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Metals & Mining

Searching for Outperformance in the Super-Cycle Sunset

- **Super-cycle sunset** — We believe mining companies with a sustainable margin advantage, biggest efficiency gains and value accretive capital allocation are likely to outperform in a flat to declining commodity price environment.
- **Search for outperformance** — To identify outperformance candidates, we update our efficiency analysis launched in 2 November's "Efficiency Rewards" with reported numbers for 2011. We believe management teams and asset portfolios with proven track records are better positioned to continue delivering sustainable value creation through the cycle. We analyse 2007-2011 track records on the following criteria 1) safety; 2) labour productivity; 3) volume growth; 4) revenue per employee; 5) cost control; 6) EBITDA per employee and 7) Capital allocation. Miners that perform well in our analysis have shown good relative share price performance (Figure 1), and we believe this correlation will hold in a declining commodity price environment.
- **Scale and Skill drive productivity** — Large scale mechanised miners with fewer, but highly skilled and more expensive, employees generate more EBITDA per employee.
- **Leaders and laggards** — We recommend buying Exxaro, BHP Billiton, Rio Tinto, Vale, Anglo American, and African Rainbow Minerals which screen well on our analysis and offer attractive value. Kumba (Sell) performed best, but is priced for perfection, in our view, and faces significant headwinds. South African gold and PGM producers rank worst in this analysis.

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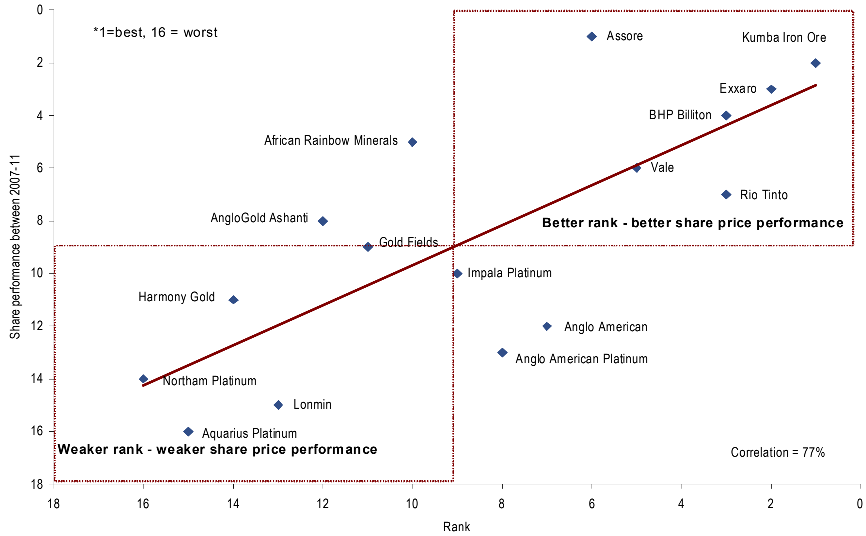
Figure 1. Relationship between miners performance ranking* and 2007-11 share performance*



Source: CIRA, DataStream

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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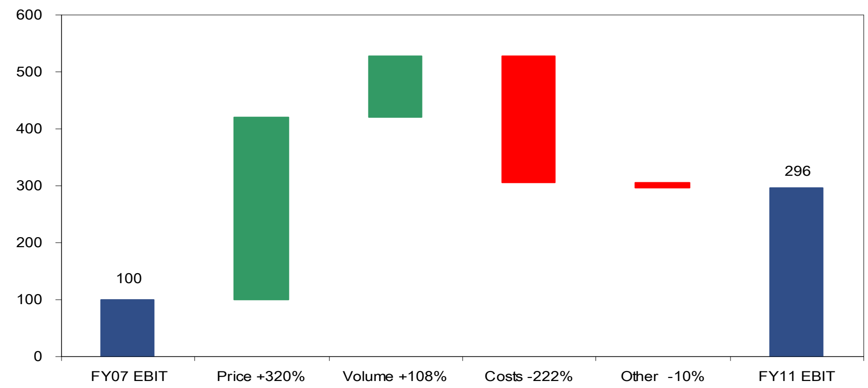
The Easy Money Has Been Made

Earnings growth has been driven largely by higher commodity prices over the past decade. Inefficiency and poor asset utilization have been hidden by commodity price driven margin expansion. Even inefficient miners exposed to hot commodities have provided healthy earnings growth and good share price performance.

Price support may diminish in importance given 1) unsustainably high historic industry margins and 2) an uncertain economic outlook. Lower commodity prices will likely expose inefficient miners, while sustainable competitive margin advantage, efficiency gains and asset optimization and value accretive capital allocation will likely be rewarded when investors can no longer rely on increasing commodity prices.

Figure 1. Miners' EBIT variance analysis, FY07-11 (2007 EBIT = 100, equally weighted)

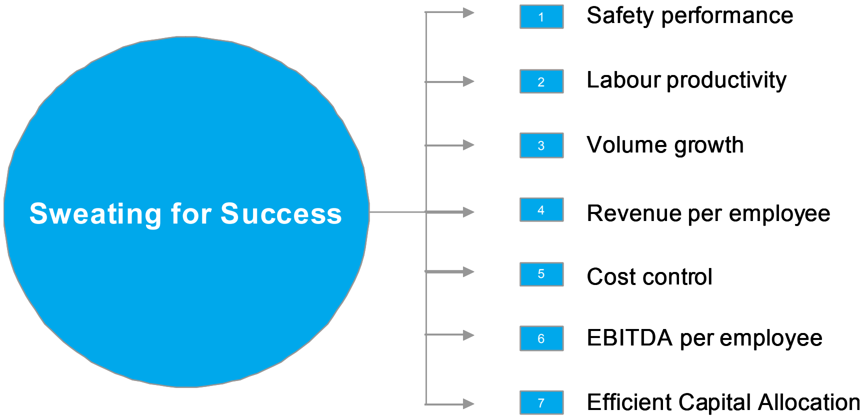


Source: Company Reports (Anglo American, BHP Billiton, Kumba, Exxaro, African Rainbow Minerals equally weighted), Citi Investment Research and Analysis

Search for outperformance

We compare miners' historical performance in terms of: 1) safety performance; 2) labour productivity; 3) volume growth; 4) revenue per employee; 5) cost control; 7) EBITDA per employee and 5) Capital allocation efficiency.

Figure 2. Sweating for Success – Efficiency drives Returns



Source: Citi Investment Research and Analysis

Figure 3 ranks miners in terms of historical productivity and efficiency performance.

Kumba came out tops, but now faces major headwinds

- Kumba performed best (Figure 3), displacing Rio Tinto in our "Sweating for Success" analysis and BHP Billiton in our "Efficiency Rewards" analysis. Superior safety, productivity, production growth, capital allocation and favourable exposure to iron ore resulted in average EBITDA per employee of $218 000 over the five year period. It performed consistently strong across all metrics, except cost control. However, we maintain our Sell recommendation on Kumba because we feel it could face some serious headwinds going forward. Apart from our view of falling iron ore prices we are concerned about the following: 1) Kumba is more expensive than peers on relative valuations 2) more cost pressure than peers due to increasing mining complexity at Sishen, 3) Kumba has a shorter reserve life (about 23 years) than major peers. 4) Limited reserves could mean the end of its strong growth profile beyond Kolomela, which is currently ramping up. 5) Limited reserves also mean that Kumba may be forced into an acquisition, which poses capital allocation risk. Our target price is R430.

ARM disappointed again, but Khumani's ramp up will be a game changer

- African Rainbow Minerals again lagged behind other South African listed diversified miners, despite its improved safety record. We believe a key reason could be contractors at Khumani expansion project, which is not yet a producing asset, which weighs on ARM's productivity, volume growth and average revenue and EBITDA per employee.

- The top ten miners in our analysis are dominated by base metal and bulk commodity producers, while the bottom six are deep level precious metal producers.

- Safety is the cornerstone of efficiency. Generally speaking, top ranked miners had the best safety record (Figure 6).

- Our analysis indicates that there is a 95% correlation between average employee cost and productivity (Figure 24). Successful companies maximise productivity of each dollar of labour cost paid even if it means higher average salaries per employee. Large scale mechanised miners generate superior revenue for each unit of labour cost (Figure 25), which ultimately result in higher EBITDA/employee.

Figure 3. Results of Citi's 2011 mining company efficiency analysis (1 = best, 16 = worst)

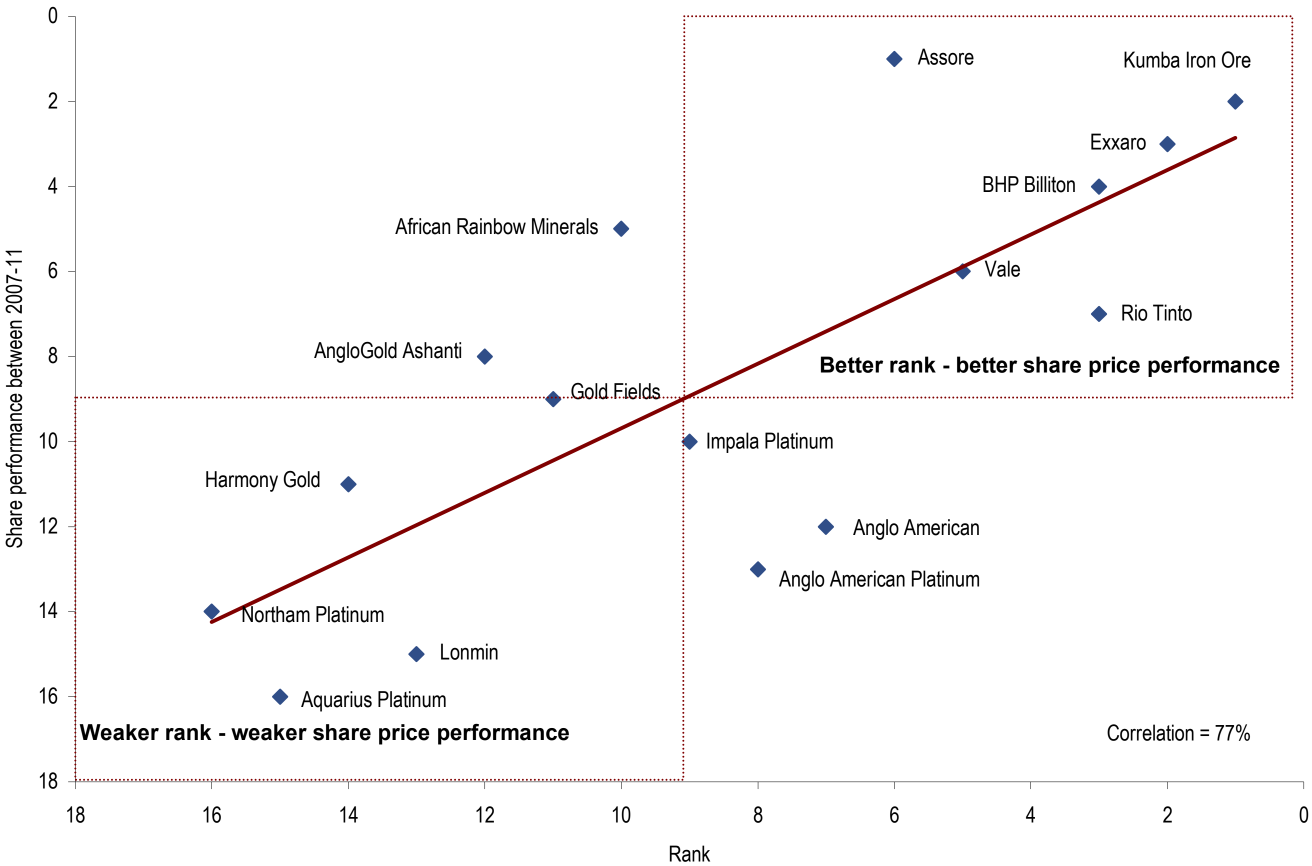
Rank	Company	Safety	Productivity	Production growth/share	Avg. Revenue per employee	Cost control	Avg. EBITDA per employee	Asset utilization efficiency	Total score (lowest = best)
1	Kumba Iron Ore	1	5	1	3	13	3	1	**27**
2	Exxaro	3	2	2	6	9	6	2	**30**
3	BHP Billiton	8	3	5	2	10	1	5	**34**
4	Rio Tinto	9	1	10	1	8	2	3	**34**
5	Vale	2	5	6	4	2	4	13	**36**
6	Assore	3	10	3	5	7	5	6	**39**
7	Anglo American	10	7	7	7	3	7	13	**54**
8	Anglo American Platinum	15	4	8	9	4	12	8	**60**
9	Impala Platinum	13	10	9	10	1	9	10	**62**
10	African Rainbow Minerals	5	14	4	8	15	8	9	**63**
11	Gold Fields	5	7	13	12	14	10	7	**68**
12	AngloGold Ashanti	16	10	14	11	6	14	3	**74**
13	Lonmin	5	15	11	15	5	15	12	**78**
14	Harmony Gold	12	9	12	16	11	16	10	**86**
15	Aquarius Platinum	11	10	16	13	12	11	15	**88**
16	Northam Platinum	14	16	15	14	16	13	16	**104**

Source: Citi Investment Research and Analysis

Miners that performed strongly in our analysis have generally shown good relative share price performance over the period (77% correlation - Figure 4). See Figure 36 in the Appendix for share price performance over the period.

We believe this correlation will hold or could even strengthen in a flat commodity price environment.

Figure 4. Relationship between miners performance ranking* and 2007-11 share performance*



* 1 = best; 16 = worst

Source: DataStream, Citi Investment Research and Analysis

Key drivers of shareholder returns going forward

Our analysis suggests that miners with the following characteristics could outperform over the coming decade:

…a number of important characteristics

- **Attractive industries** — Companies should focus on industries with strong fundamentals. High-margin businesses share a number of important characteristics: steep cost curve (iron ore, copper), strong trend demand growth (Chinese infrastructure related like iron ore), high barriers to entry (platinum, coking coal, copper, iron ore), low barriers to exit (in contrast to steel, aluminium sectors), substantial capital investment (platinum, iron ore) and consolidated industry structure (diamonds, iron ore, coking coal, platinum and manganese).

- **Sustainable margin advantage through quality assets -** assets should be competitively positioned to maximize returns trough the cycle

  - **Quality ore bodies** – large, long life, high grade, low cost, expandable assets.

  - **Stable geographies** – Lower risk of resource nationalism, availability of skills, infrastructure etc.

  - **Mining simplicity** 1) proximity to infrastructure, 2) opencast trumps underground, 3) Low upfront capex 4) easy metallurgical recoveries.

  - **Scale benefits drive superior productivity.**

  - **Diversification** – a well diversified portfolio (across geographies and commodities) of quality assets should result in more stable cash flows through the cycle.

To offset increasing mining complexity

- **Discipline and performance culture** — Strong management is required to consistently drive productivity and efficiency improvements to offset industry challenges like increasing mining complexity and grade decline. Revenue should be maximized for each unit of cost. Safety performance has an increasing impact on miners' productivity and bottom line.

- **Efficient capital allocation** — Poor capital allocation is a key risk now that many miners have strong balance sheets and healthy cash generation. Miners with expandable assets are less likely to make value destructive investments. At this stage in the cycle we would **prefer acquisitive growth** of quality producing companies trading **below replacement cost** over expensive projects which carries execution risk. Companies with attractive dividend yields are likely to continue outperforming.

- **Cost of capital** — Interest rates are at historic lows. We believe miners should make more use of cheap debt to fund growth. This could significantly reduce miners' cost of capital and boost value. It will also likely lead to more attractive dividend yields.

Recommendations on the Mining companies

We believe the tail wind of soaring commodity prices, which has been the principal driver of miners' share prices is now over. The sector faces headwinds of high mining inflation, falling volumes, soaring construction cost and growing resource nationalism which are likely to result in falling margins and returns.

However, over the past few years, many CEEMEA materials stocks have fallen substantially from their highs on global economic concerns and are now trading at historically cheap levels. We continue to see downside risk to 2012 earnings forecasts given a gloomy economic backdrop and weak spot prices. However, cheaper valuations suggest to us potential near-term earnings downgrades could largely be priced in.

Rich PE ratings are less of a downside risk

Now that peak margin expectations coupled with rich PE ratings are less of a downside risk to our investment stance, we see the following fundamental support for SA listed diversified mining equities: 1) cash flow benefit from strong near-term volume growth; 2) near-term decline in capex for most miners, 3) margin enhancement through focused volume growth into high-margin industries, 4) comfortable balance sheets; and 5) increasing potential for higher dividends or share buybacks.

In the South African market we maintain our preference for large cap diversified miners Anglo American and BHP Billiton, given what we see as attractive valuations, global and product diversification, solid cash generation, strong production growth, comfortable balance sheets and potential for higher dividends. We are cautious on the SA gold companies and Kumba Iron Ore due to what we see as relatively stretched valuations and limited growth prospects.

Figure 5. Mining companies ranked by total one-year return

Company	RIC	Unit	1-Yr target price	Current price*	1-Yr target capital return	1-Yr fwd dividend yield	Total 1-Yr return	12-mnth forward rolling PE	Rec.
Northam	NHMJ.J	ZAR	**42**	27	58.5%	1.8%	**60.3%**	17.7x	**BUY**
Rio Tinto	RIO.L	GBP	**45**	31	45.2%	2.5%	**47.7%**	6.6x	**BUY**
Impala	IMPJ.J	ZAR	**205**	147	39.1%	4.6%	**43.7%**	11.4x	**BUY**
Vale	VALE.N	USD	**26**	20	28.7%	6.2%	**34.9%**	6.2x	**BUY**
Aquarius	AQP.L	Pence	**80**	60	33.3%	0.7%	**34.0%**	37.5x	**NEUTRAL**
Anglo American	AGLJ.J	ZAR	**360**	281	28.3%	2.5%	**30.8%**	7.5x	**BUY**
BHP Billiton	BLT.L	GBP	**23**	19	22.3%	3.5%	**25.8%**	8.0x	**BUY**
ARM	ARIJ.J	ZAR	**220**	182	20.7%	3.3%	**24.0%**	10.9x	**BUY**
Lonmin	LMI.L	GBP	**10**	8	22.9%	0.0%	**22.9%**	12.5x	**NEUTRAL**
Exxaro	EXXJ.J	ZAR	**220**	208	5.8%	6.3%	**12.0%**	7.3x	**BUY**
RB Plats	RBPJ.J	ZAR	**60**	56	6.4%	0.1%	**6.5%**	23.3x	**NEUTRAL**
Anglo Platinum	AMSJ.J	ZAR	**500**	508	-1.6%	2.4%	**0.8%**	30.5x	**SELL**
AngloGold	ANGJ.J	ZAR	**300**	306	-1.8%	1.8%	**0.0%**	9.7x	**NEUTRAL**
Assore	ASRJ.J	ZAR	**280**	309	-9.3%	2.3%	**-7.0%**	11.7x	**NEUTRAL**
Gold Fields	GFIJ.J	ZAR	**100**	112.9	-11.4%	3.9%	**-7.5%**	8.2x	**SELL**
Harmony	HARJ.J	ZAR	**70**	86	-18.8%	0.0%	**-18.8%**	19.6x	**SELL**
Kumba Iron Ore	KIOJ.J	ZAR	**430**	588	-26.9%	7.8%	**-19.0%**	10.7x	**SELL**
Average					**14.2%**	**2.9%**	**17.1%**	**14.1x**	

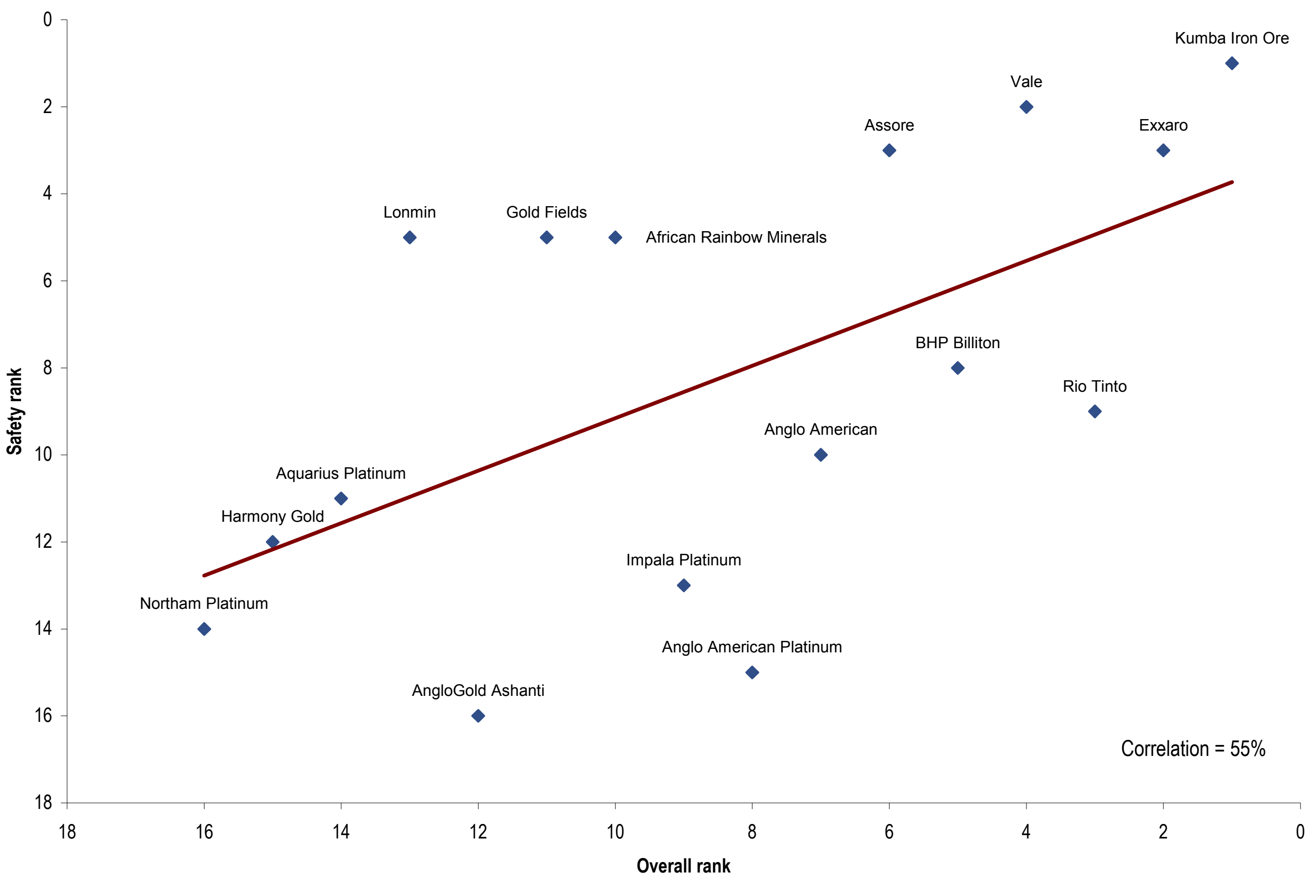
Source: dataCentral, CIRA

2007-2011 Efficiency analysis

1. Safety

Safety is the cornerstone of efficient and productive mining. There is a 55% correlation between miners' safety track records and overall efficiency and productivity (Figure 6).

Figure 6. Correlation between safety and overall productivity and efficiency ranking



Source: Company reports, Citi Investment Research and Analysis

Our analysis of mining companies' safety track record over the past four years (Figure 7 and Figure 8) highlights the following:

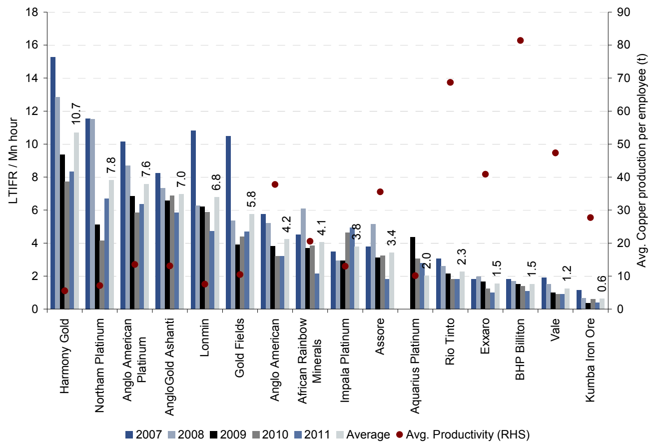
- Deep-level precious metal miners perform far worse than opencast bulk and base metal producers. Average lost time injury frequency rate (LTIFR) for precious miners stood at 6.6 per million man hours (down from 7.2 in last year's analysis), about three times higher than base metal and diversified peers.

- Encouragingly, almost all miners made considerable progress in terms of enhancing safety over the past three years. The average LTIFR improvement over the period was 41%. Miners that saw considerable progress (LTIFR reduced

by 50% or more) are Kumba Iron Ore (65%), Lonmin (56%), Gold Fields (55%), Vale (53%) and African Rainbow Minerals (52%).

- Impala Platinum, AngloGold Ashanti and Acquarius Platinum have made the least progress in terms of their safety record over the four years.
- Kumba, Vale, BHP Billiton and Exxaro were the safest miners, while underground gold and platinum miners had the most safety incidents.
- Anglo American and African Rainbow Minerals had the worst average safety record among diversified peers over the period, but both improved their safety by more than 40%.

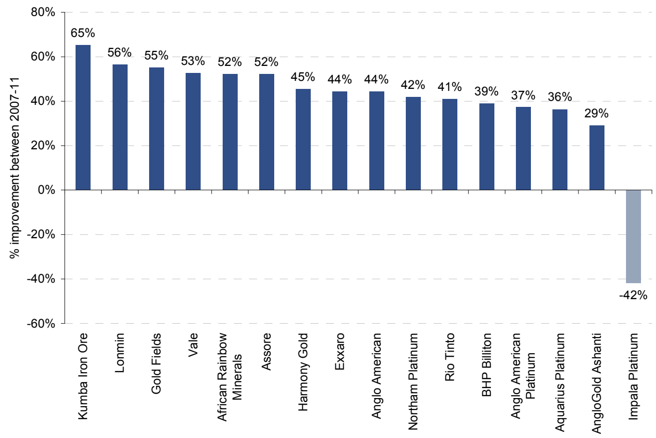
Figure 7. Miners' LTIFR*, 2007-11



* Per million man hours

Source: Company reports, Citi Investment Research and Analysis

Figure 8. % reduction (increase) in LTIFR, 2007-11



Source: Company reports, Citi Investment Research and Analysis

2. Labour productivity

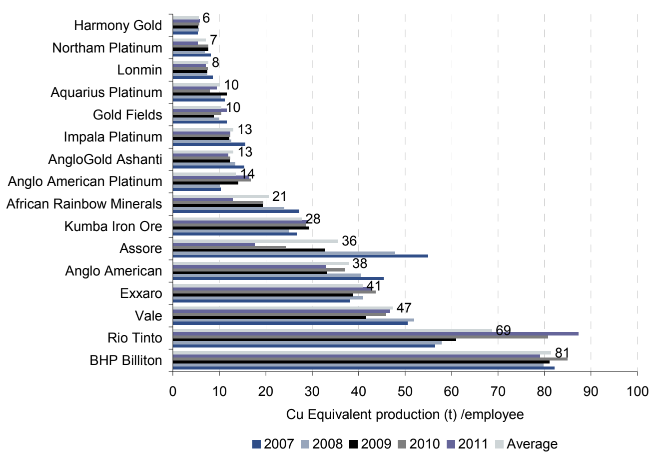
Figure 9 shows miners' labour productivity measured in annual copper equivalent units per employee.

Throughout this report, we calculated copper equivalent units using our long-term normalised commodity prices (see page Figure 34), to equalize revenue generating units among companies. For example, 10 million tonnes of export thermal coal is equal to 188 000 tonnes of copper (10 000 000x$109/t/$5 800/t).

Superior shareholder value generation starts with the correct strategy

- Productivity, or normalised revenue per employee, varies widely between different industries. Superior shareholder value generation therefore starts with the correct strategy. Companies need to invest in industries with strong fundamentals, and preferably in large scale assets which maximize revenue per employee. Opencast mining, which lends itself to mechanization appears to boost productivity relative to underground mining.
- Larger diversified miners (BHP, RIO, Vale) are more productive than smaller miners (ARM, Kumba), pointing to scale benefits.
- BHP's workforce appears to be most productive, boosted by its petroleum division, its large scale and the bulk and mechanized nature of its mineral operations.
- Deep-level precious metal miners are least productive.
- Anglo American Platinum posted the biggest efficiency improvement over the three-year period (+60%) as it reduced its workforce by 38% and implemented a major restructuring. Rio Tinto (+55%) performed best among the major London listed miners, partly due to a 36% reduction in workforce.
- Assore and ARM's efficiency dwindled by 68% and 53%, mostly due to a significant jump in unproductive workforce (263% and 166% respectively). We believe this relates mostly to contractors on Khumani expansion project, which contribute to headcount, but produce no revenue.

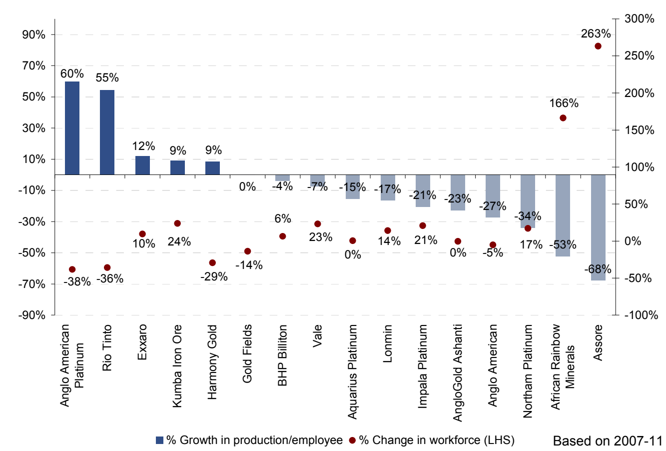
Figure 9. Annual production per employee*, 2007-11



* Copper equivalent tonnes per employee (including contractors) per annum

Source: Company reports, Citi Investment Research and Analysis

Figure 10. Growth in production per employee and workforce, 2007-11



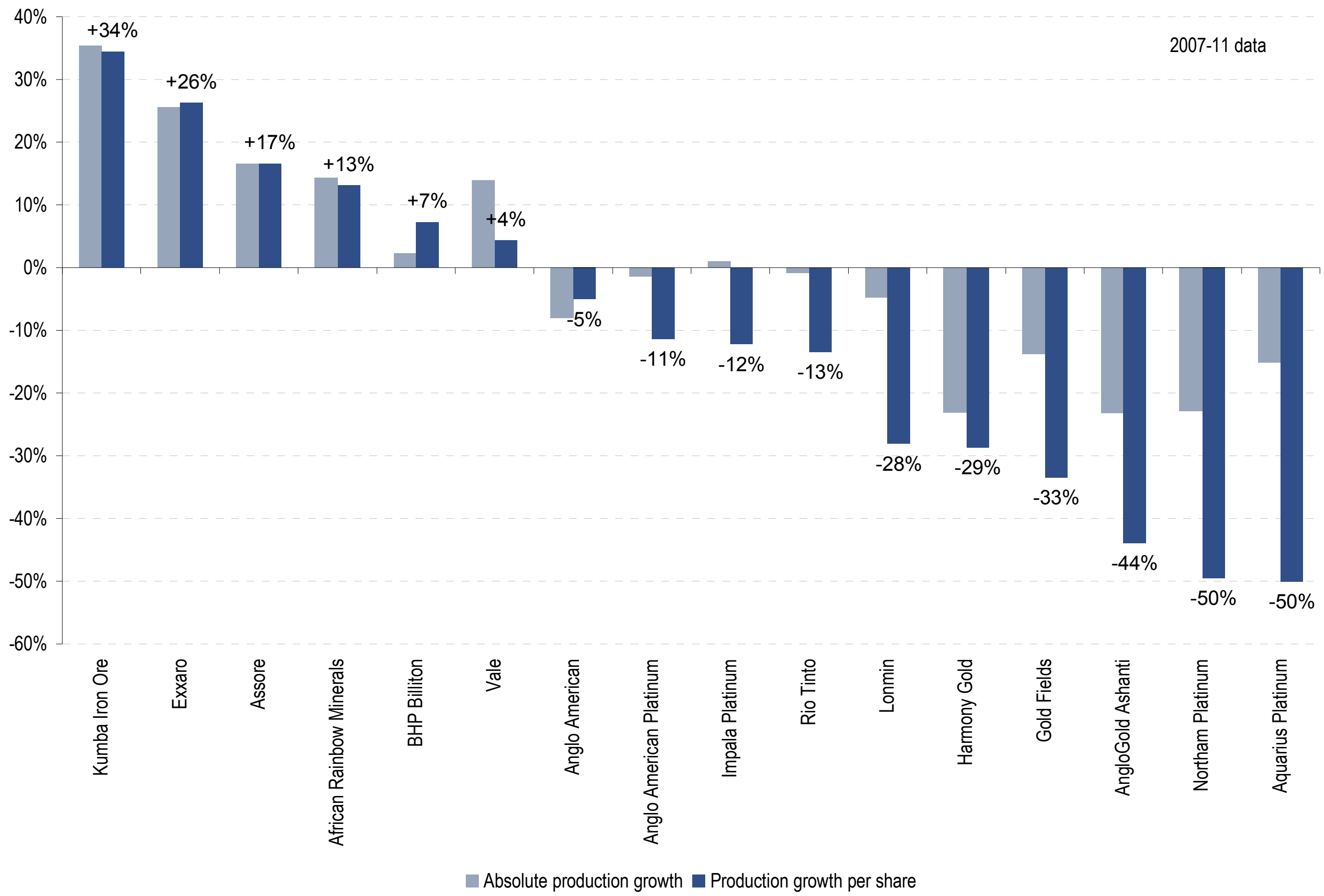
Source: Company reports, Citi Investment Research and Analysis

3. Production volume growth per share

Average production declined 1% over the past four years. Kumba (+34%), Exxaro (+26%) and Assore (+17%) were outperformers. BHP Billiton increased production per share 7%, beating major London listed peers.

Platinum and Gold miners performed poorly, with production declines in all cases. Production per share declines was exacerbated by share issues over the period.

Figure 11. Volume growth per share since 2007*



* Measured in copper equivalent units, only core divisions included. As per financial year.

Source: Company Reports and CIRA Estimates

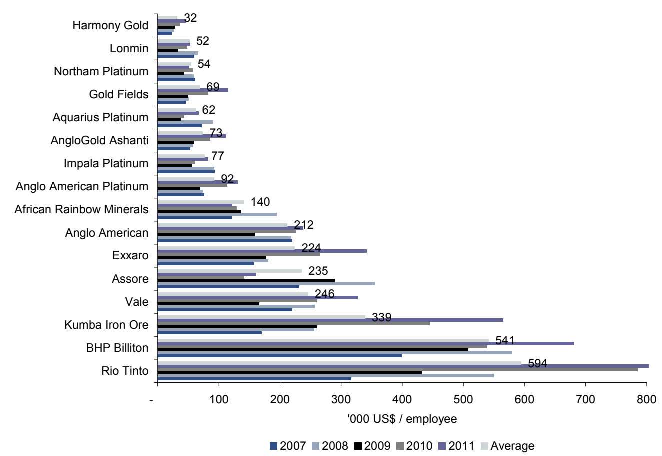
4. Revenue per employee

Revenue per employee combines labour productivity with the impact of commodity prices.

Our analysis in Figure 12 and Figure 13 highlight the following:

- Rio Tinto ($594 000 per employee) and BHP Billiton ($541 000) generated far more revenues per employee than peers. Performance was driven largely by superior productivity (Figure 9), and both miners benefited from high iron ore prices.
- Harmony Gold ($32 000) came out bottom of the pile and significantly worse than Goldfields ($69 000) and Anglogold Ashanti ($73 000), mainly due to its poor productivity (Figure 9).
- Kumba (+232%), Rio Tinto (+181%) and Goldfields (+150%) posted the biggest improvement in revenue per employee over the three years, due mainly to rising prices for iron ore and gold. Kumba and Rio Tinto also benefited from improved labour productivity over the period (Figure 9).
- Assore and Northam showed the biggest decline in revenue per employee due to a massive 263% increase in workforce for Assore and disappointing PGM price performance which impacted Northam.

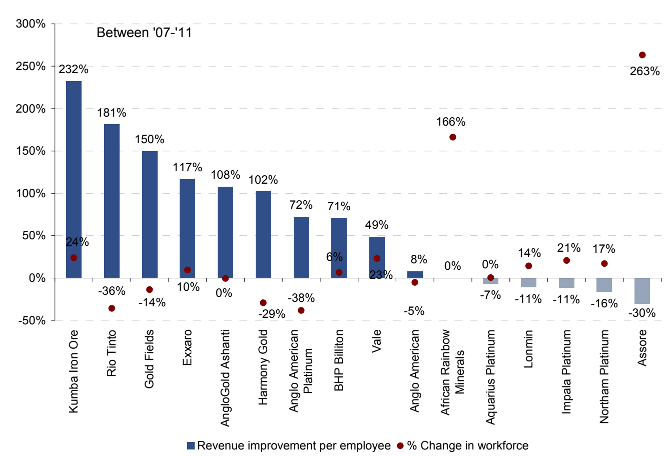
Figure 12. Revenue per employee*, 2007-11



* Including contractors

Source: Company reports, Citi Investment Research and Analysis

Figure 13. Improvement in revenue per employee, 2007-11



Source: Company reports, Citi Investment Research and Analysis

5. Cost control

Head office, marketing, exploration, royalties, SGA and other costs are often not captured in a normal cash costs analysis for miners. Thus whilst a mine may look profitable, its true profitability may not be as rosy.

To assess true cash costs (as well as compare costs across commodity types) we have looked at total costs at the corporate level. Costs are thus represented as the difference between sales and EBITDA.

To convert these into unit costs we have divided total costs by copper equivalent production. In turn copper equivalent production was calculated by dividing 2010 revenue by the 2010 average copper price (for this exercise only). The table below provides a walk through example of the calculations.

Figure 14. Calculating copper equivalent cash costs (2011)

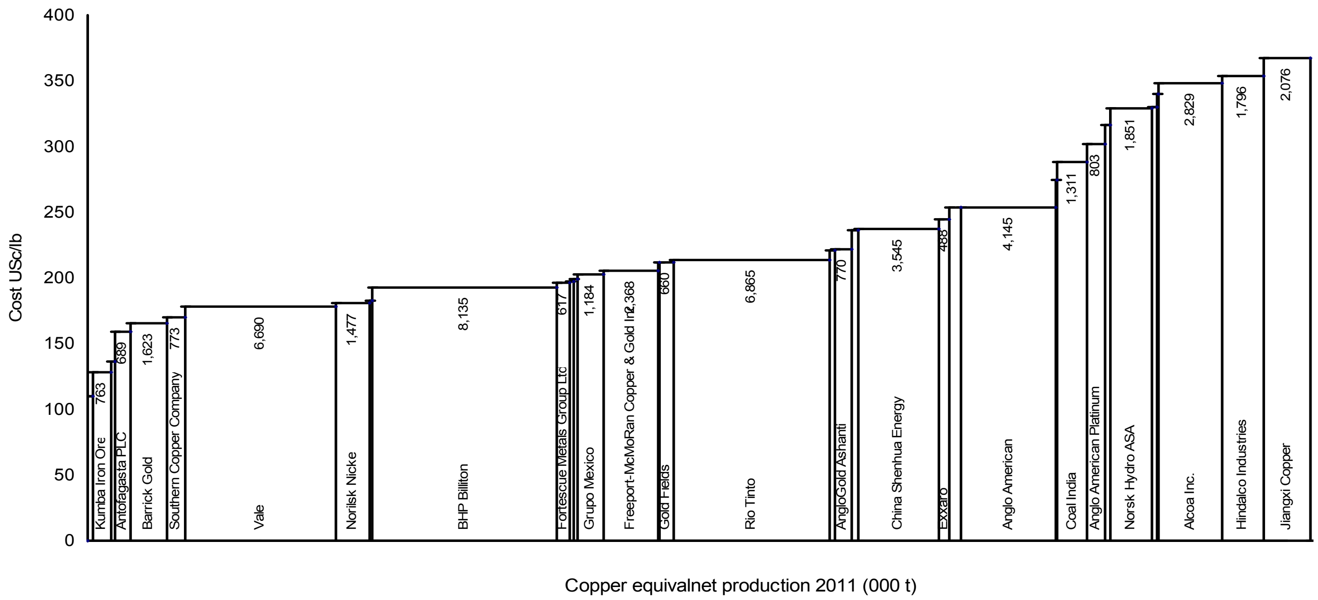
Item		Unit	Anglo	BHP	RIO	Vale
A	Sales	US$m	30,580	71,739	60,537	58,991
B	EBITDA	US$m	11,635	37,093	28,226	32,721
C	EBITDA Margin (B ÷ A)	%	38%	52%	47%	55%
D	Costs (A -B)	US$m	18,945	34,646	32,311	26,270
E	Copper price	US$/t	8820	8820	8820	8820
F	Copper price	USc/lb	400	400	400	400
G	Copper production units (A ÷ E x 1000)	kt	3,467	8,134	6,864	6,688
H	Cash cost (D ÷ G x 1000)	US$t	5,464	4,260	4,708	3,928
I	**Cash cost (H ÷ 2204 x 100)**	**USc/lb**	**248**	**193**	**214**	**178**

Source: Company Reports and CIRA Estimates

With the calculation of copper equivalent production, and an associated copper equivalent cash cost figure, we can plot a cost curve for the mining industry under our coverage universe.

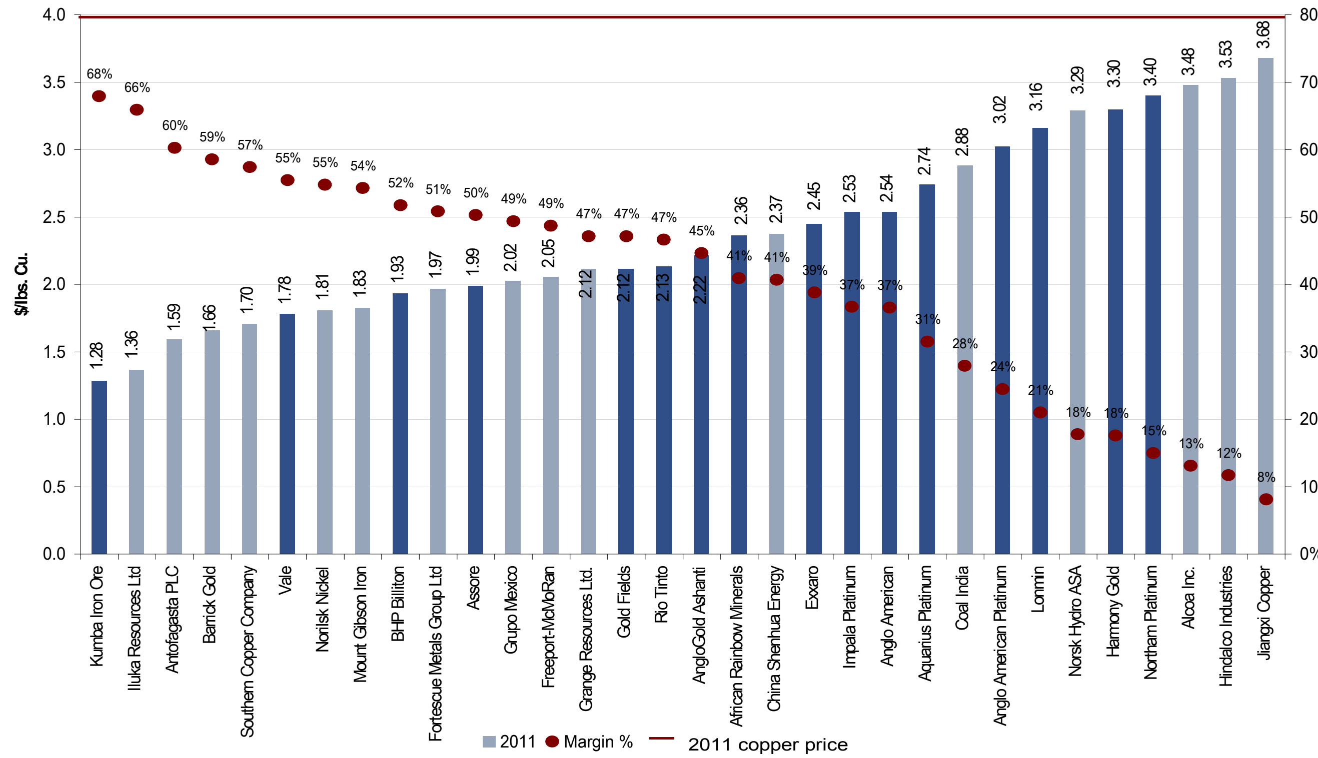
Whilst it is a crude analysis, it provides a simple snapshot of the cash cost position of companies across the mining industry. Figure 15 and Figure 16 below represent cost curves of major mining companies in Citi's global coverage universe.

Figure 15. Industry cash cost curve (showing copper equivalent units)



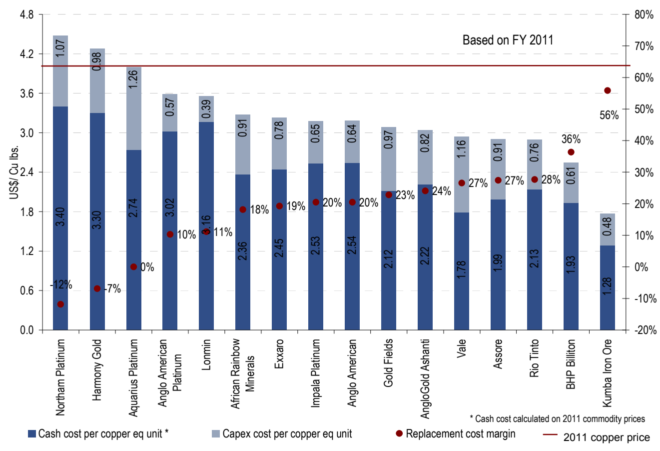
Source: Company Reports and CIRA Estimates

Figure 16. Industry cash cost curve (with EBITDA margin)



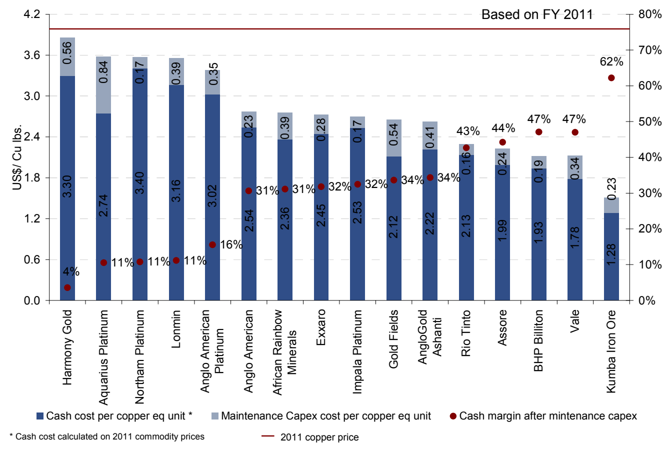
Source: Company data and Citi Investment Research and Analysis

Figure 17. Cash cost and total capital expenditure per Cu unit



Source: Company reports, Citi Investment Research and Analysis

Figure 18. Cash cost and maintenance capital expenditure per Cu unit



Source: Company reports, Citi Investment Research and Analysis

A company's strategy will largely determine its position on the global cost curve. Strategy should determine 1) attractiveness of the industry and 2) competitiveness relative to peers within same industry (driven by mining complexity, grades, scale and infrastructure).

High-margin industries share a number of important characteristics:

- Steep cost curve (iron ore, copper)
- Strong trend demand growth (Chinese infrastructure related like iron ore)
- High barriers to entry (platinum, coking coal, copper, iron ore)
- Low barriers to exit (in contrast to steel, aluminium sectors)
- Substantial capital investment (platinum, iron ore)
- Consolidated industry structure (diamonds, iron ore, coking coal, platinum and manganese)
- Low market risk

Discipline and operational efficiencies required to maintain competitiveness

Once a company is invested in the desired asset, as determined by its strategy the cost curve position can be maintained or improved through operational efficiencies and discipline. Badly run companies are likely to become less competitive, even if they own good assets.

Average unit cash cost inflation for these miners from 2007 to 2011 was 79% in US dollar terms (Figure 19). The escalation in cash costs has been driven by a combination of factors, but the major drivers have been:

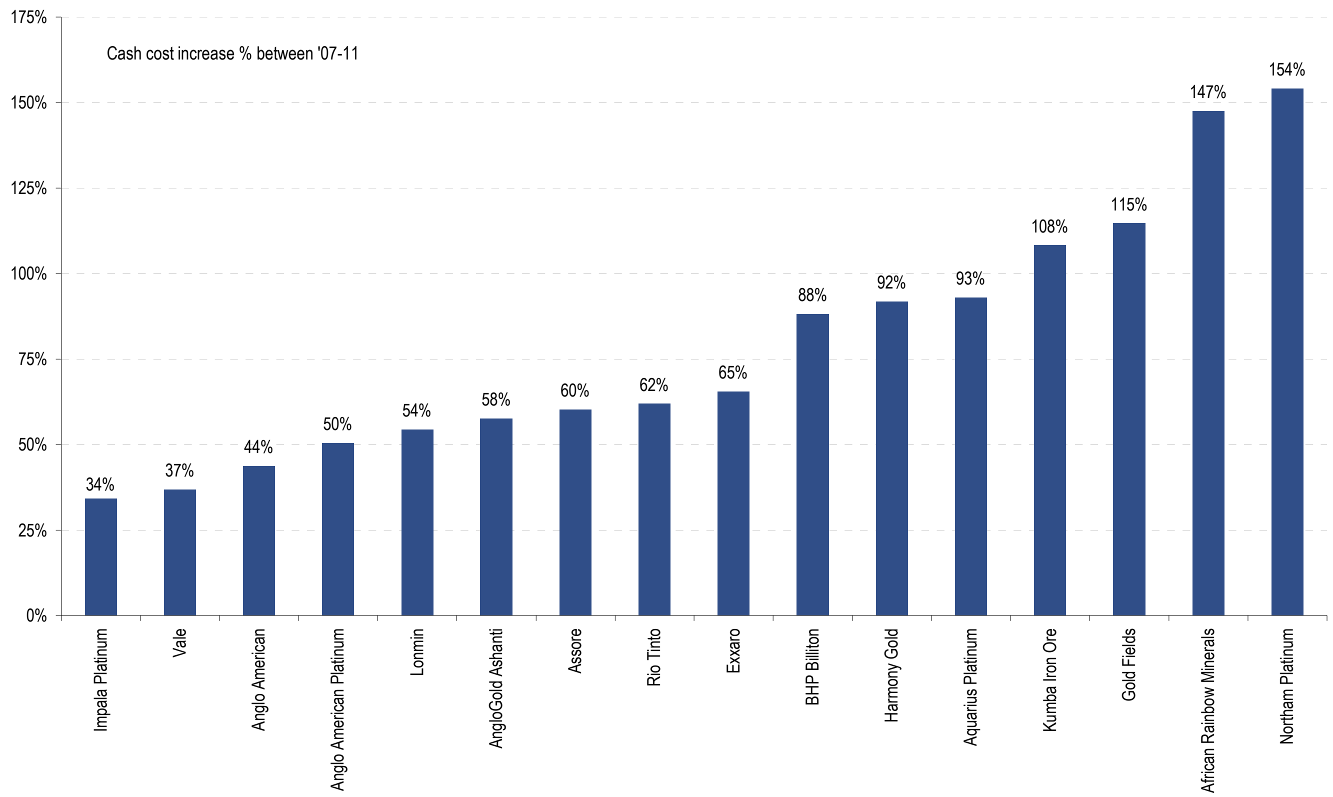
- currency appreciation;
- increasing labour and electricity costs;
- fuel and consumable costs;
- falling grades; and

- deeper, older mines with higher strip ratios;

Impala Platinum and Vale showed the best cost containment, with inflation of only 34% and 37%, respectively, over the three years.

Northam and ARM's costs went up most, rising 154% and 147% over these four years.

Figure 19. Four year cash cost inflation (2007-2011)

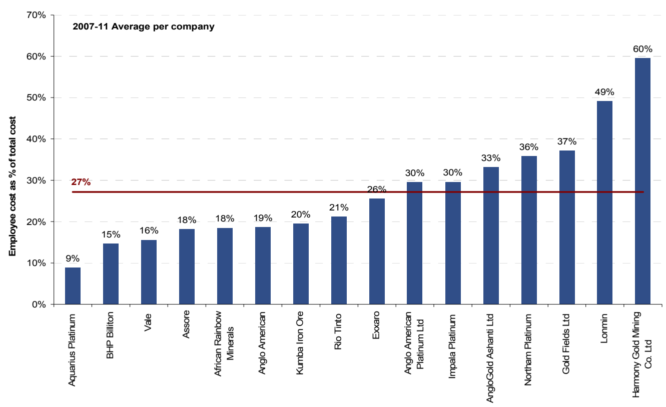


Source: Company Reports and CIRA Estimates

Labour costs under the spotlight

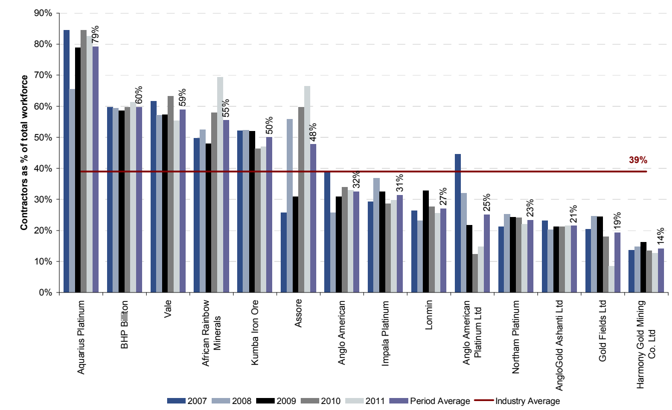
Labour is one of the most significant cost drivers, contributing up to 60% of miners' cash cost.

Figure 20. Labour cost, excluding contractors, as % of total cash cost



Source: Company Reports and CIRA Estimates

Figure 21. Contractors as % of workforce



Source: Company Reports and CIRA Estimates

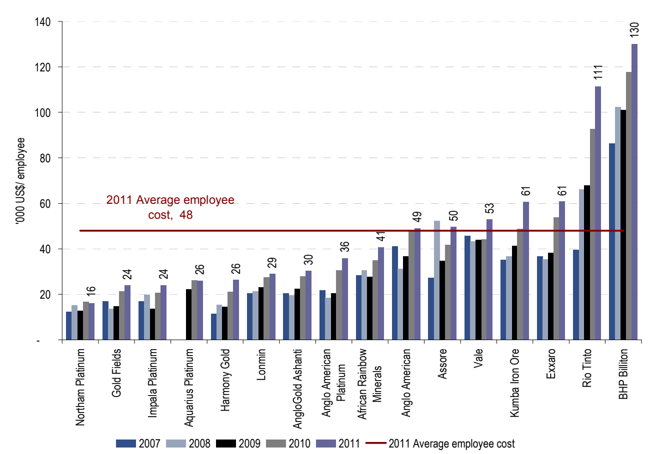
Successful miners need to achieve the following two objectives:

- minimise labour cost inflation; while
- maximising productivity per employee.

Miners that most successfully control labour cost inflation will likely achieve good relative cost control. The level of mining companies' average salary per employee is less important than productivity achieved for each rand of labour cost paid.

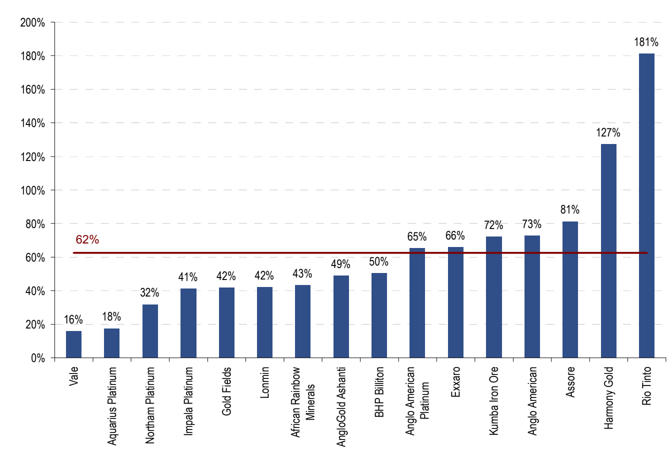
Vale contained average labour cost inflation to only 16% over the past four years, significantly better than sector average 62% (CAGR of 13%). This largely explains Vale's superior cost containment performance in Figure 19. Rio Tinto offset its massive labour cost increase of 181% with a 55% productivity improvement (Figure 10), and contained total cash cost inflation to 62% over the period (Figure 19).

Figure 22. Avg. employee cost 2007-11 (LHS) and 4yr. inflation (RHS)



Source: Company reports, Citi Investment Research and Analysis

Figure 23. Average wage inflation, 2007-11

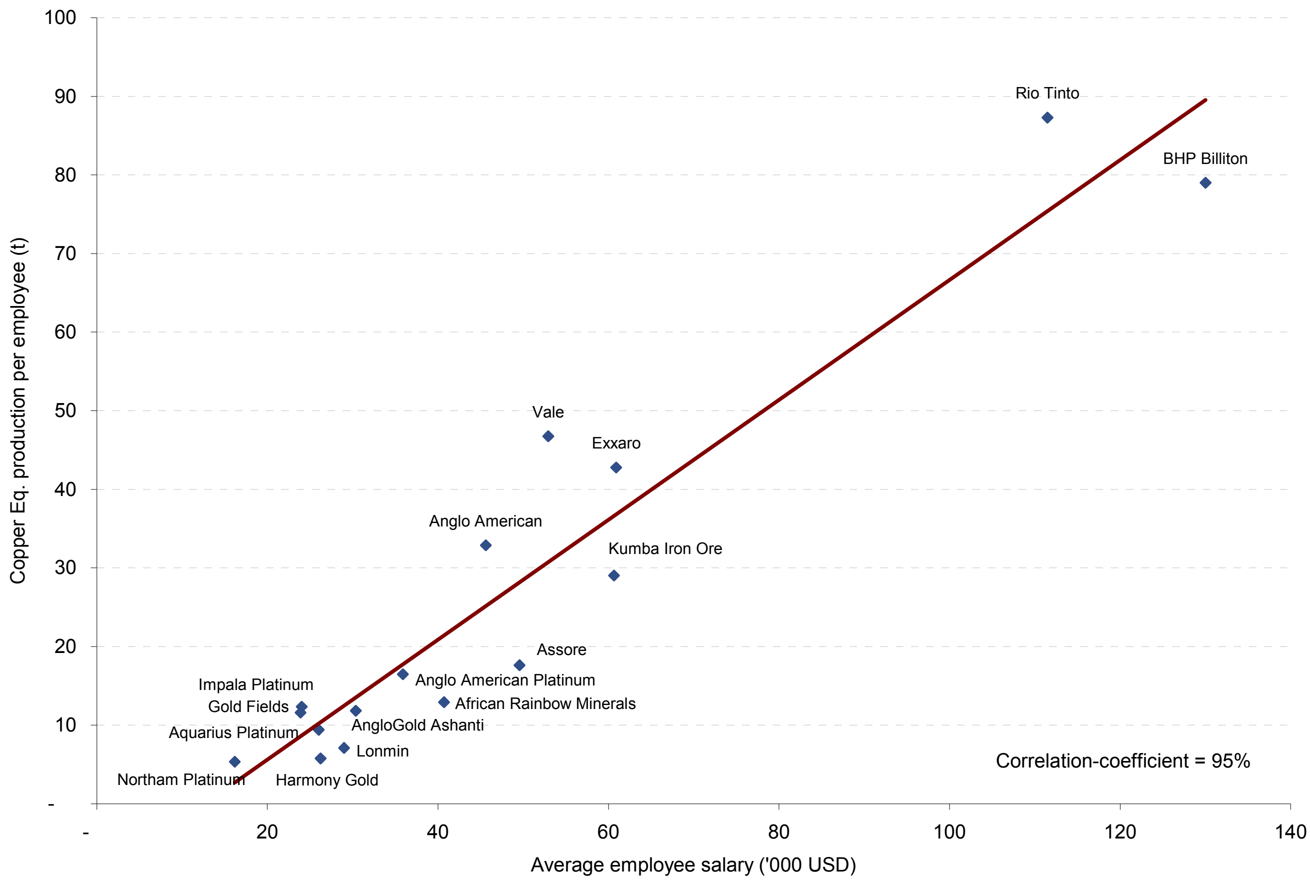


Source: Company reports, Citi Investment Research and Analysis

Productivity essential in driving down costs

Our analysis indicates that there is a 95% correlation between employee cost and productivity (Figure 24).

Figure 24. Correlation between employee cost and productivity, 2011



Source: Company reports, Citi Investment Research and Analysis

BHP Billiton's average employee cost of $130 000 (Figure 22) is far higher than peers', but it also generates far more revenue per employee (including contractors) (Figure 12). It uses more skilled labour, contractors and mechanization to achieve higher output.

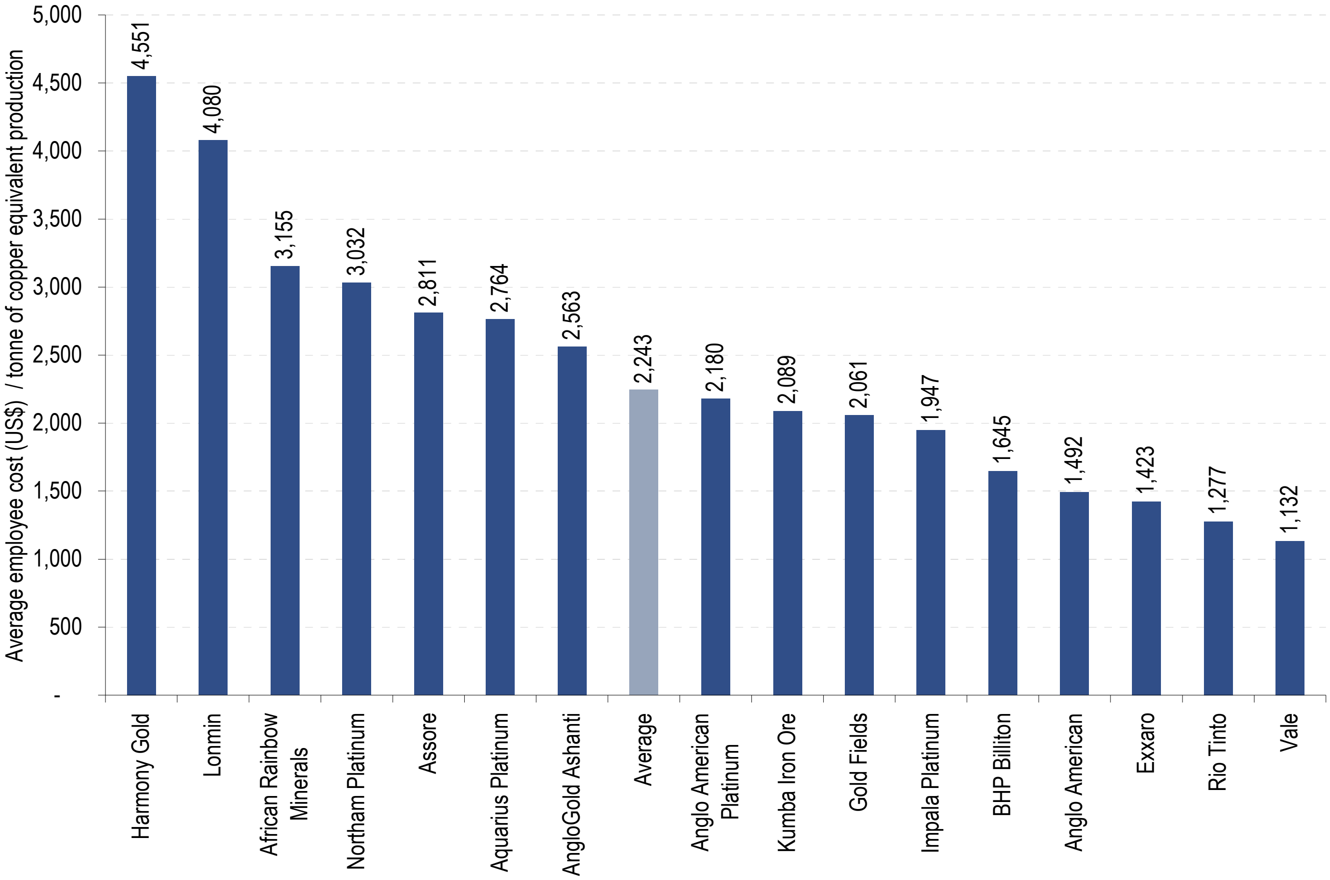
By contrast, Northam's average employee cost is lowest among its peers ($16 000), but it also achieved the third lowest output (Figure 12).

The key is to maximize productivity (revenue) for each unit of labour cost spent.

Harmony Gold, Lonmin and African Rainbow Minerals pay more labour than average ($2 243/t) for each tonne of Cu equivalent product, while Vale, Rio Tinto and Anglo American are outperformers.

The challenge for miners with higher than average labour cost per unit of revenue is that productivity gains needs to exceed real labour inflation to improve their position.

Figure 25. Labour cost per Cu equivalent production tonne, 2011



Source: Company reports, Citi Investment Research and Analysis

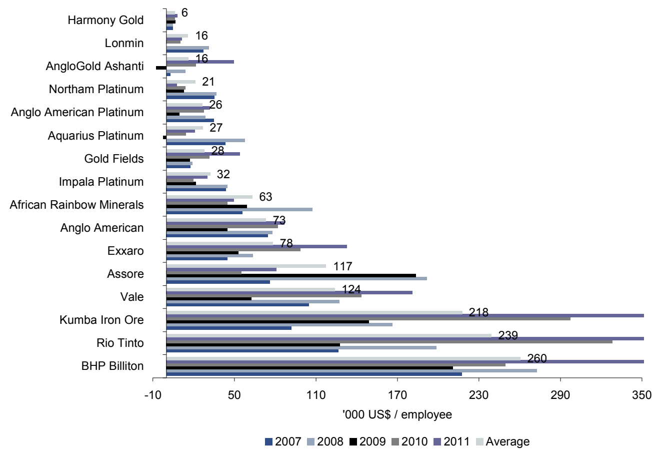
6. EBITDA per employee

EBITDA per employee considers the combined impact of commodity exposure, cost management and volume benefits.

Key observations:

- Miners with high iron ore exposure outperformed due to elevated and rising prices.
- BHP squeezed most EBITDA per capita out of its workforce, due to superior productivity, competitive cost positioning and a favourable commodity mix. It generated average EBITDA per employee of $260 000 from 2007 to 2011.
- SA gold and platinum miners underperformed, given labour intensive nature of underground mining (low productivity), declining production and high and rapidly rising costs.

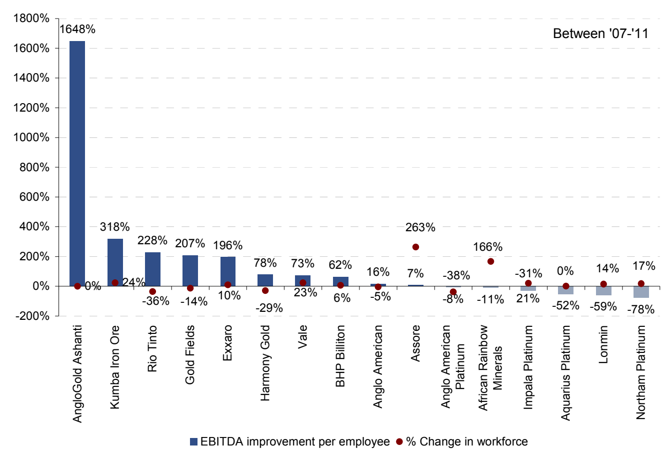
Figure 26. EBITDA per employee*, 2007-11



* Including contractors

Source: Company reports, Citi Investment Research and Analysis

Figure 27. Improvement in EBITDA per employee, 2007-11



Source: Company reports, Citi Investment Research and Analysis

7. Capital allocation and asset efficiency

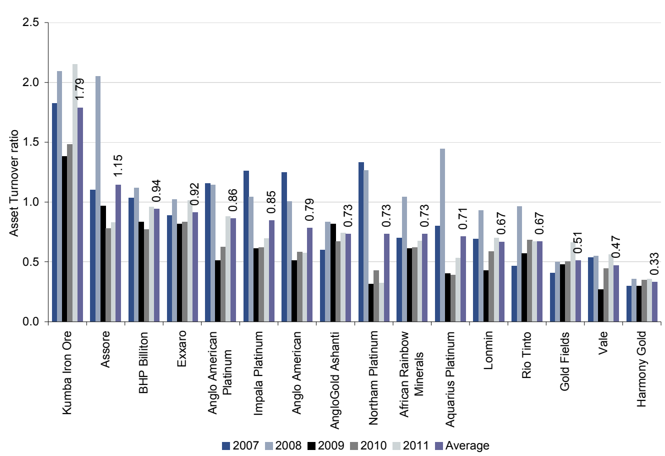
We highlight poor capital allocation as a key risk to mining company valuations, particularly in an environment of healthy cash generation and limited organic growth opportunities.

Capital allocation and efficient use of assets are as important in generating shareholder returns as earnings.

Below we analyse miners' asset turnover as a measure of efficient use of assets.

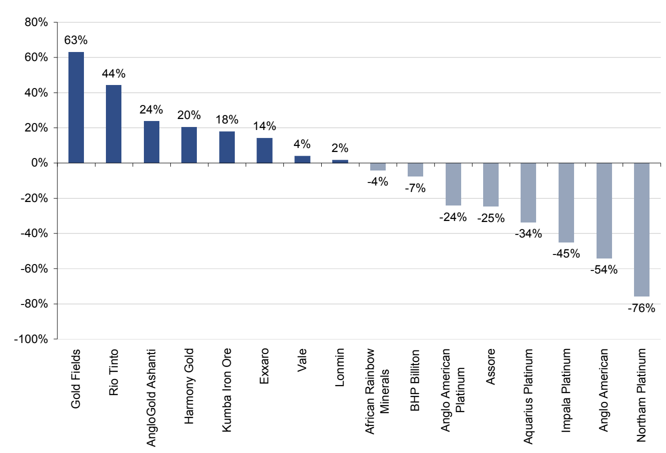
- Kumba, Assore, BHP Billiton and Exxaro display the most efficient asset utilisation among peers.
- Harmony, Vale and Gold Fields show the lowest asset turnover.
- Biggest improvements were seen at the SA gold miners, which benefited from a sharply rising gold price (which we see as unsustainable) and Rio Tinto (partly due to impairments). However, despite improvements, Harmony and Goldfields' asset utilisation are still poor.
- Anglo American's asset turnover deteriorated significantly after its acquisition of Minas Rio (expensive acquisition and unproductive capital).
- The PGM miners Northam, Aquarius and Impala also saw significant deterioration in asset turnover. This is partly due to the capital intensive nature of PGM operations and partly due to underperforming PGM prices.

Figure 28. Asset turnover (2007-2011)



Source: Company reports, Citi Investment Research and Analysis

Figure 29. Asset turnover improvement from 2007 to 2011



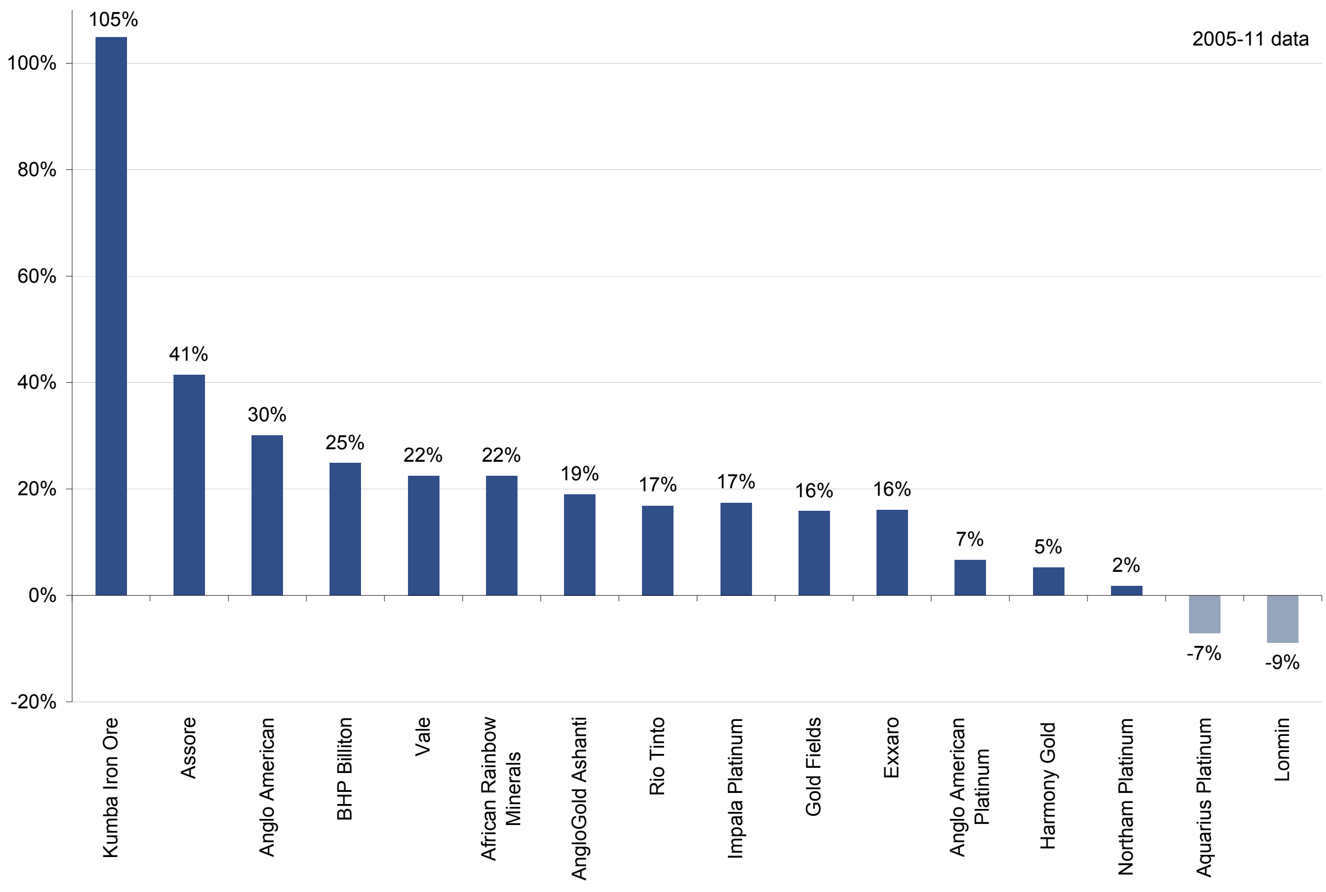
Source: Company reports, Citi Investment Research and Analysis

Figure 30 shows miners' returns on incremental invested capital for the period 2005-2011. ROIIC reflects the change in miners' NOPAT divided by change in invested capital over the period.

- South African precious metal miners again dominate the unfavourable side of the chart, but Impala (17%) and Gold Fields (16%) put in reasonable performances.
- Kumba delivered the strongest performance due to 1) attractive high margin iron ore exposure and 2) successful project delivery (Sishen jig plant).

- Anglo American put in a strong performance (30%), mainly due to its streamlining and divestments of Mondi and AngloGold Ashanti, which reduced its capital base. On a divisional level diamonds (56%), copper (17%), Iron ore and manganese (24%) and coal (23%) showed the biggest returns.
- BHP Billiton performed strongly as well, with Carbon Steel (31%) and Petroleum (37%) divisions posting healthy incremental returns.
- Rio Tinto would have been a very strong performer on this metric if it wasn't for the expensive Alcan acquisition. Its iron ore division posted ROIIC of 141% over the period, while its Energy (29%) division was also strong.

Figure 30. Return on incremental invested capital over 2005-2011



Source: Company reports, Citi Investment Research and Analysis

Financial snapshot per calendar year

Figure 31. Miners' earnings, dividend and financial ratio snapshot per calendar year*

	Calendar year	2007	2008	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Anglo American	EBITDA margin	34%	36%	28%	36%	37%	34%	35%	36%	36%	33%
	EBIT margin	28%	31%	20%	30%	30%	28%	28%	27%	27%	24%
	ROCE	32%	31%	13%	21%	23%	19%	19%	19%	19%	16%
	Earnings per share (ZAR)	**30.56**	**34.66**	**16.99**	**28.28**	**34.60**	**33.00**	**40.00**	**45.00**	**48.00**	**45.00**
	Earnings growth	*24%*	*13%*	*-51%*	*66%*	*22%*	*-5%*	*21%*	*13%*	*7%*	*-6%*
	PE multiple at R280	*9.16*	*8.07*	*16.47*	*9.89*	*8.09*	*8.48*	*7.00*	*6.22*	*5.83*	*6.22*
	Dividend per share (ZAR)	8.67	3.36	0.00	4.72	5.44	7.50	9.20	11.30	13.50	16.00
	Dividend yield at R280	3.1%	1.2%	0.0%	1.7%	1.9%	2.7%	3.3%	4.0%	4.8%	5.7%
BHP Billiton	EBITDA margin	49%	46%	42%	49%	51%	46%	48%	49%	50%	50%
	EBIT margin	42%	40%	33%	42%	44%	37%	39%	39%	40%	39%
	ROCE	51%	60%	31%	48%	46%	31%	32%	30%	28%	25%
	Earnings per share (ZAR)	**16.89**	**22.56**	**15.35**	**22.73**	**28.45**	**26.62**	**33.03**	**37.34**	**42.67**	**43.66**
	Earnings growth	*24%*	*34%*	*-32%*	*48%*	*25%*	*-6%*	*24%*	*13%*	*14%*	*2%*
	PE multiple at R239	*14.13*	*10.58*	*15.54*	*10.50*	*8.39*	*8.96*	*7.22*	*6.39*	*5.59*	*5.46*
	Dividend per share (ZAR)	3.94	6.76	6.97	6.64	7.98	9.47	11.00	12.63	14.10	18.83
	Dividend yield at R239	1.7%	2.8%	2.9%	2.8%	3.3%	4.0%	4.6%	5.3%	5.9%	7.9%
African Rainbow Minerals	EBITDA margin	44%	59%	25%	41%	39%	35%	38%	39%	39%	36%
	EBIT margin	35%	54%	12%	32%	32%	26%	28%	30%	30%	28%
	ROCE	28%	73%	7%	26%	28%	21%	25%	29%	28%	28%
	Earnings per share (ZAR)	**6.56**	**25.57**	**2.52**	**13.13**	**17.31**	**14.77**	**18.48**	**22.62**	**23.98**	**24.94**
	Earnings growth	*56%*	*290%*	*-90%*	*422%*	*32%*	*-15%*	*25%*	*22%*	*6%*	*4%*
	PE multiple at R180	*27.37*	*7.02*	*71.35*	*13.68*	*10.38*	*12.16*	*9.72*	*7.94*	*7.49*	*7.20*
	Dividend per share (ZAR)	1.50	4.00	1.75	2.00	4.50	6.00	7.00	8.00	9.00	20.50
	Dividend yield at R180	0.8%	2.2%	1.0%	1.1%	2.5%	3.3%	3.9%	4.5%	5.0%	11.4%
Assore	EBITDA margin	37%	69%	30%	48%	51%	46%	43%	42%	41%	39%
	EBIT margin	32%	66%	20%	42%	47%	39%	34%	34%	34%	32%
	ROCE	40%	141%	14%	41%	51%	36%	32%	33%	32%	34%
	Earnings per share (ZAR)	**8.06**	**42.83**	**5.28**	**21.30**	**34.48**	**30.56**	**29.61**	**31.59**	**32.55**	**36.81**
	Earnings growth	*130%*	*431%*	*-88%*	*304%*	*62%*	*-11%*	*-3%*	*7%*	*3%*	*13%*
	PE multiple at R310	*38.41*	*7.23*	*58.70*	*14.54*	*8.98*	*10.13*	*10.46*	*9.80*	*9.51*	*8.41*
	Dividend per share (ZAR)	0.70	2.50	4.00	3.40	4.50	7.00	10.50	12.50	14.50	16.50
	Dividend yield at R310	0.2%	0.8%	1.3%	1.1%	1.5%	2.3%	3.4%	4.0%	4.7%	5.3%
Exxaro	EBITDA margin	29%	35%	30%	37%	39%	43%	46%	46%	44%	38%
	EBIT margin	22%	29%	23%	31%	34%	38%	40%	39%	38%	30%
	ROCE	26%	40%	27%	40%	43%	38%	38%	40%	39%	26%
	Earnings per share (ZAR)	**4.08**	**10.06**	**7.02**	**14.37**	**20.69**	**26.21**	**33.50**	**38.60**	**40.88**	**30.01**
	Earnings growth	*45%*	*147%*	*-30%*	*105%*	*44%*	*27%*	*28%*	*15%*	*6%*	*-27%*
	PE multiple at R204	*50.05*	*20.30*	*29.10*	*14.21*	*9.87*	*7.79*	*6.10*	*5.29*	*5.00*	*6.81*
	Dividend per share (ZAR)	1.60	3.75	2.00	5.00	8.00	11.50	13.40	15.40	16.40	15.00
	Dividend yield at R204	0.8%	1.8%	1.0%	2.4%	3.9%	5.6%	6.6%	7.5%	8.0%	7.3%
Kumba Iron Ore	EBITDA margin	54%	65%	57%	67%	68%	64%	61%	59%	58%	54%
	EBIT margin	52%	64%	55%	65%	66%	62%	59%	56%	54%	49%
	ROCE	98%	146%	102%	152%	151%	118%	106%	96%	87%	71%
	Earnings per share (ZAR)	**9.83**	**22.75**	**21.76**	**44.54**	**52.99**	**53.23**	**57.40**	**54.92**	**52.63**	**47.14**
	Earnings growth	*48%*	*131%*	*-4%*	*105%*	*19%*	*0%*	*8%*	*-4%*	*-4%*	*-10%*
	PE multiple at R587	*59.70*	*25.80*	*26.98*	*13.18*	*11.08*	*11.03*	*10.23*	*10.69*	*11.15*	*12.45*
	Dividend per share (ZAR)	7.50	21.00	14.60	34.50	44.20	47.00	53.00	51.00	49.00	44.00
	Dividend yield at R587	1.3%	3.6%	2.5%	5.9%	7.5%	8.0%	9.0%	8.7%	8.3%	7.5%
	Average earnings growth	**39%**	**123%**	**-42%**	**149%**	**28%**	**0%**	**21%**	**12%**	**6%**	**-7%**
	Average PE multiple	**32.1**	**14.4**	**31.9**	**12.3**	**9.6**	**9.7**	**8.1**	**7.3**	**7.0**	**7.6**
	Average dividend yield	**1.5%**	**2.3%**	**1.5%**	**2.8%**	**3.8%**	**4.7%**	**5.5%**	**6.0%**	**6.4%**	**8.0%**

Source: dataCentral, CIRA * Note that information will be different from BHP Billiton, ARM and Assore's June year-end information. Priced at 21 June 2012

Peer comparison and companies mentioned in this report

Figure 32. Mining company peer comparison*

	RIC	Citi's	Market		Price	Historic P/E		Forward P/E		EV/EBITDA			FCF yield			Dividend Yield			P/B			ROE			$ Perf %
	Code	Rating	cap ($m)	Ccy	Local	2010	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	YTD
FTSE ALL SHARE (GBP)	.FTAS					33	11	11.6	10.9	7.2	5.8	6.5	5%	5%	7%	4%	4%	4%	3.0	1.6	2.5	26%	24%	23%	3%
FTSE/JSE ALL SHARE (ZAR)	.JALSH					16	13	12.7	11.1	8.0	7.9	7.0	7%	6%	8%	3.6%	3.8%	4.2%	3.8	3.6	3.6	30%	29%	30%	7%
Major diversified miners																									
Anglo American	AGLJ.J	Buy	47,469	ZAR	279.8	9	7	8.1	6.9	4.1	4.4	3.5	8%	7%	11%	2.2%	2.8%	3.2%	1.1	1.0	0.9	17%	13%	14%	-5%
BHP Billiton	BLT.L	Buy	61,496	GBP	18.5	9	8	8.3	7.5	4.7	4.9	4.4	9%	6%	9%	3.7%	4.1%	4.5%	2.5	2.1	1.8	36%	28%	26%	1%
Rio Tinto	RIO.L	Buy	68,227	GBP	30.8	7	6	7.2	5.9	2.8	3.2	2.5	10%	6%	13%	3.0%	3.5%	4.0%	1.7	1.2	1.0	11%	20%	19%	0%
Vale	VALE.N	Buy	63,903	USD	20.2	6	5	6.1	6.4	3.5	4.5	4.5	7%	-2%	1%	8.6%	5.7%	4.7%	1.3	1.1	1.0	30%	21%	17%	-6%
Average						***8***	***6***	***7.4***	***6.7***	***3.8***	***4.2***	***3.7***	***8%***	***4%***	***9%***	***4.4%***	***4.0%***	***4.1%***	***1.7***	***1.4***	***1.2***	***23%***	***20%***	***19%***	***-6%***
South African mid-cap miners																									
ARM	ARIJ.J	Buy	4,709	ZAR	179.6	15	11	11.0	9.4	5.0	4.6	3.8	2%	4%	8%	2.9%	3.6%	4.2%	1.7	1.5	1.4	16%	15%	15%	5%
Assore	ASRJ.J	Neutral	5,276	ZAR	309.7	16	11	10.7	11.7	7.4	7.4	7.7	5%	7%	8%	1.9%	2.8%	3.7%	3.4	3.0	2.6	34%	29%	24%	46%
Exxaro	EXXJ.J	Buy	8,837	ZAR	204.3	14	10	8.0	6.5	13.4	9.0	6.7	11%	-2%	9%	3.9%	5.6%	6.2%	3.0	2.5	2.0	36%	34%	34%	22%
Kumba	KIOJ.J	Sell	23,070	ZAR	587.0	13	11	11.0	10.2	7.9	7.9	7.6	9%	7%	9%	7.5%	8.0%	9.0%	11.9	10.0	9.2	113%	99%	94%	16%
Average - SA mid-cap miners						***15***	***11***	***10.2***	***9.5***	***8.4***	***7.2***	***6.5***	***7%***	***4%***	***8%***	***4.1%***	***5.0%***	***5.8%***	***5.0***	***4.2***	***3.8***	***50%***	***44%***	***42%***	***22%***
PGM miners																									
Anglo American Platinum	AMSJ.J	Sell	16,655	ZAR	506.1	26	37	38.3	24.7	10.8	13.2	10.3	4%	0%	1%	1.4%	0.9%	1.3%	2.3	2.3	2.1	6%	6%	9%	-6%
Aquarius Platinum	AQP.L	Neutral	395	GBP	0.5	5	13	-32.1	11.7	3.5	7.5	4.2	-15%	-15%	9%	2.4%	0.0%	0.0%	0.5	0.5	0.5	-9%	-9%	2%	-61%
Impala Platinum	IMPJ.J	Buy	11,267	ZAR	146.2	15	14	12.5	10.6	7.0	6.4	5.2	3%	3%	4%	2.8%	1.9%	2.2%	1.8	1.7	1.5	13%	13%	14%	-12%
Lonmin	LMI.L	Neutral	2,486	GBP	7.8	16	14	18.5	10.0	4.4	4.8	3.5	-2%	16%	16%	1.7%	0.4%	1.0%	0.8	0.8	0.7	6%	4%	8%	-18%
Northam Platinum	NHMJ.J	Buy	1,230	ZAR	26.4	20	37	25.3	10.2	19.0	13.0	5.8	-11%	-13%	-1%	0.5%	0.4%	0.9%	1.0	0.9	0.8	3%	4%	8%	-11%
Royal Bafokeng	RBPJ.J	Neutral	1,133	ZAR	56.1	29	34	28.0	19.5	11.4	10.8	9.5	-1%	-13%	-18%	0.0%	0.0%	0.0%	0.8	0.8	0.8	2%	3%	4%	1%
Average - PGM miners						***19***	***25***	***15.1***	***14.4***	***9.3***	***9.3***	***6.4***	***-4%***	***-4%***	***2%***	***1.5%***	***0.6%***	***0.9%***	***1.2***	***1.2***	***1.1***	***4%***	***4%***	***7%***	***-18%***
Copper																									
Antofagasta	ANTO.L	Sell	17,262	GBP	11.1	17	13	11.0	11.2	4.8	4.2	4.5	11%	11%	10%	2.5%	3.2%	3.1%	2.8	2.4	2.1	20%	23%	20%	-7%
Freeport Mcmoran	FCX.N	Buy	33,513	USD	35.3	8	7	9.1	7.4	3.7	4.4	3.6	12%	2%	8%	4.2%	3.4%	3.5%	2.1	1.9	1.6	32%	21%	23%	-4%
FST Quantum Minerals	FQM.L	Neutral	9,059	GBP	12.1	10	15	17.3	11.3	7.2	7.2	5.1	-7%	-7%	-1%	1.0%	1.0%	1.7%	2.3	1.7	1.5	16%	39%	14%	3%
Grupo Mexico	GMEXICOB.MX	Neutral	22,162	MXN	39.0	14	9	10.7	12.0	4.7	5.1	5.4	6%	6%	5%	5.7%	4.7%	4.2%	3.0	2.6	2.2	37%	26%	20%	8%
Jiangxi Copper	0358.HK	Buy	3,108	HKD	17.4	9	7	8.1	8.0	5.5	5.5	5.2	8%	8%	7%	4.9%	2.5%	2.5%	1.3	1.1	1.0	18%	15%	13%	8%
Kazakhmys	KAZ.L	Buy	6,149	GBP	7.5	4	4	4.6	4.1	0.6	0.4	0.6	7%	-2%	-14%	2.4%	2.2%	2.3%	0.7	0.6	0.6	11%	14%	14%	-18%
Southern Copper Corp	SCCO.N	Neutral	26,766	USD	31.5	17	11	13.4	15.8	7.1	7.7	8.2	5%	4%	3%	7.8%	3.7%	3.4%	6.6	5.3	4.6	59%	44%	31%	5%
Average - copper miners						***11***	***9***	***10.2***	***10.0***	***4.4***	***4.6***	***4.5***	***8%***	***3%***	***3%***	***4.9%***	***4.3%***	***3.2%***	***2.5***	***2.1***	***1.8***	***32%***	***25%***	***18%***	***4%***
Nickel																									
Norilsk	GMKN.RTS	Buy	32,693	USD	171.5	6	6	6.6	5.8	3.9	5.2	4.5	10%	5%	7%	3.9%	3.8%	4.3%	3.0	2.0	1.6	35%	33%	30%	8%
Average - Nickel						***6***	***6***	***6.6***	***5.8***	***3.9***	***5.2***	***4.5***	***10%***	***5%***	***7%***	***3.9%***	***3.8%***	***4.3%***	***3.0***	***2.0***	***1.6***	***35%***	***33%***	***30%***	***8%***
Mineral Sands and pigment																									
Iluka Resources	ILU.AX	Buy	5,036	AUD	11.8	137	9	6.6	3.5	4.9	3.5	1.7	12%	17%	32%	6.4%	7.6%	14.4%	3.2	2.5	1.8	41%	43%	61%	-21%
Huntsman	HUN.N	Neutral	3,202	USD	13.4	16	8	5.7	5.1	5.3	4.5	4.0	1%	18%	24%	3.0%	3.0%	3.0%	1.9	1.4	1.2	14%	28%	25%	34%
Average - Mineral Sands						***77***	***9***	***6.1***	***4.3***	***5.1***	***4.0***	***2.8***	***7%***	***17%***	***28%***	***4.7%***	***5.3%***	***8.7%***	***2.6***	***2.0***	***1.5***	***28%***	***36%***	***43%***	***7%***

* Priced at 21 June 2012

Source: dataCentral, CIRA

Peer comparison (continued)

Figure 33. Mining company peer comparison (continued)*

	RIC	Citi's	Market		Price	Historic P/E		Forward P/E		EV/EBITDA			FCF yield			Dividend Yield			P/B			ROE			$ Perf %
	Code	Rating	cap ($m)	Ccy	Local	2010	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	2011	2012F	2013F	YTD
Ferrous																									
African Minerals	AMIq.L	Buy	1,910	GBP	3.7	-	-48	41.7	4.0	-47.3	7.1	2.1	-52%	-8%	-7%	0.0%	0.0%	0.0%	1.9	1.9	1.3	-2%	1%	39%	-14%
Atlas Iron	AGO.AX	Buy	1,890	AUD	2.1	18	12	13.8	9.2	7.0	6.0	4.0	9%	0%	3%	1.7%	2.2%	2.7%	1.0	1.0	0.9	8%	6%	10%	-22%
Cliffs Natural	CLF.N	Buy	7,370	USD	51.7	8	5	6.0	5.7	3.5	4.7	4.2	19%	6%	13%	1.6%	4.2%	4.8%	1.3	1.1	0.9	34%	23%	18%	-17%
ENRC	ENRC.L	Buy	8,827	GBP	4.4	5	4	6.5	4.9	2.7	3.6	3.3	2%	-16%	15%	3.9%	2.8%	3.7%	0.8	0.7	0.7	19%	12%	14%	-31%
Ferrexpo	FXPO.L	Buy	2,070	GBP	2.2	5	4	5.2	5.0	2.6	3.1	2.9	6%	6%	11%	1.9%	1.9%	1.9%	1.6	1.2	1.0	51%	26%	21%	-16%
Fortescue Metals	FMG.AX	Buy	15,203	AUD	4.8	13	10	9.1	6.6	6.2	6.5	5.0	-9%	-20%	0%	1.6%	2.0%	2.5%	5.1	3.5	2.5	52%	46%	44%	15%
Gindalbie Metals	GBG.AX	Buy	521	AUD	0.4	-	-174	66.4	7.1	-0.8	-3.4	-0.7	-1%	-3%	-5%	0.0%	0.0%	0.0%	0.7	0.7	0.9	0%	1%	11%	-21%
Grange Resources	GRR.AX	Buy	589	AUD	0.5	18	5	7.8	10.4	0.8	0.8	3.4	27%	12%	-122%	10.0%	10.0%	10.0%	0.8	0.8	0.8	33%	10%	8%	-9%
London Mining	LOND.L	Buy	444	GBP	2.0	-	-6	7.6	1.6	-11.1	6.4	1.7	-61%	-30%	5%	0.0%	0.0%	0.0%	1.7	1.0	0.6	-26%	17%	49%	-28%
Mt Gibson Iron	MGX.AX	Buy	935	AUD	0.8	5	4	3.6	2.7	1.9	1.1	0.3	14%	26%	41%	4.7%	7.7%	11.2%	0.7	0.7	0.6	19%	19%	23%	-23%
Siderurgica Naci	CSNA3.SA	Sell	8,882	BRL	12.3	7	5	10.0	8.5	4.2	5.0	4.9	-1%	-10%	-2%	5.9%	3.0%	3.5%	2.3	2.4	2.0	47%	24%	26%	-24%
Average - ferrous						***9***	***-15***	***15.2***	***5.9***	***-2.3***	***3.7***	***2.8***	***-3%***	***-3%***	***-3%***	***2.8%***	***3.0%***	***3.5%***	***1.6***	***1.4***	***1.1***	***24%***	***17%***	***24%***	***-16%***
Coal																									
Adaro Energy	ADRO.JK	Buy	4,822	IDR	1420.0	19	9	6.8	5.5	3.7	4.1	3.0	10%	14%	18%	1.6%	2.9%	0.0%	1.9	1.6	1.3	24%	25%	26%	-23%
Alpha Ntrl Resc	ANR.N	Buy	1,965	USD	8.9	4	5	-9.9	-9.9	5.6	6.0	5.8	9%	13%	14%	0.0%	0.0%	0.0%	0.3	0.3	0.3	-13%	-2%	-3%	-56%
Arch Coal	ACI.N	Buy	1,358	USD	6.4	7	6	-10.0	16.9	4.8	9.9	6.1	8%	-6%	17%	6.7%	3.1%	1.9%	0.4	0.4	0.4	5%	-3%	2%	-56%
Bumi Resources	BUMI.JK	Buy	2,735	IDR	1240.0	7	10	6.0	2.8	3.8	3.7	2.3	-20%	-2%	5%	4.6%	8.8%	5.9%	1.2	1.1	0.8	15%	18%	32%	-49%
China Coal	1898.HK	Neutral	3,541	HKD	6.7	10	7	6.6	5.8	4.3	4.4	4.1	-27%	-6%	18%	3.9%	4.4%	5.0%	0.9	0.8	0.7	13%	13%	13%	-17%
China Shenhua	1088.HK	Buy	11,695	HKD	26.7	11	10	8.8	8.2	5.5	4.7	4.1	7%	10%	12%	3.4%	3.9%	4.2%	1.9	1.7	1.5	20%	20%	19%	-18%
Coal India	COAL.BO	Buy	38,455	INR	341.9	20	16	13.2	12.0	10.5	8.6	7.3	7%	9%	10%	2.5%	3.1%	3.2%	5.4	4.4	3.6	39%	37%	33%	6%
CONSOL Energy	CNX.N	Buy	6,658	USD	29.3	14	10	20.4	13.9	7.7	10.5	8.5	2%	-2%	-4%	1.5%	1.7%	1.7%	1.8	1.7	1.6	19%	9%	12%	-20%
Indo Tmbgraya	ITMG.JK	Buy	4,456	IDR	37150.0	22	8	8.7	6.3	5.1	5.0	3.5	12%	12%	16%	4.6%	9.2%	8.6%	4.1	3.8	3.0	61%	45%	53%	-7%
Mongol Mining	0975.HK	Buy	2,373	HKD	5.0	34	20	12.9	5.9	14.0	8.2	4.8	-11%	-12%	-2%	0.0%	0.0%	0.0%	3.1	2.5	1.8	16%	21%	35%	-15%
Patriot Coal	PCX.N	Neutral	148	USD	1.6	-1	-1	-0.7	-0.6	3.6	12.1	27.4	-34%	-176%	-107%	0.0%	0.0%	0.0%	0.2	0.4	1.0	-15%	-43%	-89%	-81%
Peabody Energy	BTU.N	Buy	6,652	USD	24.4	8	6	10.2	7.1	4.6	5.1	4.0	11%	6%	11%	1.4%	1.4%	1.4%	1.2	1.1	0.9	19%	11%	14%	-26%
Shougang Res	0639.HK	Neutral	1,585	HKD	2.3	7	7	6.2	6.7	2.2	1.9	1.6	17%	21%	20%	6.3%	6.8%	6.3%	0.7	0.6	0.6	10%	11%	9%	-10%
TB Bukit Asam	PTBA.JK	Buy	3,608	IDR	14750.0	17	11	9.1	7.7	7.2	5.1	4.0	8%	9%	12%	3.2%	5.0%	6.0%	4.2	3.3	2.7	43%	40%	38%	-17%
Walter Energy	WLT.N	Buy	3,008	USD	48.2	6	7	9.6	7.4	5.7	7.3	5.5	9%	4%	10%	1.0%	1.0%	1.0%	1.4	1.2	1.1	26%	14%	16%	-20%
Whitehaven Coal	WHC.AX	Buy	4,451	AUD	4.3	33	35	30.9	16.8	32.5	19.7	9.6	-9%	-11%	-3%	1.3%	0.9%	1.5%	1.8	1.8	1.7	3%	7%	12%	-8%
Average - coal						***14***	***10***	***8.1***	***7.0***	***7.6***	***7.3***	***6.4***	***0%***	***-7%***	***3%***	***2.6%***	***3.3%***	***2.9%***	***1.9***	***1.7***	***1.4***	***18%***	***14%***	***14%***	***-26%***
Gold/Precious miners																									
AngloGold Ashnti	ANGJ.J	Neutral	14,130	ZAR	302.5	-8	11	10.2	8.9	5.3	5.1	4.2	9%	5%	11%	1.4%	1.2%	1.4%	2.7	2.3	1.8	36%	27%	23%	-13%
Barrick Gold	ABX.N	Buy	40,344	USD	40.3	12	9	8.6	7.4	6.0	6.3	5.5	1%	-1%	4%	1.3%	1.9%	2.0%	1.7	1.5	1.3	21%	19%	19%	-11%
Gold fields	GFIJ.J	Sell	9,894	ZAR	111.9	18	10	8.7	7.6	4.0	4.0	3.2	8%	12%	15%	3.3%	3.4%	3.9%	1.7	1.4	1.2	15%	18%	18%	-12%
Goldcorp	GG.N	Neutral	31,468	USD	38.9	28	18	17.0	13.2	10.2	9.0	6.9	2%	-1%	3%	1.1%	1.4%	1.4%	1.5	1.4	1.3	9%	9%	10%	-12%
Harmony Gold Mng	HARJ.J	Sell	4,498	ZAR	85.4	64	18	15.2	16.8	9.7	6.9	5.7	1%	5%	7%	0.5%	0.8%	0.8%	1.0	1.0	0.9	5%	7%	6%	-12%
Newcrest Mining	NCM.AX	Buy	18,519	AUD	23.8	15	16	14.8	10.2	9.1	8.0	5.9	-3%	0%	7%	1.9%	2.1%	2.5%	1.2	1.2	1.1	8%	9%	11%	-17%
Newmont Mining	NEM.N	Neutral	24,708	USD	50.4	13	12	11.0	9.9	9.2	5.9	5.7	3%	1%	4%	2.3%	2.9%	3.3%	1.9	1.7	1.6	3%	16%	17%	-16%
Randgold Resourc	RRS.L	Neutral	8,639	GBP	59.9	62	23	14.4	10.4	14.2	9.1	6.4	1%	0%	7%	0.9%	1.4%	1.9%	3.9	3.2	2.5	19%	25%	27%	-8%
Average - Gold miners						***25***	***14***	***12.5***	***10.6***	***8.5***	***6.8***	***5.4***	***3%***	***3%***	***7%***	***1.6%***	***1.9%***	***2.1%***	***2.0***	***1.7***	***1.5***	***15%***	***16%***	***16%***	***-13%***
Average - all miners						**20**	**8**	**10.2**	**8.2**	**5.4**	**5.8**	**4.8**	**4%**	**3%**	**7%**	**3.4%**	**3.5%**	**4.0%**	**2.4**	**2.0**	**1.7**	**25%**	**23%**	**24%**	**-4%**

* Priced at 21 June 2012

Source: dataCentral, CIRA

Downside risks to our forecasts and valuation

Our profit forecasts and valuations are based on input assumptions detailed in this report. Our forecasts are subject to risks that include:

- **Poor capital allocation:** Value-destroying projects or acquisitions will negatively impact earnings forecasts and valuations.
- **Resource nationalism:** Miners' profitability, coupled with struggling economies of many resource-rich countries, are resulting in increased pressure for resource nationalism. Threats of nationalisation, higher mining taxes and royalties, and pressure on miners to spend more on community development are becoming popular as a political platform. We do not see this theme disappearing and believe the risk is firmly to the upside for royalties, taxation and community development spend of resource companies.
- **Sustaining capex blowout:** Miners need to spend increasing amounts of capex just to maintain volumes. Underestimating sustaining capex will negatively impact earnings forecasts and valuations.
- **Lower commodity prices:** than our base-case forecasts, which would negatively impact earnings forecasts and valuations.
- **Stronger producer currencies:** Stronger-than-forecast currencies for resource-producing countries would negatively impact earnings and valuations.
- **Downside risk to sales volumes:** If commodity demand unexpectedly contracts, sales volume forecasts could face downside.
- **Infrastructure constraints** could limit or delay volume growth or increase cost inflation more than we anticipate. In particular, South African manganese ore and coal exports may not reach our five-year targets due to rail and port constraints.
- **Government actions** in countries where miners operate, such as controls on imports, exports and prices and increased government regulation, could squeeze profitability.
- **Higher-than-forecast inflation** in the mining sector could drive up costs, especially if rapidly growing demand puts pressure on scarce skills and resources.
- **Skills, electricity and water shortages** may impact production and mining inflation more than we anticipate.
- **Over-estimation of mineral reserves or failure to discover new resources** or expand existing resources could lead to earnings downgrades.

Upside risks and catalysts for outperformance

- **Economic stabilisation in the Euro Area.**
- **Higher dividend payout ratios:** Anglo American, African Rainbow Minerals, Assore and BHP Billiton have payout ratios below 40%. We believe investors steer clear of miners with low payout ratios as it could suggest 1) lack of confidence in future profitability or 2) management's desire to spend shareholder cash in potentially low returning acquisitions or projects. Offering more attractive dividend yields takes away capital allocation risk and will likely result in a rerating. Refer to our Anglo American report "Create Your Catalyst – Increase Dividend Payout", dated 7 June 2012.
- **Share buybacks:** Strong free cash flow generation by miners should result in surplus cash. We have not factored share buybacks into our forecasts, but these could lead to share price outperformance.
- **M&A activity:** Strong balance sheets and excess cash generation coupled with target company valuations below replacement cost could spur M&A in the mining sector. This could 1) boost target companies' share prices beyond our target prices and 2) consolidate rather than increase commodity supply which will have a positive industry margin impact.
- **Cheap money:** Low interest rates in advanced economies could: 1) stimulate growth (industrial demand); 2) increase investment demand for commodities more than we anticipate, 3) spur M&A in the mining sector and boost dividend yields and 4) reduce miners' weighted average cost of capital as projects and acquisitions are debt financed.
- **A pick-up in US housing starts and infrastructure rebuild:** An eventual pick-up in US housing starts or fiscal stimulus, which may include infrastructure rebuild, could support commodity demand.
- **A policy response** in Europe, the US and China could provide upside for metals and mining equities.
- **Stronger for longer commodity prices:** Our base-case forecasts are for commodity prices to decline to marginal cost of production over the next decade. However, if commodity prices remain higher for longer, there could be upside risk to our earnings forecasts and valuations. Potentially higher commodity prices than our forecasts over the medium term also pose an upside risk.
- **Dwindling supply from existing mines:** Falling grades, increasing mining complexity, skills and equipment shortages, weather-related disruptions and labour issues continue to weigh on miners' production.
- **Limited new supply** caused by project and infrastructure delays. Overpromising and under-delivering on new projects has become the norm in mining. A confidence crisis could potentially lead to further project delays or even cancellations, which could sow the seeds for the next commodity bull market. Commodity supply growth is becoming more difficult due to: 1) Growing resource nationalism, 2) Permitting and environmental issues, 3) Competition for skilled labour, 4) New, mostly riskier, geographies, 5) Managing greater stakeholder concerns and 6) Access to finance.

Commodity price and exchange rate forecasts

The forecasts below represent Citi's house forecasts.

Figure 34. Citi's commodity price and exchange rate forecasts

Average per calendar year	2009	2010	2011	2012F	2013F	2014F	2015F	2016F	2017F	2018F	2019F	2020F	LT (Real)
Precious commodities													
Gold (US$/oz)	973	1,225	1,571	1,717	1,835	1,725	1,254	1,177	1,206	1,237	1,268	1,299	**1,050**
Silver (US$/oz)	14.80	20.72	36.02	30.71	27.13	24.13	21.13	18.13	17.00	17.26	17.67	18.10	**15.00**
Platinum (US$/oz)	1,203	1,612	1,720	1,683	1,725	1,775	1,750	1,750	1,724	1,767	1,811	1,856	**1,500**
Palladium (US$/oz)	263	526	733	801	925	900	850	850	689	707	724	742	**600**
Rhodium (US$/oz)	1,594	2,455	2,014	1,550	1,650	1,800	2,500	2,615	3,447	3,533	3,622	3,712	**3,000**
3PGM basket (US$/oz) (63%Pt,30%Pd,7%Rh)	948	1,345	1,444	1,409	1,480	1,514	1,533	1,541	1,534	1,572	1,612	1,652	**1,335**
Base metals													
Aluminium (US$/tonne)	1,664	2,173	2,398	2,269	2,387	2,452	2,550	2,522	2,585	2,650	2,716	2,784	**2,250**
Aluminium (US cents/lb)	75	99	109	103	108	111	116	114	117	120	123	126	**102**
Copper (US$/tonne)	5,148	7,536	8,811	8,490	8,375	7,950	7,700	6,950	7,124	7,302	7,485	7,672	**6,200**
Copper (US cents/lb)	234	342	400	385	380	361	349	315	323	331	339	348	**281**
Nickel (US$/tonne)	14,653	21,833	22,842	19,412	22,819	24,650	24,000	22,420	22,980	23,555	24,144	24,747	**20,000**
Nickel (US cents/lb)	665	990	1,036	881	1,035	1,118	1,089	1,017	1,042	1,068	1,095	1,123	**907**
Zinc (US$/tonne)	1,654	2,160	2,190	2,116	2,301	2,525	2,400	2,354	2,413	2,473	2,535	2,598	**2,100**
Zinc (US cents/lb)	75	98	99	96	104	115	109	107	109	112	115	118	**95**
Lead (US$/tonne)	1,720	2,148	2,397	2,155	2,275	2,475	2,450	2,466	2,528	2,591	2,656	2,722	**2,200**
Lead (US cents/lb)	78	97	109	98	103	112	111	112	115	118	120	123	**100**
Uranium (US$/lb)	47	46	56	50	50	50	50	56	57	59	60	62	**50**
Steelmaking materials													
Iron ore spot (CIF China) (US$/t)	85	152	175	149	138	130	125	115	110	108	105	105	**81**
Iron ore fines (FOB) (USc/dmtu)	109	177	262	219	198	183	175	156	148	144	140	140	**111**
Iron ore fines (FOB) (USD/tonne)	69	112	166	139	125	116	111	99	94	91	89	89	**71**
Iron ore lump (FOB) (USc/dmtu)	134	196	288	241	217	201	192	171	162	158	154	154	**120**
Iron ore lump (FOB) (USD/tonne)	85	125	183	153	138	128	122	109	103	100	98	98	**76**
Hard coking coal (US$/tonne)	172	191	289	233	231	225	230	215	222	226	231	235	**200**
Semi soft benchmark (US$/tonne)	116	139	210	158	157	158	159	146	151	154	157	160	**150**
Manganese ore - CIF (US$/mtu)	5.43	7.71	6.07	4.96	5.00	6.00	6.00	5.83	5.96	6.08	6.20	6.32	**5.20**
Ferro manganese - CIF (US$/tonne)	1,267	1,449	1,385	1,200	1,300	1,300	1,300	1,457	1,489	1,519	1,550	1,581	**1,300**
Ferrochrome (US$/lb)	0.93	1.24	1.26	1.30	1.00	1.00	1.00	1.12	1.15	1.17	1.19	1.22	**1.00**
Energy													
Brent crude oil (US$/bbl)	62	80	111	125	120	91	93	95	97	99	101	103	**81**
Henry Hub (US) Gas (US$/MMBtu)	4.43	4.38	4.01	2.45	3.53	5.60	5.74	5.89	6.03	6.18	6.34	6.50	**5.25**
Richards Bay thermal coal (US$/tonne)	65	92	117	108	126	139	143	137	135	137	140	143	**109**
Heavy minerals													
Rutile (US$/tonne)	535	538	839	2,315	3,000	2,800	2,600	1,121	1,146	1,169	1,192	1,216	**1,000**
Zircon (US$/tonne)	947	942	1,880	2,519	2,600	2,600	2,600	1,682	1,718	1,753	1,788	1,824	**1,500**
Synrutile (US$/t)	438	441	687	2,150	2,400	2,250	2,100	1,009	974	993	1,013	1,034	**900**
Titanium Slag (US$/tonne)	307	333	574	1,575	1,758	1,648	1,538	628	642	654	668	681	**560**
TIO2 Pigment (US$/tonne)	2,605	2,100	1,918	1,966	2,015	2,065	2,117	2,130	2,177	2,221	2,265	2,311	**2,400**
Illmenite (US$/tonne)	87	75	129	303	400	325	250	280	286	292	298	304	**250**
Currency exchange rates													
US$/ZAR	8.40	7.30	7.25	7.83	8.40	8.96	9.34	9.73	9.94	10.30	10.66	11.04	**10.00**
US$/AUD	0.79	0.92	1.03	1.04	0.96	0.90	0.89	0.90	0.89	0.87	0.85	0.84	**0.90**
US$/EUR	1.39	1.33	1.39	1.29	1.27	1.31	1.33	1.30	1.30	1.29	1.29	1.28	**1.30**
US$/CHP	559	502	482	494	530	565	589	609	641	675	711	748	**609**
US$/BRL	2.00	1.76	1.67	1.78	1.91	2.04	2.13	2.20	2.32	2.44	2.57	2.70	**2.20**
US$/COP	2,156	1,898	1,848	1,858	1,992	2,126	2,216	2,289	2,411	2,538	2,673	2,815	**2,289**
Inflation													
US CPI index	215	218	225	230	234	239	244	249	254	259	264	269	
US Inflation	0%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	

Source: Bloomberg, I-Net, DataCentral, CIRA

Key Publications

Figure 35. Key recent publication

Date	Publication	No. of Pages
13-Jan-11	Metals and Mining - The Easy Money Has Been Made*	72
8-Feb-11	Metals & Mining - Supercycle well advanced - Neutral on SA miners	34
14-Feb-11	Metals and Mining - Commodity price upgrades, but near-term peak margins pose risk	40
15-Feb-11	Anglo American (AGLJ.J) - Cyclically-Adjusted PE and Price to Book Suggest Valuation Full	10
4-Apr-11	Metals & Mining - Optimistic long-term iron ore price outlook increases valuations	42
6-Apr-11	Metals & Mining - Strike while the iron is (still) hot?	96
15-May-11	Metals & Mining; Metals & Mining; Metals & Mining - Souring Sentiment Offers Opportunities – Buy Anglo, BHP, ARM	60
20-May-11	Anglo American (AGLJ.J) - Silicosis Liabilities – a Risk to our Positive Investment Stance	10
28-Jun-11	Metals & Mining - Nationalisation – Killing The Goose That Lays The Golden Eggs	19
14-Jul-11	Metals & Mining - Coal and mineral sands boost, but costs spoil the party	26
29-Jul-11	Metals & Mining - The Unions Strike Again	14
1-Aug-11	Anglo American (AGLJ.J) - Cash Flow Kickers Coming	22
10-Aug-11	Metals & Mining - Opportunities in Uncertain Times	16
4-Sep-11	Metals & Mining - Uncertainty and Fear Create Value	52
20-Sep-11	Metals & Mining - Panic Provides	84
1-Nov-11	Metals & Mining - Efficiency Rewards: BHP Performed Best; Anglo Our Top Pick	76
5-Dec-11	Metals & Mining - Offering Value – Anglo is Our Top Pick	64
9-Jan-12	Metals & Mining - Less room for disappointment in 2012	76
16-Jan-12	Metals & Mining - Sweating for Success	120
8-Feb-12	BHP Billiton Ltd (BHP.AX) - Matching Capex to Cash Flow	12
10-Feb-12	Kumba Iron Ore Ltd (KIOJ.J) - Valuation Stretched and Margins Unsustainable - Sell	24
15-Feb-12	Anglo American (AGLJ.J) - Enjoyed the Ride – Downgrade to Neutral	28
20-Feb-12	Anglo American (AGLJ.J) - Headwinds and Low Dividends – Maintain Neutral	26
24-Feb-12	Exxaro Resources Limited (EXXJ.J) - Positive outlook and attractive dividend yield - Buy	23
28-Feb-12	African Rainbow Minerals (ARIJ.J) - Strong earnings growth, but acquisitions could cap dividends	22
5-Mar-12	Assore Limited (ASRJ.J) - Target Price +7% to R300; Maintain Buy	18
19-Mar-12	Metals & Mining - What if Optimistic Margins Are Just Hot Air?	68
29-Mar-12	BHP Billiton Ltd (BHP.AX) - Home Improvement*	44
16-Apr-12	Metals & Mining - Lower commodity prices bring earnings closer to reality	73
18-May-12	Metals & Mining - Starting To Price In The Downside	22
18-May-12	Global Iron Ore - Pumping Iron II;	140
7-Jun-12	Anglo American (AGLJ.J) - Create Your Catalyst – Increase Dividend Payout	16
15-Jun-12	BHP Billiton Ltd (BHP.AX) - WACC Down	15
15-Jun-12	Anglo American (AGLJ.J) - Coal Briefing Feedback – We Prefer Dividends Over Growth	23

Source: Citi Investment Research and Analysis

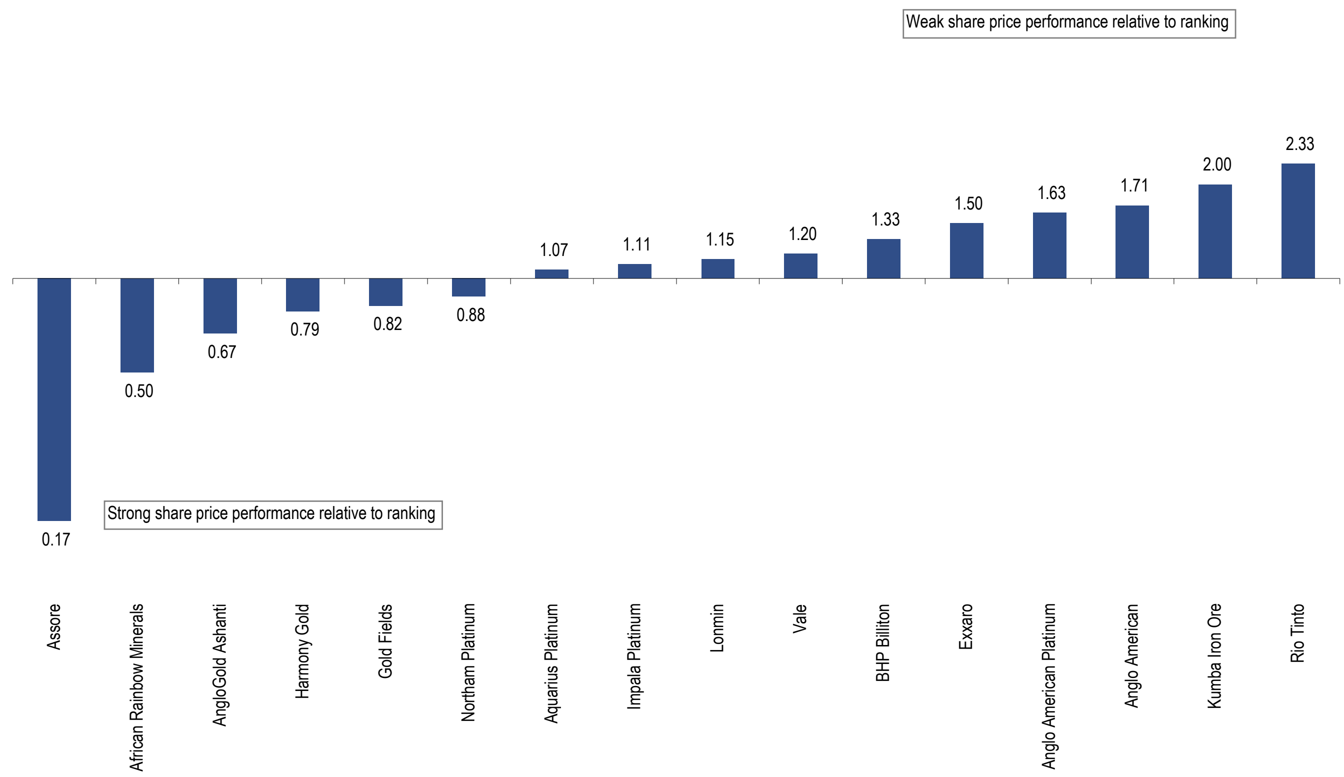
Appendix A – Share price performance

Figure 36. Share price performance, 2007-11

Company	Rank	Price currency	Price on 1st Jan'07	Price on 30th Dec'11	% Change
Assore	1	ZAR	31	210	577%
Kumba Iron Ore	2	ZAR	111	500	349%
Exxaro	3	ZAR	56	168	200%
BHP Billiton	4	GBp	935	1,878	101%
African Rainbow Minerals	5	ZAR	101	171	69%
Vale	6	BRL	27	38	40%
Rio Tinto	7	GBp	2,245	3,125	39%
AngloGold Ashanti	8	ZAR	309	343	11%
Gold Fields	9	ZAR	133	125	-6%
Impala Platinum	10	ZAR	184	167	-9%
Harmony Gold	11	ZAR	111	95	-15%
Anglo American	12	ZAR	352	296	-16%
Anglo American Platinum	13	ZAR	832	532	-36%
Northam Platinum	14	ZAR	51	30	-42%
Lonmin	15	GBp	2,872	980	-66%
Aquarius Platinum	16	AUD	9	2	-74%

Source: DataStream, Citi Investment Research and Analysis

Figure 37. Share price performance relative to Citi performance ranking



*Share price ranking (1=best) divided by Citi performance ranking (1 = best)

Source: DataStream, Citi Investment Research and Analysis

Appendix B – Calculation of Rankings

Figure 38. Safety - Safety ranking based on 2007-11 data

	Average LTIFR	Average Rank	Improvement	Improvement Rank	Combined Score	Combined Rank
Kumba Iron Ore	0.63	1	65%	1	2	1
Vale	1.24	2	53%	4	6	2
Exxaro	1.53	4	44%	8	12	3
Assore	3.42	7	52%	5	12	3
African Rainbow Minerals	4.06	9	52%	5	14	5
Gold Fields	5.76	11	55%	3	14	5
Lonmin	6.77	12	56%	2	14	5
BHP Billiton	1.50	3	39%	12	15	8
Rio Tinto	2.28	5	41%	11	16	9
Anglo American	4.23	10	44%	9	19	10
Aquarius Platinum	3.39	6	36%	14	20	11
Harmony Gold	10.70	16	45%	7	23	12
Impala Platinum	3.77	8	-42%	16	24	13
Northam Platinum	7.80	15	42%	10	25	14
Anglo American Platinum	7.58	14	37%	13	27	15
AngloGold Ashanti	6.97	13	29%	15	28	16

Source: Company reports, Citi Investment Research and Analysis

Figure 39. Productivity - Copper equivalent production tonnes/employee

	Avg. production/ emp.*	Average Rank	Improvement Rank	Combined Rank	Combined Score
Rio Tinto	68.68	2	2	4	1
Exxaro	40.86	4	3	7	2
BHP Billiton	81.40	1	7	8	3
Anglo American Platinum	13.54	9	1	10	4
Kumba Iron Ore	27.71	7	4	11	5
Vale	47.33	3	8	11	5
Gold Fields	10.46	12	6	18	7
Anglo American	37.76	5	13	18	7
Harmony Gold	5.55	16	5	21	9
Assore	35.50	6	16	22	10
AngloGold Ashanti	13.05	10	12	22	10
Impala Platinum	12.99	11	11	22	10
Aquarius Platinum	10.08	13	9	22	10
African Rainbow Minerals	20.56	8	15	23	14
Lonmin	7.58	14	10	24	15
Northam Platinum	7.11	15	14	29	16

Source: Company reports, Bloomberg, Citi Investment Research and Analysis

Figure 40. Production Growth - Copper Equivalent Production per share (lbs./share)

	2007	2008	2009	2010	2011	Growth	Rank
Kumba Iron Ore	1.76	1.77	2.19	2.34	2.37	34%	1
Exxaro	2.66	3.04	3.19	3.44	3.36	26%	2
Assore	2.23	2.67	1.77	2.54	2.60	17%	3
African Rainbow Minerals	2.61	3.07	2.34	2.94	2.95	13%	4
BHP Billiton	3.21	3.24	3.17	3.30	3.45	7%	5
Vale	3.36	3.32	2.43	3.27	3.50	4%	6
Anglo American	12.22	11.12	9.08	9.33	8.70	-5%	7
Anglo American Platinum	8.52	8.04	8.42	8.09	7.55	-11%	8
Impala Platinum	2.94	2.57	2.36	2.50	2.58	-12%	9
Rio Tinto	8.10	8.29	7.65	6.99	7.01	-13%	10
Lonmin	4.01	3.50	2.91	2.83	2.88	-28%	11
Harmony Gold	1.64	1.48	1.32	1.25	1.17	-29%	12
Gold Fields	2.69	2.10	1.93	1.84	1.79	-33%	13
AngloGold Ashanti	7.40	5.23	4.75	4.53	4.15	-44%	14
Northam Platinum	0.64	0.58	0.42	0.42	0.32	-50%	15
Aquarius Platinum	0.90	0.86	0.61	0.39	0.45	-50%	16

Source: Company reports, Citi Investment Research and Analysis

Figure 41. Average Revenue / Employee (000 US$ /Emp)

	2007-11	Rank
Rio Tinto	594.24	1
BHP Billiton	540.91	2
Kumba Iron Ore	339.00	3
Vale	245.83	4
Assore	235.47	5
Exxaro	224.29	6
Anglo American	211.60	7
African Rainbow Minerals	122.28	8
Anglo American Platinum	92.17	9
Impala Platinum	76.52	10
AngloGold Ashanti	73.43	11
Gold Feilds	68.53	12
Aquarius Platinum	61.58	13
Northam Platinum	54.19	14
Lonmin	51.82	15
Harmony Gold	31.60	16

Source: Company reports, Citi Investment Research and Analysis

Figure 42. Cost Control - Improvement in Cu Equivalent Cash Cost

	2007	2008	2009	2010	2011	Improvement	Rank
Impala Platinum	1.43	1.72	1.25	1.48	1.91	34.2%	1
Vale	1.03	1.14	1.13	1.15	1.41	36.8%	2
Anglo American	1.45	1.56	1.56	1.76	2.08	43.7%	3
Anglo American Platinum	1.80	2.01	1.90	2.32	2.71	50.4%	4
Lonmin	1.73	2.15	2.03	2.26	2.67	54.4%	5
AngloGold Ashanti	1.49	1.48	2.48	2.37	2.35	57.6%	6
Assore	1.28	1.54	1.45	1.60	2.06	60.2%	7
Rio Tinto	1.52	2.75	2.26	2.56	2.47	62.0%	8
Exxaro	1.34	1.29	1.46	1.73	2.21	65.5%	9
BHP Billiton	1.00	1.74	1.66	1.54	1.89	88.1%	10
Harmony Gold	1.56	1.72	1.76	2.37	2.99	91.8%	11
Aquarius Platinum	1.14	1.40	1.56	1.64	2.20	92.9%	12
Kumba Iron Ore	1.00	1.17	1.27	1.73	2.08	108.2%	13
Gold Fields	1.11	1.43	1.64	2.22	2.38	114.7%	14
African Rainbow Minerals	0.79	1.23	1.32	1.52	1.96	147.5%	15
Northam Platinum	1.45	1.47	1.74	2.61	3.69	154.0%	16

Source: Company reports, Citi Investment Research and Analysis

Figure 43. Average EBITDA / Employee (000 US$ /Emp)

	2007-11	Rank
BHP Billiton	260.48	1
Rio Tinto	239.20	2
Kumba Iron Ore	217.58	3
Vale	123.75	4
Assore	117.42	5
Exxaro	78.42	6
Anglo American	73.20	7
African Rainbow Minerals	57.61	8
Impala Platinum	32.04	9
Gold Fields	27.92	10
Aquarius Platinum	26.77	11
Anglo American Platinum	26.41	12
Northam Platinum	21.22	13
AngloGold Ashanti	16.00	14
Lonmin	15.87	15
Harmony Gold	5.99	16

Source: Company reports, Citi Investment Research and Analysis

Figure 44. Asset Utilization Efficiency - Asset turnover (ATO) ranked

	Average ATO	Rank	Improvement in ATO	Improvement Rank	Combined Score	Combined Rank
Kumba Iron Ore	1.79	1	18%	5	6	1
Exxaro	0.92	4	14%	6	10	2
Rio Tinto	0.67	8	44%	3	11	3
AngloGold Ashanti	0.73	8	24%	3	11	3
BHP Billiton	0.94	3	-7%	10	13	5
Assore	1.15	2	-25%	12	14	6
Gold Fields	0.51	14	63%	1	15	7
Anglo American Platinum	0.86	5	-24%	11	16	8
African Rainbow Minerals	0.73	10	-4%	9	19	9
Impala Platinum	0.85	6	-45%	14	20	10
Harmony Gold	0.33	16	20%	4	20	10
Lonmin	0.67	13	2%	8	21	12
Anglo American	0.79	7	-54%	15	22	13
Vale	0.47	15	4%	7	22	13
Aquarius Platinum	0.71	11	-34%	13	24	15
Northam Platinum	0.73	9	-76%	16	25	16

Source: Company reports, Citi Investment Research and Analysis

Company Focus

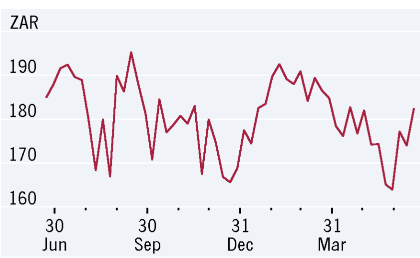
African Rainbow Minerals (ARIJ.J)

Ranked 10th

- Company Update

Buy	**1**
Price (21 Jun 12)	R182.19
Target price	R220.00
Expected share price return	20.8%
Expected dividend yield	3.3%
Expected total return	**24.0%**
Market Cap	R39,142M
	US$4,777M

Price Performance
(RIC: ARIJ.J, BB: ARI SJ)



- **ARM ranked 10th in our analysis —** lowest among the diversified miners. We attribute this to relatively weak productivity (14th), which impacted cost control (15th). We believe a key reason could be construction contractors at Khumani expansion project, which is not yet a producing asset, which weighs on ARM's productivity, volume growth and average revenue and EBITDA per employee. Strong production growth (4th) over the period offset disappointing productivity and cost control to some extent.

- **Safety improvement encouraging –** ARM's LTIRF for 2011 stood at 2.15 per million hours compared to 3.85 during previous year, a reduction of 44%. This improved its overall safety ranking to 5th from 16th in our "Sweating for Success" analysis. Most of the other measures remained stable compared to our previous analysis.

- **BUY ARM** — ARM's high quality iron ore asset seems to be trading on a very attractive relative valuation. We like ARM's long-life, low-cost assets, near-term iron ore growth prospects, and strong balance sheet. Our one-year target price of R220 implies 24% one-year total return potential and we maintain our Buy recommendation. Refer to our recent report: "African Rainbow Minerals (ARIJ.J) - Attractive iron ore exposure at a discount price".

African Rainbow Minerals (ZAR)

Year to 30 Jun	2010A	2011A	2012E	2013E	2014E
Sales (RM)	11,028.0	14,897.0	16,856.3	18,544.7	21,149.8
Net Income (RM)	1,714.0	3,319.0	3,405.3	3,626.8	4,608.2
Diluted EPS (R)	7.98	15.52	15.81	16.77	21.31
Diluted EPS (Old) (R)	7.98	15.52	15.81	16.77	21.31
PE (x)	22.8	11.7	11.5	10.9	8.5
EV/EBITDA (x)	8.5	5.2	4.9	4.4	3.5
DPS (R)	2.00	4.50	6.00	7.00	8.00
Net Div Yield (%)	1.1	2.5	3.3	3.8	4.4

Financial statements and ratio analysis

Figure 1. African Rainbow Minerals' income statement (Associates proportionately consolidated)

FYE June	**2009**	**2010**	**2011**	**2012F**	**2013F**	**2014F**	**2015F**	**2016F**
Income Statement (ZARm)								
Revenue	11,657	12,281	16,170	18,285	20,200	23,220	24,553	26,315
Revenue growth	*-17%*	*5%*	*32%*	*13%*	*10%*	*15%*	*6%*	*7%*
Cash costs	(6,591)	(8,039)	(9,551)	(11,434)	(12,749)	(14,119)	(14,519)	(16,025)
Underlying EBITDA	**5,065**	**4,242**	**6,619**	**6,851**	**7,451**	**9,101**	**10,034**	**10,290**
EBITDA margin	*43%*	*35%*	*41%*	*37%*	*37%*	*39%*	*41%*	*39%*
Depreciation and amortisation	(1,140)	(1,238)	(1,409)	(1,484)	(1,941)	(2,185)	(2,280)	(2,373)
Underlying EBIT	**3,925**	**3,004**	**5,210**	**5,367**	**5,510**	**6,916**	**7,754**	**7,917**
Exceptional items	541	97	(11)	2	0	0	0	0
Investment income	414	209	216	220	108	184	312	415
Interest paid	(487)	(293)	(350)	(312)	(162)	(162)	(102)	0
Profit before tax	**4,393**	**3,017**	**5,065**	**5,277**	**5,457**	**6,939**	**7,963**	**8,333**
Taxation	(1,795)	(989)	(1,619)	(1,702)	(1,582)	(2,012)	(2,230)	(2,333)
Tax rate (proportionately consolidated)	*41%*	*33%*	*32%*	*32%*	*29%*	*29%*	*28%*	*28%*
Profit after tax	**2,598**	**2,028**	**3,446**	**3,576**	**3,874**	**4,927**	**5,733**	**6,000**
Minority interest in profit	198	(162)	(194)	(160)	(247)	(318)	(351)	(395)
Net profit for the year	**2,796**	**1,866**	**3,252**	**3,415**	**3,627**	**4,608**	**5,382**	**5,604**
Adjustments	(479)	(152)	67	(10)	0	0	0	0
Headline earnings	**2,317**	**1,714**	**3,319**	**3,405**	**3,627**	**4,608**	**5,382**	**5,604**
Number of shares (millions):								
Weighted average	*212*	*212*	*213*	*213*	*214*	*214*	*214*	*214*
Diluted weighted average	*215*	*215*	*214*	*215*	*216*	*216*	*216*	*216*
Closing number	*212*	*212*	*213*	*214*	*214*	*214*	*214*	*214*
EPS (cents)	**1,355**	**854**	**1,555**	**1,614**	**1,697**	**2,156**	**2,518**	**2,622**
HEPS (cents)	**1,094**	**807**	**1,559**	**1,595**	**1,697**	**2,156**	**2,518**	**2,622**
Diluted HEPS (cents)	**1,079**	**798**	**1,552**	**1,581**	**1,677**	**2,131**	**2,489**	**2,591**
Diluted HEPS growth	*-42%*	*-26%*	*94%*	*2%*	*6%*	*27%*	*17%*	*4%*
DPS declared (cents)	**175**	**200**	**450**	**600**	**700**	**800**	**900**	**1,000**
Dividend payout ratio	*13%*	*23%*	*29%*	*37%*	*41%*	*37%*	*36%*	*38%*
Breakdown of underlying EBIT (ZARm)								
Platinum	(557)	794	802	708	1,121	1,435	1,494	1,576
EBIT margin	*-32%*	*25%*	*24%*	*20%*	*27%*	*32%*	*32%*	*32%*
Nkomati	26	287	148	(245)	251	600	751	695
EBIT margin	*5%*	*23%*	*10%*	*-15%*	*11%*	*22%*	*24%*	*23%*
Iron ore	1,535	1,027	3,243	3,954	3,409	3,290	2,861	2,827
EBIT margin	*61%*	*41%*	*63%*	*58%*	*49%*	*47%*	*43%*	*41%*
Manganese	3,085	1,147	1,145	872	618	732	1,499	1,768
EBIT margin	*73%*	*36%*	*35%*	*28%*	*19%*	*20%*	*36%*	*34%*
Chrome	149	(120)	(158)	(4)	(99)	(155)	(137)	(65)
EBIT margin	*16%*	*-17%*	*-14%*	*0%*	*-11%*	*-19%*	*-16%*	*-7%*
XCSA	218	30	(53)	(106)	(196)	40	123	68
EBIT margin	*14%*	*2%*	*-4%*	*-7%*	*-12%*	*2%*	*5%*	*3%*
Goedgevonden	37	54	122	217	318	424	495	460
EBIT margin	*31%*	*25%*	*24%*	*28%*	*38%*	*42%*	*44%*	*40%*
Copper and exploration	(642)	(119)	(151)	(50)	108	570	686	609
EBIT margin	*N/A*	*N/A*	*N/A*	*N/A*	*39%*	*45%*	*43%*	*38%*
Corporate and other	75	(96)	112	20	(20)	(20)	(20)	(20)
Underlying EBIT	**3,925**	**3,004**	**5,210**	**5,367**	**5,510**	**6,916**	**7,754**	**7,917**
Group EBIT margin	*34%*	*24%*	*32%*	*29%*	*27%*	*30%*	*32%*	*30%*

Source: Company reports, I-Net, CIRA estimates

We forecast ARM's FY2012E diluted headline earnings per share at R15.82, almost flat (2% higher) compared to 2011 levels. We see a further 6% and 27% growth in HEPS in FY13E and FY14E respectively.

Figure 2. African Rainbow Minerals' balance sheet (Associates proportionately consolidated)

FYE June	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Balance Sheet (ZARm)								
Non-current operating assets	13,040	14,760	17,033	19,545	20,273	21,178	21,422	22,254
Working capital	2,085	2,744	3,143	3,789	4,273	4,946	5,109	5,621
Net tax payable	(530)	(270)	(183)	(354)	(426)	(546)	(578)	(599)
Net operating assets	**14,595**	**17,234**	**19,993**	**22,979**	**24,120**	**25,579**	**25,953**	**27,277**
Investments	5,191	5,287	5,855	6,210	6,211	6,212	6,213	6,214
Cash	3,325	2,791	3,668	2,519	3,957	5,934	7,184	9,734
Total invested capital	**23,111**	**25,312**	**29,516**	**31,709**	**34,288**	**37,726**	**39,351**	**43,225**
Equity	16,149	17,765	21,157	24,095	26,440	29,553	33,226	36,907
Minority interest	602	764	958	1,155	1,155	1,155	1,155	1,155
Deferred tax	2,245	2,917	3,496	3,753	3,892	4,066	4,113	4,273
Provisions	559	768	836	782	811	847	857	890
Debt	3,556	3,098	3,069	1,925	1,990	2,104	0	0
Total invested capital	**23,111**	**25,312**	**29,516**	**31,709**	**34,288**	**37,726**	**39,351**	**43,225**
Key Balance Sheet ratios								
Non-current asset turnover (times)	0.9	0.8	0.9	0.9	1.0	1.1	1.1	1.2
Net debt (ZARm)	231	307	(599)	(594)	(1,967)	(3,830)	(7,184)	(9,734)
Gearing (%)	1	2	(3)	(3)	(8)	(15)	(28)	(36)
Working capital turnover (days)	65	82	71	76	77	78	76	78
NAV per share (ZAR)	76	84	99	113	124	138	155	173
ROCE (excluding Harmony) (%)	27.9	18.9	28.0	25.0	23.4	27.8	30.1	29.7
ROIC (%)	12.8	16.6	22.3	18.9	17.7	21.2	22.1	22.2
Return on equity (excluding cash) (%)	19.0	11.9	18.7	16.4	16.0	19.2	20.4	19.5
ROCE per division								
Platinum	-9.4%	14.4%	13.8%	11.7%	18.1%	22.9%	23.4%	24.2%
Nkomati	1.8%	13.7%	5.9%	-9.4%	9.9%	24.4%	30.8%	28.6%
Iron ore	56.7%	26.4%	53.9%	47.0%	37.3%	37.2%	33.6%	32.8%
Manganese	69.4%	26.1%	26.7%	20.8%	13.3%	14.3%	26.7%	29.8%
Chrome	14.7%	-12.0%	-18.3%	-0.6%	-13.9%	-22.7%	-20.9%	-10.4%
XCSA	16.6%	2.3%	-4.0%	-7.8%	-13.8%	2.7%	7.8%	4.4%
Goedgevonden	2.7%	3.0%	6.3%	12.3%	19.6%	25.7%	29.4%	26.4%

Source: Company reports, I-Net, Citi Research estimates

We forecast ARM's net cash position at R594m by 30 June 2012 and significant net cash position of R2.0 billion by June 2013. This could support attractive dividend yields from FY13 onwards, unless ARM makes an acquisition.

African Rainbow Minerals

Company description

ARM is a South African diversified mining company with long-life, low-cost assets in platinum, nickel, iron ore, manganese and coal through partnerships with major players in the global resource sector. Its strong BEE credentials, solid track record and healthy balance sheet give ARM access to attractive mining deals.

Investment strategy

We rate ARM Buy (1). ARM is a quality mining company with long-life, low-cost operations and strong growth opportunities, in our view. Partnerships with mining majors lead to knowledge transfer and the ability to participate in mega projects. ARM's large reserves support long asset lives and expandability and it operates low-cost mines with strong growth prospects.

Valuation

We use a discounted cash flow approach to derive our one-year target price of R220, based on:

A WACC of 13.34%; long-term (2015-2028) nominal revenue growth of 5% per annum; long-term EBITDA margins of 38%; long-term capex/EBITDA ratio of 33%; long-term ROE (excluding Harmony) of 20%; and nominal terminal growth rate (after 2028) of 6.5%, implying an exit PE multiple of 12x.

We include ARM's investment in Harmony Gold in our valuation at listed market value.

Risks

ARM's risk profile is derived after considering several factors, including an assessment of the macro economic environment, industry-specific risks, company-specific operational risks as well as financial risk.

Downside risks include: potential execution risk, given significant new projects; South African infrastructure constraints; skills, electricity and water shortages and onerous regulation in South Africa; higher-than-forecast mining inflation; over-estimation of mineral reserves and government actions.

If the impact of these risk factors is more or less negative than we currently anticipate, then the share price could fail to reach or exceed our target price.

Company Focus

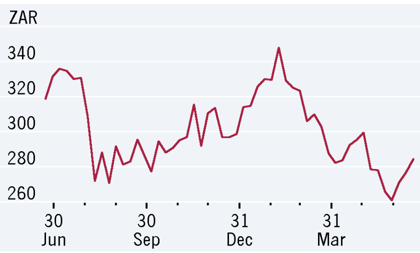
Anglo American (AGLJ.J)

Ranked 7th

- Company Update

Buy	1
Price (21 Jun 12)	R280.50
Target price	R360.00
Expected share price return	28.3%
Expected dividend yield	2.5%
Expected total return	**30.8%**
Market Cap	R389,927M
	US$47,585M

Price Performance
(RIC: AGLJ.J, BB: AGL SJ)



- **Average ranking, but favourable prospects -** Anglo American ranks 7th in our historic analysis, on the lower end of the ranking table compared to South African and London listed diversified miners. The company did well containing costs (3rd) but asset utilization (13th) and safety (10th) dragged the overall ranking down. However, Anglo American has now transformed itself into a more streamlined, focused mining company after its divestments of non-core assets. We believe future performance is likely to be better.

- **Safety ranking deteriorates, but cost control improved –** Anglo's safety ranking has slipped from 4th to 10th primarily due to better relative performance by peers, compared to its flat LTIFR of 3.2 for 2010 and 2011. Cost control improved from 5th to 3rd.

- **We prefer dividends over growth** — Our 7 June 2012 report "Create Your Catalyst – Increase Dividend Payout" showed that companies with attractive dividend yields outperformed and argued Anglo should increase its uncompetitive dividend. We maintain that Anglo should increase its payout ratio to at least 35% (2011:15%) to be attractively valued relative to peers, even if it slows down growth. Soaring construction costs and falling mining company valuations also mean that acquisitions of producing assets could potentially become cheaper than riskier organic growth.

- **BUY rated –** Anglo should continue to benefit from volume growth in 2012 as three major projects (Kolomela, Los Bronces and Barro Alto) are ramping up. We believe Minas Rio, Anglo Sur and Angloplat disappointments are now well understood and largely priced in. We estimate a total one-year return of 31% to our target price of R360 and maintain Anglo's South African listing as Buy.

Anglo American (USD)

Year to 31 Dec	2010A	2011A	2012E	2013E	2014E
Sales ($M)	27,960.0	30,580.0	31,519.0	41,673.8	43,657.3
Profit Before Tax ($M)	10,928.0	10,782.0	9,942.4	11,704.0	12,542.5
Diluted EPS ($)	3.96	4.85	4.21	4.92	5.28
Diluted EPS (Old) ($)	3.96	4.85	4.21	4.92	5.28
PE (x)	8.6	7.1	8.1	7.0	6.5
EV/EBITDA (x)	5.1	4.2	4.4	3.5	3.1
DPS ($)	0.65	0.74	0.95	1.09	1.26
Net Div Yield (%)	1.9	2.2	2.8	3.2	3.7

Financial statements and ratio analysis

Figure 1. Anglo American financial statements and ratio analysis – associates proportionately consolidated

FYE December	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Income Statement (US$m)								
Revenue	24,637	32,929	36,548	36,974	44,219	46,232	47,346	47,472
Cash costs	(17,707)	(20,946)	(23,200)	(24,483)	(28,789)	(29,643)	(30,416)	(31,793)
Underlying EBITDA	**6,930**	**11,983**	**13,348**	**12,491**	**15,431**	**16,589**	**16,930**	**15,679**
Depreciation and amortisation	(1,968)	(2,220)	(2,253)	(2,504)	(3,178)	(3,719)	(4,001)	(4,337)
Underlying EBIT	**4,962**	**9,763**	**11,095**	**9,988**	**12,252**	**12,870**	**12,929**	**11,342**
Items excluded from underlying earnings	(209)	1,715	(51)	0	0	0	0	0
Net interest	(435)	(227)	135	328	(195)	36	214	299
Profit before tax	**4,318**	**11,251**	**11,179**	**10,315**	**12,057**	**12,906**	**13,143**	**11,640**
Taxation	(1,403)	(3,124)	(3,244)	(3,188)	(3,731)	(4,118)	(4,193)	(3,715)
Profit after tax	**2,915**	**8,127**	**7,935**	**7,127**	**8,326**	**8,789**	**8,950**	**7,926**
Minority interest in profit	(485)	(1,583)	(1,766)	(1,827)	(2,110)	(2,096)	(2,095)	(1,900)
Net profit for the year	**2,430**	**6,544**	**6,169**	**5,300**	**6,216**	**6,693**	**6,855**	**6,026**
Adjustments	139	(1,568)	(49)	0	0	0	0	0
Underlying earnings	**2,569**	**4,976**	**6,120**	**5,300**	**6,216**	**6,693**	**6,855**	**6,026**
Number of shares (millions)								
Weighted average	*1,202*	*1,206*	*1,210*	*1,210*	*1,210*	*1,210*	*1,210*	*1,210*
Diluted weighted average	*1,253*	*1,281*	*1,282*	*1,282*	*1,282*	*1,282*	*1,282*	*1,282*
Closing	*1,204*	*1,207*	*1,210*	*1,210*	*1,210*	*1,210*	*1,210*	*1,210*
Underlying EPS (US cents)	**214**	**413**	**506**	**438**	**514**	**553**	**567**	**498**
Underlying EPS growth (% y-o-y)	*-51*	*+93*	*+23*	*-13*	*+17*	*+8*	*+2*	*-12*
Diluted underlying EPS (US cents)	**210**	**396**	**485**	**421**	**492**	**528**	**540**	**475**
DPS declared (US cents)	**0**	**65**	**74**	**95**	**109**	**126**	**144**	**165**
Dividend payout ratio	*0%*	*16%*	*15%*	*22%*	*21%*	*23%*	*25%*	*33%*
Diluted underlying EPS (pence)	**130**	**251**	**298**	**266**	**306**	**315**	**318**	**268**
DPS declared (pence)	0	42	46	61	69	76	86	94
Diluted underlying EPS (ZAR)	**16.99**	**28.28**	**34.60**	**32.00**	**41.00**	**47.00**	**50.00**	**46.00**
DPS declared (ZAR)	0.00	4.72	5.44	7.50	9.20	11.30	13.50	16.00
Composition of underlying EBIT (US$m)								
Platinum	32	837	890	878	1,274	1,721	1,919	1,933
EBIT margin	*1%*	*13%*	*12%*	*13%*	*17%*	*22%*	*23%*	*23%*
Diamonds	64	495	659	482	1,039	1,136	1,114	1,186
EBIT margin	*4%*	*19%*	*20%*	*16%*	*14%*	*15%*	*14%*	*15%*
Copper	2,010	2,817	2,461	2,916	3,558	3,557	3,201	2,124
EBIT margin	*51%*	*58%*	*48%*	*49%*	*50%*	*48%*	*44%*	*35%*
Nickel	2	96	57	225	334	401	355	265
EBIT margin	*1%*	*23%*	*12%*	*23%*	*34%*	*38%*	*35%*	*28%*
Iron ore and manganese	1,489	3,681	4,520	3,761	3,571	3,082	3,020	2,994
EBIT margin	*44%*	*56%*	*56%*	*48%*	*45%*	*38%*	*37%*	*34%*
Metallurgical Coal (Australia)	451	783	1,189	854	1,118	1,176	1,258	1,042
EBIT margin	*20%*	*23%*	*27%*	*20%*	*24%*	*24%*	*25%*	*19%*
Thermal Coal (South Africa)	721	710	1,230	1,020	1,393	1,846	2,019	1,678
EBIT margin	*29%*	*25%*	*33%*	*28%*	*35%*	*41%*	*41%*	*36%*
Other mining and industrial	511	661	195	201	356	440	483	516
EBIT margin	*9%*	*12%*	*5%*	*5%*	*8%*	*9%*	*10%*	*10%*
Exploration	(172)	(136)	(121)	(160)	(160)	(160)	(160)	(162)
Group and unallocated	(146)	(181)	15	(190)	(230)	(330)	(280)	(233)
Underlying EBIT	**4,962**	**9,763**	**11,095**	**9,988**	**12,252**	**12,870**	**12,929**	**11,342**
Group EBIT margin	*20%*	*30%*	*30%*	*27%*	*28%*	*28%*	*27%*	*24%*
Group EBIT margin - core operations	*24%*	*33%*	*34%*	*30%*	*30%*	*30%*	*29%*	*26%*
Key Income Statement ratios								
EBITDA margin (%)	28	36	37	34	35	36	36	33

Source: Company reports, I-Net, CIRA estimates

We forecast a 13% drop in Anglo's 2012E diluted EPS to $4.38, primarily driven by lower commodity price forecasts, partly offset by a 13% increase in copper equivalent sales volumes.

Figure 2. Anglo American's balance sheet – proportionately consolidated

FYE December	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Balance Sheet (US$m)								
Non-current operating assets	40,777	46,697	47,539	57,558	60,367	61,164	63,545	66,274
Working capital	1,810	1,624	837	2,888	3,773	3,910	4,029	3,895
Net operating assets	**42,587**	**48,321**	**48,376**	**60,447**	**64,139**	**65,074**	**67,574**	**70,169**
Investments	3,015	3,606	2,984	3,401	3,483	3,550	3,631	3,717
Cash	3,269	6,401	11,732	1,133	7,920	7,270	5,027	6,785
Total invested capital	**48,871**	**58,328**	**63,092**	**64,980**	**75,543**	**75,895**	**76,232**	**80,671**
Equity	26,121	34,239	39,092	43,446	48,451	53,752	59,010	63,208
Minority interest	1,948	3,732	4,097	4,032	4,074	4,192	4,252	4,124
Debt	14,315	13,439	12,873	8,380	13,449	8,256	2,899	2,835
Net deferred tax liabilty	4,904	5,252	5,200	6,907	7,244	7,340	7,625	7,953
Provisions	1,583	1,666	1,830	2,216	2,324	2,354	2,446	2,551
Total invested capital (Capital employed)	**48,871**	**58,328**	**63,092**	**64,980**	**75,543**	**75,895**	**76,232**	**80,671**
Key Balance Sheet ratios								
Non-current asset turnover (times)	0.6	0.7	0.8	0.6	0.7	0.8	0.7	0.7
Net debt - excluding De Beers	11,046	7,038	1,141	7,247	5,529	985	(2,128)	(3,951)
Net debt - including De Beers	12,486	7,831	1,708	7,610	5,892	1,348	(1,766)	(3,588)
Debt: Equity (%)	55	39	33	19	28	15	5	4
Gearing (%)	30	17	3	14	10	2	(4)	(7)
Gearing - including De Beers (%)	32	19	4	15	11	2	(3)	(6)
Working capital turnover (days)	27	18	8	29	31	31	31	30
NAV per share (US$)	22	28	32	36	40	44	49	52
NAV per share (ZAR)	182	207	234	281	336	398	455	508
ROCE (%)	12.6	21.5	22.9	18.4	19.7	19.9	19.5	16.5
ROIC (%)	10.5	16.3	18.2	14.5	14.3	13.8	13.8	11.8
Return on equity (%)	11.1	16.5	16.7	12.8	13.5	13.1	12.2	9.9
ROCE per division (%)								
Platinum	0	7	7	8	12	16	18	18
Diamonds	5	17	23	12	19	23	23	25
Copper	51	51	35	37	43	42	37	24
Nickel	0	5	2	9	13	15	13	9
Iron ore and manganese	14	33	36	27	24	20	20	20
Coal	27	27	38	27	32	37	36	26
Other mining and industrial	10	15	6	6	11	14	15	15

Source: Company reports, CIRA estimates

Since the depths of the financial crisis in 2009, Anglo American has strengthened its balance sheet through operating cash flows, asset sales, rights issues in subsidiaries, and replacing near-term debt with longer-term debt. We expect net debt to climb to $7.6bn by end of FY'12 (from $1.7bn in FY'11) following an acquisition of 40% interest in De Beers, implying a debt gearing ratio of around 15%. This would still be a major improvement from 2008's net debt level (including De Beers) of US$12.8bn (39% gearing ratio).

We believe Anglo's balance sheet can accommodate much higher dividend payments.

Anglo American

Company description

Anglo American is a diversified mining company, with key operations in base metals, coal, iron ore and PGMs. While its head office is in the UK, its operations are spread across the globe, with exposure to South Africa, Australia and South America. Its biggest differentiator vs. its peer group is its globally dominant position in platinum and diamond production. The group has a larger proportion of assets in Africa (40%) than its peers, which could be perceived as higher risk given political uncertainty and electricity shortages.

Investment strategy

Our recommendation on Anglo American is Buy. We forecast strong volume growth over the next four years. We believe Anglo could offset the negative impact of falling commodity prices on its margins over the next five years to some extent through a defensive commodity basket and high-margin iron ore copper and coal growth.

Valuation

Our R360 target price for Anglo is based on a 50/50 weighting of our DCF fair value of R394 and a P/E derived value of R328, whereby we apply a 8x PE multiple to 2013E earnings (a 20% discount to Anglo's long-term average of 10.3x to offset 2013's above average margin forecast and to reflect significantly increased capex spend). We derive our DCF valuation based on: 1) a weighted average cost of capital (WACC) of 9.52%; 2) long-term (2013-23E) nominal revenue growth of 5% per annum; 3) long-term EBITDA margins of 38%; 4) a long-term capex/EBITDA ratio of 41%; 5) long-term ROE of 12%; and 6) a terminal growth rate (after 2023E) of 3.5% (implying an exit P/E multiple of 10x).

Risks

The biggest risks to our earnings forecasts and valuation relate to our commodity price and currency forecasts.

Industry-specific risks include government actions, such as controls on imports, exports and prices, new forms or rates of taxation and royalties, and increased government regulation. South African miners started paying mining royalties in March 2010, in line with global best practice and market expectations.

Higher-than-forecast inflation in the mining sector could lead to near-term margin compression, but should support higher commodity prices in the long term.

Skills, electricity and water shortages in South Africa may affect production and mining inflation more than we anticipate. As around 40% of Anglo's assets are in South Africa, this could erode Anglo's global competitiveness.

Over-estimation of mineral reserves could weaken our investment case. We assume long-term reserve replacement at a fixed capital cost to EBITDA. Failure to discover new reserves or expand existing reserves could therefore impact on Anglo's valuation.

Conversely, if any of these factors proves to have less of an effect than we anticipate, the stock could materially outperform our target.

Company Focus

■ Company Update

Neutral	**2**
Price (21 Jun 12)	R308.75
Target price	R280.00
Expected share price return	-9.3%
Expected dividend yield	2.3%
Expected total return	**-7.0%**
Market Cap	R43,104M
	US$5,260M

Price Performance
(RIC: ASRJ.J, BB: ASR SJ)

Assore Limited (ASRJ.J)

Ranked 6th

- **Balanced story -** ASR ranked 6th in our analysis, fairly average compared to diversified mining peer. It ranked above average on all metrics except productivity (10th). We believe a key reason for low productivity could be construction contractors at Khumani expansion project, which is not yet a producing asset. However ASR posted by far the best share price appreciation (577%) for the period under observation due to favourable commodity exposure, in our view.

- **Plugging the gaps –** In our last analysis we mentioned productivity and safety as the dragging factor for the ASR's overall ranking. The company improved its safety performance significantly with LTIFR falling 44% during 2011 resulting in its safety ranking improving from 10th to 3rd.

- **Neutral Rated –** Assore's share price has rallied over 40% over the past year, outperforming FTSE/JSE mining index by 47%. Assore's market cap has exceeded African Rainbow Minerals' by around 12%. Both companies own the same core asset through their 50/50 joint venture in Assmang. Assmang contributes 90% to our NPV for Assore, but only 60% to our NPV for ARM. This means one gets ARM's platinum, nickel and coal assets and its 14.8% interest in Harmony Gold effectively for free at ARM's current share price. Refer to our recent report: "Assore Limited (ASRJ.J) - Downgrade to Neutral after Strong Outperformance".

Assore Limited (ZAR)

Year to 30 Jun	2010A	2011A	2012E	2013E	2014E
Sales (RM)	7,085.7	10,547.8	11,819.0	11,790.9	12,329.3
Net Income (RM)	1,494.2	3,219.3	3,595.4	3,131.7	3,213.4
Diluted EPS (¢)	1,249	2,690	3,163	2,618	2,686
Diluted EPS (Old) (¢)	1,249	2,690	3,163	2,618	2,686
PE (x)	24.7	11.5	9.8	11.8	11.5
EV/EBITDA (x)	15.1	7.7	7.0	7.9	7.5
DPS (¢)	340	450	700	1,050	1,250
Net Div Yield (%)	1.1	1.5	2.3	3.4	4.0

Financial statements and ratio analysis

Figure 1. ASR's income statement

FYE June	**2009**	**2010**	**2011**	**2012F**	**2013F**	**2014F**	**2015F**	**2016F**
Income Statement (ZARm)								
Revenue	8,819	7,086	10,548	11,819	11,791	12,329	12,511	13,919
Revenue growth	*-4%*	*-20%*	*49%*	*12%*	*0%*	*5%*	*1%*	*11%*
Cash costs	(3,224)	(4,318)	(5,246)	(5,901)	(6,545)	(7,037)	(6,862)	(7,901)
Underlying EBITDA	**5,595**	**2,768**	**5,302**	**5,918**	**5,246**	**5,292**	**5,648**	**6,018**
EBITDA margin	*63%*	*39%*	*50%*	*50%*	*44%*	*43%*	*45%*	*43%*
Depreciation and amortisation	(415)	(501)	(528)	(563)	(932)	(1,023)	(1,017)	(1,036)
Underlying EBIT	**5,180**	**2,267**	**4,774**	**5,355**	**4,314**	**4,269**	**4,631**	**4,983**
Exceptional items	0	0	0	0	0	0	0	0
Investment income	367	191	120	161	231	251	322	436
Interest paid	(298)	(124)	(78)	(237)	(128)	(20)	0	0
Profit before tax	**5,249**	**2,334**	**4,816**	**5,279**	**4,417**	**4,499**	**4,953**	**5,418**
Taxation	(1,981)	(823)	(1,567)	(1,601)	(1,260)	(1,260)	(1,387)	(1,517)
Tax rate (proportionately consolidated)	*38%*	*35%*	*33%*	*30%*	*29%*	*28%*	*28%*	*28%*
Profit after tax	**3,267**	**1,511**	**3,250**	**3,678**	**3,157**	**3,240**	**3,566**	**3,901**
Minority interest in profit	(26)	(32)	(30)	(21)	(25)	(26)	(26)	(29)
Net profit for the year	**3,241**	**1,480**	**3,220**	**3,657**	**3,132**	**3,213**	**3,540**	**3,872**
Adjustments	24	15	(0)	(62)	0	0	0	0
Headline earnings	**3,266**	**1,494**	**3,219**	**3,595**	**3,132**	**3,213**	**3,540**	**3,872**
Number of shares (millions):								
Weighted average	*119*	*120*	*120*	*114*	*120*	*120*	*120*	*120*
Diluted weighted average	*119*	*120*	*120*	*114*	*120*	*120*	*120*	*120*
Closing number	*119*	*120*	*120*	*120*	*120*	*120*	*120*	*120*
EPS (cents)	**2,734**	**1,236**	**2,691**	**3,218**	**2,618**	**2,686**	**2,959**	**3,236**
HEPS (cents)	**2,754**	**1,249**	**2,690**	**3,163**	**2,618**	**2,686**	**2,959**	**3,236**
Diluted HEPS (cents)	**2,754**	**1,249**	**2,690**	**3,163**	**2,618**	**2,686**	**2,959**	**3,236**
Diluted HEPS growth	*21%*	*-55%*	*115%*	*18%*	*-17%*	*3%*	*10%*	*9%*
DPS declared (cents)	**400**	**340**	**450**	**700**	**1,050**	**1,250**	**1,450**	**1,650**
Dividend payout ratio	*15%*	*28%*	*17%*	*22%*	*40%*	*47%*	*49%*	*51%*
Breakdown of underlying EBIT (ZARm)								
Iron ore	1,535	1,002	3,243	3,954	3,409	3,290	2,861	2,827
EBIT margin	*61%*	*41%*	*63%*	*58%*	*49%*	*47%*	*43%*	*41%*
Manganese	3,085	1,118	1,145	872	618	732	1,499	1,768
EBIT margin	*73%*	*36%*	*35%*	*28%*	*19%*	*20%*	*36%*	*34%*
Chrome	149	(120)	(158)	(4)	(99)	(155)	(137)	(65)
EBIT margin	*16%*	*-17%*	*-14%*	*0%*	*-11%*	*-19%*	*-16%*	*-7%*
Other mining and shipping activities	189	84	277	228	76	79	78	87
EBIT margin	*16%*	*11%*	*27%*	*25%*	*10%*	*10%*	*10%*	*10%*
Commissions on sales and technical fees	223	184	267	305	309	323	328	366
Underlying EBIT	**5,180**	**2,267**	**4,774**	**5,355**	**4,314**	**4,269**	**4,631**	**4,983**
Group EBIT margin	*59%*	*32%*	*45%*	*45%*	*37%*	*35%*	*37%*	*36%*

Source: Company reports, CIRA estimates

We forecast an 18%increase in ASR's 2012 diluted HEPS to R31.63, while EBITDA margin at 50% is the same as 2011 levels.

Figure 2. ASR's balance sheet

FYE June	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Balance Sheet (ZARm)								
Non-current operating assets	5,579	7,117	8,998	10,301	10,414	10,684	10,735	11,481
Working capital	1,749	2,247	2,097	2,586	2,460	2,664	2,669	3,196
Net tax payable	(429)	(254)	0	(333)	(297)	(333)	(361)	(401)
Net operating assets	**6,898**	**9,111**	**11,096**	**12,553**	**12,577**	**13,015**	**13,043**	**14,276**
Investments	110	58	0	0	0	0	0	0
Cash	3,001	1,850	2,335	3,495	3,959	4,580	6,494	7,457
Total invested capital	**10,009**	**11,018**	**13,430**	**16,048**	**16,536**	**17,595**	**19,537**	**21,734**
Equity	6,603	7,867	10,766	11,148	13,143	14,980	16,905	18,923
Minority interest	72	102	114	126	131	136	141	147
Deferred tax	1,342	1,714	2,174	1,978	2,000	2,051	2,061	2,204
Provisions	317	301	0	412	417	427	429	459
Debt	1,675	1,034	377	2,385	846	0	0	0
Total invested capital	**10,009**	**11,018**	**13,430**	**16,048**	**16,536**	**17,595**	**19,537**	**21,734**
Key Balance Sheet ratios								
Non-current asset turnover (times)	1.6	1.0	1.2	1.1	1.1	1.2	1.2	1.2
Net debt (cash) (ZARm)	(1,326)	(816)	(1,958)	(1,110)	(3,113)	(4,580)	(6,494)	(7,457)
Net debt (cash) per share (ZAR)	(11)	(7)	(16)	(9)	(26)	(38)	(54)	(62)
Gearing (%)	(25)	(12)	(22)	(11)	(31)	(44)	(62)	(65)
Working capital turnover (days)	72	116	73	80	76	79	78	84
NAV per share (ZAR)	56	66	90	93	110	125	141	158
ROCE (%)	80.3	28.3	47.3	45.3	34.3	33.4	35.5	36.5
ROIC (%)	49.8	20.5	30.9	36.2	24.5	24.8	25.9	27.8
Return on equity (excluding cash) (%)	99.8	26.8	42.9	43.5	34.5	30.3	30.9	31.4

Source: Company reports, CIRA estimates

Assore Limited

Company description

Assore mines iron ore, manganese ore, chrome and pyrophylite and produces manganese- and chrome alloys in South Africa. It also earns commission on marketing its JV partners' (ARM's) products. Assore's principal investment is Assmang which is a 50/50 joint venture with ARM and contributes around 88% to NPV.

Investment strategy

We rate ASR Neutral (2). It is a quality mining company with long-life, low-cost operations and strong growth opportunities, in our view. Khumani Iron Ore's near-term 6Mtpa expansion (to 16Mtpa) should provide a strong cash flow kicker from FY2013 as volumes ramp up into a lucrative market. We forecast a significant increase in ASR's dividends from FY12 onwards thanks to strong cash generation, rapid volume growth, slowing capex beyond Khumani iron ore expansion and ASR's strong balance sheet. However, it is trading at a significant premium valuation to South African listed mining peers and we believe its positive outlook is priced in.

Valuation

Our R280 target price is based on a DCF calculation. Our main assumptions are WACC of 13.34%, long-term (2016-2030) nominal revenue growth of 5% per annum, long-term EBITDA margins of 42%, long-term capex/EBITDA ratio of 29%, long-term ROE of 17% and nominal terminal growth rate (after 2030) of 6% (SA inflation of 5% + 1% volume growth), implying an exit PE multiple of 8.2x.

Risks

ASR's risk profile is derived after considering several factors, including an assessment of the macro economic environment, industry specific risks, company-specific operational risks as well as financial risk.

Downside risks to our target price include: A significant global economic slowdown (China in particular), which could lead to lower than forecast commodity prices; potential execution risk given significant new projects; South African infrastructure constraints limiting volume growth; skills, electricity and water shortages; onerous regulation in South Africa; higher-than-forecast mining inflation; overestimation of mineral reserves and government actions. If the impact from any of these factors proves to be more negative than we anticipate, the stock will likely have difficulty achieving our financial and price targets. However, if any of these factors proves to have less of an effect than we anticipate, the stock could materially outperform our target.

Company Focus

■ Company Update

Buy	**1**
Price (21 Jun 12)	£18.35
Target price	£23.00
Expected share price return	25.4%
Expected dividend yield	3.3%
Expected total return	**28.6%**
Market Cap	£105,813M
	US$166,311M

Price Performance
(RIC: BLT.L, BB: BLT LN)

BHP Billiton PLC (BLT.L)

Ranked 3rd

- **Getting the most from its employees —** BHP maintained its 3rd ranking in our efficiency analysis, delivering consistent high performance on all measures except cost control (12th). It continues to squeeze more profits from its employees than competitors (1st on EBITDA per employee, 3rd on productivity and 2nd on revenue per employee). We attribute this performance to management's focused strategy to maximize simplicity and efficiency, highly mechanized processes and investment in skilled labour.

- **Sweating for status quo –** BHP has done well to stay in the top quartile of the ranking even as its peer group has shown marked improvement on safety and production growth. The company managed to slightly improve production growth (5^{th} from 7^{th}) and cost control (10^{th} from 12^{th}) ranking. At the same time its Australian peer Rio has slipped from 1^{st} to 4^{th} in overall ranking.

- **Putting the diversified model to the test —** BHPB has argued that its diversified portfolio reduces the cash flow at risk; we would argue that, if this is the case, it would benefit from putting this to the test by stomaching higher debt levels and returning cash to shareholders. This would improve ROE, lower the cost of capital, and allow for higher cash returns. We believe there is further outperformance in the stock and maintain our Buy recommendation and target price of £23.00 which, rounded, converts to a R280 at a one-year forward forecast ZAR/GBP FX rate of 12. Refer to our recent note: "BHP Billiton Ltd (BHP.AX) - WACC Down".

BHP Billiton PLC (USD)

Year to 30 Jun	2010A	2011A	2012E	2013E	2014E
Sales ($M)	52,798.0	71,739.0	73,090.0	79,264.0	84,553.8
Profit Before Tax ($M)	19,572.0	31,255.0	27,156.2	29,308.1	32,987.4
Diluted EPS (¢)	223.7	407.4	337.6	366.9	414.2
Diluted EPS (Old) (¢)	223.7	407.4	337.6	366.9	414.2
PE (x)	12.9	7.1	8.5	7.9	7.0
EV/EBITDA (x)	6.7	4.4	5.0	4.7	4.1
DPS (¢)	87.0	101.0	115.0	126.0	136.0
Net Div Yield (%)	3.0	3.5	4.0	4.4	4.7

Figure 1. BHP financial statements and ratio analysis - associates proportionately consolidated

FYE June	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Income Statement (US$m)								
Revenue	50,211	52,798	71,739	73,090	79,264	84,554	87,594	92,573
Cash costs	(29,335)	(28,320)	(34,646)	(38,580)	(41,173)	(42,239)	(43,662)	(46,553)
Underlying EBITDA	**20,876**	**24,478**	**37,093**	**34,510**	**38,091**	**42,315**	**43,932**	**46,020**
Depreciation and amortisation	(3,871)	(4,759)	(5,113)	(6,484)	(7,488)	(8,132)	(9,228)	(10,304)
Underlying EBIT	**17,005**	**19,719**	**31,980**	**28,026**	**30,603**	**34,184**	**34,703**	**35,717**
Items ex from underlying earnings	(5,987)	(4,961)	(4,951)	(6,522)	(7,746)	(8,396)	(9,499)	(10,581)
Net interest	(543)	(459)	(561)	(870)	(1,295)	(1,196)	(1,037)	(818)
Profit before tax	**10,408**	**19,572**	**31,255**	**27,156**	**29,308**	**32,987**	**33,667**	**34,899**
Taxation	(4,070)	(6,563)	(7,309)	(9,038)	(9,509)	(10,637)	(10,718)	(11,058)
Profit after tax	**6,338**	**13,009**	**23,946**	**18,118**	**19,799**	**22,351**	**22,948**	**23,840**
Minority interest in profit	(461)	(287)	(298)	(151)	(269)	(304)	(358)	(336)
Net profit for the year	**5,877**	**12,722**	**23,648**	**17,967**	**19,530**	**22,047**	**22,591**	**23,504**
Adjustments	4,845	(253)	(1,964)	0	0	0	0	0
Underlying earnings	**10,722**	**12,469**	**21,684**	**17,967**	**19,530**	**22,047**	**22,591**	**23,504**
Number of shares (millions)								
Weighted average	*5,581*	*5,574*	*5,323*	*5,323*	*5,323*	*5,323*	*5,323*	*5,323*
Diluted weighted average	*5,581*	*5,574*	*5,323*	*5,323*	*5,323*	*5,323*	*5,323*	*5,323*
Underlying EPS (US cents)	**192**	**224**	**407**	**338**	**367**	**414**	**424**	**442**
Underlying EPS growth (% y-o-y)	*-30*	*+16*	*+82*	*-17*	*+9*	*+13*	*+2*	*+4*
Diluted underlying EPS (US cents)	**105**	**228**	**444**	**338**	**367**	**414**	**424**	**442**
DPS declared (US cents)	**82**	**87**	**101**	**115**	**126**	**136**	**146**	**156**
Dividend payout ratio	*43%*	*39%*	*25%*	*34%*	*34%*	*33%*	*34%*	*35%*
Composition of underlying EBIT (US$m)								
Aluminium	192	406	266	(408)	(29)	441	613	695
EBIT margin	*5%*	*11%*	*6%*	*-10%*	*-1%*	*9%*	*11%*	*12%*
Base Metals	1,045	4,489	6,414	4,502	6,972	6,814	5,806	5,724
EBIT margin	*16%*	*48%*	*50%*	*40%*	*48%*	*48%*	*44%*	*41%*
Carbon Steel	12,299	8,771	16,702	16,746	16,580	18,182	17,985	18,391
EBIT margin	*60%*	*46%*	*55%*	*52%*	*51%*	*52%*	*51%*	*49%*
Nickel	(853)	674	588	134	320	403	612	800
EBIT margin	*-36%*	*19%*	*15%*	*4%*	*9%*	*10%*	*15%*	*21%*
Energy Coal	1,639	804	1,128	1,405	1,543	2,177	2,783	2,690
EBIT margin	*44%*	*24%*	*24%*	*27%*	*28%*	*36%*	*40%*	*39%*
Petroleum	4,223	4,547	6,331	6,505	6,458	7,149	7,662	8,275
EBIT margin	*57%*	*52%*	*59%*	*50%*	*45%*	*45%*	*44%*	*43%*
Group and unallocated	(464)	1	66	(527)	22	312	568	501
Underlying EBIT	**18,081**	**19,693**	**31,496**	**28,359**	**31,865**	**35,477**	**36,030**	**37,076**
Group EBIT margin	*36%*	*37%*	*44%*	*39%*	*40%*	*42%*	*41%*	*40%*
Group EBIT margin - core operations	*32%*	*34%*	*41%*	*36%*	*39%*	*41%*	*40%*	*39%*
Key Income Statement ratios								
EBITDA margin (%)	42%	46%	52%	47%	48%	50%	50%	50%

Source: Company reports, Citi Investment Research and Analysis

Figure 2. BHP balance sheet and ratio analysis

FYE June	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Balance Sheet (US$m)								
Non-current Op. assets & others	49,947	56,557	78,757	122,473	132,219	139,101	147,939	155,128
Working capital	10,636	12,092	5,547	(5,884)	(5,688)	(2,700)	(3,082)	(3,083)
Net operating assets	**60,583**	**68,649**	**84,304**	**116,589**	**126,532**	**136,401**	**144,857**	**152,045**
Financial assets	6,591	7,455	8,239	8,685	10,120	11,591	13,099	14,644
Cash and shortterm investment	11,596	12,748	10,348	3,013	3,013	3,013	3,013	3,013
Total invested capital	**78,770**	**88,852**	**102,891**	**128,287**	**139,664**	**151,005**	**160,969**	**169,702**
Equity	39,954	48,525	56,762	66,630	80,028	96,213	112,644	129,420
Minority interest	757	804	993	1,161	1,161	1,161	1,161	1,161
Debt	16,419	15,764	15,907	25,067	21,695	16,032	9,183	1,138
Net deferred tax liabilty	3,038	4,320	2,683	8,137	8,137	8,137	8,137	8,137
Provisions	7,846	8,588	10,332	9,759	9,759	9,759	9,759	9,759
Other current liabilities	10,756	10,851	16,214	17,533	18,884	19,703	20,085	20,086
Total Inv. Cap (Capital employed)	**78,770**	**88,852**	**102,891**	**128,287**	**139,664**	**151,005**	**160,969**	**169,702**
Key Balance Sheet ratios								
Non-current asset turnover (times)	1.0	0.9	0.9	0.6	0.6	0.6	0.6	0.6
Net debt	4,823	3,016	5,559	22,054	18,682	13,019	6,170	(1,875)
Debt: Equity (%)	41	32	28	38	27	17	8	1
Gearing (%)	11	6	9	25	19	12	5	(1)
Working capital turnover (days)	77	84	28	(29)	(26)	(12)	(13)	(12)
NAV per share (US$)	7	9	11	13	15	18	21	24
NAV per share (AS$)	10	10	11	12	15	20	24	27
Price to book	3.6	3.8	4.1	2.7	2.1	1.6	1.4	1.2
ROCE (%)	22.0	23.5	33.4	24.2	22.8	23.5	22.2	21.6
Return on equity (%)	15.0	28.8	44.9	29.1	26.6	25.0	21.6	19.4
ROCE per division (%)								
Aluminium	2	3	2	(3)	(0)	3	4	5
Base Metals	4	18	23	15	23	21	16	14
Carbon steel	58	32	48	38	30	28	24	23
Nickel	(24)	34	35	7	16	21	33	44
Energy Coal	39	15	17	18	18	24	30	29
Petroleum	23	24	33	33	32	35	39	44

Source: Company reports, Citi Investment Research and Analysis

BHP Billiton PLC

Company description

BHP Billiton is the world's largest mining company, formed by the merger of BHP Ltd and Billiton plc in 2001. The group comprises six major business units, Petroleum, Aluminium, Base Metals, Carbon Steel Materials, Energy Coal and Stainless Steel Materials. The company retains a dual listed corporate structure between the UK and Australian markets.

Investment strategy

We rate BHP Billiton a Buy. Key positive drivers include the following. 1) Production growth - we forecast strong organic production growth across the group's petroleum, coal and iron ore assets as projects are delivered, subject to market conditions. 2) Strong balance sheet - BHP has a strong balance sheet that could be used to acquire assets at the bottom of the cycle, or return it to shareholders through the reactivisation of the buyback programme.

Valuation

Our target price is £23.00 (which rounded converts to a R280 at a one-year forward forecast ZAR/GBP FX rate of 12). Our BHP valuation (NPV) of £24.80 per share is partly based on DCF analysis, using a 7.8% real, after-tax, unlevered discount rate and a beta of 1.1. Our long-term equilibrium commodity prices and other key assumptions are available in our Metals & Mining Strategy reports. We calculate a one-year target price using a combination of: 1) a target price based on a 15% discount to NPV; 2) a multiple-based target price of £25.20 per share using FY13E (10x P/E and 6x EV/EBITDA); and 3) a 50% weighting for each method.

Risks

Key risks to our projected earnings, cash flows and valuation relate to weaker than expected commodity prices/economic growth and currency fluctuations.

Country risk is a significant consideration with about 40% by NPV of operations in Africa, South America and Asia. Operating risk is lower than in smaller metals and mining companies with fewer operations.

The ongoing global economic slowdown could deteriorate further, providing further downside risk to commodity prices.

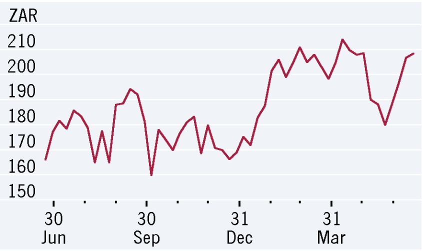
If the impact of these risk factors is more or less negative than we currently anticipate, then the share price could fail to reach or exceed our target price.

Company Focus

■ Company Update

Buy	**1**
Price (21 Jun 12)	R207.97
Target price	R220.00
Expected share price return	5.8%
Expected dividend yield	6.3%
Expected total return	**12.0%**
Market Cap	R73,736M
	US$8,998M

Price Performance
(RIC: EXXJ.J, BB: EXX SJ)



Exxaro Resources Limited (EXXJ.J)

Ranked 2nd

- **Smooth operator –** Exxaro has improved its ranking from fourth to second since "Sweating for Success". It also delivered 200% share price appreciation over the period - ranking 3rd. Exxaro performed well on most of the measures except cost control (9th).

- **What has changed** — Exxaro has outperformed its previous performance mainly on safety (3rd from 6th) and EBITDA per employee (6th from 8th). The company reduced LTIFR during 2011 by 20% compared to 2010.

- **Maintain Buy** — Exxaro's near-term cash generation outlook remains strong and could support healthy dividends. We like Exxaro's large, long-life, low-cost assets and its experienced management team with a strong track record. Key risks are elevated near-term margin forecasts and risk of poor capital allocation to further acquisitions. Refer to our recent note: "Exxaro Resources Limited (EXXJ.J) - BUY after Sharp Sell-off".

Exxaro Resources Limited (ZAR)

Year to 31 Dec	2010A	2011A	2012E	2013E	2014E
Sales (RM)	17,155.0	21,305.0	24,123.7	29,015.2	34,695.2
Net Income (RM)	5,186.0	7,302.0	8,700.0	10,817.9	12,270.5
Diluted EPS (R)	14.37	20.69	25.44	31.54	35.77
Diluted EPS (Old) (R)	14.37	20.69	25.44	31.54	35.77
PE (x)	14.5	10.1	8.2	6.6	5.8
EV/EBITDA (x)	18.7	13.0	9.3	6.9	5.2
DPS (R)	5.00	8.00	11.50	12.60	14.30
Net Div Yield (%)	2.4	3.8	5.5	6.1	6.9

Financial statements and ratio analysis

We forecast 23% growth in Exxaro's FY12 diluted HEPS to R25.44, driven mainly by higher mineral sands price expectations, which we see increasing its EBITDA margin to 43% (2011: 39%).

Figure 1. Exxaro income statement and ratio analysis – Sishen Iron Ore Company proportionately consolidated

FYE December	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012F**	**2013F**	**2014F**	**2015F**	**2016F**
Income Statement (ZARm)											
Revenue	10,610	12,460	18,160	19,830	24,957	31,232	34,408	40,292	46,032	49,934	45,343
Cash costs	(7,937)	(8,917)	(11,783)	(13,904)	(15,677)	(19,112)	(19,683)	(22,271)	(25,546)	(28,554)	(28,366)
Underlying EBITDA	**2,673**	**3,543**	**6,378**	**5,926**	**9,280**	**12,120**	**14,725**	**18,021**	**20,486**	**21,380**	**16,976**
Depreciation and amortisation	(638)	(845)	(1,030)	(1,330)	(1,512)	(1,409)	(1,828)	(2,285)	(3,060)	(3,306)	(3,523)
Underlying EBIT	**2,035**	**2,698**	**5,348**	**4,596**	**7,768**	**10,711**	**12,896**	**15,736**	**17,426**	**18,074**	**13,453**
Special items	79	(129)	(330)	(1,576)	(44)	280	(73)	(77)	(82)	(87)	(92)
Interest received	115	96	153	145	135	427	95	288	450	653	761
Interest paid	(443)	(345)	(444)	(586)	(596)	(699)	(826)	(1,195)	(1,014)	(748)	(494)
Profit before tax	**1,786**	**2,320**	**4,727**	**2,579**	**7,263**	**10,719**	**12,092**	**14,752**	**16,780**	**17,892**	**13,629**
Taxation	(798)	(873)	(1,346)	(1,556)	(2,028)	(3,062)	(3,392)	(3,934)	(4,510)	(4,828)	(3,652)
Profit after tax	**988**	**1,447**	**3,381**	**1,023**	**5,235**	**7,657**	**8,700**	**10,818**	**12,271**	**13,064**	**9,977**
Minority interest in profit	(27)	(20)	24	0	(27)	(4)	(0)	(0)	(0)	(0)	(0)
Net profit for the year	**961**	**1,427**	**3,405**	**1,023**	**5,208**	**7,653**	**8,700**	**10,818**	**12,271**	**13,064**	**9,977**
Adjustments	(69)	21	225	1,493	(22)	(351)	0	0	0	0	0
Headline earnings	**892**	**1,448**	**3,630**	**2,516**	**5,186**	**7,302**	**8,700**	**10,818**	**12,271**	**13,064**	**9,977**
Number of shares (millions)											
Weighted average	*313*	*341*	*343*	*345*	*347*	*348*	*343*	*343*	*343*	*343*	*343*
Diluted weighted average	*318*	*355*	*361*	*358*	*361*	*353*	*342*	*343*	*343*	*343*	*343*
Closing	*340*	*342*	*344*	*346*	*347*	*343*	*343*	*343*	*343*	*343*	*343*
EPS (ZAR)	**3.08**	**4.18**	**9.93**	**2.97**	**15.01**	**21.99**	**25.36**	**31.54**	**35.77**	**38.09**	**29.09**
HEPS (ZAR)	**2.85**	**4.25**	**10.58**	**7.29**	**14.94**	**20.98**	**25.36**	**31.54**	**35.77**	**38.09**	**29.09**
Diluted HEPS (ZAR)	**2.81**	**4.08**	**10.06**	**7.03**	**14.37**	**20.69**	**25.44**	**31.54**	**35.77**	**38.09**	**29.09**
Growth (%)		*+45*	*+147*	*-30*	*+105*	*+44*	*+23*	*+24*	*+13*	*+6*	*-24*
DPS declared (ZAR)	**3.65**	**1.60**	**3.75**	**2.00**	**5.00**	**8.00**	**11.50**	**12.60**	**14.30**	**15.20**	**14.50**
Dividend payout ratio	*119%*	*38%*	*38%*	*67%*	*33%*	*36%*	*45%*	*40%*	*40%*	*40%*	*50%*
Underlying EBIT per division (ZARm)											
Coal	620	885	2,654	1,905	2,690	3,339	2,687	3,865	5,037	6,469	7,245
EBIT margin Coal	*14%*	*17%*	*29%*	*20%*	*26%*	*26%*	*20%*	*25%*	*27%*	*29%*	*31%*
Mineral Sands	86	(97)	104	(124)	179	1,809	4,200	5,455	6,270	5,748	757
EBIT margin Mineral Sands	*5%*	*-4%*	*4%*	*-4%*	*4%*	*27%*	*40%*	*42%*	*40%*	*35%*	*7%*
Base metals	608	688	(172)	(8)	(113)	(629)	(165)	0	0	0	0
EBIT margin Base metals	*24%*	*25%*	*-9%*	*-1%*	*-6%*	*-34%*	*-126%*	-	-	-	-
Iron ore	787	1,186	2,718	2,568	5,028	6,395	6,341	6,599	6,302	6,041	5,506
EBIT margin Iron Ore	*45%*	*52%*	*64%*	*55%*	*65%*	*66%*	*62%*	*59%*	*56%*	*54%*	*49%*
Other	*(66)*	*36*	*44*	*255*	*(16)*	*(203)*	*(167)*	*(183)*	*(183)*	*(184)*	*(55)*
Underlying EBIT	**2,035**	**2,698**	**5,348**	**4,596**	**7,768**	**10,711**	**12,896**	**15,736**	**17,426**	**18,074**	**13,453**
Group EBIT margin	*19%*	*22%*	*30%*	*23%*	*31%*	*35%*	*37%*	*39%*	*38%*	*36%*	*30%*
Key Income Statement ratios											
Revenue growth		17%	46%	9%	26%	25%	10%	17%	14%	8%	-9%
EBITDA margin	25%	28%	35%	30%	37%	39%	43%	45%	45%	43%	37%
Depreciation rate		10%	9%	10%	10%	6%	6%	6%	8%	8%	8%
Interest cover (times)	5	8	12	5	13	16	16	13	18	25	29
Tax rate	45%	38%	28%	60%	28%	29%	28%	27%	27%	27%	27%

Source: Company reports, CIRA estimates

We forecast Exxaro's proportionately consolidated net debt at R7.3bn at end 2012, representing manageable gearing of 18%. Average return on capital employed could be as high as 38% over FY12-16E. This excludes the proposed R1.9 billion dividend from Tronox as we continue to forecast Exxaro's Mineral Sands division in its current form until the transaction is concluded.

Figure 2. Exxaro's balance sheet and ratio analysis – Sishen Iron Ore Company proportionately consolidated

FYE December	2006	2007	2008	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Balance Sheet (ZARm)											
Non-current operating assets	8,064	9,100	13,299	14,000	17,339	28,067	34,752	39,485	40,682	43,424	46,240
Working capital	1,729	2,013	3,039	3,744	3,815	18	5,519	6,270	6,653	7,299	6,503
Net tax payable	(67)	(137)	(438)	0	(42)	55	(865)	(1,005)	(1,119)	(1,204)	(920)
Net operating assets	**9,726**	**10,976**	**15,900**	**17,744**	**21,112**	**28,140**	**39,405**	**44,749**	**46,216**	**49,519**	**51,823**
Investments	693	1,031	1,546	1,142	1,375	1,538	1,538	1,538	1,538	1,538	1,538
Cash	906	850	1,769	1,023	2,140	1,065	2,519	4,916	8,075	9,888	9,406
Total invested capital	**11,325**	**12,857**	**19,215**	**19,909**	**24,627**	**30,743**	**43,462**	**51,203**	**55,828**	**60,945**	**62,766**
Equity*	9,471	11,505	14,937	15,154	20,290	27,655	33,607	40,792	48,421	56,679	61,824
Minority interest	27	19	128	1	(23)	20	20	20	20	20	20
Debt	1,827	1,333	4,150	4,754	4,360	3,068	9,836	10,391	7,387	4,246	922
Total invested capital	**11,325**	**12,857**	**19,215**	**19,909**	**24,627**	**30,743**	**43,462**	**51,203**	**55,828**	**60,945**	**62,766**
Key Balance Sheet ratios											
Non-current asset turnover (times)	1.3	1.4	1.4	1.4	1.4	1.1	1.0	1.0	1.1	1.1	1.0
Net debt (Excluding SIOC)	921	483	2,381	3,731	2,220	2,003	7,317	5,475	(688)	(5,642)	(8,484)
Gearing - excluding SIOC debt (%)	9	4	14	20	10	7	18	12	(1)	(11)	(16)
Net debt (Including SIOC)	1,506	999	2,391	4,336	1,886	1,693	7,346	5,407	(866)	(5,767)	(7,914)
Gearing - including SIOC debt (%)	14	8	14	22	9	6	18	12	(2)	(11)	(15)
Net debt/Enterprise value (%)	2	1	3	6	3	2	11	8	(1)	(8)	(12)
Working capital turnover (days)	59	59	61	69	56	0	59	57	53	53	52
ROCE (%)		26	40	27	40	43	38	37	38	38	27
RONA (After tax) (%)		21	33	17	32	35	33	29	29	29	20
NAV per share (Rand)	30	32	41	42	56	78	98	119	141	165	180
Return on equity (%)		14	26	7	29	32	28	29	28	25	17

*Including deferred tax and provisions. Source: Company reports, CIRA estimates

Exxaro Resources Limited

Company description

Exxaro is a diversified mining company producing coal, mineral sands, zinc and iron ore (20% holding in Sishen Iron Ore Company, subsidiary of Kumba Iron Ore). Its operations are predominantly in southern Africa.

Investment strategy

We rate Exxaro Buy (1). Exxaro has a healthy near-term growth pipeline in its core iron ore and coal divisions. Growth will likely mostly be into high-margin export business or lucrative commercial contracts, rather than into the low-margin 'cost-plus' contracts of the past. This should result in higher long-term margins than historical averages, in our view.

Exxaro's empowerment credentials allow it preferential access to mining deals and new port capacity and make it a supplier of choice for Eskom.

Valuation

We calculate Exxaro's discounted cash flow (DCF) target price at R220 based on: 1) a WACC of 13.2%; 2) long-term (2013E-23E) nominal revenue growth of 5% per annum; 3) long-term EBITDA margins of 36%; 4) long-term capex/EBITDA ratio of 37%, long-term ROE of 18%; and 5) terminal growth rate (after 2023) of 6.9% in rand terms (implying an exit P/E multiple of 11x). We value Exxaro's mineral sands division at 41.7% of the combination of Tronox's market cap and our DCF fair value for Exxaro's existing Mineral Sands business, on the assumption that the announced transaction is going ahead.

Risks

Exxaro's risk profile is derived after considering a number of factors, including an assessment of the macroeconomic environment, industry-specific risks, company-specific operational risks as well as financial risk.

The biggest risk for miners in general is that economic growth in highly-populated emerging market countries slows materially and developed market economies take longer to recover than we anticipate. This would imply downside risk to our commodity price and sales volume forecasts. Near-term margin forecasts are still only slightly below mid-cycle levels for most commodities and in the case of iron ore margins are still at highly-elevated levels. A stronger-than-forecast rand or Australian dollar would negatively affect Exxaro's earnings and valuation.

Industry-specific risks include government actions, such as controls on imports, exports and prices, new forms or rates of taxation and royalties, and increased government regulation. South African miners will start paying mining royalties in 2010, in line with market expectations. We do not believe there is a material risk that SA mining assets will be nationalised, despite pressure from some groups.

Higher-than-forecast inflation in the mining sector could lead to near-term margin compression, but should support higher commodity prices in the long term.

Skills, electricity and water shortages in South Africa may impact production and mining inflation more than we anticipate and could erode Exxaro's global competitiveness.

Over-estimation of mineral reserves, particularly in the Waterberg area could weaken our investment case. Failure to discover new reserves or expand existing reserves could also impact on Exxaro's valuation.

If the impact on the company from any of these factors proves to be more negative than we anticipate, the stock will likely have difficulty achieving our financial and price targets. Likewise, if any of these factors proves to have less of an effect than we anticipate, the stock could materially outperform our target.

Company Focus

■ Company Update

Sell	**3**
Price (21 Jun 12)	R588.00
Target price	R430.00
Expected share price return	-26.9%
Expected dividend yield	7.8%
Expected total return	**-19.0%**
Market Cap	R189,370M
	US$23,110M

Price Performance
(RIC: KIOJ.J, BB: KIO SJ)

Kumba Iron Ore Ltd (KIOJ.J)

Number One

- **Numero Uno –** Kumba has once again validated key observations of our analysis on importance of safety, commodity exposure and productivity. It performed extremely well on all measures except cost control (13th). Kumba managed to top the ranking for safety, production growth per share and asset utilization.
- **Right asset and right time –** Kumba owns Sishen mining complex that is one of the highest margin assets in our cost curve analysis (Figure 15) and the mine also achieved one of the best safety records in the industry. These assets have helped the company to secure 2nd rank in our previous analysis "Sweating for Success".
- **However, we maintain our Sell** — We feel Kumba could face some serious headwinds going forward. Apart from our view of falling iron ore prices we are concerned about the following: 1) Kumba is more expensive than peers on relative valuations 2) more cost pressure than peers due to increasing mining complexity at Sishen, 3) Kumba has a shorter reserve life (about 23 years) than major peers. 4) Limited reserves could mean the end of its strong growth profile beyond Kolomela, which is currently ramping up. 5) Limited reserves also mean that Kumba may be forced into an acquisition, which poses capital allocation risk. Our target price for Kumba of R430 implies a negative total one-year return of 19%.

Kumba Iron Ore Ltd (ZAR)

Year to 31 Dec	2010A	2011A	2012E	2013E	2014E
Sales (RM)	38,704.0	48,553.0	51,419.3	56,383.8	56,683.7
Net Income (RM)	14,328.0	17,048.0	17,174.0	18,518.3	17,717.4
Diluted EPS (R)	44.54	52.99	53.23	57.40	54.92
Diluted EPS (Old) (R)	44.54	52.99	53.23	57.40	54.92
PE (x)	13.2	11.1	11.0	10.2	10.7
EV/EBITDA (x)	7.5	5.8	5.9	5.7	5.9
DPS (R)	34.50	44.20	47.00	53.00	51.00
Net Div Yield (%)	5.9	7.5	8.0	9.0	8.7

Financial statements and ratio analysis

We forecast Kumba's FY12E diluted HEPS at R53.23 almost flat compared to FY11 levels and see a growth of 8% in FY13 to R57.40.

Figure 1. Kumba Iron Ore financial statements and ratio analysis

FYE December	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Income Statement (ZARm)								
Revenue	23,408	38,704	48,553	51,419	56,384	56,684	56,379	55,956
Cash operating costs	(10,033)	(12,801)	(15,580)	(18,371)	(21,833)	(23,242)	(23,960)	(25,724)
Underlying EBITDA	**13,375**	**25,903**	**32,973**	**33,048**	**34,551**	**33,442**	**32,419**	**30,232**
Depreciation	(530)	(765)	(997)	(1,343)	(1,557)	(1,928)	(2,214)	(2,699)
Impairments	0	0	0	0	0	0	0	0
Underlying EBIT	**12,845**	**25,138**	**31,976**	**31,705**	**32,993**	**31,513**	**30,205**	**27,533**
Exceptional items	35	(7)	(10)	0	0	0	0	0
Net interest	(127)	(29)	92	(47)	(72)	(16)	(17)	(130)
Profit before tax	**12,753**	**25,102**	**32,058**	**31,659**	**32,921**	**31,498**	**30,188**	**27,403**
Taxation	(3,949)	(6,813)	(9,760)	(8,894)	(8,230)	(7,874)	(7,547)	(6,851)
Profit after tax	**8,804**	**18,289**	**22,298**	**22,765**	**24,691**	**23,623**	**22,641**	**20,552**
Minority interest	(1,812)	(3,966)	(5,256)	(5,591)	(6,173)	(5,906)	(5,660)	(5,344)
Net profit for the year	**6,992**	**14,323**	**17,042**	**17,174**	**18,518**	**17,717**	**16,981**	**15,209**
Adjustments	(20)	5	6	0	0	0	0	0
Headline earnings	**6,972**	**14,328**	**17,048**	**17,174**	**18,518**	**17,717**	**16,981**	**15,209**
Number of shares (millions)								
Weighted average	*319*	*321*	*321*	*322*	*322*	*322*	*322*	*322*
Diluted weighted average	*320*	*322*	*322*	*323*	*323*	*323*	*323*	*323*
Closing	*320*	*322*	*322*	*322*	*322*	*322*	*322*	*322*
EPS (ZAR)	**21.94**	**44.66**	**53.11**	**53.33**	**57.50**	**55.01**	**52.73**	**47.22**
Headline EPS (ZAR)	**21.87**	**44.67**	**53.13**	**53.33**	**57.50**	**55.01**	**52.73**	**47.22**
Diluted HEPS (ZAR)	**21.76**	**44.54**	**52.99**	**53.23**	**57.40**	**54.92**	**52.63**	**47.14**
Growth (%)	*-4*	*+105*	*+19*	*+0*	*+8*	*-4*	*-4*	*-10*
DPS declared (ZAR)	**14.60**	**34.50**	**44.20**	**47.00**	**53.00**	**51.00**	**49.00**	**49.00**
Dividend payout ratio (%)	*67*	*77*	*83*	*88*	*92*	*93*	*93*	*104*
Key Income Statement ratios								
Revenue growth (% y-o-y)	10	65	25	6	10	1	-1	-1
Underlying EBITDA margin (%)	57	67	68	64	61	59	58	54
Underlying EBIT margin (%)	55	65	66	62	59	56	54	49
Interest cover (times)	101	867	-	682	458	-	-	212
Tax rate (%)	31	27	30	28	25	25	25	25

Source: Company reports, I-Net, CIRA estimates

Figure 2. Kumba Iron Ore's balance sheet

FYE December	2009	2010	2011	2012F	2013F	2014F	2015F	2016F
Balance Sheet (ZARm)								
Non-current operating assets	11,595	15,901	20,917	24,584	26,527	27,598	30,127	35,951
Working capital	2,593	2,924	2,845	5,601	5,719	5,605	5,733	5,760
Net tax payable	109	(61)	(188)	0	0	0	0	0
Net operating assets	**14,297**	**18,764**	**23,574**	**30,185**	**32,246**	**33,203**	**35,860**	**41,710**
Investments	307	425	663	663	663	663	663	663
Cash	891	4,855	4,742	3,921	5,141	6,531	7,223	4,939
Total invested capital	**15,495**	**24,044**	**28,979**	**34,769**	**38,050**	**40,397**	**43,746**	**47,312**
Equity	9,931	16,821	21,029	25,104	27,036	27,950	29,778	31,619
Minority interest	1,650	4,038	4,759	5,598	6,215	6,805	7,372	7,906
Debt	3,914	3,185	3,191	4,068	4,799	5,641	6,597	7,787
Total invested capital	**15,495**	**24,044**	**28,979**	**34,769**	**38,050**	**40,397**	**43,746**	**47,312**
Key Balance Sheet ratios								
Non-current asset turnover (times)	2.0	2.4	2.3	2.1	2.1	2.1	1.9	1.6
Net debt (ZARm)	3,023	(1,670)	(1,551)	147	(341)	(889)	(627)	2,849
Gearing (Net debt:(Net debt + equity)) (%)	23.3	(11.0)	(8.0)	0.6	(1.3)	(3.3)	(2.1)	8.3
Working capital turnover (days)	40	28	21	40	37	36	37	38
NAV per share (rand)	31	52	65	78	84	87	92	98
ROCE (%)	101.7	152.1	151.1	118.0	105.7	96.3	87.5	71.0
Return on net operating assets (%)	80.2	116.5	127.6	91.1	80.8	73.0	67.4	57.0
Return on equity (%)	71.8	107.1	90.1	74.5	71.0	64.4	58.8	49.5
Return on equity at replacement cost of US$120/t	18.2	34.7	40.9	38.2	36.6	35.4	34.2	29.1

Source: Company reports, I-Net, CIRA estimates

Kumba's average ROE since 2007 was 95%, which also boosted its price to book. We believe there are two main reasons for this.

1. Accounting anomaly

- Kumba was spun out of Kumba Resources (now Exxaro) with a very low equity value of R1.5bn in 2006 (R4.5bn in 2007).
- Operating assets were largely depreciated and debt-funded. Gearing in 2006: 66.5%, and 2007: 36.1%.
- Since 2007, Kumba's average dividend payout ratio has been 79%, so book (equity) never built up in the company.

2. Attractive industry and well positioned

- We restate Kumba's equity value using US$120 per annual production tonne. Replacement cost could be as high as US$180/t, on our estimates.
- On that basis, Kumba's ROE averaged 25% since 2007.
- Our near-term forecasts indicate ROEs of 40%+ and normalising to low 20%s. These attractive ROEs are indicative of the attractiveness of the iron ore industry in general, as well as Kumba's competitiveness within the industry. Kumba's desirable product (60% lump and 65% Fe content) is margin-enhancing.

Kumba Iron Ore Ltd

Company description

Kumba Iron Ore is a focused producer of high-grade iron ore and the fourth-largest supplier of seaborne iron ore. It operates the Sishen and Thabazimbi iron ore mines in South Africa with current production of 45Mtpa. Its most attractive aspects are its near-term volume growth through Kolomela (+9Mtpa), strong cash generation and dividend yield.

Investment strategy

We rate Kumba Iron Ore Sell. Although we believe it offers an attractive dividend yield of 8%+ over the next three years, it seems priced in. Current margins look unsustainably high. Longer term, we are concerned about significant downside risk to earnings as iron ore prices fall to marginal cost of production. We see four issues which continue to weigh down Kumba's investment case: 1) short resource life relative to peers limits growth and optionality; 2) margin erosion due to increasing mining complexity; 3) limited visibility on volume growth beyond Kolomela; and 4) potential for poor capital allocation (African growth strategy).

Valuation

Our Kumba target price of R430 is calculated using a discounted cash flow valuation, which takes into account optimistic long-term export EBITDA margins of 52%, as well as Kumba's considerable volume growth. Our DCF assumes a 13.1% nominal weighted average cost of capital; long-term (2016-30) nominal revenue growth of 5% per annum; long-term capex/EBITDA ratio of 22%; long-term ROE of 30%; and a terminal growth rate (after 2031) of 8.4% in rand terms.

Risks

Key risks to projected earnings, cash flows and valuation relate to weaker-than-expected commodity prices/economic growth and US$. Country risk is a consideration with all producing assets in South Africa. Operating risk in Kumba is principally from higher inflation concerns in South Africa. Kumba is also involved in a legal dispute with ArcelorMittal SA and ICT, which may negatively impact our earnings forecasts and target price.

Four major upside risks to our target price are: 1) China's demand for iron ore outpaces new low cost supply and long-term margins stay at elevated levels; 2) A collapse in the rand, which would boost Kumba's earnings forecasts and valuation; 3) Corporate action - Anglo American already holds around 65% of Kumba and we believe it will have to offer a premium to market prices if it wants to buy out minorities; and 4) Kumba's attractive dividend yield.

Appendix A-1

Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

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Johann Steyn, Analyst, holds a long position in the securities of Anglo American PLC.

Thomas O'Hara, Associate, holds a long position in the securities of Walter Energy.

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