Pursuant to Chapter 38 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited, the Securities and Futures Commission regulates Hong Kong Exchanges and Clearing Limited (HKEX) in relation to the listing of its shares on The Stock Exchange of Hong Kong Limited. The Securities and Futures Commission takes no responsibility for the contents of this document, makes no representation as to its accuracy or completeness, and expressly disclaims any liability whatsoever for any loss howsoever arising from or in reliance upon the whole or any part of the contents of this document.

The financial information relating to the years ended 31 December 2017 and 2016 included in this document do not constitute the statutory annual consolidated financial statements of HKEX for those years but is derived from those financial statements. Further information relating to these statutory financial statements required to be disclosed in accordance with section 436 of the Companies Ordinance is as follows:

HKEX has delivered the financial statements for the year ended 31 December 2016 to the Registrar of Companies as required by section 662(3) of, and Part 3 of Schedule 6 to, the Companies Ordinance and will deliver the financial statements for the year ended 31 December 2017 in due course.

HKEX's auditor has reported on the consolidated financial statements for both years. The auditor's reports were unqualified, did not include a reference to any matters to which the auditor drew attention by way of emphasis without qualifying its reports, and did not contain a statement under sections 406(2), 407(2) or (3) of the Companies Ordinance.

HKEX
香港交易所

香港交易及結算所有限公司
HONG KONG EXCHANGES AND CLEARING LIMITED

(Incorporated in Hong Kong with limited liability)
(Stock Code: 388)

Consolidated Financial Statements

For the year ended 31 December 2017

At 28 February 2018, the board of directors of HKEX comprises 12 Independent Non-executive Directors, namely Mr CHOW Chung Kong (Chairman), Mr Apurv BAGRI, Mr CHAN Tze Ching, Ignatius, Mr CHEAH Cheng Hye, Mr Timothy George FRESHWATER, Ms FUNG Yuen Mei, Anita, Mr Rafael GIL-TIENDA, Dr HU Zuliu, Fred, Mrs LEUNG KO May Yee, Margaret, Mr LEUNG Pak Hon, Hugo, Mr John Mackay McCulloch WILLIAMSON, and Mr YIU Kin Wah, Stephen, and one Executive Director, Mr LI Xiaojia, Charles, who is also HKEX's Chief Executive.

CONSOLIDATED INCOME STATEMENT
FOR THE YEAR ENDED 31 DECEMBER 2017

(Financial figures are expressed in Hong Kong Dollar)

	Note	**2017** **$m**	2016 $m
Trading fees and trading tariff	5(a)	**4,856**	4,428
Stock Exchange listing fees	5(b)	**1,333**	1,092
Clearing and settlement fees		**2,691**	2,358
Depository, custody and nominee services fees		**892**	857
Market data fees		**857**	816
Other revenue	5(c)	**945**	847
REVENUE	5	**11,574**	10,398
Investment income		**2,171**	826
Interest rebates to Participants		**(572)**	(130)
Net investment income	6	**1,599**	696
Sundry income	7	**7**	22
REVENUE AND OTHER INCOME	4	**13,180**	11,116
OPERATING EXPENSES			
Staff costs and related expenses	8	**(2,273)**	(2,035)
Information technology and computer maintenance expenses	9	**(433)**	(500)
Premises expenses		**(354)**	(333)
Product marketing and promotion expenses		**(47)**	(54)
Legal and professional fees		**(79)**	(106)
Other operating expenses	10	**(380)**	(427)
		(3,566)	(3,455)
EBITDA	4	**9,614**	7,661
Depreciation and amortisation		**(858)**	(771)
OPERATING PROFIT	11	**8,756**	6,890
Finance costs	12	**(134)**	(82)
Share of losses of joint ventures		**(12)**	(9)
PROFIT BEFORE TAXATION	4	**8,610**	6,799
TAXATION	15(a)	**(1,255)**	(1,058)
PROFIT FOR THE YEAR		**7,355**	5,741
PROFIT/(LOSS) ATTRIBUTABLE TO:			
Shareholders of HKEX	40	**7,404**	5,769
Non-controlling interests	24(a)(i)	**(49)**	(28)
PROFIT FOR THE YEAR		**7,355**	5,741
Basic earnings per share	16(a)	**$6.03**	$4.76
Diluted earnings per share	16(b)	**$6.02**	$4.75

The notes on pages 9 to 85 are an integral part of these consolidated financial statements.

Details of dividends are set out in note 17 to the consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER 2017

(Financial figures are expressed in Hong Kong Dollar)

	Note	**2017 $m**	2016 $m
PROFIT FOR THE YEAR		**7,355**	5,741
OTHER COMPREHENSIVE INCOME			
Items that may be reclassified subsequently to profit or loss:			
Currency translation differences of foreign subsidiaries recorded in exchange reserve	2(e)(iii)	**156**	(6)
Cash flow hedges	38	**1**	-
OTHER COMPREHENSIVE INCOME		**157**	(6)
TOTAL COMPREHENSIVE INCOME		**7,512**	5,735
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:			
Shareholders of HKEX		**7,561**	5,763
Non-controlling interests	24(a)(i)	**(49)**	(28)
TOTAL COMPREHENSIVE INCOME		**7,512**	5,735

The notes on pages 9 to 85 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION
AT 31 DECEMBER 2017

(Financial figures are expressed in Hong Kong Dollar)

		At 31 Dec 2017			At 31 Dec 2016		
	Note	**Current $m**	**Non-current $m**	**Total $m**	Current $m	Non-current $m	Total $m
ASSETS							
Cash and cash equivalents	18, 19	**155,660**	**-**	**155,660**	115,723	-	115,723
Financial assets measured at fair value through profit or loss	18, 20	**95,037**	**-**	**95,037**	70,066	-	70,066
Financial assets measured at amortised cost	18, 21	**30,757**	**60**	**30,817**	29,093	74	29,167
Accounts receivable, prepayments and deposits	23	**16,564**	**21**	**16,585**	12,928	21	12,949
Interests in joint ventures	25	**-**	**61**	**61**	-	59	59
Goodwill and other intangible assets	26	**-**	**17,925**	**17,925**	-	17,812	17,812
Fixed assets	27	**-**	**1,469**	**1,469**	-	1,499	1,499
Lease premium for land		**-**	**20**	**20**	-	21	21
Deferred tax assets	35(d)	**-**	**30**	**30**	-	22	22
Total assets		**298,018**	**19,586**	**317,604**	227,810	19,508	247,318
LIABILITIES AND EQUITY							
Liabilities							
Financial liabilities at fair value through profit or loss	28	**85,335**	**-**	**85,335**	61,627	-	61,627
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	18, 29	**157,814**	**-**	**157,814**	126,846	-	126,846
Accounts payable, accruals and other liabilities	30	**16,159**	**51**	**16,210**	12,246	30	12,276
Deferred revenue		**957**	**-**	**957**	842	-	842
Taxation payable		**505**	**-**	**505**	356	-	356
Other financial liabilities	31	**58**	**-**	**58**	37	-	37
Participants' contributions to Clearing House Funds	18, 32	**16,626**	**-**	**16,626**	8,656	-	8,656
Borrowings	33	**1,027**	**833**	**1,860**	-	3,422	3,422
Provisions	34	**85**	**68**	**153**	78	81	159
Deferred tax liabilities	35(d)	**-**	**711**	**711**	-	713	713
Total liabilities		**278,566**	**1,663**	**280,229**	210,688	4,246	214,934

CONSOLIDATED STATEMENT OF FINANCIAL POSITION (CONTINUED)

AT 31 DECEMBER 2017

		At 31 Dec 2017			At 31 Dec 2016		
	Note	**Current $m**	**Non-current $m**	**Total $m**	Current $m	Non-current $m	Total $m
Equity							
Share capital	36			**25,141**			22,085
Shares held for Share Award Scheme	36			**(606)**			(599)
Employee share-based compensation reserve	37			**222**			226
Hedging reserve	38			**1**			-
Exchange reserve	2(e)(iii)			**(104)**			(260)
Designated reserves	32, 39			**822**			773
Reserve relating to written put options to non-controlling interests				**(293)**			(293)
Retained earnings	40			**12,090**			10,334
Equity attributable to shareholders of HKEX				**37,273**			32,266
Non-controlling interests	24(a)(i)			**102**			118
Total equity				**37,375**			32,384
Total liabilities and equity				**317,604**			247,318
Net current assets				**19,452**			17,122

The notes on pages 9 to 85 are an integral part of these consolidated financial statements.

Approved by the Board of Directors on 28 February 2018

CHOW Chung Kong
Director

LI Xiaojia, Charles
Director

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2017

(Financial figures are expressed in Hong Kong Dollar)

	Attributable to shareholders of HKEX								
	Share capital and shares held for Share Award Scheme (note 36) $m	Employee share-based compensation reserve (note 37) $m	Exchange reserve $m	Designated reserves (note 39) $m	Reserve relating to written put options to non-controlling interests $m	Retained earnings (note 40) $m	Total $m	Non-controlling interests $m	Total equity $m
At 1 Jan 2016	18,695	199	(254)	778	(293)	10,691	29,816	146	29,962
Profit for the year	-	-	-	-	-	5,769	5,769	(28)	5,741
Other comprehensive income	-	-	(6)	-	-	-	(6)	-	(6)
Total comprehensive income	-	-	(6)	-	-	5,769	5,763	(28)	5,735
Total transactions with shareholders of HKEX, recognised directly in equity:									
- 2015 final dividend at $2.87 per share	-	-	-	-	-	(3,459)	(3,459)	-	(3,459)
- 2016 interim dividend at $2.21 per share	-	-	-	-	-	(2,683)	(2,683)	-	(2,683)
- Unclaimed HKEX dividends forfeited (note 30(a))	-	-	-	-	-	22	22	-	22
- Shares issued in lieu of cash dividends	2,782	-	-	-	-	-	2,782	-	2,782
- Shares purchased for Share Award Scheme	(188)	-	-	-	-	-	(188)	-	(188)
- Vesting of shares of Share Award Scheme	197	(186)	-	-	-	(11)	-	-	-
- Employee share-based compensation benefits	-	213	-	-	-	-	213	-	213
- Transfer of reserves	-	-	-	(5)	-	5	-	-	-
	2,791	27	-	(5)	-	(6,126)	(3,313)	-	(3,313)
At 31 Dec 2016	21,486	226	(260)	773	(293)	10,334	32,266	118	32,384

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

FOR THE YEAR ENDED 31 DECEMBER 2017

	Attributable to shareholders of HKEX									
	Share capital and shares held for Share Award Scheme (note 36) $m	Employee share-based compensation reserve (note 37) $m	Hedging reserve (note 38) $m	Exchange reserve $m	Designated reserves (note 39) $m	Reserve relating to written put options to non-controlling interests $m	Retained earnings (note 40) $m	Total $m	Non-controlling interests $m	Total equity $m
At 1 Jan 2017	21,486	226	-	(260)	773	(293)	10,334	32,266	118	32,384
Profit for the year	-	-	-	-	-	-	7,404	7,404	(49)	7,355
Other comprehensive income	-	-	1	156	-	-	-	157	-	157
Total comprehensive income	-	-	1	156	-	-	7,404	7,561	(49)	7,512
Total transactions with shareholders of HKEX, recognised directly in equity:										
- 2016 final dividend at $2.04 per share	-	-	-	-	-	-	(2,491)	(2,491)	-	(2,491)
- 2017 interim dividend at $2.55 per share	-	-	-	-	-	-	(3,133)	(3,133)	-	(3,133)
- Unclaimed HKEX dividends forfeited (note 30(a))	-	-	-	-	-	-	26	26	-	26
- Shares issued in lieu of cash dividends	3,037	-	-	-	-	-	-	3,037	-	3,037
- Shares purchased for Share Award Scheme	(228)	-	-	-	-	-	-	(228)	-	(228)
- Vesting of shares of Share Award Scheme	240	(224)	-	-	-	-	(16)	-	-	-
- Employee share-based compensation benefits	-	220	-	-	-	-	-	220	-	220
- Tax credit relating to Share Award Scheme	-	-	-	-	-	-	3	3	-	3
- Transfer of reserves	-	-	-	-	49	-	(49)	-	-	-
- Changes in ownership interests in a subsidiary (note 44)	-	-	-	-	-	-	12	12	33	45
	3,049	(4)	-	-	49	-	(5,648)	(2,554)	33	(2,521)
At 31 Dec 2017	24,535	222	1	(104)	822	(293)	12,090	37,273	102	37,375

The notes on pages 9 to 85 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 31 DECEMBER 2017

(Financial figures are expressed in Hong Kong Dollar)

	Note	**2017** **$m**	2016 $m
CASH FLOWS FROM PRINCIPAL OPERATING ACTIVITIES			
Net cash inflow from principal operating activities	41(a)	**8,013**	6,164
CASH FLOWS FROM OTHER OPERATING ACTIVITIES			
Net payments to external fund managers for purchases of financial assets measured at fair value through profit or loss		**(600)**	(2,701)
Net cash inflow from operating activities		**7,413**	3,463
CASH FLOWS FROM INVESTING ACTIVITIES			
Payments for purchases of fixed assets and intangible assets		**(688)**	(620)
Payment for interest in a joint venture		**(14)**	-
Net decrease/(increase) in financial assets of Corporate Funds:			
Decrease/(increase) in time deposits with original maturities more than three months		**2,285**	(2,419)
Payments for purchases of financial assets measured at amortised cost (excluding time deposits)		**(315)**	(312)
Sales proceeds from financial assets measured at fair value through profit or loss		**14**	-
Interest received from financial assets measured at fair value through profit or loss		**32**	16
Net cash inflow/(outflow) from investing activities		**1,314**	(3,335)
CASH FLOWS FROM FINANCING ACTIVITIES			
Repayment of bank borrowings	41(b)	**(1,603)**	-
Purchases of shares for Share Award Scheme		**(228)**	(188)
Payments of interest on borrowings	41(b)	**(66)**	(69)
Payments of other finance costs		**(54)**	-
Dividends paid to shareholders of HKEX		**(2,561)**	(3,329)
Proceeds from disposal of interest in a subsidiary without loss of control		**28**	-
Capital injection by non-controlling interest to a subsidiary		**17**	-
Net cash outflow from financing activities		**(4,467)**	(3,586)
Net increase/(decrease) in cash and cash equivalents		**4,260**	(3,458)
Cash and cash equivalents at 1 Jan		**9,286**	12,744
Cash and cash equivalents at 31 Dec		**13,546**	9,286
Analysis of cash and cash equivalents			
Cash on hand and balances and deposits with banks and short-term investments of Corporate Funds	19	**13,546**	9,286

The notes on pages 9 to 85 are an integral part of these consolidated financial statements.

(a) "Cash flows from principal operating activities" is a non-Hong Kong Financial Reporting Standard (non-HKFRS) measure used by management for monitoring cash flows of the Group (defined in note 1) and represents the cash flows generated from the trading and clearing operations of the three exchanges and five clearing houses and ancillary services of the Group. Cash flows from principal operating activities and cash flows from other operating activities together represent cash flows from operating activities as defined by Hong Kong Accounting Standard (HKAS) 7: Statement of Cash Flows. This non-HKFRS measure may not be comparable to similar measures presented by other companies.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

(Financial figures are expressed in Hong Kong Dollar unless otherwise stated)

1. General Information

Hong Kong Exchanges and Clearing Limited (HKEX or the Company) and its subsidiaries (collectively, the Group) own and operate the only stock exchange and futures exchange in Hong Kong and their related clearing houses, a clearing house for clearing over-the-counter derivatives contracts in Hong Kong, and an exchange and a clearing house for the trading and clearing of base and precious metals futures and options contracts operating in the United Kingdom (UK).

HKEX is a limited company incorporated and domiciled in Hong Kong. The address of its registered office is 12th Floor, One International Finance Centre, 1 Harbour View Street, Hong Kong.

These consolidated financial statements were approved for issue by the Board of Directors (Board) on 28 February 2018.

2. Principal Accounting Policies

Apart from the accounting policies presented within the corresponding notes to the consolidated financial statements, other principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

(a) Statement of compliance

These consolidated financial statements have been prepared in accordance with Hong Kong Financial Reporting Standards (HKFRSs) issued by the Hong Kong Institute of Certified Public Accountants (HKICPA), and accounting principles generally accepted in Hong Kong. These consolidated financial statements also comply with the applicable disclosure requirements of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (Main Board Listing Rules) and the applicable requirements of the Hong Kong Companies Ordinance (Chapter 622).

(b) Basis of preparation

These consolidated financial statements have been prepared under the historical cost convention, as modified by the revaluation of certain financial assets and financial liabilities measured at fair value.

The preparation of consolidated financial statements requires the use of certain critical accounting estimates, and requires management to exercise its judgement when applying the Group's accounting policies. Areas involving significant estimates and judgement are disclosed in note 3.

Adoption of new/revised HKFRSs

In 2017, the Group has adopted the following amendments to HKFRSs which were effective for accounting periods beginning on or after 1 January 2017:

Amendments to HKAS 7	Statement of Cash Flows – Disclosure Initiative
Amendments to HKAS 12	Income Taxes – Recognition of Deferred Tax Assets for Unrealised Losses

The adoption of these amendments to HKFRSs does not have any financial impact on the Group. Only amendments to HKAS 7 require the disclosure of changes in liabilities arising from financing activities (note 41(b)).

2. Principal Accounting Policies (continued)

(b) Basis of preparation (continued)

New/revised HKFRSs issued before 31 December 2017 but not yet effective and not early adopted

The Group has not applied the following new/revised HKFRSs which were issued before 31 December 2017 and are pertinent to its operations but not yet effective:

HKFRS 9 (2014)	Financial Instruments[1]
HKFRS 15	Revenue from Contracts with Customers[1]
HKFRS 16	Leases[2]
HK(IFRIC) Interpretation 22	Foreign Currency Transactions and Advance Consideration[1]
HK(IFRIC) Interpretation 23	Uncertainty over Income Tax Treatments[2]

[1]Effective for accounting periods beginning on or after 1 January 2018
[2]Effective for accounting periods beginning on or after 1 January 2019

HKFRS 9 (2014) will only affect the classification of debt securities held for Margin Funds and recognition of impairment provisions. It will not affect the classification of other securities held by the Group.

Currently, debt securities held for Margin Funds amounting to $3,059 million are classified as financial assets measured at fair value through profit or loss. Under HKFRS 9 (2014), they will satisfy the conditions for classification as a new category of financial assets, financial assets measured at fair value through other comprehensive income. Accordingly, the related cumulative fair value losses of $4 million will have to be transferred from retained earnings to the revaluation reserve on 1 January 2018. Subsequent changes in fair value of these debt securities shall be taken to the revaluation reserve. Interest income, foreign exchange differences, impairment losses, and gains or losses on disposal of these debt securities will continue to be recognised in consolidated income statement.

The new impairment model under HKFRS 9 (2014) requires the recognition of provision for impairment losses based on expected credit losses rather than incurred credit losses. There will be no significant change in the amount of provision for impairment losses to be recognised at 1 January 2018.

The Group will apply the new rules retrospectively from 1 January 2018. With the practical expedients permitted under the standard, comparatives for 2017 will not be restated.

HKFRS 15 is based on the principle that revenue is recognised when control of goods or services is transferred to customers. Based on the assessments undertaken to date, the Group does not expect significant financial impact arising from the change in revenue recognition policy adopted by the Group. The Group will apply the standard using the modified retrospective approach and comparatives will not be restated.

HKFRS 16 will primarily affect the accounting for the Group's operating leases. At 31 December 2017, the Group had non-cancellable operating lease commitments of $2,629 million (note 42(b)). Upon adoption of HKFRS 16 the majority of operating lease commitments will be recognised in the consolidated statement of financial position as lease liabilities and right-of-use assets. The lease liabilities would subsequently be measured at amortised cost and the right-of-use asset will be measured at cost and depreciated on a straight-line basis during the lease term. The Group intends to apply the simplified transition approach and will not restate comparatives amounts for the year prior to its first adoption.

The adoption of HK(IFRIC) Interpretation 22 and HK(IFRIC) Interpretation 23 would not have any financial impact on the Group.

There are no other new/revised HKFRSs not yet effective that are expected to have any impact on the Group.

2. Principal Accounting Policies (continued)

(c) Basis of consolidation

Subsidiaries are entities (including structured entities) over which the Group has control. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases. All material intra-group transactions and balances have been eliminated on consolidation.

Accounting policies of subsidiaries have been aligned on consolidation to ensure consistency with the policies adopted by the Group.

(d) Impairment of non-financial assets

Assets with an indefinite useful life, which include interests in joint ventures, goodwill and tradenames, are not subject to amortisation and are tested at least annually for impairment. Assets subject to amortisation are reviewed for impairment whenever there is any indication that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount (ie, the higher of an asset's fair value less costs to sell and value-in-use). Such impairment losses are recognised in the consolidated income statement. An impairment loss other than goodwill is reversed if the circumstances and events leading to the impairment cease to exist.

(e) Foreign currency translation

(i) Functional and presentation currency

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

(ii) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the consolidated income statement. They are deferred in hedging reserve under equity if they relate to qualifying cash flow hedges (note 38).

Translation differences on non-monetary financial assets that are classified as financial assets measured at fair value through profit or loss are reported as part of the fair value gain or loss.

(iii) Group companies

The results and financial position of all the Group entities that have a non-HKD functional currency are translated into HKD as follows:

- assets and liabilities (including goodwill and fair value adjustments arising on the acquisition of foreign subsidiaries) for each statement of financial position presented are translated at the closing rate at the end of the reporting period;
- income and expenses for each income statement are translated at the exchange rates approximating the foreign exchange rates ruling at the dates of the transactions; and
- all resulting currency translation differences are recognised in other comprehensive income in the exchange reserve under equity.

3. Critical Accounting Estimates and Assumptions

The Group makes estimates and assumptions concerning the future when the consolidated financial statements are prepared. The resulting accounting estimates may differ from the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below:

(a) Goodwill and tradenames

The Group tests annually whether goodwill and tradenames have suffered any impairment in accordance with the accounting policy stated in note 26.

The recoverable amounts of relevant cash generating units (CGUs) and relevant group of CGUs have been determined based on value-in-use calculations which are disclosed in note 26. These calculations require the use of estimates and significant judgement by management, including the future cash flows expected to arise from the CGUs, discount rates for calculating the present value and growth rates used to extrapolate cash flow projections beyond the financial forecasts approved by management.

Changes in facts and circumstances may result in revisions to estimates of recoverable amounts and to the conclusion as to whether an indication of impairment exists, which could affect the consolidated income statement in future years.

(b) Valuation of investments

The Group has a significant amount of investments that are not classified as Level 1 investments under HKFRS 13: Fair Value Measurement. The valuations have been determined based on quotes from market makers, alternative pricing sources supported by observable inputs, latest transactions prices or redemption prices provided by funds administrators of collective investment schemes.

At 31 December 2017, the financial assets that were not classified as Level 1 investments (excluding the base and precious metals futures and options contracts cleared through LME Clear Limited (LME Clear) that did not qualify for netting under the current accounting standards) under HKFRS 13 amounted to $4,802 million (31 December 2016: $3,201 million) which represented investments under collective investment schemes (31 December 2016: mainly comprised of $2,886 million of investments under collective investment schemes).

As the valuation of investments reflects movements in their estimated fair value, fair value gains or losses may fluctuate or reverse until the investments are sold, mature or realised upon redemption. The potential impact of the fair value change of such investments on the Group's consolidated income statement is disclosed in note 48(a)(iv).

4. Operating Segments

Accounting Policy

Operating segments are reported in a manner consistent with the internal management reports that are used to make strategic decisions provided to the chief operating decision-maker. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, is the Chief Executive of HKEX. Information relating to segment assets and liabilities is not disclosed as such information is not regularly reported to the chief operating decision-maker.

The accounting policies of the reportable segments are the same as the Group's accounting policies. Taxation charge/credit is not allocated to reportable segments.

4. Operating Segments (continued)

The Group has five reportable segments ("Corporate Items" is not a reportable segment). The segments are managed separately as each segment offers different products and services and requires different information technology systems and marketing strategies. The operations in each of the Group's reportable segments are as follows:

The **Cash** segment covers all equity products traded on the Cash Market platforms, the Shanghai Stock Exchange and the Shenzhen Stock Exchange through Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect (Stock Connect), sales of market data relating to these products and other related activities. The major sources of revenue of the segment are trading fees, trading tariff, listing fees of equity products and market data fees.

The **Equity and Financial Derivatives** segment refers to derivatives products traded on The Stock Exchange of Hong Kong Limited (Stock Exchange) and Hong Kong Futures Exchange Limited (Futures Exchange) and other related activities. These include the provision and maintenance of trading platforms for a range of equity and financial derivatives products, such as stock and equity index futures and options, derivative warrants (DWs), callable bull/bear contracts (CBBCs) and warrants and sales of related market data. The major sources of revenue are trading fees, trading tariff, listing fees of derivatives products and market data fees.

The **Commodities** segment refers to the operations of The London Metal Exchange (LME), which operates an exchange in the UK for the trading of base and precious metals futures and options contracts, and the development of a new commodity trading platform in the Mainland. It also covers the Asia Commodities contracts and gold and iron ore futures contracts traded on the Futures Exchange. The major sources of revenue of the segment are trading fees of commodity products, commodity market data fees and fees from ancillary operations.

The **Clearing** segment refers to the operations of the five clearing houses, which are responsible for clearing, settlement and custodian activities of the exchanges of the Group and Northbound trades under Stock Connect, and clearing and settlement of over-the-counter derivatives contracts. Its principal sources of revenue are derived from providing clearing, settlement, depository, custody and nominee services and net investment income earned on the Margin Funds and Clearing House Funds.

The **Platform and Infrastructure** segment refers to all services in connection with providing users with access to the platform and infrastructure of the Group. Its major sources of revenue are network, terminal user, dataline and software sub-license fees and hosting services fees.

Central income (including net investment income of Corporate Funds) and central costs (costs of central support functions that provide services to all operating segments and other costs not directly related to any operating segment) are included as "Corporate Items".

The chief operating decision-maker assesses the performance of the operating segments principally based on their EBITDA (defined below).

EBITDA is defined as earnings before interest expenses and other finance costs, taxation, depreciation and amortisation. It excludes the Group's share of results of the joint ventures. EBITDA is a non-HKFRS measure used by management for monitoring business performance. It may not be comparable to similar measures presented by other companies.

4. Operating Segments (continued)

An analysis by operating segment of the Group's EBITDA, profit before taxation and other selected financial information for the year is as follows:

2017	Cash $m	Equity and Financial Derivatives $m	Commodities $m	Clearing $m	Platform and Infrastructure $m	Corporate Items $m	Group $m
Revenue from external customers	**3,363**	**2,195**	**1,436**	**4,009**	**560**	**11**	**11,574**
Net investment income	**-**	**-**	**-**	**809**	**-**	**790**	**1,599**
Sundry income	**-**	**-**	**-**	**7**	**-**	**-**	**7**
Revenue and other income	**3,363**	**2,195**	**1,436**	**4,825**	**560**	**801**	**13,180**
Operating expenses	**(581)**	**(477)**	**(659)**	**(752)**	**(151)**	**(946)**	**(3,566)**
Reportable segment EBITDA	**2,782**	**1,718**	**777**	**4,073**	**409**	**(145)**	**9,614**
Depreciation and amortisation	**(69)**	**(77)**	**(395)**	**(196)**	**(42)**	**(79)**	**(858)**
Finance costs	**-**	**-**	**-**	**(38)**	**-**	**(96)**	**(134)**
Share of losses of joint ventures	**(4)**	**(8)**	**-**	**-**	**-**	**-**	**(12)**
Reportable segment profit before taxation	**2,709**	**1,633**	**382**	**3,839**	**367**	**(320)**	**8,610**
Other segment information:							
Interest income	**-**	**-**	**-**	**1,342**	**-**	**142**	**1,484**
Interest rebates to Participants	**-**	**-**	**-**	**(572)**	**-**	**-**	**(572)**
Other material non-cash item:							
Employee share-based compensation expenses	**(36)**	**(25)**	**(40)**	**(39)**	**(2)**	**(78)**	**(220)**

2016	Cash $m	Equity and Financial Derivatives $m	Commodities $m	Clearing $m	Platform and Infrastructure $m	Corporate Items $m	Group $m
Revenue from external customers	2,683	2,034	1,560	3,577	540	4	10,398
Net investment income	-	-	-	547	-	149	696
Sundry income	-	-	-	14	-	8	22
Revenue and other income	2,683	2,034	1,560	4,138	540	161	11,116
Operating expenses	(544)	(441)	(597)	(702)	(152)	(1,019)	(3,455)
Reportable segment EBITDA	2,139	1,593	963	3,436	388	(858)	7,661
Depreciation and amortisation	(88)	(86)	(298)	(179)	(44)	(76)	(771)
Finance costs	-	-	-	-	-	(82)	(82)
Share of loss of a joint venture	-	(9)	-	-	-	-	(9)
Reportable segment profit before taxation	2,051	1,498	665	3,257	344	(1,016)	6,799
Other segment information:							
Interest income	-	-	-	663	-	81	744
Interest rebates to Participants	-	-	-	(130)	-	-	(130)
Other material non-cash item:							
Employee share-based compensation expenses	(33)	(23)	(41)	(37)	(2)	(77)	(213)

4. Operating Segments (continued)

(a) Geographical information

The Group's revenue from external customers is derived from its operations in Hong Kong and the UK. Such information and the Group's non-current assets (excluding financial assets and deferred tax assets) by geographical location are detailed below:

	Revenue		Non-current assets	
	2017 $m	2016 $m	**At 31 Dec 2017 $m**	At 31 Dec 2016 $m
Hong Kong (place of domicile)	**9,544**	8,192	**2,067**	1,978
United Kingdom	**2,030**	2,206	**17,351**	17,333
Mainland China	**-**	-	**78**	101
	11,574	10,398	**19,496**	19,412

(b) Information about major customers

In 2017 and 2016, the revenue from the Group's largest customer amounted to less than 10 per cent of the Group's total revenue.

5. Revenue

Accounting Policy

Revenue excludes value added tax or other sales tax, and is recognised in the consolidated income statement on the following basis:

Trading fees and trading tariff are recognised on a trade date basis.

Stock Exchange listing fees mainly comprise annual listing fees and initial listing fees. Annual listing fees are recognised on a straight-line basis over the period covered. Initial listing fees for initial public offering (IPO) are recognised upon the listing of an applicant, cancellation of the application or six months after submission of the application, whichever is earlier. Initial and subsequent listing fees for warrants, CBBCs and other securities are recognised upon the listing of the securities.

Clearing and settlement fees arising from trades between Participants transacted on the Stock Exchange are recognised on the day following the trade day, upon acceptance of the trades. Fees for clearing and settlement of trades transacted on the Shanghai Stock Exchange and Shenzhen Stock Exchange through Stock Connect (A shares) are recognised on the trade day upon acceptance of the trades. Fees for clearing and settlement of trades in respect of base and precious metals futures and options contracts transacted on LME are recognised on the trade day (or trade match day, if later). Fees for all other settlement transactions are recognised upon completion of the settlement.

Custody fees for securities held in the Central Clearing and Settlement System (CCASS) depository are calculated and accrued on a monthly basis. Portfolio fees for A shares held or recorded in the CCASS depository and for Hong Kong securities held by China Depository and Clearing Corporation Limited (ChinaClear) are calculated and accrued on a daily basis.

Income on registration and transfer fees on nominee services are calculated and accrued on the book close dates of the relevant stocks during the financial year.

Market data fees and other fees are recognised when the related services are rendered.

5. Revenue (continued)

(a) Trading Fees and Trading Tariff

	2017 $m	2016 $m
Equity securities traded on the Stock Exchange and through Stock Connect	**1,954**	1,421
DWs, CBBCs and warrants traded on the Stock Exchange	**526**	502
Futures and options contracts traded on the Stock Exchange and the Futures Exchange	**1,260**	1,275
Base and precious metals futures and options contracts traded on the LME	**1,116**	1,230
	4,856	4,428

(b) Stock Exchange Listing Fees

	2017				2016			
	Equity		CBBCs, DWs & others	Total	Equity		CBBCs, DWs & others	Total
	Main Board $m	GEM $m	$m	$m	Main Board $m	GEM $m	$m	$m
Annual listing fees	**642**	**42**	**3**	**687**	609	34	4	647
Initial and subsequent issue listing fees	**87**	**32**	**519**	**638**	85	22	331	438
Other listing fees	**5**	**3**	**-**	**8**	5	2	-	7
	734	**77**	**522**	**1,333**	699	58	335	1,092

(c) Other Revenue

	2017 $m	2016 $m
Network, terminal user, dataline and software sub-license fees	**413**	406
Hosting services fees	**143**	129
Commodities stock levies and warehouse listing fees	**77**	87
Participants' subscription and application fees	**84**	76
Accommodation income (note (i))	**48**	48
Sales of Trading Rights	**41**	26
Post-liquidation interest arising from a Participant's default on market contracts (note (ii))	**55**	-
Miscellaneous revenue	**84**	75
	945	847

(i) Accommodation income mainly comprises income from Participants on securities deposited as alternatives to cash deposits of Margin Funds, income from Participants on currencies deposited if the relevant bank deposit rates are negative, and interest shortfall collected from LME Clear Participants on cash collateral where the investment return on the collateral is below the benchmarked interest rates stipulated in the clearing rules of LME Clear.

(ii) In 2017, the liquidators of Lehman Brothers Securities Asia Limited (LBSA) paid post-liquidation interest of $55 million on LBSA's debts arising from its default on market contracts, and an equal amount was appropriated to the Guarantee Fund reserve of Hong Kong Securities Clearing Company Limited (HKSCC) from retained earnings during the year ended 31 December 2017 (note 39).

6. Net Investment Income

Accounting Policy

Interest income on investments and interest rebates to Participants are recognised on a time apportionment basis using the effective interest method.

Gains and losses arising from changes in fair value of financial assets measured at fair value through profit or loss and financial liabilities at fair value through profit or loss are included under net investment income in the consolidated income statement.

	2017 $m	2016 $m
Gross interest income from financial assets measured at amortised cost	**1,484**	744
Interest rebates to Participants	**(572)**	(130)
Net interest income	**912**	614
Net fair value gains including interest income on financial assets mandatorily measured at fair value through profit or loss and financial liabilities at fair value through profit or loss	**682**	98
Others	**5**	(16)
Net investment income	**1,599**	696

7. Sundry Income

	2017 $m	2016 $m
Forfeiture of unclaimed dividends (note (a))	**7**	14
Others	**-**	8
	7	22

(a) In accordance with CCASS Rule 1109, the Group exercised its forfeiture right to appropriate cash dividends of $7 million (2016: $14 million) held by HKSCC Nominees Limited, which had remained unclaimed for a period of more than seven years and recognised these as sundry income. The Group has, however, undertaken to honor all forfeited claims amounting to $178 million at 31 December 2017 (31 December 2016: $171 million) if adequate proof of entitlement is provided by the beneficial owner claiming any dividends forfeited.

8. Staff Costs and Related Expenses

	2017 $m	2016 $m
Salaries and other short-term employee benefits	**1,865**	1,675
Employee share-based compensation benefits of Share Award Scheme (note 37)	**220**	213
Termination benefits	**38**	10
Retirement benefit costs (note (a)):		
- ORSO Plan	**116**	111
- MPF Scheme	**2**	2
- LME Pension Scheme	**23**	24
- PRC Retirement Schemes	**9**	-
	2,273	2,035

(a) Retirement Benefit Costs

Accounting Policy
Contribution to the defined contribution plans are expensed as incurred.

The Group has sponsored a defined contribution provident fund scheme (ORSO Plan) which is registered under the Occupational Retirement Schemes Ordinance (ORSO) and a Mandatory Provident Fund scheme (MPF Scheme) for the benefits of its employees in Hong Kong. The Group contributes 12.5 per cent of the employee's basic salary to the ORSO Plan if an employee contributes 5 per cent. If the employee chooses not to contribute, the Group will contribute 10 per cent of the employee's salary to the ORSO Plan. Contributions to the MPF Scheme are in accordance with the statutory limits prescribed by the MPF Ordinance. Forfeited contributions of the ORSO Plan for employees who leave before the contributions are fully vested are not used to offset existing contributions but are credited to a reserve account of that Plan, and are available for distribution to the members of the Plan at the discretion of the trustees.

The Group has also sponsored a defined contribution pension scheme for all employees of HKEX Investment (UK) Limited, LME Holdings Limited (LMEH), LME and LME Clear (collectively, LME Group) (LME Pension Scheme). For all employees who joined the LME Group before 1 May 2014, the Group contributes 15 per cent to 17 per cent of the employee's basic salary to the LME Pension Scheme. For all employees who joined the LME Group on or after 1 May 2014, they are automatically enrolled into the LME Pension Scheme on a matched contribution basis and may choose a personal contribution level ranging from 3 per cent to 5 per cent of their basic salaries, which is matched by the Group's contribution ranging from 6 per cent to 10 per cent of their basic salaries. Staff may opt-out of the scheme if they wish. There are no forfeited contributions for the LME Pension Scheme as the contributions are fully vested to the employees upon payment to the scheme.

8. Staff Costs and Related Expenses (continued)

(a) Retirement Benefit Costs (continued)

Pursuant to the relevant laws and regulations in the People's Republic of China (PRC), the Group has joined defined contribution retirement schemes for the employees arranged by local government labour and security authorities. The Group makes contributions to the retirement schemes at the applicable rates based on the amounts stipulated by the local government organisations. Upon retirement, the local government labour and security authorities are responsible for the payment of the basic retirement benefits to the retired employees.

Assets of the ORSO Plan, MPF Scheme, LME Pension Scheme and PRC Retirement Schemes are held separately from those of the Group and are independently administered and are not included in the consolidated statement of financial position.

9. Information Technology and Computer Maintenance Expenses

	2017 $m	2016 $m
Costs of services and goods:		
- consumed by the Group	**360**	427
- directly consumed by Participants	**73**	73
	433	500

10. Other Operating Expenses

	2017 $m	2016 $m
Bank charges (note 12(a))	**19**	57
Communication expenses	**14**	14
Contribution to Financial Reporting Council	**8**	7
Custodian and fund management related fees	**27**	35
Financial data subscription fees	**28**	25
Insurance	**11**	11
License fees	**31**	32
Repairs and maintenance expenses	**61**	62
Security expenses	**18**	18
Travel expenses	**54**	39
Other miscellaneous expenses	**109**	127
	380	427

11. Operating Profit

	2017 $m	2016 $m
Operating profit is stated after charging/(crediting):		
Auditor's remuneration		
- audit fees	**14**	14
- other non-audit fees	**5**	6
Operating lease rentals		
- land and buildings	**263**	241
- computer systems and equipment	**31**	28
Net foreign exchange (gains)/losses on financial assets and liabilities (excluding financial assets and financial liabilities measured at fair value through profit or loss)	**(5)**	7

12. Finance Costs

Accounting Policy

Interest expenses are charged to the consolidated income statement and recognised on a time apportionment basis, taking into account the principal outstanding and the applicable interest rates using the effective interest method. Other finance costs are recognised in the consolidated income statement in the period in which they are incurred.

	2017 $m	2016 $m
Interest and finance charges for financial liabilities not at fair value through profit or loss (note (a))	**121**	81
Negative interest on Euro and Japanese Yen deposits	**13**	-
Net foreign exchange losses on financing activities	**-**	1
	134	82

(a) For the year ended 31 December 2017, the total interest expenses for financial liabilities not at fair value through profit or loss amounted to $80 million (2016: $81 million). For the year ended 31 December 2017, banking facility commitment fees of $41 million (2016: $38 million) that relate to liquidity support provided to the Group's clearing houses, have been reclassified from bank charges, under other operating expenses, to finance costs to more appropriately reflect the nature of the costs incurred. No restatement of prior year comparatives was made as the amount was considered immaterial to the overall financial statements.

13. Directors' Emoluments and Interests of Directors

All Directors, including one Executive Director (HKEX's Chief Executive), received emoluments during the years ended 31 December 2017 and 31 December 2016. The aggregate emoluments paid and payable to the Directors during the year were as follows:

	2017 $'000	2016 $'000
Executive Director:		
Salaries and other short-term employee benefits	**9,403**	9,217
Performance bonus	**15,000**	11,250
Retirement benefit costs	**1,125**	1,125
	25,528	21,592
Employee share-based compensation benefits (note (a))	**23,328**	22,471
	48,856	44,063
Non-executive Directors:		
Fees	**16,140**	15,727
	64,996	59,790

(a) Employee share-based compensation benefits represent the fair value of share awards granted under the Share Award Scheme (Awarded Shares) on grant date (note 37) amortised to the consolidated income statement during the year.

(b) The emoluments of all Directors, including HKEX's Chief Executive who is an ex-officio member, are set out below. The amounts represent emoluments paid or receivable in respect of their services as a director.

13. Directors' Emoluments and Interests of Directors (continued)

(b) (continued)

	2017							
Name of Director	Fees $'000	Salary $'000	Other benefits (note (i)) $'000	Performance bonus $'000	Retirement benefit costs (note (ii)) $'000	Sub-total $'000	Employee share-based compensation benefits $'000	Total $'000
C K Chow	3,240	-	-	-	-	3,240	-	3,240
Charles X Li	-	9,000	403	15,000	1,125	25,528	23,328	48,856
Apurv Bagri (note (iii))	793	-	-	-	-	793	-	793
T C Chan	961	-	-	-	-	961	-	961
C H Cheah (note (v))	816	-	-	-	-	816	-	816
Timothy G Freshwater	1,021	-	-	-	-	1,021	-	1,021
Anita Y M Fung	1,102	-	-	-	-	1,102	-	1,102
Rafael Gil-Tienda	1,259	-	-	-	-	1,259	-	1,259
John B Harrison (note (vii))	700	-	-	-	-	700	-	700
Fred Z Hu	1,018	-	-	-	-	1,018	-	1,018
Bill C P Kwok (note (vii))	432	-	-	-	-	432	-	432
Vincent K H Lee (note (vii))	277	-	-	-	-	277	-	277
Margaret M Y Leung Ko	961	-	-	-	-	961	-	961
Hugo P H Leung (note (v))	723	-	-	-	-	723	-	723
John M M Williamson	1,051	-	-	-	-	1,051	-	1,051
Stephen K W Yiu (note (vi))	1,786	-	-	-	-	1,786	-	1,786
Total	16,140	9,000	403	15,000	1,125	41,668	23,328	64,996

	2016							
Name of Director	Fees $'000	Salary $'000	Other benefits (note (i)) $'000	Performance bonus $'000	Retirement benefit costs (note (ii)) $'000	Sub-total $'000	Employee share-based compensation benefits $'000	Total $'000
C K Chow	3,283	-	-	-	-	3,283	-	3,283
Charles X Li	-	9,000	217	11,250	1,125	21,592	22,471	44,063
Apurv Bagri (note (iii))	525	-	-	-	-	525	-	525
T C Chan	964	-	-	-	-	964	-	964
Timothy G Freshwater	1,018	-	-	-	-	1,018	-	1,018
Anita Y M Fung	964	-	-	-	-	964	-	964
Rafael Gil-Tienda	832	-	-	-	-	832	-	832
John B Harrison (note (vii))	2,486	-	-	-	-	2,486	-	2,486
Fred Z Hu	829	-	-	-	-	829	-	829
Bill C P Kwok (note (vii))	1,597	-	-	-	-	1,597	-	1,597
Vincent K H Lee (note (vii))	1,075	-	-	-	-	1,075	-	1,075
Margaret M Y Leung Ko	964	-	-	-	-	964	-	964
John M M Williamson	964	-	-	-	-	964	-	964
Oscar S H Wong (note (iv))	226	-	-	-	-	226	-	226
Total	15,727	9,000	217	11,250	1,125	37,319	22,471	59,790

Notes:

(i) Other benefits represented estimated money value of leave pay, insurance premium, club membership and UK tax liability of Non-Resident Director.

(ii) Employees who retire before normal retirement age are eligible for 18 per cent of the employer's contribution to the provident fund after completion of two years of service. The rate of vested benefit increases at an annual increment of 18 per cent thereafter reaching 100 per cent after completion of seven years of service.

(iii) Elected on 28 April 2016

(iv) Retired on 28 April 2016

(v) Elected on 26 April 2017

(vi) Appointment effective 26 April 2017

(vii) Retired on 26 April 2017

13. Directors' Emoluments and Interests of Directors (continued)

(c) Directors' material interests in transactions, arrangement or contracts

No significant transactions, arrangements and contracts in relation to HKEX's business to which HKEX was a party and in which a director of HKEX had a material interest, whether directly or indirectly, subsisted at the end of the year or at any time during the year.

14. Five Top-paid Employees

One (2016: one) of the five top-paid employees was a Director whose emoluments are disclosed in note 13. Details of the emoluments of the other four (2016: four) top-paid employees were as follows:

	2017 $'000	2016 $'000
Salaries and other short-term employee benefits	**22,196**	19,651
Performance bonus	**17,946**	16,219
Sign-on bonus	**3,050**	-
Retirement benefit costs	**2,211**	2,465
	45,403	38,335
Employee share-based compensation benefits (note (a))	**17,583**	21,221
	62,986	59,556

(a) Employee share-based compensation benefits represent the fair value of Awarded Shares on grant date (note 37) amortised to the consolidated income statement during the year.

(b) The emoluments of these four (2016: four) employees, including share-based compensation benefits, were within the following bands:

	2017 Number of employees	2016 Number of employees
$14,000,001 – $14,500,000	**1**	1
$14,500,001 – $15,000,000	**-**	2
$15,000,001 – $15,500,000	**1**	-
$16,000,001 – $16,500,000	**1**	1
$17,500,001 – $18,000,000	**1**	-
	4	4

The above employees included senior executives who were also Directors of the subsidiaries during the years. No Directors of the subsidiaries waived any emoluments.

15. Taxation

Accounting Policy

Tax charge for the period comprises current and deferred tax. Tax is recognised in the consolidated income statement, except to the extent that it relates to items recognised directly in equity, in which case, the tax is also recognised directly in equity.

The current tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period in the countries where HKEX and its subsidiaries operate and generate taxable income. Provisions are established where appropriate on the basis of amounts expected to be paid to the tax authorities.

The Group's accounting policy for recognition of deferred tax is described in note 35.

(a) Taxation charge/(credit) in the consolidated income statement represented:

	2017 $m	2016 $m
Current tax – Hong Kong Profits Tax		
- Provision for the year	**1,047**	879
- Over provision in respect of prior years	**(4)**	(3)
	1,043	876
Current tax – Overseas Tax		
- Provision for the year	**229**	223
- (Over)/under provision in respect of prior years	**(4)**	8
	225	231
Total current tax (note (i))	**1,268**	1,107
Deferred tax		
- Reversal of temporary differences	**(13)**	(18)
- Impact of changes in UK Corporation Tax rate (note (ii))	**-**	(31)
Total deferred tax (note 35(a))	**(13)**	(49)
Taxation charge	**1,255**	1,058

(i) Hong Kong Profits Tax has been provided at the rate of 16.5 per cent (2016: 16.5 per cent) on the estimated assessable profit for the year. Taxation on overseas profits has been calculated on the estimated assessable profit at the rates of taxation prevailing in the countries in which the Group operates, with the average corporation tax rates applicable to the subsidiaries in the UK being 19.25 per cent (2016: 20 per cent).

(ii) The UK Corporation Tax rate will be reduced to 17 per cent effective from 1 April 2020 through the enactment of the 2016 Finance Act. As a result of the reduction in UK Corporation Tax rate, the Group's net deferred tax liabilities decreased by $31 million in 2016.

15. Taxation (continued)

(b) The taxation on the Group's profit before taxation differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated entities as follows:

	2017 $m	2016 $m
Profit before taxation	**8,610**	6,799
Tax calculated at domestic tax rates applicable to profits in the respective countries (note (i))	**1,424**	1,144
Income not subject to taxation	**(267)**	(107)
Expenses not deductible for taxation purposes	**32**	31
Remeasurement of deferred tax assets and liabilities arising from changes in UK Corporation Tax rate	**-**	(31)
Change in deferred tax arising from unrecognised tax losses and other deferred tax adjustments	**74**	16
(Over)/under provision in respect of prior years	**(8)**	5
Taxation charge	**1,255**	1,058

(i) The weighted average applicable tax rate was 16.5 per cent (2016: 16.8 per cent).

16. Earnings Per Share

The calculation of the basic and diluted earnings per share is as follows:

(a) Basic earnings per share

	2017	2016
Profit attributable to shareholders ($m)	**7,404**	5,769
Weighted average number of shares in issue less shares held for Share Award Scheme (in '000)	**1,227,674**	1,212,376
Basic earnings per share ($)	**6.03**	4.76

(b) Diluted earnings per share

	2017	2016
Profit attributable to shareholders ($m)	**7,404**	5,769
Weighted average number of shares in issue less shares held for Share Award Scheme (in '000)	**1,227,674**	1,212,376
Effect of Awarded Shares (in '000)	**3,124**	3,071
Weighted average number of shares for the purpose of calculating diluted earnings per share (in '000)	**1,230,798**	1,215,447
Diluted earnings per share ($)	**6.02**	4.75

17. Dividends

Accounting Policy

Dividends declared are recognised as liabilities in the consolidated financial statements in the period in which the dividends are approved by shareholders or directors, where appropriate.

	2017 $m	2016 $m
Interim dividend paid:		
$2.55 (2016: $2.21) per share	**3,141**	2,690
Less: Dividend for shares held by Share Award Scheme (note (a))	**(8)**	(7)
	3,133	2,683
Final dividend proposed (note (b)):		
$2.85 (2016: $2.04) per share based on issued share capital at 31 Dec	**3,533**	2,498
Less: Dividend for shares held by Share Award Scheme at 31 Dec (note (a))	**(8)**	(7)
	3,525	2,491
	6,658	5,174

(a) The results and net assets of The HKEx Employees' Share Award Scheme (Share Award Scheme) are included in HKEX's financial statements. Therefore, dividends for shares held by the Share Award Scheme were deducted from the total dividends.

(b) The final dividend proposed after 31 December was not recognised as a liability at 31 December as it had not been approved by the shareholders.

(c) The 2017 final dividend will be payable in cash with a scrip dividend alternative subject to the permission of the Securities and Futures Commission (SFC) of the listing of and permission to deal in the new shares to be issued.

18. Financial Assets

Accounting Policy

Investments and other financial assets of the Group are classified under financial assets measured at fair value through profit or loss (note 20) or financial assets measured at amortised cost (note 21).

Financial assets of Clearing House Funds and Margin Funds are classified as current assets as they will be liquidated whenever liquid funds are required.

Other financial assets are classified as current assets unless they are expected to mature or be disposed of after twelve months from the end of the reporting period, in which case, they are included in non-current assets. For collective investment schemes which have no maturity date, they are included in current assets unless they cannot be redeemed within twelve months from the end of the reporting period.

Financial assets are derecognised when the rights to receive cash flows from the assets have expired or the Group has transferred substantially all the risks and rewards of ownership of the assets.

The financial assets of the Group include:

- Margin Funds (note 29);
- Clearing House Funds (note 32);
- Metals derivatives contracts (note 20);
- Cash prepayments for A shares (note 19); and
- Corporate Funds (note 22).

19. Cash and Cash Equivalents

Accounting Policy

Cash and cash equivalents comprise cash on hand, bank balances and other short-term highly liquid investments that are readily convertible into known amounts of cash and are subject to an insignificant risk of changes in value (mainly reverse repurchase investments and time deposits), with original maturities of three months or less.

	At 31 Dec 2017				
	Cash prepayments for A shares (notes (a) and (b)) $m	**Corporate Funds (note 22) $m**	**Margin Funds (notes (b) and 29) $m**	**Clearing House Funds (notes (b) and 32) $m**	**Total $m**
Cash on hand and balances and deposits with banks	**1,689**	**12,540**	**42,410**	**8,413**	**65,052**
Reverse repurchase investments	**-**	**1,006**	**80,434**	**9,168**	**90,608**
	1,689	**13,546**	**122,844**	**17,581**	**155,660**

	At 31 Dec 2016				
	Cash prepayments for A shares (notes (a) and (b)) $m	Corporate Funds (note 22) $m	Margin Funds (notes (b) and 29) $m	Clearing House Funds (notes (b) and 32) $m	Total $m
Cash on hand and balances and deposits with banks	263	8,079	31,142	4,969	44,453
Reverse repurchase investments	-	1,207	65,556	4,507	71,270
	263	9,286	96,698	9,476	115,723

(a) Cash prepayments for A shares represent cash received by HKSCC from its Clearing Participants for releasing their allocated A shares for same day settlement. Such prepayments will be used to settle HKSCC's Continuous Net Settlement (CNS) obligations payable on the next business day.

(b) The cash and cash equivalents of Margin Funds, Clearing House Funds and cash prepayments for A shares are held for specific purposes and cannot be used by the Group to finance other activities. These balances are not included in cash and cash equivalents of the Group for cash flow purpose in the consolidated statement of cash flows.

20. Financial Assets Measured at Fair Value through Profit or Loss

Accounting Policy

Classification

Investments and other financial assets are classified under financial assets measured at fair value through profit or loss if they do not meet the conditions to be measured at amortised cost (note 21). Derivative financial instruments (see below) are classified as financial assets measured at fair value through profit or loss when their fair values are positive.

Recognition and measurement

Purchases and sales of financial assets measured at fair value through profit or loss are recognised on the trade date. They are initially recognised at fair value with transaction costs recognised as expenses in the consolidated income statement and subsequently carried at fair value. Gains and losses arising from changes in fair value are included in the consolidated income statement in the period in which they arise.

20. Financial Assets Measured at Fair Value through Profit or Loss (continued)

Accounting Policy (continued)

Recognition and measurement (continued)
Interest income is included in net fair value gains/(losses) from these financial assets.

Fair values of quoted investments are based on the most representative prices within the bid-ask spreads which are currently considered as the bid-prices. The collective investment schemes are valued based on the latest available transaction price or redemption price for each fund, as determined by the fund's administrator. For unlisted securities or financial assets without an active market, the Group establishes the fair value by using valuation techniques including the use of recent arm's length transactions, reference to other instruments that are substantially the same and discounted cash flow analysis.

Derivative financial instruments
Derivative financial instruments include outstanding derivatives contracts of LME Clear, which acts as a central counterparty to the base and precious metals futures and options contracts traded on the LME, and forward foreign exchange contracts. Derivatives are initially recognised at fair value on trade date and subsequently remeasured at their fair values. Except where outstanding derivatives contracts are held in the capacity as a central counterparty, derivatives are categorised as held for trading with changes in fair value recognised in the consolidated income statement.

	At 31 Dec 2017			
	Corporate Funds (note 22) $m	Margin Funds (note 29) $m	Metals derivatives contracts (note (a)) $m	Total $m
Mandatorily measured at fair value				
Collective investment schemes:				
- listed outside Hong Kong	**1,841**	**-**	**-**	**1,841**
- unlisted	**4,802**	**-**	**-**	**4,802**
	6,643	**-**	**-**	**6,643**
Unlisted debt securities	**-**	**3,059**	**-**	**3,059**
Derivative financial instruments:				
- base and precious metals futures and options contracts cleared through LME Clear (note (a))	**-**	**-**	**85,335**	**85,335**
	6,643	**3,059**	**85,335**	**95,037**

20. Financial Assets Measured at Fair Value through Profit or Loss (continued)

	At 31 Dec 2016			
	Corporate Funds (note 22) $m	Margin Funds (note 29) $m	Metals derivatives contracts (note (a)) $m	Total $m
Mandatorily measured at fair value				
Collective investment schemes:				
- listed outside Hong Kong	2,225	-	-	2,225
- unlisted	2,886	-	-	2,886
	5,111	-	-	5,111
Unlisted debt securities	-	3,323	-	3,323
Derivative financial instruments:				
- base and precious metals futures and options contracts cleared through LME Clear (note (a))	-	-	61,618	61,618
- forward foreign exchange contracts (note 48(b))	14	-	-	14
	14	-	61,618	61,632
	5,125	3,323	61,618	70,066

(a) Metals derivatives contracts represent the fair value of the outstanding base and precious metals futures and options contracts cleared through LME Clear that do not qualify for netting under HKAS 32: Financial Instruments: Presentation, where LME Clear is acting in its capacity as a central counterparty to the contracts traded on the LME.

21. Financial Assets Measured at Amortised Cost

Accounting Policy

Classification

Investments are classified under financial assets measured at amortised cost if they satisfy both of the following conditions:

- the assets are held within a business model whose objective is to hold assets in order to collect contractual cash flows; and
- the contractual terms of the financial assets give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

The nature of any derivatives embedded in the financial assets is considered in determining whether the cash flows are solely payment of principal and interest on the principal outstanding and are not accounted for separately. If the combined cash flow of the derivatives embedded in the financial assets are considered not satisfying the “solely payments of principal and interest” condition, the financial assets are classified as financial assets measured at fair value through profit or loss (note 20).

Accounts receivable and other deposits are also classified under this category (note 23).

21. Financial Assets Measured at Amortised Cost (continued)

Accounting Policy (continued)

Recognition and measurement

Financial assets measured at amortised cost are initially recognised at fair value plus transaction costs and subsequently carried at amortised cost using the effective interest method less any impairment.

Impairment

The Group assesses at the end of each reporting period whether there is objective evidence that a financial asset or a group of financial assets is impaired. Impairment losses are incurred when there is objective evidence of impairment that, as a result of one or more loss events that have occurred after the initial recognition of the financial assets, the estimated future cash flows of the financial assets have been affected. Objective evidence of impairment could include:

- significant financial difficulty of the debtor or obligor;
- fees receivable that have been outstanding for over 180 days;
- it is becoming probable that the debtor or obligor will enter into bankruptcy or other financial reorganisation;
- the disappearance of an active market for that financial asset because of financial difficulties; or
- observable data indicating that there is a measurable decrease in the estimated future cash flows from a group of financial assets since the initial recognition of those assets, although the decrease cannot yet be identified with the individual financial assets in the group.

The Group first assesses whether objective evidence of impairment exists individually for financial assets that are individually significant, and individually or collectively for financial assets that are not individually significant.

For the purposes of a collective evaluation of impairment, financial assets are grouped on the basis of similar credit risk characteristics relevant to the estimation of future cash flows. These financial assets are collectively assessed based on historical loss experience on each type of assets and management judgement of the current economic and credit environment.

If there is objective evidence that an impairment loss has been incurred, the loss is measured as the difference between the assets' carrying amounts and the present values of estimated future cash flows discounted at the financial assets' original effective interest rates. The carrying amounts of the assets are reduced through the use of a doubtful debt allowance account and the amount of the loss is recognised in the consolidated income statement.

If, in a subsequent period, the amount of impairment loss decreases and the decrease can be shown to relate objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed by adjusting the doubtful debt allowance account. The amount of reversal is recognised in the consolidated income statement.

21. Financial Assets Measured at Amortised Cost (continued)

	At 31 Dec 2017			
	Corporate Funds (note 22) $m	**Margin Funds (note 29) $m**	**Clearing House Funds (note 32) $m**	**Total $m**
Debt securities listed outside Hong Kong	**627**	**-**	**-**	**627**
Time deposits with original maturities over three months	**588**	**29,481**	**61**	**30,130**
Other financial assets	**60**	**-**	**-**	**60**
	1,275	**29,481**	**61**	**30,817**
The expected recovery dates of the financial assets are analysed as follows:				
Within twelve months	**1,215**	**29,481**	**61**	**30,757**
More than twelve months	**60**	**-**	**-**	**60**
	1,275	**29,481**	**61**	**30,817**

	At 31 Dec 2016			
	Corporate Funds (note 22) $m	Margin Funds (note 29) $m	Clearing House Funds (note 32) $m	Total $m
Debt securities listed outside Hong Kong	312	-	-	312
Time deposits with original maturities over three months	2,873	25,782	126	28,781
Other financial assets	74	-	-	74
	3,259	25,782	126	29,167
The expected recovery dates of the financial assets are analysed as follows:				
Within twelve months	3,185	25,782	126	29,093
More than twelve months	74	-	-	74
	3,259	25,782	126	29,167

(a) The fair values of financial assets maturing after twelve months are disclosed in note 48(d)(ii).

22. Corporate Funds

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Corporate Funds comprised the following instruments:		
Cash and cash equivalents (note 19)	**13,546**	9,286
Financial assets measured at fair value through profit or loss (note 20)	**6,643**	5,125
Financial assets measured at amortised cost (note 21)	**1,275**	3,259
	21,464	17,670

Financial assets held by the Group which are funded by share capital and funds generated from operations are classified as Corporate Funds (ie, other than financial assets of Margin Funds, Clearing House Funds, cash prepayments for A shares and base and precious metals derivatives contracts).

23. Accounts Receivable, Prepayments and Deposits

Accounting Policy

Accounts receivable and other deposits are financial assets measured at amortised cost less impairment. The accounting policy for financial assets measured at amortised cost is disclosed in note 21.

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Receivable from ChinaClear, Exchange and Clearing Participants:		
- CNS money obligations receivable (note (a))	**12,515**	10,052
- transaction levy, stamp duty and fees receivable	**676**	469
- Settlement Reserve Fund and Settlement Guarantee Fund held by ChinaClear (note 29)	**2,421**	1,032
- others	**12**	14
Payment in advance for collective investment schemes traded on 1 Jan 2017	**-**	600
Other receivables, prepayments and deposits	**970**	785
Less : Provision for impairment losses of receivables (note (b))	**(9)**	(3)
	16,585	12,949

(a) Upon acceptance of Stock Exchange trades for settlement in CCASS under the CNS basis, HKSCC interposes itself between the HKSCC Clearing Participants as the settlement counterparty to the trades through novation. The CNS money obligations due by/to HKSCC Clearing Participants on the Stock Exchange trades are recognised as receivables and payables (note 30) when they are confirmed and accepted on the day after the trade day.

For a trade in A shares transacted for Stock Exchange Participants, the rights and obligations of the parties to the trade will be transferred to ChinaClear, and a market contract between HKSCC and the relevant HKSCC Clearing Participant is created through novation. The CNS money obligations due by/to HKSCC Clearing Participants and ChinaClear are recognised as receivables and payables (note 30) when they are confirmed on the trade day.

(b) The movements in provision for impairment losses of receivables were as follows:

	2017 $m	2016 $m
At 1 Jan	**3**	4
Provision for /(reversal of provision for) impairment losses of receivables under other operating expenses	**6**	(1)
At 31 Dec	**9**	3

(c) CNS money obligations receivable mature within two days after the trade date. The majority of the remaining accounts receivable, prepayments and deposits were due within three months.

24. Principal Subsidiaries and Controlled Structured Entity

Accounting Policy

Subsidiaries are entities (including structured entities (note (b)) over which the Group has control. The Group controls an entity when the Group is exposed to, or has the rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

A structured entity is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only and the relevant activities are directed by means of contractual arrangements.

The Group considers all of its investments in collective investment schemes to be investments in unconsolidated structured entities, which are classified as financial assets measured at fair value through profit or loss (note 20).

(a) Principal Subsidiaries

HKEX had direct or indirect interests in the following principal subsidiaries:

Company	Place of incorporation and operation	Issued and fully paid up share/registered capital	Principal activities	Interest held by the Group At 31 Dec 2017	Interest held by the Group At 31 Dec 2016
Direct principal subsidiaries:					
The Stock Exchange of Hong Kong Limited	Hong Kong	929 ordinary shares ($929)	Operates the single Stock Exchange in Hong Kong	**100%**	100%
Hong Kong Futures Exchange Limited	Hong Kong	230 ordinary shares ($28,750,000)	Operates a futures and options exchange	**100%**	100%
Hong Kong Securities Clearing Company Limited	Hong Kong	2 ordinary Shares ($2)	Operates a clearing house for securities traded on the Stock Exchange in Hong Kong, Shanghai Stock Exchange and Shenzhen Stock Exchange in Mainland China through Stock Connect and the central securities depository, and provides custody and nominee services for eligible securities listed in Hong Kong and Mainland China	**100%**	100%
OTC Clearing Hong Kong Limited (OTC Clear) (note (i))	Hong Kong	4,860 ordinary shares ($614,600,001) 1,620 non-voting ordinary shares ($340,200,000)	Operates a clearing house for over-the-counter derivatives	**75%**	75%

24. Principal Subsidiaries and Controlled Structured Entity (continued)

(a) Principal Subsidiaries (continued)

Company	Place of incorporation and operation	Issued and fully paid up share/registered capital	Principal activities	Interest held by the Group At 31 Dec 2017	Interest held by the Group At 31 Dec 2016
Direct principal subsidiaries (continued):					
The SEHK Options Clearing House Limited (SEOCH)	Hong Kong	1,000,000 ordinary shares ($1,000,000)	Operates a clearing house for stock options contracts traded on the Stock Exchange in Hong Kong	**100%**	100%
HKFE Clearing Corporation Limited (HKCC)	Hong Kong	1,000,000 ordinary shares ($1,000,000)	Operates a clearing house for derivatives contracts traded on the Futures Exchange	**100%**	100%
Indirect principal subsidiaries:					
The London Metal Exchange	United Kingdom	100 ordinary shares of £1 each	Operates an exchange for the trading of base and precious metals futures and options contracts	**100%**	100%
LME Clear Limited	United Kingdom	107,500,001 ordinary share of £1 each	Operates a clearing house for base and precious metals futures and options contracts	**100%**	100%
Qianhai Mercantile Exchange Co., Ltd. (QME) (note (i))	Mainland China	RMB400,000,000	Developing a commodity trading platform in Mainland China	**90.01%**	100%

The above table lists the subsidiaries of the Group which, in the opinion of its directors, principally affect the results or assets of the Group.

(i) Subsidiaries with non-controlling interests

At 31 December 2017, the Group held 75 per cent (31 December 2016: 75 per cent) interest in OTC Clear, while the remaining 25 per cent (31 December 2016: 25 per cent) interest was held by non-controlling interests. The non-controlling interests do not have voting rights at general meetings of OTC Clear.

QME (formerly known as Gangrong Trading Services (Shenzhen) Limited) is a limited company established in Mainland China. At 31 December 2017, the Group held 90.01 per cent (31 December 2016: 100 per cent) interest in QME, while the remaining 9.99 per cent (31 December 2016: Nil) interest was held by non-controlling interests.

24. Principal Subsidiaries and Controlled Structured Entity (continued)

(a) Principal Subsidiaries (continued)

(i) Subsidiaries with non-controlling interests (continued)

Set out below is the financial information related to the non-controlling interests of each subsidiary:

	OTC Clear		QME	
	2017 $m	2016 $m	**2017 $m**	2016 $m
Loss allocated to non-controlling interests	**27**	28	**22**	-
	At 31 Dec 2017 $m	At 31 Dec 2016 $m	**At 31 Dec 2017 $m**	At 31 Dec 2016 $m
Accumulated non-controlling interests	**91**	118	**11**	-

No summarised financial information of OTC Clear and QME is presented as the non-controlling interests are not material to the Group.

(ii) Significant restrictions

Cash and savings deposits are held by subsidiaries in Mainland China and are subject to exchange control restrictions. The carrying amount of these restricted assets in the consolidated financial statements at 31 December 2017 was $148 million (31 December 2016: $218 million).

(b) Controlled structured entity

HKEX controls a structured entity which operates in Hong Kong, particulars of which are as follows:

Structured entity	**Principal activities**
The HKEx Employees' Share Award Scheme (HKEX Employee Share Trust)	Purchases, administers and holds HKEX shares for the Share Award Scheme for the benefit of eligible HKEX employees (note 37)

HKEX has the power to direct the relevant activities of the HKEX Employee Share Trust and it has the ability to use its power over the HKEX Employee Share Trust to affect its exposure to returns. Therefore, the assets and liabilities of HKEX Employee Share Trust are included in HKEX's statement of financial position and the HKEX shares it held are presented as a deduction in equity as Shares held for Share Award Scheme.

25. Interests in Joint Ventures

Accounting Policy

Interests in joint ventures are accounted for in the consolidated financial statements under the equity method. The entire carrying amount of the investment is tested for impairment in accordance with the accounting policy stated in note 2(d).

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Share of net assets of joint ventures	**61**	59

25. Interests in Joint Ventures (continued)

(a) Details of the joint ventures were as follows:

Name	Place of business and country of incorporation	Principal activities	Issued and fully paid up share capital held	% of ownership interest At 31 Dec 2017	% of ownership interest At 31 Dec 2016
China Exchanges Services Company Limited (CESC)	Hong Kong	Development of index-linked and equity derivatives products	100,000,000 ordinary shares ($100,000,000)	**33.33%**	33.33%
Bond Connect Company Limited (BCCL)	Hong Kong	Provision of support services related to Bond Connect	35,000,000 ordinary shares ($35,000,000)	**40%**	N/A

In 2012, HKEX, the Shanghai Stock Exchange and the Shenzhen Stock Exchange established a joint venture, CESC, with an aim of developing financial products and related services. CESC is a strategic investment for the Group and it is expected to enhance the competitiveness of Hong Kong, help promote the development of Mainland China's capital markets and the internationalisation of the Group.

In 2017, HKEX and China Foreign Exchange Trade System (CFETS) established a joint venture, BCCL, which provides support services related to Bond Connect. BCCL is a strategic investment of the Group as it provides services to facilitate the trading of Bond Connect, which enhances HKEX's position in the fixed income market and expands the mutual market programme from equity into a new asset class.

Set out below is the measurement method and the carrying amounts of the two joint ventures:

Name	Measurement method	Carrying amount At 31 Dec 2017 $m	Carrying amount At 31 Dec 2016 $m
CESC	Equity	**51**	59
BCCL	Equity	**10**	-
		61	59

The two joint ventures are private companies and no quoted market prices are available for their shares.

No summarised financial information of CESC and BCCL is presented as the joint ventures are not material to the Group.

26. Goodwill and Other Intangible Assets

Accounting Policy

Goodwill

Goodwill arising on the acquisition of subsidiaries is carried at cost as established at the date of acquisition less accumulated impairment losses, if any.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each CGU, or group of CGUs, that is expected to benefit from the synergies of the combination. Each CGU or group of CGUs to which the goodwill is allocated represents the lowest level within the entity at which the goodwill is monitored for internal management purposes (ie, operating segment level).

Goodwill is not amortised but impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. The carrying value of goodwill is compared to the recoverable amount, which is the higher of value-in-use and the fair value less costs to sell. Any impairment is recognised immediately in the consolidated income statement and is not subsequently reversed.

Tradenames

Tradenames acquired in a business combination are recognised at fair value at the acquisition date. The fair value is based on the discounted estimated royalty payments that are expected to be avoided as a result of the tradenames being owned.

Tradenames arising from the acquisition of the LME Group have indefinite useful lives and are carried at cost less accumulated impairment losses, if any.

Tradenames are reviewed annually to determine whether events and circumstances continue to support the indefinite useful life assessment.

Customer relationships

Customer relationships acquired in a business combination are recognised initially at fair value at the acquisition date. The fair value is determined using the multi-period excess earnings method, whereby the asset is valued after deducting a fair return on all other assets that are part of creating the related cash flows. Subsequently, the customer relationships are carried at cost (ie, the initial fair value) less accumulated amortisation and impairment losses, if any. Amortisation is calculated using the straight-line method over the expected lives of the customer relationships, which are determined to be 20 to 25 years.

26. Goodwill and Other Intangible Assets (continued)

Accounting Policy (continued)

Computer software systems

Development costs that are directly attributable to the design and testing of identifiable and unique software products controlled by the Group are recognised as intangible assets if the related software does not form an integral part of the hardware on which it operates (ie, system software without which the related hardware can still operate) and when the following criteria are met:

- It is technically feasible to complete the software so that it will be available for use;
- Management intends to complete the software and use it;
- There is an ability to use the software;
- It can be demonstrated how the software will generate probable future economic benefits;
- Adequate technical, financial and other resources to complete the development and to use the software are available; and
- The expenditure attributable to the software during its development can be reliably measured.

Other development expenditures that do not meet these criteria are recognised in the consolidated income statement as incurred. Development costs previously recognised in the consolidated income statement are not recognised as an asset in a subsequent period.

Qualifying software system development expenditure and related directly attributable costs capitalised as intangible assets are amortised when they are available for use. They are amortised at rates sufficient to write off their costs net of residual values over their estimated useful lives of three to five years on a straight-line basis. The residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

Costs associated with maintaining computer systems and software programmes are recognised in the consolidated income statement as incurred.

The Group's accounting policy for impairment is described in note 2(d).

26. Goodwill and Other Intangible Assets (continued)

		Other Intangible Assets			
	Goodwill $m	Tradenames $m	Customer relationships $m	Software systems $m	Total $m
Cost:					
At 1 Jan 2016	13,162	890	3,109	1,876	19,037
Exchange differences	5	1	2	-	8
Additions	-	-	-	422	422
Disposals	-	-	-	(6)	(6)
At 31 Dec 2016	13,167	891	3,111	2,292	19,461
At 1 Jan 2017	**13,167**	**891**	**3,111**	**2,292**	**19,461**
Exchange differences	**110**	**7**	**25**	**15**	**157**
Additions	**-**	**-**	**-**	**537**	**537**
Disposals	**-**	**-**	**-**	**(11)**	**(11)**
At 31 Dec 2017	**13,277**	**898**	**3,136**	**2,833**	**20,144**
Accumulated amortisation:					
At 1 Jan 2016	-	-	397	768	1,165
Exchange differences	-	-	1	-	1
Amortisation	-	-	129	360	489
Disposals	-	-	-	(6)	(6)
At 31 Dec 2016	-	-	527	1,122	1,649
At 1 Jan 2017	**-**	**-**	**527**	**1,122**	**1,649**
Exchange differences	**-**	**-**	**4**	**8**	**12**
Amortisation	**-**	**-**	**130**	**439**	**569**
Disposals	**-**	**-**	**-**	**(11)**	**(11)**
At 31 Dec 2017	**-**	**-**	**661**	**1,558**	**2,219**
Net book value:					
At 31 Dec 2017	**13,277**	**898**	**2,475**	**1,275**	**17,925**
At 31 Dec 2016	13,167	891	2,584	1,170	17,812
Cost of software systems under development included above:					
At 31 Dec 2017	**-**	**-**	**-**	**547**	**547**
At 31 Dec 2016	-	-	-	560	560

Amortisation of $569 million (2016: $489 million) is included in “depreciation and amortisation” in the consolidated income statement.

26. Goodwill and Other Intangible Assets (continued)

Tradenames are regarded as having indefinite useful lives and there is no foreseeable limit to the period over which they are expected to generate cash flows for the Group as it is expected that their values will not be reduced through usage and there are no legal or similar limits on the period for their use.

Impairment tests for CGUs containing goodwill and intangible assets with indefinite useful lives

Goodwill and tradenames that arose on the acquisition of the LME Group in 2012 are allocated to and monitored by management at the operating segment level, which comprises CGUs, or groups of CGUs that are expected to benefit from synergies of combination with the acquired businesses. A summary of the allocation of goodwill and tradenames to these operating segments is as follows:

	At 31 Dec 2017		At 31 Dec 2016	
	Goodwill $m	**Tradenames $m**	Goodwill $m	Tradenames $m
Commodities segment	**10,396**	**703**	10,310	698
Clearing segment	**2,881**	**195**	2,857	193
	13,277	**898**	13,167	891

The Commodities segment comprises the commodities trading platform in the UK (LME commodities CGU) and the development of the commodities trading platform in Mainland China (China commodities CGU). As the China commodities CGU is still at an early stage of development, its valuation has not been taken into account in determining the recoverable amount of the Commodities segment at 31 December 2017.

The recoverable amount of each CGU is determined based on value-in-use calculations. These calculations use cash flow projections based on financial forecasts approved by management covering a five-year period. Cash flows beyond the five-year period are extrapolated using the estimated terminal growth rates stated below. The key assumptions, EBITDA margins, growth rates and discount rates used for value-in-use calculations are as follows:

	At 31 Dec 2017		At 31 Dec 2016	
	Commodities segment	**Clearing segment**	Commodities segment	Clearing segment
EBITDA margin (average of next five years)	**61%**	**50%**	57%	63%
Growth rate	**3%**	**3%**	3%	3%
Discount rate	**9%**	**9%**	9-11%	9%

For the LME commodities CGU and the Clearing segment, management determined the EBITDA margins based on past performance and expectations regarding market development. The growth rates do not exceed the long-term average growth rate for the business in the markets in which each of the CGUs currently operates. The discount rates used are pre-tax and reflect specific risks relating to each CGU.

26. Goodwill and Other Intangible Assets (continued)

Impairment tests for CGUs containing goodwill and intangible assets with indefinite useful lives (continued)

The recoverable amounts of the operating segments (including goodwill and tradenames) based on the estimated value-in-use calculations were higher than their carrying amounts at 31 December 2017 and 31 December 2016. Accordingly, no provision for impairment loss for goodwill or tradenames is considered necessary.

If the LME trading fee in the forecast period was 10 per cent lower than forecast, or the discount rate increased to 10 per cent, the recoverable amount of the Commodities segment would be approximately equal to its carrying amount. Except for this, any reasonably possible changes in the key assumptions used in the value-in-use assessment would not affect management's view on impairment at 31 December 2017.

27. Fixed Assets

Accounting Policy

Tangible fixed assets are stated at historical cost less accumulated depreciation and impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the assets.

Tangible fixed assets are depreciated when they are available for use. They are depreciated at rates sufficient to write off their costs net of expected residual values over their estimated useful lives on a straight-line basis. The residual values and useful lives are reviewed at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

The useful lives of major categories of fixed assets are as follows:

Leasehold buildings	Up to 35 years or remaining lives of the leases if shorter
Leasehold improvements	Over the remaining lives of the leases but not exceeding 10 years
Computer trading and clearing systems	
- hardware and software	3 to 5 years
Other computer hardware and software	3 years
Furniture, equipment and motor vehicles	3 to 5 years
Data centre facilities and equipment	3 to 20 years

Expenditure incurred in the construction of leasehold buildings and other directly attributable costs are capitalised when it is probable that future economic benefits associated with the expenditure will flow to the Group and the costs can be measured reliably.

Qualifying software expenditure and related directly attributable costs are capitalised and recognised as a fixed asset if the software forms an integral part of the hardware on which it operates (ie, operating system software without which the related hardware cannot operate).

Subsequent costs and qualifying development expenditure incurred after the completion of a system are included in the asset's carrying amount or recognised as a separate asset only when it is probable that future economic benefits associated with that item will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance costs and other subsequent expenditure are charged to the consolidated income statement when incurred.

The Group's accounting policy for impairment is described in note 2(d).

27. Fixed Assets (continued)

	Leasehold buildings $m	Computer trading and clearing systems $m	Other computer hardware and software $m	Data centre facilities and equipment $m	Leasehold improvements, furniture, equipment and motor vehicles $m	Total $m
Cost:						
At 1 Jan 2016	708	1,411	512	406	794	3,831
Exchange differences	-	(1)	-	-	(2)	(3)
Additions	-	56	34	4	130	224
Disposals	-	(118)	(23)	-	(34)	(175)
At 31 Dec 2016	708	1,348	523	410	888	3,877
At 1 Jan 2017	**708**	**1,348**	**523**	**410**	**888**	**3,877**
Exchange differences	**-**	**5**	**2**	**-**	**5**	**12**
Additions	**-**	**75**	**29**	**6**	**141**	**251**
Disposals	**-**	**(7)**	**(8)**	**-**	**(37)**	**(52)**
At 31 Dec 2017	**708**	**1,421**	**546**	**416**	**997**	**4,088**
Accumulated depreciation:						
At 1 Jan 2016	93	1,256	389	86	447	2,271
Depreciation	28	49	72	26	107	282
Disposals	-	(118)	(23)	-	(34)	(175)
At 31 Dec 2016	121	1,187	438	112	520	2,378
At 1 Jan 2017	**121**	**1,187**	**438**	**112**	**520**	**2,378**
Exchange differences	**-**	**2**	**1**	**-**	**1**	**4**
Depreciation	**28**	**55**	**44**	**27**	**135**	**289**
Disposals	**-**	**(7)**	**(8)**	**-**	**(37)**	**(52)**
At 31 Dec 2017	**149**	**1,237**	**475**	**139**	**619**	**2,619**
Net book value:						
At 31 Dec 2017	**559**	**184**	**71**	**277**	**378**	**1,469**
At 31 Dec 2016	587	161	85	298	368	1,499
Cost of fixed assets in the course of construction included above:						
At 31 Dec 2017	**-**	**110**	**14**	**1**	**103**	**228**
At 31 Dec 2016	-	71	10	1	72	154

28. Financial Liabilities at Fair Value through Profit or Loss

Accounting Policy

Financial liabilities at fair value through profit or loss are initially recognised at fair value on trade date and subsequently remeasured at their fair values. Changes in fair value of the liabilities are recognised in the consolidated income statement. Derivative financial instruments (note 20) outstanding on the reporting date are classified as financial liabilities at fair value through profit or loss when their fair values are negative.

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Held by LME Clear in its capacity as a central counterparty		
Derivative financial instruments:		
- base and precious metals futures and options contracts cleared through LME Clear (note (a))	**85,335**	61,618
Held for trading		
Derivative financial instruments:		
- forward foreign exchange contracts (note 48(b))	**-**	9
	85,335	61,627

(a) The amount represents the fair value of outstanding base and precious metals futures and options contracts cleared through LME Clear that do not qualify for netting under HKAS 32 “Financial Instruments: Presentation”, where LME Clear is acting in its capacity as a central counterparty to the contracts traded on the LME.

29. Margin Deposits, Mainland Security and Settlement Deposits, and Cash Collateral from Clearing Participants

Accounting Policy

The obligation to refund the Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants is disclosed under current liabilities. Non-cash collateral received from Clearing Participants is not recognised on the consolidated statement of financial position.

Margin Funds are established by cash received or receivable from Clearing Participants in respect of margin deposits, Mainland security and settlement deposits, and cash collateral of the five clearing houses to cover their open positions. Part of the Mainland security and settlement deposits is used by HKSCC to satisfy its obligations as a clearing participant of ChinaClear in respect of trades transacted through Stock Connect. These funds are held in segregated accounts of the respective clearing houses for this specified purpose and cannot be used by the Group to finance any other activities.

29. Margin Deposits, Mainland Security and Settlement Deposits, and Cash Collateral from Clearing Participants (continued)

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants comprised:		
SEOCH Clearing Participants' margin deposits	**14,571**	5,389
HKCC Clearing Participants' margin deposits	**49,245**	46,974
HKSCC Clearing Participants' margin deposits, Mainland security and settlement deposits, and cash collateral	**8,553**	5,484
OTC Clear Clearing Participants' margin deposits	**1,730**	296
LME Clear Clearing Participants' margin deposits	**83,715**	68,703
	157,814	126,846
The margin deposits, Mainland security and settlement deposits, and cash collateral were invested in the following instruments for managing the obligations of the Margin Funds (note 18):		
Cash and cash equivalents (note 19)	**122,844**	96,698
Financial assets measured at fair value through profit or loss (note 20)	**3,059**	3,323
Financial assets measured at amortised cost (note 21)	**29,481**	25,782
Settlement Reserve Fund and Settlement Guarantee Fund held by ChinaClear (note 23)	**2,421**	1,032
Margin receivable from Clearing Participants	**9**	11
	157,814	126,846

30. Accounts Payable, Accruals and Other Liabilities

Accounting Policy

Financial liabilities, other than financial liabilities at fair value through profit or loss (note 28) and financial guarantee contracts (note 31), are initially recognised at fair value and subsequently carried at amortised cost (which is same as the initial fair value due to their short-term nature).

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Payable to ChinaClear, Exchange and Clearing Participants:		
- CNS money obligations payable (note 23(a))	**14,204**	10,315
- others	**212**	174
Transaction levy payable to the SFC	**120**	79
Unclaimed dividends (note (a))	**269**	257
Stamp duty payable to the Collector of Stamp Revenue	**416**	258
Payables for collective investment schemes traded before 31 Dec 2016	**-**	300
Other payables, accruals and deposits received	**989**	893
	16,210	12,276

30. Accounts Payable, Accruals and Other Liabilities (continued)

(a) Unclaimed dividends represent dividends declared by listed companies which were held by HKSCC Nominees Limited (HKSN) but not yet claimed by shareholders of the companies concerned, and dividends declared by HKEX but not yet claimed by its shareholders. During the year, cash dividends held by HKSN which had remained unclaimed for a period of more than seven years amounting to $7 million (2016: $14 million) were forfeited and recognised as sundry income (note 7) and dividends declared by HKEX which were unclaimed over a period of six years from the date of payment amounting to $26 million (2016: $22 million) were forfeited and transferred to retained earnings in accordance with HKEX's Articles of Association (note 40).

(b) CNS money obligations payable mature within two days after the trade date. The majority of the remaining accounts payable, accruals and other liabilities would mature within three months.

31. Other Financial Liabilities

Accounting Policy
Financial guarantee contracts are initially recognised at fair value. Subsequently, such contracts are measured at the higher of the best estimate of the amount required to settle the guarantee and the amount initially recognised less, where appropriate, cumulative amortisation over the life of the guarantee on a straight-line basis.

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Financial liabilities of Clearing House Funds (note 32)	**38**	17
Financial liabilities of Corporate Funds:		
Financial guarantee contract (note (a))	**20**	20
	58	37

(a) The amount represents the carrying value of a financial guarantee provided by the Group to the Collector of Stamp Revenue, details of which are disclosed in note 43(b).

32. Clearing House Funds

Accounting Policy
Clearing Participants' cash contributions to Clearing House Funds are included under current liabilities. Non-cash collateral received from Clearing Participants is not recognised on the consolidated statement of financial position.

Clearing House Funds are established under the Clearing House Rules. Assets contributed by the Clearing Participants and the Group are held by the respective clearing houses (together with the accumulated income less related expenses for the clearing houses in Hong Kong) expressly for the purpose of ensuring that the respective clearing houses are able to fulfil their counterparty obligations in the event that one or more of the Clearing Participants fail to meet their obligations to the clearing houses. The HKSCC Guarantee Fund also provides resources to enable HKSCC to discharge its liabilities and obligations if defaulting Clearing Participants deposit defective securities into CCASS. The amounts earmarked for contribution to the Rates and FX Guarantee Resources of OTC Clear and its accumulated investment income was also included in Clearing House Funds for presentation purpose. These funds are held in segregated accounts of the respective clearing houses for this specified purpose and cannot be used by the Group to finance any other activities.

32. Clearing House Funds (continued)

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
The Clearing House Funds comprised:		
Clearing Participants' cash contributions	**16,626**	8,656
Contribution to OTC Clear Rates and FX Guarantee Resources	**156**	156
Designated reserves (notes (a) and 39)	**822**	773
	17,604	9,585
The Clearing House Funds were invested in the following instruments for managing the obligations of the Funds (note 18):		
Cash and cash equivalents (note 19)	**17,581**	9,476
Financial assets measured at amortised cost (note 21)	**61**	126
	17,642	9,602
Less: Other financial liabilities of Clearing House Funds (note 31)	**(38)**	(17)
	17,604	9,585
The Clearing House Funds comprised the following Funds:		
HKSCC Guarantee Fund	**2,712**	2,219
SEOCH Reserve Fund	**2,454**	724
HKCC Reserve Fund	**1,887**	1,316
OTC Clear Rates and FX Guarantee Fund	**1,222**	659
OTC Clear Rates and FX Guarantee Resources	**161**	160
LME Clear Default Fund	**9,168**	4,507
	17,604	9,585

(a) Designated reserves comprise contributions from the clearing houses and accumulated income net of expenses of the Clearing House Funds appropriated from retained earnings.

33. Borrowings

Accounting Policy

Borrowings are recognised initially at fair value of proceeds received, net of transaction costs incurred (net proceeds). The difference between the net proceeds and the redemption value is amortised and recognised in the consolidated income statement as interest expense over the period of the borrowings using the effective interest method and added to borrowings.

The borrowings are subsequently carried at amortised cost (ie, net proceeds plus the cumulative amortisation using the effective interest method less payments).

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least twelve months after the end of the reporting period.

33. Borrowings (continued)

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Bank borrowings (note (a))	**-**	1,586
Notes (note (b))	**1,533**	1,519
Written put options to non-controlling interests (note (c))	**327**	317
Total borrowings	**1,860**	3,422
Analysed as:		
Non-current liabilities	**833**	3,422
Current liabilities	**1,027**	-
	1,860	3,422

The borrowings were repayable as follows:

	Bank borrowings		Other borrowings	
	At 31 Dec 2017 $m	At 31 Dec 2016 $m	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Within one year	**-**	-	**1,027**	-
After one year but within two years	**-**	-	**751**	1,012
After two years but within five years	**-**	1,586	**82**	824
	-	1,586	**1,860**	1,836

(a) Bank borrowings

In 2017, the bank borrowings were fully repaid. Prior to the repayment in 2017, the bank borrowings bore average coupons of 2.2 per cent (2016: 1.7 per cent) per annum, and the average effective interest rate was 2.5 per cent (2016: 1.8 per cent) per annum.

(b) Notes

In December 2013 and January 2014, HKEX issued US$100 million (HK$775 million) and US$95 million (HK$737 million) of fixed rate senior notes which will be due in December 2018 and January 2019 respectively. The average effective interest rate of the senior notes was 2.9 per cent (2016: 2.9 per cent) per annum.

(c) Written put options to non-controlling interests

Accounting Policy

The potential cash payments related to put options issued by HKEX for the non-voting ordinary shares of a subsidiary held by non-controlling interests are accounted for as financial liabilities, which are initially recognised at fair value with a corresponding charge directly to equity under “reserve relating to written put options to non-controlling interests”.

The written put option financial liabilities are subsequently measured at amortised cost (ie, the initial fair value plus cumulative amortisation of the difference between the initial fair value and the cash payments related to put options using the effective interest method). The interest charge arising is recorded under finance costs in the consolidated income statement.

33. Borrowings (continued)

(c) Written put options to non-controlling interests (continued)

	2017 $m	2016 $m
At 1 Jan	**317**	308
Interest expenses (note (ii))	**10**	9
At 31 Dec	**327**	317

(i) OTC Clear issued non-voting ordinary shares to certain third party shareholders at a total consideration of $340 million. As part of the arrangement, put options were written by HKEX to the non-controlling interests to sell part or all of their non-voting ordinary shares in OTC Clear to HKEX at the initial subscription price of $210,000 per share less accumulated dividends received by the non-controlling interests. The put options are exercisable by the non-controlling interests at any time following the date falling five years after the shares were issued if the non-controlling interests can demonstrate to HKEX that they have used reasonable endeavours for at least three months to find a suitable purchaser for their shares at a price equal to or more than their fair market values. The carrying amount of written put options represents the present value of the amount payable by HKEX to acquire the shares held by non-controlling interests at the date at which the written put options first become exercisable.

$245 million of the written put options will become exercisable in October 2018 and the remaining $82 million will become exercisable in August 2020.

(ii) The effective interest rate of the liabilities was 3.0 per cent (2016: 3.0 per cent) per annum.

34. Provisions

Accounting Policy

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate of the amount can be made. The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period.

	Reinstatement costs $m	Employee benefit costs $m	Total $m
At 1 Jan 2017	**90**	**69**	**159**
Exchange differences	**2**	**-**	**2**
(Reversal of provision for) / provision for the year	**(3)**	**94**	**91**
Amount used during the year	**-**	**(84)**	**(84)**
Amount paid during the year	**(8)**	**(7)**	**(15)**
At 31 Dec 2017	**81**	**72**	**153**

(a) The provision for reinstatement costs represents the estimated costs of restoring the leased office premises to their original state upon the expiry of the leases. The leases are expected to expire within 13 years.

(b) The provision for employee benefit costs represents unused annual leave that has been accumulated at the end of the reporting period. It is expected to be fully utilised in the coming twelve months.

35. Deferred Taxation

Accounting Policy

Deferred tax is recognised, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements, except that deferred tax liabilities are not recognised if they arise from the initial recognition of goodwill. Deferred tax is determined using tax rates that have been enacted or substantively enacted by the end of the reporting period and are expected to apply when the related deferred tax asset is realised or the deferred tax liability is settled.

Deferred tax assets are recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences or the current tax losses can be utilised.

(a) The movements on the net deferred tax liabilities account were as follows:

	2017 $m	2016 $m
At 1 Jan	**691**	739
Exchange differences	**4**	-
Credited to the consolidated income statement (note 15(a))	**(13)**	(49)
(Credited)/charged directly to retained earnings	**(1)**	1
At 31 Dec (note (d))	**681**	691

(b) The Group had unrecognised tax losses of $1,068 million at 31 December 2017 (31 December 2016: $764 million) that may be carried forward for offsetting against future taxable income. Tax losses of a PRC entity amounting to $340 million will expire 5 years after it commences operations, and the remaining tax losses can be carried forward indefinitely and have no expiry date.

(c) The movements on the net deferred tax liabilities/(assets) were as follows:

	Accelerated tax depreciation		**Intangible assets[1]**		**Financial assets**		**Tax losses**		**Employee benefits**		**Total**	
	2017 $m	2016 $m	**2017 $m**	2016 $m	**2017 $m**	2016 $m	**2017 $m**	2016 $m	**2017 $m**	2016 $m	**2017 $m**	2016 $m
At 1 Jan	**161**	168	**599**	655	**2**	-	**(52)**	(64)	**(19)**	(20)	**691**	739
Exchange differences	**-**	-	**4**	-	**-**	-	**-**	-	**-**	-	**4**	-
Charged/(credited) to the consolidated income statement	**13**	(7)	**(25)**	(56)	**(2)**	2	**1**	12	**-**	-	**(13)**	(49)
(Credited) / charged directly to retained earnings	**-**	-	**-**	-	**-**	-	**-**	-	**(1)**	1	**(1)**	1
At 31 Dec	**174**	161	**578**	599	**-**	2	**(51)**	(52)	**(20)**	(19)	**681**	691

[1] Intangible assets include customer relationships and tradenames.

35. Deferred Taxation (continued)

(d) Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when the deferred taxes relate to tax levied by the same taxation authority on the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis. The following amounts, determined after appropriate offsetting, are shown in the consolidated statement of financial position:

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Deferred tax assets	**(30)**	(22)
Deferred tax liabilities	**711**	713
	681	691

(e) The analysis of deferred tax (assets)/liabilities is as follows:

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Deferred tax assets		
Amounts to be recovered after more than 12 months	**(24)**	(17)
Amounts to be recovered within 12 months	**(6)**	(5)
	(30)	(22)
Deferred tax liabilities		
Amounts to be recovered or settled after more than 12 months	**695**	699
Amounts to be recovered or settled within 12 months	**16**	14
	711	713
Net deferred tax liabilities	**681**	691

36. Share Capital and Shares Held for Share Award Scheme

Accounting Policy

Shares

Ordinary shares are classified as equity.

Shares held for Share Award Scheme

Where HKEX shares are acquired by the Share Award Scheme from the market or by electing for scrip in lieu of cash dividends, the total consideration of shares acquired from the market (including any directly attributable incremental costs) or under the scrip dividend scheme is presented as Shares held for Share Award Scheme and deducted from total equity.

Upon vesting, the related costs of the vested Awarded Shares purchased from the market and shares acquired under the scrip dividend scheme (dividend shares) are credited to Shares held for Share Award Scheme, with a corresponding decrease in employee share-based compensation reserve for Awarded Shares, and decrease in retained earnings for dividend shares.

36. Share Capital and Shares Held for Share Award Scheme (continued)

Issued and fully paid – ordinary shares with no par:

	Number of shares '000	Number of shares held for Share Award Scheme[1] '000	Share capital $m	Shares held for Share Award Scheme $m	Total $m
At 1 Jan 2016	1,208,536	(3,259)	19,285	(590)	18,695
Shares issued in lieu of cash dividends (note (a))	15,786	(92)	2,798	(16)	2,782
Shares purchased for Share Award Scheme (note (b))	-	(992)	-	(188)	(188)
Vesting of shares of Share Award Scheme (note (c))	-	1,126	2	195	197
At 31 Dec 2016	1,224,322	(3,217)	22,085	(599)	21,486
At 1 Jan 2017	**1,224,322**	**(3,217)**	**22,085**	**(599)**	**21,486**
Shares issued in lieu of cash dividends (note (a))	**15,487**	**(74)**	**3,052**	**(15)**	**3,037**
Shares purchased for Share Award Scheme (note (b))	**-**	**(1,000)**	**-**	**(228)**	**(228)**
Vesting of shares of Share Award Scheme (note (c))	**-**	**1,297**	**4**	**236**	**240**
At 31 Dec 2017	**1,239,809**	**(2,994)**	**25,141**	**(606)**	**24,535**

[1] Excluding shares vested but not yet transferred to awardees of 29,005 shares at 31 December 2017 (31 December 2016: 2,750 shares)

(a) During the year, the following shares were issued to shareholders who elected to receive HKEX shares in lieu of cash dividends pursuant to the scrip dividend scheme:

	2017				
	Number of shares	**Scrip price $**	**Share capital $m**	**Shares held for Share Award Scheme $m**	**Total $m**
Issued as 2016 final scrip dividends:					
- total	**7,275,254**	**186.05**	**1,354**	**-**	**1,354**
- to Share Award Scheme	**(34,906)**	**186.05**	**-**	**(7)**	**(7)**
Issued as 2017 interim scrip dividends:					
- total	**8,211,651**	**206.77**	**1,698**	**-**	**1,698**
- to Share Award Scheme	**(39,379)**	**206.77**	**-**	**(8)**	**(8)**
	15,412,620		**3,052**	**(15)**	**3,037**

	2016				
	Number of shares	Scrip price $	Share capital $m	Shares held for Share Award Scheme $m	Total $m
Issued as 2015 final scrip dividends:					
- total	8,862,992	172.81	1,531	-	1,531
- to Share Award Scheme	(53,390)	172.81	-	(9)	(9)
Issued as 2016 interim scrip dividends:					
- total	6,923,255	183.01	1,267	-	1,267
- to Share Award Scheme	(38,754)	183.01	-	(7)	(7)
	15,694,103		2,798	(16)	2,782

36. Share Capital and Shares Held for Share Award Scheme (continued)

(b) During the year, the Share Award Scheme (note 37) acquired 999,700 HKEX shares (2016: 991,700 shares) through purchases on the open market. The total amount paid to acquire the shares during the year was $228 million (2016: $188 million).

(c) During the year, a total of 1,296,700 HKEX shares (2016: 1,125,802 shares) were vested. The total cost of the vested shares was $236 million (2016: $195 million). In 2017, $4 million (2016: $2 million) was credited to share capital in respect of vesting of certain shares whose fair values were higher than the costs.

37. Employee Share-based Arrangements

Accounting Policy

The Group operates the Share Award Scheme (the Scheme), which is an equity-settled shared-based compensation plan under which Awarded Shares are granted to employees of the Group (including the Executive Director) as part of their remuneration package.

The amount to be expensed as share-based compensation expenses is determined by reference to the fair value of the Awarded Shares granted, taking into account all non-vesting conditions associated with the grants on grant date. The total expense is recognised on a straight-line basis over the relevant vesting periods (or on the grant date if the shares vest immediately), with a corresponding credit to an employee share-based compensation reserve under equity.

For those Awarded Shares which are amortised over the vesting periods, the Group revises its estimates of the number of Awarded Shares that are expected to ultimately vest based on the vesting conditions at the end of each reporting period. Any resulting adjustment to the cumulative fair value recognised in prior years is charged/credited to employee share-based compensation expense in the current year, with a corresponding adjustment to the employee share-based compensation reserve.

The movements of employee share-based compensation reserve were as follows:

	2017 $m	2016 $m
At 1 Jan	**226**	199
Employee share-based compensation benefits (note 8)	**220**	213
Vesting of shares of Share Award Scheme	**(224)**	(186)
At 31 Dec	**222**	226

The Scheme allows shares to be granted to employees under the following two categories of awards:

(i) Employee Share Awards – for all employees of the Group (including the Executive Director); and

(ii) Senior Executive Awards – for selected senior executives of the Group (including the Executive Director).

37. Employee Share-based Arrangements (continued)

Following the Board's decision to award an award sum (Awarded Sum) for the purchase of Awarded Shares to eligible employees and/or selected senior executives, the Awarded Shares are either purchased from the market or are awarded by regranting the forfeited or unallocated shares held by the Scheme. Before vesting, the Awarded Shares are held in a trust set up by the Scheme.

Further shares are derived from dividends payable on the Awarded Shares held in the Scheme from scrip shares received under the scrip dividend scheme (dividend shares), and are allocated to the awardees on a pro rata basis and have the same vesting periods as the related Awarded Shares.

(a) Employee Share Awards

Employee Share Awards vest progressively over the vesting period after the awards are granted, provided that the relevant awardee (i) remains employed by the Group (ii) is made redundant or (iii) is deemed to be a "good leaver", and Employee Share Awards vest immediately if the relevant awardee retires on reaching normal retirement age or suffers from permanent disability. Unless otherwise determined by the Board, the Remuneration Committee or the Chief Executive, the vesting period of Employee Share Awards granted is three years, and the shares will be vested in two equal tranches from the second to the third year after the shares are granted.

For awardees who do not meet the vesting criteria, the unvested shares are forfeited. The forfeited shares are held by the trustee of the Scheme who may award such shares to the other awardees, taking into consideration recommendations of the Board.

Details of Awarded Shares awarded during 2016 and 2017

Date of award	Number of Awarded Shares awarded	Average fair value per share $	Vesting period
12 Aug 2016	11,648	197.45	6 Jul 2018 – 6 Jul 2019
12 Aug 2016	4,051	197.45	1 Feb 2017 – 25 Jul 2019
25 Aug 2016	4,700	189.45	3 May 2018 – 3 May 2019
30 Dec 2016	1,083,456[1,2]	190.33	7 Dec 2018 – 7 Dec 2019
1 Mar 2017	24,939	193.76	1 May 2017 – 1 May 2019
1 Mar 2017	25,960	193.76	1 Mar 2017 – 13 Jan 2020
15 May 2017	1,100	197.23	13 Jan 2018 – 13 Jan 2019
23 Jun 2017	2,900	200.82	3 Apr 2018 – 18 Mar 2019
12 Sep 2017	600	213.29	23 Jun 2019 – 23 Jun 2020
29 Dec 2017	1,017,886[1,2]	229.99	8 Dec 2019 – 8 Dec 2020

[1] 63,210 and 58,853 shares were awarded to HKEX's Chief Executive on 30 December 2016 and 29 December 2017 respectively.

[2] 179,706 and 135,970 shares were awarded by re-granting the forfeited or unallocated shares held by the Scheme on 30 December 2016 and 29 December 2017 respectively.

37. Employee Share-based Arrangements (continued)

(a) Employee Share Awards (continued)

Details of Awarded Shares vested during 2016 and 2017 (continued)

During the year, 1,175,914 HKEX shares (2016: 1,046,334 shares) were vested at an aggregate fair value of $218 million (2016: $183 million), of which 74,387 shares (2016: 68,513 shares) were for HKEX's Chief Executive.

(b) Senior Executive Awards

The actual number of shares to be transferred to the awardees under the Senior Executive Awards is conditional on the satisfaction of performance conditions set by the Board. The Board has full discretion to determine the actual amount of award to be paid at the end of a performance assessment period (which shall normally be a period of at least three financial years) in accordance with these criteria.

The vesting of Senior Executive Awards is not affected by the awardees ceasing employment with the Group before the end of the performance assessment period. The Senior Executive Awards are considered to be vested immediately upon grant and the performance conditions are considered as non-vesting conditions.

Details of Senior Executive Awards awarded during 2016 and 2017

Date of award	Number of Awarded Shares awarded	Average fair value per share $	Total fair value $m	Performance period
30 Dec 2016	67,400	142.25	10	2017 - 2019
29 Dec 2017	62,123	172.49	11	2018 - 2020

All of the Senior Executive Awards were awarded to the HKEX's Chief Executive. The fair value per share is determined by taking into account various factors including the probability of the performance conditions being satisfied.

Details of Senior Executive Awards vested during 2016 and 2017

In 2017, 42,720 HKEX shares (2016: 23,021 shares) granted under the Senior Executive Awards were vested at a fair value of $6 million (2016: $3 million). An additional $1 million (2016: $1 million) was charged to retained earnings in respect of the vesting as the cost of Awarded Shares vested was higher than the fair value of shares previously charged to the consolidated income statement.

37. Employee Share-based Arrangements (continued)

(c) Summary of Awarded shares awarded and dividend shares

Movements in number of Awarded Shares awarded and dividend shares

	2017	2016
Number of Awarded Shares and dividend shares:		
Outstanding at 1 Jan	**3,217,209**	3,248,284
Awarded[3]	**1,135,508**	1,171,255
Forfeited	**(132,444)**	(160,473)
Vested	**(1,218,634)**	(1,069,355)
Dividend shares:		
- allocated to awardees	**71,305**	89,211
- allocated to awardees but subsequently forfeited	**(4,690)**	(5,266)
- vested[4]	**(78,066)**	(56,447)
Outstanding at 31 Dec	**2,990,188**	3,217,209

[3] Average fair value per share was $225.11 (2016: $187.66).

[4] In 2017, 78,066 dividend shares (2016: 56,447 shares), including 7,509 shares (2016: 4,388 shares) for HKEX's Chief Executive, at a cost of $15 million (2016: $10 million) were vested.

Remaining vesting periods or performance period of Awarded Shares awarded and dividend shares outstanding at 31 December

	At 31 Dec 2017		At 31 Dec 2016	
	Remaining vesting or performance period	**Number of Awarded Shares and dividend shares outstanding**	Remaining vesting or performance period	Number of Awarded Shares and dividend shares outstanding
Shares awarded in				
2014	**N/A**	**-**	0.00 year to 0.05 year	50,754
2015	**0.00 year to 1.00 year**	**687,790**	0.05 year to 2.00 years	1,917,691
2016	**0.34 year to 2.00 years**	**1,124,409**	0.09 year to 3.00 years	1,171,255
2017	**0.04 year to 3.00 years**	**1,111,931**	N/A	-
Dividend shares	**0.00 year to 2.48 years**	**66,058**	0.02 year to 2.56 years	77,509
		2,990,188		3,217,209

(d) Total number of shares held by Share Award Scheme

	At 31 Dec 2017	At 31 Dec 2016
Number of Awarded Shares and dividend shares (note (c))	**2,990,188**	3,217,209
Forfeited or unallocated shares[5]	**4,456**	150
Number of shares held by Share Award Scheme[6] (note 36)	**2,994,644**	3,217,359

[5] These shares will be regranted to eligible employees in future.

[6] Excluding shares vested but not yet transferred to awardees of 29,005 shares (31 December 2016: 2,750 shares)

38. Hedging Reserve

Accounting Policy

The Group designates certain bank balances as hedges of foreign exchange risks associated with the cash flows of highly probable forecast transactions (cash flow hedges).

The Group documents at the inception of the transaction the relationship between hedging instruments and hedged items, as well as its risk management objectives and strategies for undertaking various hedge transactions. The Group also documents its assessment, both at hedge inception and on an ongoing basis, of whether the hedging instruments have been and will continue to be highly effective in offsetting changes in cash flows of hedged items.

The changes in the fair value relating to the effective portion of hedging instruments that are designated and qualify as cash flow hedges is recognised in other comprehensive income and accumulated in hedging reserve in equity. The gains or losses relating to the ineffective portion are recognised immediately in the consolidated income statement.

Amounts accumulated in hedging reserve are reclassified to the consolidated income statement in the periods when the hedged item affects the consolidated income statement.

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 existing in hedging reserve at that time remains in hedging reserve and is recognised when the forecast transaction is ultimately recognised in the consolidated income statement. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was retained in hedging reserve is immediately reclassified to the consolidated income statement.

The movements of hedging reserve were as follows:

	2017 $m
At 1 Jan	**-**
Cash flow hedges:	
- net fair value gains of hedging instruments	**8**
- transfer to the consolidated income statement as staff costs and related expenses	**(6)**
- transfer to the consolidated income statement as information technology and computer maintenance expenses	**(1)**
At 31 Dec	**1**
Fair value of hedging instruments at 31 Dec 2017	**86**

The functional currency of the LME Group is United States Dollars (USD). To hedge the foreign currency exposure of its operating expenses, the LME Group has designated bank balances of Pound sterling (GBP) 31 million as cash flow hedges in 2017 for hedging the foreign exchange risk of its staff costs and related expenses, and information technology and computer maintenance expenses of GBP 31 million from August 2017 to March 2018. At 31 December 2017, GBP 8 million of the bank balances was outstanding.

The amounts arising from ineffective cash flow hedges credited to the consolidated income statement of the Group during the year amounted to $Nil.

39. Designated Reserves

Clearing House Funds reserves (note 32(a))

	HKSCC Guarantee Fund reserve $m	SEOCH Reserve Fund reserve $m	HKCC Reserve Fund reserve $m	OTC Clear Rates and FX Guarantee Fund reserve $m	OTC Clear Rates and FX Guarantee Resources reserve $m	Total $m
At 1 Jan 2016	318	104	351	3	2	778
(Deficit)/surplus of net investment income net of expenses of Clearing House Funds transferred (to)/from retained earnings (note 40)	(7)	-	(1)	1	2	(5)
At 31 Dec 2016	311	104	350	4	4	773
At 1 Jan 2017	**311**	**104**	**350**	**4**	**4**	**773**
Post-liquidation interest arising from a Participant's default on market contracts (note 5(c)(ii))	**55**	**-**	**-**	**-**	**-**	**55**
(Deficit)/surplus of net investment income net of expenses of Clearing House Funds	**(9)**	**1**	**(1)**	**2**	**1**	**(6)**
Transfer from/(to) retained earnings (note 40)	**46**	**1**	**(1)**	**2**	**1**	**49**
At 31 Dec 2017	**357**	**105**	**349**	**6**	**5**	**822**

40. Retained Earnings

	2017 $m	2016 $m
At 1 Jan	**10,334**	10,691
Profit attributable to shareholders	**7,404**	5,769
Transfer (to)/from Clearing House Funds reserves (note 39)	**(49)**	5
Dividends:		
2016/2015 final dividend	**(2,491)**	(3,459)
2017/2016 interim dividend	**(3,133)**	(2,683)
Unclaimed HKEX dividends forfeited (note 30(a))	**26**	22
Vesting of shares of Share Award Scheme	**(16)**	(11)
Tax credit relating to Share Award Scheme	**3**	-
Changes in ownership interests in a subsidiary (note 44)	**12**	-
At 31 Dec	**12,090**	10,334

41. Notes to the Consolidated Statement of Cash Flows

(a) Reconciliation of profit before taxation to net cash inflow from principal operating activities

	2017 $m	2016 $m
Profit before taxation	**8,610**	6,799
Adjustments for:		
Net interest income	**(912)**	(614)
Net fair value gains including interest income on financial assets and financial liabilities mandatorily measured at fair value through profit or loss	**(682)**	(98)
Finance costs	**134**	82
Depreciation and amortisation	**858**	771
Employee share-based compensation benefits	**220**	213
Provision for /(reversal of provision for) impairment losses of receivables	**6**	(1)
Other non-cash adjustments	**37**	(6)
Net increase in financial assets of Margin Funds	**(30,964)**	(11,636)
Net increase in financial liabilities of Margin Funds	**30,968**	11,633
Net increase in Clearing House Fund financial assets	**(8,040)**	(1,172)
Net increase in Clearing House Fund financial liabilities	**7,991**	1,177
Increase in cash prepayments for A shares	**(1,426)**	(134)
Net decrease /(increase) in financial assets measured at fair value through profit or loss less financial liabilities at fair value through profit or loss	**5**	(380)
(Increase)/decrease in accounts receivable, prepayments and deposits	**(2,833)**	3,432
Increase/(decrease) in other liabilities	**4,245**	(3,241)
Net cash inflow from principal operations	**8,217**	6,825
Dividends received	**-**	7
Interest received from financial assets measured at amortised cost and cash and cash equivalents	**1,484**	744
Interest received from financial assets measured at fair value through profit or loss	**-**	120
Interest paid to Participants	**(572)**	(130)
Income tax paid	**(1,116)**	(1,402)
Net cash inflow from principal operating activities	**8,013**	6,164

41. Notes to the Consolidated Statement of Cash Flows (continued)

(b) Reconciliation of liabilities arising from financing activities

	Borrowings due within one year $m	Borrowings due after one year $m
At 1 Jan 2017	**-**	**3,422**
Borrowings becoming due within one year in 2017	**1,025**	**(1,025)**
Interest on borrowings (note 12(a))	**2**	**78**
Cash flows		
- Repayment of bank borrowings	**-**	**(1,603)**
- Payments of interest on borrowings	**-**	**(66)**
Exchange differences	**-**	**27**
At 31 Dec 2017	**1,027**	**833**

42. Commitments

(a) Commitments in respect of capital expenditures

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Contracted but not provided for:		
- fixed assets	**13**	66
- intangible assets	**65**	57
Authorised but not contracted for:		
- fixed assets	**400**	273
- intangible assets	**955**	585
	1,433	981

(b) Commitments for total future minimum lease payments under non-cancellable operating leases

Accounting Policy

Leases where substantially all the rewards and risks of ownership of assets remain with the lessor are accounted for as operating leases. Rentals under such operating leases net of any incentives received from the lessor are charged to the consolidated income statement on a straight-line basis over the lease term.

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Land and buildings		
- within one year	**321**	230
- in the second to fifth years	**1,008**	490
- after the fifth year	**1,026**	155
	2,355	875
Computer systems, software and equipment		
- within one year	**58**	18
- in the second to fifth years	**216**	54
	274	72
	2,629	947

42. Commitments (continued)

(b) Commitments for total future minimum lease payments under non-cancellable operating leases (continued)

At 31 December 2017 and 31 December 2016, the Group did not have any purchase options in respect of computer systems, software and equipment.

(c) Commitments in respect of financial contributions to Financial Reporting Council

The Financial Reporting Council (FRC) is an independent statutory body established to receive and investigate complaints concerning irregularities of auditors and reporting accountants of listed companies and non-compliances with accounting requirements in the financial reports of listed companies. Since the establishment of the FRC in 2006, the Group has been contributing to the funding of the FRC's operations.

Under a memorandum of understanding signed in November 2014, the Group has agreed to make recurrent contributions to the FRC as follows:

- 2015 – 2016: $7 million per annum
- 2017 – 2019: $8 million per annum

43. Contingent Liabilities

Accounting Policy

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

A contingent liability is not recognised but is disclosed in the consolidated financial statements. When a change in the probability of an outflow occurs so that outflow is probable or when the amount of obligation becomes reliably measurable, it will then be recognised as a provision.

At 31 December 2017, the Group's material contingent liabilities were as follows:

(a) The Group had a contingent liability in respect of potential calls to be made by the SFC to replenish all or part of compensation less recoveries paid by the Unified Exchange Compensation Fund established under the repealed Securities Ordinance up to an amount not exceeding $71 million (31 December 2016: $71 million). Up to 31 December 2017, no calls had been made by the SFC in this connection.

(b) The Group had undertaken to indemnify the Collector of Stamp Revenue against any underpayment of stamp duty by its Participants of up to $200,000 for each Participant (note 31(a)). In the unlikely event that all of its 622 trading Participants (31 December 2016: 556) covered by the indemnity at 31 December 2017 defaulted, the maximum contingent liability of the Group under the indemnity would amount to $124 million (31 December 2016: $111 million).

(c) HKEX has given an undertaking in favour of HKSCC to contribute up to $50 million in the event of HKSCC being wound up while it is a wholly-owned subsidiary of HKEX or within one year after HKSCC ceases to be a wholly-owned subsidiary of HKEX, for payment of the liabilities of HKSCC contracted before HKSCC ceases to be a wholly-owned subsidiary of HKEX, and for the costs of winding up.

44. Transactions with Non-Controlling Interests

Accounting Policy

Transactions with non-controlling interests that do not result in loss of control are accounted for as equity transactions. The difference between the fair value of any consideration paid/received and the relevant share of the carrying value of net assets of the subsidiary acquired/disposed of is recorded in retained earnings.

(a) Disposal of interest in a subsidiary without loss of control

In 2017, the Group entered into an agreement to sell a 9.99 per cent stake in QME to an independent third party at a consideration of RMB25 million. After the sale, the Group's interest in QME dropped to 90.01 per cent. The effect of the partial disposal of QME on equity attributable to HKEX's shareholders is summarised as follows:

	$m
Consideration received from non-controlling interests	**28**
Less: carrying amount of non-controlling interests disposed of	**(16)**
Gain on disposal credited to retained earnings (note 40)	**12**

(b) Subsequent to the disposal (note (a)), RMB135 million and RMB15 million were further injected by the Group and the non-controlling interests into QME respectively as its registered capital in 2017 in proportion to their interests.

45. Connected Transactions and Material Related Party Transactions

(a) Connected transactions and related party transactions

Certain Directors of HKEX may be directors and/or shareholders of (i) Exchange Participants of the Stock Exchange, Futures Exchange and the LME (Exchange Participants) and Clearing Participants of HKSCC, HKCC, SEOCH, LME Clear and OTC Clear (Clearing Participants); (ii) companies listed on the Stock Exchange; and (iii) Exchange Participants for buying shares on behalf of HKSCC. Securities and derivatives contracts traded by, and fees levied on, these Exchange Participants and Clearing Participants, fees levied on these listed companies and fees paid to these Exchange Participants for buying shares on behalf of HKSCC are all undertaken in the ordinary course of business of the Group on the standard terms and conditions applicable to all other Exchange Participants, Clearing Participants, listed companies and Exchange Participants for buying shares on behalf of HKSCC.

45. Connected Transactions and Material Related Party Transactions (continued)

(b) Material related party transactions

In addition to the above and those disclosed elsewhere in these consolidated financial statements, the Group entered into the following material related party transactions:

(i) Key management personnel compensation

	2017 $m	2016 $m
Salaries and other short-term employee benefits	**173**	157
Employee share-based compensation benefits	**77**	76
Retirement benefit costs	**8**	8
	258	241

(ii) Post-retirement benefit plans

The Group has sponsored an ORSO Plan and the LME Pension Scheme as its post-retirement benefit plans (note 8(a)).

(iii) Save as aforesaid, the Group has entered into other transactions in the ordinary course of business with companies that are related parties but the amounts were immaterial.

46. Pledges of Assets

LME Clear receives securities, gold bullion and warrants as collateral for margins posted by its Clearing Participants. The total fair value of this collateral was US$1,319 million (HK$10,311 million) at 31 December 2017 (31 December 2016: US$1,781 million (HK$13,808 million)). LME Clear is obliged to return this non-cash collateral upon request when the Clearing Participants' collateral obligations have been substituted with cash collateral or otherwise discharged.

LME Clear also holds securities as collateral in respect of its investments in overnight triparty reverse repurchase agreements under which it is obliged to return equivalent securities to the counterparties at maturity of the reverse repurchase agreements. The fair value of this collateral was US$11,462 million (HK$89,602 million) at 31 December 2017 (31 December 2016: US$9,418 million (HK$73,022 million)).

The above non-cash collateral, which LME Clear is permitted to sell or repledge in the absence of default by the counterparties, was not recorded on the consolidated statement of financial position of the Group at 31 December 2017. Such non-cash collateral, together with certain financial assets amounting to US$471 million (HK$3,686 million) at 31 December 2017 (31 December 2016: US$430 million (HK$3,334 million)), have been repledged to LME Clear's investment agent and custodian banks under first floating charge and security arrangements for the settlement and depository services they provide in respect of the collateral and investments held. The floating charge could convert to a fixed charge in the event of contract termination, or default or insolvency of LME Clear.

47. Capital Management

The Group's objectives when managing capital are:

- To safeguard the Group's ability to continue as a going concern, so that it continues to provide returns for shareholders and benefits for other stakeholders;
- To support the Group's stability and growth;
- To provide capital for the purpose of strengthening the Group's risk management capability; and
- To ensure that the Group's regulated entities comply with their respective regulatory capital requirements.

The Group actively and regularly reviews and manages its capital structure to ensure an optimal capital structure and shareholder returns. The Group takes into consideration the expected capital requirements and capital efficiency, regulatory capital requirements of its regulated entities, prevailing and projected profitability, projected operating cash flows, projected capital expenditures and projected strategic investment opportunities.

The Group has a number of regulated entities that are subject to capital requirements set by the respective regulators. The regulatory capital requirements of the Group's subsidiaries at 31 December 2017 are summarised as follows:

Subsidiaries	Regulatory authority	Regulatory capital requirements
Stock Exchange, Futures Exchange	SFC, Hong Kong	Maintain at all times net current assets funded by equity sufficient to cover each subsidiary's projected total operating expenses for at least the following six months (approximately $1,116 million), and net current assets funded by equity or long-term loans from HKEX sufficient to cover its projected total operating expenses for at least the following twelve months (approximately $2,232 million).
HKSCC, HKCC, SEOCH, OTC Clear	SFC, Hong Kong	Maintain at all times liquid net assets funded by equity (ie, liquid assets of Corporate Funds minus non-current liabilities) sufficient to cover each subsidiary's projected total operating expenses for at least the following six months (approximately $522 million), and net current assets funded by equity or long-term loans from HKEX sufficient to cover its projected total operating expenses for at least the following twelve months (approximately $1,049 million).
LME	Financial Conduct Authority, UK	Maintain at all times liquid financial assets amounting to at least six months' operating costs plus a risk based capital charge (approximately US$58.9 million (HK$460 million)), and net capital of at least this amount.
LME Clear	Bank of England, UK	Maintain cash or highly liquid financial instruments with minimal market and credit risk, amounting to US$81.3 million (HK$636 million), plus 10 per cent minimum reporting threshold of US$8.1 million (HK$63 million) and US$20.3 million (HK$159 million) financial resources available to set off losses in the event of default. Capital resources must be in the form of share capital, retained earnings and reserves, reduced by intangible assets and retained losses.

At 31 December 2017, the Group had set aside $4,000 million (31 December 2016: $4,000 million) of shareholders' funds for the purpose of supporting the risk management regime of the clearing houses in their roles as central counterparties.

47. Capital Management (continued)

All regulated entities of the Group had adequate capital to meet their regulatory requirements at 31 December 2017 and 31 December 2016.

The Group adopts a dividend policy of providing shareholders with regular dividends with a normal target payout ratio of 90 per cent of the Group's profit of the year and it also offers a scrip dividend alternative to shareholders. The consideration of share capital issued under the scrip dividend scheme, together with the 10 per cent of the profit not declared as dividends, are retained as capital of the Group for future use.

The Group monitors capital on the basis of its gross gearing ratio (ie, gross debt divided by adjusted capital) and net gearing ratio (ie, net debt divided by adjusted capital). For this purpose, the Group defines gross debt as total borrowings, net debt as total borrowings less cash and cash equivalents of Corporate Funds, and adjusted capital as all components of equity attributable to shareholders of HKEX other than designated reserves. The Group's strategy is to maintain the ratios at less than 50 per cent.

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Total borrowings	**1,860**	3,422
Less: cash and cash equivalents of Corporate Funds (note 19)	**(13,546)**	(9,286)
Net debt (note (a))	**-**	-
Equity attributable to shareholders of HKEX	**37,273**	32,266
Less: designated reserves	**(822)**	(773)
Adjusted capital	**36,451**	31,493
Gross gearing ratio	**5%**	11%
Net gearing ratio	**0%**	0%

(a) Net debt is zero when the amount of cash and cash equivalents of Corporate Funds is higher than total borrowings.

48. Financial Risk Management

The Group's activities expose it to a variety of financial risks: market risk (including foreign exchange risk, price risk and interest rate risk), liquidity risk and credit risk. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Group's performance.

(a) Market risk

<u>Nature of risk</u>

Market risk is the risk of loss arising from movements in observable market variables such as foreign exchange rates, equity prices and interest rates. The Group is exposed to market risk primarily through its financial assets and financial liabilities (including borrowings).

48. Financial Risk Management (continued)

(a) Market risk (continued)

Risk management

The Group's investment policy is to prudently invest all funds managed by the Group in a manner which will satisfy liquidity requirements, safeguard financial assets and manage risks while optimising return on investments.

Investment and fund management by HKEX and the Group's subsidiaries is governed by the HKEX Investment Policy, Restrictions and Guidelines (Investment Guidelines), which is approved by the Board and reviewed regularly. Investment restrictions and guidelines form an integral part of risk control. Fund-specific restrictions and guidelines are set according to the investment objectives of each fund (ie, Corporate Funds, Clearing House Funds, Margin Funds and cash prepayments for A shares). Specific limits are set for each fund to control risks (eg, permissible asset type, asset allocation, liquidity, credit requirement, counterparty concentration, maturity, foreign exchange exposures and interest rate risks) of the investments.

From the fourth quarter of 2016 onwards, part of the Corporate Funds is invested in collective investment schemes (External Portfolio) under the External Investment Guidelines (the Investment Policy, Restrictions and Guidelines for externally-managed Corporate Funds) approved by the Board. The guidelines include an asset allocation policy which aims to preserve and enhance the return of the External Portfolio by investing in a diverse mix of asset classes whose returns are not highly correlated to each other over time to mitigate portfolio volatility and asset class concentration risk. The guidelines also define the risk-return parameters for the External Portfolio and restrictions to be observed, and the governance structure on selection and monitoring of fund managers. The fund managers of the collective investment schemes are selected based on their performance track records and areas of expertise, and each should be financially strong and stable, and their selection are approved by the Investment Advisory Committee as delegated by the Board. Specific risk management limits are set for the External Portfolio (eg, permissible asset type, asset allocation, liquidity and foreign exchange exposures).

The Investment Advisory Committee, comprised of Non-executive Directors of HKEX, advises the Board on portfolio management and monitors the risk and performance of HKEX's investments. A Treasury team in the Finance Division is dedicated to the day-to-day management and investment of the internally-managed funds and execute the subscription for and redemption of the External Portfolio based on the selection by the Investment Advisory Committee, and monitor its performance.

48. Financial Risk Management (continued)

(a) Market risk (continued)

(i) Foreign exchange risk

Nature of risk

Foreign exchange risk is the risk that the value or cash flows of an asset, liability or forecast transaction denominated in foreign currency (ie, a currency other than the functional currency of the entity to which the transactions relate) will fluctuate because of changes in foreign exchange rates. The functional currency of the Hong Kong and PRC entities are HKD and Renminbi (RMB) respectively and the functional currency of LME entities is USD. Foreign exchange risks arise mainly from the Group's investment and bank deposits in currencies other than HKD and USD and its GBP expenditure for the LME entities.

Risk management

Forward foreign exchange contracts and foreign currency bank deposits may be used to hedge the currency exposure of the Group's non-HKD and non-USD assets and liabilities and highly probable forecast transactions to mitigate risks arising from fluctuations in exchange rates.

Under the Investment Guidelines, investment in non-HKD financial instruments is subject to the following restrictions:

- Under the External Investment Guidelines, up to 50 per cent of the External Portfolio may be invested in non-HKD or non-USD investments not hedged back to HKD or USD.
- For internally-managed Corporate Funds, Clearing House Funds, Margin Funds and cash prepayments for A shares, unhedged investments in currencies other than HKD or USD must fully match the respective liabilities or forecast payments for the funds. Unhedged investments in USD may not exceed 20 per cent of the respective funds. Holdings in RMB are permitted if the currencies have been received in connection with the trading, clearing, settlement or services in respect of the Group's RMB products (including products traded through Stock Connect).

The Group's non-HKD borrowings by the Hong Kong entities are denominated in USD, which is pegged against HKD, and are therefore not subject to significant foreign currency risks.

For LME Clear, investments of the Margin Fund and Default Fund will generally be in the currency in which cash was received.

In 2017, the LME Group designated bank balances of GBP 31 million as cash flow hedges for hedging the foreign exchange risk of certain operating expenses from August 2017 to March 2018.

48. Financial Risk Management (continued)

(a) Market risk (continued)

(i) Foreign exchange risk (continued)

Exposure

The following table details the Group's financial assets and financial liabilities denominated in a currency other than the functional currency of the entity to which they relate and the net open foreign currency positions (ie, gross positions less forward foreign exchange contracts and other offsetting exposures (hedges)), at 31 December presented in HKD equivalents.

		At 31 Dec 2017			At 31 Dec 2016		
	Foreign currency	**Gross open position $m**	**Hedges $m**	**Net open position $m**	Gross open position $m	Hedges $m	Net open position $m
Financial assets[1]	EUR	**5,471**	**(5,465)**	**6**	5,161	(5,158)	3
	GBP	**9,125**	**(8,775)**	**350**	7,926	(7,490)	436
	JPY	**232**	**(231)**	**1**	1,058	(1,057)	1
	RMB	**6,514**	**(6,502)**	**12**	5,470	(5,453)	17
	USD	**2,847**	**(445)**	**2,402**	3,401	(2,102)	1,299
	Others	**1**	**-**	**1**	-	-	-
Financial liabilites[2]	EUR	**(5,465)**	**5,465**	**-**	(5,158)	5,158	-
	GBP	**(8,942)**	**8,775**	**(167)**	(7,668)	7,490	(178)
	JPY	**(231)**	**231**	**-**	(1,057)	1,057	-
	RMB	**(6,505)**	**6,502**	**(3)**	(5,456)	5,453	(3)
	USD	**(2,012)**	**445**	**(1,567)**	(5,555)	2,107	(3,448)
Total net open positions for the Group	EUR			**6**			3
	GBP			**183**			258
	JPY			**1**			1
	RMB			**9**			14
	USD			**835**			2,149
	Others			**1**			-
				1,035			2,425

1 Financial assets comprised cash and cash equivalents, financial assets measured at fair value through profit or loss (excluding collective investment schemes), financial assets measured at amortised cost, and accounts receivable and deposits.

2 Financial liabilities comprised margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants, financial liabilities at fair value through profit or loss, borrowings and accounts payable and other liabilities.

(ii) Equity price risk

Nature of risk

The Group is exposed to equity price risk as collective investment schemes are held as part of the External Portfolio. The movements of fair value of base and precious metals futures and options contracts cleared through LME Clear would not have any financial impact on the Group's results as the assets and liabilities will move by the same amount and fully offset each other.

48. Financial Risk Management (continued)

(a) Market risk (continued)

(ii) Equity price risk (continued)

Risk management

The Group sets prudent investment limits and restrictions to control investment in collective investment schemes. The Group selects fund managers after an extensive assessment of the underlying funds, their strategy and the overall quality of the fund managers, and the performance of the funds is monitored on a monthly basis.

(iii) Interest rate risk

Nature of risk

There are two types of interest rate risk:

- Fair value interest rate risk - the risk that the value of a financial instrument will fluctuate because of changes in market interest rates; and
- Cash flow interest rate risk - the risk that the future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

The Group is exposed to both fair value and cash flow interest rate risks as the Group has significant assets and liabilities (including borrowings) which are interest-bearing.

Risk management

The Group manages its interest rate risks by setting limits on the residual maturity of the investments and on the fixed and floating rate mismatches of its assets and liabilities.

Exposure

The following tables present the carrying value and highest and lowest contractual interest rates of the financial assets held by the Group (excluding bank deposits held at savings and current accounts) at 31 December:

	Fixed rate financial assets		**Floating rate financial assets**	
	At 31 Dec 2017	At 31 Dec 2016	**At 31 Dec 2017**	At 31 Dec 2016
Carrying value ($m)	**70,863**	62,707	**94,365**	73,818
Highest contractual interest rates	**3.80%**	10.50%	**1.93%**	1.99%
Lowest contractual interest rates[1]	**0.00%**	0.00%	**-4.00%**	-7.25%

[1] The contractual interest rates for certain reverse repurchase investments denominated in GBP and Euro held by LME Clear were below 0 per cent.

The contractual interest rates of the borrowings are disclosed in note 33 to the consolidated financial statements.

48. Financial Risk Management (continued)

(a) Market risk (continued)

(iv) Sensitivity analysis

Investments other than collective investment schemes

The Group uses Value-at-Risk (VaR) and portfolio stress testing to identify, measure, monitor and control foreign exchange risk and interest rate risks of the Group's investments other than collective investment schemes.

VaR measures the expected maximum loss over a given time interval (a holding period of 10 trading days is used by the Group) at a given confidence level (95 per cent confidence interval is adopted by the Group) based on historical data (one year is used by the Group). VaR is monitored on a weekly basis and the Board sets a limit on total VaR for the Group.

VaR is a statistical measure of risks and has limitations associated with the assumptions employed. The calculation is based on historical simulation and therefore vulnerable to sudden changes in market behaviour. The use of a 10-day holding period may be insufficient at times of severe illiquidity. Also, VaR does not necessarily reflect all aspects of risks that affect the price of financial instruments and may underestimate real market risk exposure. In addition, VaR does not factor in the possibility of catastrophic risks but the use of stress testing for abnormal market conditions can mitigate this limitation.

The VaR for each risk factor and the total VaR of the investments other than collective investment schemes and related hedges of the Group at 31 December were as follows:

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Foreign exchange risk	**10**	16
Interest rate risk	**7**	11
Total VaR	**12**	21

VaR for each risk factor is the independently derived largest potential loss due to fluctuations solely in that risk factor. The individual VaRs did not add up to the total VaR as there was diversification effect due to correlation amongst the risk factors.

48. Financial Risk Management (continued)

(a) Market risk (continued)

(iv) Sensitivity analysis (continued)

Collective investment schemes

At 31 December, the fair value of the Group's collective investment schemes (Funds) by strategy employed was as follows:

Strategy	**At 31 Dec 2017 $m**	At 31 Dec 2016 $m
Low Volatility Equities	**2,225**	1,798
Credit	**644**	602
Absolute Return	**1,245**	904
Multi-Asset Fixed Income	**1,278**	601
US Government Bonds and Mortgage-backed Securities	**1,251**	1,206
Total	**6,643**	5,111
Number of Funds	**15**	11

The Group monitors the market value sensitivity of the Funds through a high-level simulation of the Funds' 1-year Value at Risk (simplified 1-year VaR) using the Funds' returns and volatilities. The simplified 1-year VaR helps to determine the potential changes in the market values of the Funds over a 1-year period. At 31 December 2017, the simplified 1-year VaR calculated at a 95 per cent confidence level was 0.2 per cent (31 December 2016: 3.8 per cent), implying that the market value of the Group's Funds during the year ended 31 December 2017 could potentially change by approximately $13 million (2016: $193 million). At 31 December 2017 and 31 December 2016, the maximum exposure to loss from the Funds was equal to their carrying amounts.

The simplified 1-year VaR is computed using historical monthly returns of the Funds with the following steps:

1. Compute blended monthly returns of the Group's Funds using monthly historical returns of the respective Funds, from the period January 2015 to December 2017 (2016: January 2015 to December 2016), and their corresponding portfolio weights, assuming monthly rebalancing to the intended portfolio weights of the respective Funds;
2. Compute the average monthly return and standard deviation of the Funds' returns and derive the annualised amounts; and
3. Compute the simplified 1-year VaR, at a 95 per cent confidence level, by subtracting 1.65 times of the annualised standard deviation from the annualised average return.

The simplified 1-year VaR is a statistical measure of the historical risks and has limitations associated with the assumptions employed. Historical simulation assumes that actual observed historical changes in the respective Funds' monthly performance reflect possible future changes. This implies that the approach is vulnerable to sudden changes in market behaviour. In addition, it does not cover stressed market events, nor does it represent the Group's forecast of the Funds' future returns.

48. Financial Risk Management (continued)

(b) Liquidity risk

Nature of risk

Liquidity risk is the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities that are settled by delivering cash or another financial asset, and it results from amount and maturity mismatches of assets and liabilities.

Risk management

The Group employs projected cash flow analysis to manage liquidity risk by forecasting the amount of cash required and monitoring the working capital of the Group to ensure that all liabilities due and known funding requirements could be met.

Investments are kept sufficiently liquid to meet operational needs and regulatory requirements, and possible liquidity requirements of the Clearing House Funds and Margin Funds. The Group sets minimum levels of highly liquid assets for Corporate Funds, Clearing House Funds and Margin Funds.

Apart from the borrowings used to fund the acquisition of the LME Group, banking facilities have been put in place for contingency purposes. At 31 December 2017, the Group's total available banking facilities for its daily operations amounted to $18,963 million (31 December 2016: $18,947 million), which included $11,954 million (31 December 2016: $11,938 million) of committed banking facilities and $7,000 million (31 December 2016: $7,000 million) of repurchase facilities.

The Group also put in place foreign exchange facilities for its daily clearing operations and for the RMB Equity Trading Support Facility to support the trading of RMB stocks listed on the Stock Exchange. At 31 December 2017, the total amount of such facilities was RMB21,500 million (HK$25,809 million) (31 December 2016: RMB21,500 million (HK$23,927 million)).

In addition, the Group has arranged contingency banking facilities amounting to RMB13,000 million (HK$15,606 million) (31 December 2016: RMB13,000 million (HK$14,468 million)) for settling payment obligations to ChinaClear should there be events that disrupt normal settlement arrangements for Stock Connect.

48. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure

The Group is not exposed to liquidity risk on the outstanding base and precious metals futures and options contracts cleared through LME Clear. Accordingly, they are not included in the analyses for financial assets and financial liabilities in the tables below.

The tables below analyse the Group's financial assets into the relevant maturity buckets based on the following criteria:

- Investments held under the collective investment schemes are allocated taking into account the redemption notice periods, lock-up periods and redemption restrictions;
- the expected amounts, subject to costs to liquidate that are expected to be immaterial, that could be realised from the investments (other than collective investment schemes), bank deposits and cash and cash equivalents within one month to meet cash outflows on financial liabilities if required are allocated to the up to 1 month bucket; and
- other financial assets are allocated based on their contractual maturity dates or the expected dates of disposal.

	At 31 Dec 2017					
	Up to 1 month[1] $m	>1 month to 3 months $m	>3 months to 1 year $m	>1 year to 5 years $m	>5 years $m	Total $m
Cash and cash equivalents	**155,660**	**-**	**-**	**-**	**-**	**155,660**
Financial assets measured at fair value through profit or loss	**9,047**	**334**	**321**	**-**	**-**	**9,702**
Financial assets measured at amortised cost	**30,757**	**-**	**-**	**9**	**51**	**30,817**
Accounts receivable and deposits[1]	**16,420**	**32**	**29**	**-**	**-**	**16,481**
	211,884	**366**	**350**	**9**	**51**	**212,660**

	At 31 Dec 2016					
	Up to 1 month[1] $m	>1 month to 3 months $m	>3 months to 1 year $m	>1 year to 5 years $m	>5 years $m	Total $m
Cash and cash equivalents	115,723	-	-	-	-	115,723
Financial assets measured at fair value through profit or loss	8,448	-	-	-	-	8,448
Financial assets measured at amortised cost	29,093	-	-	74	-	29,167
Accounts receivable and deposits[1]	12,814	35	7	-	-	12,856
	166,078	35	7	74	-	166,194

[1] Amounts excluded prepayments of $104 million (31 December 2016: $93 million).

48. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure (continued)

The table below analyses the Group's financial liabilities (excluding forward foreign exchange contracts) at 31 December into relevant maturity buckets based on their contractual maturity dates. The amounts disclosed in the tables are the contractual undiscounted cash flows.

	At 31 Dec 2017				
	Up to 1 month $m	**>1 month to 3 months $m**	**>3 months to 1 year $m**	**>1 year to 5 years $m**	**Total $m**
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	**157,814**	**-**	**-**	**-**	**157,814**
Accounts payable, accruals and other liabilities[2]	**16,037**	**11**	**111**	**-**	**16,159**
Other financial liabilities:					
Other financial liabilities of Clearing House Funds	**38**	**-**	**-**	**-**	**38**
Other financial liabilities of Corporate Funds:					
Financial guarantee contract (maximum amount guaranteed) (note 43(b))	**124**	**-**	**-**	**-**	**124**
Participants' contributions to Clearing House Funds	**16,122**	**453**	**51**	**-**	**16,626**
Borrowings:					
Notes	**11**	**-**	**813**	**753**	**1,577**
Written put options to non-controlling interests	**-**	**-**	**252**	**88**	**340**
Total	**190,146**	**464**	**1,227**	**841**	**192,678**

	At 31 Dec 2016				
	Up to 1 month $m	>1 month to 3 months $m	>3 months to 1 year $m	>1 year to 5 years $m	Total $m
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	126,846	-	-	-	126,846
Accounts payable, accruals and other liabilities[2]	12,135	8	103	-	12,246
Other financial liabilities:					
Other financial liabilities of Clearing House Funds	17	-	-	-	17
Other financial liabilities of Corporate Funds:					
Financial guarantee contract (maximum amount guaranteed) (note 43(b))	111	-	-	-	111
Participants' contributions to Clearing House Funds	7,815	793	48	-	8,656
Borrowings:					
Bank borrowings	3	5	24	1,686	1,718
Notes	11	-	31	1,564	1,606
Written put options to non-controlling interests	-	-	-	340	340
Total	146,938	806	206	3,590	151,540

[2] Amounts excluded non-financial liabilities of $51 million (31 December 2016: $30 million).

48. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure (continued)

The table below analyses the Group's outstanding forward foreign exchange contracts at 31 December (which include all contracts regardless of whether they had gains or losses at the year end) that would be settled on a gross basis into relevant maturity buckets based on their contractual maturity dates. The amounts disclosed in the table are contractual undiscounted cash flows, which are different from the carrying amounts (ie, fair values) in the consolidated statement of financial position.

	At 31 Dec 2017			At 31 Dec 2016		
	Up to 1 month $m	**>1 month to 3 months $m**	**Total $m**	Up to 1 month $m	>1 month to 3 months $m	Total $m
Forward foreign exchange contracts						
- outflows	-	-	-	1,323	201	1,524
- inflows	-	-	-	1,328	201	1,529

(c) Credit risk

Nature of risk

The Group is exposed to credit risk, which is the risk that a counterparty will be unable to pay amounts in full when due. It arises primarily from the Group's investments and accounts receivables. Impairment provisions are made for losses that have been incurred at the end of the reporting period.

The Group is also exposed to clearing and settlement risk, as the clearing houses of the Group act as the counterparties to eligible trades concluded on the Stock Exchange, the Futures Exchange, the over-the-counter market and the LME through the novation of the obligations of the buyers and sellers. HKSCC is also responsible for the good title to the securities deposited and accepted in the CCASS depository. As a result, the Group has considerable market risk and credit risk since the Participants' ability to honour their obligations in respect of their trades and securities deposited may be adversely impacted by economic conditions. If the Participants default on their obligations on settlement or there are defects in the title of securities deposited and accepted in the CCASS depository, the Group could be exposed to potential risks not otherwise accounted for in these consolidated financial statements.

48. Financial Risk Management (continued)

(c) Credit risk (continued)

Risk management - Investment and accounts receivable risk

The Group limits its exposure to credit risk by rigorously selecting the counterparties (ie, deposit-takers, bond issuers, debtors and fund managers) and by diversification. At 31 December 2017, the investment in debt securities held by the Group (excluding those held by the collective investment schemes) were of investment grade and had a weighted average credit rating of Aaa (Moody) (31 December 2016: A1 (Moody)). External fund managers are financially strong and stable and their selection are approved by the Investment Advisory Committee as delegated by the Board. Deposits are placed only with the investment grade banks (licensed banks and restricted licence banks regulated by the Hong Kong Monetary Authority, and banks regulated by local banking regulators in the countries where the Group's subsidiaries operate). All investments are subject to a maximum concentration limit per counterparty and investments in debt securities are subject to a minimum investment grade rating. The LME Group invests a significant portion of cash in reverse repurchase investments, where high quality assets are held against such investments as collateral.

The Group mitigates its exposure to risks relating to accounts receivable from its Participants by requiring the Participants to meet the Group's established financial requirements and criteria for admission as Participants.

Risk management - Clearing and settlement risk

The Group mitigates its exposure to clearing and settlement-related risks by requiring the Participants to meet the Group's established financial requirements and criteria for admission as Participants, monitoring compliance with risk management measures such as imposing position limits and requiring Clearing Participants to deposit margins, Mainland security and settlement deposits, and cash collateral and contribute to the Clearing House Funds set up by the Group's five clearing houses. HKSCC also retains recourse against those Participants whose securities are deposited and accepted in the CCASS depository.

Under the HKSCC Margining and Guarantee Fund arrangements, each HKSCC Clearing Participant is allowed by HKSCC a Margin Credit of $5 million and a Dynamic Contribution Credit of $1 million. If a Clearing Participant defaults and any loss arises, HKSCC will absorb the default loss up to the Margin Credit and Dynamic Contribution Credit utilised by the defaulting Clearing Participant, after deducting its collateral and Guarantee Fund contribution kept by HKSCC. After the initial losses, HKSCC is required to absorb further losses after the HKSCC Guarantee Fund reserve and the Guarantee Fund contribution (excluding the Dynamic Contribution portion) of non-defaulting Clearing Participants are depleted. The amount of losses borne by HKSCC will be calculated on a pro rata basis with reference to the non-defaulting Clearing Participants' Dynamic Contributions and Dynamic Contribution Credits granted by HKSCC. At 31 December 2017, HKSCC has 605 Clearing Participants (31 December 2016: 542) and the total amounts of Margin Credit and Dynamic Contribution Credit granted to Clearing Participants amounted to $1,017 million (31 December 2016: $865 million).

The HKSCC Margin Credit and Dynamic Contribution Credit are supported by the $4,000 million of shareholders' funds set aside by the HKEX Group for risk management purpose.

48. Financial Risk Management (continued)

(c) Credit risk (continued)

Exposure

At 31 December, the maximum exposure to credit risk of the financial assets of the Group was equal to their carrying amounts. The maximum exposure to credit risk of the financial guarantee contract issued by the Group was as follows:

	At 31 Dec 2017		At 31 Dec 2016	
	Carrying amount in consolidated statement of financial position $m	**Maximum exposure to credit risk $m**	Carrying amount in consolidated statement of financial position $m	Maximum exposure to credit risk $m
Financial guarantee contract				
Undertaking to indemnify the Collector of Stamp Revenue (note 43(b))	**(20)**	**124**	(20)	111

Collateral held for mitigating credit risk

Certain securities, cash deposits and non-cash collateral are being held by the Group to mitigate the Group's exposure to credit risk. The financial effect of the collateral, which is capped by the amount receivable from each counterparty, was as follows:

	At 31 Dec 2017		At 31 Dec 2016	
	Carrying amount in consolidated statement of financial position $m	**Collateral held for mitigating credit risk $m**	Carrying amount in consolidated statement of financial position $m	Collateral held for mitigating credit risk $m
Accounts receivable and deposits[1]	**16,481**	**3,424**	12,856	3,536
Fair value of base and precious metals futures and options contracts cleared through LME Clear	**85,335**	**85,335**	61,618	61,618
Reverse repurchase investments	**90,608**	**90,608**	71,270	71,270

[1] Amounts excluded prepayments of $104 million (31 December 2016: $93 million).

Financial assets that were not impaired

At 31 December 2017, accounts receivable and deposits of $15,914 million (31 December 2016: $12,415 million) were neither past due nor impaired. They relate to a wide range of customers for whom there was no recent history of default.

At 31 December 2017, the age analysis of the financial assets (which mainly relate to receivables from Participants and listed companies) of the Group that were determined to be not impaired according to the period past due was as follows:

	At 31 Dec 2017 $m	At 31 Dec 2016 $m
Up to six months	**567**	441

48. Financial Risk Management (continued)

(c) Credit risk (continued)

Financial assets that were impaired at the end of the reporting period

At 31 December 2017, receivables of the Group amounting to $9 million (31 December 2016: $3 million) were determined to be impaired and full provision had been made. These receivables were outstanding for over 180 days at the end of the reporting period or were due from companies with financial difficulties. The factors the Group considered in determining whether the financial assets were impaired are disclosed in note 21.

(d) Fair values of financial assets and financial liabilities

(i) Financial assets and financial liabilities carried at fair value

At 31 December 2017 and 31 December 2016, no non-financial assets or liabilities were carried at fair values.

The following tables present the carrying value of financial assets and financial liabilities measured at fair value according to the levels of the fair value hierarchy defined in HKFRS 13: Fair Value Measurement, with the fair value of each financial asset and financial liability categorised based on the lowest level of input that is significant to that fair value measurement. The levels are defined as follows:

- Level 1: fair values measured using quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: fair values measured using valuation techniques in which all significant inputs other than quoted prices included within Level 1 are directly or indirectly based on observable market data.
- Level 3: fair values measured using valuation techniques in which any significant input is not based on observable market data.

48. Financial Risk Management (continued)

(d) Fair values of financial assets and financial liabilities (continued)

(i) Financial assets and financial liabilities carried at fair value (continued)

Recurring fair value measurements:	At 31 Dec 2017 Level 1 $m	At 31 Dec 2017 Level 2 $m	At 31 Dec 2017 Total $m	At 31 Dec 2016 Level 1 $m	At 31 Dec 2016 Level 2 $m	At 31 Dec 2016 Total $m
Financial assets						
Financial assets measured at fair value through profit or loss:						
- collective investment schemes	**1,841**	**4,802**	**6,643**	2,225	2,886	5,111
- debt securities	**3,059**	**-**	**3,059**	3,022	301	3,323
- base and precious metals futures and options contracts cleared through LME Clear	**-**	**85,335**	**85,335**	-	61,618	61,618
- forward foreign exchange contracts	**-**	**-**	**-**	-	14	14
	4,900	**90,137**	**95,037**	5,247	64,819	70,066
Financial liabilities						
Financial liabilities at fair value through profit or loss:						
- base and precious metals futures and options contracts cleared through LME Clear	**-**	**85,335**	**85,335**	-	61,618	61,618
- forward foreign exchange contracts	**-**	**-**	**-**	-	9	9
	-	**85,335**	**85,335**	-	61,627	61,627

During 2017 and 2016, there were no transfers of instruments between Level 1 and Level 2.

Level 2 fair values of debt securities, forward foreign exchange contracts, base and precious metals futures and options contracts and collective investment schemes have been determined based on quotes from market makers, funds administrators or alternative pricing sources supported by observable inputs. The most significant input are market interest rates, market prices of metals, net asset values and latest redemption prices or transaction prices of the respective collective investment schemes.

The Group's policy is to recognise transfers into and out of fair value hierarchy levels as of the date of the event or change in circumstances that caused the transfer.

(ii) Fair values of financial assets and financial liabilities not reported at fair values

Summarised in the following table are the carrying amounts and fair values of financial assets and financial liabilities not presented in the consolidated statement of financial position at their fair values. These assets and liabilities were classified under Level 2 in the fair value hierarchy.

48. Financial Risk Management (continued)

(d) Fair values of financial assets and financial liabilities (continued)

(ii) Fair values of financial assets and financial liabilities not reported at fair values (continued)

	At 31 Dec 2017		At 31 Dec 2016	
	Carrying amount in consolidated statement of financial position $m	**Fair value $m**	Carrying amount in consolidated statement of financial position $m	Fair value $m
Assets				
Financial assets measured at amortised cost:				
- other financial assets maturing over one year[1]	**60**	**54**	74	66
Liabilities				
Borrowings:				
- notes[2]	**1,533**	**1,537**	1,519	1,542
- written put options to non-controlling interests[2]	**327**	**329**	317	320
Financial guarantee to the Collector of Stamp Revenue[3]	**20**	**90**	20	76

1 The fair values are based on cash flows discounted using Hong Kong Government bond rates of a tenor similar to the contractual maturity of the respective assets, adjusted by an estimated credit spread. The discount rates used ranged from 1.84 per cent to 2.56 per cent at 31 December 2017 (31 December 2016: 2.62 per cent to 3.72 per cent).

2 The fair values are based on cash flows discounted using the prevailing market interest rates for loans with similar credit rating and similar tenor of the respective loans. The discount rates used ranged from 2.26 per cent to 2.75 per cent at 31 December 2017 (31 December 2016: 2.09 per cent to 2.95 per cent).

3 The fair values are based on the fees charged by financial institutions for granting such guarantees discounted using a ten-year Hong Kong Government bond rate to perpetuity but capped at the maximum exposure of the financial guarantee. The discount rate used was 1.74 per cent at 31 December 2017 (31 December 2016: 1.83 per cent).

The carrying amounts of bank borrowings with floating interest rates, short-term receivables (eg, accounts receivable, financial assets measured at amortised cost and cash and cash equivalents) and short-term payables (eg, accounts payable and other liabilities) approximated their fair values, and accordingly no disclosure of the fair values of these items is presented.

(e) Offsetting financial assets and financial liabilities

Accounting Policy

Financial assets and liabilities are offset and the net amount reported in the consolidated statement of financial position when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously. 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 company or the counterparty.

For base and precious metals futures and options contracts cleared through LME Clear, the asset and liability positions of LME Clear arising through its activities as a central counterparty are matched. Therefore, the same amounts are recorded for both assets and liabilities with the fair value gains and losses recognised, but offset, in the consolidated income statement.

48. Financial Risk Management (continued)

(e) Offsetting financial assets and financial liabilities (continued)

The disclosures set out in the tables below include financial assets and financial liabilities that:

- are offset in the Group's consolidated statement of financial position; or
- are subject to an enforceable master netting arrangement or similar agreement that covers similar financial instruments, irrespective of whether they are offset in the consolidated statement of financial position.

(i) Financial assets and financial liabilities subject to offsetting, enforceable master netting arrangements or similar agreements

	At 31 Dec 2017					
				Related amounts not offset in the consolidated statement of financial position		
Type of financial instruments	**Gross amount $m**	**Gross amount offset in the consolidated statement of financial position $m**	**Net amount presented in the consolidated statement of financial position[3] $m**	**Amounts subject to master netting arrangements $m**	**Cash collateral $m**	**Net amount $m**
Financial assets:						
CNS money obligations receivable[1]	**141,775**	**(129,260)**	**12,515**	**(2,042)**	**(3,006)**	**7,467**
Base and precious metals futures and options contracts cleared through LME Clear[2]	**1,572,390**	**(1,487,055)**	**85,335**	**(43,037)**	**(42,298)**	**-**
Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	**2,888**	**-**	**2,888**	**(171)**	**(203)**	**2,514**
Total	**1,717,053**	**(1,616,315)**	**100,738**	**(45,250)**	**(45,507)**	**9,981**
Financial liabilities:						
CNS money obligations payable[1]	**143,464**	**(129,260)**	**14,204**	**(2,213)**	**-**	**11,991**
Base and precious metals futures and options contracts cleared through LME Clear[2]	**1,572,390**	**(1,487,055)**	**85,335**	**(43,037)**	**-**	**42,298**
Total	**1,715,854**	**(1,616,315)**	**99,539**	**(45,250)**	**-**	**54,289**

48. Financial Risk Management (continued)

(e) Offsetting financial assets and financial liabilities (continued)

(i) Financial assets and financial liabilities subject to offsetting, enforceable master netting arrangements or similar agreements (continued)

	At 31 Dec 2016					
				Related amounts not offset in the consolidated statement of financial position		
Type of financial instruments	Gross amount $m	Gross amount offset in the consolidated statement of financial position $m	Net amount presented in the consolidated statement of financial position[3] $m	Amounts subject to master netting arrangements $m	Cash collateral $m	Net amount $m
Financial assets:						
CNS money obligations receivable[1]	82,814	(72,762)	10,052	(455)	(3,298)	6,299
Base and precious metals futures and options contracts cleared through LME Clear[2]	1,122,855	(1,061,237)	61,618	(38,427)	(23,191)	-
Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	1,353	-	1,353	-	(89)	1,264
Total	1,207,022	(1,133,999)	73,023	(38,882)	(26,578)	7,563
Financial liabilities:						
CNS money obligations payable[1]	83,077	(72,762)	10,315	(455)	-	9,860
Base and precious metals futures and options contracts cleared through LME Clear[2]	1,122,855	(1,061,237)	61,618	(38,427)	-	23,191
Total	1,205,932	(1,133,999)	71,933	(38,882)	-	33,051

1 HKSCC currently has a legally enforceable right to set off certain CNS money obligations receivable and payable relating to the same Clearing Participant and it intends to settle on a net basis.

2 LME Clear has a legally enforceable right to set off open positions of certain contracts within an individual member's account for those contracts settling on the same date and it intends to settle on a net basis.

3 For the net amounts of CNS money obligations receivable or payable and net fair value of base and precious metals futures and options contracts (ie, after set-off) and other accounts receivables due from customers, they do not meet the criteria for offsetting in the consolidated statement of financial position since the right of set-off of the recognised amounts is only enforceable following an event of default of the customers. In addition, the Group does not intend to settle the balances on a net basis.

48. Financial Risk Management (continued)

(e) Offsetting financial assets and financial liabilities (continued)

(ii) The tables below reconcile the "net amounts of financial assets and financial liabilities presented in the consolidated statement of financial position", as set out above, to the "accounts receivables, prepayments and deposits", "accounts payable, accruals and other liabilities", "financial assets measured at fair value through profit or loss" and "financial liabilities at fair value through profit or loss" presented in the consolidated statement of financial position.

	Accounts receivables, prepayments and deposits		**Financial assets measured at fair value through profit or loss**	
	At 31 Dec 2017 $m	At 31 Dec 2016 $m	**At 31 Dec 2017 $m**	At 31 Dec 2016 $m
Net amount of financial assets after offsetting as stated above:				
- CNS money obligations receivable	**12,515**	10,052	**-**	-
- Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	**2,888**	1,353	**-**	-
- Base and precious metals futures and options contracts cleared through LME Clear	**-**	-	**85,335**	61,618
Financial assets not in scope of offsetting disclosures	**1,078**	1,451	**9,702**	8,448
Prepayments	**104**	93	**-**	-
Amounts presented in the consolidated statement of financial position	**16,585**	12,949	**95,037**	70,066

	Accounts payable, accruals and other liabilities		**Financial liabilities at fair value through profit or loss**	
	At 31 Dec 2017 $m	At 31 Dec 2016 $m	**At 31 Dec 2017 $m**	At 31 Dec 2016 $m
Net amount of financial liabilities after offsetting as stated above:				
- CNS money obligations payable	**14,204**	10,315	**-**	-
- Base and precious metals futures and options contracts cleared through LME Clear	**-**	-	**85,335**	61,618
Financial liabilities not in scope of offsetting disclosures	**1,955**	1,931	**-**	9
Non-financial liabilities	**51**	30	**-**	-
Amounts presented in the consolidated statement of financial position	**16,210**	12,276	**85,335**	61,627

49. Statement of Financial Position and Reserve Movement of HKEX

Accounting Policy

In HKEX's statement of financial position, investments in subsidiaries are stated at cost less impairment losses. Provision for impairment in a subsidiary is made when the recoverable amount of the subsidiary is lower than HKEX's respective cost of investment. The results of subsidiaries are accounted for by HKEX on the basis of dividends received and receivable.

Impairment testing of the investment in a subsidiary is required upon receiving a dividend from that subsidiary if the dividend exceeds the total comprehensive income of the subsidiary concerned in the period the dividend is declared or if the carrying amount of the subsidiary in HKEX's statement of financial position exceeds the carrying amount of the subsidiary's net assets including goodwill in the consolidated statement of financial position.

Written put options to non-controlling interests initially recognised at fair value are accounted for as an investment in subsidiaries with a corresponding credit to financial liabilities at fair value through profit or loss under other financial liabilities. Subsequent changes in fair value of the financial liabilities are recognised in HKEX's income statement.

Financial guarantee contracts issued by HKEX to guarantee borrowings of subsidiaries are eliminated on consolidation.

49. Statement of Financial Position and Reserve Movement of HKEX (continued)

Statement of Financial Position of HKEX

	At 31 Dec 2017			At 31 Dec 2016		
	Current	**Non-current**	**Total**	Current	Non-current	Total
	$m	**$m**	**$m**	$m	$m	$m
ASSETS						
Cash and cash equivalents	**5,715**	**-**	**5,715**	4,357	-	4,357
Financial assets measured at fair value through profit or loss	**6,643**	**-**	**6,643**	5,125	-	5,125
Financial assets measured at amortised cost	**1**	**1**	**2**	980	1	981
Accounts receivable, prepayments and deposits	**45**	**21**	**66**	633	21	654
Amounts due from subsidiaries	**1,123**	**12,908**	**14,031**	2,097	16,708	18,805
Interests in joint ventures	**-**	**114**	**114**	-	100	100
Intangible assets	**-**	**129**	**129**	-	109	109
Fixed assets	**-**	**250**	**250**	-	193	193
Investments in subsidiaries	**-**	**12,115**	**12,115**	-	7,349	7,349
Total assets	**13,527**	**25,538**	**39,065**	13,192	24,481	37,673
LIABILITIES AND EQUITY						
Liabilities						
Financial liabilities at fair value through profit or loss	**278**	**-**	**278**	230	-	230
Accounts payable, accruals and other liabilities	**389**	**-**	**389**	668	-	668
Amounts due to subsidiaries	**422**	**-**	**422**	1,882	-	1,882
Taxation payable	**5**	**-**	**5**	41	-	41
Other financial liabilities	**11**	**-**	**11**	11	-	11
Borrowings	**782**	**751**	**1,533**	-	3,105	3,105
Provisions	**67**	**1**	**68**	66	1	67
Deferred tax liabilities	**-**	**18**	**18**	-	14	14
Total liabilities	**1,954**	**770**	**2,724**	2,898	3,120	6,018
Equity						
Share capital			**25,141**			22,085
Shares held for Share Award Scheme			**(606)**			(599)
Employee share-based compensation reserve			**222**			226
Merger reserve			**694**			694
Retained earnings			**10,890**			9,249
Equity attributable to shareholders of HKEX			**36,341**			31,655
Total liabilities and equity			**39,065**			37,673
Net current assets			**11,573**			10,294

Approved by the Board of Directors on 28 February 2018

CHOW Chung Kong
Director

LI Xiaojia, Charles
Director

49. Statement of Financial Position and Reserve Movement of HKEX (continued)

(a) Reserve movement of HKEX

	Employee share-based compensation reserve $m	Merger reserve $m	Retained earnings $m
At 1 Jan 2016	199	694	8,783
Profit attributable to shareholders	-	-	6,597
2015 final dividend at $2.87 per share	-	-	(3,459)
2016 interim dividend at $2.21 per share	-	-	(2,683)
Unclaimed HKEX dividends forfeited	-	-	22
Vesting of shares of Share Award Scheme	(186)	-	(11)
Employee share-based compensation benefits	213	-	-
At 31 Dec 2016	226	694	9,249
At 1 Jan 2017	**226**	**694**	**9,249**
Profit attributable to shareholders	**-**	**-**	**7,255**
2016 final dividend at $2.04 per share	**-**	**-**	**(2,491)**
2017 interim dividend at $2.55 per share	**-**	**-**	**(3,133)**
Unclaimed HKEX dividends forfeited	**-**	**-**	**26**
Vesting of shares of Share Award Scheme	**(224)**	**-**	**(16)**
Employee share-based compensation benefits	**220**	**-**	**-**
At 31 Dec 2017	**222**	**694**	**10,890**