

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 2016 and 2015 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 2015 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 2016 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.



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 2016

At 27 February 2017, 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 Timothy George FRESHWATER, Ms FUNG Yuen Mei, Anita, Mr Rafael GIL-TIENDA, Mr John Barrie HARRISON, Dr HU Zuli, Fred, Dr KWOK Chi Piu, Bill, Mr LEE Kwan Ho, Vincent Marshall, Mrs LEUNG KO May Yee, Margaret, and Mr John Mackay McCulloch WILLIAMSON, and one Executive Director, Mr LI Xiaojia, Charles, who is also HKEX's Chief Executive.

CONSOLIDATED INCOME STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2016

(Financial figures are expressed in Hong Kong Dollar)

	Note	2016 \$m	2015 \$m
Trading fees and trading tariff	5(a)	4,428	5,469
Stock Exchange listing fees	5(b)	1,092	1,114
Clearing and settlement fees		2,358	3,118
Depository, custody and nominee services fees		857	867
Market data fees		816	803
Other revenue	5(c)	847	862
REVENUE	5	10,398	12,233
Investment income		826	702
Interest rebates to Participants		(130)	(24)
Net investment income	6	696	678
Gain on disposal of a leasehold property	7	-	445
Sundry income	8	22	19
REVENUE AND OTHER INCOME	4	11,116	13,375
OPERATING EXPENSES			
Staff costs and related expenses	9	(2,035)	(2,020)
Information technology and computer maintenance expenses	10	(500)	(517)
Premises expenses		(333)	(294)
Product marketing and promotion expenses		(54)	(41)
Legal and professional fees		(106)	(99)
Other operating expenses:			
Reversal of provision for impairment losses arising from			
Participants' default on market contracts	11(a)	-	77
Others	11(b)	(427)	(396)
		(3,455)	(3,290)
EBITDA	4	7,661	10,085
Depreciation and amortisation		(771)	(684)
OPERATING PROFIT	12	6,890	9,401
Finance costs	13	(82)	(114)
Share of loss of a joint venture		(9)	(9)
PROFIT BEFORE TAXATION	4	6,799	9,278
TAXATION	16(a)	(1,058)	(1,347)
PROFIT FOR THE YEAR		5,741	7,931
PROFIT/(LOSS) ATTRIBUTABLE TO:			
Shareholders of HKEX	40	5,769	7,956
Non-controlling interests	25(a)(i)	(28)	(25)
PROFIT FOR THE YEAR		5,741	7,931
Basic earnings per share	17(a)	\$4.76	\$6.70
Diluted earnings per share	17(b)	\$4.75	\$6.67

The notes on pages 9 to 80 are an integral part of these consolidated financial statements. Details of dividends are set out in note 18 to the consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER 2016

(Financial figures are expressed in Hong Kong Dollar)

	Note	2016 \$m	2015 \$m
PROFIT FOR THE YEAR		5,741	7,931
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)	(6)	(7)
OTHER COMPREHENSIVE INCOME		(6)	(7)
TOTAL COMPREHENSIVE INCOME		5,735	7,924
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:			
Shareholders of HKEX		5,763	7,949
Non-controlling interests	25(a)(i)	(28)	(25)
TOTAL COMPREHENSIVE INCOME		5,735	7,924

The notes on pages 9 to 80 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AT 31 DECEMBER 2016

(Financial figures are expressed in Hong Kong Dollar)

	Note	At 31 Dec 2016			At 31 Dec 2015		
		Current \$m	Non-current \$m	Total \$m	Current \$m	Non-current \$m	Total \$m
ASSETS							
Cash and cash equivalents	19, 20	115,723	-	115,723	110,890	-	110,890
Financial assets measured at fair value through profit or loss	19, 21	70,066	-	70,066	72,705	-	72,705
Financial assets measured at amortised cost	19, 22	29,093	74	29,167	19,439	57	19,496
Accounts receivable, prepayments and deposits	24	12,928	21	12,949	15,537	21	15,558
Interest in a joint venture	26	-	59	59	-	68	68
Goodwill and other intangible assets	27	-	17,812	17,812	-	17,872	17,872
Fixed assets	28	-	1,499	1,499	-	1,560	1,560
Lease premium for land		-	21	21	-	22	22
Deferred tax assets	36(d)	-	22	22	-	22	22
Total assets		227,810	19,508	247,318	218,571	19,622	238,193
LIABILITIES AND EQUITY							
Liabilities							
Financial liabilities at fair value through profit or loss	29	61,627	-	61,627	64,486	-	64,486
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	19, 30	126,846	-	126,846	115,213	-	115,213
Accounts payable, accruals and other liabilities	31	12,246	30	12,276	15,270	15	15,285
Deferred revenue		842	-	842	773	-	773
Taxation payable		356	-	356	653	-	653
Other financial liabilities	32	37	-	37	42	-	42
Participants' contributions to Clearing House Funds	19, 33	8,656	-	8,656	7,474	-	7,474
Borrowings	34	-	3,422	3,422	-	3,409	3,409
Provisions	35	78	81	159	65	70	135
Deferred tax liabilities	36(d)	-	713	713	-	761	761
Total liabilities		210,688	4,246	214,934	203,976	4,255	208,231

CONSOLIDATED STATEMENT OF FINANCIAL POSITION (CONTINUED)
AT 31 DECEMBER 2016

	Note	At 31 Dec 2016			At 31 Dec 2015		
		Current \$m	Non-current \$m	Total \$m	Current \$m	Non-current \$m	Total \$m
Equity							
Share capital	37			22,085			19,285
Shares held for Share Award Scheme	37			(599)			(590)
Employee share-based compensation reserve	38			226			199
Exchange reserve	2(e)(iii)			(260)			(254)
Designated reserves	33, 39			773			778
Reserve relating to written put options to non-controlling interests				(293)			(293)
Retained earnings	40			10,334			10,691
Equity attributable to shareholders of HKEX				32,266			29,816
Non-controlling interests				118			146
Total equity				32,384			29,962
Total liabilities and equity				247,318			238,193
Net current assets				17,122			14,595

The notes on pages 9 to 80 are an integral part of these consolidated financial statements.

Approved by the Board of Directors on 27 February 2017

CHOW Chung Kong
Director

LI Xiaojia, Charles
Director

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2016

(Financial figures are expressed in Hong Kong Dollar)

	Attributable to shareholders of HKEX									
	Share capital and shares held for Share Award Scheme (note 37) \$m	Employee share-based compensation reserve (note 38) \$m	Exchange reserve \$m	Convertible bond 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 2015	11,743	142	(247)	409	643	(217)	8,800	21,273	86	21,359
Profit for the year	-	-	-	-	-	-	7,956	7,956	(25)	7,931
Other comprehensive income	-	-	(7)	-	-	-	-	(7)	-	(7)
Total comprehensive income	-	-	(7)	-	-	-	7,956	7,949	(25)	7,924
Total contributions by and distributions to shareholders of HKEX, recognised directly in equity:										
- 2014 final dividend at \$2.15 per share	-	-	-	-	-	-	(2,533)	(2,533)	-	(2,533)
- 2015 interim dividend at \$3.08 per share	-	-	-	-	-	-	(3,679)	(3,679)	-	(3,679)
- Unclaimed HKEX dividends forfeited (note 31(a))	-	-	-	-	-	-	18	18	-	18
- Shares issued upon exercise of employee share options	3	-	-	-	-	-	-	3	-	3
- Shares issued in lieu of cash dividends	3,165	-	-	-	-	-	-	3,165	-	3,165
- Shares purchased for Share Award Scheme	(227)	-	-	-	-	-	-	(227)	-	(227)
- Vesting of shares of Share Award Scheme	134	(126)	-	-	-	-	(8)	-	-	-
- Employee share-based compensation benefits	-	183	-	-	-	-	-	183	-	183
- Tax credit relating to Share Award Scheme	-	-	-	-	-	-	3	3	-	3
- Conversion of convertible bonds (note 37(d))	3,877	-	-	(409)	-	-	266	3,734	-	3,734
- Transfer of reserves	-	-	-	-	135	-	(135)	-	-	-
- Put options written to non-controlling interests (note 34(c))	-	-	-	-	-	(76)	-	(76)	-	(76)
Total changes in ownership interests in subsidiaries that do not result in a loss of control:										
- Changes in ownership interests in a subsidiary	-	-	-	-	-	-	3	3	85	88
Total transactions with shareholders recognised directly in equity	6,952	57	-	(409)	135	(76)	(6,065)	594	85	679
At 31 Dec 2015	18,695	199	(254)	-	778	(293)	10,691	29,816	146	29,962

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

FOR THE YEAR ENDED 31 DECEMBER 2016

	Attributable to shareholders of HKEX								Total equity \$m
	Share capital and shares held for Share Award Scheme (note 37) \$m	Employee share-based compensation 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	
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 contributions by and distributions to 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 31(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	-	-	-
Total transactions with shareholders recognised directly in equity	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

The notes on pages 9 to 80 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31 DECEMBER 2016

(Financial figures are expressed in Hong Kong Dollar)

	Note	2016 \$m	2015 \$m
CASH FLOWS FROM PRINCIPAL OPERATING ACTIVITIES			
Net cash inflow from principal operating activities	41	6,164	8,921
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		(2,701)	(600)
Net cash inflow from operating activities		3,463	8,321
CASH FLOWS FROM INVESTING ACTIVITIES			
Payments for purchases of fixed assets and intangible assets		(620)	(710)
Net proceeds from disposal of a leasehold property and other fixed assets		-	512
Net (increase)/decrease in financial assets of Corporate Funds:			
Increase in time deposits with original maturities more than three months		(2,419)	(426)
Payments for purchases of financial assets measured at amortised cost (excluding time deposits)		(312)	-
Net proceeds from sales of financial assets measured at fair value through profit or loss		-	187
Interest received from financial assets measured at fair value through profit or loss		16	17
Net cash outflow from investing activities		(3,335)	(420)
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from issuance of shares upon exercise of employee share options		-	3
Purchases of shares for Share Award Scheme		(188)	(227)
Payments of finance costs		(69)	(71)
Dividends paid to shareholders of HKEX		(3,329)	(3,017)
Proceeds from disposal of interest in a subsidiary without loss of control		-	88
Net cash outflow from financing activities		(3,586)	(3,224)
Net (decrease)/increase in cash and cash equivalents		(3,458)	4,677
Cash and cash equivalents at 1 Jan		12,744	8,067
Cash and cash equivalents at 31 Dec		9,286	12,744
Analysis of cash and cash equivalents			
Cash on hand and balances and deposits with banks and short-term investments of Corporate Funds	20	9,286	12,744

The notes on pages 9 to 80 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 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, Central, Hong Kong.

These consolidated financial statements were approved for issue by the Board of Directors (Board) on 27 February 2017.

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 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 2016, the Group has adopted the following amendments to HKFRSs which were effective for accounting periods beginning on or after 1 January 2016:

Amendments to HKAS 1	Presentation of Financial Statements - Disclosure Initiative
Amendments to HKAS 16 and HKAS 38	Clarification of Acceptable Methods of Depreciation and Amortisation

The adoption of these amendments to HKFRSs does not have any financial impact on the Group.

2. Principal Accounting Policies (continued)

(b) Basis of preparation (continued)

New/revised HKFRSs issued before 31 December 2016 but not yet effective and not early adopted

The Group has not applied the following new/revised HKFRSs which were issued before 31 December 2016 and are pertinent to its operations but not yet effective:

Amendments to HKAS 7	Statement of Cash Flows – Disclosure Initiative ¹
HKFRS 9 (2014)	Financial Instruments ²
HKFRS 15	Revenue from Contracts with Customers ²
HKFRS 16	Leases ³

¹Effective for accounting periods beginning on or after 1 January 2017

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

³Effective for accounting periods beginning on or after 1 January 2019

The adoption of amendments to HKAS 7, HKFRS 9 (2014) and HKFRS 15 would not have any significant impact on the financial performance and position of the Group.

HKFRS 16 will primarily affect the accounting for the Group's operating leases. At 31 December 2016, the Group had non-cancellable operating lease commitments of \$947 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 depreciated on a straight-line basis during the lease term.

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

(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 interest in a joint venture (note 26) and goodwill and tradenames (note 27), 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.

2. Principal Accounting Policies (continued)

(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.

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:

3. Critical Accounting Estimates and Assumptions (continued)

(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 27.

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 27. 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 2016, the financial assets that were not classified as Level 1 investments (excluding the base 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 \$3,201 million (31 December 2015: \$3,087 million) which mainly comprised \$2,886 million of investments under collective investment schemes (31 December 2015: \$3,081 million of debt securities).

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 47(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 Connects), 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 two exchanges in Hong Kong 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 metals futures and options contracts, and the development and operations of the new commodity trading platform in the Mainland. It also covers the Asia Commodities contracts traded on Hong Kong Futures Exchange Limited (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 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, finance costs 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 venture. 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.

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

4. Operating Segments (continued)

	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 items:							
Employee share-based compensation expenses	(33)	(23)	(41)	(37)	(2)	(77)	(213)
Reversal of provision for impairment losses	1	-	-	-	-	-	1
2015							
	Cash \$m	Equity and Financial Derivatives \$m	Commodities \$m	Clearing \$m	Platform and Infrastructure \$m	Corporate Items \$m	Group \$m
Revenue from external customers	3,433	2,178	1,735	4,383	499	5	12,233
Net investment income	-	-	-	604	-	74	678
Gain on disposal of a leasehold property	-	-	-	-	-	445	445
Sundry income	2	1	-	15	-	1	19
Revenue and other income	3,435	2,179	1,735	5,002	499	525	13,375
Operating expenses	(531)	(446)	(546)	(692)	(148)	(927)	(3,290)
Reportable segment EBITDA	2,904	1,733	1,189	4,310	351	(402)	10,085
Depreciation and amortisation	(85)	(87)	(275)	(148)	(43)	(46)	(684)
Finance costs	-	-	-	-	-	(114)	(114)
Share of loss of a joint venture	-	(9)	-	-	-	-	(9)
Reportable segment profit before taxation	2,819	1,637	914	4,162	308	(562)	9,278
Other segment information:							
Interest income	-	-	-	615	-	71	686
Interest rebates to Participants	-	-	-	(24)	-	-	(24)
Other material non-cash items:							
Employee share-based compensation expenses	(27)	(21)	(25)	(38)	(2)	(70)	(183)
(Provision for)/reversal of provision for impairment losses	(1)	-	-	77	-	-	76

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	
	2016 \$m	2015 \$m	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Hong Kong (place of domicile)	8,192	9,757	1,978	2,059
United Kingdom	2,206	2,476	17,333	17,481
Mainland China	-	-	101	3
	10,398	12,233	19,412	19,543

(b) Information about major customers

In 2016 and 2015, 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 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 of Hong Kong Limited (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 Connects (A shares) are recognised on the trade day upon acceptance of the trades. Fees for clearing and settlement of trades in respect of base 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.

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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

5. Revenue (continued)

(a) Trading Fees and Trading Tariff

	2016 \$m	2015 \$m
Equity securities traded on the Stock Exchange and through Stock Connects	1,421	2,252
DWs, CBBCs and warrants traded on the Stock Exchange	502	761
Futures and options contracts traded on the Stock Exchange and the Futures Exchange	1,275	1,052
Base metals futures and options contracts traded on the LME	1,230	1,404
	4,428	5,469

(b) Stock Exchange Listing Fees

	2016				2015			
	Equity		CBBCs, DWs & others	Total	Equity		CBBCs, DWs & others	Total
	Main Board	GEM			Main Board	GEM		
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	
Annual listing fees	609	34	4	647	557	31	3	591
Initial and subsequent issue listing fees	85	22	331	438	82	15	418	515
Other listing fees	5	2	-	7	6	2	-	8
	699	58	335	1,092	645	48	421	1,114

Listing fees are primarily fees paid by issuers to enable them to gain access to the Stock Exchange and enjoy the privileges and facilities of being admitted, listed and traded on the Stock Exchange.

(c) Other Revenue

	2016 \$m	2015 \$m
Network, terminal user, dataline and software sub-license fees	406	389
Commodities stock levies and warehouse listing fees	87	102
Hosting services fees	129	105
Participants' subscription and application fees	76	73
Accommodation income (note (i))	48	72
Post-liquidation interest arising from a Participant's default on market contracts (note (ii))	-	38
Sales of Trading Rights	26	11
Miscellaneous revenue	75	72
	847	862

(i) Accommodation income mainly comprises income from Participants on securities deposited as alternatives to cash deposits of Margin Funds 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 2015, the liquidators of Lehman Brothers Securities Asia Limited (LBSA) paid post-liquidation interest of \$38 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 2015 (note 39).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**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.

	2016 \$m	2015 \$m
Gross interest income from financial assets measured at amortised cost	744	686
Interest rebates to Participants	(130)	(24)
Net interest income	614	662
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	98	49
Others	(16)	(33)
Net investment income	696	678

7. Gain on Disposal of a Leasehold Property

In 2015, the Group sold a leasehold property to a third party at a consideration of \$509 million. The gain on disposal of the leasehold property, after deducting related selling expenses, amounted to \$445 million and was recognised in the consolidated income statement.

8. Sundry Income

	2016 \$m	2015 \$m
Forfeiture of unclaimed dividends (note (a))	14	11
Others	8	8
	22	19

(a) In accordance with CCASS Rule 1109, the Group exercised its forfeiture right to appropriate cash dividends of \$14 million (2015: \$11 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 honour all forfeited claims amounting to \$171 million at 31 December 2016 (31 December 2015: \$157 million) if adequate proof of entitlement is provided by the beneficial owner claiming any dividends forfeited.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

9. Staff Costs and Related Expenses

	2016 \$m	2015 \$m
Salaries and other short-term employee benefits	1,675	1,686
Employee share-based compensation benefits of Share Award Scheme (note 38)	213	183
Termination benefits	10	14
Retirement benefit costs (note (a)):		
- ORSO Plan	111	103
- MPF Scheme	2	2
- LME Pension Scheme	24	32
	2,035	2,020

(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 provident fund 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 provident fund, and are available for distribution to the provident fund members 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 auto 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.

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**10. Information Technology and Computer Maintenance Expenses**

	2016 \$m	2015 \$m
Costs of services and goods:		
- consumed by the Group	427	445
- directly consumed by Participants	73	72
	500	517

11. Other Operating Expenses

(a) In 2015, the liquidators of Lehman Brothers Securities Asia Limited paid dividends of \$77 million which were recognised within operating expenses in the Group's consolidated income statement, as a reversal of a provision for impairment losses recognised in prior years. The amount recovered of \$77 million, together with an interim dividend declared in December 2014 but received in January 2015 of \$23 million, were appropriated to the HKSCC Guarantee Fund reserve from retained earnings during the year ended 31 December 2015 (note 39).

(b) Others

	2016 \$m	2015 \$m
Insurance	11	14
Financial data subscription fees	25	26
Custodian and fund management related fees	35	31
Bank charges	57	50
Repairs and maintenance expenses	62	66
License fees	32	27
Communication expenses	14	15
Travel expenses	39	41
Security expenses	18	17
Contribution to Financial Reporting Council	7	7
Other miscellaneous expenses	127	102
	427	396

12. Operating Profit

	2016 \$m	2015 \$m
Operating profit is stated after charging:		
Auditor's remuneration		
- audit fees	14	13
- other non-audit fees	6	8
Operating lease rentals		
- land and buildings	241	203
- computer systems and equipment	28	28
Net foreign exchange losses on financial assets and liabilities (excluding financial assets and financial liabilities measured at fair value through profit or loss)	7	37

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

13. 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.

	2016 \$m	2015 \$m
Interest expenses:		
- Bank borrowings (note 34(a))	28	23
- Convertible bonds	-	42
- Notes (note 34(b))	44	44
- Written put options to non-controlling interests (note 34(c))	9	7
Net foreign exchange losses/(gains) on financing activities	1	(2)
	82	114

14. Directors' Emoluments and Interests of Directors

All Directors, including one Executive Director (HKEX's Chief Executive), received emoluments during the years ended 31 December 2016 and 31 December 2015. The aggregate emoluments paid and payable to the Directors during the year were as follows:

	2016 \$'000	2015 \$'000
Executive Director:		
Salaries and other short-term employee benefits	9,217	9,178
Performance bonus	11,250	15,000
Retirement benefit costs	1,125	1,125
	21,592	25,303
Employee share-based compensation benefits (note (a))	22,471	19,917
	44,063	45,220
Non-executive Directors:		
Fees	15,727	15,526
	59,790	60,746

- (a) Employee share-based compensation benefits represent the fair value of Awarded Shares issued under the Share Award Scheme (note 38) 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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

(b) (continued)

Name of Director	2016							Total \$'000
	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	
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 (v))	525	-	-	-	-	525	-	525
T C Chan	964	-	-	-	-	964	-	964
Timothy G Freshwater	1,018	-	-	-	-	1,018	-	1,018
Anita Y M Fung (note (iii))	964	-	-	-	-	964	-	964
Rafael Gil-Tienda (note (iii))	832	-	-	-	-	832	-	832
John B Harrison	2,486	-	-	-	-	2,486	-	2,486
Fred Z Hu	829	-	-	-	-	829	-	829
Bill C P Kwok	1,597	-	-	-	-	1,597	-	1,597
Vincent K H Lee	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 (vi))	226	-	-	-	-	226	-	226
Total	15,727	9,000	217	11,250	1,125	37,319	22,471	59,790

Name of Director	2015							Total \$'000
	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	
C K Chow	3,137	-	-	-	-	3,137	-	3,137
Charles X Li	-	9,000	178	15,000	1,125	25,303	19,917	45,220
T C Chan	926	-	-	-	-	926	-	926
Timothy G Freshwater	957	-	-	-	-	957	-	957
Anita Y M Fung (note (iii))	720	-	-	-	-	720	-	720
Rafael Gil-Tienda (note (iii))	621	-	-	-	-	621	-	621
John B Harrison	2,601	-	-	-	-	2,601	-	2,601
Fred Z Hu	799	-	-	-	-	799	-	799
Stephen C C Hui (note (iv))	203	-	-	-	-	203	-	203
Bill C P Kwok	1,417	-	-	-	-	1,417	-	1,417
Vincent K H Lee	991	-	-	-	-	991	-	991
Michael T H Lee (note (iv))	383	-	-	-	-	383	-	383
Margaret M Y Leung Ko	929	-	-	-	-	929	-	929
John M M Williamson	957	-	-	-	-	957	-	957
Oscar S H Wong (note (vi))	885	-	-	-	-	885	-	885
Total	15,526	9,000	178	15,000	1,125	40,829	19,917	60,746

Notes:

- (i) Other benefits represented estimated money value of leave pay, insurance premium and club membership.
- (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) Appointment effective 29 April 2015
- (iv) Retired on 29 April 2015
- (v) Elected on 28 April 2016
- (vi) Retired on 28 April 2016

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**14. 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.

15. Five Top-paid Employees

One (2015: one) of the five top-paid employees was a Director whose emoluments are disclosed in note 14. Details of the emoluments of the other four (2015: four) top-paid employees were as follows:

	2016 \$'000	2015 \$'000
Salaries and other short-term employee benefits	19,651	18,476
Performance bonus	16,219	26,136
Retirement benefit costs	2,465	2,682
	38,335	47,294
Employee share-based compensation benefits (note (a))	21,221	17,571
	59,556	64,865

- (a) Employee share-based compensation benefits represent the fair value of Awarded Shares issued under the Share Award Scheme (note 38) amortised to the consolidated income statement during the year.
- (b) The emoluments of these four (2015: four) employees, including share-based compensation benefits, were within the following bands:

	2016 Number of employees	2015 Number of employees
\$14,000,001 – \$14,500,000	1	-
\$14,500,001 – \$15,000,000	2	1
\$15,500,001 – \$16,000,000	-	1
\$16,000,001 – \$16,500,000	1	-
\$16,500,001 – \$17,000,000	-	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.

16. 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 36.

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

	2016 \$m	2015 \$m
Current tax – Hong Kong Profits Tax		
- Provision for the year	879	1,159
- Overprovision in respect of prior years	(3)	(2)
	876	1,157
Current tax – Overseas Tax		
- Provision for the year	223	280
- Underprovision in respect of prior years	8	3
	231	283
Total current tax (note (i))	1,107	1,440
Deferred tax		
- Reversal of temporary differences	(18)	(28)
- Impact of changes in UK Corporation Tax rates (note (ii))	(31)	(65)
Total deferred tax (note 36(a))	(49)	(93)
Taxation charge	1,058	1,347

- (i) Hong Kong Profits Tax has been provided at the rate of 16.5 per cent (2015: 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 20 per cent (2015: 20.25 per cent).
- (ii) The UK Corporation Tax rate will drop to 19 per cent effective from 1 April 2017 and 18 per cent effective from 1 April 2020 through the enactment of the 2015 Finance Act. The tax rate will be further 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 rates, the Group's net deferred tax liabilities decreased by approximately \$31 million and \$65 million in 2016 and 2015 respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

16. 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:

	2016 \$m	2015 \$m
Profit before taxation	6,799	9,278
Tax calculated at domestic tax rates applicable to profits in the respective countries (note (i))	1,144	1,554
Income not subject to taxation	(107)	(190)
Expenses not deductible for taxation purposes	31	33
Remeasurement of deferred tax assets and liabilities arising from changes in UK Corporation Tax rates	(31)	(65)
Change in deferred tax arising from unrecognised tax losses and other deferred tax adjustments	16	14
Underprovision in respect of prior years	5	1
Taxation charge	1,058	1,347

- (i) The weighted average applicable tax rate was 16.8 per cent (2015: 16.7 per cent).

17. Earnings Per Share

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

- (a) Basic earnings per share

	2016	2015
Profit attributable to shareholders (\$m)	5,769	7,956
Weighted average number of shares in issue less shares held for Share Award Scheme (in '000)	1,212,376	1,186,802
Basic earnings per share (\$)	4.76	6.70

- (b) Diluted earnings per share

	2016	2015
Profit attributable to shareholders (\$m)	5,769	7,956
Interest expense on convertible bonds (net of tax) (\$m)	-	41
Adjusted profit attributable to shareholders (\$m)	5,769	7,997
Weighted average number of shares in issue less shares held for Share Award Scheme (in '000)	1,212,376	1,186,802
Effect of employee share options (in '000)	-	6
Effect of Awarded Shares (in '000)	3,071	2,721
Effect of convertible bonds (in '000)	-	8,841
Weighted average number of shares for the purpose of calculating diluted earnings per share (in '000)	1,215,447	1,198,370
Diluted earnings per share (\$)	4.75	6.67

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

18. 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.

	2016 \$m	2015 \$m
Interim dividend paid:		
\$2.21 (2015: \$3.08) per share	2,690	3,688
Less: Dividend for shares held by Share Award Scheme (note (a))	(7)	(9)
	2,683	3,679
Final dividend proposed (note (b)):		
\$2.04 (2015: \$2.87) per share based on issued share capital at 31 Dec	2,498	3,468
Less: Dividend for shares held by Share Award Scheme at 31 Dec (note (a))	(7)	(9)
	2,491	3,459
	5,174	7,138

- (a) The results and net assets of The HKEx Employees' Share Award Scheme are included in HKEX's financial statements. Therefore, dividends for shares held by The HKEx Employees' Share Award Scheme were deducted from the total dividends.
- (b) The final dividend proposed after 31 December is not recognised as a liability at 31 December.
- (c) The 2016 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.

19. 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 21) or financial assets measured at amortised cost (note 22).

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 equities and collective investment schemes, which have no maturity date, they are included in current assets unless they cannot be disposed of or 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 30);
- Clearing House Funds (note 33);
- Base metals derivatives contracts (note 21);
- Cash prepayments for A shares (note 20); and
- Corporate Funds (note 23).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

20. 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 2016					Total \$m
	Clearing House Funds (notes (b) and 33) \$m	Margin Funds (notes (b) and 30) \$m	Cash prepayments for A shares (notes (a) and (b)) \$m	Corporate Funds (note 23) \$m		
Cash on hand and balances and deposits with banks	4,969	31,142	263	8,079		44,453
Reverse repurchase investments	4,507	65,556	-	1,207		71,270
	9,476	96,698	263	9,286		115,723

	At 31 Dec 2015					Total \$m
	Clearing House Funds (notes (b) and 33) \$m	Margin Funds (notes (b) and 30) \$m	Cash prepayments for A shares (notes (a) and (b)) \$m	Corporate Funds (note 23) \$m		
Cash on hand and balances and deposits with banks	5,067	35,812	129	11,308		52,316
Reverse repurchase investments	3,143	53,995	-	1,436		58,574
	8,210	89,807	129	12,744		110,890

- (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 Clearing House Funds, Margin 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.

21. 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 22). 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.

21. 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.

Dividend income is recognised when the right to receive a dividend is established and included under “others” in net investment income.

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 funds, as determined by the funds’ administrators. 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 forward foreign exchange, futures and options contracts, as well as the outstanding derivatives contracts of LME Clear, which acts as a central counterparty to the base metals futures and options contracts traded on the LME. 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 2016			Total \$m
	Margin Funds (note 30) \$m	Corporate Funds (note 23) \$m	Base metals derivatives contracts (note (a)) \$m	
<u>Mandatorily measured at fair value</u>				
Collective investment schemes:				
- listed outside Hong Kong	-	2,225	-	2,225
- unlisted	-	2,886	-	2,886
	-	5,111	-	5,111
Debt securities:				
- unlisted	3,323	-	-	3,323
Derivative financial instruments:				
- forward foreign exchange contracts (note 47(b))	-	14	-	14
- base metals futures and options contracts cleared through LME Clear	-	-	61,618	61,618
	-	14	61,618	61,632
	3,323	5,125	61,618	70,066
The expected recovery dates of the financial assets are analysed as follows:				
Within twelve months	3,323	5,125	61,618	70,066

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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

	At 31 Dec 2015			Total \$m
	Margin Funds (note 30) \$m	Corporate Funds (note 23) \$m	Base metals derivatives contracts (note (a)) \$m	
<u>Mandatorily measured at fair value</u>				
Equity securities:				
- listed in Hong Kong	-	79	-	79
- listed outside Hong Kong	-	106	-	106
	-	185	-	185
Debt securities:				
- listed in Hong Kong	-	712	-	712
- listed outside Hong Kong	-	1,000	-	1,000
- unlisted	5,844	478	-	6,322
	5,844	2,190	-	8,034
Derivative financial instruments:				
- forward foreign exchange contracts (note 47(b))	-	6	-	6
- base metals futures and options contracts cleared through LME Clear	-	-	64,480	64,480
	-	6	64,480	64,486
	5,844	2,381	64,480	72,705

The expected recovery dates of the financial assets are analysed as follows:

Within twelve months (note (b))	5,844	2,381	64,480	72,705
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- (a) Base metals derivatives contracts represent the fair value of the outstanding base metals futures and options contracts cleared through LME Clear that do not qualify for netting under HKAS 32, where LME Clear is acting in its capacity as a central counterparty to the contracts traded on the LME.
- (b) Balance at 31 December 2015 includes financial assets maturing after twelve months of \$300 million attributable to the Margin Funds that could readily be liquidated to meet liquidity requirements of the Funds (note 47(b)).

22. 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.

Accounts receivable and other deposits are also classified under this category (note 24).

22. 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

22. Financial Assets Measured at Amortised Cost (continued)

	At 31 Dec 2016			
	Clearing House Funds (note 33) \$m	Margin Funds (note 30) \$m	Corporate Funds (note 23) \$m	Total \$m
Debt securities listed outside Hong Kong	-	-	312	312
Time deposits with original maturities over three months	126	25,782	2,873	28,781
Other financial assets	-	-	74	74
	126	25,782	3,259	29,167
The expected recovery dates of the financial assets are analysed as follows:				
Within twelve months	126	25,782	3,185	29,093
More than twelve months	-	-	74	74
	126	25,782	3,259	29,167

	At 31 Dec 2015			
	Clearing House Funds (note 33) \$m	Margin Funds (note 30) \$m	Corporate Funds (note 23) \$m	Total \$m
Time deposits with original maturities over three months	220	18,765	454	19,439
Other financial assets	-	-	57	57
	220	18,765	511	19,496
The expected recovery dates of the financial assets are analysed as follows:				
Within twelve months	220	18,765	454	19,439
More than twelve months	-	-	57	57
	220	18,765	511	19,496

- (a) The fair values of financial assets maturing after twelve months are disclosed in note 47(d)(ii).

23. Corporate Funds

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Corporate Funds comprised the following instruments:		
Cash and cash equivalents (note 20)	9,286	12,744
Financial assets measured at fair value through profit or loss (note 21)	5,125	2,381
Financial assets measured at amortised cost (note 22)	3,259	511
	17,670	15,636

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

24. Accounts Receivable, Prepayments and Deposits

Accounting Policy

Accounts receivables and other deposits are classified as financial assets measured at amortised cost less impairment. The accounting policy for financial assets measured at amortised cost is disclosed in note 22.

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Receivable from ChinaClear, Exchange and Clearing Participants:		
- CNS money obligations receivable (note (a))	10,052	13,529
- transaction levy, stamp duty and fees receivable	469	455
- Settlement Reserve Fund and Settlement Guarantee Fund held by ChinaClear	1,032	794
- others	14	6
Payment in advance for collective investment schemes traded on 1 Jan 2017	600	-
Other receivables, prepayments and deposits	785	778
Less : Provision for impairment losses of receivables (note (b))	(3)	(4)
	12,949	15,558

- (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 31) 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 China Securities Depository and Clearing Corporation Limited (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 31) when they are confirmed on the trade day.

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

	2016 \$m	2015 \$m
At 1 Jan	4	82
Reversal of provision for impairment losses of receivables under other operating expenses	(1)	(76)
Receivables written off during the year as uncollectible	-	(2)
At 31 Dec	3	4

- (c) CNS money obligations receivable mature within two days after the trade date. Fees receivable are due immediately or up to 60 days depending on the type of services rendered. The majority of the remaining accounts receivable, prepayments and deposits were due within three months.

25. 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 (note 21) to be investments in unconsolidated structured entities.

(a) Principal Subsidiaries

HKEX had direct or indirect interests in the following principal subsidiaries at 31 December 2016:

Company	Place of incorporation and operation	Issued and fully paid up share/registered capital	Principal activities	Interest held by the Group
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%
Hong Kong Futures Exchange Limited	Hong Kong	230 ordinary shares (\$28,750,000)	Operates a futures and options exchange	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 Connects and the central securities depository, and provides custody and nominee services for eligible securities listed in Hong Kong and Mainland China	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%

25. 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
Direct principal subsidiaries (continued):				
The SEHK Options Clearing House Limited (SEOCH) (note (iii))	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%
HKFE Clearing Corporation Limited (HKCC) (note (iii))	Hong Kong	1,000,000 ordinary shares (\$1,000,000)	Operates a clearing house for derivatives contracts traded on the Futures Exchange	100%
Indirect principal subsidiaries:				
The London Metal Exchange	United Kingdom	100 ordinary shares of £1 each	Operates an exchange for the trading of base metals futures and options contracts	100%
LME Clear Limited	United Kingdom	107,500,001 ordinary share of £1 each	Operates a clearing house for base metals futures and options contracts	100%
Gangrong Trading Services (Shenzhen) Limited (note (iv))	Mainland China	RMB 250,000,000	Developing a commodity trading platform in the Mainland China	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) Subsidiary with non-controlling interests

At 31 December 2016, the Group held 75 per cent interest of OTC Clear, while the remaining 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. No summarised financial information of OTC Clear is presented as the non-controlling interests are not material to the Group.

(ii) Significant restrictions

Cash and saving 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 2016 was \$218 million (31 December 2015: \$11 million).

(iii) Internal reorganisation of subsidiaries

The Group completed an internal reorganisation of its subsidiaries on 22 January 2016 under which certain indirect subsidiaries including HKCC and SEOCH became direct wholly-owned subsidiaries of HKEX.

(iv) Gangrong Trading Services (Shenzhen) Limited was newly established in Mainland China as a wholly foreign owned enterprise during the year ended 31 December 2016.

25. Principal Subsidiaries and Controlled Structured Entity (continued)

(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 38)

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.

26. Interest in a Joint Venture

Accounting Policy

An interest in a joint venture is 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 2016 \$m	At 31 Dec 2015 \$m
Share of net assets of a joint venture	59	68

(a) Details of the joint venture at 31 December 2016 were as follows:

Name	Place of business and country of incorporation	Principal activities	Issued and fully paid up share capital held	% of ownership interest	Measurement method
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%	Equity

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, a private company, 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.

No summarised financial information of CESC is presented as the joint venture is not material to the Group.

27. 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 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. The customer relationships are carried at cost 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.

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 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 or sell it;
- There is an ability to use or sell 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 or sell 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

27. Goodwill and Other Intangible Assets (continued)

Accounting Policy (continued)

Computer software systems (continued)

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 on a straight-line basis, which do not exceed five years. The residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

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).

	Other Intangible Assets				Total \$m
	Goodwill \$m	Tradenames \$m	Customer relationships \$m	Software systems \$m	
Cost:					
At 1 Jan 2015	13,170	891	3,112	1,450	18,623
Exchange differences	(8)	(1)	(3)	(1)	(13)
Additions	-	-	-	427	427
At 31 Dec 2015	13,162	890	3,109	1,876	19,037
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
Accumulated amortisation:					
At 1 Jan 2015	-	-	269	453	722
Exchange differences	-	-	(1)	(1)	(2)
Amortisation	-	-	129	316	445
At 31 Dec 2015	-	-	397	768	1,165
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
Net book value:					
At 31 Dec 2016	13,167	891	2,584	1,170	17,812
At 31 Dec 2015	13,162	890	2,712	1,108	17,872
Cost of software systems under development:					
At 31 Dec 2016	-	-	-	560	560
At 31 Dec 2015	-	-	-	336	336

Amortisation of \$489 million (2015: \$445 million) is included in "depreciation and amortisation" in the consolidated income statement.

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.

27. Goodwill and Other Intangible Assets (continued)

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 monitored by management at the operating segment level. They are allocated to the 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 2016		At 31 Dec 2015	
	Goodwill \$m	Tradenames \$m	Goodwill \$m	Tradenames \$m
Commodities segment	10,310	698	10,306	697
Clearing segment	2,857	193	2,856	193
	13,167	891	13,162	890

Following the planned expansion of the Group's commodities business in the Mainland, management has determined the development and operations of the new commodities trading platform in Mainland China (China commodities CGU) as a separate CGU. This new CGU and the existing commodities trading platform in the UK (LME commodities CGU) are considered to be within the same Commodities operating segment at which goodwill is monitored for internal management purposes.

The recoverable amounts of each CGU are 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 2016		At 31 Dec 2015	
	Commodities segment	Clearing segment	Commodities segment	Clearing segment
EBITDA margin (average of next five years)	57%	63%	62%	66%
Growth rate	3%	3%	3%	3%
Discount rate	9-11%	9%	9%	9%

For the LME commodities CGU and the Clearing segment, management determined the EBITDA margins based on past performance and its expectations regarding market development and fee adjustments relating to the products. For the China commodities CGU, management determined the EBITDA margin based on its expectations regarding market development and the level of fees relating to services and products expected to be introduced. The growth rates do not exceed the long-term average growth rate for the business in the countries in which each of the CGUs currently operates. The discount rates used are pre-tax and reflect specific risks relating to each CGU.

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 2016 and 31 December 2015. Accordingly, no provision for impairment loss for goodwill or tradenames is considered necessary. 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 2016 (31 December 2015: recoverable amount of commodities segment would be approximately equal to its carrying amount if discount rate rose to 11 per cent).

28. 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 land classified as finance lease	Over the remaining lives of the leases
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 system development 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.

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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

28. Fixed Assets (continued)

	Leasehold land under finance lease \$m	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 2015	70	724	1,362	456	403	697	3,712
Additions	-	-	60	76	3	116	255
Disposals	(70)	(16)	(11)	(20)	-	(19)	(136)
At 31 Dec 2015	-	708	1,411	512	406	794	3,831
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
Accumulated depreciation:							
At 1 Jan 2015	12	80	1,232	326	60	399	2,109
Depreciation	-	28	35	83	26	67	239
Disposals	(12)	(15)	(11)	(20)	-	(19)	(77)
At 31 Dec 2015	-	93	1,256	389	86	447	2,271
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
Net book value:							
At 31 Dec 2016	-	587	161	85	298	368	1,499
At 31 Dec 2015	-	615	155	123	320	347	1,560
Cost of fixed assets in the course of construction:							
At 31 Dec 2016	-	-	71	10	1	72	154
At 31 Dec 2015	-	-	83	8	-	41	132

29. 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 21) 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 2016 \$m	At 31 Dec 2015 \$m
<u>Held by LME Clear in its capacity as a central counterparty</u>		
Derivative financial instruments:		
- base metals futures and options contracts cleared through LME Clear (note (a))	61,618	64,480
<u>Held for trading</u>		
Derivative financial instruments:		
- forward foreign exchange contracts (note 47(b))	9	6
	61,627	64,486

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

30. 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 the 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 Connects. 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants comprised (note 19):		
SEOCH Clearing Participants' margin deposits	5,389	6,773
HKCC Clearing Participants' margin deposits	46,974	45,123
HKSCC Clearing Participants' margin deposits, Mainland security and settlement deposits, and cash collateral	5,484	4,103
OTC Clear Clearing Participants' margin deposits	296	54
LME Clear Clearing Participants' margin deposits	68,703	59,160
	126,846	115,213
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:		
Cash and cash equivalents (note 20)	96,698	89,807
Financial assets measured at fair value through profit or loss (note 21)	3,323	5,844
Financial assets measured at amortised cost (note 22)	25,782	18,765
Settlement Reserve Fund and Settlement Guarantee Fund held by ChinaClear	1,032	794
Margin receivable from Clearing Participants	11	3
	126,846	115,213

31. Accounts Payable, Accruals and Other Liabilities

Accounting Policy

Financial liabilities, other than financial liabilities at fair value through profit or loss (note 29) and financial guarantee contracts (note 32), are initially recognised at fair value and subsequently carried at amortised cost using the effective interest method.

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Payable to ChinaClear, Exchange and Clearing Participants:		
- CNS money obligations payable (note 24(a))	10,315	13,658
- others	174	324
Transaction levy payable to the SFC	79	85
Unclaimed dividends (note (a))	257	230
Stamp duty payable to the Collector of Stamp Revenue	258	172
Payables for collective investment schemes traded before 31 Dec 2016	300	-
Other payables, accruals and deposits received	893	816
	12,276	15,285

31. 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 \$14 million (2015: \$11 million) were forfeited and recognised as sundry income (note 8) and dividends declared by HKEX which were unclaimed over a period of six years from the date of payment amounting to \$22 million (2015: \$18 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.

32. 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 2016 \$m	At 31 Dec 2015 \$m
Financial liabilities of Clearing House Funds (note 33)	17	22
Financial liabilities of Corporate Funds:		
Financial guarantee contract (note (a))	20	20
	37	42

- (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).

33. 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

33. Clearing House Funds (continued)

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
The Clearing House Funds comprised (note 19):		
Clearing Participants' cash contributions	8,656	7,474
Contribution to OTC Clear Rates and FX Guarantee Resources	156	156
Designated reserves (notes (a) and 39)	773	778
	9,585	8,408
The Clearing House Funds were invested in the following instruments for managing the obligations of the Funds:		
Cash and cash equivalents (note 20)	9,476	8,210
Financial assets measured at amortised cost (note 22)	126	220
	9,602	8,430
Less: Other financial liabilities of Clearing House Funds (note 32)	(17)	(22)
	9,585	8,408
The Clearing House Funds comprised the following Funds:		
HKSCC Guarantee Fund	2,219	2,926
SEOCH Reserve Fund	724	542
HKCC Reserve Fund	1,316	1,134
OTC Clear Rates and FX Guarantee Fund	659	505
OTC Clear Rates and FX Guarantee Resources	160	158
LME Clear Default Fund	4,507	3,143
	9,585	8,408

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

34. Borrowings

Accounting Policy

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

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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

34. Borrowings (continued)

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Bank borrowings (note (a))	1,586	1,585
Notes (note (b))	1,519	1,516
Written put options to non-controlling interests (note (c))	317	308
Total borrowings	3,422	3,409

The borrowings were repayable as follows:

	Bank borrowings		Other borrowings	
	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
After two years but within five years	1,586	793	1,836	1,824
After five years	-	792	-	-
	1,586	1,585	1,836	1,824

(a) Bank borrowings

At 31 December 2016, bank borrowings mature within 5 years (31 December 2015: 6 years). During the year, the bank borrowings bore average coupons of 1.7 per cent (2015: 1.4 per cent) per annum, and the average effective interest rate was 1.8 per cent (2015: 1.5 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 (2015: 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, using the effective interest rate method. The charge arising is recorded under finance costs in the consolidated income statement.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

34. Borrowings (continued)

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

	2016 \$m	2015 \$m
At 1 Jan	308	225
Issuance of written put options to non-controlling interests debited against related reserve under equity attributable to shareholders of HKEX (note (i))	-	76
Interest expenses (notes (ii) and 13)	9	7
At 31 Dec	317	308

- (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 non-controlling interests at the date at which the written put options first become exercisable.
- (ii) The effective interest rate of the liabilities was 3.0 per cent (2015: 3.0 per cent) per annum.

35. 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 2016	71	64	135
Exchange differences	(2)	-	(2)
Provision for the year	22	87	109
Amount used during the year	-	(75)	(75)
Amount paid during the year	(1)	(7)	(8)
At 31 Dec 2016	90	69	159

- (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 14 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.

36. 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:

	2016 \$m	2015 \$m
At 1 Jan	739	834
Exchange differences	-	(1)
Credited to the consolidated income statement (note 16(a))	(49)	(93)
Charged/(credited) directly to retained earnings	1	(1)
At 31 Dec (note (d))	691	739

- (b) The Group had unrecognised tax losses of \$764 million at 31 December 2016 (31 December 2015: \$666 million) that may be carried forward for offsetting against future taxable income indefinitely.

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

	Accelerated tax depreciation		Intangible assets		Financial assets		Tax losses		Employee benefits		Total	
	2016 \$m	2015 \$m	2016 \$m	2015 \$m	2016 \$m	2015 \$m	2016 \$m	2015 \$m	2016 \$m	2015 \$m	2016 \$m	2015 \$m
At 1 Jan	168	141	655	747	-	31	(64)	(70)	(20)	(15)	739	834
Exchange differences	-	-	-	(1)	-	-	-	-	-	-	-	(1)
(Credited)/charged to the consolidated income statement	(7)	27	(56)	(91)	2	(31)	12	6	-	(4)	(49)	(93)
Charged/(credited) directly to retained earnings	-	-	-	-	-	-	-	-	1	(1)	1	(1)
At 31 Dec	161	168	599	655	2	-	(52)	(64)	(19)	(20)	691	739

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

36. 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 2016 \$m	At 31 Dec 2015 \$m
Deferred tax assets	(22)	(22)
Deferred tax liabilities	713	761
	691	739

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

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Deferred tax assets		
Amounts to be recovered after more than 12 months	(17)	(14)
Amounts to be recovered within 12 months	(5)	(8)
	(22)	(22)
Deferred tax liabilities		
Amounts to be recovered or settled after more than 12 months	699	745
Amounts to be recovered or settled within 12 months	14	16
	713	761
Net deferred tax liabilities	691	739

37. 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 HKEX Share Award Scheme (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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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

Issued and fully paid – ordinary shares with no par:

	Number of shares '000	Share capital \$m	Shares held for Share Award Scheme \$m	Total \$m
At 1 Jan 2015	1,165,264	12,225	(482)	11,743
Shares issued upon exercise of employee share options	144	3	-	3
Shares issued in lieu of cash dividends (note (a))	15,559	3,180	(15)	3,165
Shares purchased for Share Award Scheme (note (b))	(1,137)	-	(227)	(227)
Vesting of shares of Share Award Scheme (note (c))	853	-	134	134
Conversion of the convertible bonds (note (d))	24,594	3,877	-	3,877
At 31 Dec 2015	1,205,277	19,285	(590)	18,695
At 1 Jan 2016	1,205,277	19,285	(590)	18,695
Shares issued in lieu of cash dividends (note (a))	15,694	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	1,221,105	22,085	(599)	21,486

- (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:

	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
	2015				
	Number of shares	Scrip price \$	Share capital \$m	Shares held for Share Award Scheme \$m	Total \$m
Issued as 2014 final scrip dividends:					
- total	4,532,307	286.64	1,299	-	1,299
- to Share Award Scheme	(21,660)	286.64	-	(6)	(6)
Issued as 2015 interim scrip dividends:					
- total	11,100,157	169.40	1,881	-	1,881
- to Share Award Scheme	(51,576)	169.40	-	(9)	(9)
	15,559,228		3,180	(15)	3,165

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

- (b) During the year, the Share Award Scheme (note 38) acquired 991,700 HKEX shares (2015: 1,137,400 shares) through purchases on the open market. The total amount paid to acquire the shares during the year was \$188 million (2015: \$227 million).
- (c) During the year, a total of 1,125,802 HKEX shares (2015: 852,317 shares) were vested. The total cost of the vested shares was \$195 million (2015: \$134 million). In 2016, \$2 million (2015: \$Nil) was credited to share capital in respect of vesting of certain shares whose fair values were higher than the costs.
- (d) During the year ended 31 December 2015, all of the convertible bonds issued in 2012 were converted into HKEX's shares at the prevailing adjusted conversion price of \$157.62 per share and cancelled upon the exercise of the conversion rights by the bondholders. As a result, a total number of 24,594,225 shares in HKEX were issued and credited as fully paid.

38. Employee Share-based Arrangements

Accounting Policy

The Group operates the Share Award Scheme (the Scheme), which is an equity-settled share-based compensation plan under which share awards are granted under the Share Award Scheme (Awarded Shares) 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:

	2016 \$m	2015 \$m
At 1 Jan	199	142
Employee share-based compensation benefits (note 9)	213	183
Vesting of shares of Share Award Scheme	(186)	(126)
At 31 Dec	226	199

The Scheme allows the Board to make awards as long-term incentives for selected senior executives of the Group (Senior Executive Awards) in addition to any other awards (Employee Share Awards) which they may be eligible to receive under the Scheme.

38. 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 regrating 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 was three years, and the shares would 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 awardees, taking into consideration recommendations of the Board.

Details of Awarded Shares awarded during 2015 and 2016

Date of award	Number of Awarded Shares awarded	Average fair value per share \$	Vesting period
2 Jan 2015	1,386,492 ^{1,2}	171.89	15 Dec 2016 – 15 Dec 2017
18 Nov 2015	17,364	209.67	23 Nov 2015 – 1 May 2016
18 Nov 2015	8,941	209.67	9 Dec 2015 – 9 Dec 2016
18 Nov 2015	10,749	209.67	19 Jan 2017 – 19 Jan 2018
18 Nov 2015	14,658	209.67	1 Mar 2017 – 1 Mar 2018
18 Nov 2015	3,908	209.67	13 Apr 2017 – 13 Apr 2018
18 Nov 2015	4,177	209.67	7 Oct 2017 – 7 Oct 2018
26 Nov 2015	1,900	211.14	23 Nov 2017 – 23 Nov 2018
31 Dec 2015	1,179,457 ^{1,2}	199.07	9 Dec 2017 – 9 Dec 2018
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 88,345, 60,429 and 63,210 shares were awarded to HKEX's Chief Executive on 2 January 2015, 31 December 2015 and 30 December 2016 respectively.

² 98,608, 160,685 and 179,706 shares were awarded by re-grating the forfeited or unallocated shares held by the Scheme on 2 January 2015, 31 December 2015 and 30 December 2016 respectively.

38. Employee Share-based Arrangements (continued)

(a) Employee Share Awards (continued)

Details of Awarded Shares vested during 2015 and 2016 (continued)

During the year, 1,046,334 HKEX shares (2015: 813,851 shares) were vested at an aggregate fair value of \$183 million (2015: \$126 million), of which 68,513 shares (2015: 59,618 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 2015 and 2016

Date of award	Number of Awarded Shares awarded	Average fair value per share \$	Total fair value \$m	Performance period
2 Jan 2015	95,100	128.92	12	2015 – 2017
31 Dec 2015	56,800	149.30	8	2016 – 2018
30 Dec 2016	67,400	142.25	10	2017 – 2019

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

In 2016, 23,021 HKEX shares granted under the Senior Executive Awards were vested at a fair value of \$3 million, and 593 related dividend shares were vested at a cost of \$0.1 million. An additional \$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.

38. Employee Share-based Arrangements (continued)

(c) Summary of Awarded shares awarded and dividend shares

Movements in number of Awarded Shares awarded and dividend shares

	2016 Number of Awarded Shares and dividend shares	2015 Number of Awarded Shares and dividend shares
Outstanding at 1 Jan	3,248,284	1,419,290
Awarded ³	1,171,255	2,779,546
Forfeited	(160,473)	(166,034)
Vested	(1,069,355)	(813,851)
Dividend shares:		
- allocated to awardees	89,211	69,945
- allocated to awardees but subsequently forfeited	(5,266)	(2,146)
- vested	(56,447)	(38,466)
Outstanding at 31 Dec	3,217,209	3,248,284

³ Average fair value per share was \$187.66 (2015: \$182.33)

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

	At 31 Dec 2016		At 31 Dec 2015	
	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				
2013	N/A	-	0.00 year to 0.02 year	9,650
2014	0.00 year to 0.05 year	50,754	0.02 year to 1.05 years	501,778
2015	0.05 year to 2.00 years	1,917,691	0.33 year to 3.00 years	2,686,845
2016	0.09 year to 3.00 years	1,171,255	N/A	-
Dividend shares	0.02 year to 2.56 years	77,509	0.00 year to 2.00 years	50,011
		3,217,209		3,248,284

Dividend shares

During the year, 92,144 HKEX shares (2015: 73,236 shares) were issued to the Scheme in lieu of cash dividends at a total consideration of \$16 million (2015: \$15 million), of which 89,211 shares (2015: 69,945 shares) were subsequently allocated to awardees.

During the year, 56,447 dividend shares (2015: 38,466 shares), including 4,388 shares (2015: 3,334 shares) for HKEX's Chief Executive, at a cost of \$10 million (2015: \$8 million) were vested.

Forfeited or unallocated shares held by the Scheme

At 31 December 2016, 150 forfeited or unallocated shares (31 December 2015: 11,033 shares) were held by the Scheme and would be regranted to eligible employees in future.

Vested shares held by the Scheme

At 31 December 2016, 2,750 shares (31 December 2015: 2,466 shares) were vested but had not yet been transferred to the awardees.

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39. Designated Reserves

Clearing House Funds reserves (note 33(a))

	HKSCC Guarantee Fund reserve \$m	SEOC 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 2015	184	103	353	2	1	643
(Deficit)/surplus of net investment income net of expenses of Clearing House Funds	(4)	1	(2)	1	1	(3)
Post-liquidation interest arising from a Participant's default on market contracts (note 5(c)(ii))	38	-	-	-	-	38
Surplus of reversal of provision for closing-out losses by a defaulting Clearing Participant (note 11(a))	100	-	-	-	-	100
Transfer from/(to) retained earnings (note 40)	134	1	(2)	1	1	135
At 31 Dec 2015	318	104	351	3	2	778
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

40. Retained Earnings

	2016 \$m	2015 \$m
At 1 Jan	10,691	8,800
Profit attributable to shareholders	5,769	7,956
Transfer from/(to) Clearing House Funds reserves (note 39)	5	(135)
Dividends:		
2015/2014 final dividend	(3,459)	(2,533)
2016/2015 interim dividend	(2,683)	(3,679)
Unclaimed HKEX dividends forfeited (note 31(a))	22	18
Vesting of shares of Share Award Scheme	(11)	(8)
Tax credit relating to Share Award Scheme	-	3
Transfer from convertible bond reserve upon conversion of convertible bonds	-	266
Changes in ownership interests in a subsidiary	-	3
At 31 Dec	10,334	10,691

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

41. Notes to the Consolidated Statement of Cash Flows

Reconciliation of profit before taxation to net cash inflow from principal operating activities:

	2016 \$m	2015 \$m
Profit before taxation	6,799	9,278
Adjustments for:		
Net interest income	(614)	(662)
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	(98)	(49)
Finance costs	82	114
Depreciation and amortisation	771	684
Employee share-based compensation benefits	213	183
Gain on disposal of a leasehold property and other fixed assets	-	(453)
Reversal of provision for impairment losses of receivables	(1)	(76)
Other non-cash adjustments	(6)	-
Net (increase)/decrease in financial assets of Margin Funds	(11,636)	14,268
Net increase/(decrease) in financial liabilities of Margin Funds	11,633	(14,271)
Net (increase)/decrease in Clearing House Fund financial assets	(1,172)	1,859
Net increase/(decrease) in Clearing House Fund financial liabilities	1,177	(1,994)
(Increase)/decrease in cash prepayments for A shares	(134)	490
Net (increase)/decrease in financial assets measured at fair value through profit or loss less financial liabilities at fair value through profit or loss	(380)	133
Decrease in accounts receivable, prepayments and deposits	3,432	7,226
Decrease in other current liabilities	(3,241)	(7,404)
Net cash inflow from principal operations	6,825	9,326
Dividends received	7	5
Interest received from bank deposits	744	686
Interest received from financial assets measured at fair value through profit or loss	120	55
Interest paid to Participants	(130)	(24)
Income tax paid	(1,402)	(1,127)
Net cash inflow from principal operating activities	6,164	8,921

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

42. Commitments

(a) Commitments in respect of capital expenditures:

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Contracted but not provided for:		
- fixed assets	66	4
- intangible assets	57	43
Authorised but not contracted for:		
- fixed assets	273	264
- intangible assets	585	650
	981	961

(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 2016 \$m	At 31 Dec 2015 \$m
Land and buildings		
- within one year	230	186
- in the second to fifth years	490	438
- after the fifth year	155	213
	875	837
Computer systems, software and equipment		
- within one year	18	16
- in the second to fifth years	54	23
	72	39
	947	876

At 31 December 2016 and 31 December 2015, 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 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 from 2015 to 2019. The first two contributions for 2015 and 2016 were \$7 million per annum, while the contributions during 2017 to 2019 will be \$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 2016, 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 Securities Ordinance up to an amount not exceeding \$71 million (31 December 2015: \$71 million). Up to 31 December 2016, 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 32(a)). In the unlikely event that all of its 556 trading Participants (31 December 2015: 515) covered by the indemnity at 31 December 2016 defaulted, the maximum contingent liability of the Group under the indemnity would amount to \$111 million (31 December 2015: \$103 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.
- (d) Litigation in United States (US)

All claims against the LME and HKEX defendants that existed in US litigation related to LME aluminium warehousing and that were disclosed in prior periods have now been concluded. Plaintiffs in the aluminium warehousing litigation are not appealing the United States District Court's dismissal of those claims.

44. Connected Transactions and Material Related Party Transactions

(a) Connected transactions and material related party transactions

Certain Directors of HKEX may be directors and/or shareholders of (i) Stock Exchange Participants and Futures Exchange Participants (Exchange Participants) and Clearing Participants of HKSCC, HKCC and SEOCH (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.

(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

	2016 \$m	2015 \$m
Salaries and other short-term employee benefits	157	184
Employee share-based compensation benefits	76	68
Retirement benefit costs	8	9
	241	261

(ii) Post-retirement benefit plans

The Group has sponsored an ORSO Plan, a MPF Scheme and the LME Pension Scheme as its post-retirement benefit plans (note 9(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.

45. Pledges of Assets

LME Clear receives securities and gold bullion as collateral for margins posted by its Clearing Participants. The total fair value of this collateral was US\$1,781 million (HK\$13,808 million) at 31 December 2016 (31 December 2015: US\$2,015 million (HK\$15,617 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\$9,418 million (HK\$73,022 million) at 31 December 2016 (31 December 2015: US\$7,911 million (HK\$61,311 million)).

45. Pledges of Assets (continued)

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 2016. Such non-cash collateral, together with certain financial assets amounting to US\$430 million (HK\$3,334 million) at 31 December 2016 (31 December 2015: US\$639 million (HK\$4,953 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.

46. 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 2016 are summarised as follows:

<u>Subsidiaries</u>	<u>Regulatory authority</u>	<u>Regulatory capital requirements</u>
Stock Exchange, Futures Exchange	SFC, Hong Kong	Maintain at all times net current assets funded by equity sufficient to cover its projected total operating expenses for at least the following six months (approximately \$1,176 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 \$2,352 million).

46. Capital Management (continued)

<u>Subsidiaries</u>	<u>Regulatory authority</u>	<u>Regulatory capital requirements</u>
HKSCC, HKCC, SEOCH, OTC Clear	SFC, Hong Kong	Maintain at all times net current assets funded by equity sufficient to cover its projected total operating expenses for at least the following six months (approximately \$527 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 \$1,053 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\$57.4 million (HK\$445 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\$74.2 million (HK\$575 million), plus 10 per cent minimum reporting threshold of US\$7.4 million (HK\$57 million) and US\$18.6 million (HK\$144 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 2016, the Group had set aside \$4,000 million (31 December 2015: \$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.

All regulated entities of the Group had adequate capital to meet their regulatory requirements at 31 December 2016 and 31 December 2015.

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.

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46. Capital Management (continued)

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Total borrowings	3,422	3,409
Less: cash and cash equivalents of Corporate Funds (note 20)	(9,286)	(12,744)
Net debt (note (a))	-	-
Equity attributable to shareholders of HKEX	32,266	29,816
Less: designated reserves	(773)	(778)
Adjusted capital	31,493	29,038
Gross gearing ratio	11%	12%
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.

47. 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

Nature of risk

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).

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). Investments are diversified to minimise risks and no investments are made for speculative purposes. In addition, 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.

An 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 funds.

47. Financial Risk Management (continued)

(a) Market risk (continued)

Risk management (continued)

In 2016, the Board approved new External Investment Guidelines (the Investment Policy, Restrictions and Guidelines for externally-managed Corporate Funds) to optimise risk return positioning whilst maintaining the moderate risk appetite of the Group. The External Investment Guidelines include a new asset allocation policy for externally-managed Corporate Funds (External Portfolio) which aims to preserve and enhance its return 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 investment managers. Under the new guidelines, the External Portfolio comprises collective investment schemes managed by selected fund managers based on their performance track records and areas of expertise, and each should be financially strong and have a worldwide aggregate fund size of a minimum of US\$5 billion under management. Specific risk management limits are set for the External Portfolio (eg, permissible asset type, asset allocation, liquidity, foreign exchange exposure). The performance of these external funds is monitored on a monthly basis and reviewed by the Investment Advisory Committee on a quarterly basis.

(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 entities is HKD and the functional currency of LME entities is United States Dollar (USD). Foreign exchange risks mainly arise from the Group's investment and bank deposits in currencies other than HKD and USD and its Pound sterling (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 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 new External Investment Guidelines, up to 50 per cent (20 per cent before adoption of the new Guidelines) of the External Portfolio may be invested in non-HKD or non-USD investments or investment 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 Renminbi (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 Connects).

47. Financial Risk Management (continued)

(a) Market risk (continued)

(i) Foreign exchange risk (continued)

Risk management (continued)

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

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

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 (economic hedges)), at 31 December presented in HKD equivalents.

	Foreign currency	At 31 Dec 2016			At 31 Dec 2015		
		Gross open position \$m	Economic hedges \$m	Net open position \$m	Gross open position \$m	Economic hedges \$m	Net open position \$m
Financial assets ¹	EUR	5,161	(5,158)	3	5,004	(4,981)	23
	GBP	7,926	(7,490)	436	803	(360)	443
	JPY	1,058	(1,057)	1	2,790	(2,774)	16
	RMB	5,470	(5,453)	17	3,220	(3,168)	52
	USD	3,401	(2,102)	1,299	4,361	(403)	3,958
	Others	-	-	-	255	(161)	94
Financial liabilities ²	EUR	(5,158)	5,158	-	(4,967)	4,967	-
	GBP	(7,668)	7,490	(178)	(759)	316	(443)
	JPY	(1,057)	1,057	-	(2,774)	2,774	-
	RMB	(5,456)	5,453	(3)	(3,124)	3,118	(6)
	USD	(5,555)	2,107	(3,448)	(3,317)	150	(3,167)
Total net open positions for the Group	EUR			3			23
	GBP			258			-
	JPY			1			16
	RMB			14			46
	USD			2,149			791
	Others			-			94
				2,425			970

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.

47. Financial Risk Management (continued)

(a) Market risk (continued)

(ii) Equity and commodity price risk

Nature of risk

The Group is exposed to equity price risk as collective investment schemes and equity securities are held as part of the External Portfolio in Hong Kong. The Group is not exposed to commodity price risk as investment in commodities is not permitted under the Group's Investment Guidelines. The movements of fair value of base metals futures and options contracts held by 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.

Risk management

Equity price risk is capped by an asset allocation limit. The Group sets prudent investment limits and restrictions to control investment in equity securities and collective investment schemes. The Group selects external fund managers after an extensive assessment of the underlying funds, its 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 highest and lowest contractual interest rates of the financial assets held by the Group (excluding bank deposits held at savings and current accounts and zero coupon bonds purchased at discounts) at 31 December:

	Fixed rate financial assets		Floating rate financial assets	
	At 31 Dec 2016	At 31 Dec 2015	At 31 Dec 2016	At 31 Dec 2015
Highest contractual interest rates	10.50%	6.88%	1.99%	3.75%
Lowest contractual interest rates ¹	0.00%	0.00%	- 7.25%	- 3.00%

¹ The contractual interest rates for certain reverse repurchase investments held by LME Clear were below 0 per cent.

The contractual interest rates of the borrowings are disclosed in note 34 to the consolidated financial statements.

47. 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, equity price 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 risk 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 economic hedges of the Group at 31 December were as follows:

	At 31 Dec 2016 \$m	At 31 Dec 2015 \$m
Foreign exchange risk	16	13
Equity price risk	-	7
Interest rate risk	11	6
Total VaR	21	16

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.

47. Financial Risk Management (continued)

(a) Market risk (continued)

(iv) Sensitivity analysis (continued)

Collective investment schemes

At 31 December 2016, the fair value of the Group's collective investment schemes (Funds) by strategy employed was as follows:

Strategy	At 31 Dec 2016 \$m
Low Volatility Equities	1,798
Credit	602
Absolute Return	904
Multi-Asset Fixed Income	601
US Government Bonds and mortgage-backed securities	1,206
Total	5,111

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' return and volatility. The simplified 1-year VaR helps to determine the potential change in the market value of the Funds over a 1-year period. At 31 December 2016, the simplified 1-year VaR calculated at a 95 per cent confidence level was 3.8 per cent, implying that the market value for the Group's Funds during the year ended 31 December 2016 could potentially change by approximately \$193 million. At 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 Fund, from the period January 2015 to December 2016, and their corresponding portfolio weights, assuming monthly rebalancing to the intended portfolio weights of the respective Fund;
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 Fund's 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.

47. 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.

Surplus cash of the Group in Hong Kong is invested by the Treasury team, and the investments are kept sufficiently liquid to meet the operating needs, regulatory capital requirements of the regulated entities in Hong Kong, and possible liquidity requirements of the Clearing House Funds and Margin Funds. The Group also sets a limit on the minimum level of cash or bank deposits held for the Corporate Funds, and the minimum level of investments to be held that would mature the same day for the Clearing House Funds and Margin Funds.

The LME Group also employs prudent liquidity risk management which involves maintaining sufficient cash to meet ongoing operational commitments and its adherence to the regulatory requirements of the two regulated entities. As a recognised clearing house, LME Clear has to comply with stringent liquidity requirements set by the European Market Infrastructure Regulation. Surplus cash is invested in high quality short-term investments and such investments are kept sufficiently liquid to meet operating needs and possible liquidity requirements of the LME Clear's Margin Fund and Default Fund.

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 2016, the Group's total available banking facilities for its daily operations amounted to \$18,947 million (31 December 2015: \$17,012 million), which included \$11,938 million (31 December 2015: \$10,000 million) of committed banking facilities and \$7,000 million (31 December 2015: \$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 2016, the total amount of such facilities was RMB21,500 million (HK\$23,927 million) (31 December 2015: RMB17,000 million (HK\$20,057 million)).

In addition, the Group has arranged contingency banking facilities amounting to RMB13,000 million (HK\$14,468 million) (31 December 2015: RMB13,000 million (HK\$15,338 million)) for settling payment obligations to ChinaClear should there be events that disrupt normal settlement arrangements for Stock Connects.

47. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure

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 of 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 2016				Total \$m
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	
Cash and cash equivalents	115,723	-	-	-	115,723
Financial assets measured at fair value through profit or loss ²	8,448	-	-	-	8,448
Financial assets measured at amortised cost	29,093	-	-	74	29,167
Accounts receivable and deposits ³	12,814	35	7	-	12,856
	166,078	35	7	74	166,194

	At 31 Dec 2015				Total \$m
	Up to 1 month ¹ \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	
Cash and cash equivalents	110,890	-	-	-	110,890
Financial assets measured at fair value through profit or loss ²	8,225	-	-	-	8,225
Financial assets measured at amortised cost	19,439	-	1	56	19,496
Accounts receivable and deposits ³	15,402	33	3	-	15,438
	153,956	33	4	56	154,049

¹ Amounts at 31 December 2015 included \$300 million of financial assets with contractual maturity over one year. They could readily be liquidated whenever liquid funds are required.

² Amounts excluded fair value of base metals futures and options contracts of \$61,618 million (31 December 2015: \$64,480 million), which cannot be realised to meet cash outflows.

³ Amounts excluded prepayments of \$93 million (31 December 2015: \$120 million).

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47. Financial Risk Management (continued)

(b) Liquidity risk (continued)

Exposure (continued)

The table below analyses the Group's financial liabilities (excluding forward foreign exchange contracts and outstanding base metals futures and options contracts cleared through LME Clear) 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 2016					Total \$m
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	>5 years \$m	
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	126,846	-	-	-	-	126,846
Accounts payable, accruals and other liabilities ⁴	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

	At 31 Dec 2015					Total \$m
	Up to 1 month \$m	>1 month to 3 months \$m	>3 months to 1 year \$m	>1 year to 5 years \$m	>5 years \$m	
Margin deposits, Mainland security and settlement deposits, and cash collateral from Clearing Participants	115,213	-	-	-	-	115,213
Accounts payable, accruals and other liabilities ⁴	15,153	12	104	-	-	15,269
Other financial liabilities:						
Other financial liabilities of Clearing House Funds	22	-	-	-	-	22
Other financial liabilities of Corporate Funds:						
Financial guarantee contract (maximum amount guaranteed) (note 43(b))	103	-	-	-	-	103
Participants' contributions to Clearing House Funds	6,648	780	46	-	-	7,474
Borrowings:						
Bank borrowings	2	4	16	877	800	1,699
Notes	11	-	31	1,606	-	1,648
Written put options to non-controlling interests	-	-	-	340	-	340
Total	137,152	796	197	2,823	800	141,768

⁴ Amounts excluded non-financial liabilities of \$30 million (31 December 2015: \$16 million).

47. 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 2016			At 31 Dec 2015		
	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	1,382	879	2,261
- inflows	1,328	201	1,529	1,384	877	2,261

The Group is not exposed to liquidity risk on the outstanding base metals futures and options contracts cleared through LME Clear.

(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.

47. 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 external fund managers) and by diversification. At 31 December 2016, the investment in debt securities held by the Hong Kong entities were of investment grade and had a weighted average credit rating of A1 (Moody) (31 December 2015: A1 (Moody)). External fund managers are financially strong and stable and each has a minimum worldwide aggregate fund size of US\$5 billion under management. Deposits in Hong Kong are placed only with the note-issuing banks in Hong Kong, investment grade licensed banks and restricted licence banks approved by the Board. All investments are subject to a maximum concentration limit approved by the Board and except certain Hong Kong note-issuing banks there was no significant concentration risk to a single counterparty. The investment in debt securities held by the LME Group were of investment grade, and the cash, deposit and cash equivalents balances of the LME Group are held only with investment grade licensed banks. The LME Group's only significant concentration risk is with the banks. Certain cash equivalents are invested in reverse repurchase investments where collateral is held against the default of such investments. 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 2016, HKSCC has 542 Clearing Participants (31 December 2015: 502) and the total amounts of Margin Credit and Dynamic Contribution Credit granted to Clearing Participants amounted to \$865 million (31 December 2015: \$722 million).

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

47. 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 2016		At 31 Dec 2015	
	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)	111	(20)	103

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 2016		At 31 Dec 2015	
	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	12,856	3,536	15,438	5,023
Fair value of base metals futures and options contracts cleared through LME Clear	61,618	61,618	64,480	64,480
Reverse repurchase investments	71,270	71,270	58,574	58,574

Financial assets that were not impaired

At 31 December 2016, accounts receivable and deposits of \$12,415 million (31 December 2015: \$15,082 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 2016, 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 2016 \$m	At 31 Dec 2015 \$m
Up to six months	441	356

47. Financial Risk Management (continued)

(c) Credit risk (continued)

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

At 31 December 2016, receivables of the Group amounting to \$3 million (31 December 2015: \$4 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 22.

(d) Fair values of financial assets and financial liabilities

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

At 31 December 2016 and 31 December 2015, 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 at 31 December according to the levels of the fair value hierarchy defined in HKFRS 13, 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.

47. 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 2016			At 31 Dec 2015		
	Level 1 \$m	Level 2 \$m	Total \$m	Level 1 \$m	Level 2 \$m	Total \$m
Financial assets						
Financial assets measured at fair value through profit or loss:						
- collective investment schemes	2,225	2,886	5,111	-	-	-
- equity securities	-	-	-	185	-	185
- debt securities	3,022	301	3,323	4,953	3,081	8,034
- forward foreign exchange contracts	-	14	14	-	6	6
- base metals futures and options contracts cleared through LME Clear	-	61,618	61,618	-	64,480	64,480
	5,247	64,819	70,066	5,138	67,567	72,705
Financial liabilities						
Financial liabilities at fair value through profit or loss:						
- forward foreign exchange contracts	-	9	9	-	6	6
- base metals futures and options contracts cleared through LME Clear	-	61,618	61,618	-	64,480	64,480
	-	61,627	61,627	-	64,486	64,486

During 2016 and 2015, there were no transfers of instruments between Level 1 and Level 2.

Level 2 fair values of debt securities, forward foreign exchange contracts, base 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 scheme.

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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

47. 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 2016		At 31 Dec 2015	
	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	74	66	57	53
Liabilities				
Borrowings:				
- notes ²	1,519	1,542	1,516	1,544
- written put options to non-controlling interests ²	317	320	308	316
Financial guarantee to the Collector of Stamp Revenue ³	20	76	20	85

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 2.62 per cent to 3.72 per cent at 31 December 2016 (31 December 2015: 0.80 per cent to 2.32 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 2.09 per cent to 2.95 per cent at 31 December 2016 (31 December 2015: 2.20 per cent to 2.40 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 1.83 per cent at 31 December 2016 (31 December 2015: 1.52 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 metals derivatives 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

47. 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

Type of financial instruments	At 31 Dec 2016					
	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 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 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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

47. 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)

Type of financial instruments	At 31 Dec 2015					
	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	128,003	(114,474)	13,529	(3,057)	(3,511)	6,961
Base metals futures and options contracts cleared through LME Clear ²	1,342,331	(1,277,851)	64,480	(30,624)	(33,856)	-
Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	1,068	-	1,068	-	(91)	977
Total	1,471,402	(1,392,325)	79,077	(33,681)	(37,458)	7,938
Financial liabilities:						
CNS money obligations payable ¹	128,132	(114,474)	13,658	(3,057)	-	10,601
Base metals futures and options contracts cleared through LME Clear ²	1,342,331	(1,277,851)	64,480	(30,624)	-	33,856
Total	1,470,463	(1,392,325)	78,138	(33,681)	-	44,457

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 securities 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 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.

(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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

47. Financial Risk Management (continued)

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

(ii) (continued)

	Accounts receivables, prepayments and deposits		Financial assets measured at fair value through profit or loss	
	At	At	At	At
	31 Dec 2016 \$m	31 Dec 2015 \$m	31 Dec 2016 \$m	31 Dec 2015 \$m
Net amount of financial assets after offsetting as stated above:				
- CNS money obligations receivable	10,052	13,529	-	-
- Other accounts receivable from Participants, ChinaClear, information vendors and hosting services customers, net of provision for impairment losses	1,353	1,068	-	-
- Base metals futures and options contracts cleared through LME Clear	-	-	61,618	64,480
Financial assets not in scope of offsetting disclosures	1,451	841	8,448	8,225
Prepayments	93	120	-	-
Amounts presented in the consolidated statement of financial position	12,949	15,558	70,066	72,705

	Accounts payable, accruals and other liabilities		Financial liabilities at fair value through profit or loss	
	At	At	At	At
	31 Dec 2016 \$m	31 Dec 2015 \$m	31 Dec 2016 \$m	31 Dec 2015 \$m
Net amount of financial liabilities after offsetting as stated above:				
- CNS money obligations payable	10,315	13,658	-	-
- Base metals futures and options contracts cleared through LME Clear	-	-	61,618	64,480
Financial liabilities not in scope of offsetting disclosures	1,931	1,611	9	6
Non-financial liabilities	30	16	-	-
Amounts presented in the consolidated statement of financial position	12,276	15,285	61,627	64,486

Except for financial assets measured at fair value through profit or loss and financial liabilities at fair value through profit or loss which are measured at fair value, the remaining gross amounts of financial assets and financial liabilities and their net amounts as presented in the consolidated statement of financial position that are disclosed in the above tables are measured at amortised cost. The amounts in the above tables that are offset in the consolidated statement of financial position are measured on the same basis.

48. 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, if any. 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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

Statement of Financial Position of HKEX

	At 31 Dec 2016			At 31 Dec 2015		
	Current \$m	Non-current \$m	Total \$m	Current \$m	Non-current \$m	Total \$m
ASSETS						
Cash and cash equivalents	4,357	-	4,357	5,245	-	5,245
Financial assets measured at fair value through profit or loss	5,125	-	5,125	2,375	-	2,375
Financial assets measured at amortised cost	980	1	981	-	1	1
Accounts receivable, prepayments and deposits	633	21	654	42	21	63
Amounts due from subsidiaries	2,097	16,708	18,805	2,119	16,584	18,703
Interest in a joint venture	-	100	100	-	100	100
Intangible assets	-	109	109	-	95	95
Fixed assets	-	193	193	-	216	216
Investments in subsidiaries	-	7,349	7,349	-	5,648	5,648
Total assets	13,192	24,481	37,673	9,781	22,665	32,446
LIABILITIES AND EQUITY						
Liabilities						
Financial liabilities at fair value through profit or loss	230	-	230	223	-	223
Accounts payable, accruals and other liabilities	668	-	668	359	-	359
Amounts due to subsidiaries	1,882	-	1,882	275	-	275
Taxation payable	41	-	41	27	-	27
Other financial liabilities	11	-	11	11	-	11
Borrowings	-	3,105	3,105	-	3,101	3,101
Provisions	66	1	67	59	2	61
Deferred tax liabilities	-	14	14	-	18	18
Total liabilities	2,898	3,120	6,018	954	3,121	4,075
Equity						
Share capital			22,085			19,285
Shares held for Share Award Scheme			(599)			(590)
Employee share-based compensation reserve			226			199
Merger reserve			694			694
Retained earnings			9,249			8,783
Equity attributable to shareholders of HKEX			31,655			28,371
Total liabilities and equity			37,673			32,446
Net current assets			10,294			8,827

Approved by the Board of Directors on 27 February 2017

CHOW Chung Kong
Director

LI Xiaojia, Charles
Director

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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

(a) Reserve movement of HKEX

	Employee share-based compensation reserve \$m	Convertible bond reserve \$m	Merger reserve \$m	Retained earnings \$m
At 1 Jan 2015	142	409	694	8,452
Profit attributable to shareholders	-	-	-	10,001
2014 final dividend at \$2.15 per share	-	-	-	(2,533)
2015 interim dividend at \$3.08 per share	-	-	-	(3,679)
Unclaimed HKEX dividends forfeited	-	-	-	18
Vesting of shares of Share Award Scheme	(126)	-	-	(8)
Employee share-based compensation benefits	183	-	-	-
Conversion of convertible bonds	-	(409)	-	(3,468)
At 31 Dec 2015	199	-	694	8,783
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