2015 financial statements

Contents

Group income statement

Years ended 31 December

	Note	**2015 US$m**	2014 US$m	2013 US$m
Consolidated operations				
Consolidated sales revenue	2,3	**34,829**	47,664	51,171
Net operating costs (excluding items shown separately)	4	**(27,919)**	(33,910)	(36,104)
Impairment charges net of reversals	6	**(2,791)**	(1,062)	(7,315)
Net gains/(losses) on consolidation and disposal of interests in businesses	2,37	**64**	(563)	787
Exploration and evaluation costs	13	**(576)**	(747)	(948)
Profit/(loss) relating to interests in undeveloped projects	13	**8**	(36)	(161)
Operating profit		**3,615**	11,346	7,430
Share of profit after tax of equity accounted units	7	**361**	625	698
Impairment charges net of reversals of investments in equity accounted units after tax	6	**–**	589	(216)
Profit before finance items and taxation		**3,976**	12,560	7,912
Finance items				
Net exchange losses on external debt and intragroup balances	24	**(3,538)**	(1,995)	(3,672)
Net (losses)/gains on derivatives not qualifying for hedge accounting		**(88)**	(46)	59
Finance income	8	**52**	64	82
Finance costs	8	**(750)**	(649)	(507)
Amortisation of discount		**(378)**	(382)	(369)
		(4,702)	(3,008)	(4,407)
(Loss)/profit before taxation		**(726)**	9,552	3,505
Taxation	9	**(993)**	(3,053)	(2,426)
(Loss)/profit after tax for the year		**(1,719)**	6,499	1,079
– attributable to owners of Rio Tinto (net (loss)/earnings)		**(866)**	6,527	3,665
– attributable to non-controlling interests		**(853)**	(28)	(2,586)
Basic (loss)/earnings per share	10	**(47.5c)**	353.1c	198.4c
Diluted (loss)/earnings per share	10	**(47.5c)**	351.2c	197.3c

The notes on pages 113 to 189 are an integral part of these consolidated financial statements.

Group statement of comprehensive income

Years ended 31 December

	Note	2015 US$m	2014 US$m	2013 US$m
(Loss)/profit after tax for the year		**(1,719)**	6,499	1,079
Other comprehensive income/(loss):				
Items that will not be reclassified to profit or loss:				
Actuarial gains/(losses) on post-retirement benefit plans	45	**619**	(735)	2,260
Share of other comprehensive losses of equity accounted units, net of tax		**–**	–	(1)
Tax relating to these components of other comprehensive income	9	**(175)**	215	(641)
		444	(520)	1,618
Items that have been/may be subsequently reclassified to profit or loss:				
Currency translation adjustment [(a)]		**(2,395)**	(2,004)	(2,657)
Currency translation on companies disposed of, transferred to the income statement		**(2)**	53	81
Fair value movements:				
– Cash flow hedge (losses)/gains		**(41)**	(48)	195
– Cash flow hedge losses/(gains) transferred to the income statement		**32**	55	(92)
– Losses on revaluation of available for sale securities		**(19)**	(36)	(101)
– Losses on revaluation of available for sale securities transferred to the income statement		**11**	6	146
Share of other comprehensive losses of equity accounted units, net of tax		**(57)**	(44)	(44)
Tax relating to these components of other comprehensive income	9	**(3)**	(9)	(56)
Other comprehensive loss for the year, net of tax		**(2,030)**	(2,547)	(910)
Total comprehensive (loss)/income for the year		**(3,749)**	3,952	169
– attributable to owners of Rio Tinto		**(2,443)**	4,322	3,261
– attributable to non-controlling interests		**(1,306)**	(370)	(3,092)

(a) Excludes a currency translation charge of US$503 million (2014: US$376 million; 2013: US$804 million) arising on Rio Tinto Limited's share capital for the year ended 31 December 2015, which is recognised in the Group statement of changes in equity. Refer to Group statement of changes in equity on page 111.

The notes on pages 113 to 189 are an integral part of these consolidated financial statements.

Group cash flow statement

Years ended 31 December

	Note	2015 US$m	2014 US$m	2013 US$m
Cash flows from consolidated operations [(a)]		**12,102**	18,896	19,531
Dividends from equity accounted units		**210**	298	600
Cash flows from operations		**12,312**	19,194	20,131
Net interest paid		**(827)**	(981)	(1,164)
Dividends paid to holders of non-controlling interests in subsidiaries		**(310)**	(309)	(191)
Tax paid		**(1,792)**	(3,618)	(3,698)
Net cash generated from operating activities		**9,383**	14,286	15,078
Cash flows from investing activities				
Acquisitions of subsidiaries, joint ventures and associates	37	**(3)**	–	4
Disposals of subsidiaries, joint ventures and associates	37	**(38)**	887	1,896
Purchases of property, plant and equipment and intangible assets	2	**(4,685)**	(8,162)	(13,001)
Sales of financial assets		**65**	172	224
Purchases of financial assets		**(49)**	(24)	(75)
Net funding of equity accounted units		**11**	(117)	(88)
Other investing cash flows [(b)]		**99**	741	94
Net cash used in investing activities		**(4,600)**	(6,503)	(10,946)
Cash flows before financing activities		**4,783**	7,783	4,132
Cash flows from financing activities				
Equity dividends paid to owners of Rio Tinto	11	**(4,076)**	(3,710)	(3,322)
Proceeds from additional borrowings		**1,837**	442	3,954
Repayment of borrowings		**(3,518)**	(3,476)	(1,832)
Proceeds from issue of equity to non-controlling interests		**103**	1,291	159
Own shares purchased from owners of Rio Tinto		**(2,028)**	–	–
Other financing cash flows		**12**	17	107
Net cash flows used in financing activities		**(7,670)**	(5,436)	(934)
Effects of exchange rates on cash and cash equivalents		**(159)**	(156)	(261)
Net (decrease)/increase in cash and cash equivalents		**(3,046)**	2,191	2,937
Opening cash and cash equivalents less overdrafts		**12,400**	10,209	7,272
Closing cash and cash equivalents less overdrafts	21	**9,354**	12,400	10,209
(a) Cash flows from consolidated operations				
(Loss)/profit after tax for the year		**(1,719)**	6,499	1,079
Adjustments for:				
– Taxation		**993**	3,053	2,426
– Finance items		**4,702**	3,008	4,407
– Share of profit after tax of equity accounted units		**(361)**	(625)	(698)
– Impairment charges net of reversals of investments in equity accounted units after tax		**–**	(589)	216
– Net (gains)/losses on disposal and consolidation of interests in businesses	37	**(64)**	563	(787)
– Impairment charges net of reversals	6	**2,791**	1,062	7,315
– Depreciation and amortisation		**4,645**	4,860	4,791
– Provisions (including exchange differences on provisions)	26	**726**	712	1,449
Utilisation of provisions	26	**(585)**	(973)	(871)
Utilisation of provision for post-retirement benefits	26	**(230)**	(296)	(635)
Change in inventories		**526**	937	(330)
Change in trade and other receivables		**1,404**	962	84
Change in trade and other payables		**(431)**	(380)	803
Other items [(c)]		**(295)**	103	282
		12,102	18,896	19,531

(b) Other investing cash flows in 2015 mainly relate to the disposal of property, plant and equipment across the Group. In 2014, this included the disposal of the Group's St James's Square properties.

(c) Includes a cash outflow in 2015 of US$227 million (2014: inflow of US$66 million; 2013: outflow of US$267 million) mainly relating to derivative contracts transacted for operational purposes and not designated in a hedge relationship.

The notes on pages 113 to 189 are an integral part of these consolidated financial statements.

Group balance sheet

At 31 December

	Note	2015 US$m	2014 US$m
Non-current assets			
Goodwill	12	**892**	1,228
Intangible assets	13	**3,336**	5,880
Property, plant and equipment	14	**61,057**	68,693
Investments in equity accounted units	15	**4,941**	4,868
Inventories	16	**253**	397
Deferred tax assets	17	**3,309**	3,540
Trade and other receivables	18	**1,356**	1,304
Tax recoverable		**78**	70
Other financial assets (including loans to equity accounted units)	20	**788**	722
		76,010	86,702
Current assets			
Inventories	16	**3,168**	4,350
Trade and other receivables	18	**2,386**	3,623
Tax recoverable		**118**	146
Other financial assets (including loans to equity accounted units)	20	**223**	271
Cash and cash equivalents	21	**9,366**	12,423
		15,261	20,813
Assets of disposal groups held for sale	19	**293**	312
Total assets		**91,564**	107,827
Current liabilities			
Borrowings and other financial liabilities	22	**(2,484)**	(2,684)
Trade and other payables	25	**(6,237)**	(7,437)
Tax payable		**(135)**	(800)
Provisions including post-retirement benefits	26	**(1,190)**	(1,299)
		(10,046)	(12,220)
Non-current liabilities			
Borrowings and other financial liabilities	22	**(21,140)**	(22,535)
Trade and other payables	25	**(682)**	(871)
Tax payable		**(295)**	(370)
Deferred tax liabilities	17	**(3,286)**	(3,574)
Provisions including post-retirement benefits	26	**(11,876)**	(13,303)
		(37,279)	(40,653)
Liabilities of disposal groups held for sale	19	**(111)**	(360)
Total liabilities		**(47,436)**	(53,233)
Net assets		**44,128**	54,594
Capital and reserves			
Share capital			
– Rio Tinto plc	27	**224**	230
– Rio Tinto Limited	28	**3,950**	4,535
Share premium account		**4,300**	4,288
Other reserves	29	**9,139**	11,122
Retained earnings	29	**19,736**	26,110
Equity attributable to owners of Rio Tinto		**37,349**	46,285
Attributable to non-controlling interests		**6,779**	8,309
Total equity		**44,128**	54,594

The notes on pages 113 to 189 are an integral part of these consolidated financial statements.

The financial statements on pages 106 to 200 were approved by the directors on 2 March 2016 and signed on their behalf by

Jan du Plessis
Chairman

Sam Walsh AO
Chief executive

Chris Lynch
Chief financial officer

Group statement of changes in equity

Year ended 31 December 2015 — **Attributable to owners of Rio Tinto**

	Share capital (notes 27 and 28) US$m	Share premium US$m	Other reserves (note 29) US$m	Retained earnings (note 29) US$m	Total US$m	Non-controlling interests US$m	Total equity US$m
Opening balance	**4,765**	**4,288**	**11,122**	**26,110**	**46,285**	**8,309**	**54,594**
Total comprehensive loss for the year [(a)]	–	–	(2,020)	(423)	(2,443)	(1,306)	(3,749)
Currency translation arising on Rio Tinto Limited's share capital [(b)]	(503)	–	–	–	(503)	–	(503)
Dividends	–	–	–	(4,076)	(4,076)	(315)	(4,391)
Share buyback	(88)	–	6	(1,946)	(2,028)	–	(2,028)
Own shares purchased from Rio Tinto shareholders to satisfy share options	–	–	(25)	(28)	(53)	–	(53)
Treasury shares reissued and other movements	–	12	–	1	13	–	13
Change in equity interest held by Rio Tinto	–	–	–	20	20	(17)	3
Equity issued to holders of non-controlling interests	–	–	–	–	–	103	103
Companies no longer consolidated	–	–	–	–	–	5	5
Employee share options and other IFRS 2 charges taken to the income statement	–	–	56	78	134	–	134
Closing balance	**4,174**	**4,300**	**9,139**	**19,736**	**37,349**	**6,779**	**44,128**

Year ended 31 December 2014 — Attributable to owners of Rio Tinto

	Share capital (notes 27 and 28) US$m	Share premium US$m	Other reserves (note 29) US$m	Retained earnings (note 29) US$m	Total US$m	Non-controlling interests US$m	Total equity US$m
Opening balance	5,141	4,269	12,871	23,605	45,886	7,616	53,502
Total comprehensive income for the year [(a)]	–	–	(1,689)	6,011	4,322	(370)	3,952
Currency translation arising on Rio Tinto Limited's share capital [(b)]	(376)	–	–	–	(376)	–	(376)
Dividends	–	–	–	(3,710)	(3,710)	(304)	(4,014)
Own shares purchased from Rio Tinto shareholders to satisfy share options	–	–	(129)	(31)	(160)	–	(160)
Treasury shares reissued and other movements	–	19	–	3	22	–	22
Newly consolidated operations	–	–	–	–	–	6	6
Change in equity interest held by Rio Tinto	–	–	–	36	36	(29)	7
Equity issued to holders of non-controlling interests [(c)]	–	–	–	–	–	1,291	1,291
Companies no longer consolidated	–	–	–	–	–	(18)	(18)
Employee share options and other IFRS 2 charges taken to the income statement	–	–	69	196	265	117	382
Closing balance	4,765	4,288	11,122	26,110	46,285	8,309	54,594

Year ended 31 December 2013 — Attributable to owners of Rio Tinto

	Share capital (notes 27 and 28) US$m	Share premium US$m	Other reserves (note 29) US$m	Retained earnings (note 29) US$m	Total US$m	Non-controlling interests US$m	Total equity US$m
Opening balance	5,945	4,244	14,868	21,496	46,553	11,187	57,740
Total comprehensive income for the year [(a)]	–	–	(1,984)	5,245	3,261	(3,092)	169
Currency translation arising on Rio Tinto Limited's share capital [(b)]	(804)	–	–	–	(804)	–	(804)
Dividends	–	–	–	(3,322)	(3,322)	(196)	(3,518)
Own shares purchased from Rio Tinto shareholders to satisfy share options	–	–	(77)	(44)	(121)	–	(121)
Treasury shares reissued and other movements	–	25	–	55	80	–	80
Change in equity interest held by Rio Tinto	–	–	–	102	102	(78)	24
Equity issued to holders of non-controlling interests	–	–	–	–	–	159	159
Companies no longer consolidated	–	–	–	–	–	(369)	(369)
Employee share options and other IFRS 2 charges taken to the income statement	–	–	64	73	137	5	142
Closing balance	5,141	4,269	12,871	23,605	45,886	7,616	53,502

(a) Refer to Group statement of comprehensive income.

(b) Refer to note 1(d).

(c) Equity issued to holders of non-controlling interests in 2014 included US$1,158 million of proceeds from a rights issue by Turquoise Hill Resources Ltd in January 2014.

Group statement of changes in equity
continued

Reconciliation with Australian Accounting Standards

The Group's financial statements have been prepared in accordance with IFRS, as defined in note 1, which differs in certain respects from the version of International Financial Reporting Standards that is applicable in Australia, referred to as Australian Accounting Standards (AAS).

Prior to 1 January 2004, the Group's financial statements were prepared in accordance with UK GAAP. Under IFRS, as defined in note 1, goodwill on acquisitions prior to 1998, which was eliminated directly against equity in the Group's UK GAAP financial statements, has not been reinstated. This was permitted under the rules governing the transition to IFRS set out in IFRS 1. The equivalent Australian Standard, AASB 1, does not provide for the netting of goodwill against equity. As a consequence, shareholders' funds under AAS include the residue of such goodwill, which amounted to US$560 million at 31 December 2015 (2014: US$553 million).

Save for the exception described above, the Group's financial statements drawn up in accordance with IFRS are consistent with the requirements of AAS.

Outline of dual listed companies structure and basis of financial statements

The Rio Tinto Group

These are the financial statements of the Group formed through the merger of economic interests of Rio Tinto plc and Rio Tinto Limited (Merger), and presented by both Rio Tinto plc and Rio Tinto Limited as their consolidated accounts in accordance with both UK and Australian legislation and regulations.

Merger terms

On 21 December 1995, Rio Tinto plc and Rio Tinto Limited, which are listed respectively on stock exchanges in the UK and Australia, entered into a dual listed companies (DLC) merger. This was effected by contractual arrangements between the companies and amendments to Rio Tinto plc's Memorandum and Articles of Association and Rio Tinto Limited's Constitution.

As a result, Rio Tinto plc and Rio Tinto Limited and their respective groups operate together as a single economic enterprise, with neither assuming a dominant role. In particular, the arrangements:

- confer upon the shareholders of Rio Tinto plc and Rio Tinto Limited a common economic interest in both groups;
- provide for common boards of directors and a unified management structure;
- provide for equalised dividends and capital distributions; and
- provide for the shareholders of Rio Tinto plc and Rio Tinto Limited to take key decisions, including the election of directors, through an electoral procedure in which the public shareholders of the two companies in effect vote on a joint basis.

The merger involved no change in the legal ownership of any assets of Rio Tinto plc or Rio Tinto Limited, nor any change in the ownership of any existing shares or securities of Rio Tinto plc or Rio Tinto Limited, nor the issue of any shares, securities or payment by way of consideration, save for the issue by each company of one special voting share to a trustee company which facilitates the joint electoral procedure for public shareholders. During 2002, each of the parent companies issued a DLC Dividend Share to facilitate the efficient management of funds within the DLC structure.

Accounting standards

The financial statements have been drawn up in accordance with IFRS as defined in note 1. The Merger was accounted for as a merger under UK GAAP. As permitted under the rules governing the transition to IFRS, which are set out in IFRS 1, the Group did not restate business combinations that occurred before the transition date of 1 January 2004. As a result, the DLC Merger of economic interests described above continues to be accounted for as a merger under IFRS as defined in note 1.

The main consequence of adopting merger rather than acquisition accounting is that the balance sheet of the merged Group includes the assets and liabilities of Rio Tinto plc and Rio Tinto Limited at their carrying values prior to the merger, subject to adjustments to achieve uniformity of accounting policies, rather than at their fair values at the date of the merger. For accounting purposes Rio Tinto plc and Rio Tinto Limited are viewed as a single public parent company (with their respective public shareholders being the shareholders in that single company). As a result, the amounts attributable to both Rio Tinto plc and Rio Tinto Limited public shareholders are included in the amounts attributed to owners of Rio Tinto on the balance sheet, income statement and statement of comprehensive income.

Australian Corporations Act

The financial statements are drawn up in accordance with an order, under section 340 of the Australian Corporations Act 2001, issued by the Australian Securities and Investments Commission (ASIC) on 14 December 2015. The main effect of the order is that the financial statements are prepared on the basis that Rio Tinto Limited, Rio Tinto plc and their respective controlled entities are treated as a single economic entity, and in accordance with the principles and requirements of International Financial Reporting Standards as adopted by the European Union (EU IFRS) and include a reconciliation from EU IFRS to the Australian equivalents of IFRS (see above).

For further details of the ASIC Class Order relief see page 199.

Notes to the 2015 financial statements

1 Principal accounting policies

Corporate information

Rio Tinto's business is finding, mining and processing mineral resources. Major products are aluminium, copper, diamonds, gold, industrial minerals (borates, titanium dioxide and salt), iron ore, thermal and metallurgical coal and uranium. Activities span the world and are strongly represented in Australia and North America, with significant businesses in Asia, Europe, Africa and South America.

Rio Tinto plc is incorporated in the UK and listed on the London Stock Exchange and Rio Tinto Limited is incorporated in Australia and listed on the Australian Stock Exchange. Rio Tinto plc's registered office is at 6 St James's Square, London SW1Y 4AD, UK. Rio Tinto Limited's registered office is at 120 Collins Street, Melbourne, Australia, 3000.

These financial statements consolidate the accounts of Rio Tinto plc and Rio Tinto Limited (together "the Companies") and their respective subsidiaries (together "the Group") and include the Group's share of joint arrangements and associates as explained in note 1(b) below. The Group's financial statements for the year ended 31 December 2015 were authorised for issue in accordance with a directors' resolution on 2 March 2016.

Notes 33 to 36 provide more information on the Group's subsidiaries, joint arrangements and associates and note 40 provides information on the Group's other related-party transactions.

Basis of preparation of the financial statements

The basis of preparation and the accounting policies used in preparing the Group's 2015 financial statements are set out below.

The financial statements have been prepared on a going concern basis in accordance with the Companies Act 2006 applicable to companies reporting under International Financial Reporting Standards and in accordance with applicable UK law, applicable Australian law as amended by the Australian Securities and Investments Commission Order dated 14 December 2015 and Article 4 of the European Union IAS regulation and also with:

– International Financial Reporting Standards as issued by the International Accounting Standards Board (IASB) and interpretations issued from time to time by the IFRS Interpretations Committee (IFRS IC) both as adopted by the European Union (EU) and which are mandatory for EU reporting as at 31 December 2015; and
– International Financial Reporting Standards as issued by the IASB and interpretations issued from time to time by the IFRS IC which are mandatory as at 31 December 2015.

The above accounting standards and interpretations are collectively referred to as "IFRS" in this report. The Group has not early adopted any other amendments, standards or interpretations that have been issued but are not yet mandatory.

The Group's financial statements have been prepared on the basis of accounting policies consistent with those applied in the financial statements for the year ended 31 December 2014 except for the implementation of a number of minor amendments issued by the IASB and endorsed by the EU which applied for the first time in 2015. These new pronouncements do not have a significant impact on the accounting policies, methods of computation or presentation applied by the Group and therefore prior-period financial statements have not been restated for these pronouncements.

The Group has not applied the following pronouncements which are not mandatory for 2015.

Mandatory for 2016

Endorsed by the EU

Amendment to IAS 1 "Presentation of Financial Statements – Disclosure Initiative". The amendment provides clarification of guidance in IAS 1 on materiality and aggregation, the presentation of subtotals, the structure of financial statements and the disclosure of accounting policies.

Amendments to IAS 16 and IAS 38. The amendments provide clarification of acceptable methods of depreciation and amortisation.

Annual improvements to IFRS 2012-2014 cycle.

Amendments to IFRS 11 "Joint Arrangements". The amendments deal with the accounting for acquisitions of interests in joint operations.

Mandatory for 2017 – not yet endorsed by the EU

Amendments to IAS 12: Recognition of Deferred Tax Assets for Unrealised Losses. These amendments on the recognition of deferred tax assets for unrealised losses clarify how to account for deferred tax assets related to debt instruments measured at fair value.

IAS 7 – Statement of cash flows, Narrow-scope amendments. The amendments introduce an additional disclosure that will enable users of financial statements to evaluate changes in liabilities arising from financing activities.

Mandatory for 2018 – not yet endorsed by the EU

IFRS 15 "Revenue from Contracts with Customers". The core principle of IFRS 15 is that an entity recognises revenue to depict the transfer of promised goods or services when control of the goods or services passes to customers. The amount of revenue recognised should reflect the consideration to which the entity expects to be entitled in exchange for those goods or services. A modified transitional approach is permitted under which a transitional adjustment is recognised in retained earnings at the date of implementation of the standard without adjustment of comparatives. The new standard will only be applied to contracts that are not completed at that date.

IFRS 9 "Financial Instruments". The standard includes a single approach for the classification of financial assets, based on cash flow characteristics and the entity's business model. It introduces a new model for the recognition of impairment losses, the expected credit losses model, which requires expected losses to be recognised when financial instruments are first recognised. The standard amends the rules on hedge accounting to align the accounting treatment with the risk management practices of an entity.

Mandatory for 2019 – not yet endorsed by the EU

IFRS 16 "Leases". Under the new standard, a lessee is in essence required to:

(a) recognise all lease assets and liabilities (including those currently classed as operating leases) on the balance sheet, initially measured at the present value of unavoidable lease payments;

(b) recognise amortisation of lease assets and interest on lease liabilities in the income statement over the lease term; and

(c) separate the total amount of cash paid into a principal portion (presented within financing activities) and interest (which companies can choose to present within operating or financing activities consistent with presentation of any other interest paid) in the cash flow statement.

The Group is currently evaluating the impact of the above pronouncements which may have an impact on the Group's earnings or shareholders' funds in future years. The most significant impact is likely to be from IFRS 16. Information on the undiscounted amount of the Group's operating lease commitments at 31 December 2015 under IAS 17, the current leases standard, is disclosed in note 31. Under IFRS 16, the present value of these commitments would be shown as a liability on the balance sheet together with an asset representing the right of use.

Judgments in applying accounting policies and key sources of estimation uncertainty

The preparation of the financial statements requires management to make assumptions, judgments and estimates and to use judgment in applying accounting policies and in making critical accounting estimates.

These judgments, estimates and assumptions are based on management's best knowledge of the relevant facts and circumstances, having regard to previous experience, but actual results may differ materially from the amounts included in the financial statements. Key

1 Principal accounting policies continued

areas of judgment and estimation uncertainty are highlighted below and further information is contained in the accounting policies and/or the notes to the financial statements.

Areas of judgment that have the most significant effect on the amounts recognised in the financial statements are:

– Merger accounting for the 1995 merger of the economic interests of Rio Tinto plc and Rio Tinto Limited into the dual listed companies (DLC) structure (see Dual listed companies structure on page 112);
– Acquisitions – note 1(b) and note 37;
– Review of asset carrying values, impairment charges and reversals and the recoverability of goodwill – note 1(e) and (i), note 6, note 12 and note 13;
– Estimation of asset lives – note 1(e) and (i);
– Determination of ore reserve and mineral resource estimates – note 1(j);
– Provision for onerous contracts – note 1(i)
– Close-down, restoration and environmental obligations – note 1(k);
– Deferral of stripping costs – note 1(h);
– Uncertain tax positions – note 1(m) and note 31;
– Recognition of deferred tax on mining rights recognised in acquisitions – note 1(m);
– Recoverability of potential deferred tax assets – note 17(c), (e) and (f);
– Capitalisation of exploration and evaluation costs – note 1(f);
– Identification of functional currencies – note 1(d);
– Basis of consolidation – note 1(b) and note 42;
– Contingencies – note 31; and
– Post-retirement cost assumptions – note 1(n) and note 45.

Key sources of estimation uncertainty that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are:

– Review of asset carrying values, impairment charges and reversals and the recoverability of goodwill – note1 (e) and (i), note 6, note 12 and note 13;
– Estimation of asset lives – note 1(e) and (i);
– Determination of ore reserve and mineral resource estimates – note 1(j);
– Estimation of close-down, restoration and environmental costs and the timing of expenditure – note 1(k) and note 26;
– Estimation of obligations for post-retirement costs – note 1(n) and note 45;
– Recoverability of potential deferred tax assets – note 17 (c), (e) and (f);
– Contingencies – note 31; and
– Capitalisation of exploration and evaluation costs – note 1(f).

These areas of judgment and estimation are discussed further in critical accounting policies and estimates on page 122.

(a) Accounting convention

The financial information included in the financial statements for the year ended 31 December 2015, and for the related comparative periods, has been prepared under the historical cost convention, as modified by the revaluation of certain derivative contracts and financial assets, the impact of fair value hedge accounting on the hedged item and the accounting for post-retirement assets and obligations. The Group's policy in respect of these items is set out in the notes below.

The Group's financial statements are presented in US dollars and all values are rounded to the nearest million (US$m) unless otherwise stated.

Where applicable, comparatives have been adjusted to measure or present them on the same basis as current period figures.

(b) Basis of consolidation (notes 33 to 36)

All intragroup transactions and balances have been eliminated on consolidation.

Where necessary, adjustments are made to the locally reported assets, liabilities, and results of subsidiaries, joint arrangements and associates to bring their accounting policies into line with those used by the Group.

Subsidiaries: Subsidiaries are entities controlled by either of the Companies. Control exists where either of the Companies has: power over the entities, that is existing rights that give it the current ability to direct the relevant activities of the entities (those that significantly affect the Companies' returns); exposure, or rights, to variable returns from its involvement with the entities; and the ability to use its power to affect those returns. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

Joint arrangements: A joint arrangement is an arrangement of which two or more parties have joint control. Joint control is the contractually agreed sharing of control such that decisions about the relevant activities of the arrangement (those that significantly affect the Companies' returns) require the unanimous consent of the parties sharing control. The Group has two types of joint arrangement:

Joint operations (JO): A JO is a joint arrangement in which the parties that share joint control have rights to the assets, and obligations for the liabilities, relating to the arrangement. This includes situations where the parties benefit from the joint activity through a share of the output, rather than by receiving a share of the results of trading. In relation to its interest in a JO, the Group recognises: its share of assets and liabilities; revenue from the sale of its share of the output and its share of any revenue generated from the sale of the output by the JO; and its share of expenses. These are incorporated into the Group's financial statements under the appropriate headings.

Joint ventures (JV): A JV is a joint arrangement in which the parties that share joint control have rights to the net assets of the arrangement. JVs are accounted for using the equity accounting method.

Associates: An associate is an entity that is neither a subsidiary nor a joint arrangement, over which the Group has significant influence. Significant influence is presumed to exist where there is neither control nor joint control and the Group has over 20 per cent of the voting rights, unless it can be clearly demonstrated that this is not the case. Significant influence can arise where the Group holds less than 20 per cent of the voting rights if it has the power to participate in the financial and operating policy decisions affecting the entity. Investments in associates are accounted for using the equity accounting method.

The Group uses the term "equity accounted units" (EAUs) to refer to associates and JVs collectively. For all EAUs, the carrying value will include any long-term loans to the EAUs that in substance form part of the Group's net investment. Under the equity accounting method the investment is recorded initially at cost to the Group, including any goodwill on acquisition. In subsequent periods the carrying amount of the investment is adjusted to reflect the Group's share of the EAUs' retained post-acquisition profit or loss and other comprehensive income. When the Group's share of losses in an EAU equals or exceeds its interest in the EAU, including any other unsecured receivables, the Group does not recognise further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the EAU.

Acquisitions (note 37)

Under the "acquisition" method of accounting for business combinations, the purchase consideration is allocated to the identifiable assets acquired and liabilities and contingent liabilities assumed (the identifiable net assets) on the basis of their fair value at the date of acquisition, which is the date on which control is obtained.

The consideration transferred for the acquisition of a subsidiary comprises the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree, the fair value of any asset or liability resulting from a contingent consideration arrangement and any equity interests issued by the Group. Costs related to the acquisition of a subsidiary are expensed as incurred.

The excess of the consideration transferred, the amount of any non-controlling interest in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the identifiable net assets acquired is recorded as goodwill. Any shortfall is immediately recognised in the income statement.

Provisional fair values allocated at a reporting date are finalised within 12 months of the acquisition date.

Non-controlling interests in the acquiree, that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation, are recognised by the Group in one of two ways with the choice being available on an acquisition-by-acquisition basis. They can be measured at either the non-controlling interest's proportionate share of the acquiree's identifiable net assets or at fair value. In some cases, non-controlling interests may be treated as equity options and valued on that basis. Goodwill (see note (e)) and amounts attributable to non-controlling interests will differ depending on the basis used.

Where the Group has a previously held non-controlling interest in the acquiree, this is remeasured to fair value at the date control is gained with any gain or loss recognised in the income statement. The cash cost of the share purchase that gives rise to control is included within "Investing activities" in the cash flow statement.

Where the Group increases its ownership interest in a subsidiary, the difference between the purchase price and the carrying value of the share of net assets acquired is recorded in equity. The cash cost of such purchases is included within "Financing activities" in the cash flow statement.

The results of businesses acquired during the year are included in the consolidated financial statements from the date on which control, joint control or significant influence commences.

Disposals (note 37)

Individual non-current assets or "disposal groups" (that is, groups of assets and liabilities) to be disposed of by sale or otherwise in a single transaction are classified as "held for sale" if the following criteria are met at the period end:

- the carrying amount will be recovered principally through a sale transaction rather than through continuing use; and
- the disposal group is available for immediate sale in its present condition subject only to terms that are usual and customary for such sales; and
- the sale is highly probable.

Disposal groups held for sale are carried at the lower of their carrying amount and fair value less costs to sell. The comparative balance sheet is not restated. Disposal groups acquired with a view to resale are held at the fair value determined at the acquisition date. For these assets acquired for resale no profits or losses are recognised between the acquisition date and the disposal date, unless there is a subsequent impairment.

On classification as held for sale, the assets are no longer depreciated and, if applicable, equity accounting ceases.

If control is lost, any interest in the entity retained by the Group is remeasured to its fair value and the change in carrying amount is recognised in the income statement. The retained interest may be subsequently accounted for as a joint venture, joint operation, associate or financial asset depending on the facts. Certain amounts previously recognised in other comprehensive income in respect of the entity disposed of, or for which control, joint control or significant influence has ceased, may be recycled to the income statement in proportion to the interest disposed of. The cash proceeds of disposals are included within "Investing activities" in the cash flow statement.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for in equity. The cash proceeds of such disposals are included within "Financing activities" in the cash flow statement.

(c) Sales revenue

Sales revenue comprises sales to third parties at invoiced amounts. All shipping and handling costs incurred by the Group are recognised as operating costs. Amounts billed to customers in respect of shipping and handling are classified as sales revenue where the Group is responsible for freight. If the Group is acting solely as an agent, amounts billed to customers are offset against the relevant costs. Revenue from services is recognised as those services are rendered and accepted by the customer.

Sales revenue excludes any applicable sales taxes. Mining royalties payable are presented as an operating cost or, where they are in substance a profit-based tax, within taxation.

Revenues from the sale of significant by-products, such as gold, are included in sales revenue. Sundry revenue, incidental to the main revenue-generating activities of the operations, and which is a consequence of producing and selling the main products, is treated as a credit to operating costs.

Third-party commodity swap arrangements for delivery and receipt of smelter grade alumina are offset within operating costs.

Sales of copper concentrate are stated at their invoiced amount which is net of treatment and refining charges.

Sales revenue is only recognised on individual sales when all of the following criteria are met:

- the significant risks and rewards of ownership of the product have been transferred to the buyer;
- neither continuing managerial involvement to the degree usually associated with ownership, nor effective control over the goods sold, has been retained;
- the amount of revenue can be measured reliably;
- it is probable that the economic benefits associated with the sale will flow to the Group; and
- the costs incurred or to be incurred in respect of the sale can be measured reliably.

In most instances, sales revenue is recognised when the product is delivered to the destination specified by the customer, which is typically the vessel on which it will be shipped, the destination port or the customer's premises.

The Group's products are sold to customers under contracts which vary in tenure and pricing mechanisms, with some volumes sold in the spot market.

Pricing for iron ore is on a range of terms, the majority being either monthly or quarterly average pricing mechanisms, with a smaller proportion of iron ore volumes being sold on the spot market. Substantially all iron ore sales are reflected at final prices in the results for the period, based on the best available information at the period end.

Sales revenue is commonly subject to adjustment based on an inspection of the product by the customer. In such cases, sales revenue is initially recognised on a provisional basis using the Group's best estimate of contained metal, and adjusted subsequently.

Certain products are "provisionally priced", that is, the selling price is subject to final adjustment at the end of a period normally ranging from 30 to 180 days after delivery to the customer. The final price is based on the market price at the relevant quotation point stipulated in the contract.

As is customary in the industry, revenue on provisionally priced sales is recognised based on estimates of the fair value of the consideration receivable based on relevant forward market prices. At each reporting date, provisionally priced metal is marked to market based on the forward selling price for the quotational period stipulated in the contract. For this purpose, the selling price can be measured reliably for those products, such as copper, for which there exists an active and freely-traded commodity market, such as the London Metals Exchange, and the value of product sold by the Group is directly linked to the form in which it is traded on that market.

Notes to the 2015 financial statements
continued

1 Principal accounting policies continued

The marking to market of provisionally priced sales contracts is recorded as an adjustment to sales revenue. Information on provisionally priced sales contracts is included in note 30.

(d) Currency translation
The functional currency for each entity in the Group, and for joint arrangements and associates, is the currency of the primary economic environment in which that entity operates. For many entities, this is the currency of the country in which they are located. Transactions denominated in other currencies are converted to the functional currency at the exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies are retranslated at year-end exchange rates. The Group's accounting policies for derivative financial instruments and hedge accounting are explained in more detail in note 1(p)(iii).

The Group's financial statements are presented in US dollars, as that presentation currency most reliably reflects the global business performance of the Group as a whole. On consolidation, income statement items for each entity are translated from the functional currency into US dollars at average rates of exchange where the average is a reasonable approximation of rates prevailing on the transaction date. Balance sheet items are translated into US dollars at period-end exchange rates.

Exchange differences arising on the translation of the net assets of entities with functional currencies other than the US dollar are recognised directly in the currency translation reserve. These translation differences are shown in the statement of comprehensive income, with the exception of translation adjustments relating to Rio Tinto Limited's share capital which are shown in the statement of changes in equity.

Where an intragroup balance is, in substance, part of the Group's net investment in an entity, exchange gains and losses on that balance are taken to the currency translation reserve.

Except as noted above, or in note 1(p) below relating to derivative contracts, all other exchange differences are charged or credited to the income statement in the year in which they arise.

(e) Goodwill and intangible assets (excluding exploration and evaluation expenditure) (notes 12 and 13)
Goodwill is not amortised; it is tested annually for impairment or more frequently if events or changes in circumstances indicate a potential impairment. Investments in EAUs, including any goodwill, are tested for impairment as a single asset when a trigger for impairment has been identified. The Group's impairment policy is explained in note 1(i).

Purchased intangible assets are initially recorded at cost. Finite-life intangible assets are amortised over their useful economic lives on a straight line or units of production basis, as appropriate. Intangible assets that are deemed to have indefinite lives and intangible assets that are not yet ready for use are not amortised; they are reviewed annually for impairment or more frequently if events or changes in circumstances indicate a potential impairment in accordance with accounting policy note 1(i).

The Group considers that intangible assets have indefinite lives when, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate cash flows for the Group. The factors considered in making this judgment include the existence of contractual rights for unlimited terms or evidence that renewal of the contractual rights without significant incremental cost can be expected for indefinite future periods in view of the Group's investment intentions. The life cycles of the products and processes that depend on the asset are also considered.

(f) Exploration and evaluation (note 13)
Exploration and evaluation expenditure comprises costs that are directly attributable to:

– researching and analysing existing exploration data;
– conducting geological studies, exploratory drilling and sampling;
– examining and testing extraction and treatment methods; and/or
– compiling pre-feasibility and feasibility studies.

Exploration expenditure relates to the initial search for deposits with economic potential. Expenditure on exploration activity is not capitalised.

Evaluation expenditure relates to a detailed assessment of deposits or other projects that have been identified as having economic potential. Capitalisation of evaluation expenditure commences when there is a high degree of confidence that the Group will determine that a project is commercially viable, that is the project will provide a satisfactory return relative to its perceived risks, and therefore it is considered probable that future economic benefits will flow to the Group.

The carrying values of capitalised evaluation expenditure are reviewed for impairment twice a year by management. In the case of undeveloped mining projects (projects for which the decision to mine has not yet been approved at the appropriate authorisation level within the Group) which have arisen through acquisition, the allocation of the purchase price consideration may result in undeveloped properties being recognised at an earlier stage of project evaluation compared with organic projects. The impairment review is based on a status report summarising the Group's intentions to recover value through development, sale or other partnering arrangements. Subsequent expenditure on acquired undeveloped projects is only capitalised if it meets the high degree of confidence threshold discussed above.

In some cases, undeveloped projects are regarded as successors to orebodies, smelters or refineries currently in production. Where this is the case, it is intended that these will be developed and go into production when the current source of ore is exhausted or to replace the output when existing smelters and/or refineries are closed.

(g) Property, plant and equipment (note 14)
Once an undeveloped mining project has been determined as commercially viable and approval to mine has been given, expenditure other than that on land, buildings, plant, equipment and capital work in progress is capitalised under "Mining properties and leases" together with any amount transferred from "Exploration and evaluation". Ore reserves may be declared for an undeveloped mining project before its commercial viability has been fully determined. Evaluation costs may continue to be capitalised during the period between declaration of ore reserves and approval to mine as further work is undertaken in order to refine the development case to maximise the project's returns.

Costs of evaluation of a smelter or refinery prior to approval to develop are capitalised under "Capital works in progress", provided that there is a high degree of confidence that the project will be deemed to be commercially viable.

Costs which are necessarily incurred whilst commissioning new assets, in the period before they are capable of operating in the manner intended by management, are capitalised. Development costs incurred after the commencement of production are capitalised to the extent they are expected to give rise to a future economic benefit. Interest on borrowings related to construction or development projects is capitalised, at the rate payable on project-specific debt if applicable or at the Group's cost of borrowing if not, until the point when substantially all the activities that are necessary to make the asset ready for its intended use are complete.

Property, plant and equipment is stated at cost, as defined in IAS 16, less accumulated depreciation and accumulated impairment losses. The cost of property, plant and equipment includes the estimated close-down and restoration costs associated with the asset.

(h) Deferred stripping (note 14)
In open pit mining operations, overburden and other waste materials must be removed to access ore from which minerals can be extracted economically. The process of removing overburden and waste materials is referred to as stripping. During the development of a mine (or pit), before production commences, stripping costs are capitalised as part of the cost of construction of the mine (or pit) and are subsequently amortised over the life of the mine (or pit) on a units of production basis.

In order for production phase stripping costs to qualify for capitalisation as a stripping activity asset, three criteria must be met:

– it must be probable that there will be an economic benefit in a future accounting period because the stripping activity has improved access to the orebody; and
– it must be possible to identify the "component" of the orebody for which access has been improved; and
– it must be possible to reliably measure the costs that relate to the stripping activity.

A "component" is a specific section of the orebody that is made more accessible by the stripping activity. It will typically be a subset of the larger orebody that is distinguished by a separate useful economic life (for example, a pushback).

Production phase stripping can give rise to two benefits: the extraction of ore in the current period and improved access to ore which will be extracted in future periods. When the cost of stripping which has a future benefit is not distinguishable from the cost of producing current inventories, the stripping cost is allocated to each of these activities based on a relevant production measure using a life-of-component strip ratio. The ratio divides the tonnage of waste mined for the component for the period either by the quantity of ore mined for the component or by the quantity of minerals contained in the ore mined for the component. In some operations, the quantity of ore is a more appropriate basis for allocating costs, particularly where there are significant by-products. Stripping costs for the component are deferred to the extent that the current period ratio exceeds the life of component ratio. The stripping activity asset is depreciated on a "units of production" basis based on expected production of either ore or contained minerals over the life of the component unless another method is more appropriate.

The life-of-component ratios are based on the ore reserves of the mine (and for some mines, other mineral resources) and the annual mine plan; they are a function of the mine design and therefore changes to that design will generally result in changes to the ratios. Changes in other technical or economic parameters that impact the ore reserves (and for some mines, other mineral resources) may also have an impact on the life-of-component ratios even if they do not affect the mine design. Changes to the ratios are accounted for prospectively.

It may be the case that subsequent phases of stripping will access additional ore and that these subsequent phases are only possible after the first phase has taken place. Where applicable, the Group considers this on a mine-by-mine basis. Generally, the only ore attributed to the stripping activity asset for the purposes of calculating a life-of-component ratio, and for the purposes of amortisation, is the ore to be extracted from the originally identified component.

Where a mine operates several open pits that are regarded as separate operations for the purpose of mine planning, initial stripping costs are accounted for separately by reference to the ore from each separate pit. If, however, the pits are highly integrated for the purpose of mine planning, the second and subsequent pits are regarded as extensions of the first pit in accounting for stripping costs. In such cases, the initial stripping (ie overburden and other waste removal) of the second and subsequent pits is considered to be production phase stripping.

The Group's judgment as to whether multiple pit mines are considered separate or integrated operations depends on each mine's specific circumstances.

The following factors would point towards the initial stripping costs for the individual pits being accounted for separately:

– If mining of the second and subsequent pits is conducted consecutively with that of the first pit, rather than concurrently.
– If separate investment decisions are made to develop each pit, rather than a single investment decision being made at the outset.
– If the pits are operated as separate units in terms of mine planning and the sequencing of overburden removal and ore mining, rather than as an integrated unit.
– If expenditures for additional infrastructure to support the second and subsequent pits are relatively large.
– If the pits extract ore from separate and distinct orebodies, rather than from a single orebody.

If the designs of the second and subsequent pits are significantly influenced by opportunities to optimise output from the several pits combined, including the co-treatment or blending of the output from the pits, then this would point to treatment as an integrated operation for the purposes of accounting for initial stripping costs.

The relative importance of each of the above factors is considered in each case.

Deferred stripping costs are included in "Mining properties and leases" within "Property, plant and equipment" or within "Investments in equity accounted units", as appropriate. Amortisation of deferred stripping costs is included in "Depreciation of property, plant and equipment" within "Net operating costs" or in "Share of profit after tax of equity accounted units", as appropriate.

(i) Depreciation and impairment (notes 13 and 14)

Depreciation of non-current assets

Property, plant and equipment is depreciated over its useful life, or over the remaining life of the mine or smelter or refinery if that is shorter and there is no reasonable alternative use for the asset.

The useful lives of the major assets of a cash-generating unit are often dependent on the life of the orebody to which they relate. Where this is the case, the lives of mining properties, and their associated refineries, concentrators and other long-lived processing equipment are generally based on the expected life of the orebody. The life of the orebody, in turn, is estimated on the basis of the life-of-mine plan. Where the major assets of a cash-generating unit are not dependent on the life of a related orebody, management applies judgment in estimating the remaining service potential of long-lived assets. Factors affecting the remaining service potential of smelters include, for example, smelter technology and electricity purchase contracts when power is not sourced from the company's, or in some cases a local government's, electricity generating capacity.

The useful lives and residual values for material assets and categories of assets are reviewed annually and changes are reflected prospectively.

Depreciation commences when an asset is available for use. The major categories of property, plant and equipment are depreciated on a units of production and/or straight-line basis as follows:

Units of production basis

For mining properties and leases and certain mining equipment, consumption of the economic benefits of the asset is linked to production. Except as noted below, these assets are depreciated on a units of production basis.

In applying the units of production method, depreciation is normally calculated based on production in the period as a percentage of total expected production in current and future periods based on ore reserves and, for some mines, other mineral resources. Other mineral resources may be included in depreciation calculations in limited circumstances and where there is a high degree of confidence that they can be extracted economically. This would be the case when the other mineral resources do not yet have the status of ore reserves merely because the necessary detailed evaluation work has not yet been performed and the responsible technical personnel agree that inclusion of a proportion of measured and indicated resources is appropriate based on historical reserve conversion rates.

Other mineral resources would usually only be included in unit of production calculations where there are very large areas of contiguous mineralisation, for which the economic viability is not sensitive to likely variations in grade, as may be the case for certain iron ore, bauxite and industrial minerals deposits. The required level of confidence is unlikely to exist for minerals that are typically found in low-grade ore (compared with the above), such as copper or gold. In these cases, specific areas of

1 Principal accounting policies continued

mineralisation have to be evaluated in considerable detail before their economic status can be predicted with confidence.

Where measured and indicated resources are used in the calculation of depreciation for infrastructure, primarily rail and port, which will benefit current and future mines, then the measured and indicated resources may relate to mines which are currently in production or to mines where there is a high degree of confidence that they will be brought into production in the future. The quantum of mineral resources is determined taking into account future capital costs as required by the Joint Ore Reserves Committee (JORC) code. The depreciation calculation, however, does not take into account future development costs for mines which are not yet in production. Measured and indicated resources are currently incorporated into depreciation calculations in the Group's Australian iron ore business.

Straight-line basis
Assets within operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the related mine are depreciated on a straight-line basis.

Impairment charges/reversals of non-current assets

Impairment charges and reversals are assessed at the level of cash-generating units which, in accordance with IAS 36 "Impairment of Assets", are identified as the smallest identifiable asset or group of assets that generate cash inflows, which are largely independent of the cash inflows from other assets. The existence of an active market for intermediate products is also monitored and separate cash-generating units are identified even if the majority of those products are further processed internally and therefore the cash flows are not independent. Impairment of financial assets is discussed in note 1(p) below.

In some cases, individual business units consist of several operations with independent cash-generating streams which constitute separate cash-generating units.

Goodwill acquired through business combinations is allocated to the cash-generating unit, or groups of cash-generating units if that is the lowest level within the Group at which goodwill is monitored for internal management purposes, that are expected to benefit from the related business combination. All goodwill and intangible assets that are not yet ready for use or have an indefinite life are tested annually for impairment as at 30 September, regardless of whether there has been an impairment trigger, or more frequently if events or changes in circumstances indicate a potential impairment.

Property, plant and equipment and intangible assets with finite lives are reviewed for impairment if there is an indication that the carrying amount may not be recoverable. The Group conducts an internal review of the asset values annually as at 30 September which is used as a source of information to assess for indications of impairment or reversal of previously recognised impairment losses. External factors, such as changes in expected future prices, costs and other market factors, are also monitored to assess for indications of impairment or reversal of previously recognised impairment losses. If any such indication exists then an impairment review is undertaken, the recoverable amount is assessed by reference to the higher of value in use (being the net present value of expected future cash flows of the relevant cash-generating unit in its current condition) and fair value less costs of disposal (FVLCD).

When the recoverable amount of the cash-generating unit is measured by reference to FVLCD, this amount is further classified in accordance with the fair value hierarchy for observable market data that is consistent with the unit of account for the cash-generating unit being tested. The Group considers that the best evidence of FVLCD is the value obtained from an active market or binding sale agreement and, in this case, the recoverable amount is classified in the fair value hierarchy as level 1. When FVLCD is based on quoted prices for equity instruments but adjusted to reflect factors such as a lack of liquidity in the market, the recoverable amount is classified as level 2 in the fair value hierarchy. No cash-generating units are currently assessed for impairment by reference to a recoverable amount based on FVLCD classified as level 2.

Where unobservable inputs are material to the measurement of the recoverable amount, FVLCD is based on the best information available to reflect the amount the Group could receive for the cash-generating unit in an orderly transaction between market participants at the measurement date. This is often estimated using discounted cash flow techniques and is classified as level 3 in the fair value hierarchy.

Where the recoverable amount is assessed using FVLCD based on discounted cash flow techniques, the resulting estimates are based on detailed life-of-mine and/or long-term production plans. The latter may include brownfield expansions which have not yet been approved at the appropriate authorisation level in the Group.

The cash flow forecasts for FVLCD purposes are based on management's best estimates of expected future revenues and costs, including the future cash costs of production, capital expenditure, closure, restoration and environmental costs. For the purposes of determining FVLCD from a market participant's perspective, the cash flows incorporate management's price and cost assumptions in the short and medium term. In the longer term, operating margins are assumed to remain constant where appropriate; as it is considered unlikely that a market participant would prepare detailed forecasts over a longer term. The cash flow forecasts may include net cash flows expected to be realised from extraction, processing and sale of material that does not currently qualify for inclusion in ore reserves. Such non-reserve material is only included when there is a high degree of confidence in its economic extraction. This expectation is usually based on preliminary drilling and sampling of areas of mineralisation that are contiguous with existing ore reserves. Typically, the additional evaluation required to achieve reserve status for such material has not yet been done because this would involve incurring evaluation costs earlier than is required for the efficient planning and operation of the mine.

As noted above, cost levels incorporated in the cash flow forecasts for FVLCD purposes are based on the current life-of-mine plan or long-term production plan for the cash-generating unit. This differs from value in use which requires future cash flows to be estimated for the asset in its current condition and therefore does not include future cash flows associated with improving or enhancing an asset's performance. Anticipated enhancements to assets may be included in FVLCD calculations and therefore generally result in a higher value.

Where the recoverable amount of a cash-generating unit is dependent on the life of its associated orebody, expected future cash flows reflect the current life of mine and/or long-term production plans, which are based on detailed research, analysis and iterative modelling to optimise the level of return from investment, output and sequence of extraction. The mine plan takes account of all relevant characteristics of the orebody, including waste-to-ore ratios, ore grades, haul distances, chemical and metallurgical properties of the ore impacting on process recoveries and capacities of processing equipment that can be used. The life-of-mine plan and/or long-term production plans are therefore the basis for forecasting production output and production costs in each future year.

Forecast cash flows for ore reserve estimation for JORC purposes are generally based on Rio Tinto's commodity price forecasts, which assume short-term market prices will revert to the Group's assessment of the long-term price, generally over a period of three to five years. For most commodities, these forecast commodity prices are derived from a combination of analyses of the marginal costs of the producers and of the incentive price of these commodities. These assessments often differ from current price levels and are updated periodically. The Group does not believe that published medium and long-term forward prices provide a good indication of future levels because they tend to be strongly influenced by spot prices. The price forecasts used for ore reserve estimation are generally consistent with those used for impairment testing unless management deems that in certain economic environments, a market participant would not assign Rio Tinto's view on prices, in which case management estimates the assumptions that a market participant would be expected to use.

Forecast future cash flows of a cash-generating unit take into account the sales prices under existing sales contracts.

The discount rates applied to the future cash flow forecasts represent an estimate of the rate the market would apply having regard to the time value of money and the risks specific to the asset for which the future cash flow estimates have not been adjusted. The Group's weighted average cost of capital is generally used as a starting point for determining the discount rates, with appropriate adjustments for the risk profile of the countries in which the individual cash-generating units operate. For final feasibility studies and ore reserve estimation, internal hurdle rates, which are generally higher than the Group's weighted average cost of capital, are used. For developments funded with project finance, the debt component of the weighted average cost of capital may be calculated by reference to the specific interest rate of the project finance and anticipated leverage of the project.

For operations with a functional currency other than the US dollar, the impairment review is undertaken in the relevant functional currency. In estimating FVLCD, internal forecasts of exchange rates take into account spot exchange rates, historical data and external forecasts, and are kept constant in real terms from 2020 onwards. The great majority of the Group's sales are based on prices denominated in US dollars. To the extent that the currencies of countries in which the Group produces commodities strengthen against the US dollar without commodity price offset, cash flows and, therefore, net present values are reduced. Management considers that over the long term, there is a tendency for movements in commodity prices to compensate to some extent for movements in the value of the US dollar, particularly against the Australian dollar and Canadian dollar, and vice versa. However, such compensating changes are not synchronised and do not fully offset each other. In estimating value in use, the present value of future cash flows in foreign currencies is translated at the spot exchange rate on the testing date.

Non-current assets (excluding goodwill) that have suffered impairment are reviewed using the same basis for valuation of such assets as explained above whenever events or changes in circumstances indicate that the impairment loss may no longer exist, or may have decreased. If appropriate an impairment reversal will be recognised. The carrying amount of the cash-generating unit after reversal must be the lower of (a) the recoverable amount, as calculated above, and (b) the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for the cash-generating unit in prior periods.

An onerous contract is defined under IAS 37 "Provisions, Contingent Liabilities and Contingent Assets" as a contract under which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it. However, no provision is required provided that the related assets, which may be the wider cash-generating unit of which the business unit forms part, are not fully impaired.

(j) Determination of ore reserve and mineral resource estimates

The Group estimates its ore reserves and mineral resources based on information compiled by Competent Persons as defined in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves of December 2012 (the "JORC code", which is produced by the Australasian Joint Ore Reserves Committee).

Ore reserves and, for certain mines, other mineral resources, determined in this way are used in the calculation of depreciation, amortisation and impairment charges and for forecasting the timing of the payment of close-down and restoration costs and the recovery of deferred tax assets. The depreciation and impairment policy above notes instances in which mineral resources are taken into account for accounting purposes. In addition, value may be attributed to mineral resources in purchase price allocations undertaken for the purposes of business combination accounting.

(k) Close-down, restoration and environmental obligations (note 26)

The Group has provisions for close-down and restoration costs which include the dismantling and demolition of infrastructure, the removal of residual materials and the remediation of disturbed areas for mines and certain refineries and smelters. These provisions are based on all regulatory requirements and any other commitments made to stakeholders. Closure provisions are not made for those operations that have no known restrictions on their lives as the closure dates cannot be reliably estimated. This applies primarily to certain North American smelters which have water rights or power agreements with local governments.

Close-down and restoration costs are a normal consequence of mining or production, and the majority of close-down and restoration expenditure is incurred in the years following closure of the mine, refinery or smelter. Although the ultimate cost to be incurred is uncertain, the Group's businesses estimate their costs using current restoration standards and techniques.

Close-down and restoration costs are provided for in the accounting period when the obligation arising from the related disturbance occurs, based on the net present value of the estimated future costs of restoration to be incurred during the life of the operation and post closure. Where appropriate, the provision is estimated using probability weighting of the different remediation and closure scenarios. The obligation may occur during development or during the production phase of a facility.

Provisions for close-down and restoration costs do not include any additional obligations which are expected to arise from future disturbance. The costs are estimated on the basis of a closure plan, and are reviewed six monthly during the life of the operation to reflect known developments. The estimates are also subject to formal review at regular intervals.

The initial close-down and restoration provision is capitalised within "Property, plant and equipment". Subsequent movements in the close-down and restoration provisions for ongoing operations, including those resulting from new disturbance related to expansions or other activities qualifying for capitalisation, updated cost estimates, changes to the estimated lives of operations, changes to the timing of closure activities and revisions to discount rates are also capitalised within "Property, plant and equipment". These costs are then depreciated over the lives of the assets to which they relate. Changes in closure provisions relating to closed operations are charged/credited to "Net operating costs" in the income statement.

Where rehabilitation is conducted systematically over the life of the operation, rather than at the time of closure, provision is made for the estimated outstanding continuous rehabilitation work at each balance sheet date and the cost is charged to the income statement.

The amortisation or "unwinding" of the discount applied in establishing the provisions is charged to the income statement in each accounting period. The amortisation of the discount is shown within "Finance items" in the income statement.

Environmental costs result from environmental damage that was not a necessary consequence of operations, and may include remediation, compensation and penalties. Provision is made for the estimated present value of such costs at the balance sheet date. These costs are charged to "Net operating costs", except for the unwinding of the discount which is shown within "Finance items".

Remediation procedures may commence soon after the time the disturbance, remediation process and estimated remediation costs become known, but can continue for many years depending on the nature of the disturbance and the remediation techniques used.

(l) Inventories (note 16)

Inventories are valued at the lower of cost and net realisable value, primarily on a weighted average cost basis. Average costs are calculated by reference to the cost levels experienced in the relevant month together with those in opening inventory. The cost of raw materials and

1 Principal accounting policies continued

consumable stores is the purchase price. The cost of partly-processed and saleable products is generally the cost of production, including:

– labour costs, materials and contractor expenses which are directly attributable to the extraction and processing of ore and the production of alumina and aluminium;
– the depreciation of mining properties and leases and of property, plant and equipment used in the extraction and processing of ore and the production of alumina and aluminium; and
– production overheads.

Work in progress includes ore stockpiles and other partly processed material. Stockpiles represent ore that has been extracted and is available for further processing. If there is significant uncertainty as to if and when the stockpiled ore will be processed, the ore is expensed as mined. If the ore will not be processed within the 12 months after the balance sheet date, it is included within non-current assets and net realisable value is calculated on a discounted cash flow basis. Quantities of stockpiled ore are assessed primarily through surveys and assays.

(m) Taxation (note 9 and note 17)

Current tax is the tax expected to be payable on the taxable income for the year calculated using rates that have been enacted or substantively enacted at the balance sheet date. It includes adjustments for tax expected to be payable or recoverable in respect of previous periods. Where the amount of tax payable or recoverable is uncertain, Rio Tinto establishes provisions based on the Group's judgment of the probable amount of the liability, or recovery.

Deferred tax is calculated in accordance with IAS 12. The Group provides for deferred tax in respect of fair value adjustments on acquisitions. These adjustments may relate to assets such as mining rights that, in general, are not eligible for income tax allowances. Provision for deferred tax is based on the difference between the carrying value of the asset and its income tax base (which may be US$nil). Even when there is no income tax base, the existence of a tax base for capital gains tax purposes is not usually taken into account in determining the deferred tax provision for the assets, unless they are classified as held for sale, because it is expected that the carrying amount will be recovered primarily through use of the assets and not from disposal.

(n) Post-employment benefits (note 45)

The Group operates a number of defined benefit plans which provide lump sums, pensions, medical benefits and life insurance to retirees. For post-retirement defined benefit plans, the difference between the fair value of any plan assets and the present value of the plan obligations is recognised as an asset or liability in the balance sheet.

The fair value of plan assets is the price that would be received to sell the assets in orderly transactions between market participants at the measurement date. Where appropriate, the recognition of assets may be restricted to the present value of any amounts the Group expects to recover by way of refunds from the plan or reductions in future contributions. In determining the extent to which a refund will be available the Group has considered whether any third party, such as a trustee or pension committee, has the power to enhance benefits or to wind up a pension plan without the Group's consent.

The most significant assumptions used in accounting for pension plans are the discount rate, the inflation assumption and the mortality assumptions. The discount rate is used to determine the net present value of the obligations, the interest cost on the obligations and the interest income on plan assets. The discount rate used is the yield on high-quality corporate bonds with maturities and terms that match those of the post-retirement obligations as closely as possible. Where there is no developed corporate bond market in a country, the rate on government bonds is used. The inflation assumption is used to project increases in future benefit payments for those plans that have benefits linked to inflation. The mortality assumption is used to project the future stream of benefit payments, which is then discounted to arrive at the net present value of the obligations.

Valuations of the obligations are carried out using the projected unit method which values benefits accrued at the valuation date with allowance where appropriate for future increases to pay and pensions. The values of the obligations are assessed in accordance with the advice of independent qualified actuaries.

The current service cost, any past service cost and the effect of any curtailment or settlements are recognised in the income statement. The interest cost less interest income on assets held in the plans is also charged to the income statement. All amounts charged to the income statement in respect of these plans are included within "Net operating costs" or in "Share of profit after tax of equity accounted units", as appropriate.

Actuarial gains and losses arising in the year are credited or charged to the statement of comprehensive income and comprise the effects of changes in actuarial assumptions and experience adjustments due to differences between the previous actuarial assumptions and what has actually occurred. In particular, the difference between the interest income and the actual return on plan assets is recognised in the statement of comprehensive income.

The Group's contributions to defined contribution plans are charged to the income statement in the period to which the contributions relate.

(o) Cash and cash equivalents

For the purpose of the balance sheet, cash and cash equivalents comprise: cash on hand, deposits held on call with banks, and short-term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to insignificant risk of changes in value. Bank overdrafts are shown as current liabilities in the balance sheet.

For the purposes of the cash flow statement, cash and cash equivalents are net of bank overdrafts that are repayable on demand.

(p) Financial instruments (note 30)

(i) Financial assets

Classification

The Group classifies its financial assets in the following categories: at fair value through profit or loss; loans and receivables; held-to-maturity; and available-for-sale investments. The classification depends on the purpose for which the financial assets were acquired. The Group's policy with regard to financial risk management is set out in note 30. Generally, the Group does not acquire financial assets for the purpose of selling in the short term. When the Group enters into derivative contracts, these transactions are designed to reduce exposures related to assets and liabilities, firm commitments or anticipated transactions.

Management determines the classification of financial assets at initial recognition.

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

Derivatives, including embedded derivatives separated from the host contracts, are included within financial assets at fair value through profit or loss unless they are designated as effective hedging instruments. Assets in this category are classified as current assets if expected to be settled within 12 months, otherwise they are classified as non-current.

(b) Loans and receivables

Loans and receivables comprise non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Trade receivables are included within this category; however, trade receivables subject to provisional pricing are valued as explained in note 1(c) Sales revenue.

(c) Held-to-maturity

Held-to-maturity investments are non-derivative financial assets with fixed or determinable payments and fixed maturity that the Group has the intention and ability to hold to maturity and which do not qualify as loans and receivables. Assets in this category are classified as Other investments and are classified as current assets or non-current assets based on their maturity.

(d) Available-for-sale
Available-for-sale financial assets are non-derivative financial assets that are either designated as available-for-sale or not classified in any of the other categories. They are included in non-current assets unless the Group intends to dispose of the assets within 12 months of the balance sheet date or the asset matures within 12 months.

Recognition and measurement
Regular purchases and sales of financial assets are recognised on the trade-date, being the date on which the Group commits to purchase or sell the asset. Financial assets are de-recognised when the rights to receive cash flows from the assets have expired or have been transferred and the Group has transferred substantially all risks and rewards of ownership.

Available-for-sale financial assets and financial assets at fair value through profit or loss are initially recognised at fair value, with transaction costs expensed in the income statement, and are subsequently carried at fair value. Loans and receivables and held-to-maturity financial assets are initially recognised at fair value plus transactions costs and are subsequently carried at amortised cost using the effective interest method.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Where relevant market prices are available, these are used to determine fair values, adjusted where necessary for market liquidity, bid/offer spreads and credit considerations. In other cases, fair values are calculated using quotations from independent financial institutions, or by using valuation techniques consistent with general market practice applicable to the instrument.

The fair values of cash, short-term borrowings and loans to joint ventures and associates approximate to their carrying values, as a result of their short maturity or because they carry floating rates of interest. The fair values of the various derivative instruments used for hedging purposes are disclosed in note 30. Movements on the hedging reserve are disclosed in note 29.

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

Impairment of financial assets
The Group assesses at each balance sheet date whether there is objective evidence that a financial asset or a group of financial assets is impaired. If impairment is identified for a financial asset carried at amortised cost, the carrying amount of the asset is reduced through the use of an allowance account and the loss is recognised in the income statement.

In the case of equity securities classified as available-for-sale, an evaluation is made as to whether a decline in fair value is "significant" or "prolonged" based on an analysis of indicators such as significant adverse changes in the technological, market, economic or legal environment in which the issuing company operates. If such evidence exists for available-for-sale financial assets, the cumulative loss, measured as the difference between acquisition cost less any impairment loss previously recognised in the income statement, and the current fair value is removed from equity and recognised in the income statement.

(ii) Financial liabilities
Borrowings and other financial liabilities (including trade payables but excluding derivative liabilities) are recognised initially at fair value, net of transaction costs incurred, and are subsequently stated at amortised cost.

Any difference between the amounts originally received for borrowings and other financial liabilities (net of transaction costs) and the redemption value is recognised in the income statement over the period to maturity using the effective interest method.

The fair values of medium and long-term borrowings are calculated as the present value of the estimated future cash flows using quoted prices in active markets or an appropriate market based yield curve. The carrying value of the borrowings is amortised cost.

Where an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a de-recognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognised in the income statement.

(iii) Derivative financial instruments and hedging activities
Derivatives embedded in host contracts are treated as separate derivatives when their risks and characteristics are not closely related to their host contracts. In some cases, derivatives and embedded derivatives may be designated as hedges.

Derivatives are initially recognised at their fair value on the date the derivative contract is entered into and transaction costs are expensed in the income statement. They are subsequently re-measured to fair value at each balance sheet date. Gains or losses on derivatives which are not designated as hedges are taken to the income statement. The method of recognising the resulting gain or loss for derivatives designated as hedging instruments depends on the nature of the item being hedged. The Group designates certain derivatives as either: hedges of the fair value of recognised assets or liabilities or of firm commitments (fair value hedges); or hedges of a particular risk associated with a recognised asset or liability or of a highly probable forecast transaction (cash flow hedges).

Fair value hedges: Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recorded in the income statement, together with any changes in the fair value of the hedged asset or liability or firm commitment that is attributable to the hedged risk.

When a fair value interest rate hedging instrument expires or is sold, or when a fair value interest rate hedge no longer meets the criteria for hedge accounting, the fair value adjustments which have been made to the hedged item are amortised through the income statement over the remaining life of the hedged item or written off immediately when the hedged item is de-recognised.

Cash flow hedges: The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognised in other comprehensive income. The gain or loss relating to the ineffective portion is recognised immediately in the income statement. Amounts accumulated in equity are recycled in the income statement in the period when the hedged item affects profit or loss, for example when the forecast sale that is being hedged takes place. When the forecast transaction that is being hedged results in the recognition of a non-financial asset, for example, property, plant and equipment, the gains and losses previously deferred in equity are transferred from equity and adjust the cost of the asset. The gains and losses are recognised subsequently in the income statement when the non-financial asset is amortised or sold.

When a cash flow hedging instrument expires or is sold, or when a cash flow hedge no longer meets the criteria for hedge accounting, although the forecast transaction is still expected to occur, any cumulative gain or loss relating to the instrument which is held in equity at that time remains in equity and is recognised in the income statement at the same time as the forecast transaction. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that is held in equity is immediately recognised in the income statement.

Notes to the 2015 financial statements
continued

1 Principal accounting policies continued

(q) Share-based payments (note 44)
The fair value of the Group's share plans is recognised as an expense over the expected vesting period with a corresponding entry to retained earnings for Rio Tinto plc plans and to other reserves for Rio Tinto Limited plans.

The Group uses fair values provided by independent actuaries calculated using either a lattice-based option valuation model or a Monte Carlo simulation model. The fair value of the share plans is determined at the date of grant, taking into account any market-based vesting conditions attached to the award. Non-market based vesting conditions (for example, earnings per share targets) are taken into account in estimating the number of awards likely to vest. The estimate of the number of awards likely to vest is reviewed at each balance sheet date up to the vesting date, at which point the estimate is adjusted to reflect the actual awards issued. No adjustment is made after the vesting date even if the awards are forfeited or not exercised.

The terms of each plan are considered at the balance sheet date to determine whether they should be accounted for as equity or cash settled. The Group no longer operates any plans as cash-settled. However the Performance Share Plan can, at the discretion of the directors, offer employees an equivalent amount in cash. This is not standard practice. In some jurisdictions, employees are granted cash-settled awards where equity-settled awards are prohibited by local laws and regulations. The value of these awards is immaterial.

The Group's equity-settled share plans are settled either by: the issue of shares by the relevant parent company, the purchase of shares on market, or the use of shares held in treasury which were previously acquired as part of a share buy-back. If the cost of shares acquired to satisfy the plans differs from the expense charged, the difference is taken to retained earnings or other reserves, as appropriate.

(r) Share capital (notes 27 and 28)
Ordinary shares are classified as equity. Incremental costs directly attributable to the issuance of new shares are shown in equity as a deduction, net of tax, from the proceeds.

Where any Group company purchases the Group's equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs (net of income taxes) is deducted from equity attributable to owners of Rio Tinto. Where such shares are subsequently reissued, any consideration received, net of any directly-attributable incremental costs and the related income tax effects, is included in equity attributable to owners of Rio Tinto.

(s) Segment reporting (notes 2 and 3)
Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision maker (CODM). The CODM, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as Rio Tinto's chief executive.

Critical accounting policies and estimates

(i) Dual listed companies reporting
As described in the "Outline of dual listed companies structure and basis of financial statements", for the purposes of preparing the IFRS compliant consolidated financial statements of the Rio Tinto Group, both the DLC companies, Rio Tinto plc and Rio Tinto Limited, are a single company, and the interests of shareholders of both companies are presented as the equity interests of shareholders in the reporting entity.

The 2015 Annual report satisfies the obligations of Rio Tinto Limited to prepare consolidated accounts under Australian company law, as amended by an order issued by the Australian Securities and Investments Commission on 14 December 2015. The 2015 financial statements disclose the effect of the adjustments to the Group's consolidated profit/(loss), consolidated total comprehensive income/(loss) and consolidated shareholders' funds as prepared under IFRS as defined on page 113 that would be required under the version of International Financial Reporting Standards that is applicable in Australia, referred to as Australian Accounting Standards (AAS).

The US dollar is the presentation currency used in these financial statements, as it most reliably reflects the Group's global business performance.

(ii) Acquisitions (note 37)
The determination of the fair values of net identifiable assets acquired, and of any goodwill, involves significant judgment. This is particularly the case when the acquisition involves little or no cash, for example when the Group gains control of a company in stages or by the issuance of shares. The allocation of fair value between intangible assets, and the tangible assets with which they are used, is also judgmental. The Group engages third-party valuers to advise on the purchase price allocation for significant acquisitions.

(iii) Impairment review of asset carrying values (notes 6, 12 and 13)
Events or changes in circumstances can give rise to significant impairment charges or reversals of impairment.

Estimates in respect of the timing of project expansions and the cost to complete asset construction are critical to determining the recoverable amounts for cash-generating units.

Where the recoverable amounts of the Group's cash-generating units are assessed using analyses of discounted cash flows, the resulting valuations are also sensitive to changes in estimates of long-term commodity prices, production timing and recovery rates, exchange rates, operating costs, reserve estimates, closure costs and discount rates.

Note 6 outlines the significant judgments and assumptions made in measuring the impairments recorded and notes 12 and 13 outline judgments in relation to the testing of cash-generating units containing goodwill and indefinite-life intangible assets respectively.

(iv) Estimation of asset lives and determination of ore reserve and mineral resource estimates
Intangible assets are considered to have indefinite lives when, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate cash flows for the Group. The factors considered in making this judgment include the existence of contractual rights for unlimited terms; or evidence that renewal of the contractual rights without significant incremental cost can be expected for indefinite periods into the future in view of the Group's investment intentions.

Rio Tinto estimates its ore reserves and mineral resources based on information compiled by Competent Persons as defined in accordance with the JORC code (see note 1(j)). The amounts presented under IFRS and AAS are based on the ore reserves, and in some cases mineral resources, determined under the JORC code.

The estimation of ore reserves and mineral resources requires judgment to interpret available geological data and then to select an appropriate mining method and establish an extraction schedule. It also requires assumptions about future commodity prices, exchange rates, production costs, recovery rates and discount rates and, in some instances, the renewal of mining licences. There are many uncertainties in the estimation process and assumptions that are valid at the time of estimation may change significantly when new information becomes available.

New geological data, as well as changes in assumptions, may change ore reserve and mineral resource estimates and may ultimately result in their restatement. Changes in ore reserves and, in some cases, mineral resources, could have an impact on: depreciation and amortisation rates; the carrying values of intangible assets and property, plant and equipment; deferred stripping calculations; provisions for close-down and restoration costs; and the recovery of deferred tax assets.

(v) Close-down, restoration and environmental obligations (note 26)
Provision is made for close-down, restoration and environmental costs when the obligation occurs, based on the net present value of estimated future costs with, where appropriate, probability weighting of the different remediation and closure scenarios. The ultimate cost of close-down and restoration is uncertain, and management uses its judgment and experience to provide for these costs over the life of the operations.

Cost estimates can vary in response to many factors including: changes to the relevant legal or local/national government ownership requirements and any other commitments made to stakeholders; review of remediation and relinquishment options; the emergence of new restoration techniques and the effects of inflation. Experience gained at other mine or production sites is also a significant consideration, although elements of the restoration and rehabilitation of each site are relatively unique to the site and, in some cases, there may be relatively limited restoration and rehabilitation activity and historical precedent against which to benchmark cost estimates. External experts support the cost estimation process where appropriate.

Cost estimates are updated throughout the life of the operation and generally must comply with the Group's Capital Project Framework once the operation is ten years from expected closure. The expected timing of expenditure included in cost estimates can also change, for example in response to changes to expectations relating to ore reserves and mineral resources, production rates, operating licences or economic conditions. Expenditure may occur before and after closure and can continue for an extended period of time depending on the specific site requirements. Some expenditure can continue into perpetuity. In such cases, the provision for these ongoing costs may be restricted to a period for which the costs can be reliably estimated.

Cash flows must be discounted if this has a material effect. The selection of appropriate sources on which to base the calculation of the risk-free discount rate used for such close-down, restoration and environmental obligations requires judgment.

As a result of all of the above factors, there could be significant adjustments to the provision for close-down, restoration and environmental costs which would affect future financial results. Increases and decreases in environmental obligations and increases in close-down and restoration provisons for closed operations are charged or credited directly to the income statement. Increases and decreases in close-down obligations for operating businesses are accounted for as indicated in note 1(k) above. An increase in capitalised close-down and restoration provisions would increase the unwind of the discount (as for all provisions) and depreciation charges in the income statement in future years and increase the carrying value of property, plant and equipment, potentially impacting any future impairment charges or reversals.

(vi) Deferral of stripping costs (note 14)
Stripping of waste materials takes place throughout the production phase of a surface mine or pit. The identification of components within a mine and of life of component strip ratios is dependent on an individual mine's design. Changes to that design may introduce new components and/or change the life of component strip ratios. Changes in other technical or economic parameters that impact ore reserves may also have an impact on the life of component strip ratios, even if they do not affect the mine's design. Changes to the life of component strip ratios, are accounted for prospectively.

The Group's judgment as to whether multiple pit mines are considered separate or integrated operations determines whether initial stripping of a pit is deemed to be pre-production or production phase stripping and, therefore, the amortisation base for those costs. The judgment depends on each mine's specific circumstances and the analysis requires judgment: another mining company could make a different judgment even where the fact pattern appears to be similar.

(vii) Recognition of deferred tax liabilities on mining rights recognised in acquisitions
Deferred tax is provided in respect of fair value adjustments on acquisitions. These adjustments may relate to assets such as mining rights that, in general, are not eligible for income tax allowances. Provision for deferred tax is based on the difference between the carrying value of the asset and its income tax base (which may be nil). Even where there is no income tax base, the existence of a tax base for capital gains tax purposes is not usually taken into account in determining the deferred tax liability for the assets, unless they are classified as held for sale, because it is expected that the carrying amount will be recovered primarily through use of the assets and not from disposal. For acquisitions after 1 January 2004, such a deferred tax liability on acquisition results in a consequential increase in the amounts attributed to goodwill. For acquisitions prior to 1 January 2004, such deferred tax was recognised in equity on transition to IFRS.

(viii) Capitalisation of exploration and evaluation costs and development costs prior to the decision to mine/construct (note 13)
Under the Group's accounting policy, exploration expenditure is not capitalised. Evaluation expenditure is capitalised when there is a high degree of confidence that the Group will determine that a project is commercially viable and it is therefore considered probable that future economic benefits will flow to the Group.

A project's commercial viability is determined based on whether it will provide a satisfactory return relative to its perceived risks. Once commercial viability has been established, the Group will decide, at the appropriate authorisation level (that is, the Rio Tinto Investment Committee, and the board where appropriate) whether the project should proceed. In determining whether to approve a mining project, the Investment Committee reviews the ore reserves estimate together with analyses of the net present value of the project and sensitivity analyses for the key assumptions.

There are occasions when the Group concludes that the asset recognition criteria are met at an earlier stage than approval to proceed is granted. In these cases, evaluation expenditure is capitalised if there is a high degree of confidence that the Group will determine the project is commercially viable. The Group's view is that a high degree of confidence is greater than "more likely than not" (that is, greater than 50 per cent certainty) and less than "virtually certain" (that is, less than 90 per cent certainty). Determining whether there is a high degree of confidence that the Group will determine that an evaluation project is commercially viable requires a significant degree of judgment and assessment of all relevant factors such as the nature and objective of the project; the project's current stage; project timeline; current estimates of the project's net present value, including sensitivity analyses for the key assumptions; and the main risks of the project. Development expenditure incurred prior to the decision to proceed is subject to the same criteria for capitalisation, being a high degree of confidence that the Group will determine that a project is commercially viable.

In accordance with IFRS 6 "Exploration for and Evaluation of Mineral Resources", the criteria for the capitalisation of evaluation costs are applied consistently from period to period.

Subsequent recovery of the carrying value for evaluation costs depends on successful development, sale or other partnering arrangements of the undeveloped project. If a project does not prove viable, all irrecoverable costs associated with the project net of any related impairment provisions are charged to the income statement.

(ix) Identification of functional currencies
The functional currency for each subsidiary, joint operation and equity accounted unit, is the currency of the primary economic environment in which it operates. Determination of functional currency involves significant judgment and other companies may make different judgments based on similar facts. For many of Rio Tinto's businesses, their functional currency is the currency of the country in which they operate. The Group reconsiders the functional currency of its businesses if there is a change in the underlying transactions, events or conditions which determine their primary economic environment.

Notes to the 2015 financial statements
continued

1 Principal accounting policies continued

The determination of functional currency affects the carrying value of non-current assets included in the balance sheet and, as a consequence, the amortisation of those assets included in the income statement. It also impacts exchange gains and losses included in the income statement and in equity.

(x) Estimation of obligations for post-employment costs (note 45)

The value of the Group's obligations for post-retirement benefits is dependent on the amount of benefits to be paid out and is discounted to the balance sheet date. This amount will vary depending on the assumptions made about the future pay increases received by members of final pay plans, the level of inflation (for those benefits that are subject to some form of inflation protection), the number of individuals and how long individuals live in retirement. Most of the Group's defined benefit pension plans are closed to new entrants and the majority of the obligations relate to former employees. As a consequence, the carrying value of the Group's post-retirement obligations is less sensitive to assumptions about future salary increases than it is to assumptions regarding future inflation. The assumption regarding future inflation is based on market yields on inflation-linked instruments where possible, combined with consensus views on future inflation, and is derived using the same process at each reporting date. Changes to the assumption therefore reflect changes to the market and consensus views of future inflation.

The Group reviews the actual mortality rates of retirees in its major pension plans on a regular basis and uses these rates to set its current mortality assumptions. It also allows for future improvements in mortality having regard to standard improvement scales in each relevant country.

The discount rate used to value post-retirement obligations is based upon the yields on high quality corporate bonds in the relevant currency and which have durations consistent with the nature of the obligations. The discount rate will vary from one period to another in line with movements in corporate bond yields, but at any given measurement date there is relatively little estimation uncertainty. This rate is also used to calculate the interest cost on obligations and interest income on plan assets.

Details of the key assumptions, how they have moved since the previous balance sheet date and the sensitivity of the carrying value to changes in the assumptions are set out in note 45.

For 2015, the charge against income for post-retirement benefits net of tax and non-controlling interests was US$266 million. This charge included both pension and post-retirement healthcare benefits. The charge is net of interest income of US$371 million after tax and non-controlling interests.

The weighted average future increase in compensation levels was assumed to be 3.3 per cent in 2015 and will be 3.2 per cent for 2016. The average discount rate used was 3.5 per cent in 2015 and will be 3.7 per cent in 2016 reflecting the net impact of changes in corporate bond yields in the currencies in which the Group has pension obligations.

Based on the known changes in assumptions noted above and other expected circumstances, the expected impact of post-retirement costs on the Group's net earnings in 2016 would be US$95 million more than in 2015. The actual charge may be impacted by other factors that cannot be predicted, such as the effect of changes in benefits, number of employees and exchange rates.

The table below sets out the potential change in the Group's 2015 net loss (after tax and non-controlling interests) that would result from hypothetical changes to post-retirement assumptions and estimates. The sensitivities are viewed for each assumption in isolation, although a change in one assumption is likely to result in some offset elsewhere. The figures in the table only show the impact on underlying and net earnings. Changing the assumptions would also have an impact on the balance sheet, and this is shown in note 45.

	US$ million
Sensitivity of the Group's 2015 underlying earnings and net losses to changes in:	
Discount rate	
Increase of 0.5 percentage points	36
Decrease of 0.5 percentage points	(31)
Inflation	
Increase of 0.5 percentage points	(24)
Decrease of 0.5 percentage points	23
Salary increases	
Increase of 0.5 percentage points	(7)
Decrease of 0.5 percentage points	6
Demographic – allowance for additional future mortality improvements	
Participants assumed to have the mortality rates of individuals who are one year older	15
Participants assumed to have the mortality rates of individuals who are one year younger	(15)

(xi) Recoverability of potential deferred tax assets (note 17)

The Group has tax losses, and other deductible temporary differences, mainly in Australian, Canadian, French, UK, and US taxable entities that have the potential to reduce tax payments in future years. Deferred tax assets have been recognised to the extent that their recovery is probable, having regard to the availability of sufficient taxable temporary differences relating to the same taxation authority and the same taxable entity, the projected future taxable income of these taxable entities and after taking account of specific risk factors that are expected to affect the recovery of these assets.

(xii) Contingencies (note 31)

Disclosure is made of material contingent liabilities unless the possibility of any loss arising is considered remote.

(xiii) Basis of consolidation (notes 33 to 36)

Judgment is sometimes required to determine whether the Group has control, joint control or significant influence over an entity.

2 Operating segments

Gross sales revenue [(a)]	2015 US$m	2014 US$m	2013 US$m
Iron Ore	**15,305**	23,281	25,994
Aluminium	**10,117**	12,123	12,463
Copper & Coal	**7,705**	9,957	10,434
Diamonds & Minerals	**3,674**	4,783	5,129
Other Operations	**13**	241	1,761
Reportable segments total	**36,814**	50,385	55,781
Inter-segment transactions	**(29)**	(344)	(1,182)
Product group total	**36,785**	50,041	54,599
Items excluded from underlying earnings	**(1)**	–	(24)
Gross sales revenue	**36,784**	50,041	54,575
Share of equity accounted units and adjustments for inter-subsidiary/equity accounted units sales	**(1,955)**	(2,377)	(3,404)
Consolidated sales revenue per income statement	**34,829**	47,664	51,171
Depreciation and amortisation [(b)]			
Iron Ore	**1,906**	1,953	1,627
Aluminium	**1,172**	1,180	1,151
Copper & Coal	**1,441**	1,464	1,476
Diamonds & Minerals	**488**	619	765
Other Operations	**32**	34	67
Reportable segments total	**5,039**	5,250	5,086
Other items	**68**	82	106
Less: depreciation and amortisation of equity accounted units	**(462)**	(472)	(401)
Depreciation and amortisation per note 4	**4,645**	4,860	4,791
Underlying earnings [(c)]			
Iron Ore	**3,952**	8,107	9,858
Aluminium	**1,118**	1,248	557
Copper & Coal	**274**	831	965
Diamonds & Minerals	**189**	269	237
Other Operations	**(88)**	(240)	(279)
Reportable segments total	**5,445**	10,215	11,338
Inter-segment transactions	**–**	–	(4)
Other items	**(375)**	(593)	(730)
Exploration and evaluation not attributed to product groups	**(141)**	(156)	(145)
Net finance costs	**(389)**	(161)	(242)
Underlying earnings	**4,540**	9,305	10,217
Items excluded from underlying earnings [(d)]	**(5,406)**	(2,778)	(6,552)
Net (loss)/earnings attributable to owners of Rio Tinto per income statement	**(866)**	6,527	3,665
Tax charge			
Iron Ore	**1,757**	3,698	5,290
Aluminium	**303**	303	(18)
Copper & Coal	**(96)**	98	296
Diamonds & Minerals	**131**	135	131
Other Operations	**(73)**	(135)	(229)
Reportable segments total	**2,022**	4,099	5,470
Other items	**(192)**	(193)	(302)
Exploration and evaluation not attributed to product groups	**(25)**	(34)	(23)
Net finance costs	**(245)**	(396)	(77)
	1,560	3,476	5,068
Tax credit excluded from underlying earnings [(d)]	**(567)**	(423)	(2,642)
Tax charge per income statement	**993**	3,053	2,426

2 Operating segments continued

Capital expenditure	2015 US$m	2014 US$m	2013 US$m
Iron Ore	**1,726**	4,211	6,814
Aluminium	**1,682**	2,021	2,226
Copper & Coal	**1,564**	2,128	3,392
Diamonds & Minerals	**446**	562	1,162
Other Operations	**(36)**	(56)	278
Reportable segments total	**5,382**	8,866	13,872
Other items	**65**	(416)	145
Less: capital expenditure of equity accounted units	**(859)**	(1,032)	(1,073)
Capital expenditure per financial information by business units	**4,588**	7,418	12,944
Add: Proceeds from disposal of property, plant and equipment	**97**	744	57
Capital expenditure per cash flow statement	**4,685**	8,162	13,001

Rio Tinto's management structure is based on the principal product groups in the table above together with the global functions that support the business. The chief executive of each product group reports to the chief executive of Rio Tinto. The chief executive of Rio Tinto monitors the performance of each product group based on a number of measures, including capital expenditure and operating cash flows, with underlying earnings being the key financial performance indicator. Finance costs and net debt are managed on a Group basis.

In 2015 the Energy product group as presented in previous periods was split, with the coal assets taken to the newly formed Copper & Coal product group and the uranium assets to the Diamonds & Minerals product group.

Generally, business units are allocated to product groups based on their primary product. The Diamonds & Minerals product group includes businesses with products such as uranium, borates, salt and titanium dioxide feedstock together with diamond operations and the Simandou iron ore project, which is the responsibility of the Diamonds & Minerals product group chief executive. The Copper & Coal group includes certain gold operations in addition to copper and coal.

The financial information by business unit provided on page 194 of these financial statements provides additional voluntary disclosure which the Group considers useful to the users of the financial statements.

(a) Gross sales revenue

Gross sales revenue includes the sales revenue of equity accounted units (after adjusting for sales to subsidiaries) of US$2,115 million (2014: US$2,533 million, 2013: US$3,757 million) which are not included in consolidated sales revenue. Consolidated sales revenue includes subsidiary sales of US$160 million (2014: US$156 million, 2013: US$353 million) to equity accounted units which are not included in gross sales revenue.

(b) Depreciation and amortisation

Product group depreciation and amortisation totals include 100 per cent of subsidiaries' depreciation and amortisation and include Rio Tinto's share of the depreciation and amortisation of equity accounted units. Rio Tinto's share of the depreciation and amortisation charge of equity accounted units is deducted to arrive at depreciation and amortisation, excluding equity accounted units, as shown in note 4. These figures exclude impairment charges and reversals, which are excluded from underlying earnings.

(c) Underlying earnings

Underlying earnings is reported by Rio Tinto to provide greater understanding of the underlying business performance of its operations and to enhance comparability of reporting periods.

The measure of underlying earnings is used by the chief executive of Rio Tinto to assess the performance of the product groups. Underlying earnings and net (loss)/earnings both represent amounts net of tax attributable to owners of Rio Tinto. The following items are excluded from net (loss)/earnings in arriving at underlying earnings in each period irrespective of materiality:

- Net (losses)/gains on disposal and consolidation of interests in businesses.
- Impairment charges and reversals.
- Profit/(loss) after tax from discontinued operations.
- Exchange and derivative gains and losses. This exclusion includes exchange gains/(losses) on US dollar net debt and intragroup balances, gains/(losses) on currency and interest rate derivatives not qualifying for hedge accounting and gains/(losses) on commodity derivatives not qualifying for hedge accounting.

In addition, there is a final judgmental category which includes, where applicable, other credits and charges that, individually or in aggregate if of a similar type, are of a nature or size to require exclusion in order to provide additional insight into underlying business performance.

Product group earnings include earnings of subsidiaries and equity accounted units stated before finance items but after the amortisation of discount.

Rio Tinto's share of the underlying profits of equity accounted units amount to US$390 million in 2015 (2014: US$626 million, 2013: US$710 million). This amount is attributable as follows: US$307 million profit to the Copper & Coal product group and US$83 million profit to other product groups (2014: US$551 million profit attributable to the Copper & Coal product group and US$75 million profit to other product groups; 2013: US$705 million profit attributable to the Copper & Coal product group and US$5 million to other product groups). These amounts are included in underlying earnings of the relevant product groups and include the underlying earnings of the Group's tolling entities which process alumina. Tolling entities recharge the majority of their costs and generally have minimal earnings.

The Copper & Coal product group's underlying earnings in 2013 included a US$131 million impairment after tax in relation to the product group's investment in Northern Dynasty Minerals Ltd following a strategic review of this shareholding by the product group.

(d) Reconciliation of net (losses)/earnings to underlying earnings

Exclusions from underlying earnings	Pre-tax[m] 2015 US$m	Taxation 2015 US$m	Non-controlling interests 2015 US$m	Net amount 2015 US$m	Net amount 2014 US$m	Net amount 2013 US$m
Impairment charges net of reversals (note 6)	**(2,791)**	**(57)**	**1,046**	**(1,802)**	(138)	(3,428)
Net gains/(losses) on consolidation and disposal of interests in businesses[e]	**64**	**(2)**	**(14)**	**48**	(349)	847
Exchange and derivative (losses)/gains:						
– Exchange losses on US dollar net debt and intragroup balances[f]	**(3,518)**	**269**	**(33)**	**(3,282)**	(1,858)	(2,929)
– (Losses)/gains on currency and interest rate derivatives not qualifying for hedge accounting[g]	**(86)**	**(1)**	**(1)**	**(88)**	(22)	2
– Gains on commodity derivatives not qualifying for hedge accounting[h]	**146**	**(58)**	**–**	**88**	30	196
Restructuring costs including global headcount reductions	**(344)**	**86**	**–**	**(258)**	(82)	(367)
Increased closure provision for legacy operations	**(262)**	**29**	**–**	**(233)**	–	–
Recognition of deferred tax assets relating to planned divestments	**–**	**250**	**(16)**	**234**	–	–
Write off of deferred tax asset following the MRRT repeal	**–**	**–**	**–**	**–**	(362)	–
Gain on disposal of the Group's St James's Square properties	**–**	**–**	**–**	**–**	356	–
Clermont/Blair Athol[i]	**–**	**–**	**–**	**–**	–	(173)
Deferred tax asset write off	**–**	**–**	**–**	**–**	–	(114)
Rio Tinto Kennecott[j]	**21**	**(3)**	**–**	**18**	–	(283)
Simandou and QMM IFRS 2 charge[k]	**(11)**	**–**	**–**	**(11)**	(116)	–
Other exclusions[l]	**(179)**	**54**	**5**	**(120)**	(237)	(303)
Total excluded from underlying earnings	**(6,960)**	**567**	**987**	**(5,406)**	(2,778)	(6,552)
Net (loss)/earnings	**(726)**	**(993)**	**853**	**(866)**	6,527	3,665
Underlying earnings	**6,234**	**(1,560)**	**(134)**	**4,540**	9,305	10,217

(e) Pre-tax gain of US$64 million arose mainly from the reduction in shareholding in SouthGobi Resources, the sale of the Group's interest in Murowa Diamonds and Sengwa Colliery on the 17 June 2015 and from the Aluminium product group's divestment of ECL on 9 July 2015 and Alsea on 24 November 2015.

Net loss on disposal and consolidation of interests in businesses during 2014 mainly related to further adjustments in respect of contractual obligations for product sales and delivery which remain with the Group following the sale of the Group's interest in the Clermont mine on 29 May 2014, the disposal of the Group's interest in Rio Tinto Mozambique on 7 October 2014 and indemnities provided in respect of prior disposals.

(f) Net exchange losses in 2015 comprise post-tax foreign exchange losses of US$1,197 million on US dollar denominated net debt in non-US dollar functional currency companies (on borrowings of approximately US$23.1 billion), and US$2,085 million losses on intragroup balances, as the Australian dollar, Canadian dollar and the euro all weakened against the US dollar.

In late 2015 the Group restructured certain internal group borrowings to reduce the income statement volatility resulting from the retranslation of US dollar denominated debt issued by entities with a non-US dollar functional currency.

(g) Valuation changes on currency and interest rate derivatives, which are ineligible for hedge accounting, other than those embedded in commercial contracts, and the currency revaluation of embedded US dollar derivatives contained in contracts held by entities whose functional currency is not the US dollar.

(h) Valuation changes on commodity derivatives, including those embedded in commercial contracts, that are ineligible for hedge accounting, but for which there will be an offsetting change in future Group earnings.

(i) Adjustments in relation to Clermont and Blair Athol arose in 2013 following reclassification to disposal groups held for sale, and reflect contractual obligations for product sales and funding of closure activities, which will remain with the Group following completion of the divestments.

(j) On 10 April 2013, Rio Tinto Kennecott's Bingham Canyon mine experienced a slide along a geological fault line of its north-eastern wall. Charges relating to the slide, which have been excluded from underlying earnings, primarily comprise the write off of certain deferred stripping assets and damaged equipment. In 2015, adjustments for settlement of insurance claims have been made to the amount excluded from underlying earnings, and will continue as insurance claims are settled.

(k) In 2015, the charge of US$11 million (after non-controlling interests and tax), calculated in accordance with IFRS 2 "Share-based Payment", reflects the recapitalisation of QIT Madagascar Minerals S.A. In 2014, the charge of US$116 million (after non-controlling interests and tax), calculated in accordance with IFRS 2 "Share-based Payment", reflects the discount to an estimate of fair value at which shares are transferrable to the Government of Guinea under the Simandou project Investment Framework ratified on 26 May 2014.

(l) Other credits and charges that, individually, or in aggregate if of similar type, are of a nature or size to require exclusion in order to provide additional insight into underlying business performance. In 2015, other exclusions included a provision relating to the uncompleted divestment of Carbone Savoie within the Rio Tinto Aluminium product group, divestment costs and an increase in provision relating to the Gove refinery. In 2014, other exclusions included adjustments relating to the five-year community support package for the Nhulunbuy area and community following the Gove refinery curtailment. In 2013, other exclusions included adjustments relating to inventory sold by Richards Bay Minerals during the period, which had been recognised at fair value on initial consolidation in 2012.

(m) Exclusions from underlying earnings relating to equity accounted units are stated after tax and are included in the column "Pre-tax".

Notes to the 2015 financial statements
continued

3 Operating segments – additional information

Consolidated sales revenue by destination (a)	2015 %	2014 (b) %	2013 (b) %	2015 US$m	2014 (b) US$m	2013 (b) US$m
China	**41.8**	38.3	36.3	**14,558**	18,247	18,590
United States of America	**15.2**	13.2	13.4	**5,292**	6,279	6,865
Other Asia	**13.5**	15.1	15.7	**4,695**	7,221	8,011
Japan	**11.2**	15.6	16.3	**3,907**	7,447	8,355
Europe (excluding UK)	**8.0**	8.7	9.6	**2,783**	4,142	4,901
Canada	**4.3**	3.6	3.1	**1,488**	1,715	1,578
Australia	**2.5**	2.0	1.8	**867**	976	942
UK	**1.0**	1.0	1.0	**339**	464	503
Other	**2.5**	2.5	2.8	**900**	1,173	1,426
Consolidated sales revenue	**100.0**	100.0	100.0	**34,829**	47,664	51,171

(a) Consolidated sales revenue by geographical destination is based on the ultimate country of destination of the product, if known. If the eventual destination of the product sold through traders is not known then revenue is allocated to the location of the product at the time when the risks and rewards of ownership are transferred. Rio Tinto is domiciled in both the UK and Australia.

(b) 2014 and 2013 comparative figures are adjusted to conform with the 2015 presentation of consolidated sales revenue.

Gross sales revenue by product

Gross sales revenues of the Group are derived from the following products sold to external customers:

	2015 US$m	2014 US$m	2013 US$m
Iron Ore	**15,239**	23,178	26,235
Aluminium	**9,904**	11,667	12,059
Copper	**3,381**	4,815	4,766
Coal	**2,799**	3,685	4,557
Industrial Minerals	**2,155**	3,238	3,330
Gold	**1,093**	1,007	402
Diamonds	**698**	901	859
Other	**1,515**	1,550	2,367
Total	**36,784**	50,041	54,575
Share of equity accounted units sales and inter-subsidiary equity accounted units sales and items excluded from underlying earnings	**(1,955)**	(2,377)	(3,404)
Consolidated sales revenue	**34,829**	47,664	51,171

Non-current assets other than excluded items

The total of non-current assets other than items excluded is shown by location below. This is allocated based on the location of the business units holding the assets.

Non-current assets other than excluded items (b)	2015 US$m	2014 US$m
Australia	**32,615**	38,162
Canada	**14,396**	17,065
Mongolia	**7,712**	7,842
United States of America	**5,372**	5,163
Africa	**3,682**	5,838
South America	**3,639**	3,552
Indonesia	**1,385**	1,116
Europe (excluding France and the UK)	**451**	460
UK	**274**	236
France	**267**	491
Other countries	**895**	1,417
	70,688	81,342
Non-current assets excluded from analysis above:		
Deferred tax assets	**3,309**	3,540
Accounts receivable	**964**	800
Derivatives and other financial assets (excluding tax recoverable)	**788**	722
Quasi equity loans to equity accounted units (c)	**183**	228
Tax recoverable	**78**	70
Total non-current assets per balance sheet	**76,010**	86,702

(b) Allocation of non-current assets by country is based on the location of the business units holding the assets. It includes investments in equity accounted units totalling US$4,758 million (2014: US$4,640 million) which represents the Group's share of net assets excluding quasi equity loans shown separately within "Loans to equity accounted units" above.

(c) Loans to equity accounted units comprise quasi equity loans of US$183 million (2014: US$228 million) included in "Investments in equity accounted units" on the face of the balance sheet and non-current non-quasi equity loans of US$nil (2014: US$nil) shown within "Other financial assets".

4 Net operating costs

	Note	**2015 US$m**	2014 US$m	2013 US$m
Raw materials, consumables, repairs and maintenance		**9,610**	11,044	11,164
Amortisation of intangible assets	13	**207**	237	255
Depreciation of property, plant and equipment	14	**4,438**	4,623	4,536
Employment costs	5	**5,446**	6,659	7,568
Shipping and other freight costs		**2,165**	3,370	3,513
Decrease in finished goods and work in progress		**701**	1,284	199
Royalties		**1,863**	2,516	2,883
Amounts charged by equity accounted units (a)		**459**	1,554	1,728
Net foreign exchange (losses)/gains		**(263)**	(34)	(71)
Other external costs		**4,181**	3,074	4,025
Provisions (including exchange differences on provisions)	26	**731**	1,138	1,449
Research and development		**104**	112	231
Costs included above qualifying for capitalisation		**(661)**	(738)	(582)
Other operating income		**(1,062)**	(929)	(794)
Net operating costs (excluding items shown separately)		**27,919**	33,910	36,104

(a) Amounts charged by equity accounted units relate to toll processing and also include purchases from equity accounted units of bauxite and aluminium which are then processed by the product group or sold to third parties. Generally, purchases are in proportion to the Group's share of the equity accounted unit but in 2015, US$378 million (2014: US$463 million; 2013: US$529 million) related to purchases of the other investor's share of production.

5 Employment costs

	Note	**2015 US$m**	2014 US$m	2013 US$m
Total employment costs				
– Wages and salaries		**4,670**	5,878	7,181
– Social security costs		**430**	467	421
– Net post-retirement charge	45	**439**	590	805
– Share option charge	44	**128**	152	142
		5,667	7,087	8,549
Less: charged within provisions		**(221)**	(428)	(981)
Employment costs	4	**5,446**	6,659	7,568

Notes to the 2015 financial statements
continued

6 Impairment charges and reversals

	Pre-tax 2015 US$m	Taxation 2015 US$m	Non-controlling interests 2015 US$m	Net amount 2015 US$m	Pre-tax amount 2014 US$m	Pre-tax amount 2013 US$m
Diamonds & Minerals – Simandou	**(2,039)**	**–**	**921**	**(1,118)**	–	–
Diamonds & Minerals – Energy Resources of Australia Ltd	**(260)**	**(123)**	**121**	**(262)**	–	–
Diamonds & Minerals – Roughrider	**(229)**	**30**	**–**	**(199)**	–	–
Aluminium – Other	**(179)**	**20**	**–**	**(159)**	(46)	(57)
Aluminium – Kitimat	**–**	**–**	**–**	**–**	(1,092)	(950)
Aluminium – Pacific Aluminium	**–**	**–**	**–**	**–**	1,224	–
Copper & Coal – Molybdenum Autoclave Process	**(17)**	**6**	**–**	**(11)**	(559)	–
Copper & Coal – Oyu Tolgoi	**–**	**–**	**–**	**–**	–	(4,716)
Copper & Coal – SouthGobi	**–**	**–**	**–**	**–**	–	(269)
Copper & Coal – Rio Tinto Coal Mozambique	**–**	**–**	**–**	**–**	–	(497)
Other	**(67)**	**10**	**4**	**(53)**	–	(1,042)
Total impairment charge net of reversals	**(2,791)**	**(57)**	**1,046**	**(1,802)**	(473)	(7,531)
Allocated as:						
Goodwill (note 12)	**(116)**				–	(1,149)
Intangible assets (note 13)	**(1,833)**				–	(1,287)
Property, plant and equipment (note 14)	**(652)**				(1,034)	(4,882)
Investment in equity accounted units	**–**				589	(216)
Other assets and liabilities	**(190)**				(28)	3
Total impairment charge net of reversals	**(2,791)**				(473)	(7,531)
Comprising:						
Impairment charges net of reversals of consolidated balances				**(2,791)**	(1,062)	(7,315)
Impairment reversals/(charges) of investments in equity accounted units (pre-tax)				**–**	841	(230)
Total impairment charge net of reversals in the financial information by business unit (page 195)				**(2,791)**	(221)	(7,545)
Taxation (including related to EAUs)				**(57)**	83	1,561
Non-controlling interests				**1,046**	–	2,556
Total impairment in the income statement				**(1,802)**	(138)	(3,428)

Diamonds & Minerals

Simandou, Guinea

On 26 May 2014, Rio Tinto and its Simandou project partners signed an Investment Framework with the Government of Guinea which provided the legal and commercial foundation for the project and formally separated the infrastructure and mine development plan. The Simandou project partners are currently finalising an integrated Bankable Feasibility Study for the mine, port and infrastructure elements of the project, which is scheduled to be submitted to the Government of Guinea in May 2016.

As a result of current market conditions and uncertainty over infrastructure ownership and funding, the Group has determined that it would be appropriate to record a pre-tax impairment charge of US$1,655 million to exploration and evaluation intangible assets and a pre-tax impairment charge of US$194 million to property, plant and equipment to fully write-down the long-term assets of the project and a charge of US$7 million in relation to inventories. The Group will expense the cost of further studies as incurred.

A further pre-tax charge of US$183 million has been recognised as a financial liability for contractual arrangements made in relation to the development of the Simandou project.

Energy Resources of Australia Ltd (ERA), Australia

On 11 June 2015, Rio Tinto announced that it supported ERA's decision not to proceed with the final Feasibility Study of the Ranger 3 Deeps project. Rio Tinto also determined it did not support any further study or future development of Ranger 3 Deeps due to the project's economic challenges. This resulted in a pre-tax write down to property, plant and equipment and intangible assets of US$260 million to fully write off these long-term assets. Deferred tax assets of US$123 million were also fully written off. The business continues to process low-grade ore stockpiled from the now closed open-pit operations.

Roughrider, Canada

The Group completed an Order of Magnitude study for the Roughrider project in late 2015, which provided an updated view of the development concept and geological model for this uranium project. The cash-generating unit is tested annually for impairment as it contains goodwill. The impairment test resulted in a pre-tax impairment charge of US$116 million to fully write off goodwill and a pre-tax impairment charge of US$113 million to exploration and evaluation intangible assets, which were capitalised as a result of the Hathor Exploration acquisition in 2012.

The recoverable amount for Roughrider has been determined to be US$250 million assessed by reference to a fair value less cost of disposal (FVLCD) model in line with the accounting policy set out in note 1(i). The recoverable amount for the cash-generating unit is classified as level 3 under the fair value hierarchy.

In arriving at FVLCD, post-tax cash flows expressed in real terms have been estimated and discounted using a post-tax discount rate of 7.3 per cent. Technical oversight of the Roughrider project has transitioned to Rio Tinto Exploration. The Group is continuing to evaluate the optimum development pathway in light of a subdued medium-term outlook for uranium demand.

Aluminium

Other

In the six months to 30 June 2015 challenging economic conditions at the Carbone Savoie cash-generating unit resulted in an US$147 million impairment charge. Property, plant and equipment and intangible assets were fully impaired on the basis of US$nil recoverable amount.

In 2015, a pre-tax impairment loss of US$32 million was recorded in relation to other aluminium businesses which were subsequently disposed of in the second half of the year.

In 2014, a pre-tax impairment loss of US$46 million was recorded in relation to other aluminium businesses.

In 2013, a pre-tax impairment loss of US$57 million was recorded in relation to the Shawinigan aluminium smelter following the decision to close the plant.

Kitimat, Canada

During the first half of 2014, further revisions to future capital required to complete the modernisation project resulted in a pre-tax impairment charge of US$1,092 million to the property, plant and equipment of the cash-generating unit. The recoverable amount was determined by reference to a FVLCD model, in line with the accounting policy set out in note 1(i).

In 2013, the annual impairment review of the Group's Aluminium cash-generating units with indefinite-life intangible assets resulted in a pre-tax impairment charge of US$950 million in the Kitimat cash-generating unit. The indefinite-life intangible assets relating to water rights at Kitimat were fully impaired following the allocation of this impairment loss.

Pacific Aluminium, Australia and New Zealand

Impairment reversal was recorded in 2014 in relation to the Tomago, Bell Bay and Boyne smelters, and the Gladstone Power Station, within the Pacific Aluminium cash-generating unit as evidence emerged that previously recognised impairment losses from 2011 and 2012 had reversed.

Copper & Coal

Molybdenum Autoclave Process, US

In 2015, previously estimated net disposal proceeds for the Molybdenum Autoclave Process project were reduced resulting in a pre-tax impairment of US$17 million recorded against property, plant and equipment. In 2014, following a review of the investment case and subsequent decision to terminate the project, a pre-tax impairment charge of US$559 million was recorded against property, plant and equipment.

Oyu Tolgoi, Mongolia

In May 2015, the Oyu Tolgoi Underground Mine Development and Financing Plan was signed, resolving the outstanding shareholder issues and demonstrating a commitment to develop the underground mine by all key stakeholders. In December 2015, a project financing package was agreed which confirms the sources of funding, pricing and leverage parameters for the project.

As part of the annual impairment review at 30 September 2015, the carrying value of the project was compared with a post-tax FVLCD model of cash flows from the open pit and underground mines. The value indicated by the FVLCD model for Oyu Tolgoi exceeded the carrying value of the cash-generating unit by US$0.3 billion at 30 September 2015. As such, no impairment charge has been recognised (2014: no impairment charge). No impairment indicators were identified subsequent to the annual testing date.

The assumptions subject to the most estimation uncertainty for the FVLCD calculation are the long-term copper price and the discount rate. To illustrate these sensitivities on the downside, the valuation indicated by the FVLCD modelling would reduce by US$0.8 billion if long-term copper prices were lower than forecast by 15 US cents per pound. Alternatively an increase in the project discount rate of one per cent would reduce the indicated FVLCD by US$1.4 billion if all other model inputs remained the same. In the absence of mitigating actions being taken by management, these scenarios would indicate a material impairment loss had occurred.

Other key assumptions to which the calculation of FVLCD for Oyu Tolgoi is most sensitive are operating costs, the long-term gold price, and Mongolian tugrik and Chinese yuan exchange rates against the US dollar. Future selling prices and operating costs have been estimated in line with the policy set out in note 1(i).

SouthGobi, Mongolia

The assets of SouthGobi were fully written-off as a result of the 2013 impairment testing.

Rio Tinto Coal Mozambique

In 2013, a pre-tax impairment charge was allocated to the Benga and Zambeze cash-generating units which formed Rio Tinto Coal Mozambique. The business was subsequently disposed of during 2014.

Other

In 2013, a pre-tax impairment charge of US$790 million was recorded in relation to the full write off of property, plant and equipment at the Gove alumina refinery following the decision to curtail operations. The refinery is reported separately from Aluminium within Other Operations.

7 Share of profit after tax of equity accounted units

	2015 US$m	2014 US$m	2013 US$m
Sales revenue: Rio Tinto share (a)	**2,149**	2,852	4,113
Operating costs	**(1,609)**	(1,804)	(2,871)
Profit before finance items and taxation	**540**	1,048	1,242
Finance items	**(37)**	(49)	(97)
Share of profit after tax of equity accounted units	**35**	30	31
Profit before taxation	**538**	1,029	1,176
Taxation	**(177)**	(404)	(478)
Profit for the year (Rio Tinto share)	**361**	625	698

(a) Sales revenue of equity accounted units excludes sales by equity accounted units to Group subsidiaries.

Further information relating to the Group's interests in joint ventures and associates is given in notes 35 and 36.

8 Finance income and finance costs

	Note	2015 US$m	2014 US$m	2013 US$m
Finance income from equity accounted units (Rio Tinto share)		**8**	10	14
Other finance income (including bank deposits and other financial assets)		**44**	54	68
Total finance income		**52**	64	82
Interest payable and similar charges [(a)]		**(1,004)**	(1,119)	(1,234)
Amounts capitalised	14	**254**	470	727
Total finance costs		**(750)**	(649)	(507)

(a) Interest payable and similar charges relate to interest on bank loans and other borrowings. This includes a fair value loss on interest rate swaps designated as fair value hedges of US$11 million (2014: US$199 million gain; 2013: US$266 million loss) and a fair value loss on bonds and notes attributable to interest rate risk of US$17 million (2014: US$200 million loss; 2013: US$257 million gain).

9 Taxation

	Note	2015 US$m	2014 US$m	2013 US$m
Taxation charge				
– Current		**1,132**	3,402	4,102
– Deferred	17	**(139)**	(349)	(1,676)
		993	3,053	2,426

Prima facie tax reconciliation	2015 US$m	2014 US$m	2013 US$m
(Loss)/profit before taxation	**(726)**	9,552	3,505
Deduct: share of profit after tax of equity accounted units	**(361)**	(625)	(698)
(Deduct)/add: (impairment reversal)/impairment after tax of investments in equity accounted units [(a)]	**–**	(589)	216
Parent companies' and subsidiaries' (loss)/profit before tax	**(1,087)**	8,338	3,023
Prima facie tax (receivable)/payable at UK rate of 20 per cent (2014: 21 per cent; 2013: 23 per cent)	**(217)**	1,751	695
Higher rate of taxation on Australian earnings	**506**	1,038	1,411
Impact of items excluded in arriving at underlying earnings [(b)]:			
Impairment charges net of reversals	**615**	(112)	135
Gains and losses on disposal and consolidation of businesses	**(11)**	(85)	(199)
Foreign exchange on excluded finance items	**481**	231	77
Recognition of deferred tax assets relating to planned divestments	**(250)**	–	–
Impact of tax law changes on recognition of deferred tax assets [(c)]	**–**	401	–
Other exclusions	**(17)**	(35)	(7)
Impact of changes in tax rates and laws	**(3)**	(11)	12
Other tax rates applicable outside the UK and Australia	**(68)**	5	(63)
Resource depletion and other depreciation allowances	**(15)**	(121)	(103)
Research, development and other investment allowances	**(21)**	(34)	(49)
Recognition of previously unrecognised deferred tax assets	**(40)**	(106)	–
Unrecognised current year operating losses	**45**	73	339
Other items [(d)]	**(12)**	58	178
Total taxation charge [(e)]	**993**	3,053	2,426

(a) For the year ended 31 December 2014, the impairment reversal in investments in equity accounted units is net of a tax charge of US$252 million (31 December 2013: tax credit of US$14 million).

(b) The impact for each item includes the effect of tax rates applicable outside the UK.

(c) For the year ended 31 December 2014, the remaining Minerals Resource Rent Tax (MRRT) starting base deferred tax asset was de-recognised on repeal of the tax in Australia.

(d) Other items include various adjustments to provisions for taxation in prior periods.

(e) This tax reconciliation relates to the Group's parent companies, subsidiaries and joint operations. The Group's share of profit of equity accounted units is net of tax charges of US$177 million (31 December 2014: US$404 million; 31 December 2013: US$478 million).

	2015 Total US$m	2014 Total US$m	2013 Total US$m
Tax on exchange adjustments	–	(3)	(17)
Tax on fair value movements:			
– Cash flow hedge fair value (gains)/losses	(3)	2	(34)
– Cash flow hedge gains transferred to the income statement	–	–	19
– Losses on revaluation of available for sale securities	–	1	2
– Losses on revaluation of available for sale securities transferred to the income statement	–	(1)	(20)
Tax (charge)/credit on actuarial (gains)/losses on post-retirement benefit plans	(175)	215	(641)
Other	–	(8)	(6)
Tax relating to components of other comprehensive (loss)/income for the year (a)	**(178)**	**206**	**(697)**

(a) This comprises deferred tax charge of US$174 million (2014: credit of US$205 million; 2013: charge of US$697 million) and current tax charge of US$4 million (2014: credit of US$1 million; 2013: US$nil), plus share of tax on other comprehensive income of equity accounted units shown separately (see note 17).

10 (Loss)/earnings per ordinary share

	2015 Loss US$m	2015 Weighted average number of shares (millions)	2015 Per share amount (cents)	2014 Earnings US$m	2014 Weighted average number of shares (millions)	2014 Per share amount (cents)
Basic (loss)/earnings per share attributable to ordinary shareholders of Rio Tinto (a)	(866)	1,824.7	(47.5)	6,527	1,848.4	353.1
Diluted (loss)/earnings per share attributable to ordinary shareholders of Rio Tinto (b)	(866)	1,824.7	(47.5)	6,527	1,858.7	351.2

	2013 Earnings US$m	2013 Weighted average number of shares (millions)	2013 Per share amount (cents)
Basic earnings per share attributable to ordinary shareholders of Rio Tinto (a)	3,665	1,847.3	198.4
Diluted earnings per share attributable to ordinary shareholders of Rio Tinto (b)	3,665	1,857.7	197.3

(a) The weighted average number of shares is calculated as the average number of Rio Tinto plc shares outstanding not held as treasury shares of 1,398.1 million (2014: 1,413.0 million; 2013: 1,411.6 million) plus the average number of Rio Tinto Limited shares outstanding of 426.6 million (2014: 435.4 million; 2013: 435.7 million) over the relevant period. No Rio Tinto Limited shares were held by Rio Tinto plc in any of the periods presented.

(b) In accordance with IAS 33 "Earnings per share", for the purposes of calculating diluted loss per share, the effect of potentially dilutive securities has not been taken into account for the year ended 31 December 2015. For the purposes of calculating diluted earnings per share, the effect of dilutive securities of 10.3 million shares in 2014 and 10.4 million shares in 2013 is added to the weighted average number of shares described in (a) above. This effect is calculated under the treasury stock method. The Group's only potential dilutive ordinary shares are share options for which terms and conditions are described in note 44.

11 Dividends

	2015 US$m	2014 US$m	2013 US$m
Rio Tinto plc previous year final dividend paid	**1,642**	1,533	1,311
Rio Tinto plc interim dividend paid	**1,476**	1,299	1,213
Rio Tinto Limited previous year final dividend paid	**520**	473	406
Rio Tinto Limited interim dividend paid	**438**	405	392
Dividends paid during the year	**4,076**	3,710	3,322
Dividends per share: paid during the year	**226.5c**	204.5c	178.0c
Dividends per share: proposed in the announcement of the results for the year	**107.5c**	119.0c	108.5c

	Dividends per share 2015	Dividends per share 2014	Dividends per share 2013
Rio Tinto plc previous year final (pence)	**77.98p**	65.82p	60.34p
Rio Tinto plc interim (pence)	**68.92p**	56.90p	54.28p
Rio Tinto Limited previous year final – fully franked at 30% (Australian cents)	**152.98c**	120.14c	91.67c
Rio Tinto Limited interim – fully franked at 30% (Australian cents)	**144.91c**	103.09c	93.00c

	Number of shares 2015 (millions)	Number of shares 2014 (millions)	Number of shares 2013 (millions)
Rio Tinto plc previous year final	**1,412.7**	1,413.2	1,411.9
Rio Tinto plc interim	**1,395.2**	1,413.8	1,412.5
Rio Tinto Limited previous year final	**435.0**	435.6	435.8
Rio Tinto Limited interim	**423.7**	435.7	435.5

The dividends paid in 2015 are based on the following US cents per share amounts: 2014 final – 119.0 cents, 2015 interim – 107.5 cents (2014 dividends paid: 2013 final – 108.5 cents, 2014 interim – 96.0 cents; 2013 dividends paid: 2012 final – 94.5 cents, 2013 interim – 83.5 cents).

The number of shares on which Rio Tinto plc dividends are based excludes those held as treasury shares and those held by employee share trusts which waived the right to dividends. Employee share trusts waived dividends on 342,902 Rio Tinto plc ordinary shares and 24,582 ADRs for the 2014 final dividend and on 237,266 Rio Tinto plc ordinary shares and 27,050 ADRs for the 2015 interim dividend (2014: 207,766 Rio Tinto plc ordinary shares and 3,353 ADRs for the 2013 final dividend and on 90,304 Rio Tinto plc ordinary shares and 1,912 ADRs for the 2014 interim dividend; 2013: 150,361 Rio Tinto plc ordinary shares and nil ADRs for the 2012 final dividend and 124,636 Rio Tinto plc ordinary shares and 7,303 ADRs for the 2013 interim dividend). In 2015, 2014 and 2013, no Rio Tinto Limited shares were held by Rio Tinto plc.

The number of shares on which Rio Tinto Limited dividends are based excludes those held by shareholders who have waived the rights to dividends. Employee share trusts waived dividends on 727,676 Rio Tinto Limited shares for the 2014 final dividend and on 474,665 Rio Tinto Limited shares for the 2015 interim dividend (2014: Dividend waivers applied to 183,981 Rio Tinto Limited shares for the 2013 final dividend and on 24,046 Rio Tinto Limited shares for the 2014 interim dividend; 2013: There were no applicable waivers in respect of Rio Tinto Limited shares for the 2012 final dividend. Dividend waivers applied to 222,439 Rio Tinto Limited shares for the 2013 interim dividend).

In addition, the directors of Rio Tinto announced a final dividend of 107.5 cents per share on 11 February 2016. This is expected to result in payments of US$1,931 million (Rio Tinto plc: US$1,475 million, Rio Tinto Limited US$456 million). The dividends will be paid on 7 April 2016 to Rio Tinto plc and Rio Tinto Limited shareholders on the register at the close of business on 26 February 2016.

The proposed Rio Tinto Limited dividends will be franked out of existing franking credits or out of franking credits arising from the payment of income tax during 2016.

The approximate amount of the Rio Tinto Limited consolidated tax group's retained profits and reserves that could be distributed as dividends and franked out of available credits that arose from net payments of income tax in respect of periods up to 31 December 2015 (after deducting franking credits expected to be utilised on the 2015 final dividend declared), is US$10,899 million.

12 Goodwill

	2015 US$m	2014 US$m
Net book value		
At 1 January	**1,228**	1,349
Adjustment on currency translation	**(220)**	(121)
Impairment charges [(a)]	**(116)**	–
At 31 December	**892**	1,228
– cost	**17,120**	20,122
– accumulated impairment	**(16,228)**	(18,894)
At 1 January		
– cost	**20,122**	22,678
– accumulated impairment	**(18,894)**	(21,329)

At 31 December, goodwill has been allocated as follows:

	2015 US$m	2014 US$m
Net book value		
Richards Bay Minerals	**439**	591
Pilbara	**363**	409
Hathor [(a)]	**–**	128
Other	**90**	100
	892	1,228

(a) The impairment charge of US$116 million represents the full impairment of goodwill arising from the Hathor Exploration Limited (Hathor) acquisition, which includes the Roughrider project. Refer to note 6 for further details.

Impairment tests for goodwill

Richards Bay Minerals

The Group consolidated Richards Bay Minerals on 3 September 2012. Goodwill arose in accordance with the requirement in IFRS, as defined in note 1, to recognise a deferred tax asset or liability on the difference between the fair value of newly consolidated assets and liabilities and their tax base and is retranslated at each period end for changes in the South African rand. The recognition of Richards Bay Minerals' identifiable assets and liabilities in the balance sheet was based on fair values at the acquisition date determined with the assistance of an independent third party valuer.

Richards Bay Minerals' annual impairment review resulted in no impairment charge for 2015 (2014: no impairment charge). The recoverable amount has been assessed by reference to FVLCD, in line with the policy set out in note 1(i) and classified as level 3 under the fair value hierarchy. FVLCD was determined by estimating cash flows until the end of the life-of-mine plan including anticipated expansions. In arriving at FVLCD, a post-tax discount rate of 9.3 per cent (2014: 9.2 per cent) has been applied to the post-tax cash flows expressed in real terms.

The key assumptions to which the calculation of FVLCD for Richards Bay Minerals is most sensitive and the corresponding decrease in FVLCD are set out below:

	US$ million
5% decrease in the titanium slag price	208
1% increase in the discount rate applied to post-tax cash flows	264
10% strengthening of the South African rand	670

Other assumptions include the long-term pig iron and zircon prices and operating costs. Future selling prices and operating costs have been estimated in line with the policy set out in note 1(i). The recoverable amount of the cash-generating unit exceeds the carrying value for each of these sensitivities applied in isolation.

Pilbara

The recoverability of goodwill arising from the acquisition of Robe River and monitored at the Pilbara cash-generating unit level has been assessed by reference to FVLCD using discounted cash flows, which is in line with the policy set out in note 1(i) and is classified as level 3 under the fair value hierarchy. In arriving at FVLCD, a post-tax discount rate of 7.3 per cent (2014: 7.2 per cent) has been applied to the post-tax cash flows expressed in real terms. The recoverable amounts were determined to be significantly in excess of carrying value, and there are no reasonably possible changes in key assumptions that would cause the remaining goodwill to be impaired.

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13 Intangible assets

Year ended 31 December 2015	Exploration and evaluation (a) US$m	Trademarks, patented and non-patented technology US$m	Contract based intangible assets (b) US$m	Other intangible assets US$m	Total US$m
Net book value					
At 1 January 2015	**2,596**	**156**	**2,454**	**674**	**5,880**
Adjustment on currency translation	**(134)**	**(15)**	**(393)**	**(58)**	**(600)**
Expenditure during the year	**152**	**–**	**–**	**64**	**216**
Amortisation for the year (c)	**–**	**(15)**	**(90)**	**(102)**	**(207)**
Impairment charges (d)	**(1,773)**	**(28)**	**(30)**	**(2)**	**(1,833)**
Disposals, transfers and other movements (e)	**(135)**	**(4)**	**197**	**(178)**	**(120)**
At 31 December 2015	**706**	**94**	**2,138**	**398**	**3,336**
– cost	**2,585**	**208**	**3,829**	**1,252**	**7,874**
– accumulated amortisation and impairment	**(1,879)**	**(114)**	**(1,691)**	**(854)**	**(4,538)**

Year ended 31 December 2014	Exploration and evaluation (a) US$m	Trademarks, patented and non-patented technology US$m	Contract based intangible assets (b) US$m	Other intangible assets US$m	Total US$m
Net book value					
At 1 January 2014	1,854	198	2,831	538	5,421
Adjustment on currency translation	(86)	(21)	(195)	(55)	(357)
Expenditure during the year	142	–	–	307	449
Amortisation for the year (c)	–	(20)	(116)	(101)	(237)
Disposals, transfers and other movements (e)	686	(1)	(66)	(15)	604
At 31 December 2014	2,596	156	2,454	674	5,880
– cost	2,770	294	4,341	1,536	8,941
– accumulated amortisation and impairment	(174)	(138)	(1,887)	(862)	(3,061)

(a) Exploration and evaluation assets' useful lives are not determined until transferred to property, plant and equipment. The impairment charge in the year of US$1,773 million primarily relates to exploration and evaluation assets within the Simandou and Roughrider projects in the Diamonds & Minerals product group (see note 6).

(b) The Group benefits from certain intangible assets acquired with Alcan, including power supply contracts, customer contracts and water rights. The water rights are expected to contribute to the efficiency and cost effectiveness of operations for the foreseeable future: accordingly, these rights are considered to have indefinite lives and are not subject to amortisation but are tested annually for impairment. These water rights constitute the majority of the amounts in "Contract based intangible assets".

The remaining carrying value of the water rights (US$1,655 million) as at 31 December 2015 relates wholly to the Quebec smelters cash-generating unit. The Quebec smelters cash-generating unit was tested for impairment by reference to FVLCD using discounted cash flows, which is in line with the policy set out in note 1(i). The recoverable amount of the Quebec smelters is classified as level 3 under the fair value hierarchy. In arriving at FVLCD, post-tax cash flows expressed in real terms have been estimated over the expected useful economic lives of the underlying smelting assets and discounted using a real post-tax discount rate of 7.3 per cent (2014: 7.2 per cent).

The recoverable amounts were determined to be significantly in excess of carrying value, and there are no reasonably possible changes in key assumptions that would cause the remaining water rights to be impaired.

(c) Finite life intangible assets are amortised over their useful economic lives on a straight line or units of production basis, as appropriate. Where amortisation is calculated on a straight line basis, the following useful lives have been determined:

Trademarks, patented and non-patented technology
Trademarks: 14 to 20 years
Patented and non-patented technology: ten to 20 years

Contract based intangible assets
Power contracts/water rights: two to 45 years
Other purchase and customer contracts: five to 15 years

Other intangible assets
Internally generated intangible assets and computer software: two to five years
Other intangible assets: two to 20 years

(d) Other impairment charges, excluding charges against exploration and evaluation, primarily relate to the full write off of the intangible assets of the Carbone Savoie cash-generating unit (see note 6).

(e) Disposals, transfers and other movements for exploration and evaluation include US$164 million transferred to Mining Property in relation to the Amrun project in Australia. Rio Tinto announced on 27 November 2015 the approval of the Amrun bauxite project (previously known as South of Embley) expansion in north Queensland, Australia. Production and shipping are expected to commence in the first half of 2019, ramping up to full production by the end of that year.

In 2014 disposals, transfers and other movements for exploration and evaluation included US$700 million previously classified as non-current receivables pending ratification of the Simandou project Investment Framework.

Exploration and evaluation expenditure

The charge for the year and the net amount of intangible assets capitalised during the year are as follows:

	2015 US$m	2014 US$m	2013 US$m
Net expenditure in the year (net of proceeds of US$nil (2014: US$11 million; 2013: US$27 million) on disposal of undeveloped projects)	**(705)**	(872)	(1,317)
Changes in accruals (including impairment of undeveloped projects of US$nil (2014: US$nil; 2013: US$159 million) and non-cash proceeds on disposal of undeveloped projects)	**(15)**	(53)	(160)
Amount capitalised during the year	**152**	142	368
Net charge for the year	**(568)**	(783)	(1,109)
Reconciliation to income statement			
Exploration and evaluation costs	**(576)**	(747)	(948)
Profit/(loss) relating to interests in undeveloped projects	**8**	(36)	(161)
Net charge for the year	**(568)**	(783)	(1,109)

At 31 December 2015, a total of US$0.8 billion had been capitalised related to projects which had not yet been approved to proceed. This comprised evaluation costs of US$0.7 billion included above and US$0.1 billion of early works expenditure within property, plant and equipment (31 December 2014: a total of US$2.9 billion had been capitalised comprising: evaluation costs of US$2.6 billion included above and US$0.3 billion of early works expenditure within property, plant and equipment).

14 Property, plant and equipment

Year ended 31 December 2015	Mining properties and leases (a) US$m	Land and buildings (b) US$m	Plant and equipment US$m	Capital works in progress US$m	Total US$m
Net book value					
At 1 January 2015	11,913	7,085	39,810	9,885	68,693
Adjustment on currency translation	(1,049)	(890)	(4,268)	(754)	(6,961)
Adjustments to capitalised closure costs (note 26)	147	–	–	–	147
Interest capitalised (c) (note 8)	–	–	–	254	254
Additions	400	374	715	2,767	4,256
Depreciation for the year (a) (d)	(725)	(419)	(3,294)	–	(4,438)
Impairment charges, net of reversals (e)	(69)	(51)	(308)	(224)	(652)
Disposals	(4)	(15)	(77)	–	(96)
Subsidiaries no longer consolidated	–	(7)	(17)	–	(24)
Transfers and other movements (f)	533	1,494	5,339	(7,488)	(122)
At 31 December 2015	11,146	7,571	37,900	4,440	61,057
– cost	22,474	11,405	67,690	5,000	106,569
– accumulated depreciation and impairment	(11,328)	(3,834)	(29,790)	(560)	(45,512)
Non-current assets held under finance leases (g)	–	37	6	–	43
Non-current assets pledged as security (h)	911	294	6,293	2,402	9,900

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14 Property, plant and equipment continued

Year ended 31 December 2014	Mining properties and leases (a) US$m	Land and buildings (b) US$m	Plant and equipment US$m	Capital works in progress US$m	Total US$m
Net book value					
At 1 January 2014	10,880	7,410	38,466	14,071	70,827
Adjustment on currency translation	(687)	(564)	(2,918)	(545)	(4,714)
Adjustments to capitalised closure costs (note 26)	525	–	–	–	525
Interest capitalised (c) (note 8)	–	–	2	468	470
Additions	554	302	1,369	5,571	7,796
Depreciation for the year (a) (d)	(649)	(432)	(3,542)	–	(4,623)
Impairment charges, net of reversals (e)	139	(10)	277	(1,440)	(1,034)
Disposals	–	(162)	(61)	(14)	(237)
Subsidiaries no longer consolidated	–	–	(31)	–	(31)
Transfers and other movements (f)	1,151	541	6,248	(8,226)	(286)
At 31 December 2014	11,913	7,085	39,810	9,885	68,693
– cost	23,045	10,845	69,835	11,544	115,269
– accumulated depreciation and impairment	(11,132)	(3,760)	(30,025)	(1,659)	(46,576)
Non-current assets held under finance leases (g)	–	12	1	–	13
Non-current assets pledged as security (h)	1,261	173	2,823	259	4,516

(a) At 31 December 2015, the net book value of capitalised production phase stripping costs totalled US$1,923 million, with US$1,464 million within Property, plant and equipment and a further US$459 million within Investments in equity accounted units (2014 total of US$1,816 million with US$1,373 million in Property, plant and equipment and a further US$443 million within Investments in equity accounted units). During the year capitalisation of US$455 million was partly offset by depreciation of US$266 million. Depreciation of deferred stripping costs of US$173 million (2014: US$84 million; 2013: US$70 million) is included within "Depreciation for the year".

(b) At 31 December 2015, the net book value amount for land and buildings includes freehold US$7,435 million (2014: US$6,899 million); long leasehold US$136 million (2014: US$186 million); and no short leasehold (2014: no short leasehold).

(c) Interest is capitalised at a rate based on the Group's cost of borrowing or at the rate on project specific debt, where applicable. The Group's average borrowing rate used for capitalisation of interest is 3.7 per cent (2014: 4.0 per cent).

(d) Assets within operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the related mine are depreciated on a straight line basis as follows:

Land and buildings
Land: Not depreciated
Buildings: five to 50 years

Plant and equipment
Other plant and equipment: three to 50 years
Power assets: 25 to 50 years
Capital work in progress: Not depreciated

(e) During 2015 impairment charges primarily related to the Diamonds & Minerals and Aluminium businesses (see note 6). In 2014, impairment charges primarily related to the Aluminium business and charges of US$1,669 million were partially offset by US$635 million of impairment reversals.

(f) "Transfers and other movements" includes reclassifications between categories, including the transfer to assets of disposal groups held for sale.

(g) The finance leases under which these assets are held are disclosed in note 23.

(h) Excludes assets held under finance leases. Non-current assets pledged as security represent amounts pledged as collateral against US$701 million (2014: US$587 million) of loans, which are included in note 22. As at the date on which the Oyu Tolgoi Project Finance agreements were signed (15 December 2015), a substantial part of the non-current assets related to Oyu Tolgoi were deemed to be pledged. However, as at 31 December 2015, no amounts under the project financing have been drawn down.

15 Investments in equity accounted units

Summary balance sheet (Rio Tinto share)	2015 US$m	2014 US$m
Rio Tinto's share of assets		
Non-current assets	**6,780**	6,605
Current assets	**429**	901
	7,209	7,506
Rio Tinto's share of liabilities		
Current liabilities	**(941)**	(681)
Non-current liabilities	**(1,327)**	(1,957)
	(2,268)	(2,638)
Rio Tinto's share of net assets	**4,941**	4,868

Further details of investments in equity accounted units are set out in notes 35 and 36.

The impact of impairment charges and impairment reversals on the Group's investments in equity accounted units are summarised in note 6.

At 31 December 2015 and 2014 the Group had no investments in equity accounted units with shares listed on recognised stock exchanges.

At 31 December 2015, net debt of equity accounted units, excluding amounts due to Rio Tinto, was US$1,224 million (2014: US$922 million).

16 Inventories

	2015 US$m	2014 US$m
Raw materials and purchased components	**528**	726
Consumable stores	**1,030**	1,411
Work in progress	**1,142**	1,490
Finished goods and goods for resale	**721**	1,120
	3,421	4,747
Comprising:		
Expected to be used within one year	**3,168**	4,350
Expected to be used after more than one year	**253**	397
	3,421	4,747

Inventory write-downs, net of reversals, amounting to US$192 million (2014: US$94 million; 2013: US$201 million) were recognised during the year.

At 31 December 2015, US$587 million (2014: US$430 million; 2013: US$482 million) of inventories were pledged as security for liabilities.

17 Deferred taxation

	2015 US$m	2014 US$m
At 1 January	**34**	585
Adjustment on currency translation	**(149)**	(36)
Credited to the income statement	**(139)**	(349)
Charged/(credited) to statement of comprehensive income [a]	**174**	(205)
Disposals	**(1)**	10
Other movements [b]	**58**	29
At 31 December	**(23)**	34
Comprising:		
– deferred tax liabilities [c] [d]	**3,286**	3,574
– deferred tax assets [c] [e] [f]	**(3,309)**	(3,540)

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17 Deferred taxation continued

Deferred tax balances for which there is a right of offset within the same tax jurisdiction are presented net on the face of the balance sheet as permitted by IAS 12. The closing deferred tax liabilities and assets, prior to this offsetting of balances, are shown below.

	Total 2015 US$m	Total 2014 US$m
Deferred tax liabilities arising from:		
Capital allowances	**5,311**	6,018
Unremitted earnings [(d)]	**664**	659
Capitalised interest	**432**	368
Unrealised exchange gains	**68**	255
Other temporary differences	**451**	248
	6,926	7,548
Deferred tax assets arising from:		
Tax losses [(e)]	**(2,170)**	(2,276)
Provisions	**(1,745)**	(2,096)
Capital allowances	**(794)**	(877)
Post-retirement benefits	**(829)**	(1,165)
Unrealised exchange losses	**(522)**	(658)
Other temporary differences	**(889)**	(442)
	(6,949)	(7,514)
(Credited)/charged to the income statement		
Unrealised exchange losses	**(108)**	(365)
Tax losses	**(335)**	72
Provisions	**40**	(122)
Capital allowances	**251**	272
Tax on unremitted earnings	**(16)**	2
Post-retirement benefits	**47**	34
Other temporary differences	**(18)**	(242)
	(139)	(349)

(a) The amounts credited directly to the Statement of comprehensive income include provisions for tax on exchange differences on intragroup loans qualifying for reporting as part of the net investment in subsidiaries, on cash flow hedges and on actuarial gains and losses on pension schemes and on post-retirement healthcare plans.

(b) "Other movements" include deferred tax relating to tax payable recognised by subsidiary holding companies on the profits of the equity accounted units to which it relates.

(c) The deferred tax liability of US$3,286 million (2014: US$3,574 million) includes US$3,275 million (2014: US$3,555 million) due in more than one year. The deferred tax asset of US$3,309 million (2014: US$3,540 million) includes US$3,091 million (2014: US$3,405 million) receivable in more than one year. All amounts are shown as non-current on the face of the balance sheet as required by IAS 12.

(d) Deferred tax is not recognised on the unremitted earnings of subsidiaries and joint ventures totalling US$2,763 million (2014: US$4,067 million) where the Group is able to control the timing of the remittance and it is probable that there will be no remittance in the foreseeable future. If these earnings were remitted, tax of US$136 million (2014: US$202 million) would be payable.

(e) There is a limited time period, the shortest of which is two years, for the recovery of US$1,482 million (2014: US$1,347 million) of tax losses and other tax assets which have been recognised as deferred tax assets in the financial statements.

(f) Recognised and unrecognised deferred tax assets are shown in the table below and totalled US$6,966 million at 31 December 2015 (2014: US$6,885 million). Of this total, US$3,309 million has been recognised as deferred tax assets (2014: US$3,540 million), leaving US$3,657 million (2014: US$3,345 million) unrecognised, as recovery is not considered probable.

The recognised amounts do not include deferred tax assets that have been netted off against deferred tax liabilities.

	Recognised		**Unrecognised**	
At 31 December	**2015 US$m**	2014 US$m	**2015 US$m**	2014 US$m
UK	**68**	131	**126**	150
France [(i)]	**331**	377	**1,112**	1,184
Canada	**420**	491	**645**	371
US	**928**	932	**5**	16
Australia	**1,242**	1,324	**323**	287
Other	**320**	285	**1,446**	1,337
Total [(ii)]	**3,309**	3,540	**3,657**	3,345

(i) US$1,112 million (2014: US$1,184 million) of the unrecognised assets relate to trading losses in France, which were acquired as part of the Alcan acquisition. The amount recognised takes account of legislation which restricts the recovery of losses.

(ii) US$784 million (2014: US$688 million) of the unrecognised assets relate to realised or unrealised capital losses, the recovery of which depends on the existence of capital gains in future years. There is a time limit, the shortest of which is one year, for the recovery of US$433 million of the unrecognised assets (2014: US$353 million).

18 Trade and other receivables

	Non-current 2015 US$m	Current 2015 US$m	Total 2015 US$m	Non-current 2014 US$m	Current 2014 US$m	Total 2014 US$m
Trade receivables [a]	**5**	**1,365**	**1,370**	5	2,483	2,488
Other receivables	**370**	**752**	**1,122**	435	884	1,319
Prepayment of tolling charges to jointly controlled entities [b]	**288**	**–**	**288**	387	–	387
Pension surpluses (note 45)	**592**	**–**	**592**	353	–	353
Amounts due from equity accounted units	**–**	**27**	**27**	–	36	36
Other prepayments	**101**	**242**	**343**	124	220	344
	1,356	**2,386**	**3,742**	1,304	3,623	4,927

(a) At 31 December 2015, trade and other receivables are stated net of provisions for doubtful debts of US$77 million (2014: US$39 million). Amounts of US$37 million (2014: US$35 million) were impaired; the majority of these receivables were more than 90 days overdue.

(b) Rio Tinto Aluminium has made certain prepayments to equity accounted units for toll processing of alumina. These prepayments will be charged to Group operating costs as processing takes place.

There is no material element of trade and other receivables that is interest bearing.

The fair value of current trade and other receivables and the majority of amounts classified as non-current assets approximates their carrying value.

As of 31 December 2015, trade receivables of US$188 million (2014: US$82 million) were past due but not impaired. The ageing of these receivables is as follows:

	2015 US$m	2014 US$m
less than 30 days overdue	**71**	34
between 30 and 60 days overdue	**7**	11
between 60 and 90 days overdue	**23**	30
more than 90 days overdue	**22**	7
	123	82

These relate to a number of customers for whom there is no recent history of default.

With respect to trade and other receivables that are neither impaired nor past due, there are no indications as of the reporting date that the debtors will not meet their payment obligations.

19 Assets and liabilities held for sale

At 31 December 2015, assets and liabilities held for sale primarily related to the Group's 40 per cent interest in the Bengalla coal Joint venture and its 71.2 per cent interest in the Blair Athol coal project (Blair Athol).

At 31 December 2014 assets and liabilities held for sale comprised the Group's 71.2 per cent interest in Blair Athol and its 28.4 per cent indirect interest in SouthGobi Resources Limited, which was acquired as part of the gain of control of Turquoise Hill Resources Ltd in 2012.

20 Other financial assets (including loans to equity accounted units)

	Non-current 2015 US$m	Current 2015 US$m	Total 2015 US$m	Non-current 2014 US$m	Current 2014 US$m	Total 2014 US$m
Derivative financial instruments	**529**	**77**	**606**	393	43	436
Equity shares and quoted funds	**76**	**81**	**157**	103	96	199
Other investments, including loans	**183**	**23**	**206**	226	61	287
Loans to equity accounted units	**–**	**42**	**42**	–	71	71
	788	**223**	**1,011**	722	271	993

Detailed information relating to other financial assets is given in note 30.

21 Cash and cash equivalents

	Note	2015 US$m	2014 US$m
Cash at bank and in hand		**843**	1,146
Money market funds and other cash equivalents		**8,523**	11,277
Balance per Group balance sheet		**9,366**	12,423
Bank overdrafts repayable on demand (unsecured)	22	**(12)**	(23)
Balance per Group cash flow statement		**9,354**	12,400

Cash and cash equivalents of US$426 million (2014: US$631 million) are held in countries where there are restrictions on remittances. Of this balance US$311 million (2014: US$455 million) could be used to repay subsidiaries' third-party borrowings.

There are also restrictions on a further US$802 million (2014: US$404 million) of cash and cash equivalents, the majority of which is held by partially owned entities and is not available for use in the wider Group due to the legal and contractual restrictions currently in place. Of this balance US$53 million (2014: US$24 million) could be used to repay subsidiaries' third-party borrowings.

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continued

22 Borrowings and other financial liabilities

Borrowings at 31 December	Note	Non-current 2015 US$m	Current 2015 US$m	Total 2015 US$m	Non-current 2014 US$m	Current 2014 US$m	Total 2014 US$m
Rio Tinto Finance (USA) Limited Bonds 1.875% 2015		–	–	–	–	500	500
Rio Tinto Finance (USA) plc Bonds 1.125% 2015		–	–	–	–	500	500
Rio Tinto Finance (USA) plc Bonds LIBOR plus 0.55% 2015		–	–	–	–	250	250
Alcan Inc. Global Notes 5.0% due 2015 (a)		–	–	–	–	496	496
Rio Tinto Finance (USA) Limited Bonds 2.500% 2016		–	–	–	698	–	698
Rio Tinto Finance (USA) Limited Bonds 2.250% 2016		–	–	–	498	–	498
Rio Tinto Finance (USA) plc Bonds 1.375% 2016		–	998	998	998	–	998
Rio Tinto Finance (USA) plc Bonds LIBOR plus 0.84% 2016		–	500	500	500	–	500
Rio Tinto Finance (USA) plc Bonds 2.0% 2017		500	–	500	499	–	499
Rio Tinto Finance (USA) plc Bonds 1.625% 2017		1,247	–	1,247	1,245	–	1,245
Rio Tinto Finance (USA) Limited Bonds 6.5% 2018 (a)		1,894	–	1,894	1,935	–	1,935
Rio Tinto Finance (USA) plc Bonds 2.250% 2018		1,242	–	1,242	1,239	–	1,239
Rio Tinto Finance (USA) Limited Bonds 9.0% 2019		1,481	–	1,481	1,474	–	1,474
Rio Tinto Finance (USA) Limited Bonds 3.5% 2020		997	–	997	996	–	996
Rio Tinto Finance plc Euro Bonds 2.0% due 2020 (a) (b)		848	–	848	934	–	934
Rio Tinto Finance (USA) Limited Bonds 4.125% 2021 (a)		989	–	989	998	–	998
Rio Tinto Finance (USA) Limited Bonds 3.750% 2021 (a)		1,142	–	1,142	1,144	–	1,144
Rio Tinto Finance (USA) plc Bonds 3.5% 2022 (a)		1,004	–	1,004	995	–	995
Rio Tinto Finance (USA) plc Bonds 2.875% 2022 (a)		994	–	994	988	–	988
Rio Tinto Finance plc Euro Bonds 2.875% due 2024 (a) (b)		584	–	584	646	–	646
Rio Tinto Finance (USA) Limited Bonds 3.75% 2025 (a)		1,202	–	1,202	–	–	–
Rio Tinto Finance (USA) Limited Bonds 7.125% 2028 (a)		1,000	–	1,000	1,008	–	1,008
Alcan Inc. Debentures 7.25% due 2028		106	–	106	106	–	106
Rio Tinto Finance plc Sterling Bonds 4.0% due 2029 (a) (b)		738	–	738	774	–	774
Alcan Inc. Debentures 7.25% due 2031		427	–	427	429	–	429
Alcan Inc. Global Notes 6.125% due 2033		741	–	741	745	–	745
Alcan Inc. Global Notes 5.75% due 2035		286	–	286	279	–	279
Rio Tinto Finance (USA) Limited Bonds 5.2% 2040		1,147	–	1,147	1,145	–	1,145
Rio Tinto Finance (USA) plc Bonds 4.75% 2042		490	–	490	490	–	490
Rio Tinto Finance (USA) plc Bonds 4.125% 2042		727	–	727	726	–	726
Loans from equity accounting units		–	37	37	–	52	52
Other secured loans		597	104	701	376	211	587
Other unsecured loans		382	595	977	497	627	1,124
Finance leases	23	45	7	52	49	5	54
Bank overdrafts	21	–	12	12	–	23	23
Total borrowings including overdrafts (c)		**20,810**	**2,253**	**23,063**	22,411	2,664	25,075

(a) These borrowings are subject to the hedging arrangements summarised below. Fair value hedge accounting has been applied except for the Rio Tinto Finance plc Sterling Bonds 4.0% due 2029 (see below).

(b) Rio Tinto has a US$10 billion (2014: US$10 billion) European Debt Issuance Programme (EDIP) against which the cumulative amount utilised was US$2.1 billion equivalent at 31 December 2015 (2014: US$2.3 billion). The carrying value of these bonds after hedge accounting adjustments amounted to US$2.2 billion (2014: US$ 2.4 billion) in aggregate.

(c) The Group's borrowings of US$23.1 billion (2014: US$25.1 billion) include some US$2.9 billion (2014: US$3.5 billion) which relates to subsidiary entity borrowings that are without recourse to the Group, of which US$0.7 billion (2014: US$0.6 billion) are subject to various financial and general covenants with which the respective borrowers were in compliance as at 31 December 2015.

Other financial liabilities	Non-current 2015 US$m	Current 2015 US$m	Total 2015 US$m	Non-current 2014 US$m	Current 2014 US$m	Total 2014 US$m
Derivative financial instruments	283	41	324	67	14	81
Other financial liabilities	47	190	237	57	6	63
Total other financial liabilities	**330**	**231**	**561**	124	20	144
Total borrowings including overdrafts (as above)	20,810	2,253	23,063	22,411	2,664	25,075
Total borrowings and other financial liabilities	**21,140**	**2,484**	**23,624**	22,535	2,684	25,219

Swap arrangements

At 31 December 2015, US$7.0 billion (2014: US$3.7 billion) US dollar notional of the fixed rate US dollar borrowings were swapped to floating US dollar rates and US$1.4 billion (2014: US$1.5 billion) US dollar notional equivalent of euro borrowings were fully swapped to floating US dollar rates.

Hedge accounting has been applied to the full notional of items marked (a) in the above table except for: US$750 million (2014: US$750 million) of the Rio Tinto Finance (USA) Limited Bonds 6.5% due 2018, US$nil (2014: US$1,000 million) of the Rio Tinto Finance (USA) Limited Bonds 4.125% due 2021; US$nil (2014: US$1,150 million) of the Rio Tinto Finance (USA) Limited Bonds 3.750% due 2021; US$nil (2014: US$250 million) of the Rio Tinto Finance (USA) plc Bonds 3.5% due 2022, US$nil (2014: US$250 million) of the Rio Tinto Finance (USA) plc Bonds 2.875% due 2022; and, US$75 million (2014: US$75 million) of the Rio Tinto Finance (USA) Limited Bonds 7.125% due 2028. These portions are held at amortised cost.

The Rio Tinto Finance plc Sterling Bond 4.0% due 2029 at US$0.7 billion (2014: US$0.8billion) US dollar notional equivalent of sterling was fully swapped to fixed US dollar rates. Cash flow hedging was applied to the annual interest coupons and principal of this bond. The hedge was fully effective in 2015 and 2014 financial years.

The fair value of interest rate and cross currency interest rate swaps at 31 December 2015 was US$189 million (2014: US$200 million) asset and US$275 million (2014: US$54 million) liability, respectively. These are included in "Other financial assets" and "Other financial liabilities" in the balance sheet.

Details of the major interest rate and cross currency interest rate swaps are shown in note 30.

23 Capitalised finance leases

	Note	2015 US$m	2014 US$m
Present value of minimum lease payments			
Total minimum lease payments		**53**	55
Effect of discounting		**(1)**	(1)
	14	**52**	54
Payments under capitalised finance leases			
Due within 1 year		**7**	5
Between 1 and 3 years		**28**	29
Between 3 and 5 years		**5**	6
More than 5 years		**12**	14
	14	**52**	54

24 Consolidated net debt

	2015 US$m	2014 US$m
Analysis of changes in consolidated net debt [(a)]		
Opening balance	**(12,495)**	(18,055)
Adjustment on currency translation	**1,586**	1,039
Exchange losses charged to the income statement [(b)]	**(1,630)**	(1,070)
Cash movements excluding exchange movements	**(1,109)**	5,357
Other movements	**(135)**	234
Closing balance	**(13,783)**	(12,495)
Total borrowings in balance sheet (note 22)	**(23,063)**	(25,075)
Derivatives related to net debt (included in "Other financial assets/liabilities") (note 30)	**(86)**	146
Equity accounted unit funded balances excluded from net debt [(c)]	**–**	11
Adjusted total borrowings	**(23,149)**	(24,918)
Cash and cash equivalents (note 21)	**9,366**	12,423
Consolidated net debt	**(13,783)**	(12,495)

	2015 US$m	2014 US$m	2013 US$m
Exchange (losses)/gains on US dollar net debt and intragroup balances excluded from underlying earnings			
Exchange losses on US dollar net debt	**(1,578)**	(1,056)	(2,098)
Exchange losses on intragroup balances	**(1,961)**	(940)	(1,574)
Exchange gains on loans from equity accounted units	**–**	1	–
Exchange gains on settlement of dividend	**1**	–	–
Charged to income statement	**(3,538)**	(1,995)	(3,672)

(a) Consolidated net debt is stated net of the impact of certain funding arrangements between equity accounted units and partially owned subsidiaries (equity accounted unit funded balances). This adjustment is required in order to avoid showing borrowings twice in the net debt disclosure, where funding has been provided to an equity accounted unit by the Group and subsequently on-lent by the equity accounted unit to a consolidated Group subsidiary.

(b) Exchange losses taken to the income statement include amounts excluded from underlying earnings.

(c) Equity accounted unit funded balances are defined as amounts owed by partially owned subsidiaries to equity accounted units, where such funding was provided to the equity accounted unit by the Group.

Further information relating to the currency and interest rate exposures arising from net debt and related derivatives is given in note 30.

Notes to the 2015 financial statements
continued

25 Trade and other payables

	Non-current 2015 US$m	Current 2015 US$m	Total 2015 US$m	Non-current 2014 US$m	Current 2014 US$m	Total 2014 US$m
Trade payables	**9**	**2,567**	**2,576**	5	2,592	2,597
Accruals and deferred income	**179**	**1,400**	**1,579**	248	2,123	2,371
Other payables [(a)]	**263**	**1,075**	**1,338**	359	1,201	1,560
Employee entitlements	**–**	**747**	**747**	–	905	905
Royalties and mining taxes	**2**	**345**	**347**	2	526	528
Amounts owed to equity accounted units	**131**	**100**	**231**	147	78	225
Government grants deferred	**98**	**3**	**101**	110	12	122
	682	**6,237**	**6,919**	871	7,437	8,308

(a) "Other payables" include deferred consideration of US$nil (2014: US$29 million) relating to acquired assets. All other accounts payable and accruals are non-interest bearing.

Due to their short term maturities, the fair value of trade and other payables approximates their carrying value.

26 Provisions (including post-retirement benefits)

	Pensions and post-retirement healthcare [(a)] US$m	Other employee entitlements [(b)] US$m	Close down and restoration/ environmental [(c)] US$m	Other US$m	Total 2015 US$m	Total 2014 US$m
At 1 January	4,086	599	8,630	1,287	**14,602**	14,081
Adjustment on currency translation	(407)	(70)	(763)	(104)	**(1,344)**	(963)
Adjustments to mining properties (note 14)						
– changes in estimate	–	–	147	–	**147**	525
Charged/(credited) to profit:						
– increases to existing and new provisions	141	128	456	173	**898**	1,217
– unused amounts reversed	–	(47)	(92)	(119)	**(258)**	(170)
– exchange losses on provisions	–	–	39	52	**91**	91
– amortisation of discount	–	1	335	42	**378**	384
Utilised in year	(230)	(140)	(303)	(151)	**(824)**	(1,269)
Actuarial (gains)/losses recognised in equity	(442)	–	–	–	**(442)**	776
Newly consolidated operations (note 37)	–	–	–	–	**–**	11
Subsidiaries no longer consolidated	(14)	(3)	(11)	9	**(19)**	23
Transfers to assets held for sale	(12)	(12)	(17)	(16)	**(57)**	(23)
Transfers and other movements	–	2	5	(113)	**(106)**	(81)
At 31 December	3,122	458	8,426	1,060	**13,066**	14,602
Balance sheet analysis:						
Current	107	319	484	280	**1,190**	1,299
Non-current	3,015	139	7,942	780	**11,876**	13,303
Total	3,122	458	8,426	1,060	**13,066**	14,602

(a) The main assumptions used to determine the provision for pensions and post-retirement healthcare, and other information, including the expected level of future funding payments in respect of those arrangements, are given in note 45.

(b) The provision for other employee entitlements includes a provision for long service leave of US$322 million (2014: US$354 million), based on the relevant entitlements in certain Group operations and includes US$52 million (2014: US$113 million) of provision for redundancy and severance payments.

(c) The Group's policy on close-down and restoration costs is described in note 1(k) and in paragraph (v) under "Critical accounting policies and estimates" on pages 119 and 123. Close-down and restoration costs are a normal consequence of mining, and the majority of close-down and restoration expenditure is incurred in the years following closure of the mine, refinery or smelter. Remaining lives of operations and infrastructure range from one to over 50 years with an average for all sites, weighted by closure provision, of around 17 years (2014: 18 years). Although the ultimate cost to be incurred is uncertain, the Group's businesses estimate their respective costs based on current restoration standards and techniques. Provisions of US$8,426 million (2014: US$8,630 million) for close-down and restoration costs and environmental clean-up obligations are based on risk adjusted cash flows. These estimates have been discounted to their present value at a real risk free rate of 2 per cent per annum, based on an estimate of the long term, risk free, pre-tax cost of borrowing.

Non-current provisions for close down and restoration/environmental expenditure include amounts relating to environmental clean-up of US$286 million (2014: US$341 million) expected to take place between one and five years from the balance sheet date, and US$867 million (2014: US$798 million) expected to take place later than five years after the balance sheet date.

Close-down and restoration/environmental liabilities at 31 December 2015 have not been adjusted for amounts of US$97 million (2014: US$108 million) relating to insurance recoveries and other financial assets held for the purposes of meeting these obligations.

27 Share capital – Rio Tinto plc

	2015 Number (million)	2014 Number (million)	2013 Number (million)	2015 US$m	2014 US$m	2013 US$m
Issued and fully paid up share capital of 10p each						
At 1 January	**1,425.378**	1,425.377	1,425.376	**230**	230	230
Ordinary shares issued (a) (c)	**0.022**	0.001	0.001	**–**	–	–
Shares purchased and cancelled (b)	**(40.913)**	–	–	**(6)**	–	–
At 31 December	**1,384.487**	1,425.378	1,425.377	**224**	230	230
Shares held by public						
At 1 January	**1,414.147**	1,412.695	1,411.257			
Shares reissued from treasury (a)	**0.790**	1.451	1.437			
Shares purchased and cancelled (b)	**(40.913)**	–	–			
Ordinary shares issued (a) (c)	**0.022**	0.001	0.001			
At 31 December	**1,374.046**	1,414.147	1,412.695			
Shares held in treasury	**10.441**	11.231	12.682			
Shares held by public	**1,374.046**	1,414.147	1,412.695			
Total share capital	**1,384.487**	1,425.378	1,425.377			
Other share classes						
Special Voting Share of 10p each (d)	**1 only**	1 only	1 only			
DLC Dividend Share of 10p each (d)	**1 only**	1 only	1 only			
Equalisation Share of 10p each (d)	**1 only**	1 only	1 only			

(a) 21,709 ordinary shares were issued in 2015 under the Global Employee Share Plan. 789,887 ordinary shares were reissued from treasury during the year resulting from the vesting of awards and the exercise of options under Rio Tinto plc employee share-based payment plans, with exercise prices and market values between £15.086 and £32.375 per share (2014: 971 ordinary shares were issued, and 1,450,659 ordinary shares reissued from treasury with exercise prices and market values between £10.979 and £36.275 per share; 2013: 951 ordinary shares issued, and 1,436,542 ordinary shares reissued from treasury with exercise prices and market values between £10.43 and £35.76 per share).

(b) The authority for the Company to buy back its ordinary shares was renewed at the 2015 annual general meeting. 40,912,881 shares were bought back and cancelled in 2015 under the on-market buy-back programme. No shares were bought back in 2014 and 2013.

(c) The aggregate consideration for new shares issued under the Global Employee Share Plan was US$0.9 million (2014: US$0.05 million; 2013: US$0.04 million). The difference between the nominal value and the issue price of the shares issued was credited to the share premium account. The aggregate consideration received for treasury shares reissued was US$13 million (2014: US$22 million; 2013: US$32 million). No new shares were issued as a result of the exercise of options under Rio Tinto plc employee share-based payment plans in 2015, 2014 and 2013.

(d) The "Special Voting Share" was issued to facilitate the joint voting by shareholders of Rio Tinto plc and Rio Tinto Limited on Joint Decisions, following the DLC Merger. The "DLC Dividend Share" was issued to facilitate the efficient management of funds within the DLC structure. Directors have the ability to issue an Equalisation Share if that is required under the terms of the DLC Merger Sharing Agreement.

During 2015, US$34.1 million of shares and ADRs (2014: US$49.5 million; 2013: US$42 million) were purchased by employee share ownership trusts on behalf of Rio Tinto plc to satisfy future share options and awards as they vest. At 31 December 2015, 827,679 shares and 17,890 ADRs were held in the employee share ownership trusts on behalf of Rio Tinto plc.

Information relating to share options and other share-based incentive schemes is given in note 44.

28 Share capital – Rio Tinto Limited

	2015 Number (million)	2014 Number (million)	2013 Number (million)	2015 US$m	2014 US$m	2013 US$m
Issued and fully paid up share capital						
At 1 January	**435.76**	435.76	435.76	**4,535**	4,911	5,715
Adjustment on currency translation	**–**	–	–	**(503)**	(376)	(804)
Ordinary shares purchased and cancelled (a)	**(11.57)**	–	–	**(82)**	–	–
At 31 December	**424.19**	435.76	435.76	**3,950**	4,535	4,911
– Special Voting Share (b)	**1 only**	1 only	1 only			
– DLC Dividend Share (b)	**1 only**	1 only	1 only			
Total share capital	**424.19**	435.76	435.76			

(a) At the Rio Tinto Limited annual general meeting held in 2014 shareholders authorised off-market and on-market buy-backs of up to 43.5 million Rio Tinto Limited ordinary shares. In April 2015, 11,566,308 Rio Tinto Limited ordinary shares were purchased at A$48.44 per share and cancelled under an off-market share buy-back programme.

(b) The "Special Voting Share" was issued to facilitate the joint voting by shareholders of Rio Tinto Limited and Rio Tinto plc on Joint Decisions following the DLC Merger. The "DLC Dividend Share" was issued to facilitate the efficient management of funds within the DLC structure. Directors have the ability to issue an Equalisation Share if that is required under the terms of the DLC Merger Sharing Agreement.

28 Share Capital – Rio Tinto Limited continued

Share options exercised during the year to 31 December 2015 under various Rio Tinto Limited employee share option schemes were satisfied by the on-market purchase of Rio Tinto Limited shares by a third party on the Group's behalf.

Information relating to share options and other share-based incentive schemes is given in note 44.

29 Other reserves and retained earnings

	2015 US$m	2014 US$m	2013 US$m
Capital redemption reserve [(a)]			
At 1 January	**28**	28	28
Own shares purchased and cancelled	**6**	–	–
At 31 December	**34**	28	28
Hedging reserves [(b)]			
At 1 January	**12**	3	(68)
Parent and subsidiaries' net cash flow hedge fair value (losses)/gains	**(41)**	(48)	149
Parent and subsidiaries' net cash flow hedge losses/(gains) transferred to the income statement	**32**	55	(69)
Tax on the above	**(3)**	2	(9)
At 31 December	**–**	12	3
Available for sale revaluation reserves [(c)]			
At 1 January	**(130)**	(117)	(179)
Losses on available for sale securities	**(16)**	(19)	(67)
Losses on available for sale securities transferred to the income statement	**7**	6	146
Tax on the above	**–**	–	(17)
At 31 December	**(139)**	(130)	(117)
Other reserves [(d)]			
At 1 January	**11,704**	11,766	11,778
Own shares purchased from Rio Tinto Limited shareholders to satisfy share options	**(25)**	(129)	(77)
Employee share options: value of services	**58**	69	64
Deferred tax on share options	**(2)**	(2)	1
At 31 December	**11,735**	11,704	11,766
Foreign currency translation reserve [(e)]			
At 1 January	**(492)**	1,191	3,309
Parent and subsidiaries currency translation and exchange adjustments	**(1,940)**	(1,690)	(2,138)
Equity accounted units currency translation adjustments	**(57)**	(43)	(44)
Currency translation reclassified on disposal	**(2)**	53	81
Tax on the above	**–**	(3)	(17)
At 31 December	**(2,491)**	(492)	1,191
Total other reserves per balance sheet	**9,139**	11,122	12,871

	2015 US$m	2014 US$m	2013 US$m
Retained earnings [(f)]			
At 1 January	**26,110**	23,605	21,496
Parent and subsidiaries' (loss)/profit for the year	**(1,218)**	5,243	2,796
Equity accounted units' profit after tax for the year	**352**	1,284	869
Actuarial gains/(losses) [(g)]	**616**	(720)	2,211
Tax relating to components of other comprehensive income	**(173)**	204	(631)
Total comprehensive (loss)/income for the year	**(423)**	6,011	5,245
Share buy-back scheme	**(1,946)**	–	–
Dividends paid	**(4,076)**	(3,710)	(3,322)
Change in equity interest held by Rio Tinto	**20**	36	102
Own shares purchased/treasury shares reissued for share options and other movements	**(27)**	(28)	11
Employee share options and other IFRS 2 charges taken to the income statement	**78**	196	73
At 31 December	**19,736**	26,110	23,605

(a) The capital redemption reserve was set up to comply with section 733 of the UK Companies Act 2006 (previously section 170 of the UK Companies Act 1985) when shares of a company are redeemed or purchased wholly out of the company's profits. Balances reflect the amount by which the Company's issued share capital is diminished in accordance with this section.

(b) The hedging reserve records gains or losses on cash flow hedges that are recognised initially in equity, as described in note 1 (p) (iii).

(c) The available for sale revaluation reserves record fair value gains or losses relating to available for sale securities, as described in note 1 (p) (i) (d).

(d) Other reserves includes US$11,936 million which represents the difference between the nominal value and issue price of the shares issued arising from Rio Tinto plc's rights issue completed in July 2009. No share premium was recorded in the Rio Tinto plc financial statements through the operation of the merger relief provisions of the UK Companies Act 1985.

Other reserves also include the cumulative amount recognised under IFRS 2 in respect of options granted but not exercised to acquire shares in Rio Tinto Limited, less, where applicable, the cost of shares purchased to satisfy share options exercised. The cumulative amount recognised under IFRS 2 in respect of options granted but not exercised to acquire shares in Rio Tinto plc is recorded in retained earnings.

(e) Exchange differences arising on the translation of the Group's net investment in foreign controlled companies are taken to the foreign currency translation reserve, as described in note 1(d). The cumulative differences relating to an investment are transferred to the income statement when the investment is disposed of.

(f) Retained earnings and movements in reserves of subsidiaries include those arising from the Group's share of joint operations.

(g) There were no actuarial losses relating to equity accounted units in 2015, 2014 or 2013.

30 Financial instruments and risk management

Except where stated, the information given below relates to the financial instruments of the parent companies and their subsidiaries and joint operations, and excludes those of equity accounted units. The information is grouped in the following sections:

A – Financial assets and liabilities by categories

B – Derivative financial instruments

C – Fair values

A (a) Financial assets and liabilities by categories

At 31 December 2015	Note	**Total US$m**	Loans and receivables US$m	Available for sale securities US$m	Held at fair value US$m	Held to maturity assets/other financial liabilities US$m
Financial assets						
Cash and cash equivalents	21	**9,366**	9,366	–	–	–
Trade and other receivables [(a)]		**2,468**	2,456	–	12	–
Equity shares and quoted funds	20	**157**	–	157	–	–
Other investments, including loans	20	**206**	32	–	170	4
Currency and commodity derivatives: designated as hedges [(b)]	20	**5**	–	–	5	–
Derivatives and embedded derivatives not related to net debt: not designated as hedges [(b)]	20	**412**	–	–	412	–
Derivatives related to net debt [(b)]	20,22,24	**189**	–	–	189	–
Loans to equity accounted units including quasi equity loans		**225**	225	–	–	–
Total financial assets		**13,028**	**12,079**	**157**	**788**	**4**
Financial liabilities						
Trade and other payables [(c)]		**(5,373)**			(24)	(5,349)
Short term borrowings and bank overdrafts	22	**(2,253)**			–	(2,253)
Medium and long term borrowings	22	**(20,810)**			–	(20,810)
Derivatives related to net debt [(b)]	22,24	**(275)**			(275)	–
Other derivatives and embedded derivatives: not designated as hedges [(b)]	22	**(49)**			(49)	–
Other financial liabilities	22	**(237)**			–	(237)
Total financial liabilities		**(28,997)**			**(348)**	**(28,649)**

Notes to the 2015 financial statements
continued

30 Financial instruments and risk management continued

At 31 December 2014	Note	Total US$m	Loans and receivables US$m	Available for sale securities US$m	Held at fair value US$m	Held to maturity assets/other financial liabilities US$m
Financial assets						
Cash and cash equivalents	21	12,423	12,423	–	–	–
Trade and other receivables (a)		3,727	3,715	–	12	–
Equity shares and quoted funds	20	199	–	199	–	–
Other investments, including loans	20	287	118	–	164	5
Currency and commodity derivatives: designated as hedges (b)	20	17	–	–	17	–
Derivatives and embedded derivatives not related to net debt: not designated as hedges (b)	20	219	–	–	219	–
Derivatives related to net debt (b)	20,22,24	200	–	–	200	–
Loans to equity accounted units including quasi equity loans		299	299	–	–	–
Total financial assets		17,371	16,555	199	612	5
Financial liabilities						
Trade and other payables (c)		(6,155)			(24)	(6,131)
Short term borrowings and bank overdrafts	22	(2,664)			–	(2,664)
Medium and long term borrowings	22	(22,411)			–	(22,411)
Derivatives related to net debt (b)	22,24	(54)			(54)	–
Other derivatives and embedded derivatives not designated as hedges (b)	22	(27)			(27)	–
Other financial liabilities	22	(63)			–	(63)
Total financial liabilities		(31,374)			(105)	(31,269)

(a) This excludes pension surpluses, prepayment of tolling charges to joint operations and other prepayments and specific items within other receivables and will therefore not agree to note 18.

(b) These financial assets and liabilities in aggregate agree to total derivative financial instruments disclosed in notes 20 and 22.

(c) Trade and other payables excludes deferred income, Government grants, royalties, mining taxes and employee entitlements and will therefore not agree to note 25.

A (b) Financial risk management

Funding and exposure management

The Group's policies on financial risk management are clearly defined and consistently applied. They are a fundamental part of the Group's long term strategy covering areas such as foreign exchange risk, interest rate risk, commodity price risk, credit risk, liquidity risk and capital management.

The Group mainly sells commodities it has produced and also enters into third party transactions and physical swaps on alumina to balance the regional positions and to balance the loading on production facilities.

The Group has a diverse portfolio of commodities and operates in a number of markets, which have varying responses to the economic cycle. The relationship between commodity prices and the currencies of most of the countries in which the Group operates provides a further natural hedge in the long term. Production of minerals, aluminium and alumina is an important contributor to the Gross Domestic Products of Australia and Canada, countries in which the Group has a large presence. As a consequence, the Australian and Canadian currencies have historically tended to strengthen when commodity prices are high and vice versa. These natural hedges significantly reduce the necessity for using derivatives or other forms of synthetic hedging. Such hedging is therefore undertaken to a strictly limited degree, as described below.

In addition, US dollar floating interest rates have historically also tended to be high when commodity prices are high, and vice versa, and hence the Group's interest rate policy is to generally borrow and invest, after the impact of hedging, at floating interest rates. However, in some circumstances, the Group elects to maintain a higher proportion of fixed rate funding.

Treasury operations

Treasury is a global and centralised support and service function that acts as the custodian of the Group's cash and balance sheet and its key financial risks. It performs its activities in a strong control environment, within Board approved limits. It is not a profit centre. It is responsible for managing liquidity through funding and investments as well as financial risks such as foreign exchange, interest, financial counterparty credit, commodity, insurance and pension risk. It is also responsible for managing banking relationships across the Group. Its activities are principally retained within the Group Treasury function.

Treasury policy

Rio Tinto does not acquire or issue derivative financial instruments for trading or speculative purposes; nor does it believe that it has material exposure to such trading or speculative holdings through its investments in joint arrangements and associates. However, derivatives are used as and when required in order to manage the Group's exposure in accordance with its underlying financial risk management principles. Cash management and investment activities are managed and co-ordinated centrally by Treasury using only approved counterparties and within allocated credit limits reviewed and approved by the Board at least annually.

(i) Foreign exchange risk

Management policy

The Group's shareholders' equity, earnings and cash flows are influenced by a wide variety of currencies due to the geographic diversity of the Group's sales and the countries in which it operates. The US dollar, however, is the currency in which the majority of the Group's sales are denominated. Operating costs are influenced by the currencies of those countries where the Group's mines and processing plants are located and also by those currencies in which the costs of imported equipment and services are determined. The Australian and Canadian dollars are the most important currencies (apart from the US dollar) influencing costs. In any particular year, currency fluctuations may have a significant impact on Rio Tinto's financial results. A strengthening of the US dollar against the currencies in which the Group's costs are partly determined has a positive effect on Rio Tinto's Underlying earnings. However, a strengthening of the US dollar does reduce the value of non US dollar denominated net assets and therefore total equity.

Given the dominant role of the US currency in the Group's affairs, the US dollar is the currency in which financial results are presented both internally and externally. It is also the most appropriate currency for financing the Group's operations. Borrowings and cash are predominantly denominated in US dollars, either directly or through the use of derivatives.

Certain US dollar debt and other financial assets and liabilities, including intragroup balances, are held in currencies other than the functional currency of the relevant subsidiary. This results in an accounting exposure to exchange gains and losses as the financial assets and liabilities are translated into the functional currency of the subsidiary that holds those assets and liabilities. These exchange gains and losses are recorded in the Group's income statement except to the extent that they can be taken to equity under the Group's accounting policy which is explained in note 1(d). Gains and losses on US dollar net debt and on all intragroup balances are excluded from Underlying earnings. Other exchange gains and losses are included in Underlying earnings.

See section B for the details of cross currency interest rate swaps relating to borrowings.

After taking into account relevant swap instruments, almost all of the Group's net debt is denominated in US dollars. The table below summarises, by currency, the Group's net debt, after taking into account relevant cross currency interest rate swaps and foreign exchange contracts:

Net funds/(debt) by currency	Cash and cash equivalents US$m	Total borrowings in note 22 US$m	Derivatives related to net debt US$m	**Net funds/ (debt) 2015 US$m**	Net funds/ (debt) 2014 US$m
US dollar	8,767	(22,198)	(86)	**(13,517)**	(12,144)
Australian dollar	236	(513)	–	**(277)**	(125)
Euro	46	(134)	–	**(88)**	(127)
South African rand	80	(51)	–	**29**	(85)
Canadian dollar	42	(163)	–	**(121)**	(169)
Sterling	27	–	–	**27**	4
Other	168	(4)	–	**164**	151
Total	**9,366**	**(23,063)**	**(86)**	**(13,783)**	**(12,495)**

Hedging strategy
Under normal market conditions, the Group does not generally believe that active currency hedging of transactions would provide long term benefits to shareholders. The Group reviews its exposure on a regular basis and reserves the right to enter into hedges to maintain financial stability. Currency protection measures may be deemed appropriate in specific commercial circumstances, typically hedging of capital expenditures and other significant financial items such as acquisitions, disposals, tax and dividends, and are subject to strict limits laid down by the Board. A quarterly treasury report is provided to senior management which summarises corporate debt exposed to currency risks after the impact of derivatives. Refer to section B for the details of cross currency interest rate, currency forward and option contracts used to manage the currency risk exposures of the Group at 31 December 2015.

Sensitivities
The table below gives the estimated retranslation effect on financial assets and financial liabilities of a ten per cent strengthening in the closing exchange rate of the US dollar against significant currencies. The sensitivity associated with a ten per cent weakening of a particular currency would be broadly equal and opposite to the figures presented. The impact is expressed in terms of the effect on net earnings, underlying earnings and equity, assuming that each exchange rate moves in isolation. The sensitivities are based on financial assets and financial liabilities held at 31 December 2015, where balances are not denominated in the functional currency of the subsidiary or joint operation, and exclude financial assets and liabilities held by equity accounted units. These balances will not remain constant throughout 2016, and therefore the following information should be used with care.

At 31 December 2015
Gains/(losses) associated with ten per cent strengthening of the US dollar

Currency exposure	**Closing exchange rate US cents**	**Effect on net earnings US$m**	**Of which amount impacting underlying earnings US$m**	**Net impact on equity US$m**
Australian dollar	**73**	**(182)**	**58**	**–**
Canadian dollar	**72**	**(771)**	**2**	**–**
Euro	**109**	**60**	**(25)**	**–**
New Zealand dollar	**68**	**–**	**–**	**–**

At 31 December 2014
Gains/(losses) associated with ten per cent strengthening of the US dollar

Currency exposure	Closing exchange rate US cents	Effect on net earnings US$m	Of which amount impacting underlying earnings US$m	Net impact on equity US$m
Australian dollar	82	(855)	27	5
Canadian dollar	86	(1,537)	22	(1)
Euro	122	48	(16)	–
New Zealand dollar	78	28	–	–

30 Financial instruments and risk management continued

Ten per cent is the annual exchange rate movement that management deems to be reasonably probable (on an annual basis over the long run) for one of the Group's significant currencies and as such provides an appropriate representation.

(ii) Interest rate risk

Management policy

Interest rate risk refers to the risk that the value of a financial instrument or cash flows associated with the instrument will fluctuate due to changes in market interest rates. The Group's interest rate management policy is generally to borrow and invest at floating interest rates. This approach is based on a historical correlation between interest rates and commodity prices. However, in certain circumstances the Group may elect to maintain a higher proportion of fixed rate funding.

Hedging strategy

As noted above, the Group hedges its interest rate risk by entering into interest rate derivatives to achieve its policies. The market value of such instruments moves in alignment with the market and at times can act as an alternative source of funding. The Group reviews the positions on a regular basis and may act to monetise in-the-money instruments either to take advantage of favourable market conditions or manage counterparty credit risk.

At the end of 2015, US$12.3 billion (2014: US$17.6 billion) of the Group's adjusted total borrowings was at fixed rates after taking into account interest and currency interest rate swaps, resulting in a fixed to floating debt ratio of 53 per cent fixed to 47 per cent floating (2014: 71 per cent fixed to 29 per cent floating). On a net debt basis, the fixed to floating debt ratio was 89 per cent fixed liability to 11 per cent floating liability (2014: 139 per cent fixed liability to (39) per cent floating asset). The weighted average interest rate on total adjusted borrowings as at 31 December 2015 was approximately 3.5 per cent (2014: approximately 3.7 per cent) and the weighted average maturity was approximately 8 years (2014: 8 years). The weighted average maturity and weighted average effective interest rate are based on current interest rates and the carrying value of gross borrowings at the year end.

The fixed:floating net debt ratio at the end of 2015 and 2014 reflects the high level of cash, cash equivalents and other liquid resources held by the Group and the impact of borrowings held at fixed rates.

See note 22 for the details of debt outstanding at 31 December 2015.

Sensitivities

Based on the Group's net debt (refer to note 24) and other floating rate financial instruments outstanding as at 31 December 2015, the effect on net earnings of a half percentage point increase in US dollar LIBOR interest rates, with all other variables held constant, would be a charge of US$4 million (2014: credit of US$20 million). The Group has an exposure to interest rate volatility within shareholders' equity arising from fair value movements on derivatives in the cash flow reserve. These derivatives have an underlying exposure to sterling and US dollar rates. With all factors remaining constant and based on the composition of derivatives impacting the cash flow reserve at 31 December 2015, the sensitivity of a 100 basis point increase in interest rates in each of the currencies in isolation would impact equity, before tax, by US$100 million charge (2014: US$112 million charge) for sterling and US$103 million credit (2014: US$108 million credit) for US dollar. A 100 basis point decrease would have broadly the same impact in the opposite direction. These balances will not remain constant throughout 2016, and therefore this information should be used with care.

(iii) Commodity price risk

Management policy

The Group's normal policy is to sell its products at prevailing market prices. Exceptions to this rule are subject to strict limits laid down by the Board and to rigid internal controls.

Metals such as copper and aluminium are generally sold under contracts which vary in tenure and pricing mechanisms, with some volumes sold in the spot market. The prices are determined by reference to prevailing market prices on terminal markets, such as the London Metal Exchange (LME) and COMEX in New York. Prices fluctuate widely in response to changing levels of supply and demand but, in the long run, prices are related to the marginal cost of supply. Gold is also priced in an active market in which prices respond to daily changes in quantities offered and sought. Newly mined gold is only one source of supply; investment and disinvestment can be important elements of supply and demand. Contract prices for many other natural resource products including coal are generally agreed quarterly or for longer periods with customers, although volume commitments vary by product.

Certain products, predominantly copper concentrate, are provisionally priced, that is the selling price is determined normally 30 to 180 days after delivery to the customer, based on the market price at the relevant quotation point stipulated in the contract. Revenue is recognised on provisionally priced sales based on estimates of fair value of the consideration receivable which is based on forward market prices. At each reporting date provisionally priced metal sales are marked to market based on the forward selling price for the period stipulated in the contract. For this purpose the selling price can be measured reliably for those products such as copper concentrate for which the price is directly related to the price of copper for which an active and freely traded commodity market exists, such as the LME, and the value of product sold by the Group is directly linked to the form in which it is traded on that market.

The marking to market of provisionally priced sales contracts is recorded as an adjustment to sales revenue.

At the end of 2015, the Group had 252 million pounds of copper sales (2014: 331 million pounds) that were provisionally priced at US 217 cents per pound (2014: US 288 cents per pound). The final price of these sales will be determined during the first half of 2016. A ten per cent change in the price of copper realised on the provisionally priced sales, all other factors held constant, would increase or reduce net earnings by US$36 million (2014: US$51 million).

Hedging strategy

Rio Tinto's exposure to commodity prices is diversified by virtue of its broad commodity base and the Group does not generally believe commodity price hedging would provide a long term benefit to shareholders. The Group may hedge certain commitments with some of its customers or suppliers. Details of commodity derivatives held at 31 December 2015 are set out in section B.

Sensitivities

The Group's commodity derivatives are impacted by changes in market prices and include those aluminium forward and option contracts embedded in electricity purchase contracts outstanding at 31 December 2015. A ten per cent increase in market prices would reduce net earnings by US$70 million (2014: US$97 million), and a ten per cent decrease in prices would increase net earnings by US$58 million (2014: US$84 million). A ten per cent change in prices would have a nil impact on equity, before tax, (2014: US$4 million).

The Group's "own use contracts" are excluded from the sensitivity analysis as they are outside the scope of IAS 39. Such contracts to buy or sell non financial items can be net settled but were entered into and continue to be held for the purpose of the receipt or delivery of the non financial item in accordance with the business unit's expected purchase, sale or usage requirements.

(iv) Credit risk

Treasury management policy

Credit risk is the risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss. The Group is exposed to credit risk from its operating activities (primarily from customer receivables) and from its financing activities, including investments in government securities, deposits with banks and financial institutions, other short term investments, interest rate and currency derivative contracts and other financial instruments.

Credit risks related to receivables

Customer credit risk is managed by each business unit subject to the Group's established policy, procedures and controls relating to customer credit risk management. Credit limits are established for all customers based on internal or external rating criteria. Where customers are rated by an independent credit rating agency, these ratings are used to set credit limits. In circumstances where no independent credit rating exists, the credit quality of the customer is assessed based on an extensive credit rating scorecard. Outstanding customer receivables are regularly monitored and any credit concerns highlighted to senior management. High risk shipments to major customers are generally covered by letters of credit or other forms of credit insurance.

At 31 December 2015, the Group had approximately 74 customers (2014: 105 customers) that owed the Group more than US$5 million each and these balances accounted for approximately 75 per cent (2014: 77 per cent) of all receivables owing. There were 13 customers (2014: 22 customers) with balances greater than US$20 million accounting for just over 37 per cent (2014: just over 43 per cent) of total amounts receivable. Details of trade and other receivables past due but not impaired are provided in note 18.

The maximum exposure to credit risk at the reporting date is the carrying value of each class of financial assets (refer to table of financial assets and liabilities reported above). The Group does not hold collateral as security for any trade receivables.

Credit risk related to financial instruments and cash deposits

Credit risk from investments in government securities (primarily US Government) or money market funds and balances with banks and financial institutions is managed by Group Treasury in accordance with a Board approved policy. Investments of surplus funds are made only with approved counterparties who have been assigned specific credit limits beforehand based on specific assessment criteria. The counterparty credit framework and limits are reviewed by the Board at least annually. The limits are set to minimise the concentration of credit risk and therefore mitigate the potential for financial loss through counterparty failure.

The maximum credit risk exposure of the Group's financial assets at the balance sheet date is as follows:

	Note	2015 US$m	2014 US$m
Cash and cash equivalents	21	**9,366**	12,423
Trade and other receivables		**2,468**	3,727
Investments	20	**206**	287
Derivative assets	20	**606**	436
Total		**12,646**	16,873

(v) Liquidity and capital risk management

Management policy

The Group's overriding objective when managing capital is to safeguard the business as a going concern whilst maximising returns for shareholders. In a cyclical and capital intensive industry such as the mining industry, maintaining a strong balance sheet and a sound financial risk management framework are desirable to preserving financial flexibility and generating shareholder value through the cycle. In practice, this involves regular reviews by the board and senior management. These reviews take into account the Group's strategic priorities, economic and business conditions and opportunities that are identified to invest across all points of the commodities cycle, and focus on the dividend policy, and other forms of shareholder return whilst also striving to maintain a strong balance sheet. In February 2016, the Group announced a change in its dividend policy, moving from a progressive dividend policy to a dividend determined by, taking into account the results for the financial year, the outlook for the Group's major commodities, the Board's view of the long-term growth prospects of the business and the Group's objective of maintaining a strong balance sheet. The Board expects total cash returns to shareholders over the longer term to be in a range of 40% – 60% of underlying earnings in aggregate throughout the cycle. Acknowledging the cyclical nature of the industry in periods of strong earnings and cash generation it is the Board's intention to supplement the ordinary dividends with additional returns to shareholders. The resulting capital structure provides the Group with a high degree of financial flexibility at a low cost of capital.

To maintain a strong balance sheet, the Group considers various financial metrics including a target net gearing ratio of 20 to 30 per cent, the overall level of borrowings and their maturity profile, liquidity levels, total capital, cash flow, EBITDA and interest cover ratios either on a statutory reported basis or as expected to be adjusted by the credit rating agencies.

Total capital	2015 US$m	2014 US$m
Equity attributable to owners of Rio Tinto (see Group balance sheet)	**37,349**	46,285
Equity attributable to non-controlling interests (see Group balance sheet)	**6,779**	8,309
Net debt (note 24)	**13,783**	12,495
Total capital	**57,911**	67,089

Net debt is a measure used by management and the Board to manage the Group's capital structure and liquidity risks and is linked to all of the Group's value drivers. It is also used to manage the Group's interest rate risks and foreign exchange risks on borrowings and cash. Net debt is disclosed and defined in note 24. Net debt increased from US$12.5 billion at 31 December 2014 to US$13.8 billion at 31 December 2015 as operating cash inflows were more than offset by outflows relating to capital expenditure, the dividend and the share buy-back programme. At 31 December 2015 net debt to total capital was 24 per cent (2014: 19 per cent) and interest cover was 7 times (2014: 13 times).

Notes to the 2015 financial statements
continued

30 Financial instruments and risk management continued

The unified credit status of the Group is maintained through cross guarantees whereby contractual obligations of Rio Tinto plc and Rio Tinto Limited are automatically guaranteed by the other. The table below summarises the credit ratings attributed to the Group as at 31 December.

	2015	2014
Long term rating	**A-/A3**[(a)]	A-/A3
Short term rating	**A-2/P-2**	A-2/P-2
Outlook	**Negative/ Stable**[(a)]	Stable/ Stable

(a) On 24 February 2016, the Group was downgraded to Baa1 with a negative outlook.

The Group has access to various forms of financing including its US Shelf Programme, European Debt Issuance Programme, Commercial Paper and credit facilities. The Group did not issue any listed debt in 2014 under the various finance programmes listed. In June 2015, under its US Shelf Programme, the Group issued a Rio Tinto Finance (USA) Limited US$1,200 million 3.75% bond due 2025. The proceeds were used to repurchase the Rio Tinto Finance (USA) Limited US$700 million 2.5% bond due 2016 and the Rio Tinto Finance (USA) Limited US$500 million 2.25% bond due 2016.

In November 2013, Rio Tinto Finance plc and Rio Tinto Finance Limited entered into facility agreements, as borrowers, for the aggregate amount of US$7.5 billion with a syndicate of banks. The facilities are guaranteed by Rio Tinto plc and Rio Tinto Limited. The facilities comprised a US$1,875 million three-year multi-currency revolving credit facility and a US$5,625 million five-year multi-currency revolving credit facility (including a US$ denominated same day access swing-line facility). Both facilities had two one-year extension options, the first of which was utilised in November 2014. In November 2015, the US$1,875 million and US$5,625 million facilities were amended and their maturities extended to November 2018 and November 2020 respectively with the two one-year extension options reinstated. The renewed extension options could be utilised in 2016 and/or 2017, subject to the agreement by the banks. The funds made available under the facility agreements may be used for the general corporate purposes of the Group.

Advances under the revolving facilities bear an interest rate per annum based on LIBOR (or EURIBOR, CDOR or BBSW in relation to any euro, Canadian dollar or Australian dollar loans respectively) plus a margin (which is dependent on the Group's long-term credit rating as determined by Moody's and Standard & Poor's and the level of drawdown). The facility agreements contain no financial covenants. At 31 December 2015, the facilities were undrawn.

In December 2015, Oyu Tolgoi LLC signed a $4.4 billion project finance facility. The facility consists of the following components: $0.8 billion 15 year A Loan at LIBOR plus 3.78% pre-completion and LIBOR plus 4.78% post completion; $0.9 billion 14 year Export Credit Agencies Loan at LIBOR plus 3.65% pre-completion and LIBOR plus 4.65% post-completion; $0.4 billion 13 year Export Credit Agencies Loan US Ex-Im at fixed rate of Commercial Interest Reference Rate based on US Treasury rates, determined at the time of disbursement; $0.7 billion 12 year MIGA Insured Loan at LIBOR plus 2.65% pre-completion and LIBOR plus 3.65% post-completion; and $1.6 billion 12 year B Loan at LIBOR plus 3.4% pre-completion, LIBOR plus 4.4% post-completion (includes $50 million 15 year loan at A Loan rate).

The facilities are provided and funded by international financial institutions and export credit agencies representing the governments of the United States, Canada and Australia, along with 15 commercial banks.

The Multilateral Investment Guarantee Agency (MIGA) provided political risk insurance for the commercial banks.

Draw down of the $4.4 billion facility by Oyu Tolgoi is subject to satisfaction of certain conditions precedent, and to approval by the boards of Rio Tinto, Turquoise Hill and Oyu Tolgoi. Steps prerequisite to the boards' approval comprise: updating the feasibility study, including the revised capital estimates; and securing all necessary permits for the development of the underground mine.

The parties have agreed a debt cap of $6 billion, providing potential for an additional $1.6 billion of Supplemental Debt in future.

A (c) Financial liability analysis

The table below analyses the Group's financial liabilities by relevant maturity groupings based on the remaining period from the balance sheet date to the contractual maturity date. As the amounts disclosed in the table are the contractual undiscounted cash flows, these balances will not necessarily agree with the amounts disclosed in the balance sheet.

At 31 December 2015

(Outflows) / inflows	Within 1 year or on demand US$m	Between 1 and 2 years US$m	Between 2 and 3 years US$m	Between 3 and 4 years US$m	Between 4 and 5 years US$m	After 5 years US$m	**Total US$m**
Non-derivative financial liabilities							
Trade and other payables	(4,967)	(406)	–	–	–	–	**(5,373)**
Borrowings before swaps	(2,266)	(1,889)	(3,462)	(1,538)	(1,945)	(12,318)	**(23,418)**
Expected future interest payments (a)	(884)	(867)	(837)	(628)	(561)	(4,789)	**(8,566)**
Other financial liabilities	(190)	(5)	–	–	–	–	**(195)**
Derivative financial liabilities (b)							
Derivatives related to net debt – net settled	30	30	30	30	29	28	**177**
Derivatives related to net debt – gross settled (a):							
gross inflows	62	62	62	62	872	1,617	**2,737**
gross outflows	(65)	(65)	(65)	(65)	(1,039)	(1,824)	**(3,123)**
Derivatives not related to net debt – net settled	(29)	(6)	–	–	–	(2)	**(37)**
Derivatives not related to net debt – gross settled:							
gross inflows	22	–	–	–	–	–	**22**
gross outflows	(22)	–	–	–	–	–	**(22)**
Total	(8,309)	(3,146)	(4,272)	(2,139)	(2,644)	(17,288)	**(37,798)**

At 31 December 2014

(Outflows) / inflows	Within 1 year or on demand US$m	Between 1 and 2 years US$m	Between 2 and 3 years US$m	Between 3 and 4 years US$m	Between 4 and 5 years US$m	After 5 years US$m	Total US$m
Non-derivative financial liabilities							
Trade and other payables	(5,640)	(515)	–	–	–	–	**(6,155)**
Borrowings before swaps	(2,664)	(2,868)	(1,973)	(3,139)	(1,524)	(12,535)	**(24,703)**
Expected future interest payments (a)	(927)	(883)	(838)	(816)	(608)	(5,492)	**(9,564)**
Other financial liabilities	(49)	(67)	(3)	(1)	–	–	**(120)**
Derivative financial liabilities (b)							
Derivatives related to net debt – gross settled (a):							
gross inflows	36	36	36	36	36	1,614	**1,794**
gross outflows	(28)	(28)	(28)	(28)	(28)	(1,705)	**(1,845)**
Derivatives not related to net debt – net settled	(11)	(8)	–	(1)	–	–	**(20)**
Derivatives not related to net debt – gross settled:							
gross inflows	423	–	–	–	–	–	**423**
gross outflows	(423)	–	–	–	–	–	**(423)**
Total	(9,283)	(4,333)	(2,806)	(3,949)	(2,124)	(18,118)	**(40,613)**

(a) Interest payments have been projected using interest rates applicable at the end of the applicable financial year. Where debt is subject to variable interest rates, future interest payments are subject to change in line with market rates.

(b) The maturity grouping is based on the earliest payment date.

(c) The maximum carrying value of borrowings repayable, after the impact of swaps, maturing in any financial year is US$3.3 billion (2014: US$3.3 billion).

Offsetting and enforceable master netting agreements

Financial assets and liabilities are offset and the net amount reported in the consolidated balance sheet when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously. There were no material amounts offset in the balance sheet and no material enforceable master netting agreements were identified.

30 Financial instruments and risk management continued

B Derivative financial instruments

The Group's derivatives, including embedded derivatives, as at 31 December 2015, are summarised below:

	Total fair value			
	2015		2014	
Derivatives designated as hedges	**Asset US$m**	**Liability US$m**	Asset US$m	Liability US$m
Aluminium forward contracts embedded in electricity purchase contracts [(a)]	**5**	**–**	17	–
Interest rate swaps [(b)]	**189**	**(16)**	189	–
Cross currency interest rate swaps [(c)]	**–**	**(259)**	11	(54)
Total derivatives designated as hedges	**194**	**(275)**	217	(54)
Derivatives not designated as hedges	**US$m**	**US$m**	US$m	US$m
Currency forward contracts, options and swaps	**13**	**–**	–	(5)
Aluminium forward contracts [(d)]	**5**	**(22)**	13	(20)
Aluminium options embedded in electricity purchase contracts [(a)]	**16**	**(1)**	15	–
Aluminium forward contracts embedded in electricity purchase contracts [(a)]	**357**	**(2)**	182	–
Other embedded derivatives	**21**	**–**	9	–
Other commodity contracts	**–**	**(24)**	–	(2)
Total derivatives not designated as hedges	**412**	**(49)**	219	(27)
Total derivative instruments	**606**	**(324)**	436	(81)
Analysed by maturity:				
Less than 1 year	**78**	**(41)**	43	(14)
Between 1 and 5 years	**121**	**(144)**	102	(13)
More than 5 years	**407**	**(139)**	291	(54)
Total	**606**	**(324)**	436	(81)
Total net derivative instruments	**282**		355	

Reconciliation to balance sheet	**2015 US$m**	2014 US$m
– non-current assets (note 20)	**529**	393
– current assets (note 20)	**77**	43
– current liabilities (note 22)	**(41)**	(14)
– non-current liabilities (note 22)	**(283)**	(67)
Total net derivatives instruments, detailed above	**282**	355

(a) Aluminium embedded derivatives (forward contracts and options) are contained within certain aluminium smelter electricity purchase contracts. These contracts reduce the Group's margin exposure to movements in the aluminium price.

(b) The interest rate swaps are used to convert certain fixed rate borrowings to a floating rate. For further details, see note 22.

(c) The cross currency interest rate swaps are used to convert non US dollar denominated borrowings to either fixed or floating US dollar borrowings. For further details see note 22.

(d) The aluminium forward contracts are entered into to convert aluminium sales made at a fixed price to LME cash. In 2015, US$(6) million ineffective portion arising from cash flow hedges was recognised in the income statement (2014: US$15 million).

The aluminium forward contracts which were taken out to convert aluminium sales made at a fixed price to LME cash are not designated as hedges as they largely offset.

C Fair values

The carrying amounts and fair values of all of the Group's financial instruments which are not carried at an amount which approximates their fair value at 31 December 2015 and 31 December 2014 are shown in the following table. The fair values of the Group's cash and loans to equity accounted units approximate their carrying values as a result of their short maturity or because they carry floating rates of interest.

	31 December 2015		31 December 2014	
	Carrying value US$m	**Fair value US$m**	Carrying value US$m	Fair value US$m
Short term borrowings (note 22)	**(2,253)**	**(2,255)**	(2,664)	(2,711)
Medium and long term borrowings (note 22)	**(20,810)**	**(20,302)**	(22,411)	(23,657)

Borrowings with a carrying value of US$21.3 billion (2014: US$23.2 billion) relate to listed bonds with a fair value of US$20.8 billion (2014: US$24.5 billion) and are categorised as level 1 in the fair value hierarchy. The remaining borrowings have a fair value measured by discounting estimated cash flows with an applicable market quoted yield and are categorised as level 2 in the fair value hierarchy.

C (a) Valuation hierarchy

The table below shows the financial instruments carried at fair value by valuation method at 31 December 2015:

	Total US$m	Level 1 (a) US$m	Level 2 (b) US$m	Level 3 (c) US$m	Not held at fair value US$m
Assets					
Equity shares and quoted funds (note 20)	157	87	7	10	53
Other investments, including loans (d) (note 20)	206	99	–	71	36
Trade receivables (e)	1,370	–	12	–	1,358
	1,733	186	19	81	1,447
***Derivatives* (f)**					
Forward contracts: designated as hedges (Section B)	5	–	–	5	–
Forward contracts and option contracts, not designated as hedges (Section B)	363	–	(7)	370	–
Derivatives related to net debt (Section B)	(86)	–	(86)	–	–
	2,015	186	(74)	456	1,447

The table below shows the financial instruments carried at fair value by valuation method at 31 December 2014:

	Total US$m	Level 1 (a) US$m	Level 2 (b) US$m	Level 3 (c) US$m	Not held at fair value US$m
Assets					
Equity shares and quoted funds (note 20)	199	56	85	12	46
Other investments, including loans (d) (note 20)	287	108	–	56	123
Trade receivables (e)	2,488	12	–	–	2,476
	2,974	176	85	68	2,645
***Derivatives* (f)**					
Forward contracts: designated as hedges (Section B)	17	–	–	17	–
Forward contracts and option contracts, not designated as hedges (Section B)	192	(2)	(3)	197	–
Derivatives related to net debt (Section B)	146	–	146	–	–
	3,329	174	228	282	2,645

(a) Valuation is based on unadjusted quoted prices in active markets for identical financial instruments. This category includes listed equity shares and other quoted funds.

(b) Valuation is based on inputs that are observable for the financial instruments which includes quoted prices for similar instruments or identical instruments in markets which are not considered to be active, or inputs, either directly or indirectly based on observable market data.

(c) Valuation is based on inputs for the asset or liability that are not based on observable market data (unobservable inputs).

(d) Other investments, including loans, comprise: cash deposits in rehabilitation funds, government bonds and royalty amounts receivable. The royalty receivables are valued based on an estimate of forward sales subject to the royalty agreement.

(e) Trade receivables includes provisionally priced receivables relating to sales contracts where selling price is determined after delivery to the customer, based on the market price at the relevant quotation point stipulated in the contract. Revenue is recognised on provisionally priced sales based on the forward selling price for the period stipulated in the contract.

(f) Level 3 derivatives consist of derivatives embedded in electricity purchase contracts linked to the LME with terms expiring between 2016 and 2030 (2014: 2015 and 2030). The embedded derivatives are measured using discounted cash flows and option model valuation techniques. Long-term embedded derivatives with a fair value of US$370 million at 31 December 2015 (2014: US$196 million) are valued using significant unobservable inputs as the term of the derivative extends beyond the forward curve for aluminium.

Aluminium prices are flatlined beyond the market forward curve and increased by projected inflation up to the date of expiry of the contract. The range of market prices are US$2,044 per metric tonne in 2026 to US$2,242 in 2030 (2014: US$2,320 per metric tonne in 2025 to US$2,578 in 2030).

The other contracts with a fair value of US$5 million at 31 December 2015 (2014: US$18 million) are categorised as level three as the market premium assumptions used represent unobservable inputs.

(g) Interest rate and currency interest rate swaps are valued using applicable market quoted swap yield curves adjusted for relevant basis and credit default spreads. Currency interest rate swap valuations also use market quoted foreign exchange rates. A discounted cash flow approach is applied to the cash flows derived from the inputs to determine fair value.

(h) There were no transfers between Level 1 and Level 2, or between Level 2 and Level 3 in the year ended 31 December 2015 or the year ended 31 December 2014.

Notes to the 2015 financial statements
continued

30 Financial instruments and risk management continued

C (b) Level 3 Financial assets and Financial liabilities

The table below shows the summary of changes in the fair value of the Group's Level 3 financial assets and financial liabilities for the year ended 31 December 2015 and 31 December 2014.

	31 December 2015 Level 3 financial assets and financial liabilities	31 December 2014 Level 3 financial assets and financial liabilities
Opening balance	**282**	461
Currency translation adjustments	**(43)**	(17)
Total realised gains or (losses) included in:		
– Net operating costs	**6**	(8)
Total unrealised gains included in:		
– Net operating costs	**196**	18
Total unrealised gains or (losses) transferred into other comprehensive income	**15**	(5)
Additions	**–**	8
Disposals/maturity of financial instruments	**–**	(175)
Closing balance	**456**	282
Total (losses)/gains for the year included in the income statement for assets and liabilities held at year end	**(15)**	(11)

Sensitivity analysis in respect of Level 3 derivatives

Forward contracts and options whose carrying value are valued using unobservable inputs are calculated using appropriate discounted cashflow and option model valuation techniques. The most significant of these assumptions relate to long term pricing wherein internal pricing assumptions are used after the ten year LME curve. A ten per cent increase in long term metal pricing assumptions would result in a US$38 million (31 December 2014: US$39 million) decrease in carrying value. A ten per cent decrease in long term metal pricing assumptions would result in a US$39 million (31 December 2014: US$71 million) increase in carrying value.

31 Contingencies and commitments

	2015 US$m	2014 US$m
Capital commitments excluding the Group's share of Joint Venture Capital Commitments		
Within 1 year	**710**	1,838
Between 1 and 3 years	**98**	96
Between 3 and 5 years	**2**	23
After 5 years	**24**	30
Total	**834**	1,987
Group's share of Joint Venture Capital Commitments		
Within 1 year	**300**	782
Between 1 and 3 years	**57**	331
Total	**357**	1,113

Unrecognised commitments to contribute funding or resources to joint ventures

The Group has a commitment to purchase and market a portion (in excess of the Group's ownership interest) of the output of Sohar Aluminium Company L.C.C., an aluminium smelter in which the Group is a joint venturer. The Group immediately sells the purchased products to third parties.

For Sohar Aluminium Company L.C.C. the Group, along with the other joint venturers, has made various commitments to provide shareholder funding as required, subject to approved thresholds.

In 2014, Minera Escondida Limitada held a shareholder line of credit for US$225 million (Rio Tinto share) which was undrawn at 31 December 2014. This line of credit matured during the year ended 31 December 2015.

Operating leases

The aggregate amount of minimum lease payments under non-cancellable operating leases are as follows:

	2015 US$m	2014 US$m
Within 1 year	**400**	429
Between 1 and 3 years	**590**	690
Between 3 and 5 years	**443**	460
After 5 years	**745**	766
	2,178	2,345

Purchase obligations

The aggregate amount of future payment commitments under purchase obligations outstanding at 31 December was:

	2015 US$m	2014 US$m
Within 1 year	**2,677**	2,912
Between 1 and 2 years	**2,269**	2,434
Between 2 and 3 years	**1,856**	2,026
Between 3 and 4 years	**1,519**	1,660
Between 4 and 5 years	**1,346**	1,479
After 5 years	**12,945**	19,572
	22,612	30,083

Purchase obligations are agreements to purchase goods or services that are enforceable and legally binding and specify all significant terms, including: fixed or minimum quantities to be purchased or consumed; fixed, minimum or variable price provisions; and the approximate timing of the transactions.

Purchase obligations for goods primarily relate to purchases of raw materials and consumables and purchase obligations for services primarily relate to charges for use of infrastructure, commitments to purchase power and freight contracts. These goods and services are expected to be used in the business. To the extent that this changes a provision for onerous obligations may be made as described in note 1(i).

Purchases from joint arrangements or associates are included to the extent that the quantity purchased is in excess of Rio Tinto's ownership interest in the entity. However, purchase obligations exclude contracted purchases of bauxite, alumina and aluminium from joint arrangements and associates and contracted purchases of alumina from third parties as the purchases are made for commercial reasons and the Group is, overall, a net seller of these commodities.

In addition, as explained above, the Group has a commitment to purchase and market a portion (in excess of the Group's ownership interest) of the output of Sohar Aluminium Company L.L.C.

	2015 US$m	2014 US$m
Contingent liabilities (subsidiaries and joint operations)		
Indemnities and other performance guarantees [(a)] [(b)]	**226**	239

(a) Indemnities and other performance guarantees represent the potential outflow of funds from the Group for the satisfaction of obligations including those under contractual arrangements (for example undertakings related to supplier agreements) not provided for in the balance sheet, where the likelihood of the guarantees or indemnities being called is assessed as possible rather than probable or remote.

(b) There were no material contingent liabilities arising in relation to the Group's joint ventures and associates.

Marketing of iron ore is undertaken in the Singapore Commercial Centre by Rio Tinto Iron Ore Asia Pte Ltd (RTIOA), which is remunerated on an arm's length basis by the Group's iron ore product group. The arrangements are under review by the Australian Tax Office (ATO). Rio Tinto considers the arrangements to be in accordance with transfer pricing law, and will therefore vigorously defend its position in the event of any ATO challenge.

The Group is subject to certain legal proceedings, claims, complaints and investigations arising out of the ordinary course of business. Legal proceedings include, but are not limited to, breach of contract, breach of environmental, competition, securities and health and safety laws. The Group may not be insured fully, or at all, in respect of such risks. The Group cannot predict the outcome of individual legal actions. The Group may settle litigation or regulatory proceedings prior to a final judgment or determination of liability. The Group may do so to avoid the cost, management efforts or negative business, regulatory or reputational consequences of continuing to contest liability, even when they believe they have valid defences to liability. The Group believes that no material loss to the Group is expected to result from these legal proceedings, claims, complaints and investigations.

Guarantees by parent companies

Rio Tinto plc and Rio Tinto Limited have, jointly and severally, fully and unconditionally guaranteed the following securities issued by the following 100 per cent owned finance subsidiaries: US$17.3 billion (31 December 2014: US$18.5 billion) Rio Tinto Finance (USA) Limited and Rio Tinto Finance (USA) plc Bonds with maturity dates up to 2042; and US$2.1 billion (31 December 2014: US$2.3 billion) on the European Debt Issuance Programme. In addition, Rio Tinto Finance plc and Rio Tinto Finance Limited have entered into facility arrangements for an aggregate amount of US$7.5 billion (31 December 2014: US$7.5 billion). The facilities are guaranteed by Rio Tinto plc and Rio Tinto Limited.

Contingent assets

The Group has, from time to time various insurance claims outstanding with reinsurers. These include a claim relating to the Manefay slide at Rio Tinto Kennecott in April 2013. An interim progress payment was received on this claim in 2013 and a second in 2015. Further receipts are considered probable but the amount cannot currently be reliably estimated.

32 Average number of employees

	Subsidiaries and joint operations			Equity accounted units (Rio Tinto share)			Group total		
	2015	2014	2013	**2015**	2014	2013	**2015**	2014	2013
The principal locations of employment were:									
Australia and New Zealand	**22,125**	23,447	24,740	**863**	711	749	**22,988**	24,158	25,489
Canada	**11,113**	12,187	12,830	**–**	–	–	**11,113**	12,187	12,830
UK [(a)]	**542**	649	780	**–**	–	–	**542**	649	780
Europe [(a)]	**2,312**	2,850	3,430	**–**	88	2,427	**2,312**	2,938	5,857
Africa	**5,651**	5,699	6,787	**1,271**	1,560	1,505	**6,922**	7,259	8,292
US	**3,439**	3,503	4,039	**–**	–	285	**3,439**	3,503	4,324
Mongolia	**2,647**	3,212	3,289	**–**	–	–	**2,647**	3,212	3,289
Indonesia	**2,871**	2,959	2,467	**–**	–	–	**2,871**	2,959	2,467
South America	**192**	356	511	**1,317**	1,509	1,409	**1,509**	1,865	1,920
Other countries [(b)]	**595**	1,045	980	**–**	–	103	**595**	1,045	1,083
	51,487	55,907	59,853	**3,451**	3,868	6,478	**54,938**	59,775	66,331

(a) 2014 and 2013 comparative numbers are adjusted to conform with the 2015 presentation of Europe and the UK separately.

(b) "Other countries" primarily includes employees in the Middle East (excluding Oman), India, Singapore and other countries in Asia which are not shown separately in the table above. For the year ended 31 December 2015, the average number of employees in Singapore was 212 and the average number of employees in India was 232.

Employee numbers, which represent the average for the year, include 100 per cent of employees of subsidiary companies. Employee numbers for joint operations and equity accounted units are proportional to the Group's interest under contractual agreements. Average employee numbers include a part-year effect for companies acquired or disposed of during the year.

Part-time employees are included on a full-time-equivalent basis. Temporary employees are included in employee numbers.

People employed by contractors are not included.

33 Principal subsidiaries

At 31 December 2015

Company and country of incorporation/ operation	Principal activities	Class of shares held	Proportion of class held (%)	Group interest (%)	Non-controlling interest(%)
Australia					
Argyle Diamonds Limited	Mining and processing of diamonds	Ordinary	100	100	–
Coal & Allied Industries Limited [(a)]	Coal mining	Ordinary	80	80	20
Dampier Salt Limited	Salt production	Ordinary	68.36	68.36	31.64
Energy Resources of Australia Ltd	Uranium mining	Ordinary	68.39	68.39	31.61
Hamersley Iron Pty Limited	Iron ore mining	Ordinary	100	100	–
North Mining Limited [(c)]	Iron ore mining	Ordinary	100	100	–
Queensland Coal Pty Limited [(b)]	Coal mining	Ordinary	100	100	–
Rio Tinto Aluminium (Holdings) Limited	Bauxite mining; alumina production; primary aluminium smelting	Ordinary	100	100	–
Robe River Mining Co Pty Ltd [(c)]	Iron ore mining	Class A	40	60	40
		Class B	73.61		
Brazil					
Alcan Alumina Ltda. [(d)]	Alumina production and bauxite mining	Quota	100	100	–
Canada					
Rio Tinto Canada Uranium Corporation	Uranium projects	Common	100	100	–
Iron Ore Company of Canada Inc. [(e)]	Iron ore mining; iron ore pellets	Common	58.72	58.72	41.28
Rio Tinto Fer et Titane Inc.	Titanium dioxide feedstock; high purity iron and steel	Common	100	100	–
		Class B preference	100	100	–
		CAD 0.01 preferred	100	100	–
Rio Tinto Alcan Inc.	Bauxite mining; alumina refining; aluminium smelting	Common	100	100	–
		Class A, B, C	100	100	–
Rio Tinto Diamonds and Minerals Canada Holding Inc. [(f)]	Diamond mining and processing	Class P1 preferred	100	100	–
Guinea					
Simfer Jersey Limited [(g)]	Iron ore project	Ordinary	53	53	47
Madagascar					
QIT Madagascar Minerals SA [(h)]	Ilmenite mining	Common	80	80	15
		Investment certificates	100	100	
		Voting Certificates	80	80	20
Mongolia					
Turquoise Hill Resources Ltd (including Oyu Tolgoi LLC) [(i)]	Copper and gold mining	Common	50.79	50.79	49.21
Namibia					
Rössing Uranium Limited [(j)]	Uranium mining	B N$1	71.22	68.62	31.38
		C N10c	70.59		
South Africa					
Richards Bay Titanium (Proprietary) Limited [(k)]	Titanium dioxide/high purity iron production	B Ordinary	100	74	26
		B preference	100		
		Parent Preference	100		
Richards Bay Mining (Proprietary) Limited [(k)]	Ilmenite, rutile and zircon mining	B Ordinary	100	74	26
		B preference	100		
		Parent Preference	100		
United States of America					
Kennecott Holdings Corporation (including Kennecott Utah Copper, Kennecott Land and Kennecott Exploration)	Copper and gold mining, smelting and refining, land development and exploration activities	Common US$0.01	100	100	–
U.S. Borax Inc.	Mining, refining and marketing of borates	Common US$0.10	100	100	–

This list includes only those companies that have a more significant impact on the profit or assets of the Group. Refer to note 47 for a list of related undertakings.

The Group's principal subsidiaries are mostly held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.

33 Principal subsidiaries continued

(a) Of the Group's 80 per cent interest in Coal & Allied Industries Limited, an indirect share of 4.29 per cent is held through its investment in an equity accounted unit. Coal & Allied forms part of the Rio Tinto Coal Australia business unit.

Through a series of intermediate companies, Coal & Allied held interests in Bengalla (40 per cent, pending completion of sale to New Hope Corporation which is anticipated to be in Q1 2016), Mount Thorley (80 per cent) and Warkworth (55.6 per cent) as at 31 December 2015. The Group's beneficial interests were therefore: Bengalla: 32 per cent; Mount Thorley: 64 per cent; Warkworth: 44.5 per cent. These are unincorporated arrangements that are not entities. The Group recognises its share of assets, liabilities, revenues and expenses relating to these arrangements. Coal & Allied also owns 100 per cent of Hunter Valley Operations.

In February 2016, the restructuring of the Coal and Allied group completed. As a result Rio Tinto now has a 100 per cent shareholding in Coal & Allied Industries Limited and its wholly-owned subsidiaries and in Hunter Valley Resources Pty Ltd. Mitsubishi is now a joint venture participant in the Hunter Valley Operations Joint Venture.

(b) Queensland Coal Pty Limited is the main legal entity that holds the Group's interests in Hail Creek (82 per cent), Blair Athol (71.2 per cent) and Kestrel (80 per cent). These are unincorporated arrangements that are not entities; the Group recognises its share of assets, liabilities, revenues and expenses relating to these arrangements. Queensland Coal forms part of the Rio Tinto Coal Australia business unit.

(c) Robe River Mining Co Pty Ltd (which is 60 per cent owned by the Group) holds a 30 per cent interest in Robe River Iron Associates (Robe River). North Mining Ltd (which is wholly owned by the Group) holds a 35 per cent interest in Robe River. Through these companies the Group recognises a 65 per cent share of the assets, liabilities, revenues and expenses of Robe River, with a 12 per cent non-controlling interest. The Group therefore has a 53 per cent beneficial interest in Robe River.

(d) Alcan Alumina Ltda holds the Group's 10 per cent interest in Consórcio De Alumínio Do Maranhão, a joint operation in which the Group participates but is not a joint operator. The Group recognises its share of assets, liabilities, revenues and expenses relating to this arrangement.

(e) Iron Ore Company of Canada Inc. is incorporated in the United States of America, but operates in Canada.

(f) Rio Tinto Diamonds and Minerals Canada Holdings Inc. is the legal entity that owns the Group's 60 per cent interest in the Diavik Diamond Mine (Diavik), an unincorporated arrangement that is not an entity. The Group recognises its share of assets, liabilities, revenue and expenses relating to this arrangement.

(g) Simfer Jersey Limited, a company incorporated in Jersey in which the Group has a 53 per cent interest, has an 87.88 per cent interest in Simfer S.A. the company that operates the Simandou mining project in Guinea. The Group therefore has a 46.58 per cent indirect interest in Simfer S.A. These entities are consolidated as subsidiaries and together referred to as the Simandou iron ore project.

(h) The Group's shareholding in QIT Madagascar Minerals SA carries an 80 per cent economic interest and 80 per cent of the total voting rights; a further 5 per cent economic interest is held through non-voting investment certificates to give an economic interest of 85 per cent. The non-controlling interests have a 15 per cent economic interest and 20 per cent of the total voting rights.

(i) The Group obtained a controlling interest in Turquoise Hill Resources Ltd (formerly Ivanhoe Mines Limited) on 24 January 2012. Ivanhoe was renamed Turquoise Hill Resources Ltd (Turquoise Hill) on 2 August 2012. The Group has a 50.79 per cent interest in Turquoise Hill, which holds a 66 per cent interest in Oyu Tolgoi (OT) which is subsidiary of Turquoise Hill. The Group therefore has a 33.5 per cent indirect interest in OT. Turquoise Hill is incorporated in Canada but operates principally in Mongolia.

(j) The Group's shareholding in Rössing Uranium Limited holds 35.57 per cent of the total voting rights; the non-controlling interests hold 64.43 per cent of the total voting rights. Rössing is consolidated by virtue of the Group's board control. The Government of Namibia has the ability to veto matters that are considered not to be in the interest of Namibia, this is considered to be a protective right. Rio Tinto therefore has control of Rössing and consolidates it as a subsidiary.

(k) Additional classes of shares issued by Richards Bay Titanium (Proprietary) Limited and Richards Bay Mining (Proprietary) Limited representing non-controlling interests are not shown. The Group's total legal and beneficial interest in Richards Bay Titanium (Proprietary) Limited and Richards Bay Mining (Proprietary) Limited is 74 per cent.

Summary financial information for subsidiaries that have non-controlling interests that are material to the Group

This summarised financial information is shown on a 100 per cent basis. It represents the amounts shown in the subsidiaries' financial statements prepared in accordance with IFRS under Group accounting policies, including fair value adjustments, and before intercompany eliminations.

	Iron Ore Company of Canada 2015 US$m	Iron Ore Company of Canada 2014 US$m	**Energy Resources of Australia(c) 2015 US$m**	Energy Resources of Australia(c) 2014 US$m	**Simandou(a)(c) 2015 US$m**	Simandou(a) 2014 US$m	**Turquoise Hill(b) 2015 US$m**	Turquoise Hill(b) 2014 US$m
Revenue	**1,353**	1,696	**245**	345	**–**	–	**1,636**	1,765
Profit/(loss) after tax	**(12)**	222	**(412)**	(167)	**(1,955)**	(334)	**215**	(156)
– attributable to non-controlling interests	**(4)**	93	**(132)**	(54)	**(974)**	(171)	**76**	(164)
– attributable to Rio Tinto	**(8)**	129	**(280)**	(113)	**(981)**	(163)	**139**	8
Other comprehensive loss	**(341)**	(192)	**(21)**	(38)	**–**	–	**7**	(34)
Total comprehensive (loss)/income	**(353)**	30	**(433)**	(205)	**(1,955)**	(334)	**222**	(190)
Non-current assets	**2,325**	2,944	**89**	565	**–**	1,769	**7,712**	8,337
Current assets	**412**	442	**363**	372	**18**	53	**1,728**	1,382
Current liabilities	**(261)**	(332)	**(94)**	(75)	**(78)**	(36)	**(322)**	(409)
Non-current liabilities	**(724)**	(949)	**(355)**	(427)	**(19)**	(16)	**(167)**	(595)
Net assets	**1,752**	2,105	**3**	435	**(79)**	1,770	**8,951**	8,715
– attributable to non-controlling interests	**724**	871	**1**	138	**(44)**	877	**4,075**	4,010
– attributable to Rio Tinto	**1,028**	1,234	**2**	297	**(35)**	893	**4,876**	4,705
Cashflow from operations	**206**	506	**56**	(61)	**(59)**	(98)	**658**	864
Dividends paid to non-controlling interests	**–**	(120)	**–**	–	**–**	–	**–**	–

(a) These figures represent the consolidated position of both Simfer Jersey and Simfer S.A. which together form the Simandou Iron Ore project.

(b) Turquoise Hill Resources Ltd holds controlling interests in Oyu Tolgoi. Turquoise Hill's rights issue at the beginning of 2014 increased non-controlling interests by US$1,158 million.

(c) These include impairment adjustments recognised by Rio Tinto. Refer to note 6 on page 130 for further information.

	Robe River Mining Co Pty 2015 US$m	Robe River Mining Co Pty 2014 US$m	Other companies and eliminations (c) 2015 US$m	Other companies and eliminations (c) 2014 US$m	Robe River 2015 US$m	Robe River 2014 US$m
Revenue	**976**	1,687	**1,133**	1,968	**2,109**	3,655
Profit/(loss) after tax	**615**	766	**203**	1,036	**818**	1,802
– attributable to non-controlling interests	**176**	300	**–**	–	**176**	300
– attributable to Rio Tinto	**439**	466	**203**	1,036	**642**	1,502
Other comprehensive loss	**(107)**	(364)	**(578)**	(187)	**(685)**	(551)
Total comprehensive income/(loss)	**508**	402	**(375)**	849	**133**	1,251
Non-current assets	**2,935**	4,444	**4,154**	5,296	**7,089**	9,740
Current assets	**602**	73	**(10)**	86	**592**	159
Current liabilities	**(105)**	(112)	**(247)**	(271)	**(352)**	(383)
Non-current liabilities	**(60)**	(289)	**(2,120)**	(2,969)	**(2,180)**	(3,258)
Net assets	**3,372**	4,116	**1,777**	2,142	**5,149**	6,258
– attributable to no- controlling interests	**1,347**	1,620	**–**	–	**1,347**	1,620
– attributable to Rio Tinto	**2,025**	2,496	**1,777**	2,142	**3,802**	4,638
Cashflow from operations	**798**	1,438	**733**	1,578	**1,531**	3,016
Dividends paid to non-controlling interests	**(271)**	(181)	**–**	–	**(271)**	(181)

(c) "Other companies and eliminations" includes North Mining Limited, a wholly owned subsidiary of the Group which accounts for its interest in Robe River and goodwill of US$363 million (2014: US$409 million) that arose on acquisition of the Group's interest in Robe River. During 2015 the branch of North Mining Limited and the company were combined, in 2014 only the branch of North Mining Limited is presented.

34 Principal joint operations

Company and country of incorporation/operation	Principal activities	Group interest (%)
Australia		
Tomago Aluminium Joint Venture	Aluminium smelting	51.6
Kestrel (a)	Coal mining	80
Gladstone Power Station	Power generation	42.1
Hope Downs Joint Venture	Iron ore mining	50
Queensland Alumina Limited (b) (c)	Alumina production	80
New Zealand		
New Zealand Aluminium Smelters Limited (b) (c)	Aluminium smelting	79.4
Canada		
Alouette	Aluminium production	40
Indonesia		
Grasberg expansion (d)	Copper and gold mining	40
United States of America		
Pechiney Reynolds Quebec Inc (c) (e)	Aluminium smelting	50.3

This list includes only those joint operations that have a more significant impact on the profit or operating assets of the Group. Refer to note 47 for a list of related undertakings.

The Group's joint operations are held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.

(a) Although the Group has an 80 per cent interest share in the Kestrel Joint Venture, decisions about activities that significantly affect the returns that are generated require agreement of both parties to the Joint Venture Agreement, giving rise to the joint control.

(b) Although the Group has a 79.4 per cent interest in New Zealand Aluminium Smelters Limited and an 80 per cent interest in Queensland Alumina Limited, decisions about activities that significantly affect the returns that are generated require agreement of both parties to the arrangements, giving rise to joint control.

(c) Queensland Alumina Limited, New Zealand Aluminium Smelters Limited and Pechiney Reynolds Quebec Inc. are joint arrangements that are primarily designed for the provision of output to the parties sharing joint control; this indicates that the parties have rights to substantially all the economic benefits of the assets. The liabilities of the arrangements are in substance satisfied by cash flows received from the parties; this dependence indicates that the parties effectively have obligations for the liabilities. It is these facts and circumstances that give rise to the classification for these entities as joint operations.

(d) Under the terms of a contractual agreement, Rio Tinto is entitled to 40 per cent of additional material mined as a consequence of expansions and developments of the Grasberg facilities since 1998.

(e) Pechiney Reynolds Quebec Inc. has a 50.1 per cent interest in the Aluminerie de Becancour aluminium smelter, which is located in Canada.

Notes to the 2015 financial statements
continued

35 Principal joint ventures

At 31 December 2015

Company and country of incorporation/operation	Principal activities	Number of shares held	Class of shares held	Proportion of class held (%)	Group interest (%)
Chile					
Minera Escondida Limitada [(a)]	Copper mining and refining	–	–	30	30
Oman					
Sohar Aluminium Company L.L.C. [(b)]	Aluminium smelting/power generation	37,500	Ordinary	20	20

This list includes only those joint ventures that have a more significant impact on the profit or operating assets of the Group. Refer to note 47 for a list of related undertakings.

The Group's principal joint ventures are held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.

(a) Although the Group has a 30 per cent interest in Minera Escondida Limitada, participant and management agreements provides for an Owners' Council whereby significant commercial and operational decisions about the relevant activities that significantly affect the returns that are generated in effect require the joint approval of both Rio Tinto and BHP Billiton (holders of a 57.5 per cent interest). It is therefore determined that Rio Tinto participates in joint control.

The year-end of Minera Escondida Limitada is 30 June. The amounts included in the consolidated financial statements of Rio Tinto are, however, based on accounts of Minera Escondida Limitada that are coterminous with those of the Group.

(b) Although the Group holds a 20 per cent interest in Sohar Aluminium Company L.L.C., decisions about relevant activities that significantly affect the returns that are generated require agreement of all parties to the arrangement. It is therefore determined that Rio Tinto participates in joint control.

Summary information for joint ventures that are material to the Group

This summarised financial information is shown on a 100 per cent basis. It represents the amounts shown in the joint ventures' financial statements prepared in accordance with IFRS under Group accounting policies, including fair value adjustments and amounts due to and from Rio Tinto.

	Minera Escondida Limitada [(c)] 2015 US\$m	Minera Escondida Limitada [(c)] 2014 US\$m	**Sohar Aluminium Company L.L.C. [(c)] 2015 US\$m**	Sohar Aluminium Company L.L.C. [(c)] 2014 US\$m	**Rio Tinto Benga (Mauritius) Limited [(d)] 2015 US\$m**	Rio Tinto Benga (Mauritius) Limited 2014 US\$m
Revenue	**6,184**	7,607	**665**	675	**–**	91
Depreciation and amortisation	**(977)**	(1,027)	**(135)**	(135)	**–**	–
Other operating costs	**(3,777)**	(3,237)	**(445)**	(450)	**–**	(220)
Operating profit/(loss)	**1,430**	3,343	**85**	90	**–**	(129)
Finance expense	**(20)**	(33)	**(20)**	(20)	**–**	(11)
Income tax	**(533)**	(1,237)	**5**	(5)	**–**	–
Profit/(loss) after tax	**877**	2,073	70	65	–	(140)
Total comprehensive income/(loss)	**877**	2,073	**70**	65	**–**	(140)
Non-current assets	**13,761**	12,093	**3,400**	3,515	**–**	–
Current assets	**2,177**	2,453	**255**	270	**–**	–
Current liabilities	**(2,303)**	(1,567)	**(240)**	(330)	**–**	–
Non-current liabilities	**(2,223)**	(2,170)	**(1,480)**	(1,590)	**–**	–
Net assets	**11,412**	10,809	**1,935**	1,865	**–**	–
Assets and liabilities above include:						
Cash and cash equivalents	**197**	263	**10**	15	**–**	–
Current financial liabilities	**(1,223)**	(203)	**(170)**	(260)	**–**	–
Non-current financial liabilities	**(1,200)**	(1,060)	**(1,320)**	(1,405)	**–**	–
Dividends received from joint venture (Rio Tinto share)	**401**	251	**–**	–	**–**	–

Reconciliation of the above amounts to the Investment recognised in the Group balance sheet

Group interest	30%	30%	20%	20%	(d)	(d)
Net assets	11,412	10,809	1,935	1,865	–	–
Group's ownership interest	3,424	3,243	387	373	–	–
Other adjustments	(11)	(6)	–	–	–	–
Carrying value of Group's interest	3,413	3,237	387	373	–	–

(c) In addition to its "Investment in equity accounted unit", the Group recognises deferred tax liabilities of US$582 million (2014: US$546 million) relating to tax on unremitted earnings.

(d) On 7 October 2014, Rio Tinto completed the sale of Rio Tinto Coal Mozambique, which comprises the Benga coal mine and other projects in the Tete province of Mozambique. See note 37.

36 Principal associates

At 31 December 2015

Company and country of incorporation/operation	Principal activities	Number of shares held	Class of shares held	Proportion of class held (%)	Group interest (%)
Australia					
Boyne Smelters Limited [(a)]	Aluminium smelting	153,679,560	Ordinary	59.4	59.4
Brasil					
Mineração Rio do Norte S.A. [(b)]	Bauxite mining	25,000,000	Ordinary	12.5	12
		47,000,000	Preferred	11.8	
United States of America					
Halco (Mining) Inc	(c)	4,500	Common	45	45

This list includes only those associates that have a more significant impact on the profit or operating assets of the Group. Refer to note 47 for a list of related undertakings.

The Group's principal associates are held by intermediate holding companies and not directly by Rio Tinto plc or Rio Tinto Limited.

(a) The parties that collectively control Boyne Smelters Limited do so through decisions that are determined on an aggregate voting interest that can be achieved by several combinations of the parties. Although each combination requires Rio Tinto's approval, this is not joint control as defined under IFRS 11. Rio Tinto is therefore determined to have significant influence over this company.

(b) Although the Group holds only 12 per cent of Mineraçao Rio do Norte S.A., it has representation on its board of directors and a consequent ability to participate in the financial and operating policy decisions. It is therefore determined that Rio Tinto has significant influence.

(c) Halco has a 51 per cent indirect interest in Compagnie des Bauxites de Guinée, a bauxite mine, the core assets of which are located in Guinea.

Summary information for associates that are material to the Group

This summarised financial information is shown on a 100 per cent basis. It represents the amounts shown in the associate's financial statements prepared in accordance with IFRS under Group accounting policies, including amounts due to and from Rio Tinto.

	Boyne Smelters Limited [(d)] 2015 US$m	Boyne Smelters Limited [(d)] 2014 US$m
Revenue	**(10)**	–
Profit after tax	**40**	1,072
Other comprehensive loss [(e)]	**(91)**	(82)
Total comprehensive (loss)/income	**(51)**	990
Non-current assets [(f)]	**1,525**	1,813
Current assets	**64**	86
Current liabilities	**(106)**	(108)
Non-current liabilities	**(1,069)**	(1,369)
Net assets	**414**	422

(d) Boyne Smelters Limited is a tolling operation; as such it is dependent on its participants for funding which is provided through cash calls. Rio Tinto Aluminium has made certain prepayments to Boyne for toll processing of alumina. These are charged to Group operating costs as processing takes place.

(e) "Other comprehensive loss" is net of amounts recognised by subsidiaries in relation to quasi equity loans.

(f) In 2014, a post-tax impairment reversal of US$589 million was recorded. See note 6.

Group interest	**59.4%**	59.4%
Net assets	**414**	422
Group's ownership interest	**246**	251
Loans to equity accounted units	**183**	228
Carrying value of Group's interest	**429**	479

Notes to the 2015 financial statements
continued

36 Principal associates continued

Summary information for joint ventures and associates that are not individually material to the Group

	Joint ventures 2015 US$m	Joint ventures 2014 US$m	Associates 2015 US$m	Associates 2014 US$m
Carrying value of Group's interest	**10**	403	**702**	749
Profit after tax	**–**	16	**60**	30
Other comprehensive income/(loss)	**15**	(30)	**(43)**	(14)
Total comprehensive income/(loss)	**15**	(14)	**17**	16

37 Purchases and sales of subsidiaries, joint ventures, associates and other interests in businesses

Acquisitions
There were no material acquisitions during the years ended 31 December 2015, 2014 and 2013.

2015 disposals
On 23 April 2015, Turquoise Hill Resources Ltd completed the block sale of 48.7 million common shares in SouthGobi Resources Ltd and with further divestments has reduced its interest to below 20 per cent. As at 31 December 2015 Turquoise Hill Resources Ltd's interest in SouthGobi Resources Ltd is no longer consolidated as a subsidiary and has been classified as an available for sale investment.

On 17 June 2015, Rio Tinto disposed of its 77.8 per cent interest in Murowa Diamonds and 50 per cent interest in Sengwa Colliery Ltd (Sengwa) to RZ Murowa Holdings Limited.

Rio Tinto completed the sale of ECL to Fives on 9 July 2015 and the sale of Alesa to Groupe Reel on 24 November 2015.

Disposals in the cash flow statement are presented net of cash on disposal and after adjusting for working capital and other items as specified under the relevant sale agreements.

2014 disposals
On 29 May 2014, Rio Tinto completed the sale of its 50.1 per cent interest in the Clermont Joint Venture to GS Coal for US$1,015 million (before finalisation of net debt and working capital adjustments). The net assets and liabilities of Clermont were included within assets and liabilities of disposal groups held for sale in the Group balance sheet at 31 December 2013.

On 7 October 2014, Rio Tinto completed the sale of Rio Tinto Coal Mozambique, which comprises the Benga coal mine and other projects in the Tete province of Mozambique, to International Coal Ventures Private Limited for US$50 million (before net debt and working capital adjustments).

Rio Tinto completed the sale of its 50 per cent share in Søral to Norsk Hydro Aluminium ASA on 31 October 2014 and the sale of its 46.67 per cent share in Alucam to the Government of Cameroon on 31 December 2014.

On 26 May 2014, Rio Tinto and its Simandou project partners signed an Investment Framework with the Government of Guinea and agreed to transfer an equity interest in Simfer S.A., to the state. The arrangement allows the Government of Guinea to acquire equity interests of up to 25 per cent of Simfer S.A. at a discount to fair value, and a further 10 per cent at full fair value. Arrangements to transfer an interest in a subsidiary undertaking at a discount to fair value are considered to be a share-based payment. The discount provided or value given on the 25 per cent interest in Simfer S.A. was calculated in accordance with IFRS 2 "Share-based payment" as a loss of US$230 million.

The first tranche of shares comprising 7.5 per cent non-contributory shares was transferred free of charge to the Government of Guinea on 26 May 2014. A second tranche comprising 10 per cent Ordinary Contributory Shares may be acquired at any time for a pro rata share of historical mining cost. The third tranche of shares comprising 7.5 per cent non-contributory shares may be transferred at any time after 22 April 2016 free of charge. The remaining two tranches of 5 per cent ordinary contributing chares may be acquired by the Government of Guinea at market value at any time after 22 April 2026 and 22 April 2031 respectively.

2013 disposals
On 1 December 2013, Rio Tinto completed the sale of its 80 per cent interest in Northparkes Mine to China Molybdenum Co. Ltd for consideration of US$820 million.

On 23 May 2013, the initial public offering of Constellium (formerly Alcan Engineered Products) was launched, resulting in Rio Tinto reducing its holding from 36.6 per cent to 27.5 per cent. Rio Tinto subsequently divested the remainder of its holding in two further tranches. Total consideration from these transactions was US$671 million, inclusive of a special dividend and proceeds from sale of Rio Tinto's equity shareholding, which are included within dividends from equity accounted units and sales of financial assets respectively in the Group's cash flow statement.

On 31 July 2013 Rio Tinto completed the sale of its 57.7 per cent interest in Palabora Mining Company for US$373 million. The purchaser was a consortium comprising South African and Chinese entities led by the Industrial Development Corporation of South Africa and Hebei Iron & Steel Group.

Turquoise Hill Resources Ltd, a 50.8 per cent owned subsidiary of Rio Tinto, completed the sale of its 50 per cent interest in Altynalmas Gold and 57 per cent interest in Inova Resources Limited on 29 November 2013 and 1 November 2013 respectively. Sumeru Gold B.V. (consideration paid of US$ 235 million) and Shanxi Donghui Coal Coking & Chemicals Group Co. (consideration paid of US$81 million) were the respective buyers.

On 17 July 2013, Rio Tinto completed the sale of its 100 per cent interest in the Eagle nickel-copper project to Lundin Mining Corporation for consideration of US$315 million.

38 Directors' and key management remuneration

Aggregate remuneration, calculated in accordance with the UK Companies Act 2006, of the directors of the parent companies was as follows:

	2015 US$000	Restated 2014 US$000	Restated 2013 US$000
Emoluments	**10,590**	11,090	14,061
Long-term incentive plans	**2,118**	3,444	7,225
	12,708	14,534	21,286
Pension contributions: defined contribution plans	**52**	55	108
Gains made on exercise of share options	**1**	–	5,888

The Group defines key management personnel as the directors and members of the Executive Committee. The Executive Committee comprises the executive directors, product group chief executive officers and Group executives.

The aggregate remuneration incurred by Rio Tinto plc in respect of its directors was US$6,385,000 (2014: US$6,653,000; 2013: US$11,451,000). The aggregate pension contribution to defined contribution plans was US$52,000 (2014: US$55,000; 2013: US$44,000). The aggregate remuneration, including pension contributions and other retirement benefits, incurred by Rio Tinto Limited in respect of its directors was US$6,375,000 (2014: US$9,796,000; 2013: US$6,437,000). The aggregate pension contribution to defined contribution plans was US$nil (2014: US$nil; 2013: US$64,000).

During 2015, one director (2014: one; 2013: three) accrued retirement benefits under defined benefit arrangements, and one director (2014: one; 2013: two) accrued retirement benefits under defined contribution arrangements.

Emoluments included in the table above have been translated from local currency at the average exchange rate for the year with the exception of bonus payments which, together with amounts payable under long term incentive plans, have been translated at the year-end rate.

Detailed information concerning directors' remuneration, shareholdings and options is shown in the Remuneration report, including tables 1 to 3, on pages 70 to 104.

Aggregate compensation, representing the expense recognised under IFRS, as defined in note 1, of the Group's key management, including directors, was as follows:

	2015 US$000	2014 US$000	2013 US$000
Short-term employee benefits and costs	**25,616**	30,137	30,696
Post-employment benefits	**1,049**	1,449	2,741
Share-based payments	**17,566**	19,676	26,392
	44,231	51,262	59,829

The figures shown above include employment costs which comprise social security and accident premiums in Canada, the UK and US and payroll taxes in Australia paid by the employer as a direct additional cost of hire. In total, they amount to US$2,320,000 (2014: US$2,870,000; 2013: US$2,897,000) and although disclosed here, are not included in table 1 of the Remuneration report.

More detailed information concerning the remuneration of key management is shown in the Remuneration report, including tables 1 to 3 on pages 70 to 104.

39 Auditors' remuneration

	2015 US$m	2014 US$m	2013 US$m
Group Auditors' remuneration [a]			
Audit of the company	**4.3**	4.0	3.8
Audit of subsidiaries	**10.1**	10.7	11.5
Total audit	**14.4**	14.7	15.3
Audit related assurance services	**0.9**	1.1	1.2
Other assurance services [b]	**0.9**	1.0	3.0
Total assurance services	**1.8**	2.1	4.2
Tax compliance [c]	**0.5**	0.4	0.5
Tax advisory services [c]	**0.4**	0.5	0.4
Services related to corporate finance transactions not covered above			
– services in connection with bond issues/capital raising	**0.2**	0.1	0.4
– services in connection with divestment programme	**–**	–	0.5
Other non-audit services not covered above	**1.1**	0.3	0.4
Total non-audit services	**2.2**	1.3	2.2
	18.4	18.1	21.7
Audit fees payable to other accounting firms			
Audit of the financial statements of the Group's subsidiaries	**1.9**	2.7	3.0
Fees in respect of pension scheme audits	**0.2**	0.4	0.3
	2.1	3.1	3.3

(a) The remuneration payable to PwC, the Group Auditors, is approved by the Audit committee. The committee sets the policy for the award of non-audit work to the auditors and approves the nature and extent of such work, and the amount of the related fees, to ensure that independence is maintained. The fees disclosed above consolidate all payments made to member firms of PwC by the Companies and their subsidiaries, together with the Group's share of the payments made by joint operations. Non-audit services arise largely from assurance and/or regulation related work.

(b) Other assurance services are mainly related to carve-out financial statements and sustainability assurance.

(c) "Taxation services" includes tax compliance and advisory services. Tax compliance involves the review of returns for corporation, income, sales and excise taxes. Tax advisory services include advice on non-recurring acquisitions and disposals, advice on transfer pricing and advice on employee global mobility.

40 Related-party transactions

Information about material related-party transactions of the Rio Tinto Group is set out below:

Subsidiary companies and joint operations

Details of investments in principal subsidiary companies are disclosed in note 33. Information relating to joint operations can be found in note 34.

Equity accounted units

Transactions and balances with equity accounted units are summarised below. Purchases, trade and other receivables, and trade and other payables relate largely to amounts charged by equity accounted units for toll processing of alumina and purchasing of bauxite and aluminium. Sales relate largely to sales of alumina to equity accounted units for smelting into aluminium.

Income statement items	2015 US$m	2014 US$m	2013 US$m
Purchases from equity accounted units	**(1,249)**	(1,835)	(1,953)
Sales to equity accounted units	**307**	625	1,569
Cash flow statement items	**US$m**	US$m	US$m
Net funding of equity accounted units	**11**	(117)	(88)
Balance sheet items	**US$m**	US$m	US$m
Investments in equity accounted units (note 15) [a]	**4,941**	4,868	3,957
Loans to equity accounted units (note 20)	**42**	71	94
Loans from equity accounted units (note 22)	**(37)**	(52)	(86)
Trade and other receivables: amounts due from equity accounted units (note 18)	**315**	423	615
Trade and other payables: amounts due to equity accounted units (note 25)	**(231)**	(225)	(290)

(a) Investments in equity accounted units include quasi equity loans. Further information about investments in equity accounted units is set out in notes 35 and 36.

Pension funds

Information relating to pension fund arrangements is set out in note 45.

Directors and key management

Details of directors' and key management remuneration are set out in note 38 and in the Remuneration report on pages 70 to 104.

41 Exchange rates in US$

The principal exchange rates used in the preparation of the 2015 financial statements were:

	Full-year average			Year end		
	2015	2014	2013	**2015**	2014	2013
Sterling	**1.53**	1.65	1.56	**1.48**	1.56	1.65
Australian dollar	**0.75**	0.90	0.97	**0.73**	0.82	0.89
Canadian dollar	**0.78**	0.91	0.97	**0.72**	0.86	0.94
Euro	**1.11**	1.33	1.33	**1.09**	1.22	1.38
South African rand	**0.079**	0.092	0.104	**0.064**	0.086	0.096

42 Bougainville Copper Limited (BCL)

The Group owns 53.83 per cent of the issued share capital of BCL. Mining has been suspended at the Panguna mine since 1989. Safe access by company employees has not been possible since that time and an accurate assessment of the condition of the assets cannot therefore be made. Considerable funding would be required to recommence operations to the level which applied at the time of the mine's closure in 1989. An Order of Magnitude study completed by BCL in 2013 indicated an estimated capital requirement of US$5.2 billion to reopen the mine assuming all site infrastructure is replaced. Rio Tinto does not have control over BCL under IFRS, as defined in note 1, as it does not have the current ability to direct the activities that affect its returns, being the mining and sale of ore from the Panguna mine; it is therefore not a subsidiary.

In August 2014 the Group announced a strategic review of all options in relation to the 53.83 per cent stake in BCL. That review remains ongoing.

43 Events after the balance sheet date

On January 27, 2016 the Group announced it had reached a binding agreement for the sale of its Mount Pleasant thermal coal assets to MACH Energy Australia Pty Ltd for US$224 million plus royalties.

The agreement includes a payment on completion of US$83 million, two unconditional deferred payments of US$58 million respectively payable eight and 16 months from completion, a conditional payment of US$25 million, and royalties, payable quarterly at two per cent of gross FOB revenue for coal sold from the first 625 million tonnes of run of mine coal (equivalent to 474 million tonnes of marketable reserves) when prices exceed US$72 tonne. The proceeds of the sale will be used for general corporate purposes.

The restructure of Coal & Allied Industries Limited, which was announced on 30 September 2015, completed on 3 February 2016. The restructure involved the exchange of a 32.4 per cent interest in Hunter Valley Operations mine for a 100 per cent shareholding in Coal & Allied Industries Limited. As a 100 percent owner of Coal & Allied, Rio Tinto:

- holds a 67.6 per cent interest with management rights in the Hunter Valley Operations mine;
- holds interests of 80 per cent and 55.6 per cent respectively, with management rights, in the integrated Mount Thorley and Warkworth operations;
- holds a 100 per cent interest in the Mount Pleasant project (sale agreed); and
- holds 100 percent interest in Coal & Allied Limited's wholly owned subsidiaries and in Hunter Valley.

Mitsubishi is now a joint venture participant in the Hunter Valley Operations Joint Operation.

The sale of the Bengalla coal Joint Venture in Australia to New Hope Corporation Limited for consideration of A$865 million (before net debt and working capital adjustments) completed on 1 March 2016. As a result of Rio Tinto's assumption of 100 per cent of Coal & Allied, the Group will receive all the proceeds from the sale of Bengalla.

Except as disclosed above, no significant events were identified after the balance sheet date.

44 Share based payments

Rio Tinto plc and Rio Tinto Limited have a number of share-based incentive plans, which are described in detail in the remuneration report. These plans have been accounted for in accordance with the fair value recognition provisions of IFRS 2 "Share-based Payment".

The charge that has been recognised in the income statement for Rio Tinto's share-based incentive plans, and the related liability (for cash-settled plans), is set out in the table below.

	Charge recognised for the year			**Liability at the end of the year**	
	2015 US$m	2014 US$m	2013 US$m	**2015 US$m**	2014 US$m
Equity-settled plans	**128**	152	142	**–**	–
Cash-settled plans	**–**	–	–	**1**	1
Total	**128**	152	142	**1**	1

44 Share-based payments continued

The main Rio Tinto plc and Rio Tinto Limited plans are as follows:

Share Savings Plans

Awards under these plans are settled in equity and accounted for accordingly. The fair value of each award on the day of grant was estimated using a lattice-based option valuation model, including allowance for the exercise price being at a discount to market price.

Awards are no longer granted under the Share Savings Plans as these plans were replaced by the Global Employee Share Plans in 2012. Charges will continue to be incurred until prior period awards have vested.

Share Option Plans

The Group has a policy of settling awards made under the Share Option Plans in equity, although the directors at their discretion can offer a cash alternative. The awards are accounted for in accordance with the requirements applying to equity-settled, share-based payment transactions. The performance conditions in relation to total shareholder return (TSR) have been incorporated in the measurement of fair value for these awards by modelling the correlation between Rio Tinto's TSR and that of the Euromoney Global Mining Index, formerly the HSBC Global Mining Index. The relationship between Rio Tinto's TSR and the index was simulated many thousands of times to derive a distribution which, in conjunction with the lattice-based option valuation model, was used to determine the fair value of the options.

Awards are no longer granted under the Share Option Plans as the long term incentive plan arrangements have been simplified and awards are now only made under the Performance Share Plans. All charges have been incurred as the remaining unvested awards vested during 2015.

UK Share Plan (formerly the Share Ownership Plan)

The fair values of Matching and Free Shares made by Rio Tinto plc are taken to be the market value of the shares on the date of purchase. These awards are settled in equity.

Performance Share Plans

Participants are generally assigned shares in settlement of their awards and therefore the awards are accounted for in accordance with the requirements applying to equity-settled share-based payment transactions.

For the awards or parts of awards with TSR performance conditions, the fair value of the awards was calculated using a Monte Carlo simulation model taking into account the TSR performance conditions. One-third of the awards issued since 2013 must satisfy an earnings target relative to ten global mining comparators for vesting. As this is a non-market related performance condition, under IFRS 2, the fair value recognised is reviewed at each accounting date based on the directors' expectations for the proportion vesting. As at 31 December 2015 it was assumed 100 per cent of awards subject to the condition would vest. Forfeitures prior to vesting are assumed at three per cent per annum of outstanding awards (2014: three per cent per annum).

Management Share Plans

The Management Share Plans were introduced in 2007 to provide conditional share-based awards to management. The vesting of these awards is dependent on service conditions being met. In general, the awards will be settled in equity, including the dividends accumulated from date of award to vesting. The awards are accounted for in accordance with the requirements applying to equity-settled share-based payment transactions.

The fair value of each award on the day of grant is equal to the share price on the day of grant less a small adjustment for the timing of dividends. Forfeitures prior to vesting are assumed at seven per cent per annum of outstanding awards (2014: seven per cent per annum).

Bonus Deferral Plans

The Bonus Deferral Plans were originally introduced in 2009 for the mandatory deferral of the 2008 bonuses for executive directors, product group executives and for other executives. Additional Bonus Deferral Awards have been made each year since 2011 (made in respect of the 2010 bonus) for the mandatory deferral of 50 per cent of the bonuses for executive directors and product group executives and 25 per cent of the bonuses for other executives.

The vesting of these awards is dependent only on service conditions being met. In general, the awards will be settled in equity including the dividends accumulated from date of award to vesting. The awards are accounted for in accordance with the requirements applying to equity-settled share-based payment transactions. The fair value of each award on the day of grant is equal to the share price on the day of grant less a small adjustment for the timing of dividends vesting. Forfeitures prior to vesting are assumed at three per cent per annum of outstanding awards (2014: three per cent per annum).

Global Employee Share Plans

The Global Employee Share Plans were introduced in 2012. The Companies provide matching shares for each share purchased. The vesting of these matching awards is dependent on service conditions being met. These awards are settled in equity. The fair value of each matching share on the day of grant is equal to the share price on the date of purchase. Forfeitures prior to vesting are assumed at five per cent per annum of outstanding awards (2014: five per cent per annum).

Summary of options outstanding

A summary of the status of the Companies' equity-settled share option plans (Share Savings Plans and Share Option Plans) at 31 December 2015 is presented below.

Options outstanding at 31 December 2015	Number	Weighted average exercise price per option £/A$	Weighted average remaining contractual life Years	Aggregate intrinsic value 2015 US$m
Rio Tinto plc Share Savings Plan (exercise price £24 – £29)	53,375	£ 28.06	1.1	–
Rio Tinto Limited Share Savings Plan (exercise price A$55 – A$60)	141,782	A$56.97	1.1	–
Rio Tinto plc Share Option Plan (exercise price £16 – £43)	756,276	£ 31.82	4.7	1
Rio Tinto Limited Share Option Plan (exercise price A$33 – A$77)	371,353	A$54.37	2.7	1
	1,322,786			2

As at 31 December 2014 there were 2,798,923 options outstanding with an aggregate intrinsic value of US$16 million.

Options exercisable at 31 December 2015				
Rio Tinto plc Share Option Plan (exercise price £16 – £43)	756,276	£ 31.82	4.7	1
Rio Tinto Limited Share Option Plan (exercise price A$33 – A$77)	371,353	A$54.37	2.7	1
	1,127,629			2

As at 31 December 2015 and 31 December 2014, there were no options exercisable under either the Rio Tinto plc or the Rio Tinto Limited Share Savings Plans.

The Management Share Plans, Performance Share Plans, Bonus Deferral Plans, Global Employee Share Plans and UK Share Plan together represent 99 per cent (2014: 93 per cent) of the total IFRS 2 charge for Rio Tinto plc and Rio Tinto Limited plans in 2015.

Performance Share Plans

	Rio Tinto plc awards				Rio Tinto Limited awards			
	2015 Number	**Weighted average fair value at grant date 2015 £**	2014 Number	Weighted average fair value at grant date 2014 £	**2015 Number**	**Weighted average fair value at grant date 2015 A$**	2014 Number	Weighted average fair value at grant date 2014 A$
Non-vested shares at 1 January	**2,928,001**	**24.05**	3,161,952	27.91	**2,024,876**	**45.87**	2,023,519	53.29
Awarded	**912,883**	**19.59**	950,148	22.73	**523,259**	**39.28**	626,072	44.40
Forfeited	**(171,310)**	**20.04**	(230,496)	20.98	**(80,207)**	**39.44**	(127,726)	40.31
Failed performance conditions	**(175,554)**	**31.17**	(233,736)	36.33	**(109,808)**	**62.04**	(124,431)	75.65
Vested	**(505,566)**	**31.19**	(719,867)	36.27	**(309,297)**	**62.03**	(372,558)	75.66
Non-vested shares at 31 December	**2,988,454**	**21.29**	2,928,001	24.05	**2,048,823**	**41.13**	2,024,876	45.87

	2015 Number	**Weighted average share price 2015 £**	2014 Number	Weighted average share price 2014 £	**2015 Number**	**Weighted average share price 2015 A$**	2014 Number	Weighted average share price 2014 A$
Vested awards settled in shares during the year	**481,360**	**29.44**	719,867	33.24	**288,803**	**58.59**	355,548	65.98
Vested awards settled in cash during the year	**24,206**	**29.44**	–	–	**20,494**	**58.59**	17,010	65.98

In addition to the equity-settled awards shown above, there were 4,053 Rio Tinto plc cash-settled awards outstanding at 31 December 2015 (2014:1,261 Rio Tinto plc cash-settled awards outstanding). The total liability for these awards at 31 December 2015 was less than US$1 million (2014: less than US$1 million).

Management Share Plans, Bonus Deferral Plans, Global Employee Share Plans and UK Share Plan (combined)

	Rio Tinto plc awards				Rio Tinto Limited awards			
	2015 Number	**Weighted average fair value at grant date 2015 £**	2014 Number	Weighted average fair value at grant date 2014 £	**2015 Number**	**Weighted average fair value at grant date 2015 A$**	2014 Number	Weighted average fair value at grant date 2014 A$
Non-vested awards at 1 January	**2,747,346**	**31.31**	2,277,219	32.72	**2,579,081**	**59.83**	2,058,902	61.64
Awarded	**1,452,429**	**28.15**	1,420,588	31.87	**1,352,526**	**56.37**	1,357,091	61.74
Forfeited	**(239,018)**	**29.41**	(191,039)	30.67	**(200,278)**	**57.48**	(206,134)	58.86
Vested	**(749,030)**	**32.51**	(759,422)	36.70	**(737,933)**	**61.19**	(630,778)	70.93
Non-vested shares at 31 December	**3,211,727**	**29.70**	2,747,346	30.89	**2,993,396**	**58.09**	2,579,081	59.83
Comprising of:								
– Management Share Plan	**1,778,043**	**29.62**	1,807,727	32.16	**1,629,390**	**58.09**	1,638,119	59.46
– Bonus Deferral Plan	**274,965**	**29.99**	202,651	33.58	**211,341**	**59.78**	199,724	58.24
– Global Employee Share Plan	**1,078,327**	**29.72**	693,230	31.57	**1,152,665**	**57.79**	741,238	61.08
– UK Share Plan	**80,392**	**30.17**	43,738	31.82				

	2015 Number	**Weighted average fair value at grant date 2015 £**	2014 Number	Weighted average fair value at grant date 2014 £	**2015 Number**	**Weighted average fair value at grant date 2015 A$**	2014 Number	Weighted average fair value at grant date 2014 A$
Vested awards settled in shares during the year (including dividend shares applied on vesting)								
– Management Share Plan	**633,690**	**27.14**	631,359	31.84	**564,679**	**53.44**	461,835	63.70
– Bonus Deferral Plan	**126,997**	**22.57**	144,916	29.44	**121,205**	**45.21**	128,528	58.48
– Global Employee Share Plan	**68,422**	**24.91**	42,910	31.10	**76,446**	**52.93**	32,780	60.70
– UK Share Plan	**4,687**	**25.25**	4,096	32.77				

In addition to the equity-settled awards shown above, there were 26,576 Rio Tinto plc and 7,684 Rio Tinto Limited cash-settled awards outstanding at 31 December 2015 (2014: 16,985 Rio Tinto plc cash-settled awards outstanding). The total liability for these awards at 31 December 2015 was less than US$1 million (2014: less than US$1 million).

45 Post-retirement benefits

Description of plans

The Group operates a number of pension and post-retirement healthcare plans around the world. Some of these plans are defined contribution and some are defined benefit, with assets held in separate trusts, foundations and similar entities.

Defined benefit pension and post-retirement healthcare plans expose the Group to a number of risks:

Uncertainty in benefit payments	The value of the Group's liabilities for post-retirement benefits will ultimately depend on the amount of benefits paid out. This in turn will depend on the level of future pay increases, the level of inflation (for those benefits that are subject to some form of inflation protection) and how long individuals live.
Volatility in asset values	The Group is exposed to future movements in the values of assets held in pension plans to meet future benefit payments.
Uncertainty in cash funding	Movements in the values of the obligations or assets may result in the Group being required to provide higher levels of cash funding, although changes in the level of cash required can often be spread over a number of years. In some countries control over the rate of cash funding or over the investment policy for pension assets might rest to some extent with a trustee body or other body that is not under the Group's direct control. In addition the Group is also exposed to adverse changes in pension regulation.

For these reasons the Group has a policy of moving away from defined benefit pension provision and towards defined contribution arrangements instead. The defined benefit pension plans for salaried employees are closed to new entrants in almost all countries. For unionised employees, some plans remain open.

The Group does not usually participate in multi-employer plans in which the risks are shared with other companies using those plans. The Group's participation in such plans is immaterial and consequently no detailed disclosures are provided in this note.

Pension plans

The majority of the Group's defined benefit pension obligations are in Canada, the UK, the US, Switzerland and the Eurozone.

In Canada the benefits for salaried staff are generally linked to final average pay and are closed to new entrants. Benefits for bargaining employees are reviewed in negotiation with unions and are typically either linked to final average pay or to a flat monetary amount per year of service. Some of these plans have been closed to new entrants but some remain open at present. During 2015 agreement was reached with the unions to close the largest plan to new entrants with effect from dates in 2016 and 2017. New employees will instead join an arrangement which is defined contribution from the Group's perspective, with any required additional funding being provided by employees. The plans are subject to the regulatory requirements that apply to Canadian pension plans in the relevant provinces and territories (predominantly Quebec). Pension Committees are responsible for ensuring that the plans operate in a manner that is compliant with the relevant regulations. The Pension Committees generally have a number of members appointed by the sponsor and a number appointed by the plan participants. In some cases there is also an independent Committee member.

The defined benefit sections of the UK arrangements are linked to final pay and are closed to new members. New employees are admitted to defined contribution sections. The plans are subject to the regulatory requirements that apply to UK pension plans. Trustees are responsible for ensuring that the plans operate in a manner that is compliant with UK regulations. Trustee boards have a number of directors appointed by the sponsor and a number appointed by the plan participants. In some cases there is also an independent trustee director.

A number of defined benefit pension plans are sponsored by the US entities. Benefits for salaried staff are generally linked to final average pay and closed to new entrants, while benefits for bargaining employees are reviewed in negotiation with unions and are typically a flat monetary amount per year of service. A Benefits Governance Committee is responsible for ensuring that the plans are compliant with US regulations. Members of that Committee are appointed by the sponsor.

In Europe, there are defined benefit plans in Switzerland, the Netherlands, Germany and France. The largest single plan is in Switzerland and provides benefits linked to final average pay. The Swiss plan is overseen by a Foundation Board which is responsible for ensuring that the plan complies with Swiss regulations. Foundation Board members are appointed by the plan sponsor, by employees and by retirees.

In Australia, the main arrangements are principally defined contribution in nature but there are sections providing defined benefits linked to final pay, typically paid in lump sum form. The defined benefit sections are closed to new entrants.

The Group also operates a number of unfunded defined benefit plans, which are included in the figures below.

Post-retirement healthcare plans

Certain subsidiaries of the Group, mainly in the US and Canada, provide health and life insurance benefits to retired employees and in some cases to their beneficiaries and covered dependants. Eligibility for cover is dependent upon certain age and service criteria. These arrangements are generally unfunded, and are included in the figures below.

Plan assets

The assets of the pension plans are invested predominantly in a diversified range of equities, bonds and property. Consequently, the funding level of the pension plans is affected by movements in the level of equity markets and also by movements in interest rates. The Group monitors its exposure to changes in interest rates and equity markets and also measures its balance sheet pension risk using a value at risk approach. These measures are considered when deciding whether significant changes in investment strategy are required. Asset-liability studies are conducted on a periodic basis for the main pension plans to determine the optimal investment mix bearing in mind the Group's tolerance for risk, the risk tolerance of the local sponsor companies and the views of the pension committees and trustee boards who are legally responsible for the investments of the plans. In Canada, the UK and Switzerland the Group works with the trustees to ensure that the investment policy adopted is consistent with the Group's tolerance for risk. In the US the Group has direct control over the investment policy, subject to the local investment regulations.

The proportions of the total fair value of assets in the pension plans for each asset class at the balance sheet date were:

	2015		2014	
Equities	***37.7%***		*39.1%*	
– Quoted		**33.3%**		35.4%
– Private		**4.4%**		3.7%
Bonds	***48.0%***		*46.9%*	
– Government fixed income		**13.5%**		13.6%
– Government inflation-linked		**12.8%**		11.8%
– Corporate and other publicly quoted		**20.8%**		20.7%
– Private		**0.9%**		0.8%
Property	***10.8%***		*10.1%*	
– Quoted property funds		**6.5%**		6.0%
– Unquoted property funds		**4.3%**		4.0%
– Directly held property		**0.0%**		0.1%
Qualifying insurance policies	***0.6%***		*0.5%*	
Cash & other	***2.9%***		*3.4%*	
	100.0%		*100.0%*	

The assets of the plans are managed on a day-to-day basis by external specialist fund managers. These managers may invest in the Group's securities subject to limits imposed by the relevant fiduciary committees and local legislation. The approximate total holding of Group securities within the plans is US$23 million (2014: US$22 million).

The holdings of quoted equities are invested either in pooled funds or segregated accounts held in the name of the relevant pension funds. These equity portfolios are well diversified in terms of the geographic distribution and market sectors.

The holdings of government bonds are generally invested in the debt of the country in which a pension plan is situated. Corporate and other quoted bonds are usually of investment grade. Private debt is mainly in North America.

The quoted property funds are invested in a diversified range of properties.

The holdings of Cash & other are predominantly cash and short-term money market instruments.

Investments in private equity, private debt, and property are less liquid than the other investment classes listed above and therefore the Group's investment in those asset classes is restricted to a level that does not endanger the liquidity of the pension plans.

The Group does not currently utilise derivatives to manage risk in its pension plans. However, fund managers may use derivatives to hedge currency movements within their portfolios and, in the case of bond managers, to take positions that could be taken using direct holdings of bonds but more efficiently.

Maturity of defined benefit obligations

An approximate analysis of the maturity of the obligations is given in the table below:

	Pension benefits	Other benefits	**2015 Total %**	2014 Total %	2013 Total %
Proportion relating to current employees	22%	21%	**22%**	25%	25%
Proportion relating to former employees not yet retired	12%	2%	**11%**	11%	11%
Proportion relating to retirees	66%	77%	**67%**	64%	64%
Total	100%	100%	**100%**	100%	100%
Average duration of obligations (years)	13.5	12.6	**13.4**	13.9	13.3

Geographical distribution of defined benefit obligations

An approximate analysis of the geographic distribution of the obligations is given in the table below:

	Pension benefits	Other benefits	**2015 Total %**	2014 Total %	2013 Total %
Canada	44%	44%	**44%**	46%	45%
UK	31%	2%	**29%**	27%	27%
US	13%	53%	**15%**	15%	14%
Switzerland	6%	0%	**6%**	5%	6%
Eurozone	4%	0%	**4%**	4%	5%
Australia	1%	0%	**1%**	2%	2%
Other	1%	1%	**1%**	1%	1%
Total	100%	100%	**100%**	100%	100%

45 Post-retirement benefits continued

Total expense recognised in the income statement

	Pension benefits	Other benefits	**2015 Total US$m**	2014 Total US$m	2013 Total US$m
Current employer service cost for defined benefit plans	(173)	(11)	**(184)**	(196)	(284)
Past service income	116	28	**144**	66	1
Curtailment gains/(losses)	5	8	**13**	(1)	44
Settlement gains	11	–	**11**	22	2
Net interest on net defined benefit liability	(77)	(36)	**(113)**	(133)	(209)
Non-investment expenses paid from the plans	(21)	–	**(21)**	(19)	(22)
Total defined benefit expense	(139)	(11)	**(150)**	(261)	(468)
Current employer service cost for defined contribution and industry-wide plans	(287)	(2)	**(289)**	(329)	(337)
Total expense recognised in the income statement	(426)	(13)	**(439)**	(590)	(805)

The above expense amounts are included as an employee cost within net operating costs. In 2015, US$nil (pre-tax) of curtailment and settlement gains have been excluded from underlying earnings (2014: US$2 million, 2013: US$21 million, both relating to divestments).

The curtailments shown in the table above relate primarily to headcount reductions at various operations and divestments during 2015 and previous years. The settlement gains in 2015, 2014 and 2013 relate mainly to an exercise in the US in which deferred vested participants were offered a one-time lump sum payment in place of their future pension payments. The pension and other benefits past service income in 2015 relate to design changes in Canada and to changes to post-retirement medical plans in the US. The past service income during 2014 relates to design changes to post-retirement medical plans in the US.

Total amount recognised in other comprehensive income before tax

	2015 US$m	2014 US$m	2013 US$m
Actuarial gains/(losses)	**548**	(1,853)	1,092
Return on assets (net of interest on assets)	**79**	1,127	1,212
Loss on application of asset ceiling	**(8)**	(9)	(44)
Total gain/(loss) recognised in other comprehensive income	**619**	(735)	2,260

Amounts recognised in the balance sheet

The following amounts were measured in accordance with IAS 19 at 31 December:

	Pension benefits	Other benefits	**2015 Total US$m**	2014 Total US$m
Total fair value of plan assets	13,642	–	**13,642**	15,219
Present value of obligations – funded	(14,443)	–	**(14,443)**	(16,869)
Present value of obligations – unfunded	(818)	(862)	**(1,680)**	(2,030)
Present value of obligations – total	(15,261)	(862)	**(16,123)**	(18,899)
Effect of asset ceiling	(49)	–	**(49)**	(53)
Net deficit to be shown in the balance sheet	(1,668)	(862)	**(2,530)**	(3,733)
Comprising:				
– Deficits	(2,260)	(862)	**(3,122)**	(4,086)
– Surpluses	592	–	**592**	353
Net deficits on pension plans	(1,668)	–	**(1,668)**	(2,686)
Unfunded post-retirement healthcare obligation	–	(862)	**(862)**	(1,047)

The surplus amounts shown above are included in the balance sheet as Trade and other receivables. See note 18.

Deficits are shown in the balance sheet within Provisions (including post-retirement benefits). See note 26.

Funding policy and contributions to plans

The Group reviews the funding position of its major pension plans on a regular basis and considers whether to provide funding above the minimum level required in each country. In Canada and the US the minimum level is prescribed by legislation. In the UK and Switzerland the minimum is negotiated with the local trustee or foundation in accordance with the funding guidance issued by the local regulators. In deciding whether to provide funding above the minimum level the Group takes into account other possible uses of cash within the Group, the tax situation of the local sponsoring entity and any strategic advantage that the Group might obtain by accelerating contributions. The Group does not generally pre-fund post-retirement healthcare arrangements.

	Pension benefits	Other benefits	**2015 Total US$m**	2014 Total US$m	2013 Total US$m
Contributions to defined benefit plans	270	58	**328**	353	734
Contributions to defined contribution plans	270	2	**272**	310	317
Contributions to industry-wide plans	17	–	**17**	19	20
Total	557	60	**617**	682	1,071

Contributions to defined benefit pension plans are kept under regular review and actual contributions will be determined in line with the Group's wider financing strategy, taking into account relevant minimum funding requirements. As contributions to many plans are reviewed on at least an annual basis, the contributions for 2016 and subsequent years cannot be determined precisely in advance. Contributions to defined benefit pension plans for 2016 are estimated to be around US$280 million but may be higher or lower than this. Healthcare plans are generally unfunded and contributions for future years will be equal to benefit payments net of participant contributions. The Group's contributions are expected to be similar to the amounts paid in 2015.

Movements in the net defined benefit liability

A summary of the movement in the net defined benefit liability is shown in the first table below. The subsequent tables provide a more detailed analysis of the movements in the present value of the obligations, the fair value of assets and the effect of the asset ceiling.

The amounts shown below include, where appropriate, 100 per cent of the costs, contributions, gains and losses in respect of employees who participate in the plans and who are employed in associates and joint arrangements. Consequently, the costs, contributions, gains and losses may not correspond directly to the amounts disclosed above in respect of the Group. Defined contribution plans and industry-wide plans are excluded from the movements below.

	Pension benefits	Other benefits	**2015 Total US$m**	2014 Total US$m
Change in the net defined benefit liability				
Net defined benefit liability at the start of the year	(2,686)	(1,047)	**(3,733)**	(3,309)
Amounts recognised in Income	(139)	(11)	**(150)**	(261)
Amounts recognised in Other comprehensive income	562	57	**619**	(735)
Employer contributions	270	58	**328**	353
Arrangements divested	25	–	**25**	13
Currency exchange rate movements	300	81	**381**	206
Net defined benefit liability at the end of the year	(1,668)	(862)	**(2,530)**	(3,733)

	Pension benefits	Other benefits	**2015 Total US$m**	2014 Total US$m
Change in present value of obligation				
Present value of obligation at the start of the year	(17,852)	(1,047)	**(18,899)**	(18,792)
Current employer service costs	(173)	(11)	**(184)**	(196)
Past service income	116	28	**144**	66
Curtailments	5	8	**13**	(1)
Settlements	52	–	**52**	326
Interest on obligation	(579)	(36)	**(615)**	(783)
Contributions by plan participants	(25)	(3)	**(28)**	(37)
Benefits paid	934	61	**995**	1,042
Experience gain	77	30	**107**	56
Changes in financial assumptions gain/(loss)	423	23	**446**	(1,718)
Changes in demographic assumptions (loss)/gain	(9)	4	**(5)**	(191)
Arrangements divested	46	–	**46**	58
Currency exchange rate gain	1,724	81	**1,805**	1,271
Present value of obligation at the end of the year	(15,261)	(862)	**(16,123)**	(18,899)

	Pension benefits	Other benefits	**2015 Total US$m**	2014 Total US$m
Change in plan assets				
Fair value of plan assets at the start of the year	15,219	–	**15,219**	15,527
Settlements	(41)	–	**(41)**	(304)
Interest on assets	506	–	**506**	655
Contributions by plan participants	25	3	**28**	37
Contributions by employer	270	58	**328**	353
Benefits paid	(934)	(61)	**(995)**	(1,042)
Non-investment expenses	(21)	–	**(21)**	(19)
Return on plan assets (net of interest on assets)	79	–	**79**	1,127
Arrangements divested	(21)	–	**(21)**	(45)
Currency exchange rate loss	(1,440)	–	**(1,440)**	(1,070)
Fair value of plan assets at the end of the year	13,642	–	**13,642**	15,219

45 Post-retirement benefits continued

	Pension benefits	Other benefits	**2015 Total US$m**	2014 Total US$m
Change in the effect of the asset ceiling				
Effect of the asset ceiling at the start of the year	(53)	–	**(53)**	(44)
Interest on the effect of the asset ceiling	(4)	–	**(4)**	(5)
Movement in the effect of the asset ceiling	(8)	–	**(8)**	(9)
Currency exchange rate gain	16	–	**16**	5
Effect of the asset ceiling at the end of the year	(49)	–	**(49)**	(53)

In determining the extent to which the asset ceiling has an effect, the Group considers the funding legislation in each country and the rules specific to each pension plan. The calculation takes into account any minimum funding requirements that may be applicable to the plan, whether any reduction in future Group contributions is available, and whether a refund of surplus may be available. In considering whether any refund of surplus is available the Group considers the powers of trustee boards and similar bodies to augment or wind up a plan. Where such powers are unilateral, the Group does not consider a refund to be available at the end of the life of a plan. Where the plan rules and legislation both permit the employer to take a refund of surplus, the asset ceiling may have no effect, although it may be the case that a refund will only be available many years in the future.

Main assumptions (rates per annum)

The main assumptions for the valuations of the plans under IAS 19 are set out below:

	Canada	UK	US	Switzerland	Eurozone	Australia	Other (mainly Africa)[a]
At 31 December 2015							
Discount rate	3.9%	3.7%	4.2%	0.8%	2.1%	4.0%	10.7%
Inflation[b]	1.7%	3.0%	2.1%	1.1%	1.7%	2.1%	8.5%
Rate of increase in pensions	0.4%	2.6%	–	0.0%	1.6%	2.1%	8.5%
Rate of increase in salaries	3.0%	3.7%	3.6%	2.1%	2.3%	4.0%	10.5%
At 31 December 2014							
Discount rate	3.9%	3.4%	3.8%	0.9%	1.8%	2.7%	9.0%
Inflation[b]	1.8%	3.0%	2.1%	1.3%	1.7%	2.1%	7.1%
Rate of increase in pensions	0.7%	2.6%	–	0.0%	1.5%	2.1%	7.1%
Rate of increase in salaries	3.1%	3.8%	3.6%	2.3%	2.1%	4.0%	9.1%

(a) The assumptions vary by location for the "Other" plans. Assumptions shown are for Southern Africa.

(b) The inflation assumption shown for the UK is for the Retail Price Index. The assumption for the Consumer Price Index at 31 December 2015 was 2.0 per cent (2014: 2.0 per cent).

The main financial assumptions used for the healthcare plans, which are predominantly in the US and Canada, were: discount rate: 4.1 per cent (2014: 3.9 per cent); medical trend rate: 8.4 per cent reducing to 5.1 per cent by the year 2023 broadly on a straight line basis (2014: 6.7 per cent, reducing to 5.1 per cent by the year 2022); claims costs based on individual company experience.

For both the pension and healthcare arrangements the post-retirement mortality assumptions allow for future improvements in longevity. The mortality tables used imply that a man aged 60 at the balance sheet date has a weighted average expected future lifetime of 26 years (2014: 26 years) and that a man aged 60 in 2035 would have a weighted average expected future lifetime of 28 years (2014: 28 years).

Sensitivity

The values reported for the defined benefit obligations are sensitive to the actuarial assumptions used for projecting future benefit payments and discounting those payments. In order to estimate the sensitivity of the obligations to changes in assumptions, we calculate what the obligations would be if we were to make small changes to each of the key assumptions in isolation. The difference between this figure and the figure calculated using our stated assumptions is an indication of the sensitivity to changes in each assumption. The results of this sensitivity analysis are summarised in the table below. Note that this approach is valid for small changes in the assumptions but will be less accurate for larger changes in the assumptions. The sensitivity to inflation includes the impact on pension increases, which are generally linked to inflation where they are granted.

Assumption	Change in assumption	2015 Approximate (increase)/decrease in obligations Pensions US$m	2015 Other US$m	2014 Approximate (increase)/decrease in obligations Pensions US$m	2014 Other US$m
Discount rate	increase of 0.5 percentage points	**960**	**50**	1,166	63
	decrease of 0.5 percentage points	**(1,025)**	**(54)**	(1,250)	(68)
Inflation	increase of 0.5 percentage points	**(505)**	**(17)**	(653)	(23)
	decrease of 0.5 percentage points	**481**	**14**	620	20
Salary increases	increase of 0.5 percentage points	**(77)**	**(2)**	(100)	(2)
	decrease of 0.5 percentage points	**75**	**2**	97	2
Demographic – allowance for future improvements in longevity	Participants assumed to have the mortality rates of individuals who are one year older	**435**	**15**	477	18
	Participants assumed to have the mortality rates of individuals who are one year younger	**(435)**	**(15)**	(477)	(18)
Medical costs trend rates	increase of 1.0 percentage points	**–**	**(31)**	–	(41)
	decrease of 1.0 percentage points	**–**	**26**	–	35

Information on the sensitivity of the Group's earnings to the main assumptions is set out in note 1 (Critical accounting policies and estimates section (x)) on page 124.

46 Rio Tinto Limited parent company disclosures

As at 31 December	2015 A$m	2014 A$m
Assets		
Current assets	**6,034**	16,523
Non-current assets	**11,525**	11,302
Total assets	**17,559**	27,825
Liabilities		
Current liabilities	**(616)**	(8,230)
Non-current liabilities	**(4,833)**	(38)
Total liabilities	**(5,449)**	(8,268)
Net assets	**12,110**	19,557
Shareholders' equity		
Share capital	**4,004**	4,113
Other reserves	**373**	377
Retained earnings	**7,733**	15,067
Total equity	**12,110**	19,557
Profit of the parent company	**6,532**	9,121
Total comprehensive income of the parent company	**6,532**	9,122

Prepared under Australian Accounting Standards (AAS). In relation to Rio Tinto Limited there are no significant measurement differences between AAS and IFRS as defined in note 1.

Rio Tinto Limited guarantees

Rio Tinto Limited provides a number of guarantees in respect of Group companies.

Rio Tinto plc and Rio Tinto Limited have jointly guaranteed the Group's external listed debt under the US Shelf Programme, European Debt Issuance Programme and Commercial Paper Programme which totalled A$26.6 billion at 31 December 2015 (31 December 2014: A$25.4 billion); in addition these entities also jointly guarantee the Group's undrawn credit facility which was A$10.3 billion at 31 December 2015 (31 December 2014: A$9.1 billion).

Rio Tinto Limited has guaranteed external debt held by Rio Tinto Group entities which totalled A$0.1 billion at 31 December 2015 (31 December 2014: A$0.1 billion) and provided guarantees in respect of certain derivative contracts which were in a liability position of A$18 million at 31 December 2015 (31 December 2014: A$6 million).

In addition, Rio Tinto Limited has provided a guarantee of certain obligations of Rio Tinto Finance Limited, a wholly owned subsidiary.

Pursuant to the DLC Merger, both Rio Tinto plc and Rio Tinto Limited issued deed poll guarantees by which each company guaranteed contractual obligations incurred by the other or guaranteed by the other.

Notes to the 2015 financial statements
continued

47 Related undertakings

The following tables outline the Group's subsidiaries, associated undertakings and joint ventures as defined in Regulation 7 of the UK Companies Act 2006. All subsidiaries are included in the Group consolidation.

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
1043802 Ontario Ltd; – Canada	CAD Ordinary shares	100
46106 YUKON INC; – Canada	CAD Common shares	100
46117 YUKON INC.; Canada	CAD Common shares	100
	CAD Preferred shares	100
535630 YUKON INC.; Canada	CAD Common shares	100
	CAD Preferred shares	100
7999674 CANADA INC.; Canada	CAD Common shares	100
9230556 CANADA INC.; Canada	CAD Common shares	100
	CAD Preferred shares	100
9539549 CANADA INC.; Canada	US$ Common shares	100
AGM Holding Company Pte Ltd; Singapore	US$ Ordinary shares	100
Alcan Alumina Ltda.; Brazil	BRL1.00 Quota shares	100
Alcan Aluminium UK Limited; United Kingdom	£1.00 Ordinary shares	100
Alcan Asia Limited; Hong Kong	HKD Ordinary shares	100
Alcan Betriebs- und Verwaltungsgesellschaft GmbH; Germany	€51.13 Ordinary shares	100
Alcan Chemicals Limited; United Kingdom	£1.00 Ordinary shares	100
Alcan Composites Brasil Ltda; Brazil	BRL0.01 Ordinary shares	100
Alcan Corporation; United States	US$0.01 Ordinary shares	100
Alcan Farms Limited; United Kingdom	£1.00 Ordinary shares	100
Alcan Finances USA LLC; United States	US$1,000.00 Ordinary shares	100
Alcan Gove Development Pty Limited; Australia	AUD Ordinary shares	100
Alcan Gove Pty Limited; Australia	AUD Class A Shares	100
	AUD Class B Shares	100
Alcan Gove Superannuation Pty Limited; Australia	AUD Ordinary shares	100
Alcan Holdings Australia Pty Limited; Australia	AUD Class A Shares	100
	AUD Ordinary shares	100
Alcan Holdings Europe B.V.; Netherlands	€455.00 Ordinary shares	100
Alcan Holdings Nederland B.V.; Netherlands	€4,555.00 Ordinary shares	100
Alcan Holdings Switzerland AG (SA/Ltd.); Switzerland	CHF0.01 Registered Shares	100
Alcan International Network U.S.A. Inc.; United States	US$ Ordinary shares	100
Alcan Lebensmittelverpackungen GmbH; Germany	€51.12918 Ordinary shares	100
Alcan Management Services (Shanghai) Co., Ltd.; China	US$ Ordinary shares	100
Alcan Management Services Canada Limited/Societe de Services de Gestion Alcan Canada Limitee; Canada	CAD Ordinary shares	100
Alcan Northern Territory Alumina Pty Limited; Australia	AUD Ordinary shares	100
Alcan Packaging Canada Limited; Canada	CAD0.11 Ordinary shares	100
Alcan Packaging Mühltal Gmbh & Co. KG; Germany	€51.129188 Ordinary shares	100
Alcan Primary Metal Australia Pty Ltd; Australia	AUD Ordinary shares	100
Alcan Primary Products Company LLC; United States	US$ Units shares	100
Alcan Primary Products Corporation; United States	US$0.01 Ordinary shares	100
Alcan Realty Limited/Societe Immobiliere Alcan Limitee; Canada	CAD Ordinary shares	100
Alcan South Pacific Pty Ltd; Australia	AUD Ordinary shares	100
Alcan Trading AG (SA/Ltd.); Switzerland	CHF1,000.00 Registered shares	100
Aluminium & Chemie Rotterdam B.V.; Netherlands	€4,555.00 Ordinary shares	65.8
Aluminium Dunkerque; France	€16.00 Ordinary shares	100
Aluminium Pechiney; France	€16.00 Ordinary shares	100
Aluminum Company of Canada Limited/Aluminium du Canada Limitee; Canada	CAD Ordinary shares	100
Alusuisse Servicios S.A., Panama; Panama	PAB1.00 Ordinary shares	100
Alusuisse Servicios S.A., Venezuela; Venezuela, Bolivarian Republic of	VEB1.00 Ordinary shares	100
AML Exploration Pty Limited; Australia	AUD Ordinary shares	100
AML Properties Pty Ltd; Australia	AUD Ordinary shares	100
Anglesey Aluminium Limited; United Kingdom	£1.00 Ordinary shares	100

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Anglesey Aluminium Metal Limited; United Kingdom	£1.00 Ordinary shares	100
AP Service; France	€15.00 Ordinary shares	100
Aquatic Holdings (Mauritius) Limited; Mauritius	US$1.00 Ordinary shares	100
Argyle Diamond Mines Pty Limited; Australia	AUD Ordinary shares	100
Argyle Diamonds (2013) Ltd; Australia	AUD Ordinary shares	100
Argyle Diamonds Limited; Australia (a)	AUD Class A shares	100
	AUD Class B Shares	100
Ashton Canada Pty Limited; Australia	AUD Ordinary shares	100
Ashton Mining Pty Ltd; Australia	AUD Ordinary shares	100
Ashton Nominees Pty Limited; Australia	AUD Ordinary shares	100
Asia Gold Mongolia LLC; Mongolia	MNT1,250.00 Common shares	100
Asia Naran Bulag LLC; Mongolia	MNT1,000.00 Common shares	100
Australian Coal Holdings Pty. Limited; Australia (a)	AUD A shares	100
Australian Coal Resources Limited; Australia	AUD Ordinary shares	100
Australian Mining & Smelting Pty Ltd; Australia (a)	AUD Ordinary shares	100
Balkhash Saryshagan LLP; Kazakhstan (c)	–	–
Baume Pty. Limited; Australia (a)	AUD Ordinary shares	100
Beasley River Management Pty Limited; Australia	AUD Ordinary shares	100
Beasley River Marketing Pty Ltd; Australia	AUD A Class Shares	100
Beasley River Mining Pty Limited; Australia	AUD Ordinary shares	100
Bektau B.V.; Netherlands	€200.00 Ordinary shares	75
Black Hill Land Pty Ltd; Australia	AUD Ordinary shares	100
Blair Athol Coal Pty. Ltd.; Australia	AUD Ordinary shares	100
	AUD Ordinary shares	100
	AUD Ordinary shares	100
Blair Athol Joint Venture; Australia (c)	–	–
Borax España, S.A.; Spain	€150.00 Ordinary shares	100
Borax Europe Limited; United Kingdom	£0.25 Ordinary shares	100
Borax Francais; France	€2.75 Ordinary shares	100
Borax Malaysia Sdn Bhd; Malaysia	RM1.00 Ordinary shares	100
Borax Rotterdam N.V.; Netherlands	€453.78 Ordinary shares	100
Bougainville Copper Foundation Ltd; Papua New Guinea	PGK1.00 Ordinary shares	100
Bougainville Copper Limited; Papua New Guinea	PGK1.00 Ordinary shares	53.8
Boyne Smelters Limited; Australia	AUD A1 Class shares	100
	AUD A2 Class shares	100
	AUD B1 Class shares	100
British Alcan Aluminium Plc; United Kingdom	£1.00 Ordinary shares	100
British Alcan Overseas Investments Limited; United Kingdom	£1.00 Ordinary shares	100
Canning Resources Pty Limited; Australia (a)	AUD Ordinary shares	100
Cape Bougainville Joint Venture; Australia (c)		–
Capricorn Diamonds Investments Pty Limited; Australia	AUD Ordinary shares	100
Carbone Savoie; France	€7.70 Ordinary shares	100
Carol Lake Company Ltd.; Canada	CAD100.00 Ordinary shares	100
Carrier Holdings Limited; Mauritius	US$1.00 Management Share shares	100
	US$1.00 Ordinary shares	100
Catherine Hill Bay Land Pty Ltd; Australia	AUD Ordinary shares	100
Cathjoh Holdings Pty Limited; Australia	AUD Ordinary shares	100
Champlain Reinsurance Company Ltd.; Switzerland	CHF1.23 Registered Shares	100
Channar Finance Limited; Australia	AUD Class B shares	100
Channar Financial Services Pty Ltd; Australia	AUD Ordinary shares	100
Channar Management Services Pty Limited; Australia	AUD Ordinary shares	100
Channar Mining Pty Ltd; Australia	AUD Ordinary shares	100
Channar Security Pty Limited; Australia	AUD Ordinary shares	100

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47 Related undertakings continued

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Chlor Alkali Unit Pte Ltd; Singapore	SGD1.00 Ordinary (SGD) shares	100
	US$1.00 Ordinary (USD) shares	68.4
CIA. Inmobiliaria e Inversiones Cosmos S.A.C.; Peru	PEN1,000.00 Ordinary shares	100
CNA Bengalla Investments Pty Limited; Australia	AUD1.00 Ordinary shares	100
CNA Bengalla Pty Limited; Australia	AUD Ordinary shares	100
CNA Investments (UK) Pty Limited; Australia	AUD Ordinary shares	100
CNA Resources Holdings Pty Limited; Australia	AUD "A" Ordinary shares	100
	AUD "B" Ordinary shares	100
CNA Resources Limited; Australia	AUD "A" Ordinary shares	100
	AUD "B" Ordinary shares	100
CNA Sub Holdings Pty Limited; Australia	AUD Ordinary shares	100
CNA UK Limited; United Kingdom	US$0.01 Ordinary Bearer shares	100
CNA Warkworth Australasia Pty Limited; Australia	AUD Ordinary shares	100
CNA Warkworth Pty Ltd; Australia	AUD Ordinary shares	100
Coal & Allied Industries Limited; Australia	AUD Ordinary shares	89.8
Coal & Allied Mining Services Pty Limited; Australia	AUD Ordinary shares	100
Coal & Allied Operations Pty Ltd; Australia	AUD Ordinary shares	100
Compagnie Générale D'électrolyse Du Palais; France	€0.94 Ordinary shares	100
Compania de Transmision Sierraoriente S.A.C.; Peru	PEN1,000.00 Ordinary shares	100
Corporation De Pêche Ste-Marguerite Inc.; Canada	CAD10.00 Ordinary shares	96.8
CRA Exploration (India) Private Limited; India	INR10.00 Ordinary shares	99.9
CRA Investments Pty. Limited; Australia [(a)]	AUD Ordinary shares	100
CRA Pty Ltd; Australia [(a)]	AUD Ordinary shares	100
Dampier Salt Ltd; Australia	AUD Ordinary ($1.00257) shares AUD Ordinary ($1.88 on 31/01/2013) shares	68.4 68.4
Darex Capital, Inc.; Panama	US$0.01 Par Value One Cent shares	100
Daybreak Development LLC; United States	US$0.01 Common shares	100
Daybreak Property Holdings LLC; United States [(c)]	–	–
Daybreak Secondary Water Distribution Company; United States	US$0.01 Common shares	51.2
Daybreak Water Company; United States	US$0.01 Class A Common shares	100
	US$0.01 Class B Common shares	2.5
Daybreak Water Holding LLC; United States	US$0.01 Common shares	100
DB Medical I LLC; United States	US$ Units shares	100
DBVC1 LLC; United States [(c)]	–	–
Diamond Producers Association Limited ; United Kingdom [(d)]	–	–
Diavik Diamond Mines (2012) Inc.; Canada	CAD Common shares	100
Dolphin Properties Pty. Ltd.; Australia	AUD Ordinary shares	100
East Kalimantan Coal Pte. Ltd; Singapore [(a)]	SGD1.00 ordinary shares	100
	US$1.00 Ordinary shares	100
Eastland Management Inc.; United States	US$1.00 Common shares	100
Electric Power Generation Limited; New Zealand [(a)]	NZD1.00 Ordinary shares	100
Emirates Energy Limited; United Kingdom	US$1.00 Ordinary shares	100
Energy Resources of Australia Ltd; Australia	AUD A Class Ordinary shares	68.4
Falcon Insurance Ltd; Malta [(a)]	US$1.00 Class "A" Ordinary shares	100
	US$1.00 Class "B" shares	100
Flambeau Mining Company; United States	US$0.01 Common shares	100
Fondation Rio Tinto; Guinea [(c)]	–	–
France Aluminium Recyclage Sa; France	€15.00 Ordinary shares	60
Fundsprops Pty. Limited; Australia [(a)]	AUD Ordinary shares	100
Gava Exploration Limited Liability Company; Uzbekistan [(c)]	–	–
Gladstone Infrastructure Pty Ltd – Australia	AUD Class G Redeemable Preference shares	100
	AUD Ordinary shares	100

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Gove Aluminium Ltd; Australia	AUD A Non Redeemable Preferece shares	100
	AUD A Redeemable Preference Shares	100
	AUD Ordinary shares	100
Gove Joint Venture (the); Australia [c]	–	–
GPS Energy Pty Limited; Australia	AUD Ordinary shares	100
GPS Nominee Pty Limited; Australia	AUD Ordinary shares	100
GPS Power Pty. Limited; Australia	AUD Ordinary shares	100
Green Mountain Mining Venture; United States [c]	–	–
Gulf Power Company / La Compagnie Gulf Power; Canada	CAD100.00 Ordinary shares	100
Gumala Advisory Company Pty Ltd; Australia	AUD Ordinary shares	51
Gwandalan Land Pty Ltd; Australia	AUD Ordinary shares	100
Hail Creek Coal Pty Ltd; Australia	AUD Ordinary shares	100
Hail Creek Marketing Pty Ltd; Australia	AUD Ordinary shares	82
Hamersley Associated Investments Pty Limited; Australia	AUD Ordinary shares	100
Hamersley Exploration Pty Limited; Australia	AUD Ordinary shares	100
Hamersley HMS Pty Ltd; Australia	AUD Ordinary shares	100
Hamersley Holdings Limited; Australia [a]	AUD Ordinary shares	100
	AUD Ordinary shares	100
Hamersley Iron – Yandi Pty Limited; Australia [a]	AUD Class B Shares	100
	AUD Class C shares	100
	AUD Ordinary shares	100
Hamersley Iron Pty Limited; Australia	AUD Ordinary shares	100
Hamersley Resources Limited; Australia	AUD Ordinary shares	100
	AUD Z Class Ordinary shares	100
Hamersley WA Pty Ltd; Australia	AUD Ordinary shares	100
Henlopen Manufacturing Co., Inc.; United States	US$100.00 Ordinary shares	100
Heruga Exploration LLC; Mongolia	MNT12,500.00 Common shares	100
High Purity Iron Inc.; United States	US$1.00 Common Shares	100
HImet Corporation Pty Limited; Australia [a]	AUD Ordinary shares	100
HIsmelt (Operations) Pty Ltd; Australia	AUD Ordinary shares	100
HIsmelt Corporation Pty Limited; Australia	AUD A Class shares	100
Howmet Insurance Company, Inc.; United States	US$1.00 Ordinary shares	100
HV Operations Pty Ltd; Australia	AUD Ordinary shares	100
HVO Coal Sales Pty Ltd; Australia	AUD Ordinary shares	100
IAL Holdings Singapore Pte Ltd; Singapore	US$ Ordinary shares	100
IEA Coal Research Limited; United Kingdom	£1.00 Ordinary shares	100
IEA Environmental Projects Limited; United Kingdom	£1.00 Ordinary shares	100
IGP Holding Company Ltd; Virgin Islands, British	USD Ordinary shares	100
Industrias Metalicas Castello S.A.; Spain	€6.01 Ordinary shares	100
Integrity Land and Cattle LLC; United States	US$ Units shares	100
Iron Ore Company of Canada; United States	US$1,000.00 Series A shares	91.4
	US$1,000.00 Series E shares	100
	US$1,000.00 Series F shares	100
Itallumina Srl; Italy	€1.00 Quotas shares	100
Johcath Holdings Pty Limited; Australia	AUD Ordinary shares	100
Juna Station Pty Ltd; Australia	AUD Ordinary shares	100
Kalamah Pty Ltd; Australia	AUD Ordinary shares	100
Kalimantan Gold Pty Limited; Australia	AUD Ordinary shares	100
Kalteng Pty. Ltd; Australia [a]	AUD A Class Ordinary shares	100
	AUD Class B (Fully Paid $1.00 13/01/2003) shares	100
	AUD Class B (Paid to $0.12 02/09/2005) shares	100
	AUD Ordinary shares	100
Kelian Investment Limited; Virgin Islands, British [c]	–	–
Kelian Pty. Limited; Australia	AUD Ordinary shares	100
Kembla Coal & Coke Pty. Limited; Australia	AUD Ordinary shares	100

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47 Related undertakings continued

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Kennecott Barneys Canyon Mining Company; United States	US$0.01 Common shares	100
Kennecott Exploration Company; United States	US$0.01 Common shares	100
Kennecott Exploration Mexico, S.A. de C.V.; Mexico	MXN1,000.00 Ordinary shares	100
Kennecott Holdings Corporation; United States	US$0.01 Common shares	100
Kennecott Land Company; United States	US$0.01 Common shares	100
Kennecott Land Investment Company LLC; United States (c)	–	–
Kennecott Management Services Company; United States	US$0.01 Common shares	100
Kennecott Molybdenum Company; United States	US$0.01 Common shares	100
Kennecott Nevada Copper Company; United States	US$0.01 Common shares	100
Kennecott Ridgeway Mining Company; United States	US$1.00 Common shares	100
Kennecott Royalty Company; United States	US$100.00 Common shares	100
Kennecott Services Company; United States	US$0.01 Common shares	100
Kennecott Uranium Company; United States	US$0.01 Common shares	100
Kennecott Utah Copper LLC; United States	US$ Units shares	100
Kennecott Water Distribution LLC; United States	US$ Ordinary shares	100
Kestrel Coal Pty Limited; Australia	AUD Ordinary shares	100
Kestrel Coal Sales Pty Limited; Australia	AUD Ordinary shares	100
Kirganik LLC; Russian Federation (c)	–	–
Korgantas LLP; Kazakhstan (c)	–	–
Kutaibar Holdings Pty Ltd; Australia (a)	AUD Ordinary shares	100
Lao Sanxai Minerals Company Limited; Lao People's Democratic Republic	US$1.00 Ordinary shares	70
Lawson Mardon Flexible Limited; United Kingdom	£1.00 Ordinary shares	100
Lawson Mardon Smith Brothers Ltd.; United Kingdom	£1.00 Ordinary shares	100
Lazurnoe Limited Liability Company; Russian Federation (c)	–	–
Lower Hunter Land Holdings Pty Ltd; Australia	AUD Ordinary shares	100
Magma Arizona Railroad Company; United States	US$100.00 Common shares	99.9
Malmikaivos Oy; Finland	€168.18793 Ordinary shares	100
Metallwerke Refonda AG; Switzerland	CHF125.00 Bearer shares	100
Metals & Minerals Insurance Pte. Limited; Singapore	SGD Ordinary shares	100
	SGD Redeemable Preference Shares	100
Miller Pohang Coal Co Pty Ltd; Australia	AUD Ordinary shares	100
Minera Kennecott, S.A. de C.V.; Mexico	MXN1.00 Series "B" shares	100
Minera Tinyacclla SA; Peru	PEN1.00 Ordinary shares	99.9
Minmi Land Pty Ltd; Australia	AUD Ordinary shares	100
Mitchell Plateau Bauxite Co. Pty. Limited; Australia	AUD Ordinary shares	100
Mitchell Plateau Joint Venture; Australia (c)	–	–
Mongolian Gas and Exploration LLC; Mongolia	US$1.00 Common shares	100
Mount Bruce Mining Pty Limited; Australia	AUD Ordinary shares	100
Mount Thorley Co Venture; Australia (c)	–	–
Mount Thorley Coal Loading Ltd; Australia	AUD Ordinary shares	72.2
Mount Thorley Operations Pty Limited; Australia	AUD Ordinary shares	100
Movele SARL	US$ Ordinary shares	100
	US$ Preferred shares	100
Mutamba Mineral Sands S.A.; Mozambique	MZN100.00 Ordinary shares	100
Namoi Valley Coal Pty. Limited; Australia	AUD Class B shares	100
	AUD Ordinary shares	100
NBH Pty Ltd; Australia	AUD Ordinary shares	100
Nhulunbuy Corporation Limited Australia (c)	–	–
Nords Wharf Land Pty Ltd; Australia	AUD Ordinary shares	100
Norgold Pty Limited; Australia	AUD Ordinary shares	100
	AUD Redeemable Preference shares	100

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
North Gold (W.A.) Pty Ltd; Australia	AUD Ordinary shares	100
	AUD Redeemable Preference shares	100
North Insurances Pty. Ltd.; Australia	AUD Ordinary shares	100
North IOC (Bermuda) Holdings Limited; Bermuda	US$1.00 Ordinary shares	100
North IOC (Bermuda) Limited; Bermuda	US$143.641269 Class A Ordinary Shares (US$143.64126903)	100
	US$1.00 Ordinary (US$1.00) shares	100
	US$100,000.00 Preferred Shares (US$100,000)	100
North IOC Holdings Pty Ltd; Australia	AUD Ordinary shares	100
North Limited; Australia	AUD Ordinary shares	100
North Mining Limited; Australia	AUD Ordinary shares	100
	AUD Redeemable Preference shares	100
Northern (Rhondda) Collieries Pty Ltd; Australia	AUD Ordinary shares	100
Novacoal Australia Pty. Limited; Australia	AUD Ordinary shares	100
Nozalela Mineral Sands (Pty) Ltd; South Africa	ZAR1.00 Ordinary shares	100
Oaklands Coal Pty. Limited; Australia	AUD Ordinary shares	100
Olkhovoe LLC; Russian Federation [c]	–	–
Orian Holding Corp; Virgin Islands, British	US$1.00 Common shares	100
Oyu Tolgoi Netherlands BV; Netherlands	€100.00 Ordinary shares	100
Pacific Aluminium (New Zealand) Limited; New Zealand	NZD1.00 Ordinary shares	100
Pacific Aluminium Bell Bay Sales Pty Limited; Australia	AUD Ordinary shares	100
Pacific Aluminium Pty. Limited; Australia [a]	AUD Ordinary shares	100
Pacific Aluminium Services Pty Limited; Australia	AUD Ordinary shares	100
Pacific Coast Mines, Inc.; United States	US$1.00 Common shares	100
Pacific Resource Investments Limited; Cayman Islands [a]	US$1.00 Ordinary shares	100
Pandrew Pty Ltd; Australia	AUD Ordinary shares	100
Pechiney Aviatube Limited; United Kingdom	£1.00 Ordinary shares	100
Pechiney Bâtiment; France	€15.00 Ordinary shares	100
Pechiney Bécancour, Inc.; United States	US$1.00 Ordinary shares	100
Pechiney Cast Plate, Inc.; United States	US$1.00 Ordinary shares	100
Pechiney Consolidated Australia Pty Limited; Australia	US$1.00 Ordinary shares	100
	US$1.00 Preference Shares	100
Pechiney Dis Ticaret Limited Sirketi; Turkey	TRY25.00 Ordinary shares	100
Pechiney Holdings, Inc.; United States	US$1.00 Ordinary shares	100
Pechiney Metals LLC; United States [c]	–	–
Pechiney Philippines Inc.; Philippines	PHP10.00 Ordinary shares	99.9
Pechiney Plastic Packaging (Canada) Inc.; Canada	CAD1.00 Ordinary shares	100
Pechiney Plastic Packaging, Inc.; United States	US$ Ordinary shares	100
Pechiney Resources Pty. Limited; Australia	AUD Ordinary shares	100
Pechiney Sales Corporation; United States	US$1.00 Ordinary shares	100
Pechiney Servicios; Venezuela, Bolivarian Republic of	VEB1,000.00 Ordinary shares	100
Pechiney Vénézuela, S.A.; Venezuela, Bolivarian Republic of	VEB1,000.00 A shares	100
	VEB10,000.00 B shares	100
Peko Exploration Pty Ltd.; Australia	AUD Ordinary shares	100
Peko-Wallsend Pty Ltd; Australia	AUD Ordinary shares	100
Pilbara Iron Company (Services) Pty Ltd; Australia	AUD Ordinary shares	100
Pilbara Iron Pty Ltd; Australia	AUD Ordinary shares	100
Project Generation Group Pty Ltd; Australia [a]	AUD Ordinary shares	100
PSZ Pty Limited; Australia	AUD Ordinary shares	100
PT Alcan Packaging Flexipack; Indonesia	IDR1,000,000.00 Ordinary shares	100
PT Hutan Lindung Kelian Lestari; Indonesia	IDR9,803.00 Ordinary shares	99
PT Kelian Equatorial Mining; Indonesia	IDR1,080.00 Ordinary shares	90
PT Mitra Sumbawa Minerals; Indonesia	US$1.00 Ordinary shares	90
PT Rikit Alas Minerals; Indonesia	US$1.00 Ordinary shares	90
PT Rio Tinto Consultants; Indonesia	US$1.00 Ordinary shares	100

47 Related undertakings continued

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
PT Rio Tinto Exploration; Indonesia	US$1.00 Ordinary shares	100
PT Rio Tinto Indonesia; Indonesia	US$1.00 Ordinary shares	100
PT Rio Tinto Irja; Indonesia	US$1.00 Ordinary shares	100
QIT Madagascar Minerals Ltd; Bermuda	US$1.00 Ordinary shares	100
QIT Madagascar Minerals SA; Madagascar	US$10.00 Certificats d'investissement shares	100
	US$10.00 Common Shares	80
QMP Metal Powders (Suzhou) Ltd; China	US$1.00 Ordinary shares	100
Quebec North Shore and Labrador Railway Company / Compagnie de Chemin de Fer du Littoral Nord de Quebec et du Labrador Inc.; Canada	CAD27.59 Ordinary shares	100
Queensland Coal Pty. Limited; Australia	AUD Ordinary shares	100
Química e Metalúrgica Mequital Ltda.; Brazil	BRL Ordinary shares	100
R.W. Miller (Holdings) Limited; Australia	AUD Ordinary shares	100
Ranges Management Company Pty Ltd; Australia	AUD Ordinary shares	100
Ranges Mining Pty Ltd; Australia	AUD Ordinary shares	100
Resolution Copper Company; United States	US$0.01 Common shares	100
Resolution Copper Mining LLC; United States (c)	-	–
Richards Bay Mining (Proprietary) Limited; South Africa	ZAR0.01 B Ordinary shares	99.9
	ZAR0.01 B Preference shares	100
	ZAR0.01 BHP Billiton Preference shares	100
Richards Bay Mining Holdings (Proprietary) Limited; South Africa	ZAR1.00 A Ordinary shares	100
	ZAR1.00 B Ordinary shares	100
Richards Bay Prefco (Pty) Ltd; South Africa	ZAR0.01 Prefence shares	100
Richards Bay Titanium (Proprietary) Limited; South Africa	ZAR0.01 B Ordinary shares	100
	ZAR0.01 B Preference shares	100
	ZAR0.01 BHP Billiton Preference shares	100
Richards Bay Titanium Holdings (Proprietary) Limited; South Africa	ZAR1.00 A Ordinary shares	100
	ZAR1.00 B Ordinary shares	100
Rio de Contas Desenvolvimentos Minerais Ltda; Brazil	BRL Quota shares	100
Rio Sava Exploration DOO; Serbia (c)	-	–
Rio Tinto (Commercial Paper) Limited; Australia (a)	AUD Ordinary shares	100
Rio Tinto (Hong Kong) Ltd; Hong Kong	HKD Ordinary shares	100
Rio Tinto (Mauritius) Pty Limited; Mauritius	US$1.00 Ordinary shares	100
Rio Tinto Advisory Services Pty Limited; Australia	AUD Ordinary shares	100
Rio Tinto Alcan Fund Inc.; Canada	CAD Ordinary shares	100
Rio Tinto Alcan Iceland Ltd; Iceland	ISK1.00 Registered shares	100
Rio Tinto Alcan Inc.; Canada	CAD COMMON shares	100
Rio Tinto Alcan International Ltd. / Rio Tinto Alcan International Ltee; Canada	CAD Common shares	100
Rio Tinto Alcan Middle East DMCC; United Arab Emirates	AED1,000.00 Ordinary shares	100
Rio Tinto Alcan Technology Pty Ltd; Australia	AUD1.00 Ordinary shares	100
Rio Tinto Almazpoisk LLC; Russian Federation (c)	-	–
Rio Tinto Aluminium (Bell Bay) Limited; Australia	AUD 7.5% Cumulative Preference shares	100
	AUD Ordinary shares	100
Rio Tinto Aluminium (Holdings) Limited; Australia	AUD Ordinary shares	100
	AUD Ordinary shares	100
Rio Tinto Aluminium Limited; Australia	AUD Ordinary shares	100
	AUD Ordinary shares	100
Rio Tinto America Holdings Inc.; United States	US$0.01 Class A Common shares	100
	US$100.00 Series A Preferred Stock shares	100
Rio Tinto America Inc.; United States	US$100.00 Common shares	100
Rio Tinto Asia Ltd; Hong Kong	HKD Ordinary shares	100
Rio Tinto Asia Pty. Limited.; Australia (a)	AUD Class A shares	100
	AUD Ordinary shares	100

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Rio Tinto AuM Company; United States	US$0.01 Common shares	100
Rio Tinto Australian Holdings Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto Bahia Holdings Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Base Metals Pty. Limited; Australia [(a)]	AUD Ordinary shares	100
Rio Tinto Brazilian Holdings Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto Brazilian Investments Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto Canada Diamond Exploration Inc.; Canada	CAD Common shares	100
Rio Tinto Canada Diamond Operation Management Inc.; Canada	CAD Common shares	100
Rio Tinto Canada Inc; Canada	CAD Class B Shares	100
	CAD Class C Shares	100
	CAD Class D Shares	100
	CAD Class J shares	100
Rio Tinto Canada Management Inc./ Rio Tinto Gestion Canada Inc.; Canada	CAD Common Shares	100
	CAD Preferred shares	100
Rio Tinto Canada Uranium Corporation; Canada	CAD Common shares	100
Rio Tinto Charters Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Coal (Clermont) Pty Ltd; Australia	AUD Ordinary shares	100
Rio Tinto Coal (NSW) Pty Limited; Australia	AUD Ordinary Fully Paid Share shares	100
Rio Tinto Coal Australia Pty Limited; Australia	AUD Ordinary shares	100
Rio Tinto Coal Investments Pty Limited; Australia	AUD Ordinary shares	100
Rio Tinto Coal NSW Holdings Limited; Australia [(a)]	AUD Ordinary shares	100
Rio Tinto Congo RDC SARL; Congo, The Democratic Republic of the	US$200.00 Ordinary shares	100
Rio Tinto Desenvolvimentos Minerais LTDA.; Brazil	BRL Quotas shares	100
Rio Tinto Diamonds and Minerals Canada Holding Inc.; Canada	CAD Class A (dividend rights) shares	100
	CAD Class B shares	100
	CAD Class C (voting rights) shares	100
	CAD Class P1 Preferred shares	100
Rio Tinto Diamonds Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Diamonds Netherlands B.V.; Netherlands	€500.00 Ordinary shares	100
Rio Tinto Diamonds NV; Belgium	€ Ordinary shares	100
Rio Tinto Eastern Investments B.V.; Netherlands	€453.78 Ordinary shares	100
Rio Tinto Energy America Inc.; United States	US$0.01 Common shares	100
Rio Tinto Energy Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Escondida Limited; Bermuda	US$1.00 Ordinary shares	100
Rio Tinto European Holdings Limited; United Kingdom [(b)]	£1.00 Ordinary shares	100
Rio Tinto Exploration (Asia) Holdings Pte. Ltd.; Singapore	US$1.00 Ordinary shares	100
Rio Tinto Exploration (PNG) Limited; Papua New Guinea [(a)]	PGK1.00 Ordinary shares	100
Rio Tinto Exploration and Mining (India) Private Limited; India	INR10.00 Ordinary shares	100
Rio Tinto Exploration Canada Inc.; Canada	CAD Class A shares	100
	CAD Class B shares	100
	CAD Class C shares	100
	CAD Class D shares	100
	CAD Class E Preferred shares	100
Rio Tinto Exploration DRC Orientale Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Exploration Gabon SA; Gabon	XAF10,000.00 Ordinary shares	100
Rio Tinto Exploration India Private Limited; India	INR10.00 Ordinary shares	100
Rio Tinto Exploration Kazakhstan LLP; Kazakhstan [(c)]	–	–

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47 Related undertakings continued

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Rio Tinto Exploration Pty Limited; Australia [(a)]	AUD Class B shares	100
	AUD Class C shares	100
	AUD Class C Shares	100
	AUD Ordinary shares	100
Rio Tinto Exploration Zambia Limited; Zambia	ZMW1.00 Ordinary shares	100
Rio Tinto Fer et Titane Inc.; Canada	CAD Class B Preference shares	100
	CAD Common shares	100
	CAD0.01 Preferred Shares	100
Rio Tinto FH Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Finance (USA) Limited; Australia [(a)]	AUD Ordinary shares	100
Rio Tinto Finance (USA) plc; United Kingdom	£1.00 Ordinary Shares	100
Rio Tinto Finance Canada Inc./ Finances Rio Tinto Canada Inc.; Canada	CAD Ordinary shares	100
Rio Tinto Finance Limited; Australia [(a)]	AUD Ordinary shares	100
Rio Tinto Finance plc; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto France S.A.S.; France	€15.25 Ordinary shares	100
Rio Tinto Global Employment Company Pte. Ltd.; Singapore	US$1.00 Ordinary shares	100
Rio Tinto Guinée S.A.; Guinea	GNF100,000.00 Ordinary shares	100
Rio Tinto Holdings Jersey Limited; Jersey [(b)]	US$1.00 Ordinary shares	100
Rio Tinto Holdings LLC; Mongolia	MNT20,000.00 Ordinary shares	100
Rio Tinto Hydrogen Energy Australia Pty Limited; Australia [(a)]	AUD Ordinary shares	100
Rio Tinto Hydrogen Energy LLC; United States [(c)]	–	–
Rio Tinto ICT Limited; Cyprus	US$10.00 Class 'A' Ordinary shares	100
Rio Tinto India Private Limited; India	INR10.00 Ordinary shares	100
Rio Tinto Indonesian Holdings Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto International Holdings Limited; United Kingdom [(b)]	£1.00 Ordinary shares	100
Rio Tinto International Trading (Shanghai) Co Ltd; China	US$1.00 Ordinary shares	100
Rio Tinto Investments Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Investments One Pty Limited; Australia	AUD Ordinary shares	100
Rio Tinto Investments Two Pty Limited; Australia	AUD Ordinary shares	100
Rio Tinto Iron & Titanium GmbH; Germany [(c)]	–	–
Rio Tinto Iron & Titanium Holdings GmbH; Germany [(c)]	–	–
Rio Tinto Iron & Titanium Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Iron and Titanium Canada Inc. / Rio Tinto Fer et Titane Canada Inc.; Canada	CAD Common shares	100
Rio Tinto Iron Ore Asia Pte Ltd; Singapore	US$1.00 Ordinary shares	100
Rio Tinto Iron Ore Atlantic Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Iron Ore Europe S.A.S.; France	€100.00 Ordinary shares	100
Rio Tinto Iron Ore Trading China Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Japan Ltd; Japan	JPY500.00 Ordinary shares	100
Rio Tinto Jersey Holdings 2010 Limited; Jersey	US$ Ordinary shares	100
Rio Tinto Korea Ltd; Korea, Republic of	KRW10,000.00 Ordinary shares	100
Rio Tinto Logistic Services Pty Ltd; Australia [(a)]	AUD Ordinary shares	100
Rio Tinto London Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Management Services South Africa (Proprietary) Ltd; South Africa	ZAR2.00 Ordinary shares	100
Rio Tinto Marketing Pte. Ltd.; Singapore	SGD1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto Marketing Services Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Medical Plan Trustees Limited; United Kingdom	£1.00 Ordinary shares	100

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Rio Tinto Metals Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto Minera Peru Limitada SAC; Peru	PEN100.00 Ordinary shares	100
Rio Tinto Mineracao do Brasil Ltda; Brazil	BRL1.00 Quotas shares	100
Rio Tinto Minerals Asia Pte Ltd; Singapore	SGD1.00 Ordinary SGD shares	100
	US$1.00 Ordinary USD shares	100
Rio Tinto Minerals Development Limited; United Kingdom	£0.25 Ordinary shares	100
Rio Tinto Minerals Inc.; United States	US$0.01 Common shares	100
Rio Tinto Mining and Exploration Inc.; United States	US$1.00 Common shares	100
Rio Tinto Mining and Exploration Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Mining and Exploration S.A.C.; Peru	PEN0.50 Ordinary shares	100
Rio Tinto Namibian Holdings Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Nickel Company; United States	US$0.01 Common shares	100
Rio Tinto Nominees Limited; United Kingdom	£1.00 Ordinary shares	100
Rio Tinto Orissa Mining Private Ltd; India	INR100.00 Ordinary shares	51
Rio Tinto OT Management Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Overseas Holdings Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto Pension Investments Limited; United Kingdom [b]	£1.00 Ordinary shares	100
Rio Tinto Peru Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto PNG Limited; Papua New Guinea [a]	PGK1.00 Ordinary shares	100
Rio Tinto Potash Management Inc. / Rio Tinto Potasse Management Inc.; Canada	CAD Common shares	100
Rio Tinto Procurement (Singapore) Pte Ltd; Singapore	US$1.00 Ordinary shares	100
Rio Tinto Pte Ltd; Singapore	SGD1.00 Ordinary shares	100
	SGD1.00 Preference Shares	100
Rio Tinto Saskatchewan Management Inc.; Canada	CAD Common shares	100
Rio Tinto Saskatchewan Potash Holdings General Partner Inc.; Canada	CAD Common shares	100
Rio Tinto Saskatchewan Potash Holdings Limited Partnership; Canada [c]	–	–
Rio Tinto Services Inc.; United States	US$0.01 Common shares	100
Rio Tinto Services Limited; Australia [a]	AUD Class Z shares	100
	AUD Ordinary shares	100
Rio Tinto Severo Zapad Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Shared Services Pty Limited; Australia	AUD Ordinary shares	100
Rio Tinto Shipping (Asia) Pte. Ltd.; Singapore	US$1.00 Ordinary shares	100
Rio Tinto Shipping Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Shipping Pty. Limited.; Australia [a]	AUD Ordinary shares	100
Rio Tinto Simfer UK Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Singapore Holdings Pte Ltd; Singapore	SGD1.00 Ordinary SGD shares	100
	US$ Ordinary USD shares	100
Rio Tinto Sohar Logistics LLC; Oman	OMR1.00 Ordinary shares	70
Rio Tinto South East Asia Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Rio Tinto Staff Fund Pty Limited; Australia [a]	AUD Ordinary shares	100
Rio Tinto Sulawesi Holdings Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Technological Resources Inc.; United States	US$0.01 Common shares	100
Rio Tinto Technological Resources UK Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Trading (Shanghai) Co., Ltd.; China	US$ Capital Contribution shares	100
Rio Tinto Uranium Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Uranium Services Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Vostok Limited; United Kingdom	US$1.00 Ordinary shares	100
Rio Tinto Western Holdings Limited; United Kingdom	£1.00 Ordinary shares	100
	US$1.00 Ordinary shares	100
Riversdale Anthracite Colliery (Proprietary) Ltd; South Africa	ZAR2.00 Ordinary shares	74

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47 Related undertakings continued

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Riversdale Connections (Proprietary) Ltd; South Africa	ZAR1.00 Ordinary shares	100
Riversdale Holdings (Proprietary) Ltd; South Africa	ZAR1.00 Ordinary shares	100
Robe River Limited; Australia	AUD Ordinary shares	100
Robe River Mining Co. Pty. Ltd.; Australia	AUD A shares	40
	AUD B shares	76.4
Rocklea Station Pty Ltd; Australia	AUD Ordinary shares	100
Rössing Uranium Limited; Namibia	NAD1.00 "B" Shares	71.2
	NAD0.10 "C" Shares	70.6
RTA AAL Australia Limited; Australia	AUD Ordinary shares	100
	AUD Ordinary shares	100
	AUD Ordinary shares	100
	AUD Ordinary 1 shares	100
RTA Boyne Limited; Australia	AUD Ordinary shares	100
RTA Holdco 1 Limited; United Kingdom	US$0.0001 Ordinary shares	100
RTA Holdco 4 Limited; United Kingdom	US$1.00 Ordinary shares	100
	US$0.732815 Ordinary shares	100
RTA Holdco 7 Limited; United Kingdom	US$0.001 Class A Preference Shares	100
	US$1.00 Ordinary Shares	100
RTA Holdco 8 Limited; United Kingdom	US$0.001 Class A Preference shares	100
	US$1.00 Ordinary shares	100
RTA Holdco Australia 1 Pty Ltd; Australia	AUD Ordinary shares	100
	AUD Ordinary shares	100
	AUD Ordinary shares	100
	AUD Ordinary shares	100
	AUD Ordinary shares	100
RTA Holdco Australia 3 Pty Ltd; Australia	AUD Ordinary shares	100
RTA Holdco Australia 5 Pty Ltd; Australia	AUD Ordinary shares	100
RTA Holdco Australia 6 Pty Ltd; Australia	AUD Ordinary shares	100
	AUD Ordinary shares	100
RTA Pacific Pty Limited; Australia	AUD Ordinary shares	100
	AUD Ordinary shares	100
RTA Resources Pty Limited; Australia	AUD Ordinary shares	100
RTA Sales Pty Ltd; Australia	AUD Class A shares	100
	AUD Class B shares	100
RTA Smelter Development Pty Limited; Australia	AUD Ordinary shares	100
RTA Weipa Pty Ltd; Australia	AUD Ordinary shares	100
RTA Yarwun Pty Ltd; Australia	AUD Ordinary shares	100
RTAlcan 1 LLC; United States	US$ Class A Preferred shares	100
	US$ Common shares	100
RTAlcan 2 LLC; United States	US$ Common shares	100
RTAlcan 3 LLC; United States	US$ Common shares	100
RTLDS Aus Pty. Ltd; Australia [(a)]	AUD Ordinary shares	100
RTLDS UK Limited; United Kingdom	£1.00 Ordinary shares	100
RTMDC LLC; Mongolia	MNT1,240.00 Common shares	100
RTPDS Aus Pty Ltd; Australia	AUD Ordinary shares	100
Saryarka B.V.; Netherlands	€200.00 Ordinary shares	75
Savoie Services Y.K.; Japan	JPY50,000.00 Ordinary shares	100
Scheuch Unterstuetzungskasse GmbH; Germany	€51.129 Ordinary shares	100
SGLS LLC; Mongolia	MNT10,000.00 Common shares	100
Simfer Jersey Finance 1 Ltd; Jersey	US$ Ordinary shares	100
Simfer Jersey Finance 2 Ltd; Jersey	US$ Ordinary shares	53
Simfer Jersey Limited; Jersey	US$ Ordinary shares	53
Simfer Jersey Nominee Limited; United Kingdom	£1.00 Ordinary shares	100
SIMFER S.A.; Guinea	GNF100,000.00 Ordinary shares	87.9
Singapore Metals Pte. Ltd.; Singapore	US$ Ordinary shares	100
Skeleton Coast Diamonds Limited; Namibia	NAD2.00 Ordinary shares	100
Skymont Corporation; United States	US$ Common shares	100

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Société De Financement Des Risques Industriels; Luxembourg	€ Ordinary shares	100
Société D'entreprises, Carrières Et Mines De L'Esterel; France	€9.33 Ordinary shares	100
Société Générale de Recherches et d'exploitations Minières; France	€0.02 Ordinary shares	100
Société Immobilière Alpes Provence; France	€15.00 Ordinary shares	100
Société Minière Et De Participations Guinée-Alusuisse*; Guinea (c)	–	–
Société Port D'Ehoala S.A.; Madagascar	US$100.00 Ordinary shares	99.9
Sohio Western Mining Company; United States	US$100.00 common shares	100
Southern Copper Pty. Limited; Australia	AUD A shares	100
	AUD B shares	100
	AUD Non Cumulative Redeemable Preference shares	100
	AUD Ordinary shares	100
Spinacia Holdings Limited; Cyprus	€1.00 Ordinary shares	100
Swift Current Land & Cattle LLC; United States (c)	–	–
Swiss Aluminium Australia Limited; Australia	AUD Ordinary shares	100
	AUD Stock Unit Shares A	100
	AUD Stock Unit Shares B	100
	AUD Stock Unit Shares C	100
TBAC Limited; United Kingdom	£1.00 Ordinary shares	100
Technological Resources Pty. Limited; Australia (a)	AUD A shares	100
	AUD B shares	100
The Barrier Corporation (Vic.) Pty. Limited; Australia (a)	AUD Ordinary shares	100
The Kelian Community and Forest Protection Trust; Singapore (c)	–	–
The Pyrites Company, Inc.; United States	US$1.00 Common shares	100
The Roberval and Saguenay Railway Company/ La Compagnie du Chemin de Fer Roberval Saguenay; Canada	CAD100.00 Ordinary shares	100
	CAD100.00 Preference shares 6% Non-Cumulative	100
The Zinc Corporation Pty Ltd; Australia	AUD Ordinary shares	100
	AUD Z Class Ordinary shares	100
Thos. W. Ward Limited; United Kingdom	£0.25 Ordinary shares	100
THR Aruba Holdings LLC A.V.V.; Aruba	US$1.00 Common shares	100
THR Delaware Holdings, LLC; United States (c)	–	–
THR Kharmagtai Pte Ltd.; Singapore	US$ Ordinary shares	100
THR MINES (BC) LTD.; Canada	CAD Common shares	100
	US$ Common shares	100
THR Mines Services Co. Ltd.; Canada	CAD Common shares	100
THR Mongolia Development Inc.; Virgin Islands, British	US$1.00 Common shares	100
THR OYU TOLGOI LTD.; Virgin Islands, British	US$1.00 Ordinary shares	100
THR Ulaan Pte. Ltd.; Singapore	US$ Ordinary shares	100
Three Crowns Insurance Company Limited; Bermuda	£1.00 Common shares	100
Tinto Holdings Australia Pty. Limited; Australia	AUD A shares	100
	AUD Ordinary shares	100
Tisand (Proprietary) Limited; South Africa	ZAR1.00 A Ordinary shares	100
	ZAR1.00 B Ordinary shares	100
	ZAR1,000.00 Cumulative Preference Shares	100
Tomago Aluminium Company Pty Limited; Australia	AUD Class A Shares	51.6
Trans Territory Pipeline Pty Limited; Australia	AUD Ordinary shares	100
Turquoise Hill Netherlands Cooperatif UA; Netherlands	US$ COOP share shares	100
Turquoise Hill Resources Limited Luxembourg Branch; Luxembourg (c)	–	–
Turquoise Hill Resources Ltd.; Canada	CAD Common shares	50.8
Turquoise Hill Resources Philippines Inc.; Philippines	PHP100.00 Common shares	99.9
Turquoise Hill Resources Singapore Pte Ltd.; Singapore	SGD1.00 Common shares	100
U.S. Borax Inc.; United States	US$0.10 Common shares	100
Union Creek Ranch LLC; United States (c)	–	–
Union Générale Industrielle Africaine; Morocco	MAD100.00 Ordinary shares	100
Victoria Technology Inc.; United States (a)	US$1.00 Ordinary shares	100

Notes to the 2015 financial statements
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47 Related undertakings continued

Subsidiaries Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Vostin Pty. Limited; Australia [(a)]	AUD Ordinary shares	100
Waste Solutions and Recycling LLC; United States	US$ Units shares	100
West Kutai Foundation Limited; Singapore [(c)]	–	–
Wimmera Industrial Minerals Pty. Limited; Australia [(a)]	AUD Ordinary shares	100
Winchester South Development Company Proprietary Limited; Australia	AUD Ordinary shares	100
Wyoming Coal Resources Company; United States	US$0.01 Common shares	100
Yalleen Pastoral Co Pty Ltd; Australia	AUD Ordinary shares	63.7
Zululand Anthracite Colliery (Proprietary) Ltd; South Africa	ZAR1.00 Ordinary shares	74
Zululand Titanium (Pty) Ltd; South Africa	ZAR1.00 Ordinary shares	100

Associated undertakings (equity accounted entities) Name of undertaking and country of incorporation	Share class	% of share class held by Group companies
Alufluor AB; Sweden	SEK1,000.00 Ordinary shares	50
Bengalla Coal Sales Co Pty Ltd; Australia	AUD Ordinary shares	40
Bengalla Mining Company Pty Ltd; Australia	AUD Ordinary shares	40
CanPacific Potash Inc.; Canada [(e)]	–	–
Channar Investment Nominee Pty Limited; Australia	AUD Ordinary shares	100
Chinalco Rio Tinto Exploration Co. Ltd; China	CNY1.00 Capital Contribution (Ordinary shares)	49
Dalrymple Bay Coal Terminal Pty Ltd; Australia	AUD Ordinary (AUD0.18 paid on 25/06/1981) shares	32.1
DB Trail Crossing, LLC; United States [(e)]	–	–
Develor Enterprises Limited; Cyprus	€1.71 Ordinary shares	50
Empresa de Mineracao Finesa Ltda.; Brazil	BRL Quotas shares	49
Enarotali Gold Project Limited; Jersey	£0.001 Ordinary shares	25
Fabrica De Plasticos Mycsa, S.A.; Venezuela, Bolivarian Republic of	VEF1.00 Common shares	49
Global Hubco BV; Netherlands	€1.00 Ordinary shares	33.3
Halco (Mining) Inc.; United States	US$100.00 Ordinary shares	45
Half-Tide Marine Pty Ltd; Australia	AUD Ordinary shares	48.6
Hope Downs Marketing Company Pty Ltd; Australia	AUD A Class shares	100
Hunter Valley Resources Pty Ltd; Australia	AUD A Class Shares	100
Hydrogen Energy International LLC; United States [(e)]	–	–
Leichhardt Coal Pty Limited; Australia	AUD Ordinary shares	44.7
Minera Escondida Ltda; Chile [(e)]	–	–
Mineracao Tabuleiro Ltda; Brazil	BRL Quotas shares	48
Northern Land Company Ltd; Canada	CAD1.00 Ordinary shares	50
Oyu Tolgoi LLC; Mongolia	MNT10,000.00 Common shares	66
Port Waratah Coal Services Ltd; Australia	AUD Ordinary shares	66.9
Procivis Savoie; France	€19.00 Ordinary shares	22.1
Rightship Pty Ltd; Australia	AUD Ordinary shares	33.3
Sohar Aluminium Co. L.L.C.; Oman	OMR1.00 Ordinary shares	20
Warkworth Coal Sales Ltd; Australia	AUD Ordinary shares	55.5
Warkworth Mining Limited; Australia	AUD Ordinary shares	55.5
Warkworth Pastoral Co Pty Ltd; Australia	AUD Ordinary shares	55.5
Warkworth Tailings Treatment Pty Ltd; Australia	AUD Ordinary shares	55.5

Joint Ventures (proportionately consolidated entities)

Name of undertaking and country of operation	Address of principal place of business	Capital % owned by Group
Aluminerie Alouette Inc.; Canada	400, Chemin de la Pointe-Noire, C.P. 1650, Sept-Îles Québec G4R 5M9, Canada	40
Aluminerie De Bécancour, Inc.; Canada	5555 Pierre Thibault Street, PO 30, Becancour, Quebec G0X 1B, Canada	25.2
Bao-HI Ranges Joint Venture; Australia	Level 22, 152-158 St Georges Terrace, Perth WA 6000, Australia	54
Bengalla Joint Venture; Australia	123 Albert Street, Brisbane QLD 4000, Australia	32
Channar Mining Joint Venture; Australia	Level 22, 152-158 St Georges Terrace, Perth WA 6000, Australia	60
Consórcio de Alumínio do Maranhão; Brazil	Av. Engenheiro Emiliano Macieira, KM18, Estiva, 65095-604, Sao Luis, Maranhao, Brazil	10
Diavik Joint Venture; Canada	P.O. Box 2498, 5007-50th Avenue, Yellowknife NT X1A 2P8, Canada	60
Gladstone Power Station Joint Venture; Australia	NRG Gladstone Operating Service, Gladstone Power Station, Gladstone QLD 4680, Australia	42.1
Grasberg Joint Venture; Indonesia	Jl Mandala Raya Selatan, No.1 Kuala Kencana, Timika, Irian Jaya, 98663, Indonesia	40
Hail Creek Joint Venture; Australia	123 Albert Street, Brisbane QLD 4000, Australia	82
Hope Downs Joint Venture; Australia	Level 22, 152-158 St Georges Terrace, Perth WA 6000, Australia	50
Kestrel Joint Venture; Australia	123 Albert Street, Brisbane QLD 4000, Australia	80
New Zealand Aluminium Smelters Ltd; New Zealand	Level 6, 109 Featherston Street, Wellington, 6011, New Zealand	79.4
Pechiney Reynolds Quebec, Inc.; United States	8770 West Bryn Mawr Avenue, Chicago, Illinois 60631-3657, U.S.A.	50.2
Queensland Alumina Limited; Australia	Plant Operations Building, Parsons Point, Gladstone QLD 4680, Australia	80
Robe River Iron Associates Joint Venture; Australia	Level 27, Central Park, 152-158 St. Georges Terrace, PERTH WA 6850, Australia	57.1
Robe River Ore Sales Pty. Ltd.; Australia	Level 27, Central Park, 152-158 St. Georges Terrace, PERTH WA 6000, Australia	57.1
Tomago Aluminium Joint Venture; Australia	638 Tomago Road, NSW 2324, Tomago, Australia	51.6
Warkworth Joint Venture; Australia	123 Albert Street, Brisbane QLD 4000, Australia	44.5
Winchester South Joint Venture; Australia	123 Albert Street, Brisbane QLD 4000, Australia	75
Winter Road Joint Venture; Canada	P.O. Box 2498, 5007-50th Avenue, Yellowknife NT X1A 2P8, Canada	33.3
Yarraloola Pastoral Co; Australia	Level 27, Central Park, 152-158 St. Georges Terrace, PERTH WA 6850, Australia	57.1

(a) Directly held by Rio Tinto Limited.
(b) Directly held by Rio Tinto plc.
(c) Group ownership is held through an interest in capital. The entity has no classes of shares.
(d) Company limited by guarantee.
(e) Group ownership in the associate is held through an interest in capital. The entity has no classes of shares.
(f) All joint ventures are governed by a joint venture agreement.

Rio Tinto plc

Company balance sheet

As at 31 December	Note	2015 US$m	2014 US$m
Fixed assets			
Investments	B	**36,180**	36,139
		36,180	36,139
Current assets			
Amounts owed by subsidiaries	C	**883**	940
Cash at bank and in hand		**4**	3
		887	943
Creditors – amounts falling due within one year			
Amounts owed to subsidiaries	D	**(12,079)**	(11,922)
Dividends payable		**(18)**	(17)
		(12,097)	(11,939)
Net current liabilities		**(11,210)**	(10,996)
Total assets less current liabilities		**24,970**	25,143
Net assets		**24,970**	25,143
Capital and reserves			
Called up share capital	E	**224**	230
Share premium account		**4,300**	4,288
Other reserves	F	**11,988**	11,982
Profit and loss account		**8,458**	8,643
Equity shareholders' funds		**24,970**	25,143

The Rio Tinto plc company balance sheet has been prepared in accordance with Financial Reporting Standard 101 "Reduced Disclosure Framework" (FRS 101). Note A explains the principal accounting policies.

Profit after tax and total comprehensive income for the year amounted to US$2,863 million (2014: US$4,821 million). As permitted by section 408 of the UK Companies Act 2006, no profit and loss account for the Rio Tinto plc parent company is shown.

The Rio Tinto plc company balance sheet, profit and loss account and the related notes were approved by the directors on 2 March 2016 and the balance sheet is signed on their behalf by

Jan du Plessis
Chairman

Sam Walsh AO
Chief executive

Chris Lynch
Chief financial officer

Rio Tinto plc

Registered number: 719885

Company statement of changes in equity

Year ended 31 December 2015	Share capital US$m	Share premium account US$m	Other reserves US$m	Profit and loss account US$m	Total equity US$m
Opening balance	230	4,288	11,982	8,643	25,143
Profit for the financial year (comprehensive income)	–	–	–	2,863	2,863
Dividends	–	–	–	(3,119)	(3,119)
Proceeds from issue of shares	–	12	–	1	13
Share buy-back	(6)	–	6	–	–
Share-based payments	–	–	–	70	70
Total	224	4,300	11,988	8,458	24,970

Year ended 31 December 2014	Share Capital US$m	Share premium account US$m	Other reserves US$m	Profit and loss account US$m	Total equity US$m
Opening balance	230	4,269	11,982	6,599	23,080
Profit for the financial year (comprehensive income)	–	–	–	4,821	4,821
Dividends	–	–	–	(2,857)	(2,857)
Proceeds from issue of shares	–	19	–	3	22
Share-based payments	–	–	–	77	77
Total	230	4,288	11,982	8,643	25,143

A Principal accounting policies

a. Basis of preparation

Rio Tinto plc has transitioned from the previously extant UK Generally Accepted Accounting Practice (UK GAAP) to Financial Reporting Standard 101 "Reduced disclosure framework", (FRS 101), for all periods presented. There were no measurement or recognition adjustments for the Company on the adoption of FRS 101.

The Rio Tinto plc company financial statements have been prepared using the historical cost convention, as modified by the revaluation of certain financial liabilities and in accordance with the UK Companies Act 2006. The financial statements have been prepared on a going concern basis.

The accounting policies set out below have been applied consistently to all periods presented in these financial statements. The following exemptions available under FRS 101 have been applied:

- Paragraphs 45(b) and 46 to 52 of IFRS 2, "Share-based payment" (details of the number and weighted average exercise prices of share options, and how the fair value of goods and services received was determined.)
- Paragraphs 91-99 of IFRS 13 "Fair value measurement" (disclosure of valuation techniques and inputs used for fair value measurement of assets and liabilities).
- IFRS 7 "Financial Instruments: Disclosures".
- Paragraph 38 of IAS 1 "Presentation of financial statements", comparative information requirements in respect of Paragraph 79(a)(iv) of IAS 1.
- The following paragraphs of IAS 1 "Presentation of financial statements":
  - 10(d) (statement of cash flows);
  - 16 (statement of compliance with all IFRS);
  - 38A (requirement for minimum of two primary statements, including cash flow statements);
  - 38B-D (additional comparative information);
  - 111 (cash flow statement information); and
  - 134-136 (capital management disclosures).
- IAS 7 "Statement of cash flows".
- Paragraph 30 and 31 of IAS 8 "Accounting policies, changes in accounting estimates and errors" (requirement for the disclosure of information when an entity has not applied a new IFRS that has been issued and is not yet effective).
- Paragraph 17 of IAS 24 "Related party disclosures" (key management compensation).
- The requirements of IAS 24, "Related party disclosures" to disclose related-party transactions entered into between two or more members of a group.

b. Judgments in applying accounting policies and key sources of estimation uncertainty

The preparation of the financial statements requires management to make assumptions, judgments and estimates and to use judgment in applying accounting policies and making critical accounting estimates. These judgments, estimates and assumptions are based on management's best knowledge of the relevant facts and circumstances, having regard to previous experience, but actual results may differ materially from the amounts included in the financial statements.

The key area of judgment that has the most significant effect on the amounts recognised in the financial statements is the review for impairment of investment carrying values.

c. Currency translation

Items included in the financial statements are measured using the currency of the primary economic environment in which the Company operates (the functional currency). The financial statements are presented in US dollars, which is the Company's functional and presentation currency. Transactions denominated in other currencies, including the issue of shares, are translated into the functional currency using the exchange rates prevailing at the date of the transaction.

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 profit and loss account.

Exchange rates used are consistent with the rates used by the Group as disclosed in the consolidated financial statements (note 41).

d. Investments

Fixed asset investments are valued at cost less accumulated impairment losses. Investments are reviewed for impairment if events or changes in circumstances indicate that the carrying amount may not be recoverable.

e. Financial guarantees

Financial guarantees are recognised initially at fair value. Subsequently, the liability is measured at the higher of the best estimate of the expenditure required to settle the present obligation and the amount initially recognised less cumulative amortisation.

f. Share-based payments

The Company operates a number of share-based payment plans for Group employees, the details of which are included in the consolidated financial statements (note 44). The fair value of the Company's share plans is recognised as an addition to the cost of the investment in the subsidiary in which the relevant employees work over the expected vesting period, with a corresponding entry to the profit and loss account reserve. Payments received from the Company's subsidiaries in respect of these share-based payments are recognised as a reduction in the cost of the investment. The Company uses fair values provided by independent actuaries calculated using either a lattice-based option valuation model or a Monte Carlo simulation model. The fair value of the share plans is determined at the date of grant, taking into account any market-based vesting conditions attached to the award.

Non-market based vesting conditions (eg earnings per share targets) are taken into account in estimating the number of awards likely to vest. The estimate of the number of awards likely to vest is reviewed at each balance sheet date up to the vesting date, at which point the estimate is adjusted to reflect the actual awards issued. No adjustment is made after the vesting date even if the awards are forfeited or not exercised.

g. Dividend income

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

h. Treasury shares

The consideration paid for shares repurchased by the Company and held as treasury shares is recognised as a reduction in shareholders' funds through the profit and loss account.

B Fixed assets

	2015 US$m	2014 US$m
Investments in Group companies:		
At 1 January	**36,139**	36,107
Additions	**70**	78
Other adjustments	**(29)**	(46)
At 31 December	**36,180**	36,139

At 31 December 2015 the Company had the following principal subsidiaries:

Company	Principal activity	Country of incorporation	Percentage shareholding
Rio Tinto International Holdings Limited	Holding company	UK	100
Rio Tinto European Holdings Limited	Holding company	UK	100

In accordance with Section 409 of the UK Companies Act 2006, a full list of related undertakings is disclosed in the consolidated financial statements (note 47).

C Amounts owed by subsidiaries

Amounts owed by subsidiaries includes US$833 million (31 December 2014: US$922 million), which is subject to interest based on LIBOR, is unsecured and repayable on demand.

D Amounts owed to subsidiaries

Amounts owed to subsidiaries include US$11,970 million (31 December 2014: US$11,887 million) which is subject to interest rates based on LIBOR, is unsecured and repayable on demand.

E Share capital

	2015 US$m	2014 US$m
Issued and fully paid up share capital of 10p each [(a)]		
At 1 January	**230**	230
Ordinary shares purchased and cancelled [(b)]	**(6)**	–
At 31 December	**224**	230

(a) 21,709 new shares (2014: 971 new shares) were issued during the year and 789,887 shares (2014: 1,450,659 shares) were reissued from treasury pursuant to share plans.

(b) During the year 40,912,881 shares (2014: nil) were purchased from Rio Tinto Limited and immediately cancelled.

F Other reserves

Other reserves include US$11,936 million which represents the difference between the nominal value and issue price of the shares issued arising from Rio Tinto plc's rights issue completed in July 2009.

G Guarantees

Rio Tinto plc provides a number of guarantees in respect of Group companies.

Rio Tinto plc and Rio Tinto Limited have jointly guaranteed the Group's external listed debt under the US Shelf Programme, European Debt Issuance Programme and Commercial Paper Programme which totalled US$19.4 billion at 31 December 2015 (31 December 2014: US$20.8 billion). In addition, these entities also jointly guarantee the Group's undrawn credit facility which was US$7.5 billion at 31 December 2015 (31 December 2014: US$7.5 billion). Rio Tinto plc has provided guarantees in respect of certain derivative contracts that are in a liability position of US$275 million at 31 December 2015 (31 December 2014: US$55 million). The fair value of financial guarantees has been determined as US$nil (31 December 2014: US$nil).

Rio Tinto plc has provided a number of guarantees in relation to various pension funds. Subject to certain conditions, Rio Tinto plc would pay any contributions due from Group companies participating in these funds in the event that the companies fail to meet their contribution requirements. The guarantees were not called upon in 2015. The aggregate of company contributions to these plans in 2015 was US$107 million (2014: US$65 million).

Other guarantees issued by Rio Tinto plc in relation to Rio Tinto Group entities as at 31 December 2015 amount to US$328 million (31 December 2014: US$439 million). Included within this balance is US$59 million (31 December 2014: US$59 million) in relation to non-wholly owned subsidiaries.

Pursuant to the DLC Merger, both Rio Tinto plc and Rio Tinto Limited issued deed poll guarantees by which each company guaranteed contractual obligations incurred by the other or guaranteed by the other.

Rio Tinto financial information by business unit

	Rio Tinto interest %	Gross revenue [a] for the year ended 31 December 2015 US$m	2014 US$m	2013 US$m	EBITDA [b] for the year ended 31 December 2015 US$m	2014 US$m	2013 US$m	Net earnings [c] for the year ended 31 December 2015 US$m	2014 US$m	2013 US$m
Iron Ore										
Pilbara	(d)	**13,886**	21,482	23,633	**7,730**	13,701	16,511	**4,013**	7,956	9,568
Iron Ore Company of Canada	58.7	**1,353**	1,696	2,258	**197**	516	927	**12**	144	305
Product group operations		**15,239**	23,178	25,891	**7,927**	14,217	17,438	**4,025**	8,100	9,873
Evaluation projects/other		**66**	103	103	**(55)**	27	4	**(73)**	7	(15)
		15,305	23,281	25,994	**7,872**	14,244	17,442	**3,952**	8,107	9,858
Aluminium	(e)									
Bauxite		**2,057**	1,956	2,012	**937**	752	765	**542**	429	377
Alumina		**2,145**	2,158	2,090	**(47)**	(54)	(226)	**(187)**	(209)	(265)
Intersegment		**(849)**	(834)	(739)	**–**	–	–	**–**	–	–
Bauxite & Alumina		**3,353**	3,280	3,363	**890**	698	539	**355**	220	112
Primary Metal		**4,931**	5,867	5,771	**1,245**	1,604	976	**446**	629	200
Pacific Aluminium		**2,254**	2,483	2,348	**408**	524	252	**147**	291	126
Intersegment & Other		**(1,876)**	(2,087)	(2,087)	**132**	(43)	8	**92**	(6)	15
Integrated operations		**8,662**	9,543	9,395	**2,675**	2,783	1,775	**1,040**	1,134	453
Other product group items		**1,374**	2,373	2,866	**(76)**	36	32	**(50)**	26	28
Product group operations		**10,036**	11,916	12,261	**2,599**	2,819	1,807	**990**	1,160	481
Evaluation projects/other		**81**	207	202	**143**	111	87	**128**	88	76
		10,117	12,123	12,463	**2,742**	2,930	1,894	**1,118**	1,248	557
Copper & Coal										
Rio Tinto Kennecott	100.0	**1,403**	2,186	2,194	**437**	958	840	**44**	523	428
Escondida	30.0	**1,855**	2,282	2,566	**760**	1,292	1,453	**281**	612	777
Grasberg joint venture	(f)	**–**	49	39	**(17)**	6	2	**(34)**	(17)	(21)
Oyu Tolgoi & Turquoise Hill	(g)	**1,636**	1,765	237	**501**	366	(345)	**57**	(20)	(164)
Palabora	(h)	**–**	–	526	**–**	–	105	**–**	–	42
Northparkes	(h)	**–**	–	351	**–**	–	227	**–**	–	141
Copper Operations		**4,894**	6,282	5,913	**1,681**	2,622	2,282	**348**	1,098	1,203
Copper Evaluation projects/other	(i)	**–**	–	–	**(186)**	(231)	(350)	**(111)**	(147)	(232)
Total Copper		**4,894**	6,282	5,913	**1,495**	2,391	1,932	**237**	951	971
Rio Tinto Coal Australia	(j)	**2,757**	3,560	4,413	**497**	450	1,041	**48**	21	367
Rio Tinto Coal Mozambique	(k)	**–**	59	88	**–**	(96)	(114)	**–**	(93)	(142)
Coal Operations		**2,757**	3,619	4,501	**497**	354	927	**48**	(72)	225
Coal Evaluation projects/other		**54**	48	–	**(5)**	(5)	(85)	**(3)**	(11)	(68)
Total Coal	(q)	**2,811**	3,667	4,501	**492**	349	842	**45**	(83)	157
Other product group items		**–**	8	20	**(19)**	(58)	(207)	**(8)**	(37)	(163)
		7,705	9,957	10,434	**1,968**	2,682	2,567	**274**	831	965
Diamonds & Minerals										
Diamonds	(l)	**698**	901	852	**293**	315	257	**79**	104	53
Rio Tinto Iron & Titanium	(m)	**1,571**	2,168	2,251	**435**	689	728	**116**	248	264
Rio Tinto Minerals		**624**	675	657	**178**	212	205	**103**	121	131
Dampier Salt	68.4	**306**	398	404	**71**	67	43	**24**	18	7
Uranium	(q)	**474**	633	936	**1**	(77)	119	**(42)**	(117)	(85)
Product group operations		**3,673**	4,775	5,100	**978**	1,206	1,352	**280**	374	370
Simandou iron ore project		**–**	–	–	**(87)**	(97)	(71)	**(41)**	(55)	(43)
Evaluation projects/other		**1**	8	29	**(58)**	(64)	(110)	**(50)**	(50)	(90)
		3,674	4,783	5,129	**833**	1,045	1,171	**189**	269	237
Other Operations	(n)	**13**	241	1,761	**(81)**	(287)	(398)	**(88)**	(240)	(279)
Intersegment transactions		**(29)**	(344)	(1,182)	**–**	–	(4)	**–**	–	(4)
Product group total		**36,785**	50,041	54,599	**13,334**	20,614	22,672	**5,445**	10,215	11,334

	Rio Tinto interest %	Gross revenue (a) for the year ended 31 December			EBITDA (b) for the year ended 31 December			Net earnings (c) for the year ended 31 December		
		2015 US$m	2014 US$m	2013 US$m	**2015 US$m**	2014 US$m	2013 US$m	**2015 US$m**	2014 US$m	2013 US$m
Other items					**(546)**	(755)	(995)	**(375)**	(593)	(730)
Exploration and evaluation					**(167)**	(194)	(168)	**(141)**	(156)	(145)
Net interest								**(389)**	(161)	(242)
Underlying EBITDA/earnings					**12,621**	19,665	21,509	**4,540**	9,305	10,217
Items excluded from underlying EBITDA/ earnings		**(1)**	–	(24)	**(563)**	(825)	(556)	**(5,406)**	(2,778)	(6,552)
EBITDA/net (loss)/earnings					**12,058**	18,840	20,953	**(866)**	6,527	3,665
Reconciliation to Group income statement										
Share of equity accounted unit sales and intra-subsidiary/equity accounted units sales		**(1,955)**	(2,377)	(3,404)						
Depreciation & amortisation in subsidiaries excluding capitalised depreciation					**(4,553)**	(4,828)	(4,470)			
Impairment charges, net of reversals					**(2,791)**	(221)	(7,545)			
Depreciation & amortisation in equity accounted units					**(462)**	(472)	(401)			
Taxation and finance items in equity accounted units					**(276)**	(759)	(625)			
Consolidated sales revenue/Profit on ordinary activities before finance items and tax		**34,829**	47,664	51,171	**3,976**	12,560	7,912			

Rio Tinto financial information by business unit
continued

	Rio Tinto interest %	Capital expenditure (o) for the year ended 31 December			Depreciation & amortisation for the year ended 31 December			Operating assets (p) as at			Employees for the year ended 31 December		
		2015 US$m	2014 US$m	2013 US$m	**2015 US$m**	2014 US$m	2013 US$m	**2015 US$m**	2014 US$m	2013 US$m	**2015 Number**	2014 Number	2013 Number
Iron Ore													
Pilbara	(d)	**1,608**	4,038	6,480	**1,744**	1,789	1,461	**16,848**	19,524	19,498	**11,097**	12,032	12,143
Iron Ore Company of Canada	58.7	**118**	173	334	**162**	164	166	**1,155**	1,460	1,553	**2,316**	2,580	2,620
Other		**–**	–	–	**–**	–	–	**2**	3	11	**–**	–	18
		1,726	4,211	6,814	**1,906**	1,953	1,627	**18,005**	20,987	21,062	**13,413**	14,612	14,781
Aluminium	(e)												
Bauxite		**159**	122	144	**112**	126	130	**1,050**	1,366	1,454	**2,603**	2,613	2,525
Alumina		**158**	166	166	**207**	212	232	**2,698**	3,166	3,609	**2,287**	2,228	2,163
Bauxite & Alumina		**317**	288	310	**319**	338	362	**3,748**	4,532	5,063	**4,890**	4,841	4,688
Primary Metal		**1,249**	1,781	1,767	**629**	692	666	**10,326**	11,455	12,165	**7,980**	9,270	10,414
Pacific Aluminium		**126**	129	134	**212**	135	109	**1,198**	1,421	405	**2,339**	2,395	2,377
Intersegment and Other		**(10)**	(177)	15	**12**	15	14	**677**	889	1,181	**210**	311	318
Integrated Operations		**1,682**	2,021	2,226	**1,172**	1,180	1,151	**15,949**	18,297	18,814	**15,419**	16,817	17,797
Copper & Coal													
Rio Tinto Kennecott	100.0	**408**	642	783	**344**	324	296	**2,442**	2,603	2,634	**1,793**	1,976	2,093
Escondida	30.0	**770**	947	947	**293**	308	216	**3,485**	2,999	2,524	**1,159**	1,344	1,248
Grasberg joint venture	(f)	**179**	193	176	**43**	36	38	**1,016**	878	761	**2,868**	2,955	2,441
Oyu Tolgoi & Turquoise Hill	(g)	**92**	166	768	**416**	379	379	**3,597**	3,933	6,010	**2,798**	3,255	3,472
Palabora	(h)	**–**	–	18	**–**	–	–	**–**	–	–	**–**	–	1,145
Northparkes	(h)	**–**	–	18	**–**	–	25	**–**	–	–	**–**	–	269
Copper Operations		**1,449**	1,948	2,710	**1,096**	1,047	954	**10,540**	10,413	11,929	**8,618**	9,530	10,668
Copper Evaluation projects/ other	(i)	**3**	10	103	**4**	4	8	**153**	168	141	**158**	310	505
Total Copper		**1,452**	1,958	2,813	**1,100**	1,051	962	**10,693**	10,581	12,070	**8,776**	9,840	11,173
Rio Tinto Coal Australia	(j)	**108**	165	547	**336**	406	486	**2,137**	3,099	3,945	**3,157**	3,187	3,826
Rio Tinto Coal Mozambique	(k)	**–**	2	32	**–**	–	28	**–**	7	119	**–**	183	263
Coal Operations		**108**	167	579	**336**	406	514	**2,137**	3,106	4,064	**3,157**	3,370	4,089
Coal other		**4**	3	–	**5**	7	–	**2**	19	–	**809**	698	–
Total Coal	(q)	**112**	170	579	**341**	413	514	**2,139**	3,125	4,064	**3,966**	4,068	4,089
		1,564	2,128	3,392	**1,441**	1,464	1,476	**12,832**	13,706	16,134	**12,742**	13,908	15,262
Diamonds & Minerals													
Diamonds	(l)	**124**	148	319	**159**	168	168	**857**	1,124	1,279	**1,118**	1,268	1,255
Rio Tinto Iron & Titanium	(m)	**150**	185	274	**194**	233	264	**3,554**	4,424	4,859	**4,507**	4,787	4,955
Rio Tinto Minerals		**28**	69	115	**45**	41	36	**585**	650	669	**987**	1,024	1,110
Dampier Salt	68.4	**14**	21	28	**22**	28	29	**140**	193	228	**394**	479	512
Uranium	(q)	**39**	54	153	**65**	135	252	**(216)**	151	247	**1,329**	1,243	1,654
Simandou iron ore project		**91**	85	273	**1**	14	14	**(10)**	864	808	**912**	958	1,011
Other		**–**	–	–	**2**	–	2	**279**	571	618	**114**	109	123
		446	562	1,162	**488**	619	765	**5,189**	7,977	8,708	**9,361**	9,868	10,620
Other Operations	(n)	**(36)**	(56)	278	**32**	34	67	**(14)**	418	544	**296**	845	3,887
Product group total		**5,382**	8,866	13,872	**5,039**	5,250	5,086	**51,961**	61,385	65,262	**51,231**	56,050	62,347
Intersegment transactions								**242**	238	276			
Net assets/(liabilities) of disposal groups held for sale	(r)	**–**	–	–	**–**	–	–	**182**	(48)	771	**–**	–	–
Other items		**65**	(416)	145	**68**	82	106	**(1,253)**	(2,784)	(2,352)	**3,657**	3,725	3,984
Less: equity accounted units		**(859)**	(1,032)	(1,073)	**(462)**	(472)	(401)						
Total		**4,588**	7,418	12,944	**4,645**	4,860	4,791	**51,132**	58,791	63,957	**54,888**	59,775	66,331

	Rio Tinto interest %	Capital expenditure (o) for the year ended 31 December 2015 US$m	2014 US$m	2013 US$m	Depreciation & amortisation for the year ended 31 December 2015 US$m	2014 US$m	2013 US$m	Operating assets (p) as at 2015 US$m	2014 US$m	2013 US$m	Employees for the year ended 31 December 2015 Number	2014 Number	2013 Number
Add back: Proceeds from disposal of property, plant and equipment		**97**	744	57									
Total capital expenditure per cash flow statement		**4,685**	8,162	13,001									
Less: Net debt								**(13,783)**	(12,495)	(18,055)			
Less: EAU funded balances excluded from net debt								**–**	(11)	(16)			
Equity attributable to owners of Rio Tinto								**37,349**	46,285	45,886			

Notes to financial information by business unit

Business units are classified according to the Group's management structure. Where presentational revisions are made, comparative amounts are adjusted accordingly.

a) Gross sales revenue includes the sales revenue of equity accounted units (after adjusting for sales to subsidiaries) in addition to consolidated sales. Consolidated sales revenue includes subsidiary sales to equity accounted units which are not included in gross sales revenue.

b) EBITDA of subsidiaries and the Group's share of EBITDA relating to equity accounted units represents profit before: tax, net finance items, depreciation and amortisation charged to the income statement in the period. Underlying EBITDA excludes the same items that are excluded from underlying earnings.

c) Represents profit after tax for the period attributable to the owners of the Rio Tinto Group. Business unit earnings are stated before finance items but after the amortisation of discount related to provisions. Earnings attributed to business units do not include amounts that are excluded in arriving at underlying earnings.

d) Pilbara represents the Group's 100 per cent holding in Hamersley and 65 per cent holding of Robe River Iron Associates. 30 per cent of Robe River Iron Associates is held through a 60 per cent owned subsidiary and therefore the Group's net beneficial interest is 53 per cent.

e) Presented on an integrated operations basis splitting activities between Bauxite & Alumina, Primary Metal, Pacific Aluminium and Other integrated operations (which in total reflect the results of the integrated production of aluminium) and Other product group items, which relate to other commercial activities.

f) Under the terms of a contractual agreement, Rio Tinto is entitled to 40 per cent of material mined as a consequence of expansions and developments of the Grasberg facilities since 1998.

g) Rio Tinto's interest in Oyu Tolgoi is held indirectly through its 50.8 per cent investment in Turquoise Hill Resources Ltd (TRQ) which in turn owns 66 per cent of Oyu Tolgoi LLC, which owns the Oyu Tolgoi copper-gold mine. As at 31 December 2015 the principal asset of TRQ was its interest in Oyu Tolgoi LLC. As at 31 December 2014, TRQ's investment in SouthGobi Resources Ltd was classified as an asset held for sale. On 23 April 2015, TRQ completed the block sale of 48.7 million common shares in SouthGobi Resources and with further divestments has reduced its interest to below 20 per cent. As at 31 December 2015 TRQ's interest in SouthGobi Resources Ltd is no longer consolidated as a subsidiary and has been classified as an available for sale investment.

h) Rio Tinto completed the divestment of its 57.7 per cent interest in Palabora Mining Company on 31 July 2013 and of its 80 per cent interest in the Northparkes mine on 1 December 2013.

i) In the 2014 Annual report, Copper Evaluation projects/other included the results of TRQ. As at 31 December 2015 the principal asset of TRQ was its interest in Oyu Tolgoi LLC and, as such, has been shown combined with Oyu Tolgoi. The 2014 and 2013 comparative periods have been restated to be shown on a consistent basis.

j) Includes Rio Tinto's 80 per cent interest in Coal & Allied, through which Rio Tinto held its beneficial interests in Bengalla, Mount Thorley and Warkworth of 32 per cent, 64 per cent and 44.5 per cent respectively. In February 2016, the restructuring of the Coal and Allied group completed. As a result, Rio Tinto now has a 100 per cent shareholding in Coal & Allied Industries Limited and its wholly-owned subsidiaries and in Hunter Valley Resources Pty Ltd. Mitsubishi is now a joint venture participant in the Hunter Valley Operations Joint Venture.

k) On 7 October 2014, Rio Tinto disposed of its interest in Rio Tinto Coal Mozambique (RTCM), including its interests in the Benga project, a 65:35 joint venture with Tata Steel Limited. Zululand Anthracite Colliery (ZAC), which was retained, is reported within Coal Evaluation projects/other. In February 2016, Rio Tinto signed an agreement to dispose of its interest in ZAC.

l) Includes Rio Tinto's interests in Argyle (100 per cent) and Diavik (60 per cent). Murowa (77.8 per cent) was included until its disposal to RZ Murowa Holdings Limited.

m) Includes Rio Tinto's interests in Rio Tinto Fer et Titane (100 per cent), QIT Madagascar Minerals (80 per cent) and Richards Bay Minerals (attributable interest of 74 per cent).

n) Other Operations include Rio Tinto's 100 per cent interest in the Gove alumina refinery and Rio Tinto Marine.

o) Capital expenditure comprises the net cash outflow on purchases less disposals of property, plant and equipment, capitalised evaluation costs and purchases less disposals of other intangible assets. The details provided include 100 per cent of subsidiaries' capital expenditure and Rio Tinto's share of the capital expenditure of joint operations and equity accounted units.

p) Operating assets of subsidiaries comprise net assets excluding post-retirement assets and liabilities, net of tax, and are before deducting net debt. Operating assets are stated after deduction of non-controlling interests, which are calculated by reference to the net assets of the relevant companies (ie inclusive of such companies' debt and amounts due to or from Rio Tinto Group companies).

q) In 2015 the Energy product group as presented in previous periods was split with the coal assets taken to the newly formed Copper & Coal product group and the uranium assets to the Diamonds & Minerals product group.

r) Assets and liabilities held for sale at 31 December 2015 comprise Rio Tinto's interests in the Blair Athol coal project, Carbone Savoie, Bengalla, and Molybdenum Autoclave Process assets.

   Assets and liabilities held for sale as at 31 December 2014 comprised Rio Tinto's interests in the Blair Athol coal project and SouthGobi Resources Ltd.

Australian Corporations Act – summary of ASIC relief

Pursuant to section 340 of the Corporations Act 2001 (Corporations Act), the Australian Securities and Investments Commission issued an order dated 14 December 2015 that granted relief to Rio Tinto Limited from certain requirements of the Corporations Act in relation to the Company's financial statements and associated reports. The order essentially continues the relief that has applied to Rio Tinto Limited since the formation of the Group's dual listed companies (DLC) structure in 1995. The order applies to Rio Tinto Limited's financial reporting obligations for the financial years and half-years ending between 31 December 2015 and 30 June 2020.

In essence, instead of being required under the Corporations Act to prepare consolidated financial statements covering only itself and its controlled entities, the order allows Rio Tinto Limited to prepare consolidated financial statements in which it, Rio Tinto plc and their respective controlled entities are treated as a single economic entity. In addition, those consolidated financial statements are to be prepared:

- in accordance with the principles and requirements of International Financial Reporting Standards as adopted by the European Union (EU IFRS) rather than the Australian Accounting Standards (AAS) (except for one limited instance in the case of any concise report), and in accordance with UK financial reporting obligations generally;
- on the basis that the transitional provisions of International Financial Reporting Standard 1, First-time Adoption of International Financial Reporting Standards, should be applied using the combined financial statements previously prepared for Rio Tinto Limited, Rio Tinto plc and their respective controlled entities under Generally Accepted Accounting Principles in the United Kingdom, under which the DLC Merger between Rio Tinto Limited and Rio Tinto plc was accounted for using "merger", rather than "acquisition", accounting (reflecting that neither Rio Tinto Limited nor Rio Tinto plc was acquired by, or is controlled by, the other; and meaning that the existing carrying amounts, rather than fair values, of assets and liabilities at the time of the DLC Merger were used to measure those assets and liabilities at formation);
- on the basis that Rio Tinto Limited and Rio Tinto plc are a single company (with their respective shareholders being the shareholders in that single company); and
- with a reconciliation, from EU IFRS to AAS, of the following amounts: consolidated loss/profit for the financial year, total consolidated comprehensive loss/income for the financial year and total consolidated equity at the end of the financial year (see page 112).

Those consolidated financial statements must also be audited in relation to their compliance with relevant Australian and UK requirements. Rio Tinto Limited must also prepare a Directors' report which satisfies the content requirements of the Corporations Act (applied on the basis that for these purposes the consolidated entity is the Group, and the consolidated financial statements cover the Group). This includes a Remuneration report (see pages 70 to 104) prepared in accordance with the requirements of the Corporations Act.

Rio Tinto Limited is also required to comply generally with the lodgement and distribution requirements of the Corporations Act (including timing requirements) in relation to those consolidated financial statements (including any concise financial statements), the Auditor's report and the Directors' report. The Corporations Act also requires that a non-binding resolution to adopt the Remuneration report be voted on by shareholders at the Company's annual general meeting.

Rio Tinto Limited is not required to prepare separate consolidated financial statements solely for it and its controlled entities. Rio Tinto Limited is also not required to prepare and lodge parent entity financial statements for itself in respect of each relevant financial year.

Rio Tinto Limited must, however, in accordance with the Corporations Act include in the consolidated financial statements for the Group, as a note, various parent entity information regarding Rio Tinto Limited (including in relation to assets, liabilities, shareholders' equity, profit and loss, income, guarantees, contingent liabilities, and contractual commitments) prepared in accordance with AAS (see page 175).

Directors' declaration

Directors' statement of responsibilities in relation to the Group financial statements, Rio Tinto plc financial statements and Rio Tinto Limited financial statements

The directors are responsible for preparing the Annual report, the Remuneration report and the financial statements in accordance with applicable law and regulations.

UK and Australian company law requires the directors to prepare financial statements for each financial year. Under UK law the directors have elected to prepare the Group financial statements in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union and the Rio Tinto plc financial statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards and applicable law), including FRS 101 "Reduced disclosure framework".

Under Australian law, the directors are also required to prepare certain Rio Tinto Limited parent company financial statements in accordance with Australian Accounting Standards (AAS). In preparing the Group financial statements, the directors have also elected to comply with IFRSs, issued by the International Accounting Standards Board (IASB).

Under UK and Australian company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the companies as at the end of the financial year, and of the profit or loss of the companies and Group for the period (as applicable).

In preparing these financial statements, the directors are required to:

- select suitable accounting policies and apply them consistently;
- make judgments and estimates that are reasonable and prudent;
- state whether IFRSs as adopted by the European Union, applicable UK Accounting Standards and AAS have been followed, subject to any material departures disclosed and explained in the Group and parent company financial statements respectively; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group and the companies will continue in business.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the transactions of the companies and the Group and disclose with reasonable accuracy at any time the financial position of the companies and the Group and enable them to ensure that:

- the Group financial statements comply with the UK Companies Act 2006, the Australian Corporations Act 2001 as amended by the Australian Securities and Investments Commission Order dated 14 December 2015 and Article 4 of the IAS Regulation;
- the Rio Tinto plc financial statements comply with the UK Companies Act 2006;
- the Rio Tinto Limited parent company disclosures comply with the Corporations Act as amended by the Australian Securities and Investments Commission Order dated 14 December 2015; and
- the Remuneration Report complies with the UK Companies Act 2006 and the Corporations Act 2001 as amended by the Australian Securities and Investments Commission Order dated 14 December 2015.

The directors are also responsible for safeguarding the assets of the Companies and the Group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for the maintenance and integrity of the Group's website. Legislation governing the preparation and dissemination of financial statements may differ between jurisdictions in which the Group reports.

Each of the current directors, whose names and function are listed on pages 51 to 53 in the Governance section, confirm that, to the best of their knowledge:

- the Rio Tinto Group financial statements and notes, which have been prepared in accordance with IFRS as adopted by the EU, the Corporations Act 2001 as amended by the Australian Securities and Investments Commission Order dated 14 December 2015, the UK Companies Act 2006 and Article 4 of the IAS Regulation, give a true and fair view of the assets, liabilities, financial position and loss of the Group;
- the Rio Tinto plc financial statements and notes, which have been prepared in accordance with United Kingdom Generally Accepted Accounting Practice give a true and fair view of the assets, liabilities, financial position and profit of the company;
- the Rio Tinto Limited parent company disclosures, which have been prepared in accordance with Australian Accounting Standards (AAS) and Corporations Act 2001 as amended by the Australian Securities and Investments Commission Order dated 14 December 2015 give a true and fair view of the assets, liabilities, financial position and profit of the company;
- the Strategic report section of the Annual report include a fair review of the development and performance of the business and the position of the Group, together with a description of the principal risks and uncertainties that it faces; and
- there are reasonable grounds to believe that each of the Rio Tinto Group, Rio Tinto plc and Rio Tinto Limited will be able to pay its debts as and when they become due and payable.

The directors have been given the declarations by the chief executive and chief financial officer required by section 295A of the Corporations Act 2001 as amended by the Australian Securities and Investments Commission Order dated 14 December 2015.

Disclosure of information to auditors

The directors in office at the date of this report have each confirmed that:

- so far as he or she is aware, there is no relevant audit information of which the Group's auditors are unaware; and
- he or she has taken all the steps that he or she ought to have taken as a director to make himself or herself aware of any relevant audit information and to establish that the Group's auditors are aware of that information.

This declaration is made in accordance with a resolution of the board.

Jan du Plessis
Chairman

Sam Walsh AO
Chief executive

Chris Lynch
Chief financial officer

Auditor’s independence declaration

As lead auditor for the audit of Rio Tinto Limited for the year ended 31 December 2015, I declare that to the best of my knowledge and belief, there have been:

(a) no contraventions of the auditor independence requirements of the *Corporations Act 2001* in relation to the audit; and
(b) no contraventions of any applicable code of professional conduct in relation to the audit.

This declaration is in respect of Rio Tinto Limited and the entities it controlled during the period.

Paul Bendall
Partner
PricewaterhouseCoopers

Melbourne

2 March 2016

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Independent auditors' report of PricewaterhouseCoopers LLP to the members of Rio Tinto plc and PricewaterhouseCoopers to the members of Rio Tinto Limited

For the purpose of this report, the terms "we" and "our" denote PricewaterhouseCoopers LLP in relation to UK legal, professional and regulatory responsibilities and reporting obligations to the members of Rio Tinto plc and PricewaterhouseCoopers in relation to Australian legal, professional and regulatory responsibilities and reporting obligations to the members of Rio Tinto Limited. The Group financial statements, as defined below, consolidate the accounts of Rio Tinto plc and Rio Tinto Limited and their respective subsidiaries ("the Group") and include the Group's share of joint arrangements and associates.

The relevant legislation governing the companies is the United Kingdom Companies Act 2006 for Rio Tinto plc and the Corporations Act 2001 as amended by the ASIC order dated 14 December 2015 (the "ASIC Order") for Rio Tinto Limited.

Report on the financial statements and the financial report

Opinion of PricewaterhouseCoopers LLP on the financial statements to the members of Rio Tinto plc

In our opinion:

- the financial statements, defined below, give a true and fair view of the state of the Group's and of Rio Tinto plc's affairs as at 31 December 2015 and of the Group's loss and cash flows for the year then ended;
- the Group financial statements have been properly prepared in accordance with International Financial Reporting Standards ("IFRSs") as adopted by the European Union;
- the Rio Tinto plc company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Group financial statements, Article 4 of the IAS Regulation.

Separate opinion of PricewaterhouseCoopers LLP in relation to IFRSs as issued by the International Accounting Standards Board ("IASB")

As explained in note 1 to the financial statements, the Group, in addition to applying IFRSs as adopted by the European Union, has also applied IFRSs as issued by the IASB.

In our opinion, the Group financial statements comply with IFRSs as issued by the IASB.

Opinion of PricewaterhouseCoopers on the financial report to the members of Rio Tinto Limited

In our opinion:

- the financial report, as defined below, is in accordance with the Corporations Act 2001 as amended by the ASIC Order, including:
    - i. giving a true and fair view of the Group's financial position as at 31 December 2015 and of its performance for the year ended on that date;
    - ii. complying with Australian Accounting Standards (including Australian Accounting Interpretations) and the Corporations Regulations 2001; and
- the Group financial statements also comply with IFRSs as disclosed in note 1.

What we have audited

The Rio Tinto Group financial statements, included within the Annual report and Accounts (the "Annual report"), comprise:

- the Group balance sheet as at 31 December 2015;
- the Group income statement and statement of comprehensive income for the year then ended;
- the Group cash flow statement for the year then ended;
- the Group statement of changes in equity for the year then ended;
- notes 1 – 45 and 47 to the Group financial statements, which include a summary of significant accounting policies and other explanatory information;
- the outline of dual listed companies structure and basis of financial statements (page 112); and
- the Rio Tinto financial information by business unit.

The Rio Tinto plc company financial statements, included within the Annual report, comprise:

- the Rio Tinto plc company balance sheet as at 31 December 2015; and
- notes A-G to the Rio Tinto plc financial statements, which include a summary of significant accounting policies and other explanatory information.

The Group's financial statements and the Rio Tinto plc company financial statements are referred to in this report as the "financial statements".

PricewaterhouseCoopers LLP has audited the Group financial statements and the Rio Tinto plc company financial statements for the year ended 31 December 2015.

PricewaterhouseCoopers has audited the Reconciliation with Australian Accounting Standards, the Directors' remuneration report included in the Directors' report and the financial report for 31 December 2015. The financial report, included within the Annual report, comprises the Group financial statements, Note 46 "Rio Tinto Limited parent company disclosures" and the Directors' declaration on page 200.

Certain required disclosures have been presented elsewhere in the Annual report rather than in the notes to the financial statements and the financial report. These are cross-referenced from the financial statements and the financial report and are identified as audited.

The financial reporting framework that has been applied in the preparation of the Group financial statements is applicable law in the United Kingdom, applicable law in Australia as amended by the ASIC Order (described in the Annual report under the heading "Australian Corporations Act – Summary of ASIC relief") and IFRSs as adopted by the European Union and as issued by the IASB.

The financial reporting framework that has been applied in the preparation of the Rio Tinto plc company financial statements is United Kingdom Accounting Standards, comprising FRS 101, "Reduced Disclosure Framework", and applicable law (United Kingdom Generally Accepted Accounting Practice).

All currency references are to the United States Dollar, unless otherwise stated.

Our audit approach

Rio Tinto's principal activities are minerals and metals exploration, development, production and processing. The Group operates through four product groups and 84 business units.

Overview

Materiality	Overall Group materiality: $300 million (2014: $600 million), which represents 5% of profit before tax adjusted for items excluded from underlying earnings (as defined in note 2 to the Group financial statements). The lower materiality in 2015 reflects the lower underlying profitability of the Group, principally due to the significant fall in commodity prices.
Scope	We identified two business units (2014: three) which, in our view, required an audit of their complete financial information, due to their financial significance to the Group. Those business units were Pilbara (previously audited separately as Hamersley Iron and Robe River) and Escondida. Specific audit procedures on certain balances and transactions were performed at a further 17 business units (2014: 14), which comprised 12 (2014: 6) operating business units and 5 (2014: 8) central business units, such as treasury entities. As a consequence of the lower Group materiality we brought additional business units into scope and performed extended audit procedures at in-scope business units to maintain appropriate audit coverage.
Areas of focus	– We assessed the risks of material misstatement in the financial statements and determined that they remain consistent with 2014. – Impairment assessments (including indicators of impairment and impairment reversal), with a particular focus on goodwill (Roughrider), property, plant and equipment (Energy Resources of Australia and Oyu Tolgoi) and exploration and evaluation assets (Simandou and Roughrider). – Provisions for uncertain tax positions. – Provisions for close-down, restoration and environmental obligations. – Defined benefit pension plan surpluses and deficits. – Impact of ongoing finance transformation, including shared services transition, on the control environment.

The scope of our audit and our areas of focus

We conducted our audit in accordance with International Standards on Auditing (UK and Ireland) ("ISAs (UK & Ireland)") and Australian Auditing Standards ("ASAs").

We designed our audit by determining materiality and assessing the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits, we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud.

The risks of material misstatement that had the greatest effect on our audit, including the allocation of our resources and effort, are identified as "areas of focus" in the table below. We have also set out how we tailored our audit to address these specific areas in order to provide an opinion on the financial statements as a whole, and any comments we make on the results of our procedures should be read in this context. This is not a complete list of all risks identified by our audit.

Area of focus	How our audit addressed the area of focus
Impairment/reversal of impairment assessment Rio Tinto has goodwill of $892 million, indefinite-lived intangible assets of $1,655 million, property, plant and equipment of $61,057 million, and exploration and evaluation assets of $706 million as at 31 December 2015, contained within 47 cash generating units ("CGUs"). Impairment charges to each of these asset categories have been recognised in prior periods. In 2015 a pre-tax impairment charge of $2,791 million was recognised, which primarily related to goodwill, intangible assets and property, plant and equipment. All CGUs containing goodwill and indefinite-lived intangible assets must be tested for impairment on an annual basis. Management must also determine the recoverable amount for other assets including property, plant and equipment and evaluation and exploration assets when impairment or impairment reversal indicators are identified. For the CGUs which contain Rio Tinto's goodwill, indefinite-lived intangible assets, property, plant and equipment, and exploration and evaluation assets, the determination of recoverable amount, being the higher of value-in-use and fair value less costs to dispose, requires judgement on the part of management in both identifying and then valuing the relevant CGUs. Recoverable amounts are based on management's view of key variables and market conditions such as future commodity prices, the timing and approval of future capital and operating expenditure, and the most appropriate discount rate. As well as considering indicators of impairment, management must determine whether any indicators of reversal of previous impairments are apparent for assets other than goodwill. Due to the decrease in commodity prices during the year, impairment reversals were only considered in a limited number of cases. No impairment reversals were recognised.	For all material goodwill balances, indefinite-lived intangible assets, property, plant and equipment, and exploration and evaluation assets we undertook the following: – We satisfied ourselves as to the appropriateness of management's identification of the Group's CGUs and the continued satisfactory operation of the Group's controls over the impairment assessment process. – We evaluated management's assessment of impairment indicators, as well as indicators of impairment reversal, including the conclusions reached. – With the support of our valuation specialists, we benchmarked key market related assumptions in management's valuation models used to determine recoverable amount, including future commodity prices, foreign exchange rates and discount rates, against external data. – We verified the mathematical accuracy of management's valuation models and agreed relevant data, including assumptions on timing and future capital and operating expenditure, to the latest Life of Mine/production plans and budgets.

Independent auditors' report of PricewaterhouseCoopers LLP to the members of Rio Tinto plc and PricewaterhouseCoopers to the members of Rio Tinto Limited
continued

Area of focus	How our audit addressed the area of focus
In relation to specific projects or business units we noted the following: Roughrider – in late 2015 the Group finalised an Order of Magnitude study for the Roughrider uranium project. Taking into account Rio Tinto's updated view of the development concept and geological model, a pre-tax impairment charge of $116 million was recognised against goodwill, and a further $113 million against evaluation and exploration assets. Energy Resources of Australia ("ERA") – in June 2015 Rio Tinto announced that it supported ERA's decision not to proceed with the Final Feasibility Study of the Ranger 3 Deeps project. Rio Tinto also announced that it did not support any further study or future development of Ranger 3 Deeps due to the project's economic challenges. As a result, at 30 June 2015 Rio Tinto recognised a pre-tax impairment charge of $260 million, predominantly related to property, plant and equipment. Oyu Tolgoi – this project has progressed during 2015, including the agreement of project-specific financing for the underground development phase. However, forecast copper prices, to which the recoverable amount is sensitive, have declined. Management conducted an assessment of the recoverable amount of the Oyu Tolgoi CGU as described in Note 1(i) "Principal accounting policies" (Depreciation and impairment) utilising those forecast copper prices and a project-specific discount rate. Simandou – completion of bankable feasibility studies for the mine, port infrastructure and rail infrastructure to support the Simandou project was delayed in 2015 due to the Ebola epidemic in West Africa. Draft separate feasibility studies for the mine, port and rail were issued in December 2015 with the final integrated feasibility study due in May 2016. Due to current market conditions and uncertainty over infrastructure ownership and funding Rio Tinto recognised a pre-tax impairment charge of $2,039 million, predominantly related to exploration and evaluation assets and property, plant and equipment. Refer to note 6 for management's conclusions and the Audit Committee's views set out on page 59.	In addition to our overall response to impairment risk described above, we performed additional procedures on certain projects or business units as follows: – Roughrider – assessed the outcome of management's recently completed Order of Magnitude study, which included a revised geological model and an updated market outlook.; – ERA – checked management's decision not to continue to support ERA's Ranger 3 Deeps project through Rio Tinto board and committee meeting minutes and public announcements.; – Oyu Tolgoi – read the Underground Mine Development and Financing Plan and independently assessed management's project-specific discount rate, considering the terms of the project finance agreement signed in 2015. We also satisfied ourselves as to the appropriateness of the copper price assumptions used in management's impairment model.; and – Simandou – understood the key findings from the draft bankable feasibility studies and discussed these with management responsible for the project, considered management's assessment of external indicators of value for the project and considered the judgements taken by management in determining the impairment charge. We validated the appropriateness of the related disclosures in note 6 to the financial statements, including the sensitivities provided with respect to Oyu Tolgoi.
Close-down, restoration and environmental obligations Rio Tinto has provisions for close-down, restoration and environmental obligations of $8,426 million as at 31 December 2015. The calculation of these provisions requires management judgement in estimating the quantum and timing of future costs, particularly given the unique nature of each site, the long timescales involved and the potential associated obligations. These calculations also require management to determine an appropriate rate to discount these future costs back to their net present value. The judgement required to estimate such costs is further compounded by the fact that there has been limited restoration and rehabilitation activity and historical precedent against which to benchmark estimates of future costs. Management reviews the close-down, restoration and environment obligations on a semi-annual basis, using experts to provide support in its assessment where appropriate. This review incorporates the effects of any changes in local regulations and management's anticipated approach to restoration and rehabilitation. Refer to note 26 and the Audit Committee's views set out on page 59.	We assessed management's process for the review of provisions, and performed detailed testing of the 31 December 2015 provision for five business units. For the remaining business units, including legacy operations, we assessed provision movements in the year relating to close-down, restoration and environmental obligations to check they were consistent with our understanding of the asset and associated remediation plans. As part of our detailed testing of the cost estimates prepared by management for the five business units selected, we established the existence of legal and/or constructive obligations with respect to the restoration and rehabilitation for each business unit to assess the appropriateness of the intended method of restoration and rehabilitation and associated cost estimate. We also considered the competence and objectivity of management's experts, whether internal or external to Rio Tinto, who produced the cost estimates. We validated the accuracy of calculations and the appropriateness of the discount rate using our valuations specialists.
Provisions for uncertain tax positions The Group operates across a large number of jurisdictions and is subject to periodic challenges by local tax authorities on a range of tax matters during the normal course of business, including transfer pricing, indirect taxes and transaction related tax matters. As at 31 December 2015, the Group has current and non-current taxes payable of $430 million. Where the amount of tax payable is uncertain, Rio Tinto establishes provisions based on management's judgement of the probable amount of the liability. Refer to notes 17 and 31, and the Audit Committee's views set out on page 59.	We assessed management's process for identifying uncertain tax positions and the related accounting policy of provisioning for tax exposures. We used our tax specialists to gain an understanding of the current status of tax assessments and investigations and to monitor developments in ongoing disputes. We read recent rulings and correspondence with local tax authorities, as well as external advice received by the Group where relevant, to satisfy ourselves that the tax provisions had been appropriately recorded or adjusted to reflect the latest external developments.

Area of focus	How our audit addressed the area of focus
Defined benefit pension plan surpluses and deficits The Group has approximately 60 defined benefit pension plans. The total fair value of plan assets is $13,642 million, and the total present value of obligations is $15,261 million, which are both significant in the context of the overall balance sheet of the Group. The valuation of the pension liabilities requires judgement in determining appropriate assumptions such as salary increases, mortality rates, discount rates, inflation levels and the impact of any changes in individual pension plans. Movements in these assumptions can have a material impact on the determination of the liability. Management uses external actuaries to assist in assessing these assumptions. Judgement is also involved in the measurement of the fair value of certain pension assets. Refer to notes 26 and 45 and the Audit Committee's views set out on page 59.	We used our actuarial specialists to satisfy ourselves that the assumptions used in calculating the pension plan liabilities, including salary increases and mortality rate assumptions, were consistent with the specifics of each plan and, where applicable, with relevant national and industry benchmarks. We also verified that the discount and inflation rates used in the valuation of the pension liabilities were consistent with our internally developed benchmarks and in line with other companies' recent external reporting. For pension plan assets, we obtained third party confirmations of ownership and third party valuations of individual pension assets. We re-performed a sample of the valuations independently, for example testing the valuation of marketable securities to index prices as at 31 December 2015, recalculating valuations based on observable inputs and using our specialists to help us assess other individual asset values, whose value is not determined based on observable market inputs, such as property.

Finance transformation – Shared services transition
The shared services transition element of Rio Tinto's Finance transformation programme includes the centralisation and outsourcing of certain back office finance activities (excluding key controls) to third-party providers. The programme commenced in 2014 and is expected to complete in 2016. The largest business units had fully transitioned by the end of 2015.
 	
Certain of the activities being transitioned were previously undertaken in Rio Tinto's own shared services centres. A number of additional business unit finance processes have also been transitioned in 2015.
 	
This centralisation of finance processes and the associated transfer of responsibilities created a risk of loss of knowledge which could adversely affect the controls, or allow control gaps to emerge, during the transition period. There is also a risk that controls over financial reporting, which rely on those activities that have been, or are to be, transitioned may not be designed and/or operate effectively.
 	
Refer to the Audit Committee's views set out on page 59.
	We updated our understanding of the Group's shared services transition plans, including the timing of business unit transitions and the extent of activities being transferred.
	
	We assessed the implementation of management's plans through the following:
	
	– Assessing the design effectiveness of internal controls over financial reporting in the processes impacted at both the Group and business unit levels.
	– Testing the operating effectiveness of key controls which operate within Rio Tinto's retained organisation.
	– In respect of third-party outsourced service providers:
	  – Evaluating the 'Statements of Works' governing the service level agreements with Rio Tinto and the associated key performance indicators.
	  – Visiting the outsourced shared service centres to understand the structure, roles, responsibilities and the outsourced service provider's knowledge and understanding of the transitioned processes and procedures. This provided evidence that key controls still remained within Rio Tinto's retained organisation.
	  – Obtaining a report from independent third parties on the Service Organisation Controls performed in accordance with the Statement on Standards for Attestation Engagements (SSAE) No. 16. This provided evidence about the operating effectiveness of governance and entity level controls operated by the outsourced service providers.

How we tailored the audit scope

As the Group engagement team, we tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the geographic structure of the Group, the accounting processes and controls, and the industry in which the Group operates.

Following the reorganisation of the former Energy product group in February 2015, the Group is organised into four product groups – Aluminium, Copper & Coal, Diamonds & Minerals, and Iron Ore – all of which are supported by centralised functions. Each product group is made up of a number of operating businesses which represent separate business units. The Group financial statements are a consolidation of business units, comprising the Group's operating businesses and centralised functions. Based on this, we determined the appropriate business units to perform work over based on factors such as the size of the balances, the areas of focus as noted above and known accounting matters, and to include unpredictability in our audit procedures.

In establishing the overall approach to the Group audit, we determined the type of work that needed to be performed at business units by us, as the Group engagement team, or component auditors from either other PwC network firms or non-PwC firms operating under our instruction. In 2015, we identified two business units (2014: three) which, in our view, required an audit of their complete financial information, due to their financial significance to the Group. Those business units were Pilbara (previously considered as separate Hamersley Iron and Robe River business units, with both subject to full scope audits) and Escondida. Specific audit procedures on certain balances and transactions were performed at a further 17 business units (2014: 14), primarily to ensure appropriate audit coverage. This increase resulted from the reduction in our overall materiality from $600 million to $300 million as explained below. As we seek to vary our audit procedures each year to ensure an element of unpredictability, two smaller business units (2014: two) were included in our Group audit scope for 2015. With the reduction in materiality we extended certain of our procedures at in-scope business units when compared with those undertaken during the comparative period. We also performed work centrally on IT general controls, journals, taxation, pensions and treasury, and on the shared services transition as noted above. Together, the central and operating business units at which work was performed by the Group engagement team and component auditors accounted for 83% of consolidated revenue, 82% of consolidated underlying profit before tax and 84% of consolidated total assets. At the Group level, we also carried out analytical and other procedures on the business units not covered by the procedures described above.

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Where work was performed by component auditors, we determined the level of involvement we needed to have in the audit work at those business units to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the Group financial statements as a whole.

We issued formal, written instructions to all component auditors setting out the audit work to be performed by each of them and maintained regular communication with the component auditors throughout the audit cycle. These interactions included attending component clearance meetings and holding regular conference calls, as well as reviewing and assessing matters reported. The Group engagement team also reviewed certain audit working papers of the component auditors of Pilbara, Escondida, Rio Tinto Aluminium and Turquoise Hill Resources.

In addition, senior members of the Group engagement team visited component teams across all four product groups in Canada, Australia, the United States of America, Chile, Mongolia, and Singapore. These visits included meetings with local management and with the component auditors, and typically operating site tours.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and to evaluate the effect of misstatements, both individually and on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

Overall Group materiality	$300 million (2014: $600 million). This reflects the lower profitability of the Group, principally due to the significant fall in commodity prices.
How we determined it	Consistent with the prior year, 5% of profit before tax adjusted for items excluded from underlying earnings (as defined in note 2 to the financial statements).
Rationale for benchmark applied	We consider an adjusted measure to be one of the principal considerations for members in assessing the recurring financial performance of the Group as it best represents results from continuing operations.
Component materiality	For each component in our audit scope, we allocated a materiality that was less than our overall Group materiality. The range of materiality allocated to each component was between $100 million and $250 million.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above $30 million (2014: $50 million) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

Going concern

Under the Listing Rules we are required to review the directors' statement, set out on page 105, in relation to going concern. We have nothing to report having performed our review.

Under ISAs (UK & Ireland) we are also required to report to you if we have anything material to add or to draw attention to in relation to the directors' statement about whether they considered it appropriate to adopt the going concern basis in preparing the financial statements. We have nothing material to add or to draw attention to.

As noted in the directors' statement, the directors have concluded that it is appropriate to adopt the going concern basis in preparing the financial statements. The going concern basis presumes that the Group and Parent Companies (Rio Tinto plc and Rio Tinto Limited) have adequate resources to remain in operation, and that the directors intend them to do so, for at least one year from the date the financial statements were signed.

As part of our audit we have concluded that the directors' use of the going concern basis is appropriate. However, because not all future events or conditions can be predicted, these statements are not a guarantee as to the Group's and Parent Companies' ability to continue as a going concern.

Other required reporting – PricewaterhouseCoopers LLP

Consistency of other information

Companies Act 2006 opinion

In our opinion, the information given in the Strategic report and the Directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements.

ISAs (UK & Ireland) reporting

Under ISAs (UK & Ireland) we are required to report to you if, in our opinion:

Information in the Annual report is: – materially inconsistent with the information in the audited financial statements; or – apparently materially incorrect based on, or materially inconsistent with, our knowledge of the Group and Rio Tinto plc acquired in the course of performing our audit; or – otherwise misleading.	We have no exceptions to report arising from this responsibility.
The statement given by the directors on page 66, in accordance with provision C.1.1 of the UK Corporate Governance Code ("the Code"), that they consider the Annual report taken as a whole to be fair, balanced and understandable and provides the information necessary for members to assess the Group's and Rio Tinto plc's position and performance, business model and strategy is materially inconsistent with our knowledge of the Group and Rio Tinto plc acquired in the course of performing our audit.	We have no exceptions to report arising from this responsibility.
The section of the Annual report on page 59, as required by provision C.3.8 of the Code, describing the work of the Audit Committee does not appropriately address matters communicated by us to the Audit Committee.	We have no exceptions to report arising from this responsibility.

The directors' assessment of the prospects of the Group and of the principal risks that would threaten the solvency or liquidity of the Group

Under ISAs (UK & Ireland) we are required to report to you if we have anything material to add or to draw attention to in relation to:

– the directors' confirmation on page 64 of the Annual report, in accordance with provision C.2.1 of the Code, that they have carried out a robust assessment of the principal risks facing the Group, including those that would threaten its business model, future performance, solvency or liquidity.	We have nothing material to add or to draw attention to.
– the disclosures in the Annual report that describe those risks and explain how they are being managed or mitigated.	We have nothing material to add or to draw attention to.
– the directors' explanation on page 15 of the Annual report, in accordance with provision C.2.2 of the Code, as to how they have assessed the prospects of the Group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.	We have nothing material to add or to draw attention to.

Under the Listing Rules we are required to review the directors' statement that they have carried out a robust assessment of the principal risks facing the Group and the directors' statement in relation to the longer-term viability of the Group, set out on page 15. Our review was substantially less in scope than an audit and only consisted of making enquiries and considering the directors' process supporting their statements; checking that the statements are in alignment with the relevant provisions of the Code; and considering whether the statements are consistent with the knowledge acquired by us in the course of performing our audit. We have nothing to report having performed our review.

Adequacy of accounting records and information and explanations received

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by Rio Tinto plc, or returns adequate for our audit have not been received from branches not visited by us; or
- the Rio Tinto plc financial statements and the part of the Directors' remuneration report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Directors' remuneration

Directors' remuneration report – Companies Act 2006 opinion

In our opinion, the part of the Directors' remuneration report to be audited has been properly prepared in accordance with the Companies Act 2006.

Other Companies Act 2006 reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion, certain disclosures of directors' remuneration specified by law are not made. We have no exceptions to report arising from this responsibility.

Corporate governance statement

Under the Listing Rules we are required to review the part of the Corporate Governance Statement relating to ten further provisions of the Code. We have nothing to report having performed our review.

Other required reporting – PricewaterhouseCoopers

Directors' remuneration

Directors' remuneration report – Corporations Act 2001 opinion

Under the Corporations Act 2001 (in respect of Rio Tinto Limited) we are required to express an opinion on the Directors' remuneration report included in the Directors' report, based on our audit conducted in accordance with Australian Auditing Standards. The directors of Rio Tinto Limited are responsible for the preparation and presentation of the Remuneration report in accordance with section 300A of the Corporations Act 2001 as amended by the ASIC Order.

In our opinion, the Remuneration report included in the accompanying Annual report complies with the requirements of section 300A of the Corporations Act 2001 as amended by the ASIC Order.

Independence

In conducting our audit, we have complied with the independence requirements of the Corporations Act 2001.

Responsibilities for the financial statements, the financial report and the audit

Our responsibilities and those of the directors

As explained more fully in the Directors' statement of responsibilities set out on page 200, the directors are responsible for the preparation of the financial statements and the financial report and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of the financial report that is free from material misstatement, whether due to fraud or error.

Our responsibility is to audit and express an opinion on the financial statements and financial report in accordance with applicable law and ISAs (UK & Ireland) and Australian Auditing Standards respectively. Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors and relevant ethical requirements relating to audit engagements in Australia.

This report, including the opinions, has been prepared for and only for the members of Rio Tinto plc and Rio Tinto Limited as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 (in respect of Rio Tinto plc) and the Corporations Act 2001 as amended by the ASIC Order (in respect of Rio Tinto Limited) and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

What an audit of financial statements involves

An audit involves obtaining evidence about the amounts and disclosures in the financial statements and the financial report sufficient to give reasonable assurance that these are free from material misstatement, whether caused by fraud or error. This includes an assessment of:

- whether the accounting policies are appropriate to the Group's and the Parent Companies' circumstances and have been consistently applied and adequately disclosed;

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- the reasonableness of significant accounting estimates made by the directors; and
- the overall presentation of the financial statements and the financial report.

The procedures selected depend on the auditors' judgement, including the assessment of the risks of material misstatement of the financial statements and the financial report whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entities' preparation and fair presentation of the financial statements and the financial report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entities' internal control.

We primarily focus our work in these areas by assessing the directors' judgements against available evidence, forming our own judgements, and evaluating the disclosures in the financial statements and the financial report.

We test and examine information, using sampling and other auditing techniques, to the extent we consider necessary to provide a reasonable basis for us to draw conclusions. We obtain audit evidence through testing the effectiveness of controls, substantive procedures or a combination of both.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

In addition, we read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements and the audited financial report and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

Richard Hughes (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London, United Kingdom

2 March 2016

Paul Bendall Partner
for and on behalf of PricewaterhouseCoopers
Chartered Accountants and Statutory Auditors
Melbourne, Australia

2 March 2016

(a) The maintenance and integrity of the Rio Tinto Group website is the responsibility of the directors; the work carried out by the auditors does not involve consideration of these matters and, accordingly, the auditors accept no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the website.

(b) Legislation in the United Kingdom and Australia governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Financial summary 2006-2015

US$m	2006	2007	2008	2009	2010	2011	2012	2013	2014	**2015**
Gross sales revenue[a]	25,440	33,518	56,905	42,734	59,008	65,298	55,597	54,575	50,041	**36,784**
Share of equity accounted units' sales revenue and items excluded from underlying earnings	(2,975)	(3,818)	(4,044)	(2,472)	(3,837)	(4,769)	(4,655)	(3,404)	(2,377)	**(1,955)**
Consolidated sales revenue	22,465	29,700	52,861	40,262	55,171	60,529	50,942	51,171	47,664	**34,829**
Underlying profit before interest and tax (PBIT)	9,912	10,517	17,683	9,843	21,128	23,662	13,467	16,039	13,851	**7,310**
Finance costs[b]	(193)	(570)	(1,706)	(1,058)	(909)	(759)	(616)	(794)	(967)	**(1,076)**
Exchange differences and derivatives[c]	83	253	(322)	528	529	2	695	(3,362)	(2,021)	**(3,458)**
Other exclusions from underlying earnings	438	(364)	(6,477)	(1,453)	(257)	(9,633)	(15,977)	(8,378)	(1,311)	**(3,502)**
(Loss)/proft before tax (PBT)	10,240	9,836	9,178	7,860	20,491	13,272	(2,431)	3,505	9,552	**(726)**
Tax on exclusions	(357)	60	988	(91)	42	135	2,896	2,642	423	**567**
Tax on underlying PBT	(2,016)	(2,150)	(4,730)	(1,985)	(5,338)	(6,607)	(3,485)	(5,068)	(3,476)	**(1,560)**
Loss after tax from discontinued operations	–	–	(827)	(449)	(97)	(10)	(7)	–	–	**–**
Attributable to non-controlling interests	(429)	(434)	(933)	(463)	(860)	(955)	(1)	2,586	28	**853**
Net (loss)/earnings	7,438	7,312	3,676	4,872	14,238	5,835	(3,028)	3,665	6,527	**(866)**
Underlying/adjusted earnings[d]	7,338	7,443	10,303	6,298	13,987	15,572	9,269	10,217	9,305	**4,540**
(Loss)/earnings per share (basic) – continuing operations[e]	456.2c	464.9c	286.8c	301.7c	731.0c	303.9c	(163.4)c	198.4c	353.1c	**(47.5)c**
Underlying earnings per share (basic) – continuing operations[e]	450.1c	473.2c	656.2c	357.1c	713.3c	809.7c	501.3c	553.1c	503.4c	**248.8c**
Dividends per share: declared for year[f]										
Rio Tinto shareholders (US cents)	85.07c	111.23c	111.22c	45.00c	108.00c	145.00c	167.00c	192.00c	215.00c	**215.00c**
Rio Tinto plc (pence)	44.22p	56.20p	67.49p	28.84p	67.35p	90.47p	106.77p	120.10p	134.88p	**143.13p**
Rio Tinto Limited (Aus. cents)	110.69c	125.72c	146.22c	51.56c	111.21c	134.01c	160.18c	213.14c	256.07c	**296.80c**
Net assets										
Fixed assets[g]	25,803	75,888	67,651	72,706	83,895	91,529	90,580	81,554	80,669	**70,226**
Other assets less liabilities	3,026	11,609	8,469	10,078	4,394	1,632	8,478	8,224	4,596	**4,037**
Provisions (including deferred tax)	(7,007)	(16,013)	(14,987)	(17,998)	(19,706)	(25,935)	(22,126)	(18,221)	(18,176)	**(16,352)**
Net debt	(2,437)	(45,191)	(38,672)	(18,861)	(4,071)	(8,342)	(19,192)	(18,055)	(12,495)	**(13,783)**
Non-controlling interests	(1,153)	(1,521)	(1,823)	(2,094)	(6,265)	(6,685)	(11,187)	(7,616)	(8,309)	**(6,779)**
Equity attributable to owners of Rio Tinto	18,232	24,772	20,638	43,831	58,247	52,199	46,553	45,886	46,285	**37,349**
Capital expenditure[h]	(3,992)	(5,000)	(8,574)	(5,388)	(4,591)	(12,573)	(17,615)	(13,001)	(8,162)	**(4,685)**
Acquisitions	(303)	(37,539)	(9)	(396)	(907)	(4,156)	(1,335)	4	–	**(3)**
Disposals	24	13	2,572	2,424	3,800	386	251	1,896	887	**(38)**
Net cash generated from operating activities[i]	7,803	8,491	14,883	9,212	18,277	20,235	9,430	15,078	14,286	**9,383**
Cash flows before financing activities[j]	3,714	(34,251)	8,702	5,855	16,566	3,245	(8,813)	4,132	7,783	**4,783**
Ratios										
Operating margin[k]	42%	34%	32%	24%	37%	37%	25%	30%	28%	**20%**
Net debt to total capital[l]	11%	63%	63%	29%	6%	12%	25%	25%	19%	**24%**
Underlying earnings: owners' equity[m]	44%	35%	45%	20%	27%	28%	19%	22%	20%	**11%**
Interest cover[n]	89	20	10	9	27	27	13	13	13	**7**

(a) Gross sales revenue includes 100 per cent of subsidiaries' sales revenue and the Group's share of the sales revenue of equity accounts units (after adjusting for sales to subsidiaries).

(b) Finance costs include net interest and amortisation of discount.

(c) Under IFRS, as defined in note 1, certain gains and losses on currency exchange and on revaluation of derivatives are included in the Group's net (loss)/earnings. These items are excluded from underlying earnings.

(d) Underlying earnings is an additional measure of earnings, which is reported by Rio Tinto with its IFRS (as defined in note 1) results to provide greater understanding of the underlying business performance of its operations. It is defined in note 2 to the financial statements. Underlying profit before interest and tax (PBIT) is similar to underlying earnings except that it is stated before tax and interest.

(e) 2009 earnings per share from continuing operations and underlying earnings per share have been calculated using a number of shares which reflects the discounted price of the July 2009 rights issues (the bonus factor). 2006 to 2008 comparatives have been restated accordingly.

(f) Dividends per share are the amounts declared in respect of each financial year. These usually include an interim dividend paid in the year, and a final dividend paid after the end of the year. The special dividend of 90 US cents per share paid in 2006 is not included in the table. 2005 to 2008 ordinary dividends per share have been restated using a number of shares which reflects the discounted price of the July 2009 rights issues (the bonus factor).

(g) Fixed assets include property, plant and equipment, intangible assets, goodwill, and investments in, and long-term loans to, equity accounted units.

(h) Capital expenditure is presented gross, before taking into account any disposals of property, plant and equipment.

(i) Net cash generated from operating activities represents the cash generated by the Group's consolidated operations, after payment of interest, taxes, and dividends to non-controlling interests in subsidiaries.

(j) Cash flow before financing activities is stated before deducting dividends payable to owners of Rio Tinto.

(k) Operating margin is the percentage of underlying PBIT, after excluding tax on equity accounted units, to gross sales revenue.

(l) Total capital comprises equity attributable to owners of Rio Tinto plus net debt and non-controlling interests.

(m) Underlying earnings: owners' equity represents underlying earnings expressed as a percentage of the mean of opening and closing equity attributable to owners of Rio Tinto.

(n) Interest cover represents the number of times interest payable less receivable (excluding the amortisation of discount but including capitalised interest) is covered by underlying operating profit, less amortisation of discount, plus dividends from equity accounted units. Underlying operating profit is similar to underlying earnings but is stated before tax, interest and share of profit after tax of equity accounted units.

Summary financial data in Australian dollars, sterling and US dollars

2015 A$m	2014 A$m	2015 £m	2014 £m		2015 US$m	2014 US$m
48,878	55,430	**24,063**	30,367	Gross sales revenue	**36,784**	50,041
46,281	52,797	**22,784**	28,925	Consolidated sales revenue	**34,829**	47,664
(965)	10,581	**(475)**	5,797	(Loss)/profit before tax from continuing operations	**(726)**	9,552
(2,284)	7,199	**(1,124)**	3,944	(Loss)/profit for the year from continuing operations	**(1,719)**	6,499
(1,151)	7,230	**(567)**	3,961	Net (loss)/earnings attributable to Rio Tinto shareholders	**(866)**	6,527
6,033	10,307	**2,970**	5,647	Underlying earnings [(a)]	**4,540**	9,305
(63.1)c	391.1c	**(31.0)p**	214.3p	Basic (loss)/earnings per ordinary share [(b)]	**(47.5)c**	353.1c
330.6c	557.6c	**162.8p**	305.5p	Basic underlying earnings per ordinary share [(a)(b)]	**248.8c**	503.4c
				Dividends per share to Rio Tinto shareholders [(c)]		
297.89c	223.23c	**146.90p**	122.72p	– paid	**226.5c**	204.5c
151.89c	152.98c	**74.21p**	77.98p	– proposed	**107.5c**	119.0c
6,356	8,621	**3,129**	4,723	Cash flow before financing activities	**4,783**	7,783
(18,924)	(15,243)	**(9,294)**	(8,026)	Net debt	**(13,783)**	(12,495)
51,280	56,463	**25,184**	29,729	Equity attributable to Rio Tinto shareholders	**37,349**	46,285

(a) Underlying earnings exclude net impairment and other charges of US$5,406 million (2014 charges: of US$2,778 million), which are analysed on page 127.

(b) Basic (loss)/earnings per ordinary share and basic underlying earnings per ordinary share do not recognise the dilution resulting from share options on issue.

(c) The Australian dollar and sterling amounts are based on the US dollar amounts, retranslated at average or closing rates as appropriate, except for the dividends which are the actual amounts.

The financial data above has been extracted from the financial information set out on pages 107 to 189.