

Research

15 February 2012 | 120 pages

European Metals, Mining & Steel

Q112 Stock Guide – Forgetting Beta And Finding Alpha*

- **Trimming weighting** — The metals and mining sector has rallied by over 30% since the December lows, the rally has been driven by a PE expansion rather than earnings upgrades. We believe the beta rally will run out of steam as spot commodity prices are still pointing to earnings downgrades. We believe that investors should be looking to find alpha in 2012. We move to a bearish stance on the sector on a 3-6 month view and target alpha trades of BHP Billiton, Rio Tinto, ENRC, Arcelor Mittal, Nyrstar and Randgold. Potential Laggards are Norsk Hydro, Aquarius Platinum, Lonmin, Hochschild, and Talvivaara.

Figure 1. Sector Overview – 3-6 months

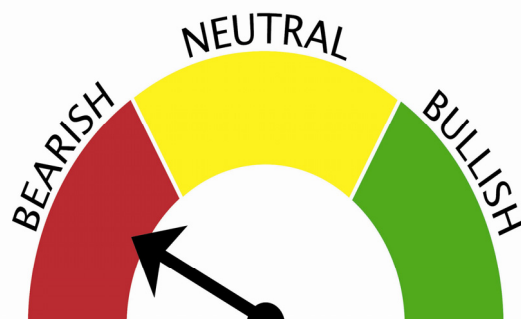


Figure 2. Key Macro Indicators

Indicator	3-6 months	Comment
US\$	Neutral	US\$ strength on improving economy and ongoing debt issues in Europe.
Leading indicators	-ve	Micro indicators are starting to roll off.
Inventory Cycle	Neutral	Inventory levels have rebounded
China	Neutral	Recent monetary measures have knocked sentiment
Share Momentum	-ve	RSI have risen for the equities and are trading above 60
EPS Momentum	-ve	Spot earnings would suggest earnings downgrades of around 5-10%.
Valuation	Neutral	NPV s are supportive but sector has rerated against the market.
Overall	-ve	

Source: Citi Investment Research and Analysis

- Quarterly
- Equities
- Commodities

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

CORRECTION NOTE: The previous version of this note incorrectly stated ENRC's target price on page 7.

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Key Ideas & Results So Far

Figure 3. Key Ideas

Key Ideas	Comments	Stock Implications
Sweating for Success	"Sweating for Success" is our global mining theme for the next decade — The mining sector was given a free kick with surging commodity prices over the past decade, which hid a number of problems. Mining companies will now have to sweat it out to deliver shareholder returns. This is likely to drive significant alpha in the sector rather than the large beta trade that we have seen.	The leaders and laggards — We have looked at what is being priced in and believe the best risk adjusted returns over the next five to ten years will be Rio Tinto, BHP Billiton, ArcelorMittal, ENRC, Randgold, and Nyrstar. Potential laggards are Norsk Hydro, Aquarius Platinum, Lonmin, Hochschild, and Talvivaara.
Oil versus Big Mining	Mining & Oil - The mining sector's capital spend is likely to overtake Oil & Gas on spend, the mining companies have a slight advantage on the deployment of capital due to higher margin projects and higher achievable growth rates. However the dividend yield of the mining sector is less than the oil and gas sector.	Capital deployment will be the key differentiation factor within the mining companies. This favours Rio Tinto, Randgold, ENRC
Nothing lasts for EVA	Returns have peaked — EVA creation, returns in excess of the cost of capital, peaked for the mining sector in 2006 and, while we expect this spread to approach these highs in 2011, going forward we forecast a steady decline. For steel the peak in EVA creation was in 2005 and, with the exception of a brief bounce in 2008, returns have never revisited similar levels.	
Cash Returns & Balance Sheets	There is a strong relationship between cash returns and the PE of the mining companies. Yield in the mining sector has outperformed Growth, largely due to the difficulty in bringing on new production.	
Steel – Slimming down	The steel companies are likely to outperform the mining companies as they cut costs, divest non core assets and reduce debt level.	Key leader is ArcelorMittal with potential of \$9.6bn of assets up for sale.
Elections / Political Risk	2012 will see a number of important elections: significantly, for the first time in 20 years the same year will see elections in the US and a transition in Chinese leadership, now the two largest economies. In addition we expect margin pressure to increase from higher taxation and royalties	We remain underweight South Africa, and selective on Russian companies
Equity Capital Market	We expect less M&A but an increase in IPOs. M&A transactions are likely to be skewed to the buy-out of minority interests or streamlining of current businesses by divesting non-core assets.	
Transition to Later-Cycle Commodities	We believe we are peaking out in terms of the metals intensity of use for many early-stage commodities. We believe that China has restocked on most of the Industrial Commodities	The PGM, copper, nickel producers all seem likely to benefit at the expense of the iron ore producers. European steel producers could benefit from lower input costs.
Gold	Gold has been on a structural uptrend for the past ten years, and we believe that 2012 is unlikely to be any different.	Stick with the earnings upgrade candidates among the gold companies, our favoured play is Randgold.

Source: Citi Investment Research and Analysis



Results So Far

Themes

- **Cash and Credit** - Rio Tinto didn't add to their \$7bn buyback program (but did boost dividends somewhat), likely choosing to conserve cash for the Richard Bay Minerals transaction with BHP. BHP had less ability to do so post-Petrohawk and has plans for the majority of its expected cash from operations. ArcelorMittal is focusing on reducing net debt (we think to below \$20bn) through divestments.
- **Portfolio restructuring** – Exiting non core businesses has been a key feature of the reporting season thus far. BHP announced its intended exit from the diamond business in late 2011 and on 1st February elected to exercise its put option to sell its 34% stake in RBM to RIO in effect ending its interest in Titanium Dioxide. At Mittal, management confirmed minority divestments will continue – on the block are Chinese stakes which could raise \$700-800m and the holding in Erdemir which is worth ~\$1.2bn at current share prices.

BHP Billiton

- **In-line ops** - US\$9.94b NPAT was virtually in-line with our US\$9.97b estimate that was just below consensus of US\$10b. Underlying EBITDA of US\$18.7b and EBIT of US\$15.7b were slightly better, but boosted by non-cash derivative gain and asset sale in Petroleum.
- **Matching capex to cash flow** – Approved capex spend of US\$17bn is likely to rise over the next year as major projects including Olympic Dam get the full sign off. On our estimates BHP spends all the cash flow generated over the next 5 years, with the only real potential for capital returns being significantly higher commodity prices than we forecast. This works both ways though and with the company committed to 'live within its means', projects could be at risk if commodity prices were to fall.
- **Portfolio rationalisation** - We expected an increased focus on rationalising the portfolio as the major capex investment into large projects makes some of the smaller projects less relevant. Diamonds has been slated for divestment and the RBM put option has been exercised, and the next candidates on the block could include Aluminium smelters, Nickel West, New Mexico Coal and Yeelirrie. BHPB will also look to curtail capacity at any operations burning cash, as has been done in manganese and nickel, with aluminium most susceptible currently.

Rio Tinto

- **Results slightly ahead** – Underlying earnings of US\$15.5bn were slightly ahead of our estimate and consensus (US\$15.4bn and US\$15.3bn respectively) with EBITDA of US\$28.5bn in-line.
- **Alcan impairment** – The expected impairment in the Alcan assets of US\$8.86bn was ahead of our estimates of \$5bn and takes the carrying value of the assets down to a level consistent with our NPV of ~US\$25bn.
- **Capital management disappointment** – No increase to US\$7b buy-back, which is 90% complete and due to be completed by end 1Q12, was disappointing. Net debt is now US\$8.5b with gearing of 12% so the balance sheet is hardly stretched, and we forecast US\$6b in free cash flow in 2012 after capex of US\$16b. After completing the buyback (US\$1b) and purchase of RBM stake from BHPB (~US\$2.5b) free cash flow should drop to US\$2.5b, probably a prudent safety margin in the current environment. Further buybacks remain “under review”, and given excess cash flow generation we expect more in 2H12 and 2013.

Randgold

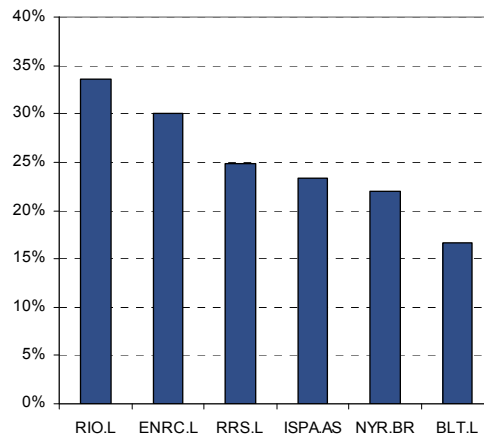
- **2011 in-line** - Randgold reported Net income of \$377m versus Citi's forecast of \$380m
- **2012 guidance positive** - Guiding to gold production of 825-865Koz, vs Citi's previous forecast of 821Koz. Cash costs are being guided to below \$650/Oz vs Citi's forecast of \$660/Oz

ArcelorMittal

- **Operationally small beat** - \$1.7bn vs \$1.6bn Citi forecast
- **Closures, restructuring and taxes** - \$1bn net loss, included an impairment charge of \$228m and restructuring charges of \$219m both related to Long Carbon Europe. In addition a non cash tax charge due to reversal of deferred tax assets and lower recognition of deferred tax assets led to a significant tax charge of \$833m in Q4.
- **Upside to 2012 earnings, divestments and net debt reduction** - If current steel prices hold in Q2 then 2012 EBITDA could reach \$12bn. We think net debt of less than \$20bn (Currently \$22.5bn) is achievable in 2012 based on divestments of minority stakes.

Top Picks – Key Points

Figure 4. Top Picks – Total Return Expectations (%)

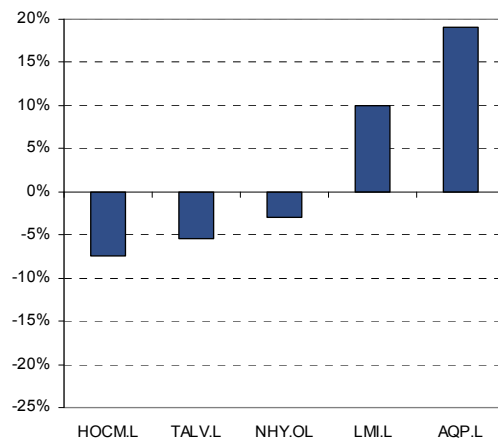


Source: Citi Investment Research and Analysis

- **BHP Billiton (BLT.L; £20.75; 1)** – We recommend maintaining a defensive stance on the sector as such BHPB screens as one of the best defensive stocks. BHPB has a larger US\$ cost base and also benefits from oil exposure and should be more immune to cost pressures. While the company's recent M&A in shale gas is unlikely to be that fruitful for the company we believe that it is priced.
- **Rio Tinto (RIO.L; £37.69; 1)** – The key driver of the company's earnings remains iron ore, and our base case scenario is for a pick up in steel production in China in Q2 and Q3 2012 which should support prices. A strong free cash flow should allow the company to extend its \$7bn buy back program later in the year.
- **ENRC (ENRC.L; £7.13; 1)** – We maintain our Buy recommendation and £9.10 target price on ENRC, which remains one of the cheapest diversified mining companies based on P/E and P/NPV multiples.
- **ArcelorMittal (ISPA.AS; €17.22; 1)** – We maintain our Buy recommendation and €20 target price. If current steel prices hold through Q2, reaching 2012 EBITDA of \$12bn would be a real possibility. Net debt continues to improve and with the possibility of divestments in 1H12, we could see net debt down below \$20bn.
- **Nyrstar (NYR.BR; €7.42; 1)** – We expect the group to be ~40% upstream integrated by 2014 just at the right time when we expect tightness in Zinc market providing the group with higher price participation than being a pure smelting company. By 2014 we expect the group EBIT to be evenly split between mining and smelting from just 21% mining EBIT in 2011F. Despite the run in last couple of months, the stock is still trading at >45% discount to our NPV and ~14% discount to 2012 Book Value. Nyrstar is one of our Key Buys within the Continental Small and Mid Cap space over a 12-month investment horizon. Nyrstar is Buy rated with a €9.10 PT.
- **Randgold (RRS.L; £71.80; 1)** – Our Buy recommendation is based on persistent strong growth 2011-2016; costs per ounce on a downtrend with upcoming new low-cost Kibali mine and also due to general growth in production at RRS. Big valuation discount to quality UK-peer Fresnillo.

Potential Laggards – Key Points

Figure 5. Potential Laggards – Total Return Expectations (%)

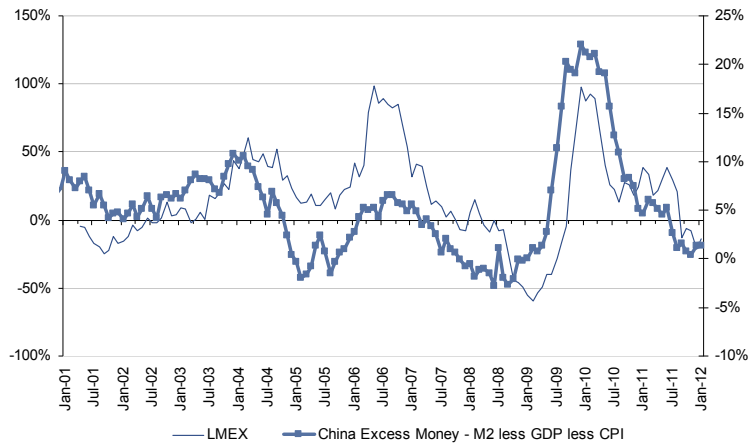


Source: Citi Investment Research and Analysis

- **Hochschild Mining (HOCM.L; £5.10; 2)** - HOCM has useful growth coming through Inmaculada in 2014 but production could be flat or down until then. We believe silver will be much lower in 2014 and do not believe HOCM deserves the same valuation rating as persistent-growth Randgold.
- **Norsk Hydro ((NHY.OL; NKr30.37; 3)** – We maintain our Sell recommendation on Hydro based on margin pressure on its downstream operations, a lack of volume growth in the short term and a strong Norwegian Krone placing pressure on operating costs.
- **Talvivaara (TALV.L; £3.43; 2)** – While Q4 was a record, the run rate for the lower end of 2012 guidance, 6.25ktpq, is 30% higher still. This will require a structural improvement in the availability of the metals recovery plant, sub 50% in 2011, and the nickel grade from the heaps. The company is far from out of the woods yet and there remain significant operational hurdles in our view. Additionally with leverage set to hit 140% in 2012 we continue to believe investors face dilution risk which is likely to rise as the stock value approaches the implied valuation from the minority option of £4.50. We maintain our Neutral rating and £3.25 TP.
- **Lonmin (LMI.L; £10.39; 2)** – The company is suffering from the woes of the SA platinum industry in the form of powerful trade unions, safety stoppages and constant noise about nationalisation. Dependent on one mine with little flexibility to counter squeezed margins.
- **Aquarius Platinum (AQP.L; £1.43; 2)** – All the woes of the SA industry plus its own poor production trends and its now huge dependence on Mimosa in Zimbabwe for delivering profits.

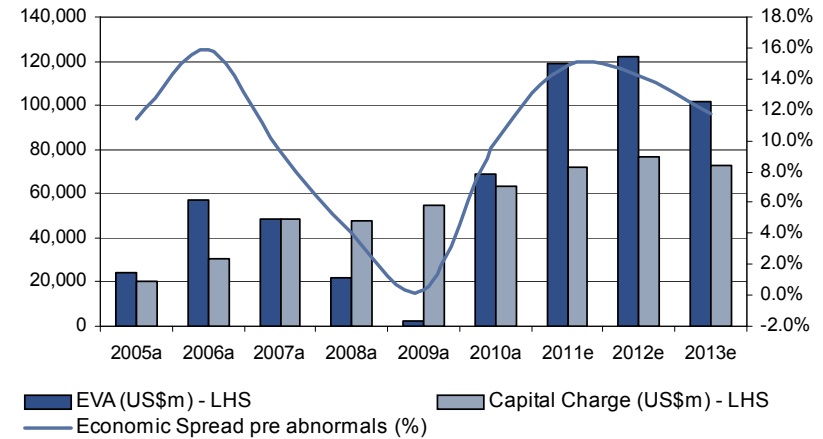
Sector View

Figure 6. China Excess monetary chart versus commodity prices



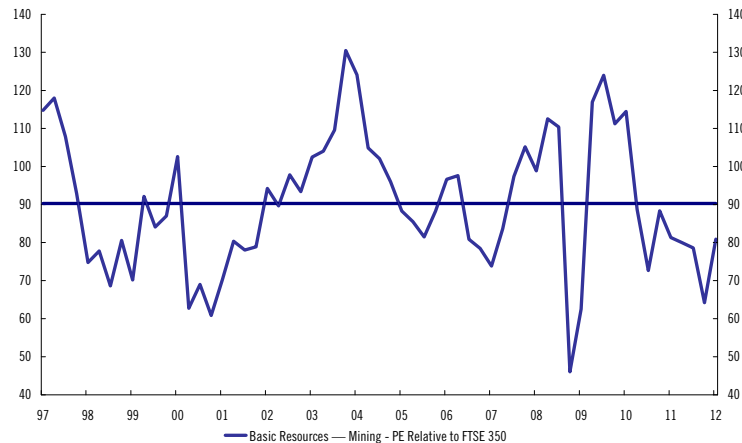
Source: Citi Investment Research and Analysis

Figure 7. Global EVA creation, 2005-2013E



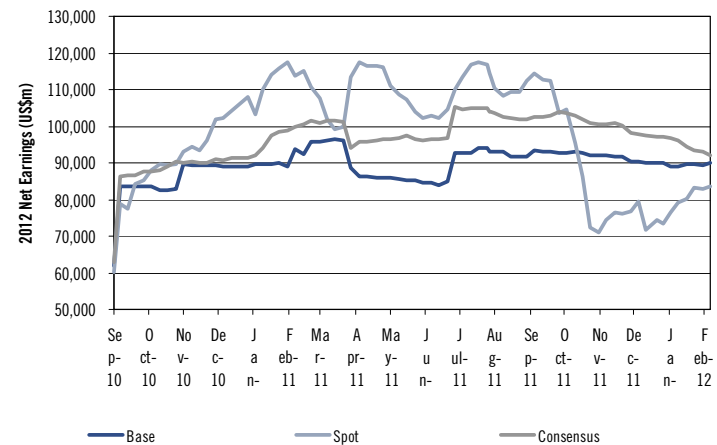
Source: Citi Investment Research and Analysis

Figure 8. PE Relative UK mining sector versus the market



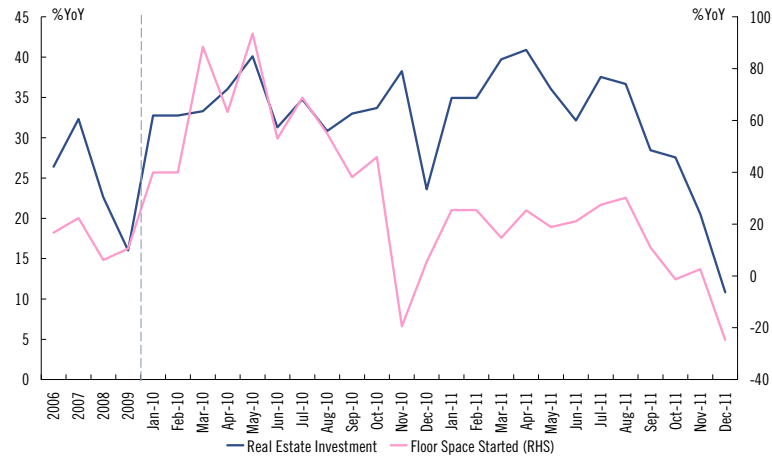
Source: Citi Investment Research and Analysis

Figure 9. Earnings momentum



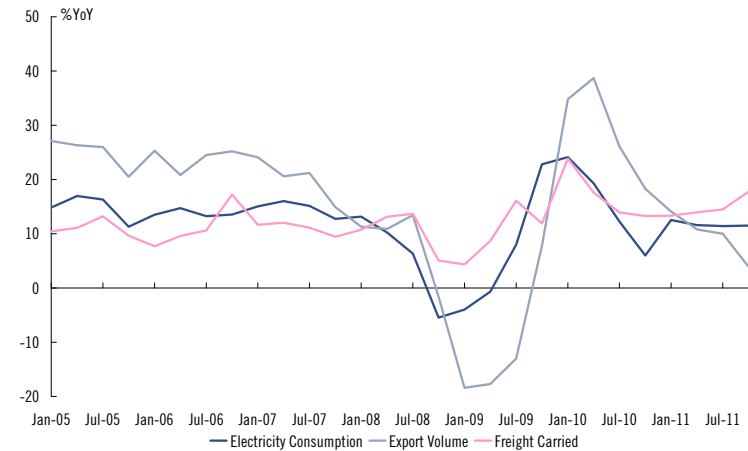
Source: Citi Investment Research and Analysis

Figure 10. New Floor Area Started vs. Property Investment



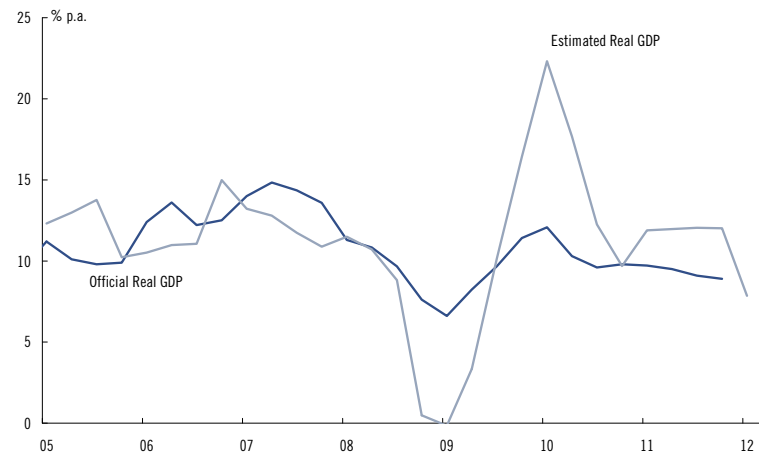
Source: CEIC and Citi Investment Research and Analysis

Figure 11. Quarterly Growth of Cargo, Power Consumption and Exports



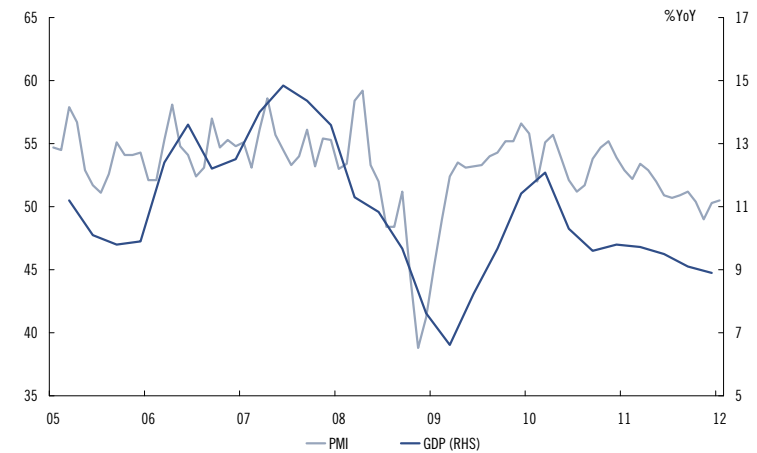
Source: CEIC and Citi Investment Research and Analysis

Figure 12. Estimated GDP Growth Based on Cargo, Power Consumption and Exports



Source: CEIC and Citi Investment Research and Analysis

Figure 13. Manufacturing PMI vs. Real GDP Growth



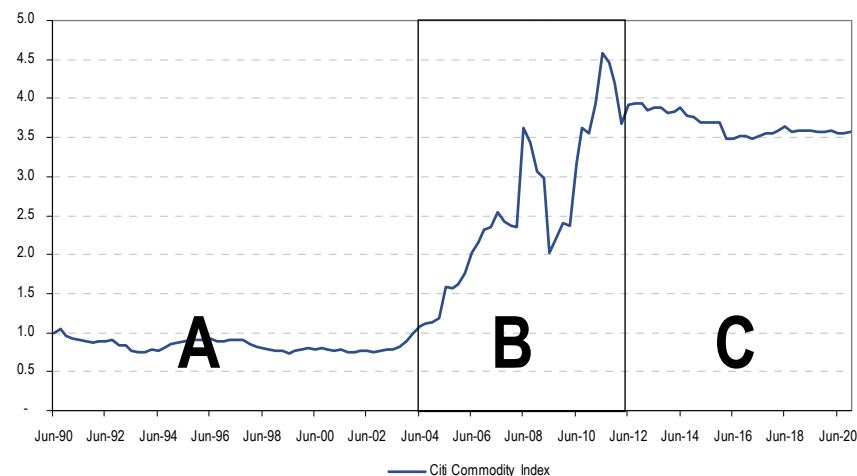
Source: CEIC and Citi Investment Research and Analysis

Figure 14. Correlation R2

1994-2004			
	BHP	Rio	Copper
BHP		0.804	0.421
Rio	0.804		0.374
Copper	0.421	0.374	
2005-2011			
	BHP	Rio	Copper
BHP		0.91	0.765
Rio	0.91		0.798
Copper	0.765	0.798	

Source: Bloomberg Data, Citi Investment Research and Analysis

Figure 15. Citi commodity price index (bulks, base and precious) – unique periods



Source: Citi Investment Research and Analysis

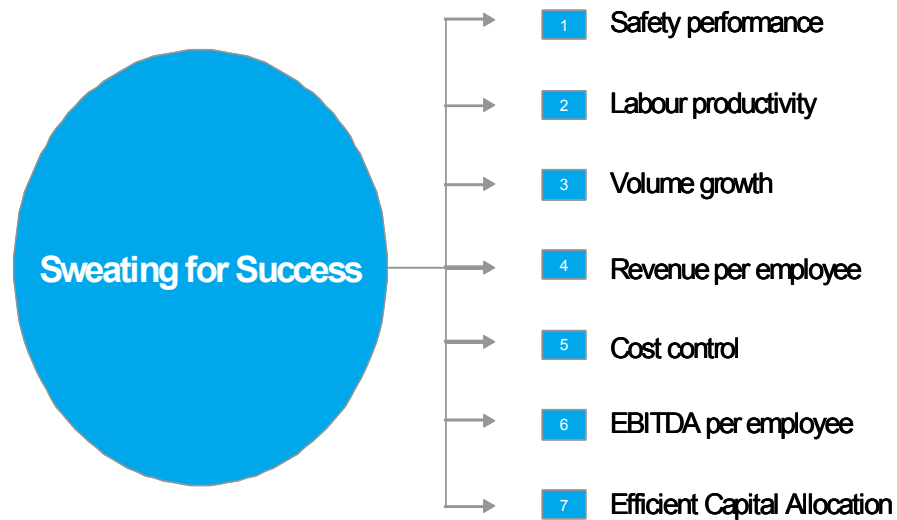
Figure 16. Efficiency evolution – The bottom line

	1996-2005 (Period A)			2006-2011 (Period B)			2012-2015 (Period c)		2012-2020 (Period C)	
	Change in			Change in			Change in		Change in	
	Revenue	EPS	Sh Price	Revenue	EPS	Sh Price	Revenue	EPS	Revenue	EPS
Anglo				3%	82%	17%	22%	27%	41%	25%
BHP Billiton	73%	252%	174%	146%	195%	98%	25%	18%	59%	55%
Rio Tinto	133%	258%	184%	208%	124%	42%	22%	29%	35%	46%
Vale				359%	294%	109%	2%	-22%	0%	0%

	1996-2005 (Period A)			2006-2011 (Period B)			2012-2015 (Period c)		2012-2020 (Period C)	
	EPS			EPS			EPS		EPS	
	Conversion	Sh Price	ROIIC	Conversion	Sh Price	ROIIC	Conversion	ROIIC	Conversion	ROIIC
Anglo				25.75	17%	58%	1.19	-23%	0.60	-11%
BHP Billiton	3.46	174%		1.33	98%	32%	0.74	7%	0.94	17%
Rio Tinto	1.94	184%	16%	0.60	42%	16%	1.28	32%	1.34	34%
Vale				0.82	109%	23%	-10.56	-13%		

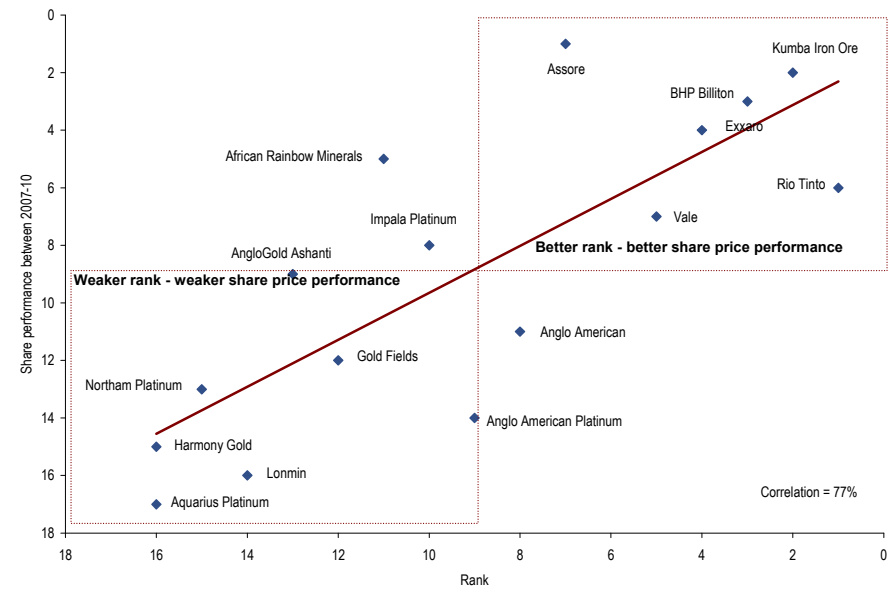
Source: Company Data, Citi Investment Research and Analysis

Figure 17. Sweating for Success – Efficiency drives Returns



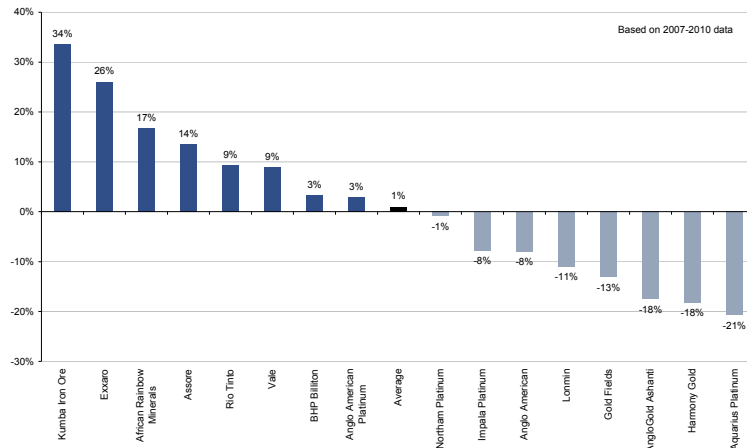
Source: Citi Investment Research and Analysis

Figure 18. Relationship between miners performance ranking* & 2007-10 share performance*



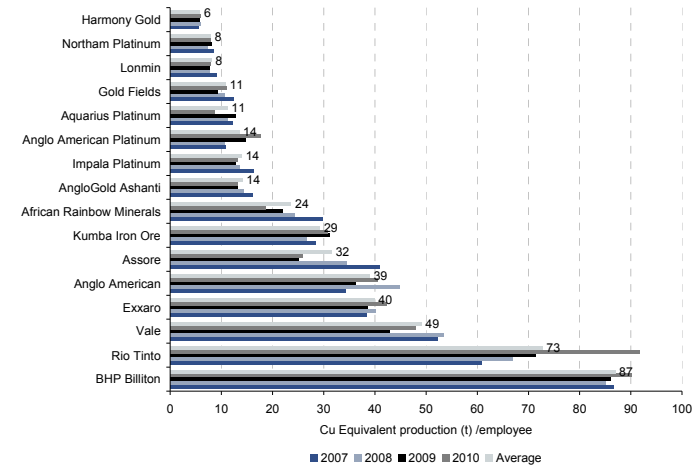
Source: DataStream, Citi Investment Research and Analysis, * 1 = best; 17 = worst

Figure 19. Cumulative production growth since 2007*



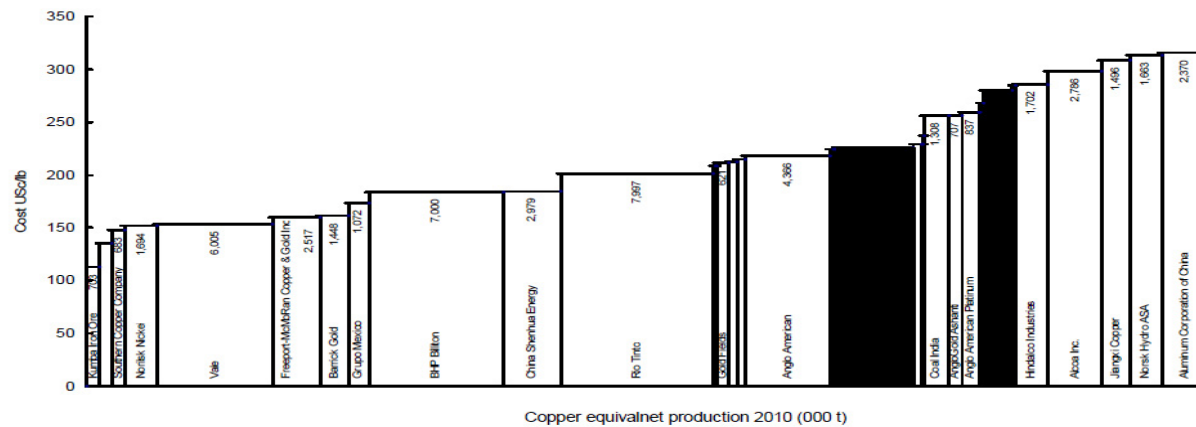
Source: Citi Investment Research and Analysis

Figure 20. Annual production per employee*, 2007-10



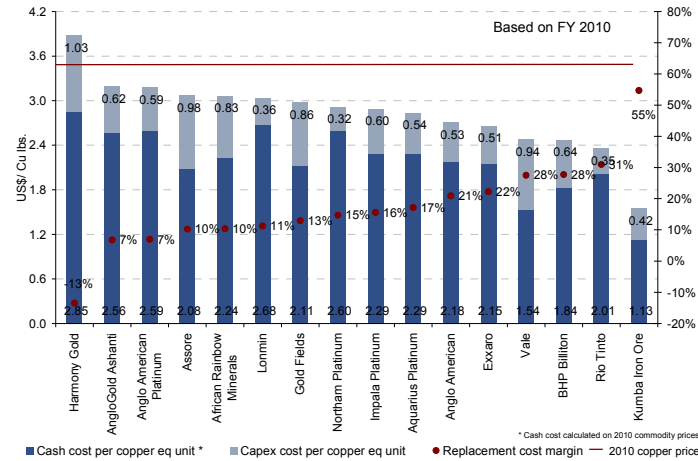
Source: Citi Investment Research and Analysis

Figure 21. Industry cash cost curve (showing copper equivalent units)



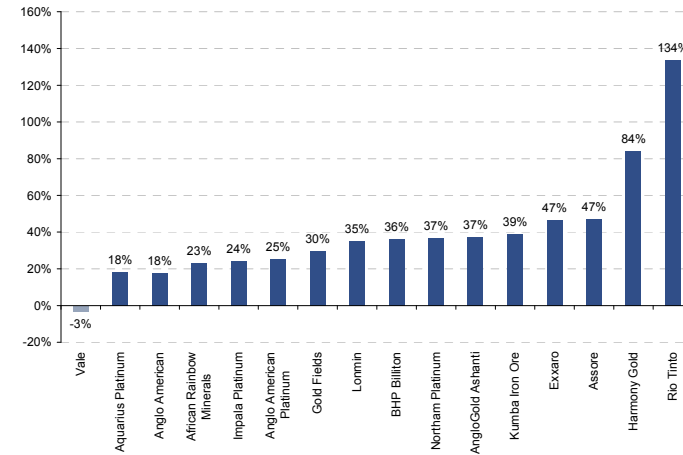
Source: Wood Mackenzie, Citi Investment Research and Analysis

Figure 22. Cash cost and total capital expenditure per Cu unit*



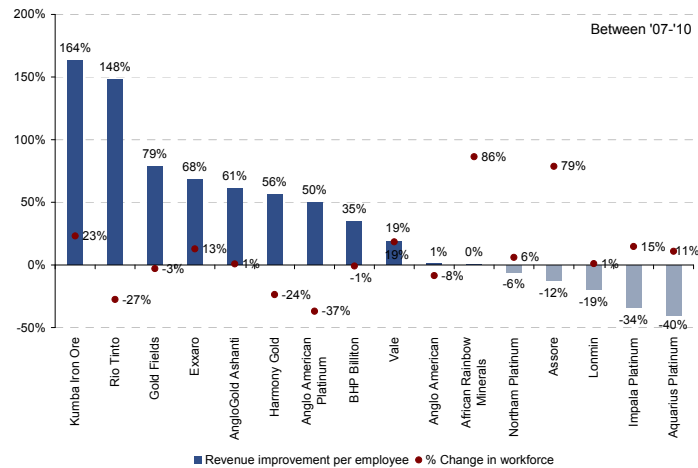
Source: Company reports, Citi Investment Research and Analysis

Figure 23. Average wage inflation, 2007-10



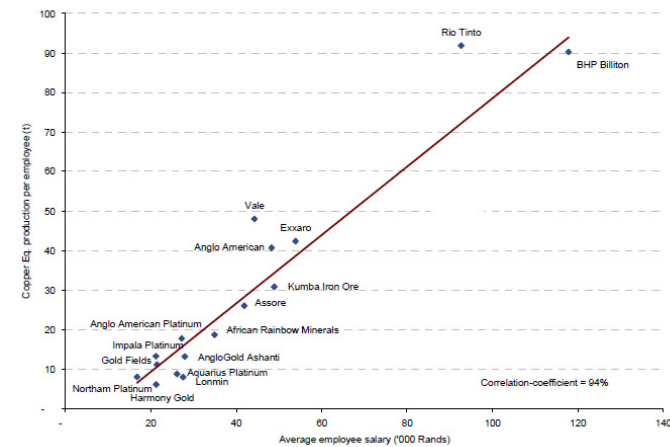
Source: Company reports, Citi Investment Research and Analysis

Figure 24. Improvement in revenue per employee, 2007-10



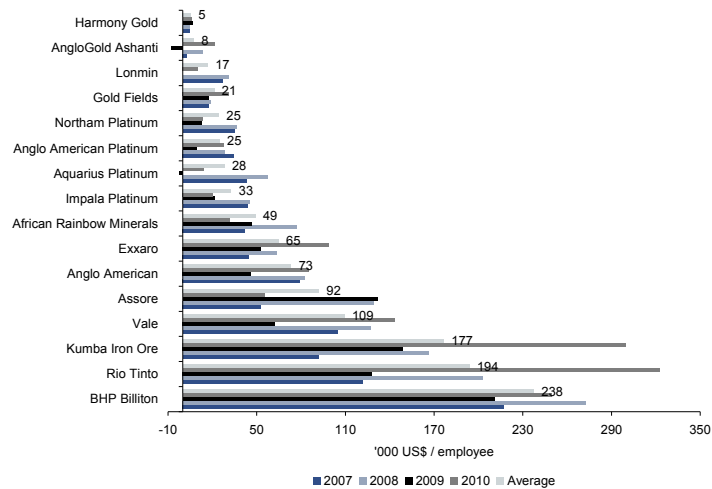
Source: Company reports, Citi Investment Research and Analysis

Figure 25. Correlation between employee cost and productivity, 2010



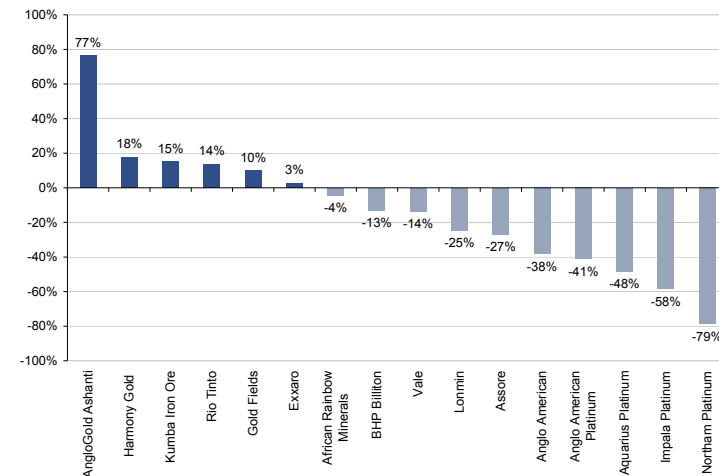
Source: Company reports, Citi Investment Research and Analysis

Figure 26. EBITDA per employee*, 2007-10



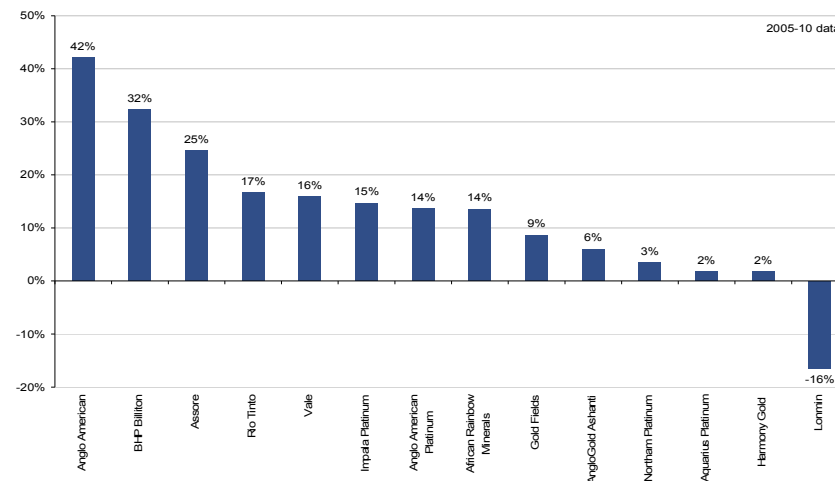
Source: Company reports, Citi Investment Research and Analysis. * Including contractors

Figure 27. Improvement in fixed asset turnover between 2007 and 2010



Source: Company reports, Citi Investment Research and Analysis.

Figure 28. Return on incremental invested capital (2005 – 2010*)



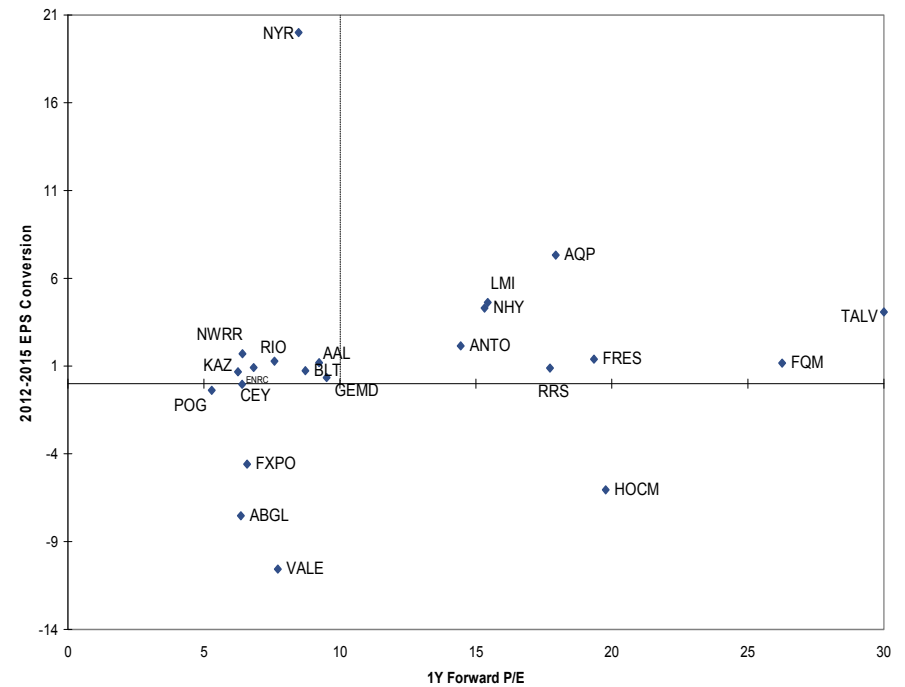
Source: Citi Investment Research and Analysis. * Change in NOPAT/Change in invested capital (2005-2010)

Figure 29. EPS Conversion* vs Share Price Performance and ROIIC^

	2006-2011 (Period B)			2012-2015 (Period c)		2012-2020 (Period C)	
	EPS Conv	Sh Price	ROIIC	EPS Conv	ROIIC	EPS Conv	ROIIC
Diversified							
Anglo	25.75	17%	58%	1.19	-23%	0.60	-11%
BHP Billiton	1.33	98%	32%	0.74	7%	0.94	17%
ENRC	-	-	-	0.92	20%	1.02	5%
Rio Tinto	0.60	42%	16%	1.28	32%	1.34	34%
Vale	0.82	109%	23%	-10.56	-13%	-	-
Bulks							
Ferrexpo	-	-	-	-4.58	-13%	5.28	-46%
NWR	-	-	-	1.70	5%	2.10	30%
Zanaga	-	-	-	-	-	-	-
Base							
Antofagasta	0.48	225%	18%	2.16	42%	-0.01	-36%
First Quantum	-0.10	228%	14%	1.18	40%	1.14	35%
Kazakhmys	3.77	20%	23%	0.67	10%	-0.16	14%
Nyrstar	-	-	-	29.39	36399%	17.14	338%
Talvivaara	-	-	-	4.08	822%	4.30	870%
Aluminium							
Norsk Hydro	1.80	-33%	nm	4.31	nm	5.13	12%
Precious							
African Barrick Gold	-	-	-	-7.52	-33%	1.50	-370%
Aquarius Platinum	-0.32	6%	-2%	7.32	164%	-9.39	30%
Centamin Egypt	-	243%	-	-0.04	-3%	0.02	2%
European Gold Fields	0.01	557%	1%	1.32	50%	2.53	79%
Fresnillo	1.37	-	83%	1.40	nm	1.45	nm
Gem Diamonds	-	-	-	0.35	-8%	-0.05	-36%
Hochschild	0.56	-	48%	-6.04	-15%	4.29	-276%
Lonmin PLC	-0.71	-36%	-6%	4.62	34%	4.56	-
Petropavlovsk	0.65	-33%	11%	-0.38	nm	23.55	nm
Randgold	0.73	610%	25%	0.89	441%	1.27	39%

Source: Citi Investment Research and Analysis. *Change in EPS/Change in Revenue capped at 20 on positive side, Note: P/E capped at 30

Figure 30. EPS Conversion* vs 1Y Forward P/E Ratio



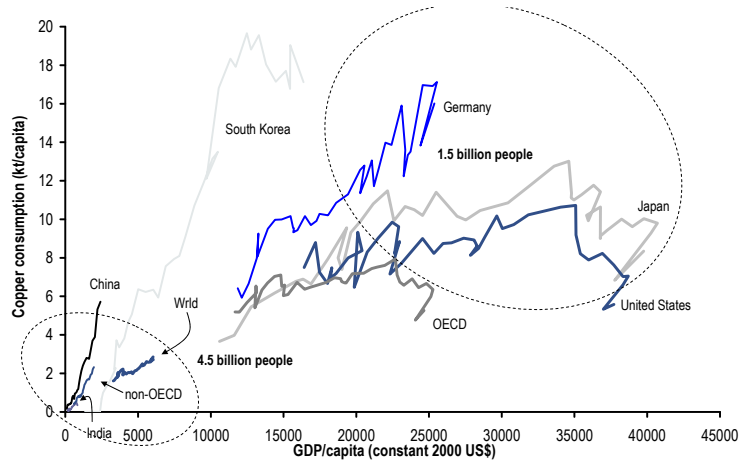
Source: Citi Investment Research and Analysis. *Change in EPS/Change in Revenue capped at 20 on positive side, Note: P/E capped at 30



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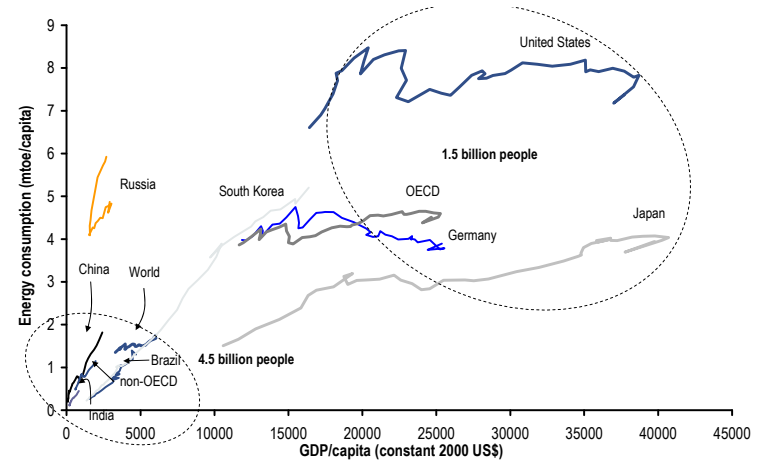
Big Oil versus Big Mining

Figure 31. Copper GDP per capita



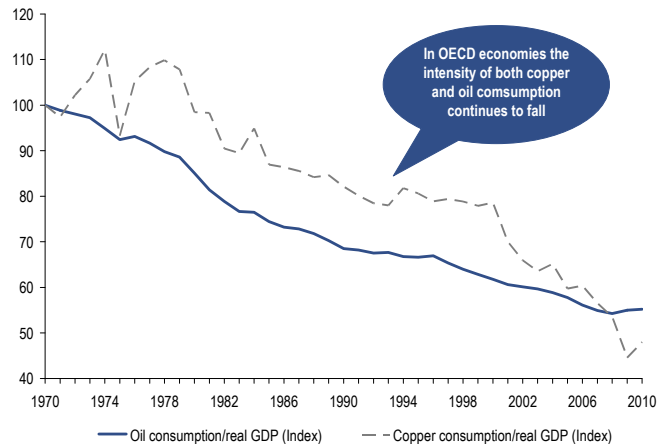
Source: DataCentral, Citi Investment Research and Analysis

Figure 32. Oil GDP per capita



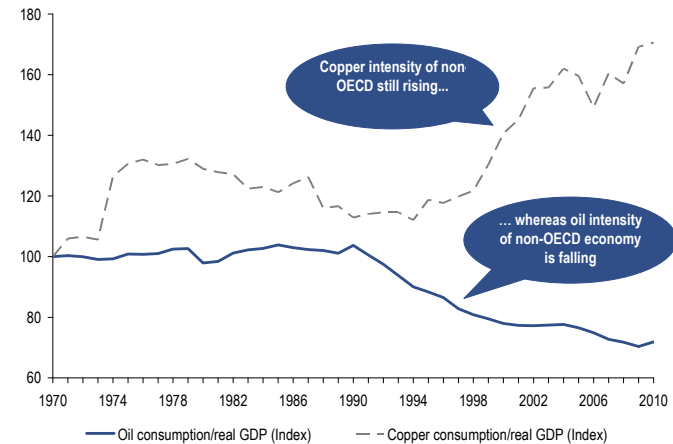
Source: Company Reports, Citi Investment Research and Analysis

Figure 33. Oil and copper consumption in OECD countries



Source: DataCentral, Citi Investment Research and Analysis

Figure 34. Oil and copper consumption in Non-OECD countries



Source: DataCentral, Citi Investment Research and Analysis

PART 1 – Returns

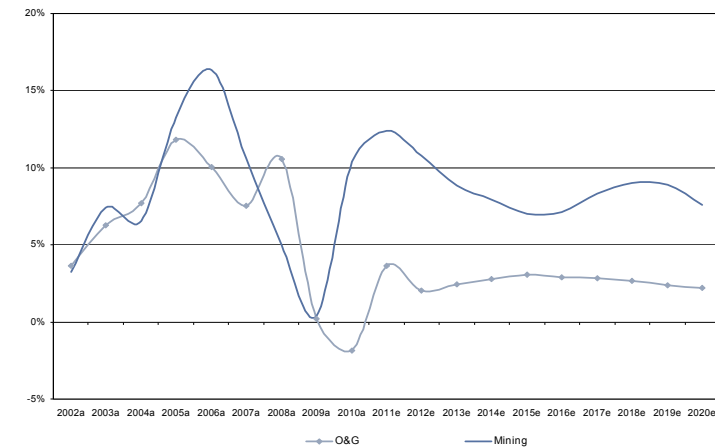
The EVA spread (ROIC - WACC) of the mining industry has been higher than that of the oil and gas industry over the past ten years. Moreover, we expect the Mining sector to deliver an EVA spread of almost twice the integrated Oil & Gas sector.

We are forecasting the ROIC-WACC spread from the Integrated oil and gas companies at around 3%. In contrast we are forecasting a reduction in the ROIC-WACC spread of the large mining companies from a peak of around 12.5% in 2011e to around 7% by 2015e.

Under our forecasted commodity price environment we believe the efficient deployment of capital is likely to be the major differentiating factor between the companies and the sectors.

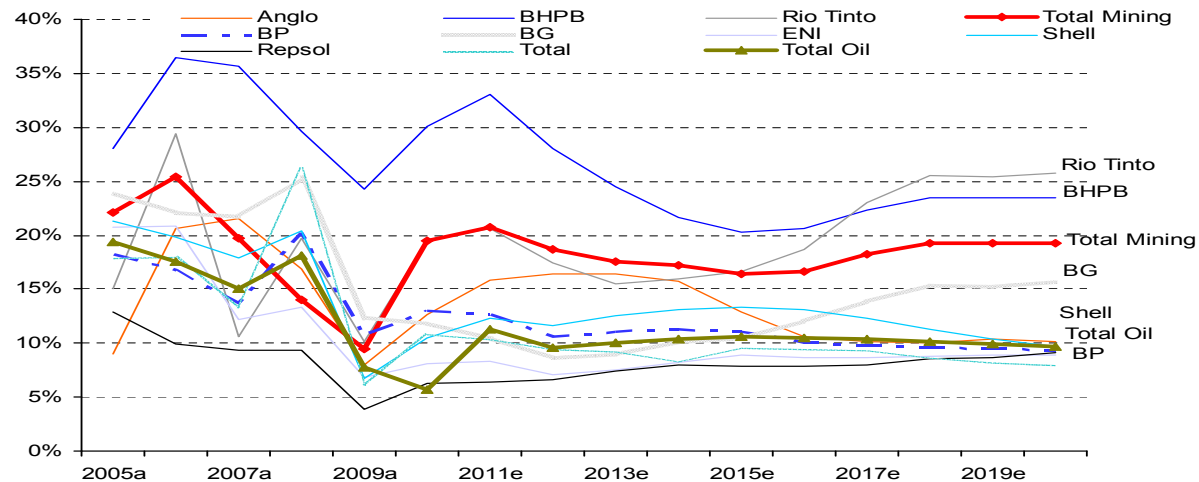
Put another way – for the miners the last decade's EVA movement was all down to commodity prices – we believe the next 10 years is all about capital management – efficient capex, share buybacks and avoiding big-ticket M&A.

Figure 35. EVA creation – (ROIC – WACC) of UK Large Oil and UK Large Mining



Source: Citi Investment Research and Analysis

Figure 36. ROIC for the selective metals, mining and oil companies



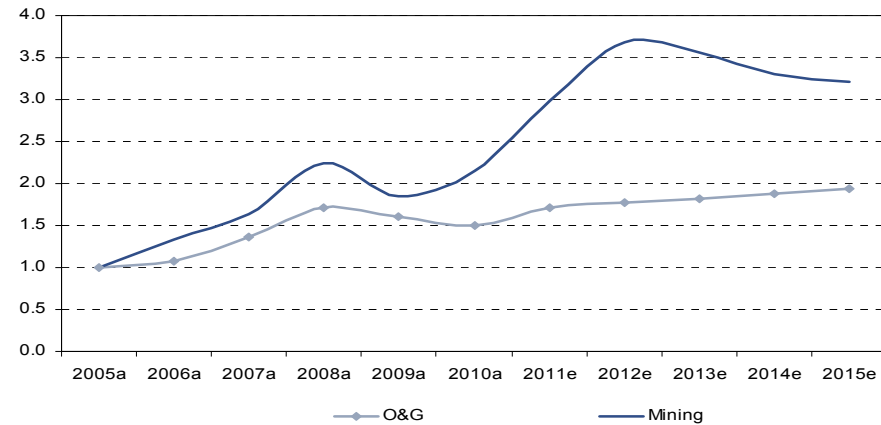
Source: Citi Investment Research and Analysis

PART 2 - The Capex Spend

The underlying commodity prices are likely to be a swing driver of the relative sector performance; however, we believe the reinvestment of cash flow will be the most influential factor on the sector and stock performances.

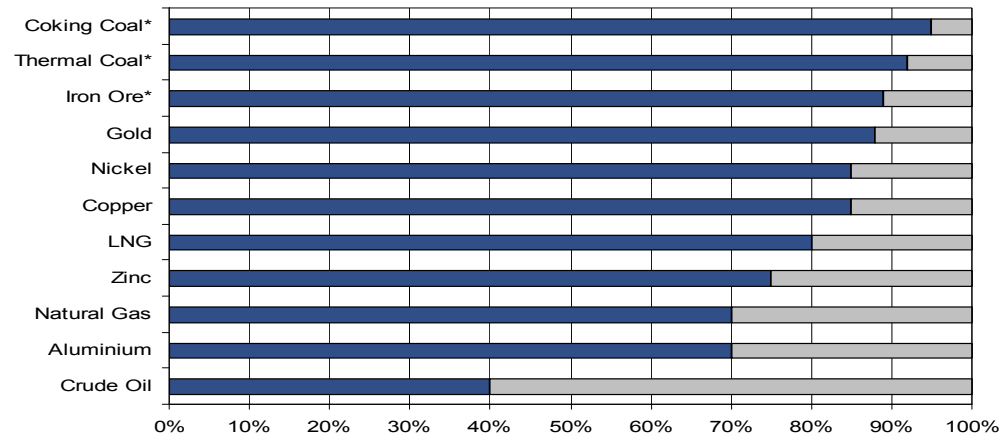
The Mining sector is about to embark on unprecedented levels of capex spend, which is similar to the Oil industry in 2004/05. We are forecasting capex spend to increase by 4x the historical annual rate, an expansion in excess of the O&G sector.

Figure 37. Capex oil and gas v mining as a multiple of D & A



Source: DataCentral, Citi Investment Research and Analysis

Figure 38. Addressable market, which is available for private investment as % of the total market (in blue)



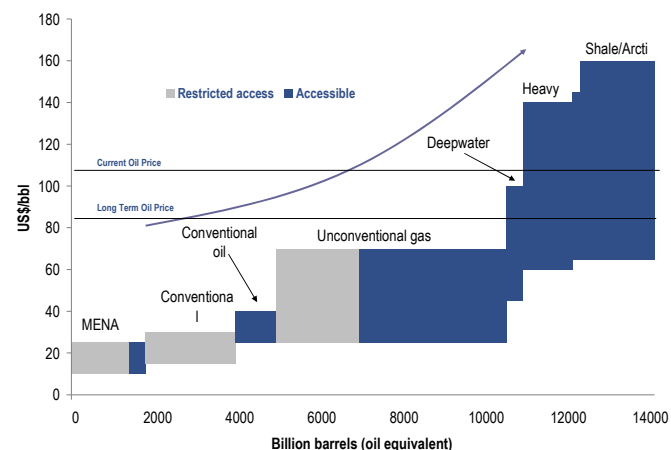
Source: Citi Investment Research and Analysis, *seaborne market

Oil

The oil and gas companies are being forced up the cost curve due to restricted access to low cost oil and gas reserves. At the current oil price, we estimate around 40% of the accessible market would not generate a positive NPV; moreover at long-term oil prices the deepwater projects wouldn't generate a positive NPV.

The following chart plots what oil price is needed to deliver a NPV neutral project at a 10% discount rate.

Figure 39. Accessible market oil and gas

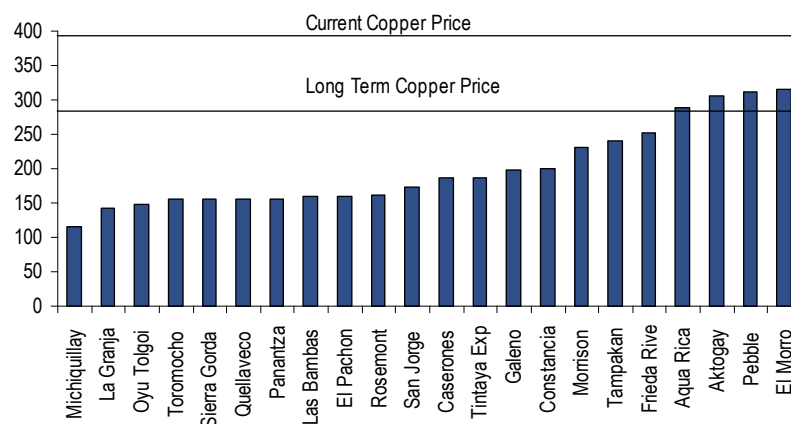


Source: Citi Investment Research and Analysis

Copper

In contrast, while capex costs for copper projects are increasing, it is a relatively level playing field. The vast majority of new copper projects are not restricted to state-owned enterprises. Moreover at today's copper price we estimate all these projects would be NPV positive and under our long-term copper price 90% of production would deliver a positive NPV. The following chart plots the oil price that is needed to deliver a NPV neutral project at a 10% discount rate.

Figure 40. Accessible market of copper projects and the copper price required to deliver a NPV neutral project



Source: Brook Hunt, CIRA estimates

Where on the cost curve are they spending

The key point to make between the two sectors is that the Oil and Gas sector is spending along the cost curve, while the large Metals and Mining companies are generally spending capital at projects at the lower end of the cost curve.

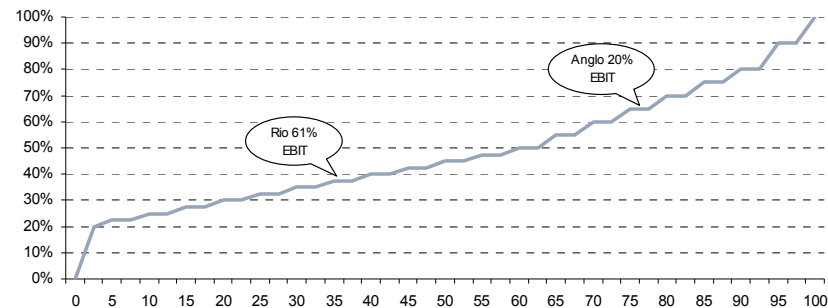
We believe that the marginal assets will drop in/out of their economic threshold, unlike the last decade, which allowed for a steepening of the cost-curve, thereby price-enabling fourth-quartile assets.

From an investment strategy standpoint, this is an important point. Last decade many of the investment 'winners' were those companies that benefited most from this cost-curve steepening (e.g. Canadian heavy oil or Chinese iron ore). Our scenario would favour a very a low cost production strategy in this decade rather than a leverage approach. Therefore, we believe 'winners' are likely to come from those companies that can deploy capital in the first-third quartiles of the curve.

Overall production growth favours mining

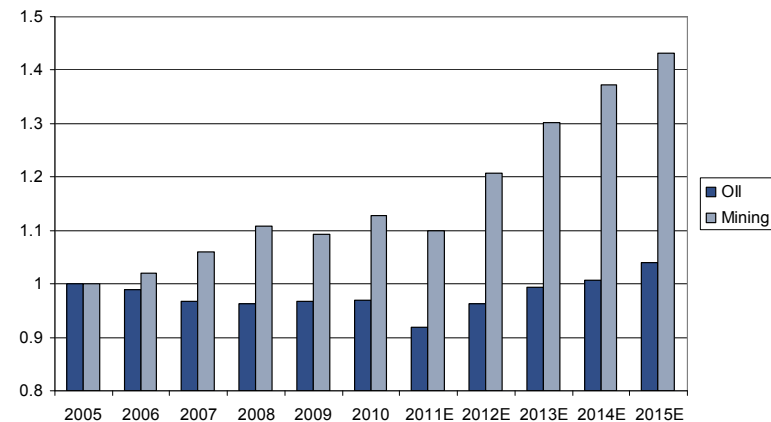
We have compared the growth prospects of the mining and oil sectors using our boe and copper equivalent charts. Overall we forecast the metals and mining companies to deliver higher growth rates than the oil companies.

Figure 41. Generic Cost Curve Positioning of New Mining Projects through to 2015



Source: Citi Investment Research and Analysis

Figure 42. Production growth Oil v Mining



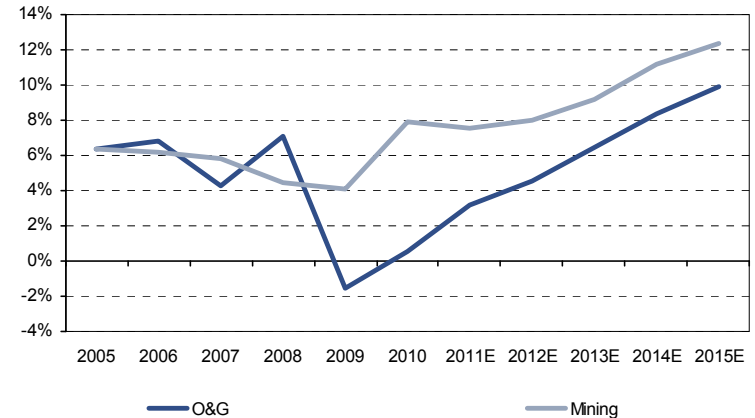
Source: Company data, CIRA estimates

PART 3 – Cash Flow

Free cash flow post capex favours the mining companies and inflows from operating cash flow more than cover capex and dividend payments. This is in contrast with the Oil companies, which in some cases are seeing outflows exceed inflows.

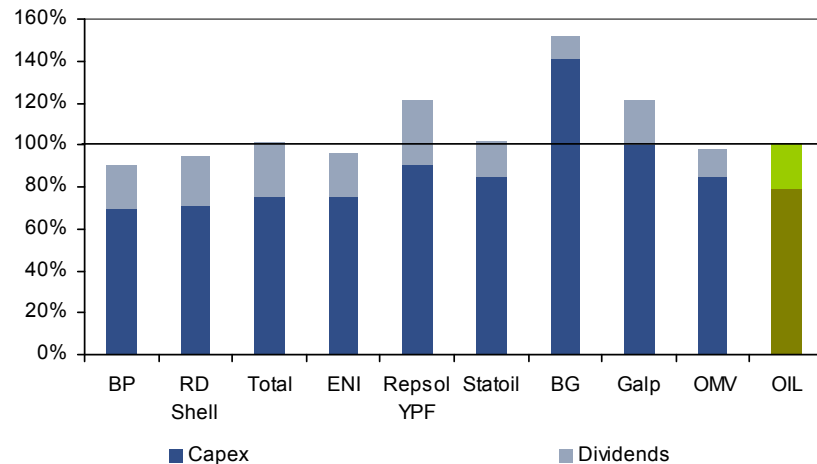
This raises the possibility of higher dividend payments from the mining sector, but the probability is the mining companies will use the surplus cash for additional capex or M&A.

Figure 43. Free Cash Flow Yield post capex



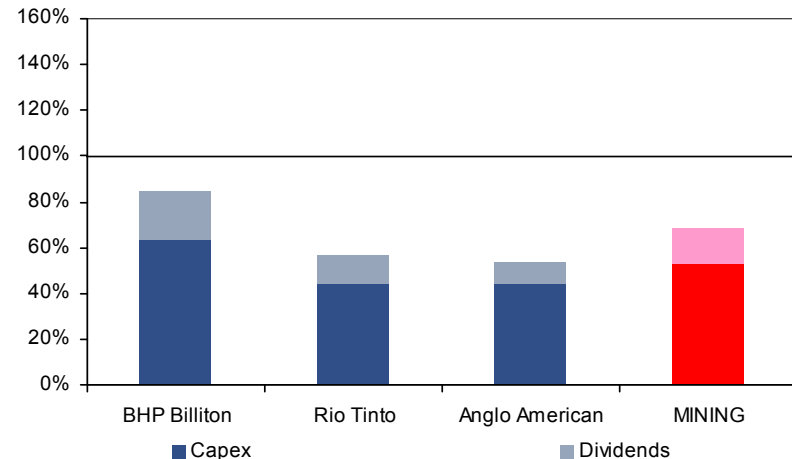
Source: Company Reports and CIRA Estimates

Figure 44. Oil Companies Cash Outflow as a % of Operating Cash Flow 2011F-2015F



Source: Company Reports and CIRA Estimates

Figure 45. Mining Companies Cash Outflow as a % of Operating Cash Flow 2011F-2015F



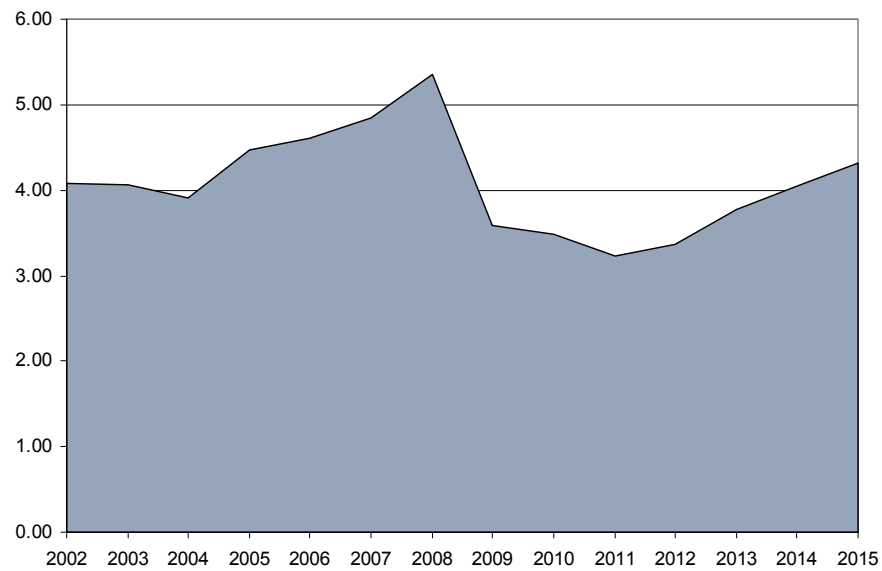
Source: Company Reports and CIRA Estimates



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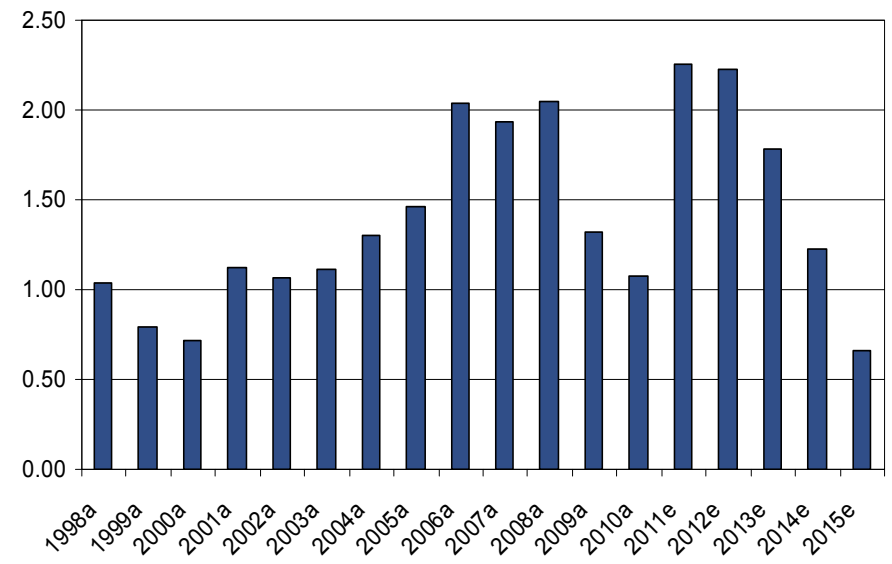
Sector Re-rating

Figure 46. Volume growth per share



Source: Company data, CIRA estimates (from 2011)

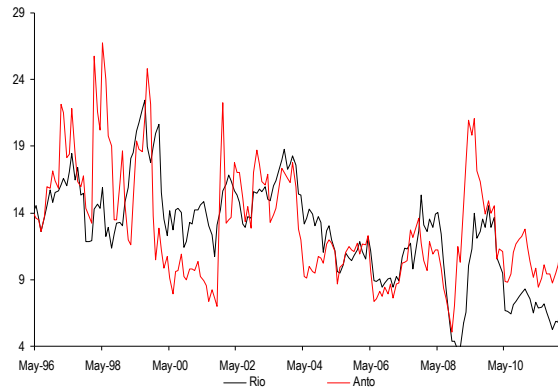
Figure 47. Rio Tinto Capex to D&A



Source: Company data, CIRA estimates

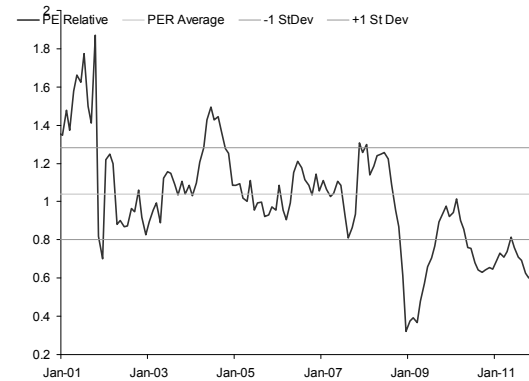
Cash Returns

Figure 48. Forward PE of Rio Tinto and Antofagasta



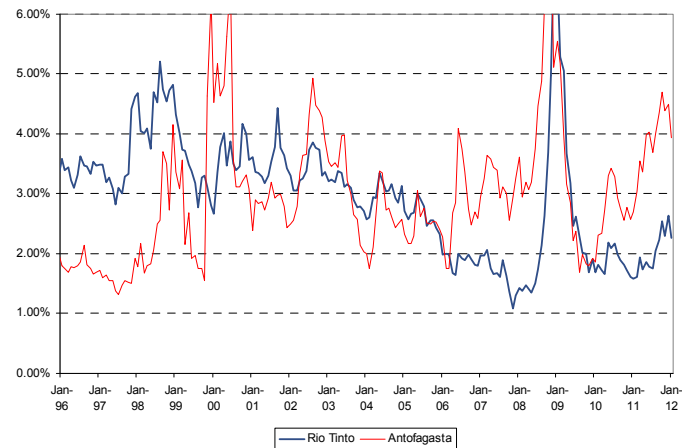
Source: Datastream

Figure 49. Forward PE of Rio Tinto Relative to Antofagasta



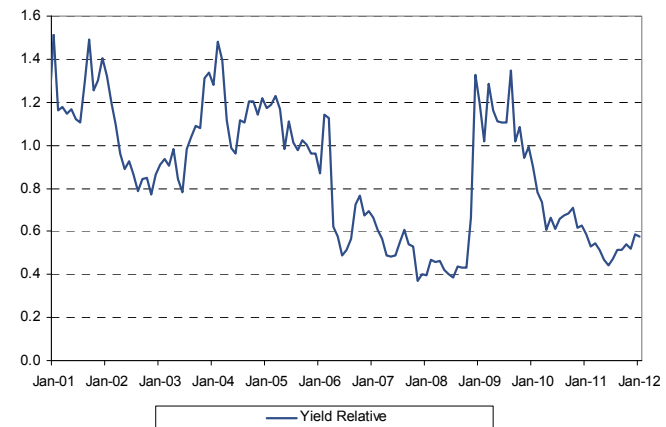
Source: Datastream

Figure 50. Forward dividend yield of Rio Tinto and Antofagasta (%)



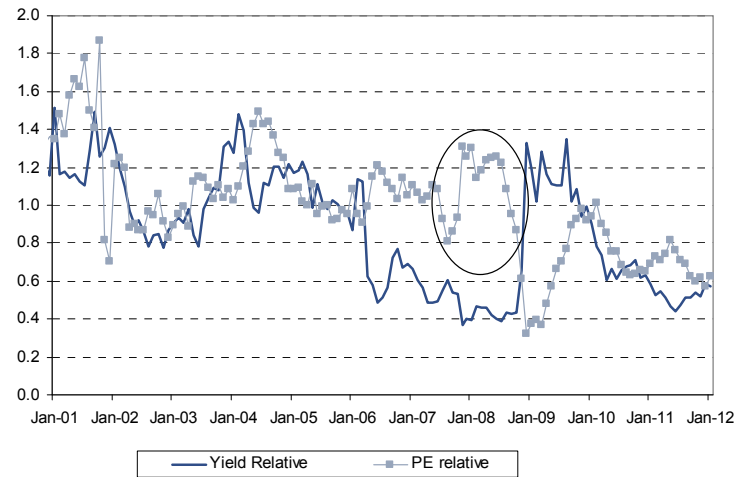
Source: Datastream

Figure 51. Forward dividend yield of Rio Tinto Relative to Antofagasta



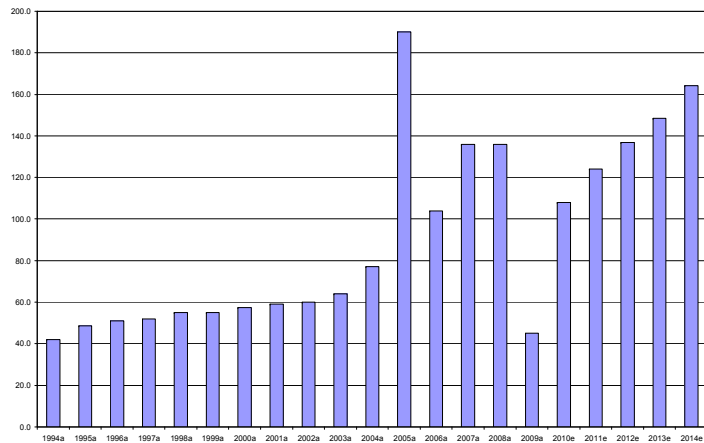
Source: Datastream

Figure 52. Forward PE relative versus forward dividend yield relative – Rio versus Anto



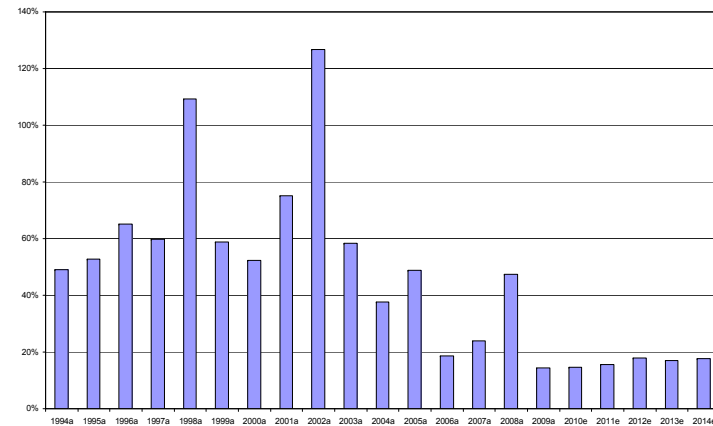
Source: DataStream

Figure 53. Rio Tinto dividend per share (USc)



Source: Company data, CIRA estimates

Figure 54. Payout ratio (%)



Source: Company data, CIRA estimates

Steel

Figure 55. Global Steel Demand and Forecasts

Regional Demand - Finished Steel	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011e	2012e	2013e	2014e	2015e
EU (15)	139	137	146	143	139	140	147	142	153	155	140	105	112	114	113	114	115	117
% change Y-o-Y	7.6%	-1.3%	6.2%	-2.3%	-2.2%	0.3%	4.9%	-3.4%	8.0%	1.4%	-9.9%	-24.8%	6.0%	2.0%	-0.7%	0.6%	1.1%	1.4%
Other Europe	35	32	26	21	27	34	36	36	47	50	49	31	46	47	46	47	48	49
% change Y-o-Y	5.8%	-10.6%	-16.7%	-20.7%	31.3%	23.1%	7.7%	-0.2%	29.4%	6.1%	-1.6%	-35.6%	45.8%	2.0%	-1.0%	2.0%	2.0%	2.0%
CIS	23	25	31	39	37	38	41	42	44	49	50	38	47	48	49	51	52	54
% change Y-o-Y	-9.1%	6.0%	23.5%	25.7%	-3.8%	3.4%	6.3%	2.0%	5.1%	13.0%	0.2%	-22.6%	22.4%	3.0%	2.0%	3.0%	3.0%	3.0%
NAFTA	148	145	147	132	133	131	147	124	135	128	115	76	102	104	107	109	112	116
% change Y-o-Y	6.0%	-1.9%	0.8%	-9.9%	0.6%	-1.6%	12.3%	-15.5%	8.9%	-5.6%	-9.5%	-34.1%	34.5%	2.1%	2.0%	2.2%	2.9%	3.5%
Central/South America	25	24	27	27	28	28	30	29	34	38	39	31	39	40	41	42	44	45
% change Y-o-Y	4.9%	-1.3%	12.4%	-1.3%	2.7%	0.5%	7.0%	-1.6%	14.1%	12.8%	3.6%	-20.0%	22.9%	2.6%	2.9%	3.6%	3.7%	3.7%
China	98	102	113	120	148	181	257	257	384	456	476	597	681	744	806	875	943	1,014
% change Y-o-Y	-5.3%	4.2%	11.1%	6.2%	22.7%	22.5%	42.2%	-0.2%	49.3%	18.8%	4.5%	25.2%	14.1%	9.2%	8.4%	8.6%	7.7%	7.6%
Japan	82	82	92	88	88	91	95	94	95	98	95	66	85	84	84	86	87	88
% change Y-o-Y	-0.4%	0.9%	12.0%	-5.3%	1.1%	3.3%	3.9%	-1.0%	1.0%	3.6%	-3.2%	-30.9%	28.6%	-10.0%	1.0%	1.3%	1.5%	1.5%
India	23	25	26	27	29	31	34	39	43	42	50	55	59	63	68	73	79	85
% change Y-o-Y	2.9%	8.0%	5.2%	4.2%	5.5%	8.0%	9.9%	14.3%	9.9%	-3.2%	19.9%	10.0%	7.3%	7.1%	7.0%	7.7%	8.2%	8.3%
Other Asia/Pacific	86	96	107	106	130	118	127	128	133	140	142	112	129	134	139	144	150	156
% change Y-o-Y	-18.7%	12.4%	10.6%	-0.5%	22.9%	-9.4%	7.7%	1.0%	3.7%	5.1%	1.7%	-21.2%	15.4%	3.4%	3.5%	3.9%	4.2%	3.9%
Africa/Middle East	32	32	34	39	43	46	52	59	63	66	69	67	68	70	73	75	77	79
% change Y-o-Y	3.8%	0.4%	6.4%	14.4%	8.6%	7.8%	13.8%	11.9%	7.8%	5.0%	4.0%	-3.0%	2.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Global Demand	692	702	750	742	803	838	967	950	1,130	1,222	1,226	1,179	1,368	1,448	1,525	1,615	1,707	1,804
% change Y-o-Y	0.1%	1.5%	6.9%	-1.1%	8.2%	4.4%	15.3%	-1.7%	19.0%	8.1%	0.3%	-3.8%	16.0%	5.9%	5.3%	5.9%	5.7%	5.7%
Global Ex China	594	600	637	621	655	657	709	693	747	766	749	582	687	704	719	740	764	790
% change Y-o-Y		1.0%	6.1%	-2.4%	5.4%	0.3%	7.9%	-2.3%	7.7%	2.6%	-2.2%	-22.3%	17.9%	2.5%	2.1%	2.9%	3.2%	3.4%

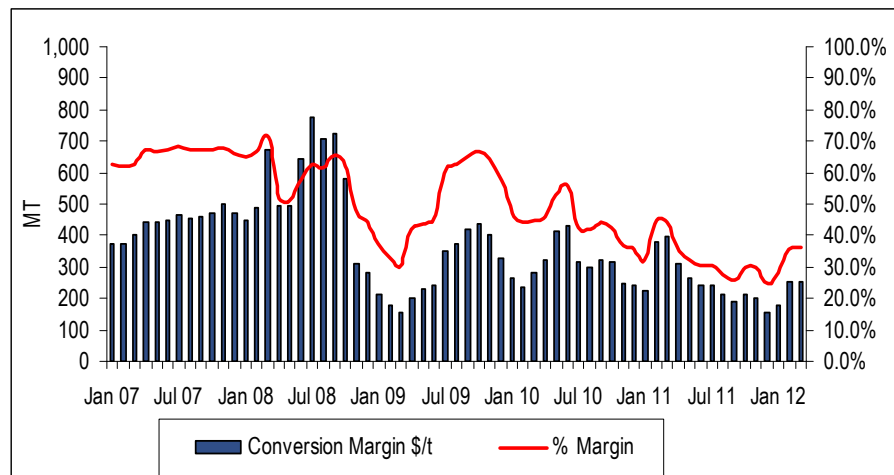
Source: CRU, IISI, MB, Citi Investment Research and Analysis

Figure 56. Steel Prices – Historical and Forecast

	1Q10	2Q10	3Q10	4Q10	1Q11	2Q11	3Q11	4Q11	1Q12	2Q12	3Q12	4Q12	1Q13	2Q13	3Q13	4Q13
EU Hot Rolled Coil US\$/t	638	756	672	700	844	856	765	662	650	650	644	657	676	676	676	676
EU CR Coil Price US\$/t	722	894	760	825	940	989	860	797	761	761	754	767	787	787	787	787
EU CR Coil Price €/t	504	663	616	601	692	693	610	590	585	585	580	590	605	605	605	605
EU HR Coil Price €/t	445	560	545	510	602	592	543	490	500	500	495	505	520	520	520	520
EU Shredded Scrap €/t	220	281	249	275	353	338	300	290	285	285	282	288	296	296	296	296
Heavy Plate (€/t)	713	685	690	651	736	713	714	640	653	653	647	660	679	679	679	679
EU Rebar \$/t	572	742	619	653	763	791	785	750	743	743	735	750	773	773	773	773
EU Rebar €/t	399	550	502	476	573	547	557	560	571	571	566	577	594	594	594	594
US Rebar US\$/t	600	688	653	719	800	802	806	825	888	831	789	804	826	826	826	826
US HRC US\$/t	640	752	655	670	877	896	755	715	770	720	684	697	716	716	716	716
US Plate	741	970	845	827	1000	1146	1120	1056	1137	1063	1009	1029	1057	1057	1057	1057
US Shredded scrap US\$/t	347	363	335	412	463	445	460	430	407	407	403	411	423	423	423	423

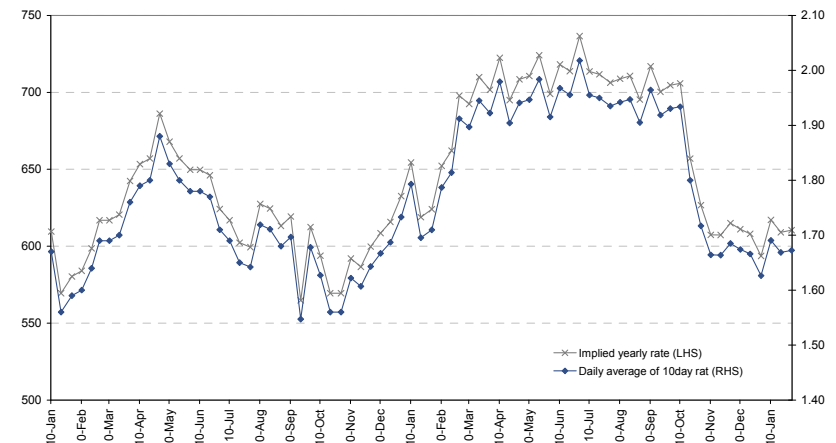
Source: Citi Investment Research and Analysis, MB, CRU

Figure 57. European Conversion Margin



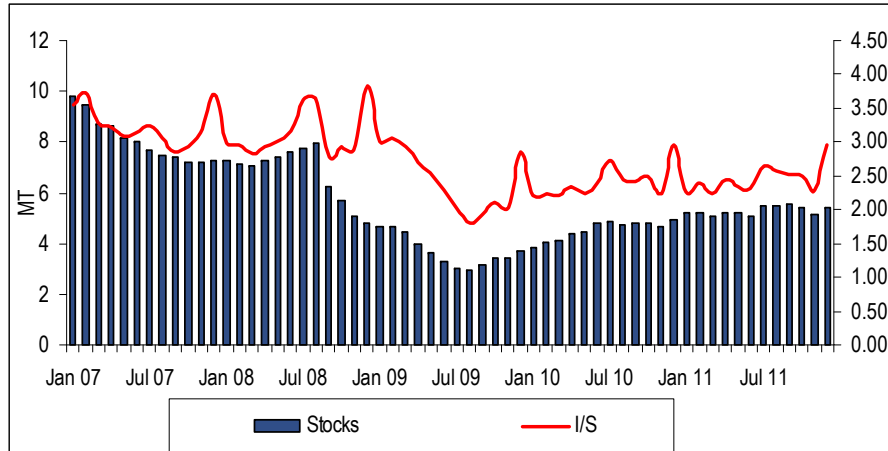
Source: CRU, Metal Bulletin, Citi Investment Research and Analysis

Figure 58. CISA Steel Production (Mt)



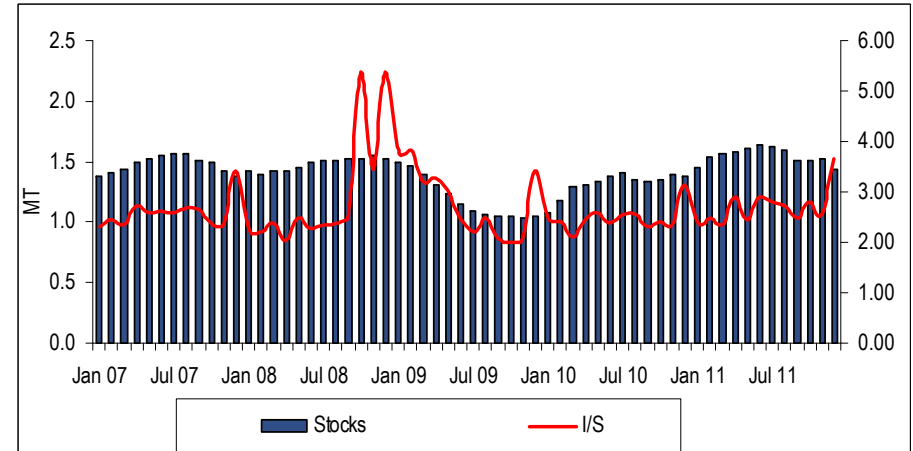
Source: CISA, Citi Investment Research and Analysis

Figure 59. US Sheet Stocks to shipment ratio



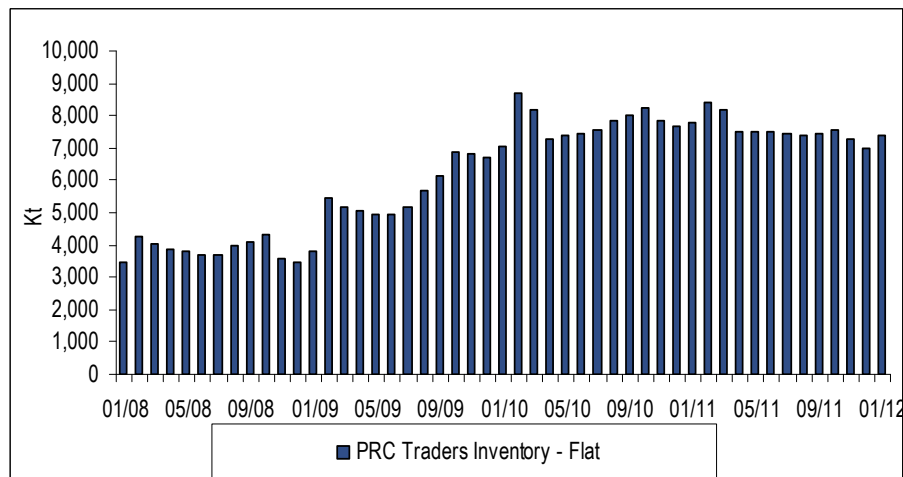
Source: CRU, Citi Investment Research and Analysis

Figure 60. Germany Sheet Stocks to shipment ratio



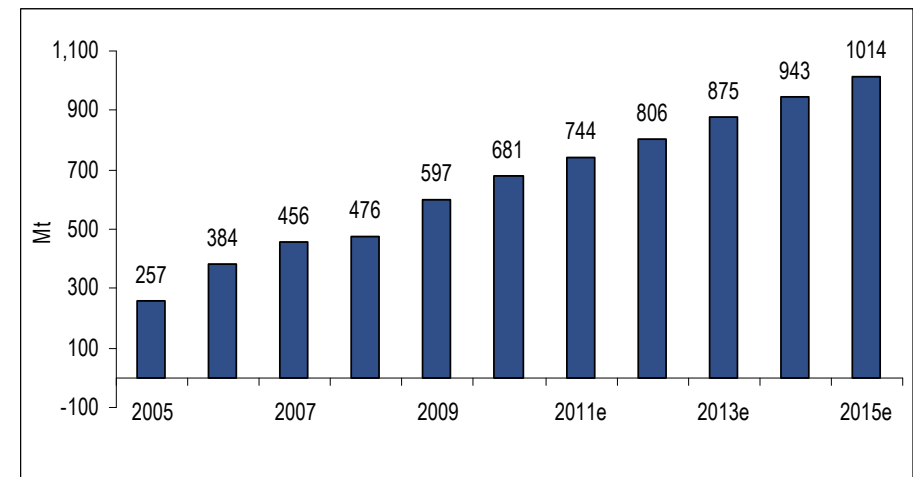
Source: CRU, Citi Investment Research and Analysis

Figure 61. China Traders Inventories - Flats



Source: CRU, MySteel, Citi Investment Research and Analysis

Figure 62. Chinese Apparent Consumption of Finished Steel



Source: CRU, Citi Investment Research and Analysis

Figure 63. Global Stainless Steel Demand and Forecasts (000' tonnes)

Demand	2005	2006	2007	2008	2009	2010	2011e	2012e	2013e	2014e	2015e
Western Europe	2,929	3,618	3,706	3,538	2,772	3,788	3,849	3,811	3,817	3,845	3,889
% change Y-o-Y	-10.0%	23.5%	2.4%	-4.5%	-21.7%	36.7%	1.6%	-1.0%	0.1%	0.7%	1.1%
Eastern Europe	227	303	351	369	167	189	196	199	205	213	221
% change Y-o-Y	7.9%	33.1%	15.8%	5.2%	-54.8%	13.2%	4.1%	1.4%	3.1%	3.6%	3.9%
CIS	109	111	128	135	38	66	68	69	71	73	75
% change Y-o-Y	61.9%	1.9%	15.8%	5.2%	-71.7%	71.4%	3.0%	2.0%	3.0%	3.0%	3.0%
North America	1,664	1,909	2,012	1,979	1,578	1,955	2,006	2,052	2,103	2,169	2,247
% change Y-o-Y	-6.4%	14.7%	5.4%	-1.6%	-20.3%	23.9%	2.6%	2.3%	2.5%	3.1%	3.6%
Latin America	329	376	414	426	271	355	371	384	399	413	426
% change Y-o-Y	3.4%	14.5%	10.1%	2.8%	-36.4%	30.9%	4.6%	3.6%	3.7%	3.5%	3.3%
China	3,747	4,500	4,665	4,849	5,974	7,545	8,239	8,931	9,699	10,446	11,240
% change Y-o-Y	18.5%	20.1%	3.6%	4.0%	23.2%	26.3%	9.2%	8.4%	8.6%	7.7%	7.6%
Japan	1,271	1,128	1,355	1,108	764	1,267	1,254	1,267	1,283	1,302	1,322
% change Y-o-Y	-8.4%	-11.2%	20.1%	-18.2%	-31.0%	65.8%	-1.0%	1.0%	1.3%	1.5%	1.5%
India	829	904	1,000	1,035	1,213	1,293	1,385	1,482	1,596	1,727	1,870
% change Y-o-Y	4.1%	9.0%	10.7%	3.5%	17.2%	6.6%	7.1%	7.0%	7.7%	8.2%	8.3%
Other Asia/Pacific	83	86	93	95	19	19	19	20	21	22	23
% change Y-o-Y	-5.4%	4.3%	8.3%	1.9%	-79.6%	-1.6%	1.9%	3.4%	3.8%	4.3%	3.8%
Africa/Middle East	231	256	269	278	306	263	271	278	289	302	312
% change Y-o-Y	-11.4%	11.1%	5.0%	3.2%	10.1%	-14.2%	3.1%	2.9%	3.8%	4.4%	3.5%
Global Demand	13,430	15,577	16,227	16,229	15,638	19,732	20,841	21,872	23,084	24,338	25,685
Demand % change Y-o-Y	1.2%	16.0%	4.2%	0.0%	-3.6%	26.2%	5.6%	4.9%	5.5%	5.4%	5.5%
Global Surplus/(Deficit)	-	-	-	-	-	-	1,389	1,264	1,422	1,315	499
Months of Consumption	-	-	-	-	-	-	0.8	0.7	0.7	0.6	0.2

Source: Citi Investment Research and Analysis, CRU, ISSB



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Company Overview

Figure 64. Valuations spot versus base versus consensus - PE

PE Multiples	Base				Spot				Consensus			
	2011E	2012E	2013E	11-13E CAGR	2011E	2012E	2013E	11-13E CAGR	2011E	2012E	2013E	11-13E CAGR
Diversified												
Anglo American PLC	9.5	9.0	7.7	11%	9.6	10.2	10.6	-5%	8.8	9.0	7.4	9%
BHP Billiton PLC	8.2	8.8	7.7	3%	8.2	9.2	8.3	0%	8.0	8.2	7.8	1%
ENRC	6.5	6.7	6.3	2%	6.5	7.1	6.6	0%	6.5	7.0	6.0	4%
Rio Tinto PLC	7.1	7.4	6.5	4%	7.2	7.6	6.4	6%	7.3	7.4	6.8	4%
Vale	6.2	7.7	8.1	-12%	6.2	8.8	8.5	-14%	5.7	6.5	6.5	-6%
Weighted Average	8.1	8.5	7.4	4%	8.2	9.0	8.1	0%	7.8	8.0	7.3	3%
Bulks												
Ferrexpo PLC	5.8	6.5	5.7	0%	5.8	6.7	4.6	11%	5.4	6.5	5.4	-1%
New World Resources	9.2	5.4	4.7	39%	9.2	7.1	6.3	21%	7.5	8.3	7.0	4%
Zanaga	nm	nm	nm	na	nm	nm	nm	na	nm	nm	nm	na
Base Metals												
Antofagasta PLC	16.3	14.1	12.1	16%	16.3	11.9	12.3	15%	16.3	12.5	11.3	20%
First Quantum Minerals	16.5	26.3	13.1	12%	18.0	20.2	15.2	9%	14.6	10.3	8.4	32%
Kazakhmys Plc	5.5	6.1	5.3	2%	5.5	5.5	5.4	1%	6.0	6.2	6.0	-1%
Nyrstar	14.5	8.3	4.0	90%	14.5	7.2	5.3	65%	12.3	7.5	4.7	63%
Talvivaara	nm	49.6	9.6	na	nm	24.9	12.3	na	nm	18.2	7.1	na
Aluminium												
Norsk Hydro	nm	15.3	10.9	na	16.1	16.5	25.5	-20%	16.1	19.5	12.2	15%
Precious Metals												
African Barrick Gold	11.2	6.3	5.1	49%	11.2	6.2	6.1	36%	11.6	8.5	7.7	23%
Aquarius Platinum Plc	21.1	15.5	8.3	59%	21.1	22.9	24.6	-7%	13.7	16.3	8.5	27%
Centamin Egypt	9.0	6.3	4.5	41%	9.0	6.3	5.3	30%	8.4	6.4	4.4	39%
European Goldfields	nm	nm	nm	na	nm	nm	nm	na	nm	nm	294.6	na
Fresnillo Plc	22.2	19.1	16.9	15%	22.2	17.1	15.2	21%	21.5	21.0	18.4	8%
Gem Diamonds	10.6	9.8	10.8	-1%	nm	10.7	14.1	na	8.9	8.9	8.6	2%
Hochschild Mining	12.8	19.6	19.6	-19%	12.7	15.4	14.4	-6%	15.1	17.3	15.7	-2%
Lonmin Plc	14.8	14.9	9.5	25%	14.7	16.5	14.3	2%	15.6	17.8	11.9	14%
Petropavlovsk PLC	7.5	5.2	4.0	37%	7.5	5.2	4.8	25%	7.5	6.4	5.5	17%
Randgold Resources Plc	27.7	17.6	11.9	53%	27.7	17.4	14.0	41%	27.7	17.1	15.5	34%
South Africa												
African Rainbow	12.2	10.0	8.4	21%	12.2	13.4	13.3	-4%	10.8	8.5	7.2	23%
Assore	8.5	8.1	8.4	1%	8.5	9.6	9.2	-4%	8.2	7.1	6.3	14%
Exxaro	9.0	6.0	5.3	30%	9.3	7.4	7.1	14%	9.1	6.7	6.0	24%
Kumba Iron Ore Ltd	10.6	9.6	9.5	6%	10.6	11.1	9.8	4%	10.6	9.3	8.6	11%

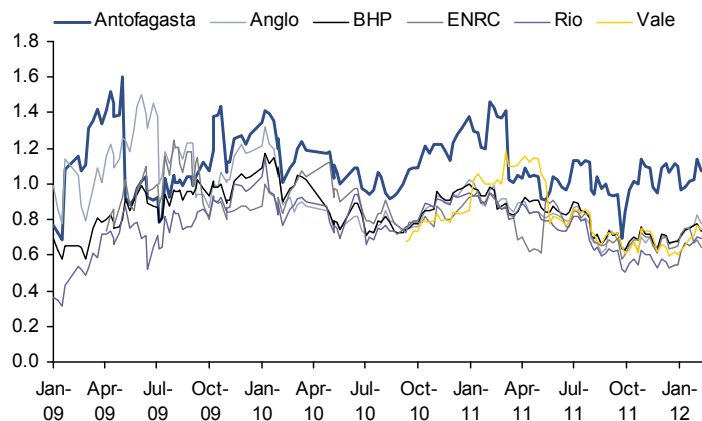
Source: Datastream, Citi Investment Research and Analysis, priced as at 13 Feb 2012

Figure 65. Valuations spot versus base versus consensus - PE

EV/EBITDA	Base				Spot				Consensus			
	2011E	2012E	2013E	11-13E CAGR	2011E	2012E	2013E	11-13E CAGR	2011E	2012E	2013E	11-13E CAGR
Diversified												
Anglo American PLC	4.4	4.1	3.4	13%	4.4	4.4	4.2	3%	3.9	3.7	3.1	11%
BHP Billiton PLC	6.5	6.7	5.9	5%	6.5	6.9	6.1	3%	6.7	6.2	5.7	8%
ENRC	3.4	3.4	3.1	5%	3.4	3.6	3.3	3%	3.4	3.6	3.1	5%
Rio Tinto PLC	5.1	4.7	4.1	11%	5.0	4.8	4.1	11%	4.9	5.1	4.5	4%
Vale	4.5	5.2	5.4	-9%	4.3	5.5	5.3	-10%	4.2	4.4	4.3	-2%
Weighted Average	6.1	6.0	5.3	7%	6.1	6.1	5.4	4%	5.3	5.5	5.0	6%
Bulks												
Ferrexpo PLC	4.0	4.4	4.0	1%	4.0	4.5	3.3	11%	3.9	4.5	3.9	1%
New World Resources	4.4	3.7	3.3	15%	4.4	4.3	3.9	6%	4.1	4.5	4.3	-1%
Zanaga	nm	nm	nm	na	nm	nm	nm	na	nm	nm	nm	na
Base Metals												
Antofagasta PLC	5.3	5.0	4.6	8%	5.3	4.4	4.7	7%	5.4	4.6	4.4	11%
First Quantum Minerals	7.1	8.4	4.8	22%	7.1	7.0	5.2	17%	6.8	4.8	4.0	30%
Kazakhmys Plc	5.1	5.6	4.6	5%	5.1	4.9	4.7	4%	4.9	5.0	5.0	-1%
Nyrstar	7.0	4.8	3.0	53%	7.0	4.4	3.6	40%	6.6	4.6	3.5	38%
Talvivaara	22.0	12.1	6.3	87%	21.4	9.8	7.1	74%	23.5	10.3	5.7	104%
Aluminium												
Norsk Hydro	4.3	5.0	4.1	3%	3.9	5.3	6.5	-22%	5.3	6.0	4.8	5%
Precious Metals												
African Barrick Gold	4.7	3.1	2.6	34%	4.0	3.9	3.7	4%	4.9	3.9	3.5	18%
Aquarius Platinum Plc	9.6	7.5	4.8	42%	9.6	9.4	9.7	0%	5.8	5.9	4.3	16%
Centamin Egypt	6.6	4.6	2.8	53%	6.6	4.6	3.3	41%	na	4.9	2.9	na
European Goldfields	nm	79.4	45.6	na	nm	66.7	34.1	na	nm	99.1	26.8	na
Fresnillo Plc	12.2	11.1	9.8	11%	12.2	10.2	9.2	15%	12.0	10.8	9.5	13%
Gem Diamonds	2.3	2.2	2.4	-3%	2.0	2.3	2.8	-16%	2.1	2.2	2.1	1%
Hochschild Mining	3.7	4.8	5.0	-13%	3.7	4.1	4.1	-4%	4.0	4.3	3.8	2%
Lonmin Plc	8.1	7.5	5.2	25%	8.0	8.0	7.0	7%	8.5	9.1	6.7	12%
Petropavlovsk PLC	5.9	3.8	3.0	39%	5.9	3.8	3.5	30%	5.5	4.6	3.9	18%
Randgold Resources Plc	16.9	11.2	7.5	50%	16.9	11.1	8.7	39%	17.4	10.3	9.1	38%
South Africa												
African Rainbow	6.4	5.5	4.8	16%	6.4	6.6	6.2	1%	5.8	4.8	4.1	19%
Assore	5.7	5.5	5.8	0%	5.7	6.4	6.2	-4%	5.4	4.7	4.0	16%
Exxaro	11.0	6.2	5.4	43%	11.1	7.5	7.6	21%	11.0	6.8	5.5	41%
Kumba Iron Ore Ltd	5.4	5.0	5.0	4%	5.4	5.7	5.2	2%	na	4.9	4.5	na

Source: Datastream, Citi Investment Research and Analysis, priced as at 13 Feb 2012

Figure 66. Price to NPV



Source: Citi Investment Research and Analysis

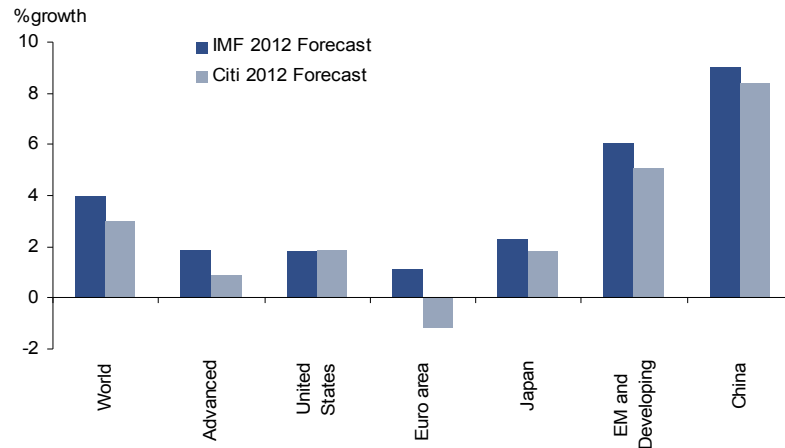
Figure 67. Price to NPV

			NPV per share		
			Base	Spot	%
Diversified					
Anglo American PLC	GBP	AAL.L	35.38	34.53	-2%
BHP Billiton PLC	GBP	BLT.L	28.00	29.20	4%
ENRC	GBP	ENRC.L	10.63	10.59	0%
Rio Tinto PLC	GBP	RIO.L	54.33	59.93	10%
Vale	USD	VALE.N	34.70	39.26	13%
Bulks					
Ferrexpo PLC	GBP	FXPO.L	4.47	7.35	64%
New World Resources	GBP	NWRR.L	8.08	6.89	-15%
Zanaga	GBP	ZIOC.L	1.45	1.95	34%
Base Metals					
Antofagasta PLC	GBP	ANTO.L	12.32	13.08	6%
First Quantum Minerals	GBP	FQM.L	15.21	15.13	-1%
Kazakhmys Plc	GBP	KAZ.L	14.54	16.74	15%
Nyrstar NV	EUR	NYR.BR	12.93	8.77	-32%
Talvivaara	GBP	TALV.L	6.13	6.41	5%
Aluminium					
Norsk Hydro (NOK)	NOK	NHY.OL	37.14	28.92	-22%

Source: Citi Investment Research and Analysis

Commodities

Figure 68. Citi and IMF Economic Forecasts for 2012



Source: IMF, Citi Investment Research and Analysis

Figure 69. China Less Dependent on Exports?



Source: Haver Analytics, Citi Investment Research and Analysis

- Citi's economic forecast sees global real GDP growth falling from +3.7% in 2011 to +3.0% growth in 2012 before recovering to +3.6% growth in 2013, more pessimistic than the recent IMF *World Economic Outlook* from November 2011.
- The non-OECD remains the driver of world growth. Citi forecasts advanced economies to grow a mediocre +0.9% in 2012 and a stronger +1.2% in 2013. However, growth in emerging and developing economies is also forecasted to slow from 2010 down to +5.6% in 2012 and +6% in 2013.
- But there are substantive tail risks to this economic outlook, both in the developed world (e.g. Eurozone sovereign defaults; financial contagion; the potential for inflation) and the developing world (e.g. China hard landing).
- While the Eurozone situation remains in flux, our base case assumes that a last-minute political breakthrough involving either or both the ECB and the IMF prevents a worst-case 'involuntary' or 'disorderly' Eurozone breakup.
- The slowdown in the advanced economies is again raising questions about the strength of "decoupling" and continued growth by emerging market economies. However, the share of exports in Chinese growth has fallen from its peak near 9% of GDP to only 4%, making it more resilient to external shocks.
- On the other hand, fears have also risen of a potential sudden stop in China, notably from its local banking sector, its small-medium enterprises (SMEs) and a collapse in its property sector. But in the short-term, China can call upon robust fiscal and monetary stimuli to counteract any slowdown and we feel risks of a hard landing in China, while eventually very real, are not yet immediate. China is forecasted to grow +8.7% in 2012 and +8.4% in 2013, down from the +9.1% growth in 2011.

Copper

2H 2012 softness

- While mine production has continued to be impacted by disruption related losses at major mining complexes, a clear softening in demand in the third quarter, combined with an increasingly bleak global macro-economic outlook, have weighed on prices as demand concerns came to the fore.
- Copper prices weakened significantly during the second half of 2011, with 3-month LME prices averaging \$7,530/t in Q4 compared to \$8,993/t in Q3, despite much publicized production problems and visible stock drawdowns. LME stock drawdowns represent a shifting of inventory to Asia (China) rather than a sign of stronger demand or significant lack of material availability.
- After H1 inventory draws, Chinese restocking stepped up after August 2011, with refined copper imports hitting 343,926 tons in November, a 29 month high. Chinese imports should remain strong as traders continue to take advantage of price dips to re-stock. Favorable LME-SFE arbitrage should continue to assist this trend.
- We estimate that the copper market was in deficit by 296,000 tons in 2011, should be roughly balanced next, before moving into modest surplus in 2013. Demand in developed economies in 2012 will remain subdued in our view, as Europe in particular struggles with high debt burdens, austerity measures and low consumer confidence. Indeed, we forecast European copper consumption to contract by 2.6% in 2012.
- We expect further near-term softness in copper prices, as European concerns continue to dog the macro-picture. While China will be out of the market for much of January due to the early new year, but with firm support at \$6,500/t. However, an improving macro-environment, plus new China stimulus should see an H2 rebound.

Figure 70. Global Copper Supply Demand Balance

kt	2009	2010	2011	2012e	2013e	2014e	2015e
Mine Production (Concentrates)	12,694	12,870	12,874	13,843	14,771	15,644	16,483
Secondary Supply etc. (incl losses)	1,271	953	1,308	1,285	1,317	1,118	898
Smelter Capacity	17,140	17,571	18,011	18,767	19,378	19,943	20,087
Smelter Production	13,924	13,873	14,229	15,107	16,084	16,752	17,375
Mine Production (Electrowon)	3,301	3,331	3,459	3,829	4,118	4,305	4,362
High Grade Scrap	1,380	1,829	1,720	1,550	1,500	1,350	1,450
Mine Production (Total)	16,107	16,334	16,650	17,601	18,889	19,949	20,884
Refined Production (Total)	18,605	19,033	19,478	20,486	21,701	22,407	23,187
% Change	0.6%	2.3%	2.3%	5.2%	5.9%	3.3%	3.5%
Consumption/Demand	17,357	19,170	19,774	20,522	21,451	22,256	23,085
% Change	-4.3%	10.4%	3.2%	3.8%	4.5%	3.8%	3.7%
Surplus/Deficit	1,258	-137	-296	-36	250	151	103
Stock Change	279	-107	83	-36	250	151	103
Stocks	1,125	1,017	941	905	1,155	1,306	1,408
Stock:Consumption Ratio (wks)	3.4	2.8	2.5	2.3	2.8	3.1	3.2
Price (US\$/lb)	2.41	3.42	4.00	3.55	3.87	3.72	3.63
(US\$/t)	5,318	7,543	8,829	7,825	8,525	8,200	8,000

Source: Wood Mackenzie, Citi Investment Research and Analysis

Aluminum

Continued tight prompt availability, and rising costs to support aluminum prices in 2012

- Aluminum fundamentals weakened appreciably through the final quarter of 2011, with significantly deliveries into the LME warehouse network taking LME inventory close to 5 million tons by the end of December. Despite production cutbacks in October/November, Chinese inventory has also picked up by over 130,000 tons between November and December.
- Aluminum premiums softened through 4Q'11, with US Mid-West P1020 premiums slipping to \$167/t compared to levels of close to \$200/t mid-year, Japan premiums have also seen a similar slide, pointing to a modest improvement in metal availability. However, it should be noted that in a historical context premiums still remain high. Reforms of LME warehouse load out rates come into effect in April 2012, but are unlikely to significantly ease US regional metal availability.
- We believe the current low interest rate will persist for quite a few years, ensuring that a significant volumes of aluminum inventory will remain locked up in financing deals. Concerns over tighter credit conditions impacting financing deals could be misplaced, with current revolvers likely to continue absorbing excess metal in 2012.
- With LME prices hovering around \$2,000/t we believe a sizable proportion of smelting capacity is facing negative cash cost vs. cash price basis. Chinese production has fallen from an annualised 19.2 mt in September to 17.8 mt in November, with smelter in Southern China also suffering from rising power tariffs. In Europe, Netherlands based ZALCO has filed bankruptcy, closing the 275,000 tpy Vlissingen smelter, as it struggled to meet power costs.
- The supply/demand outlook for the aluminum market is expected to remain in surplus over the forecast period, with stocks remaining at relatively high levels. However, the continuing impact of stock financing combined with the warehousing bottle neck caused by the minimum application of LME load rate guidance should limit the negative impact of over production. We see little downside risk from current price levels despite the continuing Euro debt crisis weighing on sentiment, with a solid floor to prices at around \$1,950/t. We expect an improving H2 macro-environment to lift prices in H2'12, with prices averaging \$2,275/t for the year as a whole.

Figure 71. Global Aluminum Supply Demand Balance

	2009	2010	2011	2012e	2013e	2014e	2015e
Smelter Capacity ktpy	49,330	50,215	52,898	56,210	62,250	66,899	70,521
Refined Production	37,704	41,148	45,179	47,462	50,938	54,243	57,716
Capacity Utilization (%)	78%	85%	88%	87%	86%	84%	84%
Supply Incr (%)	-5.9%	11.8%	7.2%	5.1%	7.3%	6.5%	6.4%
Consumption/Demand	34,521	40,949	44,648	47,018	50,327	53,827	57,409
Consumption Incr. (%)	-6.9%	18.6%	9.0%	5.3%	7.0%	7.0%	6.7%
MARKET BALANCE	3,183	1,199	531	444	611	415	307
Stocks	6,485	6,502	6,915	7,477	8,088	8,503	8,810
Stock Change	1,777	17	413	444	611	415	307
Stocks (weeks)	9.8	8.3	8.1	8.1	8.2	8.1	7.9
Price: US\$/lb	0.78	0.99	1.10	1.03	1.15	1.18	1.16
US\$/t	1,712	2,173	2,421	2,275	2,525	2,600	2,550

Source: Wood Mackenzie, Citi Investment Research and Analysis

Nickel

Global Downturn Worries and Surging Chinese Nickel-Pig-Iron Production Have Both Hurt the Price

- With the exception of a modest short-covering rally in July, nickel prices have been largely under pressure since the end of Q1 2011. Underlying stainless and therefore nickel demand has remained relatively firm through 2011, however the almost unbroken price decline has led to a significant destocking in the stainless steel supply chain due to pricing impact of the alloy surcharge mechanism on stainless prices.
- LME stocks declined almost continually through 2011, supporting the view of strong underlying demand. Indeed stocks fell from 137 kt in January to end the year at 90.5 kt. December did see some deliveries prompted by year-end accounting issues, but a strong 2H'11 stock build expected by many commentators failed to occur.
- The nickel market remained balanced during the second half of 2011, as production from two Brazilian ferro-nickel projects (Onca Puma and Barro Alto) fell below expectation, while a significant number of Chinese nickel-pig-iron (NPI) producers became uneconomic at sub \$18,500/t prices. Indeed estimates for 2011 NPI production are now significantly lower at around 190-200 kt compared to early 2011 forecasts of close to 300 kt. The possibility of the taxation of Indonesian ore exports in 2012 (and eventual ban by 2014) is likely to limit the growth potential of NPI going forward.
- HPAL production remains a key issue for the nickel market in 2012. Collectively, Vale's VNC plant in New Caledonia, First Quantum's Ravensthorpe plant, Sherrit's Amabato project, and the Ramu project in Papua New Guinea could add further 200 kt of productive capacity next year. However, given continuing technological issues, and years of delays, we are highly skeptical of any of the above projects adding meaningful production volumes in 2012.
- The market should move from a small annual deficit in 2011 to a very modest surplus in 2012. We do not believe nickel will face a tidal wave of new supply next year. We expect nickel prices to trade up from current levels in Q1 potentially to \$21,000/t, as the stainless sector restocks, but prices to average \$19,500/t for the year.

Figure 72. World Nickel Supply Demand Balance

kt	2009	2010	2011	2012e	2013e	2014e	2015e
Mine production	1,478	1,667	1,863	2,022	2,142	2,254	2,317
Refined capacity	2,037	2,115	2,291	2,440	2,462	2,522	2,522
Refinery utilization	64%	68%	70%	71%	76%	78%	81%
Nickel in Pig iron	67	124	191	199	211	214	217
Metal production	1,310	1,435	1,596	1,737	1,876	1,972	2,043
Supply	1,310	1,435	1,596	1,737	1,876	1,972	2,043
Supply (%)	-5.2%	14.0%	7.4%	9.3%	5.2%	6.5%	3.8%
Consumption/Demand	1,295	1,533	1,618	1,740	1,831	1,954	2,050
Consumption (%)	-2.7%	18.3%	5.5%	6.3%	6.5%	6.7%	5.0%
Surplus/Deficit	14.3	-97.7	-21.6	17.0	44.7	18.3	-7.8
Reported stocks	163.6	143.2	121.7	138.6	183.4	201.6	193.8
Stock change	8.1	9.6	-21.7	17.0	44.7	18.3	-7.8
Stocks (wks)	6.6	4.9	3.9	4.2	5.2	5.4	4.9
Price - US\$/lb	6.74	9.89	10.38	8.85	10.35	11.18	10.89
- US\$/t	14,862	21,814	22,888	19,500	22,820	24,650	24,000

Source: Wood Mackenzie, Citi Investment Research and Analysis

Zinc

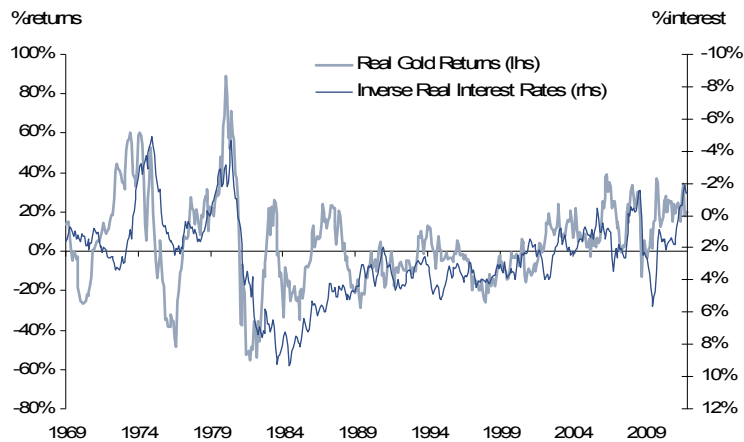
- After a modest rally towards the end of November, zinc prices have struggled for momentum, with a combination of rising stocks in November and December adding to the general macro-economic related negative sentiment impacting the base metals sector.
- In the short-term at least, zinc retains the weakest near-term fundamentals of the major base metals. While zinc demand outpaced supply during 2011, the level was still not significant enough to prevent a fourth year in a row of significant surplus, heightening zinc vulnerability to increasing macro-economic uncertainty.
- Global zinc demand declined to 5.9% growth in 2011 compared to 14.7% in 2008, as auto sector demand in particular slowed as the removal of government subsidies early in the year prompted auto sales to slow to 4% compared to over 30% in 2010, while fixed asset investment related demand for zinc fell during 2H'11 as monetary tightening impacted.
- After peaking in July 2011 at 890 kt, LME stocks did begin to draw through the third quarter of 2011. However, through December deliveries again picked-up with total LME inventory levels ending the year at 821 kt, up 120 kt over the year as a whole. Total exchange stocks hit almost 1.3 million tons in mid August and remain high at close to 1.2 million tons. With a forward curve firmly in contango, we believe that a substantial portion of these stocks are tied up in financing deals as is the case with aluminum, and thus remain unavailable to the market.
- We expect another albeit smaller surplus in 2012, but project the market to begin to tighten towards 2014 on slowing mine supply growth due to depletion at a number of major mining complexes. With prices close to marginal cost of production, we see a relatively firm floor at \$1,800/t, and expect prices to pick-up through 2012 in line with an improving macro environment. However, short-term, continued over production will likely limit the extent of any price rallies.

Figure 73. Global Zinc Supply Demand Balance

kt	2009	2010	2011	2012e	2013e	2014e	2015e
Mine production	11,531	12,174	12,744	13,222	13,593	14,324	14,793
Concentrate required	10,935	12,528	12,747	13,087	13,539	13,797	14,290
Metal production	11,203	12,730	13,097	13,475	13,913	14,332	14,084
Smelter Capacity	11,174	12,683	13,101	13,335	15,123	16,862	17,223
Primary prodn	10,430	11,949	12,158	12,483	12,914	13,333	13,974
Secondary prodn	773	881	938	992	1,000	1,000	1,010
Supply	11,203	12,830	13,097	13,475	13,913	14,332	14,811
Supply (%)	-3.8%	14.5%	2.1%	2.9%	3.3%	3.0%	3.3%
Consumption	10,278	11,792	12,487	13,045	13,701	14,392	15,115
Consumption (%)	-7.1%	14.7%	5.9%	4.5%	5.0%	5.0%	5.0%
MARKET BALANCE	925	1,038	610	430	212	-60	-304
Reported stock change	288	122	358	430	212	-60	-304
Total stocks	1,005	1,126	1,484	1,914	2,125	2,066	1,762
Stocks (wks)	5.1	5.0	6.2	7.6	8.1	7.5	6.1
Price (US\$/lb)	0.79	0.98	1.00	0.93	1.04	1.15	1.09
(US\$/t)	1,732	2,161	2,212	2,050	2,295	2,525	2,400

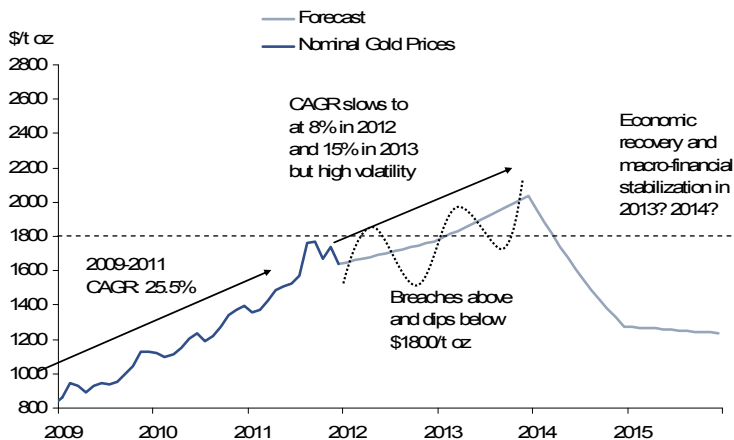
Source: Wood Mackenzie, Citi Investment Research and Analysis

Figure 74. Gold Returns and Inverse Real Interest Rates



Source: IMF, Citi Investment Research and Analysis

Figure 75. Gold Price History and Forecast to 2015



Source: Haver Analytics, Citi Investment Research and Analysis

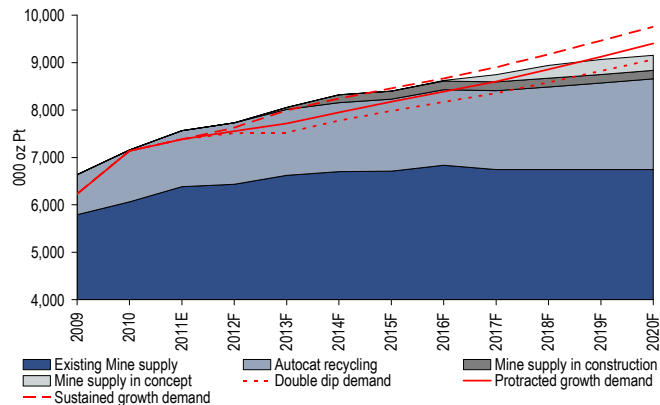
Gold

- Gold has performed outstandingly from 2009 to 2011, with a CAGR of over 25%. This has been a function of its special status as a universally accepted medium-of-exchange and financial store of value.
- In our view, during periods of macro-financial uncertainty (which we expect will continue for the foreseeable future), three major macro-financial factors should drive nominal and real gold returns: denomination effects from inflation and currency adjustments, real interest rates and financial demand for gold as a safe haven and source of liquidity.
- The inflation outlook generally looks stable and our economics team is forecasting global inflation to fall from 3.9% to 3.0% in 2012 and 2.9% in 2013. For the US, CPI inflation is expected to fall to only 1.8% and 1.7% in 2012 and 2013 respectively. Also, our FX strategy team is seeing the dollar continue to rally slightly against the euro and EURUSD to press the 1.20-1.30 range. Both of these should provide bearish pressure on dollar-denominated gold prices.
- Real interest rates are expected to remain low given the gloomy economic outlook and more unconventional QE may be further down the line. But for now, the world's central banks, particularly the Fed, may play more of a wait-and-see game, testing the efficacy of the Fed's new initiative to provide transparency on its own forecast for target rates.
- Meanwhile, due to the still unresolved situation in the EMU, investors both private and public, may seek to balance financial demand for gold with sales for liquidity. Central banks had shifted to becoming net buyers of gold in 2011 for the first time in two decades, buying an estimated net 192 tons, but there is evidence that the central banks of some troubled European sovereigns are selling gold stockpiles for austerity and liquidity reasons.
- Hence, in our base forecast, we are forecasting 8% CAGR in 2012 and 15% in 2013, followed by a rapid correction down to an average \$1250 price for 2015 due to a broader global economic recovery and macro-financial stabilization. We see bullion prices averaging \$1,710/t oz. in 2012.

Platinum Group Metals

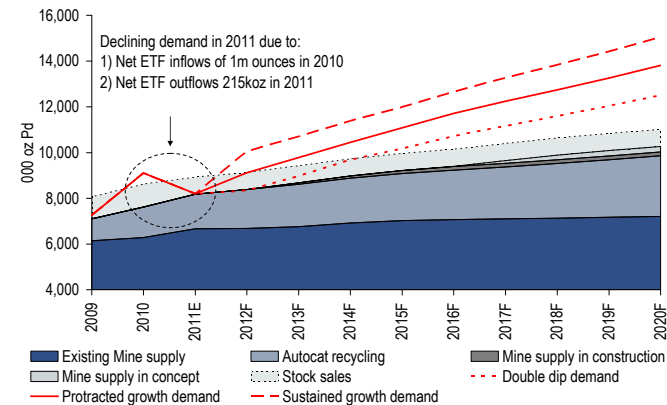
- We have made minor downgrades to our below-consensus platinum price assumptions and remain cautious on its 12-24 month outlook. We upgraded our 2013-2015 assumptions for palladium by 6-8% and our long-term price by 9%. We downgraded our 2012 palladium assumptions by 7% given recent exchange traded fund sales.
- We maintain our medium-term surplus outlook for platinum. This is as we forecast 1) a 6% decrease in Western European LV production in 2012, 2) a decrease in the diesel penetration rate, and 3) continued substitution of platinum with palladium. Our previous 400-600koz p.a. surplus outlook has however been reduced to 100-350koz p.a., mainly due to 1) higher safety related stoppages in South Africa, and 2) stronger jeweler sales in China.
- Even though weaker global economic sentiment and net sales in ETFs have weighed on the palladium price during 2H'11, we expect a strong recovery in the palladium price in 2012. This is as we continue to forecast a rising deficit market in palladium, mainly due to growth in light vehicle (LV) production in gasoline-based markets (in particular China and the US). The sheer size of these two markets combined (40% of global vehicle production) implies significant palladium demand uplift, even in a muted growth environment.

Figure 76. CIRA Platinum Supply-Demand Profile



Source: GFMS, Citi Investment Research and Analysis estimates

Figure 77. CIRA Palladium Supply-Demand Profile

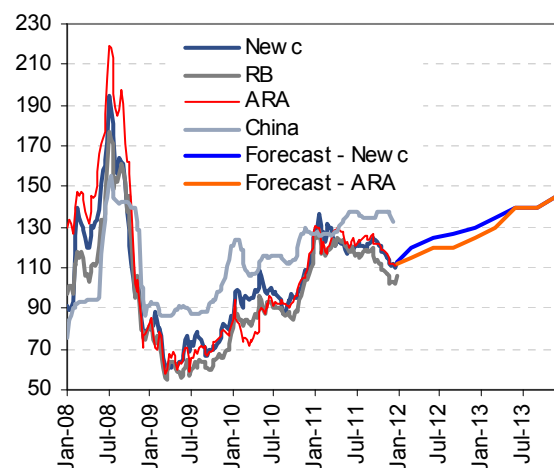


Source: GFMS, Citi Investment Research and Analysis estimates

Thermal Coal – Treading Water

- We have downgraded our price forecasts for thermal coal in 2012 due to a combination of weaker economic growth, slower than expected recovery in demand from Japan as well as lower imports from India and China. Overall we still expect thermal coal market to remain tight but the short term factors will hinder prices moving significantly higher over next few months. Our spot Newc price for 2012 has been cut by 7% to \$126/t, while weakening economic growth in Europe should result in API2 prices underperforming against Asia and average \$120/t (down -11%).
- Indian buying interest has remained muted as utilities push back on imported thermal coal as high coal prices, poor domestic coal production and capped electricity tariffs are making many plants uneconomic. While lower economic growth has the potential to alleviate the tight power situation that is developing, we believe this situation is unsustainable over the longer term and India will be forced to increase use of imported coal. Demand in Japan has grown at a slower pace than we expected. The repairs to damaged coal-fired utilities have been slow, which has hindered demand for imported coal, but with two major plants due online in 1H'12, we see Japanese imports picking up markedly in 2Q'12.
- China remains the bright spot with increasing demand and a positive 'arb' inducing higher imports. With inflation now looking under control, the ability of the central government to increase electricity has improved. Thus we expect Chinese utilities to start re-invigorating spare capacity as their economics stabilize and become more favorable. The continued appreciation of CNY currency should also help.
- The major downside is European demand, where the spectre of anaemic growth in Europe doesn't bode well for thermal coal demand in that region. The only saving grace is Germany's increasing reliance on thermal coal after it shut 7 nuclear power plants earlier this year. But clearly this will remain a significant tail risk for 2012.

Figure 78. Thermal Coal Spot Prices & Forecasts



Source: Bloomberg, Platts, Citi Investment Research and Analysis

Figure 79. Thermal Coal Supply & Demand Forecasts

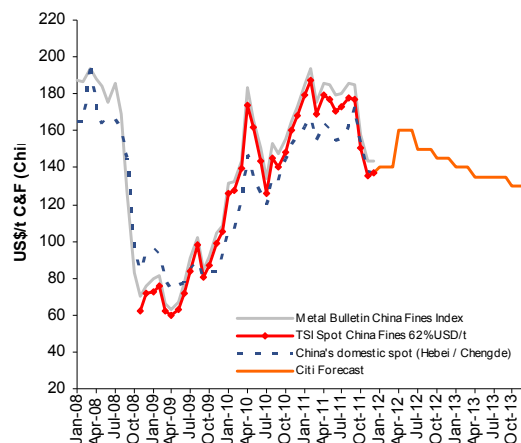
IMPORTS (Mt)	2010	2011	2012E	2013E	2014E	2015E	2016E
Japan	119.6	113.2	123.8	125.5	127.3	128.4	132.8
South Korea	89.1	86.0	91.4	97.2	103.8	110.8	120.7
Taiwan	53.2	62.4	62.4	62.4	62.4	62.4	61.9
India	48.6	95.6	118.4	127.7	130.3	126.2	117.1
EC	108.7	127.4	132.2	131.8	134.6	133.3	135.1
Others	241.1	223.5	238.8	261.9	288.3	330.9	342.3
Total	660.4	708.0	767.0	806.5	846.7	891.9	909.9
EXPORTS (Mt)	2010	2011	2012E	2013E	2014E	2015E	2016E
Australia	140.9	152.9	177.5	186.6	200.5	215.6	219.8
South Africa	70.0	73.0	74.0	77.0	80.0	82.3	82.0
Russia	80.4	88.1	96.4	102.6	102.6	117.2	118.4
Indonesia	215.5	242.0	265.0	300.0	320.0	323.6	341.9
Columbia	62.0	64.0	69.1	69.1	69.1	75.2	79.2
Vietnam	24.0	20.0	25.8	22.0	23.0	20.7	19.4
Other	57.0	67.8	54.8	44.5	48.8	47.9	51.0
Total	649.7	707.8	762.6	801.8	844.1	882.5	911.8
IMPLIED MARKET BALANCE	-10.7	-0.2	-4.4	-4.7	-2.7	-9.3	1.9

Source: Wood Mackenzie, Tex Report, Platts, Citi Investment Research and Analysis

Iron Ore – Intermission Lingers On...

- We have kept our iron ore price forecasts unchanged from last month's update ("[Bulk Commodities - No short term recovery in Iron Ore prices](#)"). We remain convinced Chinese steel mills are unlikely to restock in the short term, keeping gains in iron ore prices muted. In 2012 we are assuming a relatively low growth rate in steel output of only 2.5%; but we remain mindful that any further deterioration in the macro environment could result in this being even lower. If so, iron ore prices could struggle to move higher from current levels.
- Major steel mills are still cutting capacity; which has shown up in the latest steel production figures issued by China's CISA showing that daily production in early November was 1.66Mt per day, equivalent to ~607Mtpy. Plus with inventories at relatively healthy levels in China, we can't see why Chinese steel producers would come back into the market aggressively this year.
- With an early Chinese New Year (23-Jan), it's conceivable that steel mills could shut up shop and not return until mid-February. Therefore we don't expect to see the typical end of year restocking that is normally the case. But with the Chinese government indicating last week its willingness to stabilize the economy (by cutting the RRR by 50bps), we expect the steel industry to be a little bit more comfortable in reinvigorating capacity once it does return. This should result in a huge surge in steel output in 2Q'12, and thus pushing iron ore prices significantly higher. As such, we reiterate our 6-12m price target of \$165/t.
- Projects continue to be delayed due to a combination of high capital costs, regulatory issues and construction delays. As a result, our expected surplus in 2014 has been significantly reduced to only 14mt (down from 30Mt previously). The previously forecast surplus in subsequent years also been reduced.
- We believe rising costs and the recovery of freight rates over the longer term to be supportive of iron ore prices. With capital intensity as high as \$180/t, an iron ore price over \$85/t FOB is required to produce an IRR of 15%. This should keep prices well supported at current levels.

Figure 80. Iron Ore Prices and Forecast



Source: Tex, MB, Platts, Citi Investment Research and Analysis

Figure 81. Iron Ore Supply Demand Balance

Mt	2010	2011	2012e	2013e	2014e	2015e	2016e
SEABORNE IMPORTS							
China	619	678	711	741	760	781	800
Japan	134	133	137	137	137	137	140
Taiwan	19	14	15	15	15	16	16
EEC	120	115	96	105	106	108	109
USA	7	7	9	9	9	9	9
Others	98	109	115	121	157	206	304
Total	997	1,056	1,082	1,129	1,185	1,257	1,377
SEABORNE EXPORTS							
Australia	413	433	480	531	596	674	735
Brazil	311	308	330	342	373	402	454
India	102	90	70	65	60	48	51
Canada	28	25	25	25	25	25	25
Africa	57	59	70	83	100	107	111
Other	69	71	56	53	45	48	37
Total	980	986	1,031	1,099	1,200	1,304	1,412
MARKET BALANCE	-16.3	-69.5	-50.5	-30.0	14.8	47.4	34.8

Source: Tex Report, Citi Investment Research and Analysis

Figure 82. Commodity Price Outlook

CALENDAR YEARS		2010	2011	2012e	2013e	2014e	2015e	Long term
AVERAGE EXCHANGE RATES								
A\$/US\$		0.92	1.03	1.03	0.96	0.92	0.89	0.90
EURO/US\$		1.33	1.39	1.38	1.37	1.37	1.36	1.30
US\$/ZAR		7.32	7.26	8.35	8.72	9.08	9.47	10.00
PRECIOUS METALS & DIAMONDS								
Gold	US\$/oz	1229	1574	1709	1912	1610	1254	1050
Silver	US\$/oz	20.24	35.39	29.75	27.13	24.13	21.13	15.00
Platinum	US\$/oz	1614	1722	1609	1675	1725	1700	1550
Palladium	US\$/oz	529	734	775	925	900	850	620
BASE METALS								
Aluminium	US\$/t	2,173	2,423	2,275	2,525	2,600	2,550	2,250
Copper	US\$/t	7,543	8,829	7,825	8,525	8,200	8,000	6,200
Nickel	US\$/t	21,814	22,888	19,500	22,820	24,650	24,000	20,000
Zinc	US\$/t	2,161	2,212	2,050	2,295	2,525	2,400	2,100
Lead	US\$/t	2,148	2,391	2,150	2,400	2,600	2,500	2,200
Uranium	US\$/lb	46	57	50	50	50	50	50
COAL								
Contract prices								
Asia								
Hard coking	US\$/t	191	289	256	248	240	230	200
Thermal Asia	US\$/t	97	121	126	140	153	149	105
Thermal Europe	US\$/t	97	122	120	139	153	149	109
IRON ORE								
Asia	Spot \$US/t	147	168	149	135	125	120	81
PETROLEUM								
Oil (WTI)	US\$/bbl	83	95	72	93	88	90	81
Oil (Brent)	US\$/bbl	83	110	86	102	87	89	85

Source: Datastream, Bloomberg, Citi Investment Research and Analysis

Industrial Commodities: Snap Shot – 3 to 6 month view*

Bearish

- Copper
- Lead
- Silver

Neutral

- Thermal Coal
- Aluminium
 - Zinc
- Nickel
- Platinum

Bullish

- Iron Ore
- Coking Coal
- Carbon Steel
- Palladium

Source: Citi Investment Research and Analysis. *Price relative to the forward curve

Mining World in Q112 - Event Calendar

Date	Company	Type	Analyst
12-Jan-12	Ferrexpo	Q411 production	Tom O'Hara
17-Jan-12	Rio Tinto	Q411 production	Heath Jansen
18-Jan-12	African Barrick	Q411 results	Jon Bergtheil
18-Jan-12	BHP	Dec11 Quarter production	Heath Jansen
18-Jan-12	Fresnillo	Q4 production	Jon Bergtheil
18-Jan-12	Hochschild Mining	Q4 production	Jon Bergtheil
26-Jan-12	Gem Diamonds	Q411 Trading Statement	Jon Bergtheil
23-Jan-12	New World Resources	Trading update	Tom O'Hara
24-Jan-12	Aquarius Platinum	Q212 results	Jon Bergtheil
26-Jan-12	Anglo American	Q4 IMS	Heath Jansen
26-Jan-12	Kazakhmys	Q311 production	Anindya Mohinta
26-Jan-12	Lonmin	Q1 production	Jon Bergtheil
26-Jan-12	Lonmin	AGM	Jon Bergtheil
26-Jan-12	Petropavlovsk	Trading update	Jon Bergtheil
30-Jan-12	Centamin	Q411 earnings	Jon Bergtheil
31-Jan-12	Vedanta	Q3 FY 2010-11 Production	Anindya Mohinta
01-Feb-12	Outokumpu	FY11 results	Anindya Mohinta
01-Feb-12	Antofagasta	Q411 production	Anindya Mohinta
01-Feb-12	ENRC	Q411 production	Anindya Mohinta
06-Feb-12	Aperam	Q411 earnings & 2011 results	Anindya Mohinta
06-Feb-12	Randgold	Q4 results	Jon Bergtheil
07-Feb-12	ArcelorMittal	Q4 & 2011 results	Anindya Mohinta
08-Feb-12	BHP	FY12 Interim	Heath Jansen
09-Feb-12	Aquarius Platinum	1H 2012 results	Jon Bergtheil
09-Feb-12	Rio Tinto	2011 Annual results	Heath Jansen
10-Feb-12	Boliden	YE report 2011	No coverage
10-Feb-12	SSAB	YE 2011	Anindya Mohinta
15-Feb-12	Voestalpine	Q3 FY 2011-2012	Anindya Mohinta
16-Feb-12	African Barrick	2011 prelims	Jon Bergtheil
16-Feb-12	Norsk Hydro	Q411 results	Heath Jansen
16-Feb-12	Talvivarra	FY11 results	Mike Flitton
17-Feb-12	Anglo American	FY results	Heath Jansen

Source: Citi Investment Research and Analysis



Date	Company	Type	Analyst
23-Feb-12	New World Resources	FY11 results	Tom O'Hara
23-Feb-12	Nyrstar	FY11 results	Jatinder Goel
01-Mar-12	Kazakhmys	Trading update	Anindya Mohinta
05-Mar-12	Salzgitter	Key data for FY11	Anindya Mohinta
07-Mar-12	Klockner	FY11 results	Anindya Mohinta
07/ 08 Mar-12	Citi's Global Resources Conference		
13-Mar-12	Antofagasta	FY11 results	Anindya Mohinta
14-Mar-12	Ferrexpo	Prelims	Tom O'Hara
14-Mar-12	Ferrexpo	FY11 results	Tom O'Hara
14-Mar-12	Outokumpu	AGM	Anindya Mohinta
21-Mar-12	ENRC	2011 prelims	Anindya Mohinta
26-Mar-12	SSAB	AGM	Anindya Mohinta
28-Mar-12	Petropavlovsk	FY11 results	Jon Bergtheil
30-Mar-12	Salzgitter	Annual Press Conf	Anindya Mohinta

Source: Citi Investment Research and Analysis

Company Section – Metals, Mining & Steel

(All company prices as at Feb 14 2012)

Figure 83. Metals & Mining | Comparable Valuation Sheet (cont.)

Company Name	Reuters Code	Rating	Market Cap USD \$m	Ccy	Share				P/E (x)			EV/EBITDA (x)			Dividend yield (%)			Free cash flow yield (%)			ROCE (%)		
					Price	Target	Upside	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	
UK/Europe																							
Anglo American PLC	AALL	2	58,790	GBP	28.17	30.00	6%	9.8	9.2	7.9	5.2	4.5	3.6	1.7	2.1	2.5	15.9	9.0	12.2	14.0	13.3	14.7	
African Barrick Gold Plc	ABGL.L	1	3,349	GBP	5.18	6.55	26%	11.4	6.4	5.1	5.1	2.8	1.7	1.4	3.1	3.9	8.2	22.2	26.1	12.6	20.2	23.7	
Antofagasta PLC	ANTO.L	3	20,957	GBP	13.48	10.10	-25%	16.1	14.4	12.3	5.7	5.5	5.1	4.6	4.7	4.8	10.1	8.8	9.8	29.8	31.6	33.4	
Aquarius Platinum Ltd	AQP.L	2	1,107	GBP	1.49	1.65	11%	54.9	42.8	11.5	15.8	9.3	5.1	1.0	0.4	0.4	-1.4	1.2	10.7	6.0	4.8	10.5	
BHP Billiton PLC	BLT.L	1	231,874	GBP	20.83	23.00	10%	9.2	8.7	8.0	5.9	6.3	5.8	3.1	3.7	4.0	-6.4	-11.6	-7.6	27.4	20.4	18.8	
Centamin Egypt Limited	CEY.L	1	1,678	GBP	0.97	1.04	7%	11.4	6.4	4.5	8.5	4.4	2.3	0.0	0.0	0.0	2.7	9.4	15.5	32.3	36.4	44.7	
European Goldfields Limited	EGUq.L	1	2,117	GBP	7.30	9.92	36%	-182.8	-149.7	-82.3	2579.6	85.7	55.4	0.0	0.0	0.0	-4.9	-14.0	-13.0	-1.4	2.6	3.9	
First Quantum Minerals Ltd	FQM.L	2	10,101	GBP	13.73	14.00	2%	18.0	26.9	13.4	7.6	9.2	5.5	3.1	0.7	1.4	-6.4	-11.3	-2.3	20.4	10.5	15.9	
Fresnillo Plc	FRES.L	2	20,049	GBP	17.73	16.68	-6%	20.6	19.3	17.1	11.1	10.9	9.4	3.6	2.1	2.3	0.5	3.4	4.2	56.0	56.4	63.0	
Ferrexpo PLC	FXPO.L	1	3,194	GBP	3.44	4.45	29%	6.8	6.7	5.9	4.8	4.4	3.7	1.1	1.2	1.2	4.8	5.3	10.7	51.4	35.8	33.6	
Gem Diamonds	GEMD.L	1	515	GBP	2.36	2.61	11%	11.2	9.9	10.9	3.3	3.1	3.7	0.0	0.0	0.0	6.9	-7.9	-11.9	16.6	15.8	12.0	
Hochschild Mining Plc	HOCM.L	2	2,759	GBP	5.18	4.75	-8%	12.6	19.5	19.5	4.3	5.3	5.6	1.6	1.0	1.0	12.2	-3.8	3.0	36.8	23.0	19.7	
Kazakhmys Plc	KAZ.L	1	9,509	GBP	11.39	15.20	33%	6.0	6.2	5.3	2.7	2.1	1.7	1.9	2.9	3.2	7.0	1.6	-3.2	20.9	18.0	17.8	
Lonmin PLC	LMIL	2	3,307	GBP	10.35	11.05	7%	21.0	15.4	9.8	8.8	5.4	3.7	1.2	1.6	2.6	-2.2	6.0	10.3	5.6	5.7	8.4	
Norsk Hydro ASA	NHY.OL	3	11,400	NOK	31.48	30.00	-5%	-8.2	15.3	10.9	3.5	3.9	2.9	0.0	2.0	2.7	-3.0	4.6	11.5	10.0	4.5	6.2	
New World Resources	NWRR.L	1	2,161	GBP	5.18	7.20	39%	13.2	6.3	5.6	5.4	3.9	3.5	3.8	8.0	9.0	3.5	7.7	14.7	16.3	20.9	21.7	
Nyrstar NV	NYR.BR	1	1,680	EUR	7.49	9.10	21%	16.6	8.5	4.1	6.9	4.8	2.7	1.2	1.3	1.3	-52.9	9.2	26.7	7.2	8.4	15.7	
Petropavlovsk PLC	POG.L	1	2,121	GBP	7.16	8.34	16%	9.0	5.2	4.0	6.8	4.1	3.0	0.6	0.7	0.7	-20.0	7.7	19.7	12.6	15.6	18.4	
Rio Tinto PLC	RIO.L	1	106,944	GBP	38.46	49.00	27%	7.5	7.6	6.7	4.1	3.5	2.8	2.3	2.8	3.2	1.3	6.1	10.0	18.3	15.4	15.4	
Randgold Resources Ltd	RRS.L	1	10,326	GBP	71.45	88.84	24%	22.4	17.5	11.8	13.7	11.3	7.4	0.9	1.1	1.7	1.4	0.2	6.1	26.7	32.1	40.0	
Talvivaara Mining Company	TALV.L	2	1,332	GBP	3.43	3.25	-5%	-64.8	60.7	11.7	23.9	12.4	6.3	0.0	0.0	0.0	-10.1	-1.3	13.6	1.7	6.1	14.3	
Zanaga Iron Ore Company	ZIOC.L	1H	442	GBP	1.00	1.50	50%	-131.7	-268.2	-268.2	-210.6	-111.5	-112.4	0.0	0.0	0.0	-0.5	-0.4	-0.4	-2.5	-0.9	-0.9	
Eastern Europe, South Africa & Latin America																							
United Company Rusal	0486.HK	1	12,638	HKD	6.45	8.00	24%	6.7	5.4	4.4	6.7	4.1	3.1	0.0	0.0	0.0	3.2	9.2	9.3	12.3	12.0	13.9	
Anglo American	AGLJ.J	2	58,954	ZAR	342.3	380.0	11%	9.8	9.2	7.9	5.2	4.5	3.6	1.7	2.1	2.4	16.0	9.0	12.1	14.0	13.3	14.7	
ALBA	ALBHBq.L	2	2,189	USD	7.00	7.20	3%	6.7	8.8	6.9	5.9	5.7	4.6	5.9	5.7	7.3	13.5	15.2	20.6	15.2	8.4	10.7	
Anglo American Platinum Ltd	AMSJ.J	3	19,231	ZAR	548.0	510.0	-7%	45.1	29.8	25.3	12.8	11.9	10.8	1.1	2.2	2.5	2.6	0.5	2.1	6.1	6.9	7.7	
AngloGold Ashanti Ltd	ANGJ.J	2	17,384	ZAR	349.5	360.0	3%	12.6	11.0	7.7	6.3	5.4	3.7	1.0	1.1	1.6	6.0	6.7	14.0	19.3	19.6	26.5	
African Rainbow Minerals	ARIJ.J	1	5,293	ZAR	190.3	230.0	21%	11.6	9.7	8.3	5.2	4.4	3.7	2.7	3.4	3.9	3.2	6.5	10.2	14.7	15.8	17.1	
Assore Limited	ASRJ.J	1	4,473	ZAR	246.2	280.0	14%	7.1	7.7	8.3	4.8	5.2	5.2	3.1	3.9	4.7	7.7	10.3	11.6	31.0	28.8	25.4	
Buenaventura SAA	BVN.N	1	11,207	USD	40.77	50.00	23%	12.5	11.2	12.3	13.1	14.0	14.4	0.8	0.9	0.8	0.2	-0.9	-5.5	35.7	33.5	27.0	
Eurasian Natural Resources Corporation PLC (ENRC)	ENRC.L	1	14,254	GBP	7.02	9.10	30%	7.7	6.9	6.4	4.5	4.1	3.7	2.4	2.6	2.8	1.5	-5.0	13.3	18.0	14.7	14.4	
Gold Fields Ltd	GFIJ.J	3	11,989	ZAR	127.2	115.0	-10%	11.4	9.5	7.5	4.6	4.3	3.5	2.6	3.1	3.9	0.4	11.5	16.6	16.0	17.2	21.9	
Grupo Mexico	GMEXICOB.MX	2	25,948	MXN	42.35	37.90	-11%	10.9	15.4	14.1	5.6	6.9	6.1	4.7	3.2	3.6	7.0	6.3	4.1	32.2	22.8	22.7	
Norilsk Nickel	GMKN.RTS	2	33,398	USD	175.2	225.0	28%	8.5	7.2	6.3	5.6	4.2	3.5	2.9	3.5	4.0	8.3	7.9	9.8	29.1	22.9	23.7	
Harmony Gold Mining Co. Ltd	HARJ.J	3	5,577	ZAR	99.36	85.00	-14%	23.3	17.1	13.7	10.3	6.9	5.2	0.4	0.7	1.3	2.0	6.1	9.4	5.2	7.7	10.0	
Impala Platinum	IMPJ.J	1	13,810	ZAR	168.0	220.0	31%	16.3	12.7	10.5	8.4	6.6	5.5	3.1	3.8	4.6	3.2	4.3	5.5	14.4	15.3	17.4	
Jordan Phosphates	JOPH.AM	3	1,280	JOD	12.09	8.00	-34%	13.3	12.8	14.4	9.2	9.0	11.3	1.1	1.2	1.2	-1.0	1.2	3.5	14.5	11.2	9.3	
Jastrzębska Spółka Węglowa	JSW.WA	1	4,054	PLN	107.7	119.0	10%	7.0	5.1	6.1	3.7	2.8	3.0	0.8	4.0	5.9	9.2	14.1	10.7	25.5	33.1	24.8	
Kuzbass Fuel Company	KBTK.MM	1	527	RUB	159.0	239.4	51%	9.8	6.4	5.4	5.8	3.8	3.2	2.6	3.9	4.6	4.8	1.0	15.5	22.4	23.2	23.9	
Kety SA	KETY.WA	1	343	PLN	117.8	130.0	10%	10.2	10.9	9.8	6.1	6.4	6.0	4.4	3.7	4.1	0.9	6.2	8.6	10.2	8.9	8.9	
Exxaro Resources Limited	EXXJ.J	1	9,358	ZAR	203.0	215.0	6%	7.5	6.1	5.4	8.9	5.8	4.7	4.2	6.0	6.8	4.9	9.0	15.8	32.5	37.7	35.8	

Source: Citi Investment Research and Analysis, priced as at 14 Feb 2012.

Figure 84. Metals & Mining | Comparable Valuation Sheet (cont.)

Company Name	Reuters Code	Rating	Market Cap USD \$m	Ccy	Share			P/E (x)			EV/EBITDA (x)			Dividend yield (%)			Free cash flow yield (%)			ROCE (%)		
					Price	Target	Upside	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E
Eastern Europe, South Africa & Latin America																						
Norham Platinum	NHMJ.J	1	1,625	ZAR	32.65	45.00	38%	32.6	16.0	9.6	19.4	10.1	6.2	0.7	1.5	2.5	-1.7	-5.2	1.3	3.3	5.5	8.0
Southern Copper Company	SCCO.N	2	28,177	USD	33.15	31.66	-4%	13.1	17.0	16.2	8.1	9.1	8.4	6.2	2.9	3.2	4.9	3.6	1.1	49.2	34.9	30.9
Polymetal	PMTLq.L	1	6,025	USD	16.51	28.00	70%	13.5	9.7	9.6	8.6	5.9	5.3	0.0	0.0	0.0	7.8	7.5	9.0	26.9	32.0	30.1
Raspadskaya	RASP.MM	1	3,062	RUB	117.4	179.6	53%	13.3	4.3	6.9	8.0	2.8	3.9	4.1	5.8	3.6	3.1	13.0	10.0	17.7	35.5	21.3
Royal Bafokeng Platinum	RBPJ.J	1	1,268	ZAR	59.00	65.00	10%	22.9	17.4	14.6	10.4	8.7	8.2	0.0	0.0	0.0	-4.5	-10.6	-15.7	3.0	3.8	4.5
Vale (Preferred)	VALEp.N	1	133,092	USD	25.34	29.00	14%	6.4	7.6	8.0	4.8	5.0	5.2	1.4	1.1	1.2	7.6	1.7	1.9	22.5	15.7	13.3
Australia																						
Alacer Gold	AQG.AX	2	3,023	AUD	8.78	10.00	14%	30.9	13.2	9.1	14.8	7.4	5.4	0.0	0.0	0.0	9.6	3.7	7.4	12.8	13.9	18.3
Aquarius Platinum Ltd	AQP.AX	2	1,126	AUD	2.23	2.60	17%	55.0	43.5	11.7	15.8	9.5	5.1	1.0	0.4	0.4	-1.4	1.2	10.5	6.0	4.8	10.5
Alumina Ltd	AWC.AX	2	3,183	AUD	1.22	1.30	7%	49.7	91.7	16.6	13.0	12.4	6.9	2.0	0.8	4.6	-0.7	-5.7	-1.0	4.3	1.7	5.8
Beadell Resources Ltd	BDR.AX	2H	565	AUD	0.80	0.82	2%	-20.8	10.9	3.5	-17.3	6.8	1.9	0.0	0.0	0.0	-18.2	10.1	30.2	-37.7	48.6	154.1
BHP Billiton Ltd	BHP.AX	1	231,874	AUD	36.66	45.00	23%	11.2	10.4	9.6	5.9	6.3	5.8	2.5	3.1	3.3	-5.3	-9.7	-6.4	27.4	20.4	18.8
Bathurst Resources	BTU.AX	1H	557	AUD	0.75	0.85	13%	-51.8	-531.9	11.5	-29.0	6260.6	6.9	0.0	0.0	0.0	-9.5	-16.8	-4.2	-10.0	-1.8	11.9
Discovery Metals Limited	DML.AX	1	781	AUD	1.65	1.60	-3%	-61.0	19.6	8.5	-177.5	10.8	5.3	0.0	0.0	0.0	-19.5	-3.4	9.5	-6.4	40.5	101.8
Energy Resources Of Australia Ltd	ERA.AX	2H	720	AUD	1.30	1.50	16%	-35.7	-81.2	36.2	16.3	-0.7	-0.5	0.0	0.0	6.9	-14.0	-5.8	15.7	-0.2	-1.8	0.5
Gryphon Minerals	GRY.AX	1H	505	AUD	1.35	1.75	30%	-23.8	-15.5	64.2	-17.8	-14.0	16.4	0.0	0.0	0.0	-5.1	-25.4	-15.2	-37.6	-25.6	8.0
Intrepid Mines	IAU.AX	2H	780	AUD	1.39	1.40	1%	-21.8	-15.0	-14.4	-16.2	-13.2	-13.6	0.0	0.0	0.0	4.7	-5.1	-5.3	-262.7	-273.8	-281.7
Iluka Resources Ltd	ILU.AX	1	8,002	AUD	17.80	25.00	40%	11.4	5.4	4.4	6.3	3.1	2.2	4.9	9.0	11.2	9.5	20.5	25.0	34.3	106.9	155.6
Kingsgate Consolidated Limited	KCN.AX	2	1,196	AUD	7.90	7.00	-11%	17.6	10.3	7.7	11.0	6.5	4.8	1.7	2.4	3.3	2.9	10.7	14.3	9.9	14.7	18.8
Lynas Corporation Ltd	LYC.AX	2H	2,494	AUD	1.36	1.30	-4%	-58.4	51.2	10.0	-55.5	23.1	5.9	0.0	0.0	0.0	-9.3	-7.8	7.9	-16.8	15.0	57.1
Mirabela Nickel Ltd	MBN.AX	1	518	AUD	0.98	2.60	165%	-21.8	28.3	6.9	24.7	7.6	4.1	0.0	0.0	4.8	-13.8	-0.5	14.1	-1.0	4.7	9.6
Medusa Mining Ltd	MML.AX	1H	1,251	AUD	6.17	8.00	30%	14.7	11.3	8.0	13.0	9.5	5.3	1.4	1.5	1.5	2.2	5.6	10.5	44.0	41.9	53.0
Newcrest Mining Ltd	NCM.AX	1	28,829	AUD	35.10	38.00	8%	23.3	16.6	11.1	13.0	9.2	6.4	1.2	1.5	1.7	-1.6	1.9	7.9	9.1	9.5	13.1
New Hope Corp Ltd	NHC.AX	2	5,171	AUD	5.80	5.65	-3%	23.5	20.5	14.6	21.2	16.2	10.4	4.5	3.2	2.8	2.9	-4.9	-7.5	3.5	6.1	10.3
OceanaGold	OGC.AX	1H	686	AUD	2.43	3.60	48%	15.8	18.4	8.8	4.6	4.8	2.7	0.0	0.0	0.0	1.2	1.5	26.3	8.6	11.1	18.9
OZ Minerals Ltd	OZL.AX	1	3,887	AUD	11.50	13.00	13%	12.6	13.4	9.4	5.0	5.1	3.3	3.4	1.9	2.7	4.6	8.7	14.2	14.5	11.9	18.5
Paladin Energy Ltd	PDN.AX	1H	1,615	AUD	1.80	2.20	22%	-94.1	91.8	39.1	57.9	18.1	12.6	0.0	0.0	0.5	-10.7	-5.2	5.3	2.2	3.9	4.0
PanAust Limited	PNA.AX	1H	2,396	AUD	3.74	4.20	12%	14.6	12.9	8.5	7.7	7.1	4.6	0.0	0.0	0.0	-2.9	8.0	5.4	23.9	22.5	30.8
Perseus	PRU.AX	1	1,400	AUD	2.85	3.50	23%	40.7	11.5	5.5	27.3	7.1	3.1	0.0	0.0	0.0	-5.4	0.3	10.9	10.9	31.7	54.1
Resource Generation	RES.AX	1H	119	AUD	0.42	1.40	233%	-32.2	-17.4	167.3	-24.3	-23.6	22.9	0.0	0.0	0.0	-9.2	-125.1	-234.1	-5.9	-4.0	2.2
Rio Tinto Ltd	RIO.AX	1	109,994	AUD	70.43	95.00	35%	9.5	9.5	8.3	4.2	3.6	2.9	1.8	2.2	2.6	1.0	4.9	8.0	18.3	15.4	15.4
Regis Resources	RRL.AX	1	1,966	AUD	4.17	4.25	2%	22.7	9.8	6.6	17.3	8.6	4.4	0.0	0.0	0.0	-1.9	8.3	16.7	33.0	85.8	117.3
Resolute	RSG.AX	2	1,506	AUD	2.14	2.20	3%	9.2	6.7	5.1	3.6	4.3	2.9	0.0	0.0	0.0	12.2	17.9	26.6	18.7	32.6	45.3
Rex Minerals Limited	RXM.AX	2H	270	AUD	1.64	1.60	-2%	-31.5	-11.6	-22.1	-17.3	-6.7	-6.1	0.0	0.0	0.0	-12.5	-6.5	-63.2	-35.0	-65.9	-18.7
St Barbara Limited	SBM.AX	2H	829	AUD	2.37	2.25	-5%	6.2	4.9	4.8	3.4	2.3	1.6	0.0	0.0	0.0	9.4	17.3	19.1	27.0	35.4	34.0
Sandfire Resources NL	SFR.AX	1	1,341	AUD	8.27	8.50	3%	-60.1	14.6	5.5	-50.6	7.8	3.2	0.0	0.0	0.0	-21.8	-5.4	23.3	-8.9	41.1	93.2
White Energy Company	WEC.AX	2	173	AUD	0.51			-29.2	-11.6	-12.9	-17.1	-1.4	-3.2	0.0	0.0	0.0	-5.7	-17.8	-5.5	-9.1	-5.7	-5.2
Whitehaven Coal Ltd	WHC.AX	1	2,989	AUD	5.61	6.50	16%	34.7	14.9	8.6	17.3	8.5	4.9	1.9	3.4	3.9	0.7	6.4	14.5	9.0	16.8	27.0
Western Areas NL	WSA.AX	2	1,110	AUD	5.75	6.00	4%	10.7	12.3	7.9	4.7	5.3	4.1	3.5	4.0	5.2	6.2	5.7	13.3	28.7	20.9	29.2

Source: Citi Investment Research and Analysis, priced as at 14 Feb 2012

Figure 85. Metals & Mining | Comparable Valuation Sheet (cont.)

Company Name	Reuters Code	Rating	Market Cap USD \$m	Ccy	Share			P/E (x)			EV/EBITDA (x)			Dividend yield (%)			Free cash flow yield (%)			ROCE (%)		
					Price	Target	Upside	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E
North America																						
Alcoa Inc.	AA.N	2	10,994	USD	10.33	10.00	-3%	18.8	20.2	8.6	7.4	6.7	4.1	0.9	1.2	1.2	2.3	-2.6	14.3	4.7	3.8	7.8
Barrick Gold	ABX.N	1	48,050	USD	48.03	78.00	62%	10.1	9.2	11.6	6.3	5.8	6.7	1.0	1.0	1.0	-15.6	5.8	3.4	14.4	12.4	9.2
Arch Coal	ACI.N	1	2,933	USD	13.86	21.00	52%	22.5	13.8	11.6	8.4	6.6	5.8	1.7	3.2	3.2	-52.9	11.2	12.2	6.9	5.6	5.9
Peabody Energy	BTU.N	1	9,741	USD	35.96	54.00	50%	14.1	11.3	7.2	8.3	5.6	4.2	0.6	0.9	0.9	-35.7	3.9	9.9	11.0	9.5	12.4
CONSOL Energy	CNX.N	1	8,139	USD	35.84	45.00	26%	15.2	13.9	12.8	9.8	9.0	8.1	0.9	1.4	1.4	9.2	4.6	5.6	9.5	7.6	8.0
Freeport-McMoRan Copper & Gold Inc.	FCX.N	2	42,338	USD	44.66	43.00	-4%	9.7	12.6	8.9	4.9	5.7	4.3	3.2	3.9	2.2	9.1	0.6	8.7	26.2	17.6	21.2
KiOR, Inc.	KIOR.O	2H	1,248	USD	12.23	16.00	31%	-16.8	-18.0	-13.2	-26.5	-23.3	-34.4	0.0	0.0	0.0	-15.2	-19.5	-47.7	-54.4	-23.6	-11.0
Newmont Mining	NEM.N	1	29,005	USD	59.41	80.00	35%	12.6	12.1	18.2	5.7	5.8	7.4	2.0	2.2	1.7	-1.8	3.6	1.0	14.9	13.0	9.0
Noranda Aluminum Holding Corporation	NOR.N	1H	749	USD	11.14	12.00	8%	12.0	12.4	7.2	6.0	5.7	4.1	8.2	1.1	1.1	8.8	8.9	10.7	6.6	7.6	11.6
Natural Resource Partners LP	NRP.N	2	2,800	USD	26.41			16.3	13.9	12.9	12.4	10.8	10.1	6.9	8.3	8.3	5.3	10.1	11.5	16.9	17.2	18.8
Oxford Resource Partners, LP	OXF.N	2	328	USD	15.58			-115.3	10.4	8.1	9.6	4.9	4.6	8.1	11.2	11.5	1.2	14.1	16.0	4.0	21.8	26.7
Patriot Coal	PCX.N	2H	744	USD	8.14	9.00	11%	-11.6	-5.6	-7.6	18.2	9.6	7.8	0.0	0.0	0.0	1.9	-20.1	-7.6	-2.5	-2.3	-1.3
Pretium Resources	PVG.TO	1H	1,343	CAD	15.45	17.00	10%	-88.5	-138.6	-	-82.8	-132.5	-	0.0	0.0	0.0	-2.5	-1.5	-0.1	-2.2	-2.1	-0.0
										74015.2			71321.5									
RTI International Metals, Inc.	RTI.N	2	716	USD	23.70	24.00	1%	140.6	39.8	19.0	15.0	8.8	7.2	0.0	0.0	0.0	-25.3	-21.3	-1.3	3.5	4.4	5.9
Titanium Metals Corp	TIE.N	2H	2,636	USD	15.05	15.00	-0%	28.4	17.6	15.9	12.5	8.5	7.6	0.9	2.0	2.0	0.8	4.5	5.2	9.9	12.1	12.9
Walter Energy	WLT.N	1H	4,450	USD	71.26	88.00	23%	15.1	8.7	7.6	9.2	6.1	5.1	0.5	0.7	0.7	-35.4	8.3	13.5	11.2	9.6	10.4
Asia Pacific																						
Jiangxi Copper	0358.HK	1	9,512	HKD	21.30	22.70	7%	10.6	8.6	8.6	7.5	5.8	5.3	1.3	1.6	1.6	10.3	12.2	8.3	16.2	17.7	17.3
Shougang Fushan Resources Group	0639.HK	2H	2,240	HKD	3.23	3.20	-1%	12.6	8.5	9.1	5.1	3.1	2.9	3.3	4.9	4.6	9.5	16.2	15.7	11.5	11.9	11.2
Mongolian Mining	0975.HK	1	3,354	HKD	7.02	9.00	28%	28.6	10.3	7.4	17.3	7.0	4.9	0.0	0.0	0.0	-11.6	6.1	4.5	19.8	25.6	30.3
China Shenhua Energy	1088.HK	1	90,033	HKD	35.10	40.70	16%	13.3	11.5	10.7	7.2	6.1	5.5	2.6	3.0	3.2	5.1	7.5	9.2	22.5	23.9	24.4
Minmetals Resources Limited	1208.HK	1H	2,845	HKD	4.17	5.20	25%	5.6	7.5	6.2	4.3	3.7	3.1	0.0	0.0	0.0	31.8	9.1	8.0	20.6	20.0	21.2
China Kingstone Mining	1380.HK	1H	242	HKD	0.95	2.10	121%	13.3	3.1	1.8	7.8	0.5	-0.1	0.0	0.0	0.0	-5.3	13.3	46.5	60.5	79.3	99.1
Hidilii Industry	1393.HK	3	828	HKD	3.11	2.10	-32%	14.8	7.6	6.8	10.7	6.4	5.9	0.0	2.0	2.2	-4.1	3.9	10.2	7.8	8.6	8.7
SouthGobi Resources	1878.HK	1H	1,282	HKD	54.80	87.40	59%	122.5	18.8	8.6	61.2	7.8	4.5	0.0	0.0	0.0	-7.5	-7.6	-2.4	-0.1	12.9	19.9
SINOMA	1893.HK	1	1,640	HKD	3.56	4.60	29%	10.6	7.6	5.5	4.3	3.3	2.9	1.7	2.4	3.4	-84.5	-13.4	68.3	15.7	12.0	13.8
China Coal Energy	1898.HK	1	17,304	HKD	10.12	10.30	2%	11.3	8.8	7.1	6.1	5.3	4.4	2.4	3.1	3.9	-17.9	-1.8	6.5	11.8	12.0	13.4
China Gold International Resources	2099.HK	1H	1,262	HKD	24.70	30.00	21%	24.1	10.3	8.4	12.0	5.8	4.6	0.0	0.0	3.6	-2.0	6.0	4.3	6.3	9.5	10.9
China Polymetallic Mining	2133.HK	1	529	HKD	2.05	3.50	71%	-11.3	5.3	2.6	73.0	3.5	1.6	0.0	0.0	7.7	-14.8	-10.8	27.2	15.0	73.8	83.9
Aluminum Corporation of China	2600.HK	3	7,308	HKD	4.19	2.90	-31%	64.4	84.7	32.4	12.8	12.1	10.5	0.2	0.4	0.2	-9.2	-3.4	5.7	3.8	3.6	4.2
China Molybdenum	3993.HK	3	2,723	HKD	4.33	3.00	-31%	20.1	17.4	16.3	11.7	9.7	8.8	0.0	1.2	1.2	2.0	7.7	6.5	11.0	9.1	9.4
Adaro Energy	ADRO.JK	1	6,930	IDR	1,950	2,250	15%	17.0	8.5	7.4	6.2	5.1	4.2	0.9	2.0	3.5	6.0	11.4	13.1	22.0	23.6	25.6
BANPU	BANP.BK	1	5,621	THB	636.0	830.0	31%	9.8	11.9	9.3	7.4	6.0	4.7	2.8	2.9	3.8	16.2	8.9	11.4	12.2	15.5	18.0
Bumi Resources	BUMI.JK	1	5,713	IDR	2,475	2,900	17%	12.3	8.2	5.4	6.9	5.1	3.6	1.9	3.8	4.9	-5.5	-0.5	2.0	12.8	12.5	15.7
Coal India	COAL.BO	1	43,219	INR	336.3	380.0	13%	16.1	14.3	12.4	10.6	9.1	7.1	1.5	1.7	2.0	7.9	8.4	9.5			
Hindalco Industries	HALC.BO	1	6,073	INR	155.9	203.0	30%	12.7	11.0	8.4	6.0	5.9	4.9	1.0	1.1	1.1	-11.8	-18.2	8.2	8.7	8.0	9.5
Hindustan Zinc	HZNC.BO	3	12,298	INR	143.1	112.0	-22%	11.3	12.8	11.3	6.0	6.4	5.0	0.5	0.6	0.8	7.9	8.0	9.2	54.3	51.3	59.0
Indo Tambang Raya Megah	ITMG.JK	1	5,003	IDR	39,850	45,450	14%	11.7	9.2	6.9	7.2	5.3	3.7	2.1	6.0	6.5	7.1	10.9	14.4	96.1	95.8	129.8
National Aluminium	NALU.BO	3	3,322	INR	63.35	56.00	-12%	18.6	13.7	12.5	7.8	5.0	4.0	1.3	1.7	1.9	3.6	6.5	9.5	13.2	13.7	15.1
Tambang Batubara Bukit Asam	PTBA.JK	1	5,376	IDR	21,000	23,000	10%	13.1	10.9	9.8	8.5	6.7	5.5	2.4	3.9	5.0	3.1	6.7	8.7	104.7	101.7	99.9
Sterlite Industries (India)	STRL.BO	1	8,856	INR	129.5	165.0	27%	8.5	6.9	6.1	4.0	3.1	2.6	0.9	1.1	1.2	6.3	14.1	13.1	19.5	19.4	20.3

Source: Citi Investment Research and Analysis, priced as at 14 Feb 2012

Figure 86. Steel | Comparable Valuation Sheet

Company Name	Reuters Code	Rating	Market Cap USD \$m	Share				P/E (x)			EV/EBITDA (x)			P/BVPS (x)			Free cash flow yield (%)			ROCE (%)		
				Ccy	Price	Target	Upside	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E
UK/Europe																						
Klöckner & Co.	KCOGn.DE	2	1,513	EUR	11.50	12.00	4%	65.7	12.0	7.9	8.1	6.0	4.7	0.6	0.6	0.6	-30.6	6.8	14.7	4.7	5.5	7.0
ArcelorMittal	ISPA.AS	1	35,083	EUR	17.04	20.00	17%	19.2	10.0	6.0	5.7	5.1	4.2	0.6	0.6	0.5	-2.8	10.3	23.7	5.3	5.6	7.9
Sidenor SA	SID.AT	2	179	EUR	1.41			-58.6	12.8	4.5	10.0	6.6	4.6	0.3	0.3	0.3	-8.6	10.7	31.7	1.5	3.0	5.2
Salzgitter AG	SZGG.DE	1	3,632	EUR	45.81	55.00	20%	27.9	17.0	12.7	7.6	6.1	5.1	0.6	0.6	0.6	-14.7	4.8	3.5	3.5	4.6	5.5
voestalpine AG	VOES.VI	1	5,846	EUR	26.21	35.00	34%	9.6	8.6	7.1	5.7	5.4	4.8	0.9	0.8	0.8	9.7	11.5	13.3	8.6	8.2	9.2
Eastern Europe, South Africa & Latin America																						
Severstal	CHMF.RTS	1	15,253	USD	15.14	17.00	12%	8.1	6.7	9.3	5.0	4.3	5.0	1.7	1.4	1.4	2.6	9.8	12.1	21.3	19.4	14.7
Companhia Siderurgica Nacional	CSNA3.SA	2	15,425	BRL	18.16	18.00	-1%	6.1	13.6	13.8	6.1	6.1	6.2	3.7	3.1	2.7	-1.7	-3.3	-1.8	19.7	16.2	14.8
Erdemir	EREGL.IS	2	4,858	TRY	3.99	3.30	-17%	10.5	8.1	7.7	7.7	6.6	6.1	1.2	1.1	1.0	3.1	10.4	13.4	11.2	11.2	11.3
Ezzsteel	ESRS.CA	1H	615	EGP	6.83	15.00	120%	9.3	8.6	2.6	5.3	4.7	2.6	0.7	0.7	0.6	16.1	43.1	83.2	10.9	9.8	18.2
Gerdau SA	GGBR4.SA	1	16,760	BRL	17.85	18.00	1%	18.2	13.2	10.7	8.5	7.1	6.1	1.2	1.1	1.1	-0.1	5.8	7.3	6.2	7.7	8.9
Ezz Dekheila	IRAX.CA	1H	1,078	EGP	487.1	770.0	58%	7.0	6.0	3.9	4.1	3.4	2.3	1.6	1.6	1.4	11.2	22.3	31.2	17.1	16.5	24.3
Kumba Iron Ore Ltd	KIOJ.J	3	23,558	ZAR	562.2	430.0	-24%	8.9	9.6	9.5	4.7	5.2	5.2	11.4	8.9	8.5	14.5	11.0	13.4	101.7	89.8	79.4
Mechel	MTL.N	3	5,962	USD	11.21	8.00	-29%	7.6	3.8	7.7	6.5	4.5	6.8	0.8	1.1	1.0	-4.3	14.1	4.4	12.9	13.7	9.1
NLMK	NLMK.RTS	1	11,986	USD	2.00	3.30	65%	10.2	6.0	6.9	6.2	3.5	3.5	1.0	0.9	0.9	0.5	13.0	14.3	16.0	14.2	12.4
TMK	TRMKq.L	1	2,671	USD	12.38	18.00	45%	6.7	4.2	4.0	5.7	4.2	3.8	1.2	1.0	0.8	11.5	24.8	28.3	14.2	15.2	15.2
Ternium SA	TX.N	1	4,587	USD	22.88	29.00	27%	11.7	9.6	6.7	4.2	4.3	3.0	0.9	0.8	0.7	1.6	11.6	17.5	11.4	7.4	10.6
Usiminas	USIM5.SA	2	8,368	BRL	12.19	11.00	-10%	42.2	11.8	8.3	17.3	10.8	8.4	0.7	0.6	0.6	-4.4	-6.4	2.9	1.3	2.7	3.8
Vale	VALE.N	1	133,092	USD	26.24	33.00	26%	7.1	7.9	8.3	4.8	5.0	5.2	1.7	1.4	1.2	6.8	1.7	1.8	22.5	15.7	13.3
Australia																						
Atlas Iron Ltd	AGO.AX	1	3,218	AUD	3.35	4.00	19%	15.8	12.5	9.4	9.8	6.7	4.8	1.6	1.6	1.4	4.8	0.9	-3.0	14.7	15.0	17.3
Fortescue Metals Group Ltd	FMG.AX	1	18,388	AUD	5.50	6.50	18%	10.9	9.9	8.1	7.2	7.3	6.2	5.9	4.0	2.8	-6.8	-14.0	-0.8	37.7	23.5	21.8
Gindalbie Metals Ltd	GBG.AX	1H	931	AUD	0.70	0.80	15%	150.8	-58.2	52.8	64.0	22.2	9.7	1.2	1.2	1.2	-64.3	-53.8	-6.1	0.8	2.9	6.1
Grange Resources Limited	GRR.AX	1H	737	AUD	0.60	0.70	18%	7.5	7.6	20.1	1.5	2.3	6.1	1.1	1.0	1.1	13.1	-45.0	-110.2	13.3	9.7	5.3
Mount Gibson Iron	MGX.AX	2H	1,558	AUD	1.34	1.50	12%	7.2	4.4	4.1	3.8	1.7	1.1	1.1	1.0	0.8	4.0	21.1	25.9	24.2	29.0	31.2
Murchison Metals Ltd	MMX.AX	3H	210	AUD	0.44	0.35	-20%	-32.2	-175.3	84.2	-10.5	16.0	16.9	0.6	0.4	0.5	24.0	45.4	-39.7	-5.2	-3.3	-4.0
North America																						
AK Steel Holding Corporation	AKS.N	2H	924	USD	8.38	9.00	7%	111.5	13.5	6.7	13.9	9.2	6.2	2.4	2.1	1.7	-44.2	-6.0	-16.3	4.8	3.6	6.2
Allegheny Technologies Incorporated	ATI.N	2	4,900	USD	46.07	50.00	9%	25.1	18.1	13.5	11.9	9.5	7.5	2.0	1.8	1.6	-5.5	1.1	0.4	7.6	7.7	9.3
Avalon Rare Metals	AVL.TO	1H	310	CAD	3.00	6.00	100%	-52.7	-25.2	-22.9	-45.3	-20.0	-20.6	2.6	2.9	3.2	-4.2	-9.3	-9.4	-23.3	-20.4	-17.2
Cliffs Natural Resources Inc.	CLF.N	1	10,281	USD	71.89	96.00	34%	7.5	7.2	7.4	5.0	5.0	4.8	1.8	1.4	1.2	-28.8	7.2	10.8	22.5	14.2	13.3
Commercial Metals Co	CMC.N	1	1,615	USD	13.97	17.00	22%	33.9	10.4	7.2	8.6	5.3	3.9	1.4	1.3	1.1	5.6	19.5	16.2	6.1	13.2	13.6
Carpenter Technology Corp	CRS.N	2	2,445	USD	55.28	54.00	-2%	24.5	19.7	15.3	11.6	9.6	8.0	3.1	2.9	2.5	-0.3	-1.5	-0.4	8.9	11.4	12.6
Nucor Corporation	NUE.N	1	13,910	USD	43.92	51.00	16%	17.0	14.6	11.3	7.1	6.6	5.4	1.9	1.8	1.6	2.9	4.8	9.4	10.2	11.4	13.7
Steel Dynamics Inc	STLD.O	1	3,335	USD	15.25	18.00	18%	12.3	9.0	8.0	6.7	5.0	4.3	1.4	1.3	1.1	10.0	13.7	14.0	8.8	11.2	12.1
United States Steel Corporation	X.N	1H	4,199	USD	29.16	35.00	20%	-144.4	10.1	6.5	10.7	5.1	3.6	1.2	1.2	1.0	-11.1	6.3	13.9	1.1	5.1	7.8

Source: Citi Investment Research and Analysis, priced as at Feb 14 2012

Figure 87. Steel | Comparable Valuation Sheet (cont.)

Company Name	Reuters Code	Rating	Market Cap USD \$m	Share				P/E (x)			EV/EBITDA (x)			P/BVPS (x)			Free cash flow yield (%)			ROCE (%)		
				Ccy	Price	Target	Upside	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E
Asia Pacific & Japan																						
Dongkuk Steel Mill	001230.KS	2H	1,402	KRW	25,400	24,000	-6%	40.9	6.7	12.0	8.4	6.6	6.8	0.5	0.5	0.5	-30.5	-4.6	12.6	3.7	4.7	4.2
Hyundai Steel	004020.KS	1	8,911	KRW	117,000	120,000	3%	16.0	8.4	8.3	7.7	7.6	6.6	1.1	1.0	0.9	-5.7	-4.1	3.7	7.3	6.1	7.1
POSCO	005490.KS	1	32,378	KRW	416,000	470,000	13%	9.9	9.0	8.1	5.9	6.3	5.3	0.9	0.8	0.7	-11.6	1.1	4.0	7.3	5.9	7.2
Maanshan Iron and Steel	0323.HK	1H	2,820	HKD	2.84	6.40	125%	-42.7	14.4	6.8	6.8	3.8	2.7	0.7	0.6	0.6	-6.9	11.3	29.2	1.2	6.1	10.1
Angang Steel	0347.HK	2H	5,859	HKD	6.28	5.51	-12%	-24.1	28.9	13.6	11.2	5.8	4.6	0.7	0.7	0.7	-10.5	4.1	15.6	-0.9	3.1	4.8
China Vanadium Titano-Magnetite Mining	0893.HK	1	530	HKD	1.98	3.59	81%	6.9	4.9	4.6	3.3	1.5	0.8	1.0	0.9	0.8	12.8	18.9	20.9	36.1	38.4	43.5
Chu Kong Oil and Gas Pipe	1938.HK	1H	335	HKD	2.57	4.18	63%	9.5	4.3	3.5	7.3	4.4	4.2	0.9	0.8	0.7	-11.0	-17.9	14.9	11.1	15.4	14.1
China Steel	2002.TW	1	15,067	TWD	29.55	30.40	3%	24.2	20.8	18.7	12.8	12.0	10.5	1.5	1.5	1.5	-1.2	1.9	3.4	5.5	5.9	6.4
Gloria Material Technology	5009.TWO	1	369	TWD	27.80	34.00	22%	13.9	9.4	8.3	9.3	7.4	6.8	1.6	1.5	1.3	-14.7	-3.0	-2.0	8.4	9.9	10.0
Baoshan Iron & Steel	600019.SS	2H	14,210	CNY	5.11	6.13	20%	16.8	10.2	8.2	6.5	4.8	4.0	0.9	0.8	0.8	10.5	10.7	11.6	4.7	6.4	7.8
Jindal Steel and Power	JNSP.BO	1	11,514	INR	605.4	645.0	7%	14.0	11.6	10.6	10.5	8.8	8.2	3.3	2.6	2.1	0.4	-4.7	-4.3	13.9	14.6	13.3
JSW Steel	JSTL.BO	1	3,692	INR	813.2	920.0	13%	17.0	10.9	7.3	6.8	5.4	4.3	1.1	1.0	0.9	-9.7	2.9	17.6	6.5	8.4	10.3
MOIL	MOIL.BO	3	919	INR	269.0	258.0	-4%	12.0	10.1	9.2	7.0	5.0	3.9	1.9	1.7	1.5	7.5	7.8	7.7	69.1	49.5	47.1
Steel Authority of India	SAIL.BO	1	9,274	INR	110.4	130.0	18%	10.3	7.6	6.9	6.4	5.2	4.5	1.1	1.0	0.9	-10.1	-7.0	-1.1	12.0	11.5	12.0
Sesa Goa	SESA.BO	3	4,349	INR	246.0	190.0	-23%	6.4	5.0	4.8	3.4	2.7	2.1	1.4	1.1	0.9	-35.6	-6.8	7.8	28.9	13.5	9.2
Tata Steel	TISC.BO	2	9,586	INR	485.1	442.0	-9%	15.2	11.9	6.9	6.8	6.0	5.0	1.2	1.1	1.0	4.0	4.9	6.6	6.7	7.0	9.6

Source: Citi Investment Research and Analysis, priced as at Feb 14 2012

Figure 88. Oil & Gas | Comparable Valuation Sheet

Company Name	Reuters Code	Rating	Market Cap USD \$m	Share				P/E (x)			EV/EBITDA (x)			Dividend yield (%)			Free cash flow yield (%)			ROCE (%)		
				Ccy	Price	Target	Upside	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E	2011A	2012E	2013E
UK/Europe																						
BP	BP.L	2	148,413	GBP	4.96	4.65	-6%	6.4	6.7	6.2	3.2	3.0	2.6	4.0	4.2	4.6	-2.4	7.4	8.4	11.7	11.5	11.6
Repsol	REP.MC	1	33,843	EUR	21.01	26.50	26%	13.7	11.4	9.3	5.5	4.8	4.1	5.2	6.0	6.7	-6.8	12.8	5.9	6.1	6.6	7.5
BG Group	BG.L	1	78,589	GBP	14.68	16.20	10%	17.3	16.4	13.5	8.0	7.7	6.7	1.1	1.1	1.2	-4.8	-4.8	-3.8	10.4	10.1	10.6
Total	TOTF.PA	3	127,711	EUR	41.04	36.00	-12%	7.5	7.7	7.1	2.9	2.8	2.6	5.9	5.6	5.6	9.4	4.7	6.2	11.3	11.8	12.0
Eni	ENI.MI	1	91,372	EUR	17.29	18.00	4%	8.5	8.6	7.0	3.7	3.5	2.9	6.5	6.0	6.1	6.1	3.6	7.8	9.0	9.0	10.4
Royal Dutch Shell	RDSa.L	2	230,446	GBP	22.97	23.50	2%	8.7	7.7	7.0	3.0	2.9	2.6	4.8	4.8	5.0	6.0	5.4	7.3	11.0	12.0	12.2
Statoil	STL.OL	2	86,784	NOK	155.5	158.0	2%	9.4	8.9	8.1	2.1	2.2	2.1	4.7	4.4	4.6	5.3	3.5	3.1	9.9	10.0	10.2
Galp Energia	GALP.LS	2	13,329	EUR	13.10	14.00	7%	47.3	30.7	22.6	17.5	12.0	10.0	1.4	1.7	2.3	-5.5	-0.2	1.2	4.6	5.7	7.1
OMV AG	OMVV.VI	3	11,624	EUR	26.92	22.50	-16%	9.2	6.9	5.4	3.6	3.4	2.6	3.6	3.7	3.7	-1.7	3.0	8.7	8.1	8.3	9.9

Source: Citi Investment Research and Analysis, priced as at Feb 14 2012

African Barrick Gold Plc (ABGL.L)

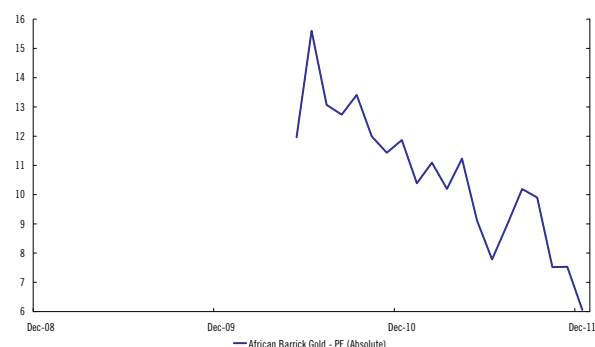
Buy (1)
Target Price: £6.55

- **Valuation:** We prefer to use longer-term P/NPV ratios to value this subsector and set our target price of £6.55 by applying a 1.3x P/NPV ratio to our NPV estimate of £5.04 (derived using a discount rate of 10%). We use a 1.3x P/NPV, as we do for UK gold peers of a similar size. We set our target P/NPV multiples with reference to absolute and relative historical sector average levels, taking into account our views on the current stage of the cycle and on the quality of each company's assets and management.
- **Risks:** Key risks that could prevent achievement of our target price are the gold price, which has a volatile trading history, and African political risk. While Tanzania has a stable democracy, its location alongside some unstable democracies does offer some risk.

ABG has good labour relationships but there have been examples of labour disruption in the past before ABG took steps to improve relationships. There is always a risk that labour difficulties could resume. There has also been a security risk at ABG's North Mara mine.

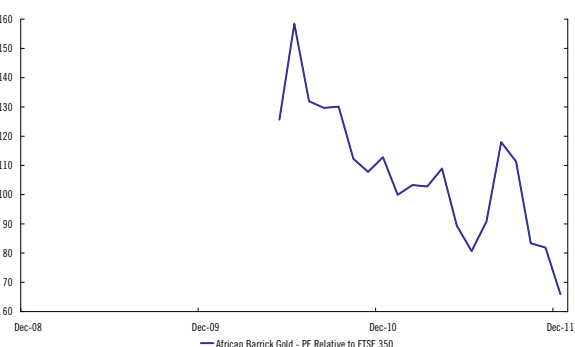
We consider the ABG technology to be standard for the mining industry but all mining carries risk. ABG has extremely high safety standards but mines present a constant risk of fatalities and accidents cannot be ruled out.

Figure 89. PE Absolute



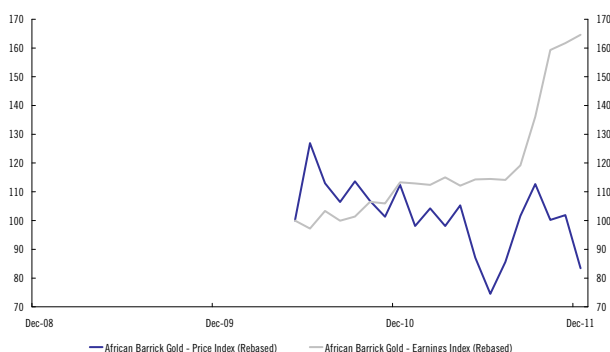
Source: Citi Investment Research and Analysis

Figure 90. PE Relative



Source: Citi Investment Research and Analysis

Figure 91. Price & Earning Absolute



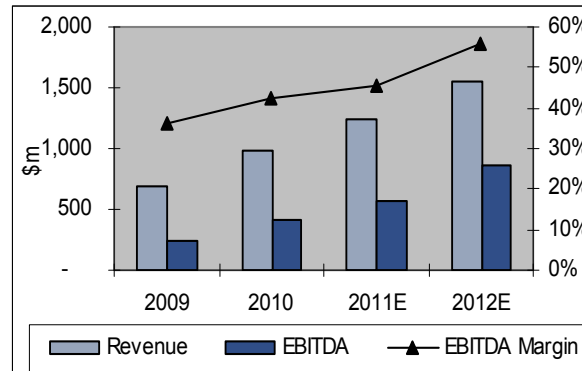
Source: Citi Investment Research and Analysis

Figure 92. African Barrick Gold - Summary

African Barrick Financials \$m	2009	2010	2011E	2012E
Income Statement				
Revenue	693	975	1,242	1,549
EBITDA	249	414	568	865
EBITDA Margin	36%	42%	46%	56%
Net Income	59	218	296	527
EPS	0.14	0.53	0.72	1.28
DPS	0.02	0.02	0.12	0.26
Number of shares (m)	410	410	410	410
Cash Flow Statement				
Cash flow from Ops	194	343	472	858
Capex	- 223	- 221	- 197	- 116
Free Cash Flow	- 54	68	278	742
Dividends Paid	-	252	28	85
Net Cash Flow	17	331	250	657
Balance Sheet				
Cash	70	401	649	1,306
Fixed Assets	1,498	1,615	1,688	1,678
Total Assets	2,370	2,928	3,390	4,073
Debt	-	-	-	-
Net debt	- 70	- 401	- 649	- 1,306
Total Liabilities	1,720	384	569	804
Shareholder Equity	650	2,543	2,822	3,269
Operations				
EBITDA by Asset				
Bulyanhulu	39	181	242	296
Buzwagi	80	96	201	318
North Mara	75	153	124	269
Tulawaka	42	28	70	33
Other	13	-	-	-
Total	258	457	635	914
Attributable Gold Prod Koz				
Bulyanhulu	249	259	259	282
Buzwagi	188	184	217	302
North Mara	212	214	170	241
Tulawaka	66	29	42	19
Total	716	687	688	844
Capex				
Bulyanhulu	60	81	53	36
Buzwagi	122	29	38	27
North Mara	34	92	81	42
Tulawaka	7	15	12	5
Other	0	4	-	-
Total	223	221	183	110
Other Asset info				
	Reserves (Kt)	Resources (Kt)	Gold Grade (g/t)	
Bulyanhulu	34,693	16,296	9.175	
Buzwagi	57,131	16,714	1.9925	
North Mara	21,976	12,344	2.82	
Tulawaka	150	100	4.12	
Other	-	-	-	
Total	113,949	45,454	4.3	

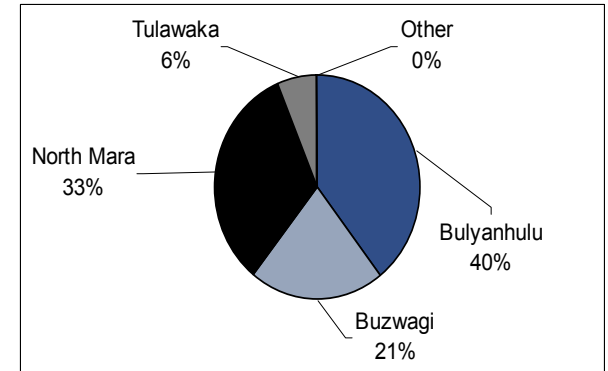
Source: Company reports, Citi Investment Research and Analysis

Figure 93. Sales & Margins



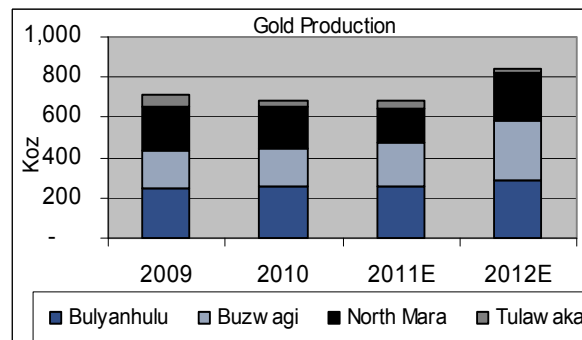
Source: Company reports, Citi Investment Research and Analysis

Figure 94. EBITDA 2010



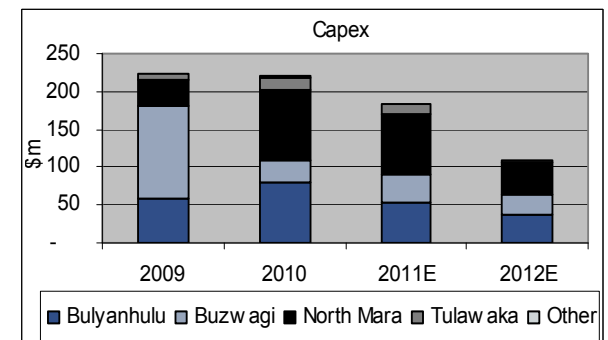
Source: Company reports, Citi Investment Research and Analysis

Figure 95. Gold Production



Source: Company reports, Citi Investment Research and Analysis

Figure 96. Capex



Source: Company reports, Citi Investment Research and Analysis

Anglo American PLC (AAL.L)

Neutral (2)
Target Price: £30.00

■ **Valuation:** AAL's target price is based on a 50/50 weighting of our DCF fair value today £35 and a PE derived value of £26. We apply a 10x PE multiple to 2012 earnings. We convert Anglo's pound target price at R12.70 to arrive at our rand target price of R380. We calculate AAL's discounted cash flow valuation based on: 1) a weighted average cost of capital (WACC) of 9.52%; 2) long-term (2013E-23E) nominal revenue growth of 5% per annum; 3) long-term EBITDA margins of 38%; 4) 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).

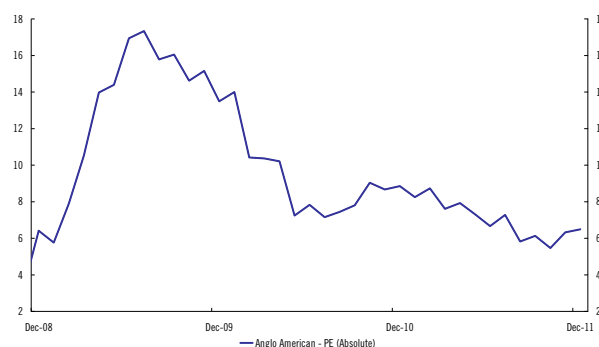
■ **Risks:** The biggest risks to our earnings forecasts and valuation relate to commodity prices and currency forecasts.

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, it 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.

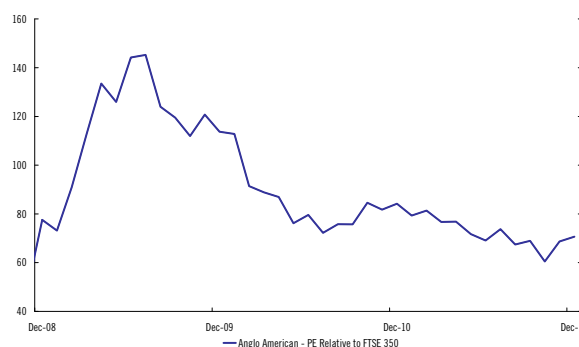
Conversely, if any of these factors proves to have less of an effect than we anticipate, the stock could materially outperform our target.

Figure 97. PE Absolute



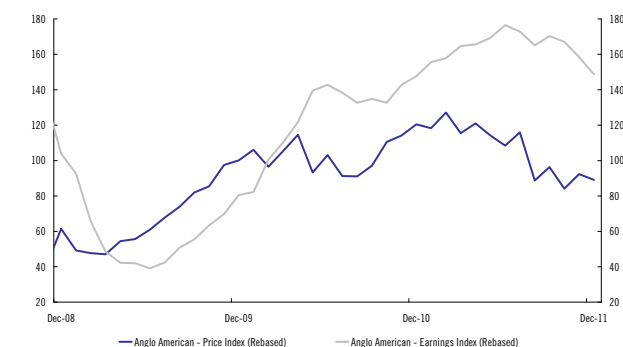
Source: Citi Investment Research and Analysis

Figure 98. PE Relative



Source: Citi Investment Research and Analysis

Figure 99. Price & Earning Absolute



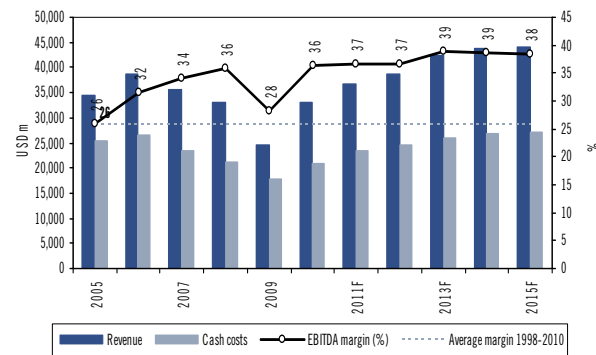
Source: Citi Investment Research and Analysis

Figure 100. Anglo American - Summary

Anglo American FYE December	2009	2010	2011F	2012F
Income statement				
EBITDA (US\$m)	6,930	11,983	13,517	14,170
EBIT (US\$m)	4,962	9,763	11,221	11,694
Growth	-51%	97%	15%	4%
EBIT margin	24%	33%	34%	34%
HEPS (USc)	210	396	456	482
Growth	-51%	89%	15%	6%
DPS (USc)	0	65	75	95
Growth	-100%	-	15%	27%
Multiples				
P/E multiple at R314	19x	10x	9x	9x
EV/EBITDA at R314	10	5	5	5
FCF yield at R314	1%	9%	14%	7%
Dividend yield at R314	0.0%	1.7%	1.9%	2.3%
Price to book at R314	1.7	1.5	1.2	0.9
Gearing	32%	19%	3%	-1%
ROCE	13%	21%	22%	22%
Return on equity	11%	16%	15%	13%
EBIT per division (US\$m)				
Platinum	32	837	692	968
EBIT margin	1%	13%	9%	14%
Diamonds	64	495	720	1,072
EBIT margin	4%	19%	21%	25%
Copper	2,010	2,817	2,490	3,020
EBIT margin	51%	58%	51%	51%
Nickel	2	96	145	233
EBIT margin	1%	23%	24%	24%
Iron ore and manganese	1,489	3,681	4,597	3,966
EBIT margin	44%	56%	57%	51%
Metallurgical Coal	451	783	1,450	1,245
EBIT margin	20%	23%	33%	27%
Thermal Coal	721	710	1,179	1,348
EBIT margin	29%	25%	33%	36%
Other mining & industrial	511	661	199	253
EBIT margin	9%	12%	5%	5%
Exploration	-172	-136	-121	-160
Group and unallocated	-146	-181	-131	-250
Underlying EBIT	4,962	9,763	11,221	11,694

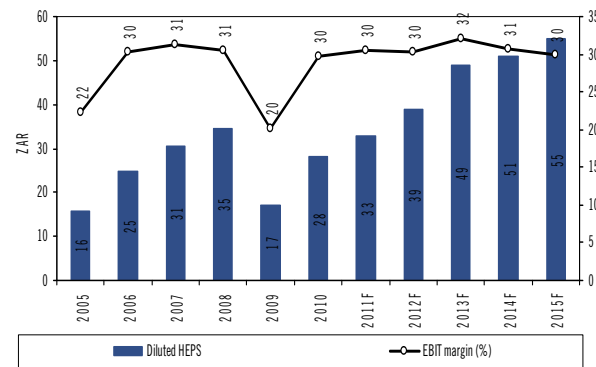
Source: Company reports, Citi Investment Research and Analysis

Figure 101. Revenue, cash costs & EBITDA margin



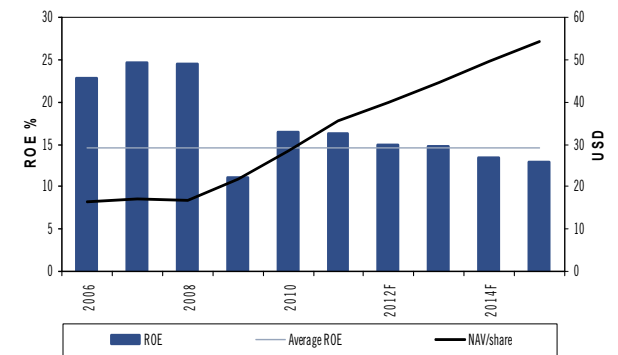
Source: Company reports, Citi Investment Research and Analysis

Figure 103. EBIT margin and EPS



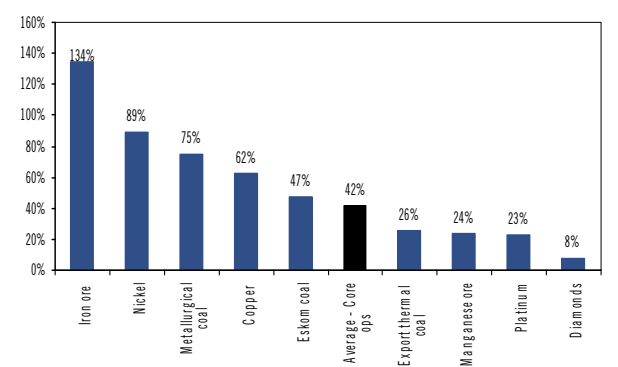
Source: Company reports, Citi Investment Research and Analysis

Figure 102. NAV, ROE and EBIT margin



Source: Company reports, Citi Investment Research and Analysis

Figure 104. Volume growth per commodity 2011-2020



Source: Company reports, Citi Investment Research and Analysis

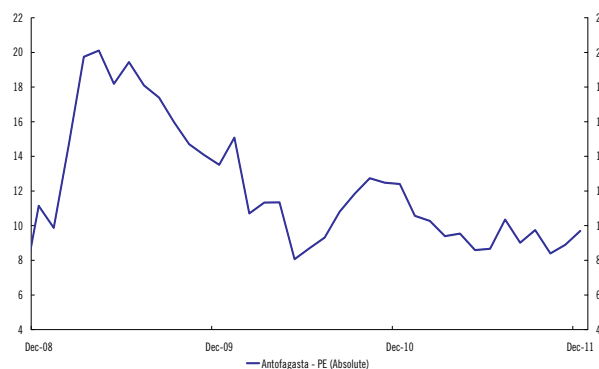
Antofagasta PLC (ANTO.L)

Sell: (3)
Target Price: £10.10

- **Valuation:** Our target price of £10.10 is based on a blend of NPV, free cash flow, multiples (EV/EBITDA) and residual income. The NPV and residual income approach give us a moderated and longer-term view of normalised returns, and the multiple and free cash flow methods give us a valuation on near-term earnings potential. We apply a 20% premium to NPV to try and capture some of the optionality from resources and cash.
- **Risks:** With 80% of its sales related to copper, any change in copper prices has a significant effect on our estimates, valuation and target price; in terms of costs, there is added risk given the unpredictability of its cash production costs; not only are cash costs related to copper prices, but they are also affected by the prices of by-products, such as molybdenum, gold and silver.

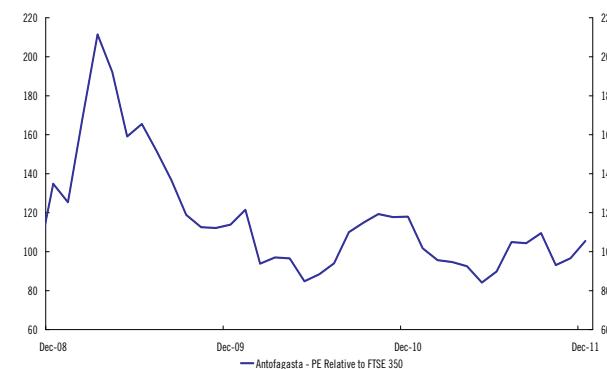
If the impact of these risk factors is more or less negative than we currently anticipate, then the share price could fail to reach or exceed our target price

Figure 105. PE Absolute



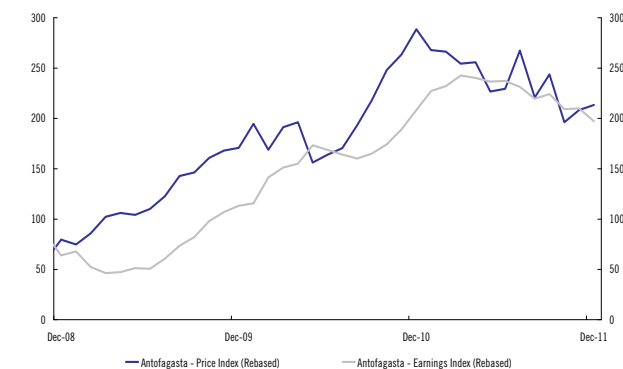
Source: Citi Investment Research and Analysis

Figure 106. PE Relative



Source: Citi Investment Research and Analysis

Figure 107. Price & Earnings Absolute



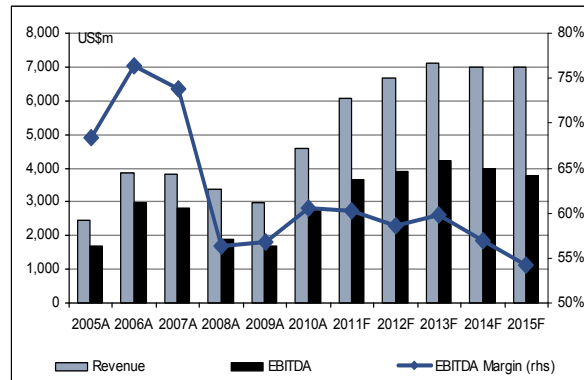
Source: Citi Investment Research and Analysis

Figure 108. Antofagasta - Summary

	2009A	2010A	2011F	2012F	2013F
US\$m unless specified					
Summary Income Statement					
Revenue	2,963	4,577	6,079	6,683	7,096
EBITDA	1,681	2,772	3,664	3,913	4,240
EBIT	1,459	2,595	3,213	3,433	3,749
Underlying Net Income	668	991	1,259	1,452	1,700
HEPS (US\$)	0.68	1.01	1.28	1.47	1.72
DPS (US\$)	0.23	1.16	0.95	0.99	1.01
No. of Shares	986	986	986	986	986
EBITDA Margin	57%	61%	60%	59%	60%
EBIT Margin	49%	57%	53%	51%	53%
Summary Cash Flow					
Operating Cash Flow	1,022	1,991	2,508	2,646	3,246
Capex	-1,324	-1,302	-691	-792	-1,192
Free Cash Flow	-302	689	1,817	1,853	2,054
Net Investments	-140	-188	226	0	0
Dividend to Equity	-562	-237	-1,183	-976	-997
Dividend to Minorities	-310	-703	-993	-1,305	-1,395
Total Financing Cash Flow	305	-377	-2,048	-2,781	-2,543
Net Cash Flow	-189	127	-5	-928	-488
Summary Balance Sheet					
Cash	3,222	3,542	3,292	2,364	1,876
Total Current Assets	4,133	4,947	4,851	4,183	3,680
PPE	4,873	6,093	6,367	6,680	7,380
Total Non-Current Assets	5,378	6,641	6,929	7,242	7,943
Total Current Liabilities	996	931	1,407	1,456	1,460
Working Capital	3,137	4,016	3,444	2,726	2,220
Total Debt	1,627	2,197	2,366	1,866	1,716
Shareholders' Equity	6,617	7,526	7,479	7,574	7,918
Net Debt	-1,596	-1,345	-927	-498	-160
ND/Equity	-24%	-18%	-12%	-7%	-2%
Production					
Copper (kt)					
Los Pelambres	312	385	412	391	382
El Tesoro	90	95	97	100	86
Michilla	41	41	42	40	43
Esperanza	0	0	90	174	198
Antucoya	0	0	0	0	0
Total Copper Production (kt)	443	521	641	705	708
Total Moly Production (kt)	7.8	8.8	9.9	10.7	8.6
Total Gold Production (koz)	23.6	33.7	196.9	277.7	292.9
Total Silver Production (koz)	1,291	1,471	2,342	2,451	2,770
Divisional EBITDA					
Los Pelambres	1,409	2,375	2,637	2,410	2,395
El Tesoro	232	355	457	425	481
Michilla	28	61	153	62	111
Esperanza	0	0	528	1,154	1,387
Transport	57	60	77	78	83
Water	60	67	72	72	73
Exploration	-67	-99	-200	-234	-233
Corporate/Other	-38	-46	-59	-55	-56
Total EBITDA	1,681	2,772	3,664	3,913	4,240
Commodity/Fx Assumptions					
Copper (US\$/lb)	241	342	400	355	387
Molybdenum (US\$/lb)	12.1	15.9	15.8	15.2	15.5
Gold (US\$/oz)	972	1,229	1,574	1,709	1,912
Silver (US\$/oz)	14.5	20.2	35.4	29.8	27.1

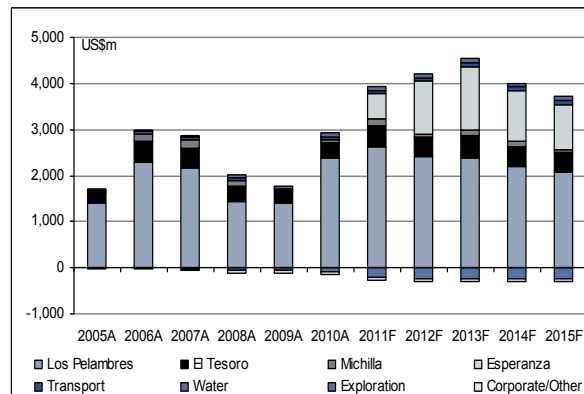
Source: Company reports, Citi Investment Research and Analysis

Figure 109. Group Revenue, EBITDA and EBITDA Margin



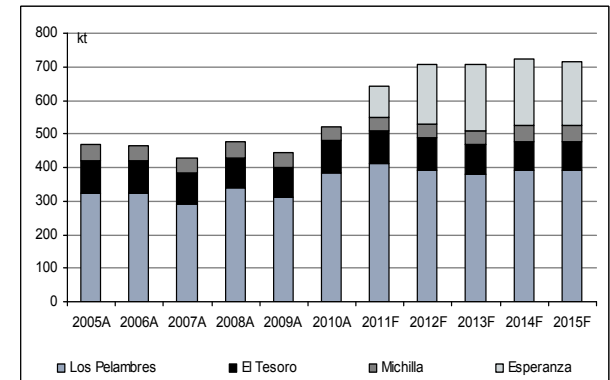
Source: Company reports, Citi Investment Research and Analysis

Figure 111. Divisional EBITDA Split



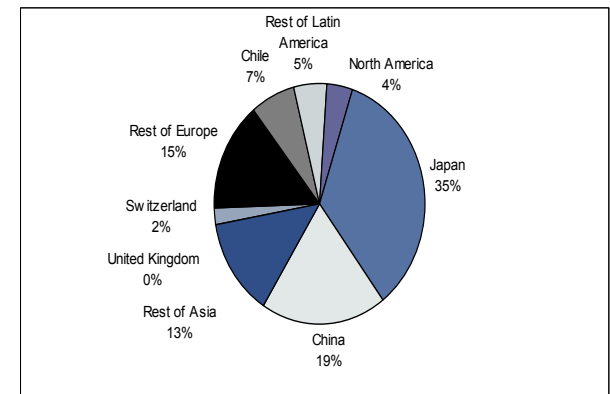
Source: Company reports, Citi Investment Research and Analysis

Figure 110. Copper Production by Operation



Source: Company reports, Citi Investment Research and Analysis

Figure 112. 2010 Revenue by Destination



Source: Company reports, Citi Investment Research and Analysis

Aquarius Platinum Ltd (AQP.L)

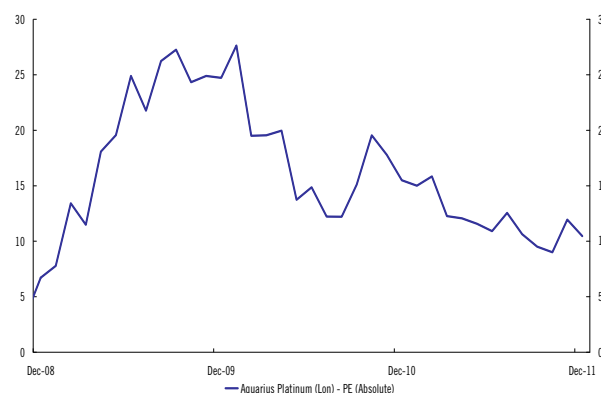
Neutral: (2)
Target Price: £1.65

- **Valuation:** Our £1.65 target price is based on our NPV valuation, given the current uncertainty over the macro outlook and likelihood of depressed earnings near term. Our base case NPV for the stock of £1.83 is derived from a DCF model that assumes a discount rate for the UK listing of 9% (in line with that which we use for its closest UK peer). We set our target price at 0.9x NPV. We set this at a discount to the 1.0x used for larger platinum peers in order to take account of AQP's smaller size and price volatility. The limited premium to NPV compared with other precious metals stocks reflects the recent safety issues at AQP and associated risks.
- **Risks:** Aquarius faces risks given that group earnings are all generated from a single commodity and mining is limited to one region. That said, the group generally has lowest costs among the South African PGM producers. All its mining is done using efficient mechanised mining via the use of contractors. This reduces exposure risks. Further, Aquarius does not operate its own downstream activities, with a life-of-mine offtake agreement with Impala taking care of smelting and refining capacity.

Key risks to Aquarius failing to achieve our projected earnings, cash flows and target price relate to the following: **Rand strength.** A stronger-than-expected rand would continue to depress rand-denominated cash flows. **Cost pressures.** Although Aquarius uses contractors to do all the mining and therefore has limited exposure to wage costs, cost pressures continue to be a feature in the industry. **Geopolitical exposure.** Mining is limited to one region, Southern Africa. Aquarius has considerable investment at Mimosa in Zimbabwe. Any further deterioration in the political situation there and/or inability to expand the production assets could be a big problem for the company.

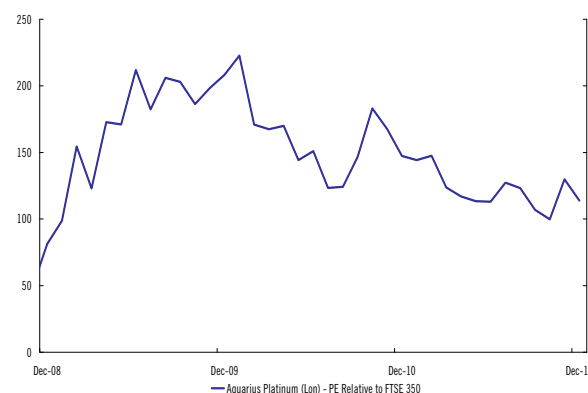
However, if the impact of these risk factors is less negative than we currently anticipate, then the share price could exceed our target price.

Figure 113. PE Absolute



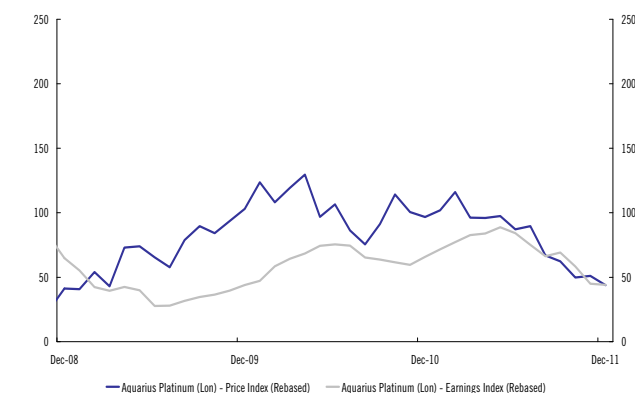
Source: Citi Investment Research and Analysis

Figure 114. PE Relative



Source: Citi Investment Research and Analysis

Figure 115. Price & Earning Absolute



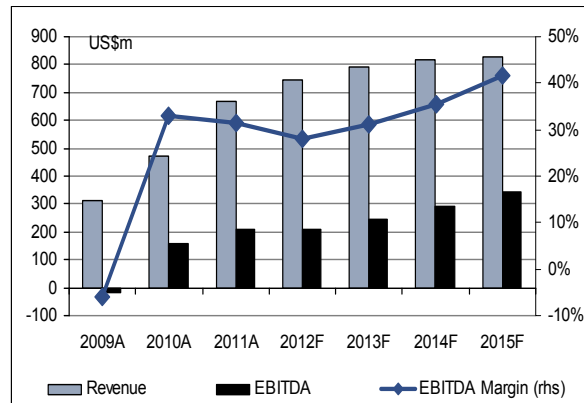
Source: Citi Investment Research and Analysis

Figure 116. AQP - Summary

FYE June	2009A	2010A	2011A	2012F	2013F
US\$m unless specified					
Summary Income Statement					
Revenue	311	472	668	745	793
EBITDA	-19	156	210	209	247
EBIT	-61	114	149	173	208
Underlying Net Income	-46	62	97	114	143
HEPS (US\$)	-0.13	0.13	0.21	0.25	0.31
DPS (US\$)	0.00	0.06	0.08	0.10	0.04
No. of Shares	344	490	464	464	464
EBITDA Margin	-6%	33%	31%	28%	31%
EBIT Margin	-20%	24%	22%	23%	26%
Summary Cash Flow					
Operating Cash Flow	12	94	162	205	224
Capex	-59	-75	-210	-37	-160
Free Cash Flow	-47	19	-48	168	64
Net Investments	-14	14	0	0	0
Dividend	-30	-9	-37	-39	-44
Change in Borrowings	-108	174	14	-40	-40
Total Financing Cash Flow	39	196	-34	-79	-84
Net Cash Flow	-17	228	-54	79	-30
Summary Balance Sheet					
Cash	154	382	328	407	377
Total Current Assets	317	552	481	600	569
PPE	500	698	806	807	927
Total Non-Current Assets	914	1,379	1,457	1,576	1,666
Total Current Liabilities	70	102	120	137	135
Working Capital	247	449	362	463	434
Total Debt	76	260	292	252	212
Shareholders' Equity	608	837	851	993	1,125
Net Debt	-77	-122	-36	-155	-165
ND/Equity	-13%	-15%	-4%	-16%	-15%
Total Production (koz)					
By Metal					
Platinum	481	471	496	541	558
Palladium	258	259	280	292	300
Rhodium	77	74	79	79	83
Gold	15	17	19	18	17
Total PGM	831	822	875	929	958
By Operation					
Kroondal	422	409	415	429	429
Marikana	158	135	106	121	124
Everest	64	8	100	157	191
Mimosa	180	200	208	201	183
CTRP	7	6	5	6	7
Total PGM	1,291	1,471	2,254	2,593	2,849

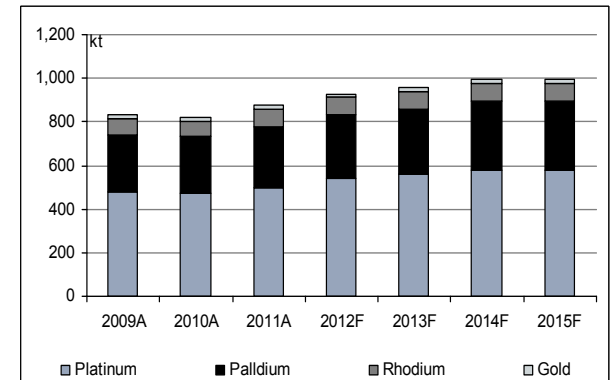
Source: Company reports, Citi Investment Research and Analysis

Figure 117. Group Revenue, EBITDA and EBITDA Margin



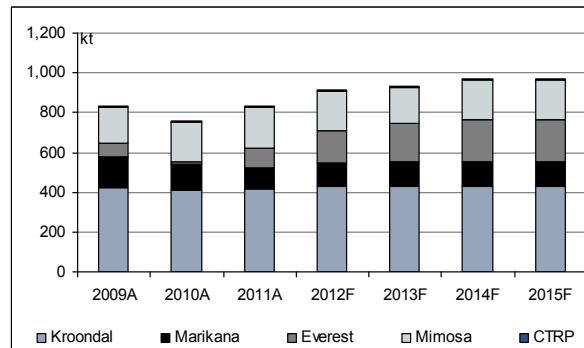
Source: Company reports, Citi Investment Research and Analysis

Figure 118. Production by Commodity



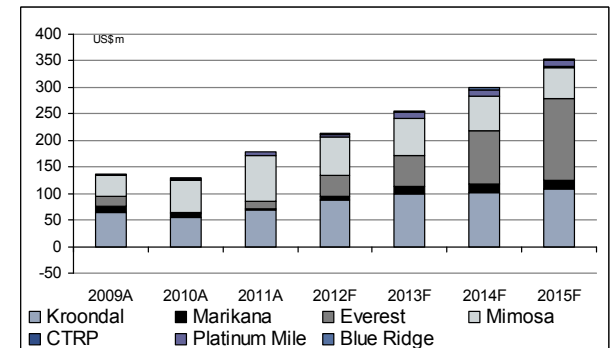
Source: Company reports, Citi Investment Research and Analysis

Figure 119. Production by Asset



Source: Company reports, Citi Investment Research and Analysis

Figure 120. Divisional EBITDA Split



Source: Company reports, Citi Investment Research and Analysis



ArcelorMittal (ISPA.AS)

Buy: (1)

Target Price: €20.00

- **Valuation:** We have a €20 target price for ArcelorMittal. We use an equal-weighted combination of DCF value, Residual income, EV/EBITDA and FCF analysis.

Our DCF-based model calculates a value of €21 per share. The steel sector has historically traded at 5.5x mid-cycle EV/EBITDA. We use 5x 2012E EBITDA to calculate our mid-cycle value. We calculate a value of €17 per share based on this analysis. Our FCF and residual income models suggest a fair value of €16 and €24, respectively.

- **Risks:** ArcelorMittal's net debt reduces investment flexibility.

ArcelorMittal shares are sensitive to spot steel prices, contract renegotiations and raw material input costs.

ArcelorMittal has high fixed costs, and high net debt overlays financial gearing to already high operational gearing to the cycle. The group is the key steel stock to own if you're positive the cycle, and key one to avoid if you're negative the steel cycle.

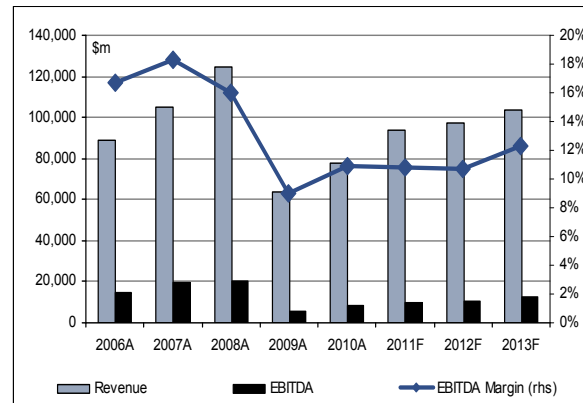
If the impact of these risk factors is more negative than we currently anticipate, then the share price would be impeded from reaching our price target.

Figure 121. ArcelorMittal - Summary

YE December	2009A	2010A	2011F	2012F	2013F
\$m unless specified					
Group Summary					
Crude Steel Production (mt)	70.9	90.6	91.5	99.0	103.8
Steel Shipments (mt)	86.4	103.1	80.2	88.3	94.8
Revenue	63,902	78,025	93,973	97,178	103,276
EBITDA	5,749	8,525	10,117	10,368	12,700
EBIT	-1,649	3,604	4,898	5,700	7,595
Underlying Net Income	157	2,912	2,263	3,472	5,763
No. of Shares (m)	1,509	1,512	1,549	1,549	1,549
HEPS (\$)	0.1	1.9	1.5	2.2	3.7
DPS (\$)	0.8	0.8	0.8	0.8	0.8
Operating Cash Flow	7,278	4,015	2,457	3,190	9,770
Capex	-2,792	-3,346	-4,838	-5,380	-5,280
Free Cash Flow	12,493	2,644	-1,250	1,057	3,879
Working Capital	6,560	-2,531	-3,825	-1,461	-944
Net Debt	18,983	19,710	22,513	20,100	13,008
Pension Surplus/(Deficit)	-7,583	-7,583	-7,583	-7,583	-7,583
EBITDA Margin	9%	11%	11%	11%	12%
EBIT Margin	-3%	5%	5%	6%	7%
ND/Equity	31%	32%	40%	34%	20%
Capex/Depreciation	0.5	0.7	1.1	1.2	1.0
Steel Price Assumptions (\$/t)					
Flat Carb Americas Avg	697	782	892	816	831
Flat Carb Europe Avg	800	824	982	923	873
Long Carbon Avg	745	801	937	919	899
Stainless avg	2,922	0	0	0	0
Production (mt)					
Flat Carbon Americas	17	23	24	26	26
Flat Carbon Europe	23	30	30	32	35
Long Carbon Steel	18	23	23	25	26
AA&CIS	13	15	15	16	17
Distribution Solutions	0	0	0	0	0
Stainless	2	0	0	0	0
Divisional EBITDA					
Flat Carbon Americas	1,119	1,555	2,109	2,203	3,149
Flat Carbon Europe	1,918	2,015	1,500	1,689	2,117
Long Carbon Steel	1,666	2,075	1,866	1,909	2,515
AA&CIS	1,002	1,135	1,238	1,360	1,632
Distribution Solutions	-97	457	271	210	296
Stainless	443	0	0	0	0
Total EBITDA	6,051	7,237	6,984	7,371	9,711
EBITDA/t (\$)					
Flat Carbon Americas	69	74	95	94	134
Flat Carbon Europe	88	73	55	57	65
Long Carbon Steel	84	90	78	73	93
AA&CIS	85	86	99	101	118
Distribution Solutions	-6	25	15	10	12
Stainless	303	0	0	0	0

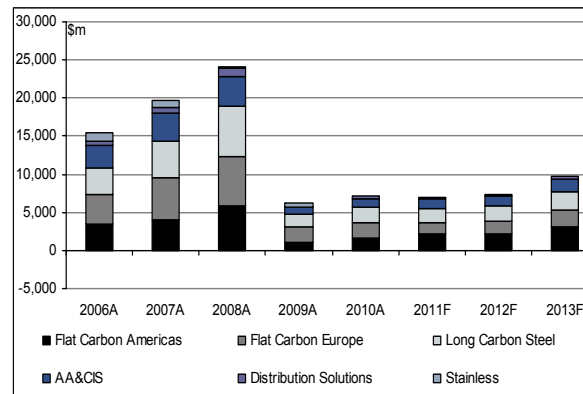
Source: Company reports, Citi Investment Research and Analysis

Figure 122. EBITDA/t and EBITDA Margin



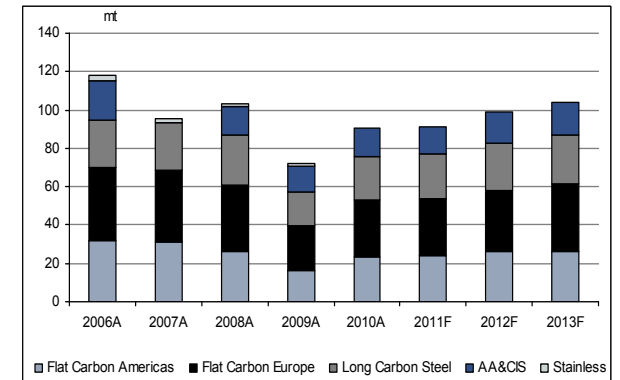
Source: Company reports, Citi Investment Research and Analysis

Figure 124. Divisional EBITDA Split



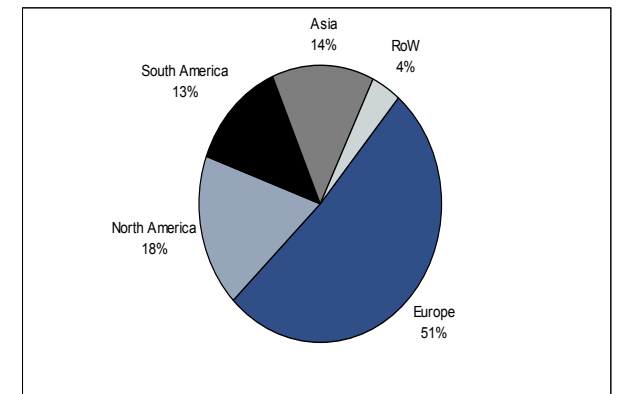
Source: Company reports, Citi Investment Research and Analysis

Figure 123. Divisional Steel Production



Source: Company reports, Citi Investment Research and Analysis

Figure 125. FY 2010 Revenue by Destination



Source: Company reports, Citi Investment Research and Analysis

BHP Billiton PLC (BLT.L)

Buy: (1)
Target Price: £23.00

■ **Valuation:** Our target price is £23.00 (which rounded converts to a R290 at a one-year forward forecast ZAR/GBP FX rate of 12). Our BHP valuation (NPV) of £27.80 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 10% discount to NPV; 2) a multiple-based target price of £21.45 per share using FY12E (10x P/E and 6x EV/EBITDA); and 3) a 50% weighting for each method.

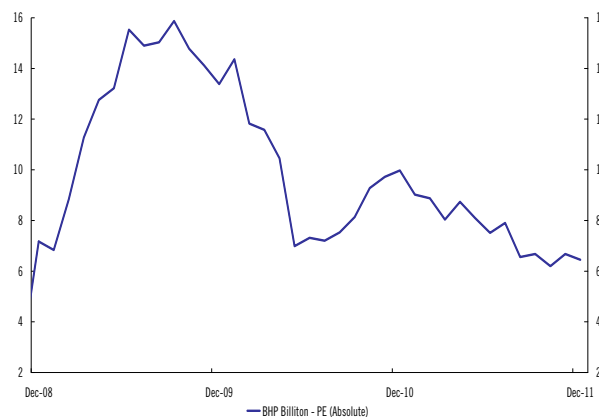
■ **Risks:** Key risks to our projected earnings, cash flows and valuation relate to weaker than expected commodity prices/economic growth and currency fluctuations.

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.

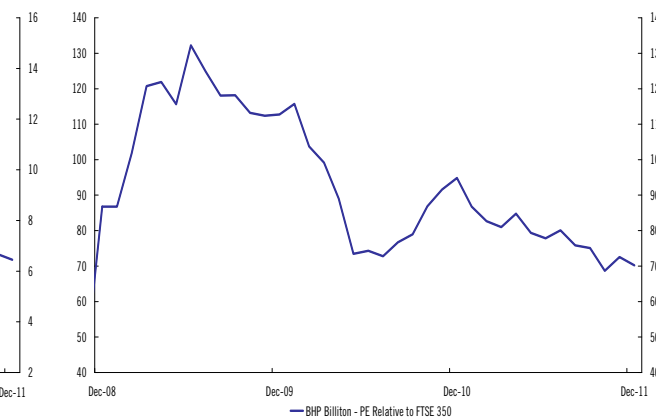
If the impact of these risk factors is more or less negative than we currently anticipate, then the share price could fail to reach or exceed our target price.

Figure 126. PE Absolute



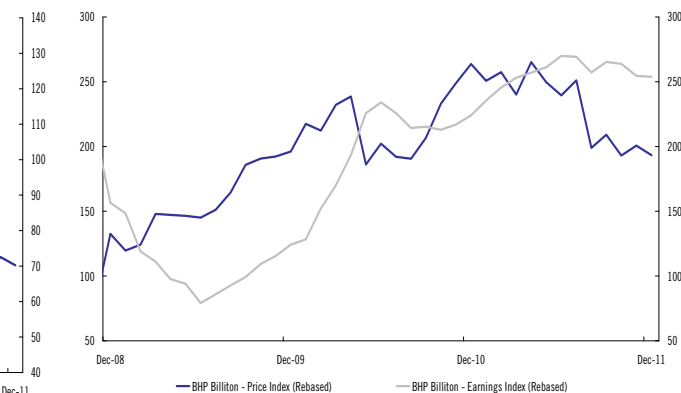
Source: Citi Investment Research and Analysis

Figure 127. PE Relative



Source: Citi Investment Research and Analysis

Figure 128. Price & Earning Absolute



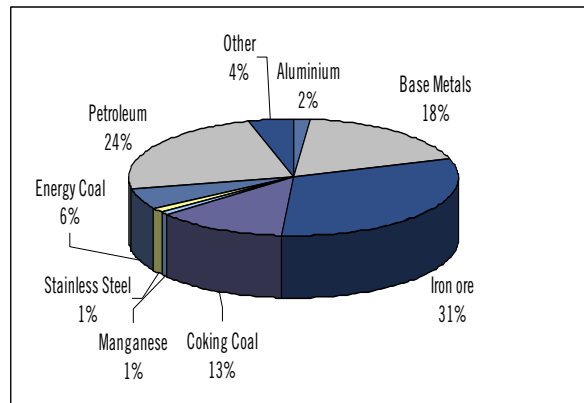
Source: Citi Investment Research and Analysis

Figure 129. BHP Billiton – Summary

June year end	2009A	2010A	2011A	2012e	2013e	2014e
Profit and loss (US\$m, UK Gaap)						
Sales revenue	50,211	52,798	71,739	75,385	84,617	88,787
+ Other revenue	589	528	531	359	0	0
- Operating costs	29,924	28,848	35,177	39,429	44,101	45,504
EBITDA	20,876	24,478	37,093	36,314	40,516	43,283
- Depreciation	3,871	4,759	5,113	6,445	7,691	8,593
EBIT	17,005	19,719	31,980	29,870	32,825	34,690
- Net interest expense	543	459	561	870	1,309	1,277
Pretax profit	16,462	19,260	31,419	29,000	31,516	33,413
- Tax expense	5,279	6,504	9,437	9,610	10,127	10,631
- Minorities	461	287	298	243	307	306
Profit after tax - Pre exceptionals	10,722	12,469	21,684	19,147	21,082	22,477
+ Exceptional Items	(4,845)	253	1,964	0	0	0
Reported profit	5,877	12,722	23,648	19,147	21,082	22,477
Pre-abnormals EPS (USc)	192	223	398	360	396	422
- EPS growth (%)	-30%	16%	78%	-10%	10%	7%
CFPS (USc)	331	316	571	483	581	620
DPS (USc)	82	87	101	115	126	136
Ave diluted shares DLC (m)	5,581	5,581	5,323	5,323	5,323	5,323
Divisional earnings (US\$m)						
Aluminium	122	292	154	(133)	57	287
Base Metals	560	2,891	4,191	2,645	4,444	4,599
Carbon Steel	8,168	5,847	11,287	12,281	11,367	11,421
Stainless Steel	(654)	430	382	84	199	218
Energy Coal	1,161	517	741	1,032	1,204	1,645
Petroleum	2,715	3,075	4,336	6,371	8,005	8,873
Steel	0	0	0	0	0	0
Expln, tech, new businesses	69	278	396	299	662	741
Exploration, R&D	(1,009)	(1,029)	(1,054)	(1,701)	(1,811)	(1,836)
Net interest, minorities & other	(5,255)	421	3,216	(1,732)	(3,045)	(3,472)
Net Profit	5,877	12,722	23,648	19,147	21,082	22,477
Sales volumes						
Alumina (kt)	4,396	3,841	4,010	4,305	4,938	5,266
Aluminium (kt)	1,233	1,241	1,246	1,248	1,245	1,277
Iron ore (mt)	117	125	135	154	167	188
Coking coal (mt)	27	30	26	28	33	35
Steaming coal (mt)	67	65	70	72	78	82
Copper (kt)	1,208	1,066	1,149	1,123	1,328	1,352
Nickel (kt)	74	101	105	101	112	112
Gold (koz)	176	142	197	175	198	208
Manganese alloys (kt)	308	350	452	458	449	449
Chrome alloys (kt)	-	-	-	-	-	-
Diamonds (kct)	2,448	3,050	2,506	1,828	1,780	1,780
Steel (mt)	0	0	0	0	0	0
Oil equivalent (mmbob)	137	154	150	237	294	343
Cashflow (US\$m)						
Cash from operations	18,457	17,643	30,971	25,699	30,899	32,989
Asset sales	164	132	80	139	0	0
Capital costs (PPE only)	(9,492)	(9,323)	(11,147)	(18,601)	(21,300)	(21,691)
Gross dividends paid	(4,969)	(4,895)	(5,144)	(5,947)	(6,440)	(6,973)
Acquisitions/other	(1,723)	(1,489)	(6,378)	(15,088)	(2,244)	(2,280)
Cashflow prefunding	2,437	2,068	8,382	(13,798)	915	2,046
Net funding	3,475	(1,168)	(11,329)	4,728	(1,724)	(2,822)
Net cashflow	6,226	1,321	(2,492)	(8,587)	0	0
Free cash flow	7,720	7,049	13,981	(7,433)	8,164	9,795
Free cash flow yield	5%	4%	7%	-4%	4%	5%
Balance sheet (US\$m)						
Fixed Assets (PPE)	50,575	57,086	70,070	104,743	118,817	132,460
Total assets	78,770	88,852	102,891	130,130	145,648	160,771
Total liabilities	38,059	39,523	45,136	61,067	61,194	59,445
Net attributable assets	39,954	48,525	56,762	67,902	83,292	100,166
Net asset backing (US\$/sh)	\$7.29	\$8.84	\$10.85	\$12.98	\$15.87	\$19.04
Total debt	16,419	15,764	15,907	25,067	24,152	22,107
Cash	11,596	12,748	10,348	2,242	2,242	2,242
Net debt	4,823	3,016	5,559	22,825	21,910	19,864
Working capital	14,319	15,757	11,686	(228)	(1,137)	64

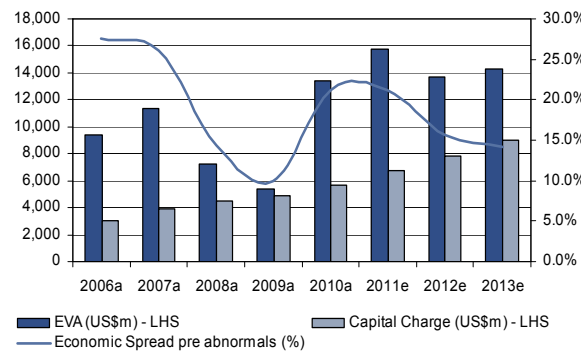
Source: Company reports, Citi Investment Research and Analysis

Figure 130. Company overview (by NPV)



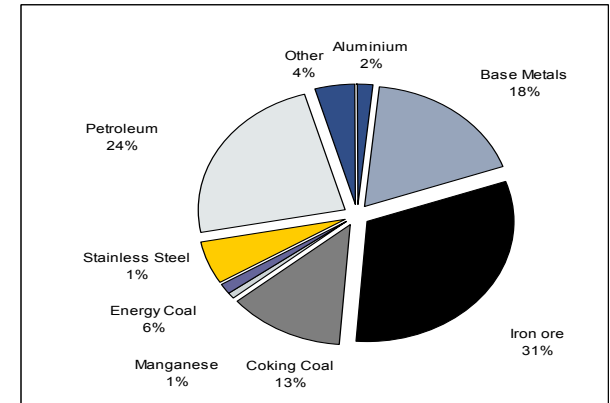
Source: Company reports, Citi Investment Research and Analysis

Figure 132. EVA Creation



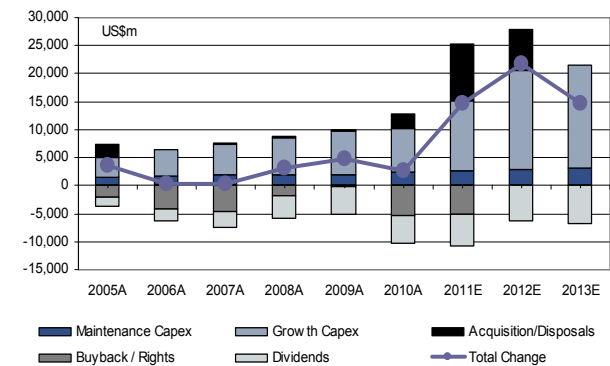
Source: Company reports, Citi Investment Research and Analysis

Figure 131. EBIT Contribution



Source: Company reports, Citi Investment Research and Analysis

Figure 133. Invested Capital changes



Source: Company reports, Citi Investment Research and Analysis

Centamin Egypt Limited (CEY.L)

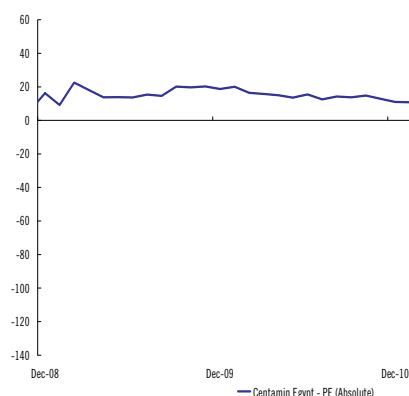
Buy: (1)
Target Price: £1.04

■ **Valuation:** Our £1.04 target price is based on a long-term NPV assessment of CEY based on a 1.1x multiple of our £0.95 NPV (derived using a discount rate of 12%). We use a 1.1x P/NPV ratio in comparison to UK gold peers with less political risk on 1.3x.

We set our target P/NPV multiples with reference to absolute and relative historical sector average levels, taking into account our views on the current stage of the cycle and on the quality of each company's assets and management.

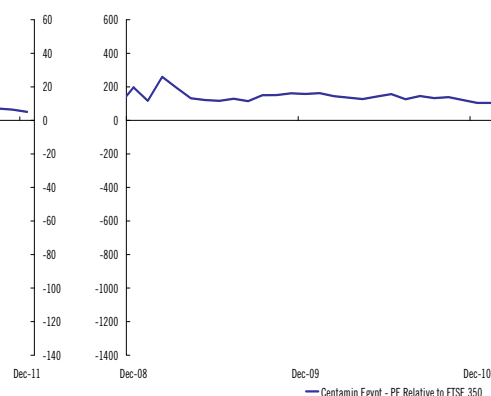
Risks: CEY faces risks associated with the currently difficult political situation in Egypt. Furthermore, all mining ventures carry risk via the acquisition, financing, exploration, development and operation of mining properties. These risk factors could materially affect the company's future operations. The following risk factors could also cause the stock price to deviate significantly from our target price. CEY's operations are influenced by fluctuations in the world gold price. If the price of gold should drop significantly, the economic prospects of CEY's Sukari project could be significantly reduced or rendered uneconomic. The converse applies to a rising gold price. CEY offers potential redators instant access to gold production, as opposed to gold exploration assets and there is a possibility that CEY could become a target. Also, should CEY seek to make acquisitions, this represents either upside or downside risk. There is a risk that the expenditures that CEY makes in exploration will not result in the discovery of mineralised materials in commercial quantities. There is also a degree of uncertainty attributable to the calculation of mineralisation, which could represent an upside or downside risk to our earning forecasts. These risks could impede the share price from reaching our target price.

Figure 134. PE Absolute



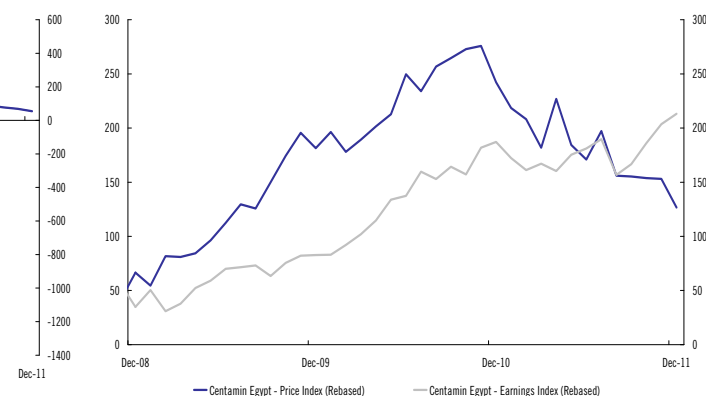
Source: Citi Investment Research and Analysis

Figure 135. PE Relative



Source: Citi Investment Research and Analysis

Figure 136. Price & Earning Absolute



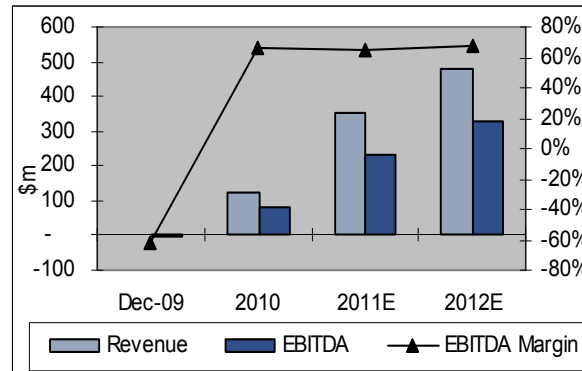
Source: Citi Investment Research and Analysis

Figure 137. Centamin - Summary

Financials \$m	Dec-09	2010	2011E	2012E
Income Statement				
Revenue	2	124	352	482
EBITDA	1	82	230	326
EBITDA Margin	-62%	66%	65%	68%
Net Income	1	52	184	261
EPS	0	5	17	24
DPS	-	-	-	-
Number of shares (m)	996	1,035	1,086	1,086
Cash Flow Statement				
Cash flow from Ops	10	50	194	299
Capex	189	100	139	143
Free Cash Flow	199	50	56	156
Dividends Paid	-	-	-	-
Net Cash Flow	104	129	62	156
Balance Sheet				
Cash	27	154	150	306
Fixed Assets	57	280	345	416
Total Assets	444	639	839	1,101
Debt	-	-	-	-
Net debt/(cash)	27	154	150	306
Total Liabilities	12	19	23	31
Shareholder Equity	432	620	816	1,070
Operations				
EBITDA by Asset				
Sukari	1	82	230	326
Attributable Gold Prod Koz				
Sukari	0.2	148.3	186.0	277.3
Capex				
Sukari	189	100	139	143
Other Asset info				
Resources (Mt)	302	1.69		
Gold Grade (g/t)				
Sukari				
Other				
Total				

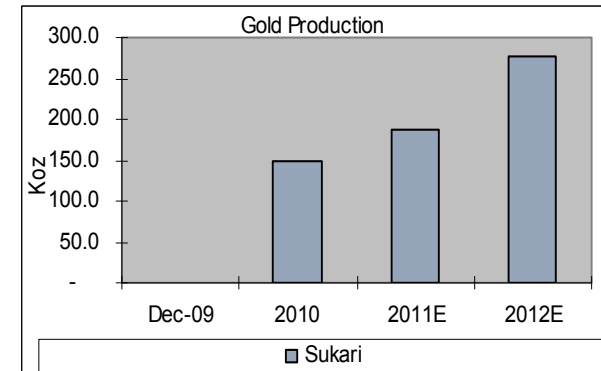
Source: Company reports, Citi Investment Research and Analysis

Figure 138. Sales & Margins



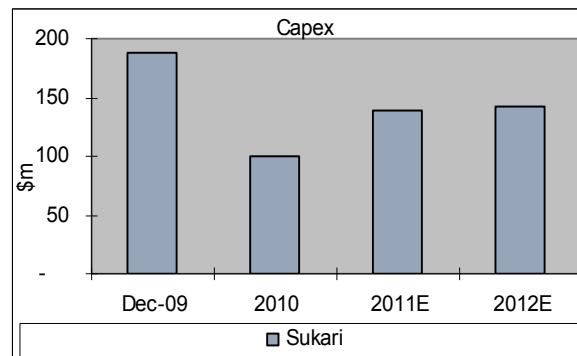
Source: Company reports, Citi Investment Research and Analysis

Figure 139. Gold Production



Source: Company reports, Citi Investment Research and Analysis

Figure 140. Capex



Source: Company reports, Citi Investment Research and Analysis

Eurasian Natural Resources Corporation PLC (ENRC) (ENRC.L)

Buy (1)
Target Price: £9.10

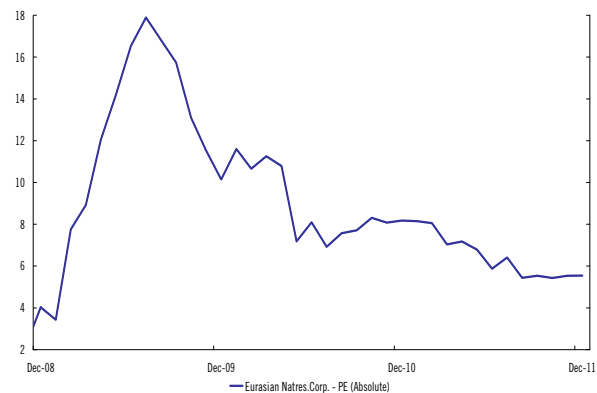
■ **Valuation:** We value ENRC using a rounded average of four methods - DCF, multiples, free cash flow and residual income - to get to our price target of £9.10.

Our DCF valuation uses a 2.5% growth rate (KAZ 2%), a 5% equity risk premium and a 6.5% cost of debt. We apply a 10% premium to our derived NPV. Our multiples/SOTP valuation is based on industry peer multiples for the different divisions. Our residual income model uses a 12.5% target return.

Risks: As the company is primarily Kazakhstan-based, we view political/regional risk as higher than for peers. The quality of the company's assets might however be a partial offset. Upside to our target price could come from projects such as platinum and bauxite (CAMEC assets) - which are still not fully well known or modeled. On the downside we feel an increasing concentration of DRC assets could lead to investors assigning a lower earnings multiple to ENRC. Other key risks to our target price are as follows. **Political & Regulatory Risk:** The group's assets were acquired through the privatisation process in the mid-90s and the group has close links with the current government of Kazakhstan. The majority of ENRC's subsurface contracts expire within the next 10 years. **Commodity Prices:** The key commodities for ENRC are ferrochrome, iron ore and aluminium. Any material movements in these commodities would likely have a significant impact on corporate earnings. **Currency Risk:** ENRC reports in US\$, and its revenue stream is priced in US\$. However, operating costs are split 80:20 between the KZT and US\$. Any significant movements in the exchange rate would likely impact margins and profitability.

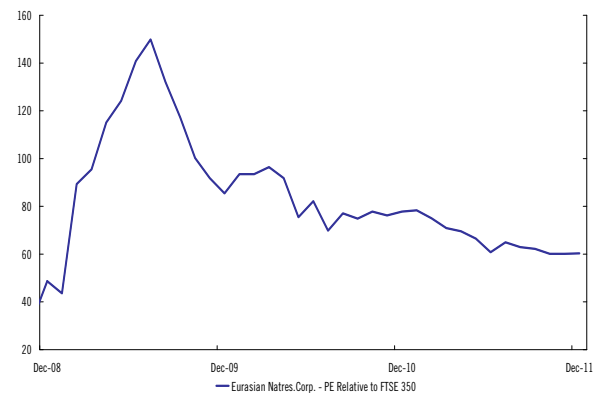
ENRC has increased its exposure to Africa - DRC and Zimbabwe through acquisitions - we believe this increases the political risk for the group.

Figure 141. PE Absolute



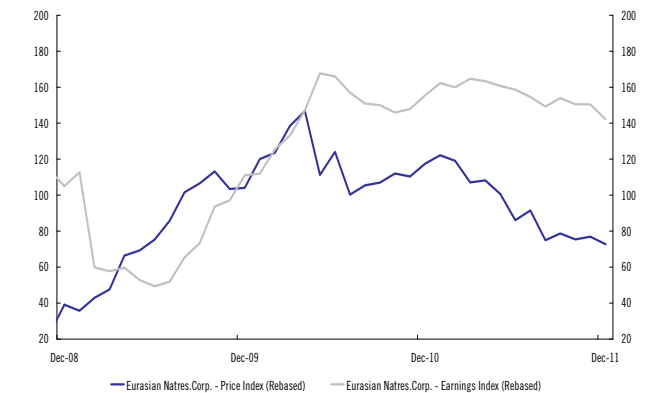
Source: Citi Investment Research and Analysis

Figure 142. PE Relative



Source: Citi Investment Research and Analysis

Figure 143. Price & Earning Absolute



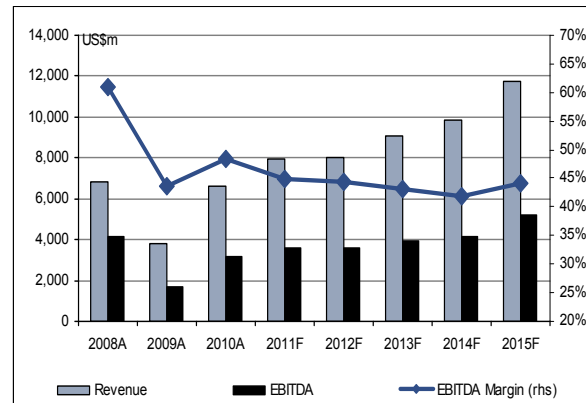
Source: Citi Investment Research and Analysis

Figure 144. ENRC - Summary

	2008A	2009A	2010A	2011F	2012F
US\$m unless specified					
Summary Income Statement					
Revenue	6,823	3,831	6,605	7,922	8,022
EBITDA	4,161	1,672	3,194	3,563	3,560
EBIT	3,850	1,374	2,710	3,048	2,965
Underlying Net Income	2,642	1,045	2,185	2,130	2,072
HEPS (US\$)	2.05	0.81	1.70	1.65	1.61
DPS (US\$)	0.24	0.12	0.31	0.30	0.29
No. of Shares (m)	1,288	1,290	1,290	1,290	1,290
EBITDA Margin	61%	44%	48%	45%	44%
EBIT Margin	56%	36%	41%	38%	37%
					0.19
Summary Cash Flow					
Operating Cash Flow	2,766	1,209	2,303	2,456	2,582
Capex	-1,479	-912	-2,009	-1,977	-3,295
Free Cash Flow	1,287	297	294	479	-714
Net Investments	-1,873	-2,105	-2,368	-2,208	-3,295
Dividend to Equity	-148	-322	-238	-406	-373
Dividend to Minorities	-5	-12	-10	-12	-11
Total Financing Cash Flow	-854	-644	826	-452	-384
Net Cash Flow	39	-1,540	761	-204	-1,098
Summary Balance Sheet					
Cash	2,493	830	1,595	1,402	304
Total Current Assets	4,393	2,469	3,557	3,768	2,752
PPE	4,282	5,470	8,146	9,950	12,700
Total Non-Current Assets	5,621	7,148	10,724	12,784	15,534
Total Current Liabilities	1,050	930	1,554	1,879	1,897
Working Capital	3,343	1,539	2,003	1,889	855
Total Debt	727	428	1,630	1,567	1,567
Shareholders' Equity	8,172	7,713	9,749	11,678	13,377
Net Debt	-1,766	-402	35	165	1,263
ND/Equity	-22%	-5%	0%	1%	9%
Production					
External Only					
Chrome Ore (kt)	1,114	966	409	505	464
Manganese Ore (kt)	718	560	615	625	564
Iron Manganese (kt)	432	62	68	124	124
Ferro Alloy (kt)	1,321	1,217	1,580	1,542	1,550
Iron Ore (mt)	15	15	17	16	17
Aluminium (kt)	106	125	226	250	260
Alumina (kt)	1,391	1,361	1,195	1,188	1,151
Thermal Coal (mt)	8	7	7	5	5
Copper Concentrate (kt)	0	5	36	50	83
Cobalt Concentrate (kt)	0	1	9	14	15
Divisional EBITDA (attributable)					
Ferroalloys	2,789	871	1,403	993	979
Iron Ore	919	532	1,133	1,746	1,689
Alumina and Aluminium	295	70	267	285	187
Energy	177	220	308	336	428
Copper and Cobalt	0	6	60	188	205
Logistics	50	39	75	93	98
Total EBITDA	4,230	1,738	3,246	3,641	3,586

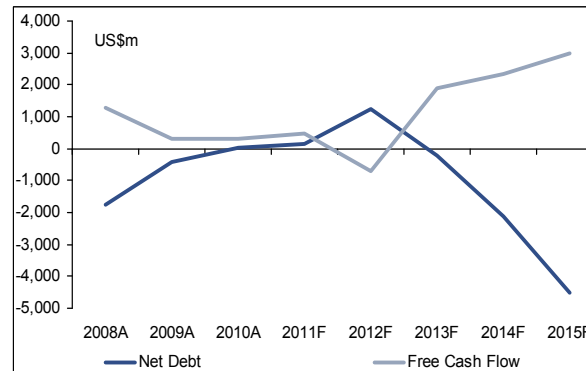
Source: Company reports, Citi Investment Research and Analysis

Figure 145. Group Revenue, EBITDA and EBITDA Margin



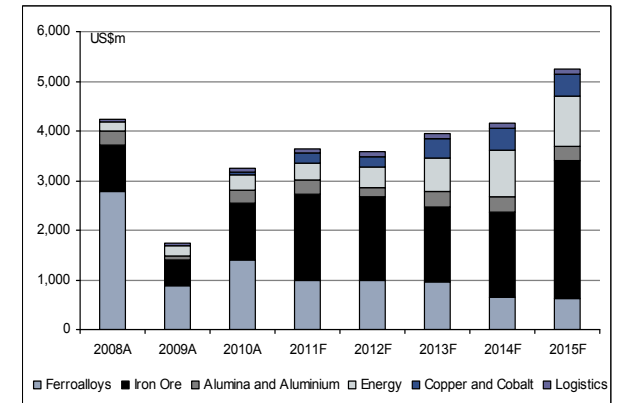
Source: Company reports, Citi Investment Research and Analysis

Figure 147. Net Debt vs FCF



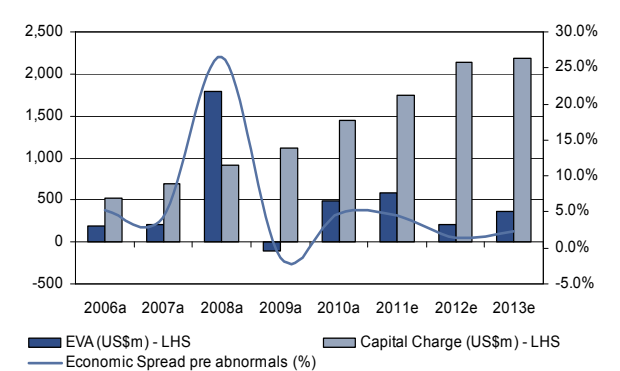
Source: Company reports, Citi Investment Research and Analysis

Figure 146. Divisional EBITDA Split



Source: Company reports, Citi Investment Research and Analysis

Figure 148. EVA creation



Source: Company reports, Citi Investment Research and Analysis

Ferrexpo PLC (FXPO.L)

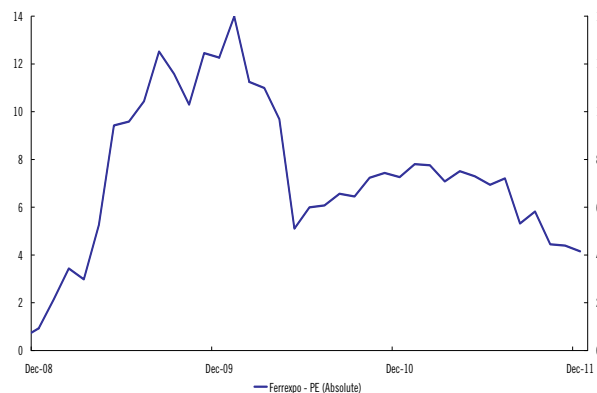
Buy: (1)
Target Price: £4.45

- **Valuation:** Our FXPO target price of £4.45 is set using a weighted average of NPV (75%) and multiples-based valuation (25%). Our NPV of £4.68 is derived using a 12% WACC, reflecting regional and commodity exposure. We also apply a 5x 2012E EV/EBITDA ratio (£3.67/sh), in line with historical trading multiples. A weighting of 75% NPV and 25% EV/EBITDA reflects the emphasis we place on longer-term growth prospects and drives our rounded target price of £4.45.
- **Risks:** The key risks surrounding FXPO, which could prevent the shares from reaching our target price, are:

Execution risk: The Ukraine, and FXPO specifically, have been short on project development expertise in operations as large as the potential expansion of the Yeristovo mine. **Transportation risk:** Unlike the major iron ore producers, FXPO does not own its logistics network (freight and rail) and is thus reliant on using state or third-party-owned infrastructure. It is however becoming increasingly self-sufficient in rail car wagons and the acquisition of barging company Helogistics demonstrates an intention to rectify this. **Commodity price risk:** As a single commodity producer, FXPO's earnings are highly sensitive to iron ore prices and consequently global steel demand. On our calculations a 5% change in the iron ore price can move earnings by ~10%. **Ukraine geopolitical risk:** Country and political risk are significant considerations, given historical events within Russia and the Former Soviet Union (FSU). We have attempted to adjust for the sovereign risk factor in setting our discount rate. However, this adjustment may not fully reflect the risk of doing business in the FSU.

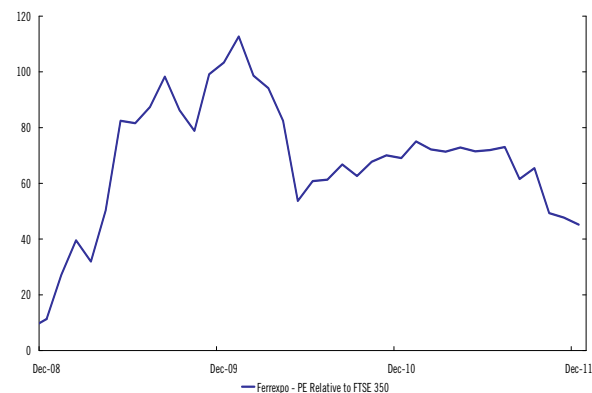
If the impact of these risk factors is more or less negative than we currently anticipate, then the share price could fail to reach or exceed our target price.

Figure 149. PE Absolute



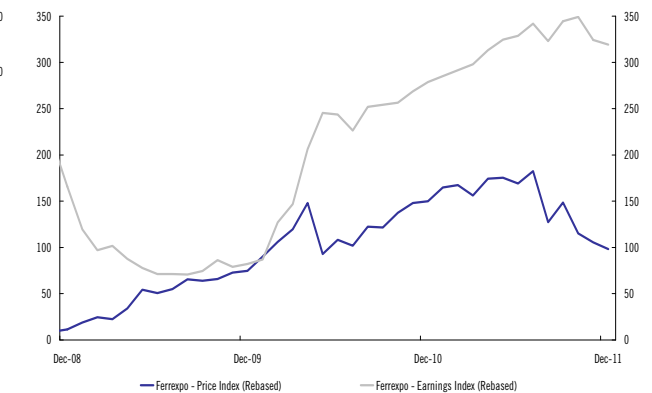
Source: Citi Investment Research and Analysis

Figure 150. PE Relative



Source: Citi Investment Research and Analysis

Figure 151. Price & Earning Absolute



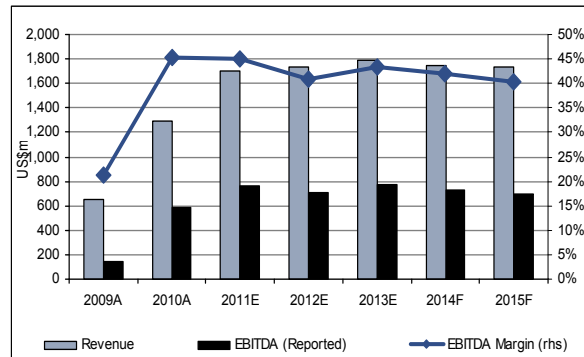
Source: Citi Investment Research and Analysis

Figure 152. Ferrexpo - Summary

	2009A	2010A	2011E	2012E
\$m unless specified				
Summary Income Statement				
Revenue	649	1,295	1,701	1,738
EBITDA (Reported)	138	585	766	711
EBIT	103	550	722	665
Underlying Net Income	71	423	535	479
HEPS (\$/sh)	0.12	0.72	0.91	0.82
DEPS (\$/sh)	0.12	0.72	0.91	0.82
DPS (Usc/sh)	6.6	6.6	6.6	6.6
No. of Shares (Diluted)	586	586	585	585
EBITDA Margin	21%	45%	45%	41%
EBIT Margin	16%	43%	42%	38%
Summary Cash Flow				
Operating Cash Flow	77	380	598	529
Capex	-86	-167	-375	-348
Free Cash Flow	-9	213	223	181
Dividend to Equity	-36	-42	-39	-39
Total Financing Cash Flow	-74	104	439	-39
Net Cash Flow	-76	307	625	142
Summary Balance Sheet				
Cash	12	319	945	1,087
Total Current Assets	221	659	1,306	1,454
PPE	452	647	988	1,294
Total Non-Current Assets	599	819	1,161	1,466
Total Current Liabilities	310	192	547	555
Working Capital	-90	467	759	899
Total Debt	270	424	920	920
Shareholders' Equity	460	848	1,342	1,783
Net Debt	258	104	-25	-167
ND/Equity	56%	12%	-2%	-9%
Production/Sales (Kt)				
Pellet Production From Own Concentrate				
62% Pellets	4,305	4,972	4,789	5,363
65% Pellets	4,304	4,061	4,305	4,640
Total	8,609	9,033	9,093	10,003
Pellets From Purchased Concentrate				
62% Pellets	157.4	180.2	219.1	400.0
65% Pellets	0.0	817.9	440.1	400.0
Total	157	998	659	800
Total Pellet Production				
62% Pellets	4,463	5,153	5,008	5,763
65% Pellets	4,304	4,879	4,745	5,040
Grand Total	8,767	10,031	9,753	10,803
Total Pellet Sales				
	9,015	9,721	9,707	10,803

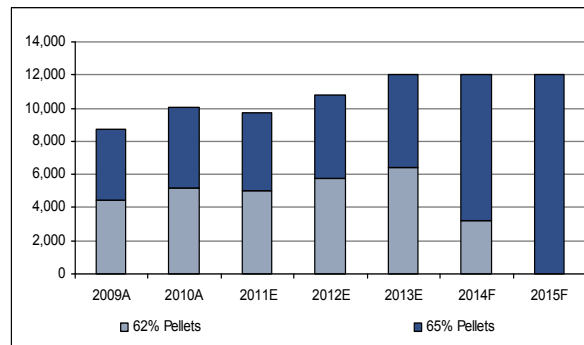
Source: Company reports, Citi Investment Research and Analysis

Figure 153. Group Revenue, EBITDA and EBITDA Margin



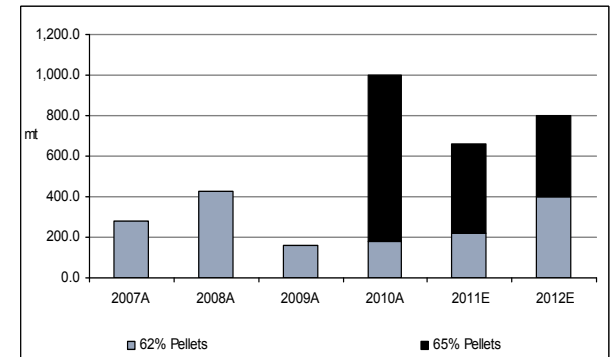
Source: Company reports, Citi Investment Research and Analysis

Figure 155. Total Pellet Production (Kt)



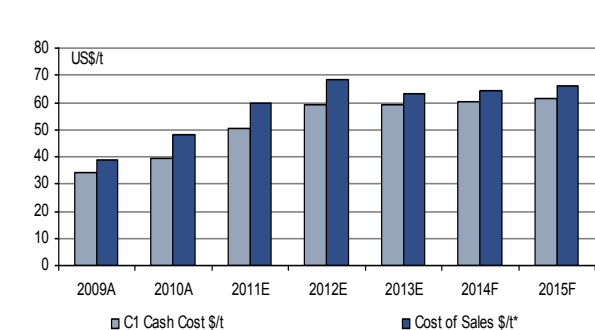
Source: Company reports, Citi Investment Research and Analysis

Figure 154. Pellets From Purchased Concentrate (Kt)



Source: Company reports, Citi Investment Research and Analysis

Figure 156. Cash Costs \$/t



Source: Company reports, Citi Investment Research and Analysis



First Quantum Minerals Ltd (FQM.L)

Neutral: (2)
Target Price: £14.00

- **Valuation:** We value FQM using DCF, free cash flow and multiples. Our DCF inputs for FQM are a risk free rate of 3.5%, a risk premium of 4.0% and a terminal growth rate of 3.5%. This gives us a WACC of 11%. Our multiples based valuation uses a 6x EBITDA multiple for GM, Kevitsa and Kansanshi and 5.5x for Sentinel. Our DCF valuation is £15.

We set our price target of £14 as a blend of three methods - DCF, multiples, and free cash flow, based off 2013E EBITDA and EPS estimates.

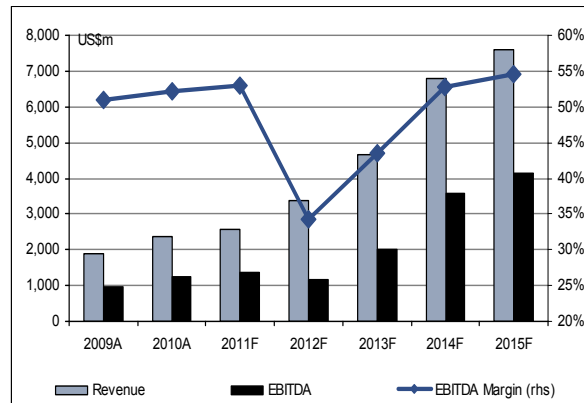
- **Risks:** Key risks for the company include an uncertain tax regime in Zambia where it operates one large copper mine and has its biggest project, and also its ability to successfully execute the Sentinel, Ravensthorpe and Kevitsa projects. If the impact of these risk factors is greater/less than we currently anticipate, then the share price could miss/exceed our target price.

Figure 157. FQM - Summary

	2009A	2010A	2011F	2012F	2013F
US\$m unless specified					
Summary Income Statement					
Revenue	1,903	2,378	2,555	3,363	4,657
EBITDA	970	1,242	1,352	1,155	2,023
EBIT	808	1,126	1,249	972	1,806
Underlying Net Income	603	857	601	384	769
HEPS (US\$)	1.08	-0.29	1.23	0.81	1.61
DPS (US\$)	0.10	0.20	0.71	0.14	0.29
No. of Shares (m)	429	429	448	476	476
EBITDA Margin	51%	52%	53%	34%	43%
EBIT Margin	42%	47%	49%	29%	39%
Summary Cash Flow					
Operating Cash Flow	563	761	653	445	965
Capex	-362	-358	-1,249	-1,537	-1,132
Free Cash Flow	201	404	-596	-1,092	-167
Net Investments	-367	-226	-1,314	-1,609	-1,203
Dividend to Equity	-9	-56	-79	-79	-102
Dividend to Minorities	-3	-20	-11	0	0
Total Financing Cash Flow	1,034	-110	542	1,471	570
Net Cash Flow	1,230	426	-119	306	332
Summary Balance Sheet					
Cash	919	1,345	475	782	1,114
Total Current Assets	1,844	2,180	1,195	2,008	2,574
PPE	2,158	3,036	3,906	5,332	6,318
Total Non-Current Assets	2,721	3,079	4,011	5,438	6,424
Total Current Liabilities	732	965	566	850	902
Working Capital	1,112	1,214	630	1,158	1,672
Total Debt	192	161	63	863	1,363
Shareholders' Equity	2,486	2,751	3,714	4,768	5,607
Net Debt	-728	-1,184	-413	81	249
ND/Equity	-29%	-43%	-11%	2%	4%
Production					
Copper (kt)					
Kansanshi	245	231	230	262	334
Bwana/lonshi	0	7	0	0	0
GM	37	37	37	48	48
Frontier	92	48	0	0	0
Kolwezi	0	0	0	0	0
Kevista	0	0	0	9	18
Kalumbila	0	0	0	0	0
Total Copper Production (kt)	374	323	267	318	399
Total Nickel Production (kt)	0.0	0.0	5.6	37.7	47.1
Total Gold Production (koz)	193.3	191.4	191.4	264.4	281.2
Total Cobalt Production (kt)	0.00	0.00	0.04	0.52	0.84
Divisional EBITDA (attributable)					
Kansanshi	578	848	1,034	761	1,234
Bwana/lonshi	-1	7	0	0	0
GM	95	144	196	254	301
Frontier	277	109	-1	0	0
Kolwezi	0	0	0	0	0
Ravensthorpe	0	0	0	83	237
Kevista	0	0	0	67	190
Kalumbila	0	0	0	0	0
Total EBITDA	948	1,109	1,229	1,164	1,963

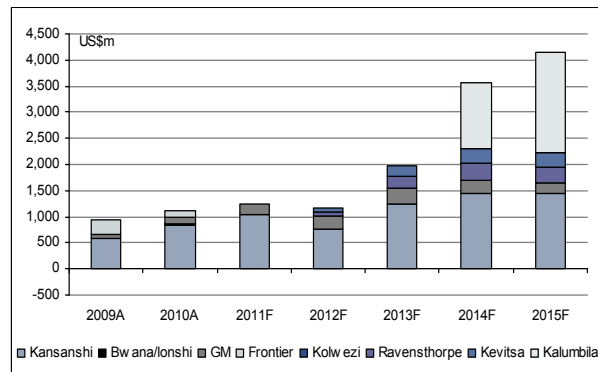
Source: Company reports, Citi Investment Research and Analysis

Figure 158. Group Revenue, EBITDA and EBITDA Margin



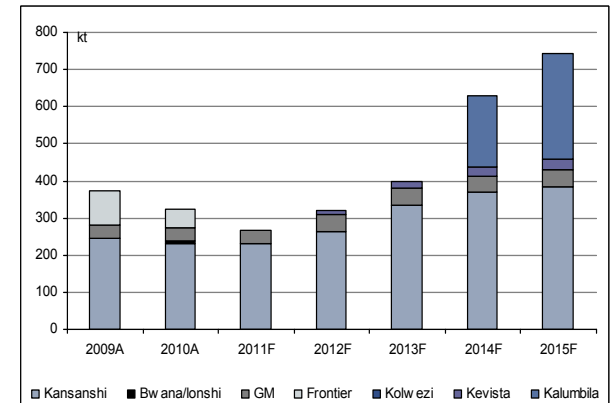
Source: Company reports, Citi Investment Research and Analysis

Figure 160. Divisional EBITDA Split



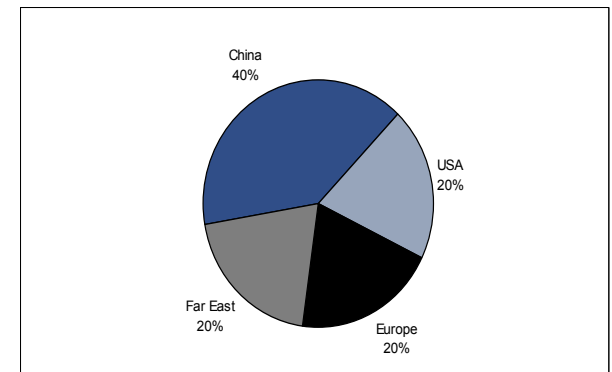
Source: Company reports, Citi Investment Research and Analysis

Figure 159. Copper Production by Operation



Source: Company reports, Citi Investment Research and Analysis

Figure 161. 2010 Revenue by Destination



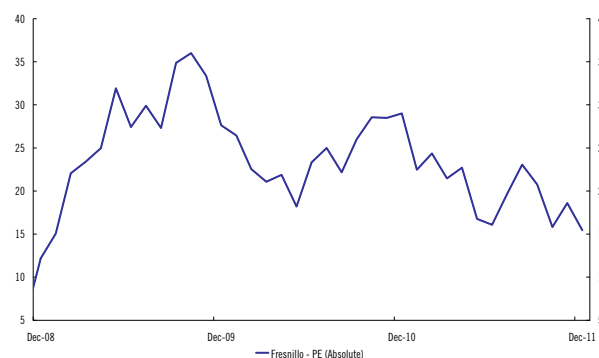
Source: Company reports, Citi Investment Research and Analysis

Fresnillo Plc (FRES.L)

Neutral: (2)
Target Price: £16.68

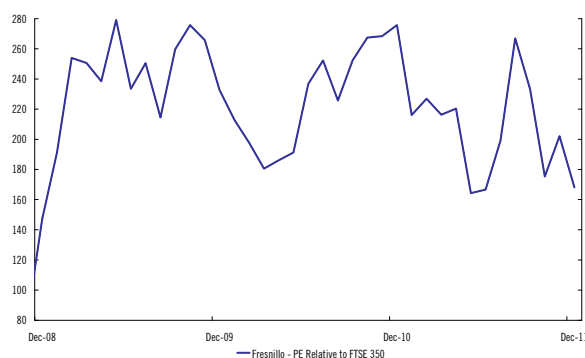
- Valuation:** We prefer to use longer-term P/NPV ratios to value this subsector and set our target price of £16.68 by applying a 1.9x P/NPV ratio to our NPV estimate of £8.78 (derived using a discount rate of 10%, given our assessment of lower country risk in LatAm vs. Africa and Russia). We set our target P/NPV multiples with reference to absolute and relative historical average levels, taking into account our views on the current stage of the cycle and on the quality of each company's assets and management.
- Risks:** The main risks to our investment thesis & target price revolve around either positive or negative moves in the following key areas:
 - Silver and metal prices:** We expect silver to hold recent levels but see only limited upside risk as global financial risk is easing and silver will have to rely on industrial and jewellery demand alone. Silver has displayed a greater degree of volatility than other precious metals over recent years. The volatility and oversupply potential could see silver prices fluctuate away from our forecasts, leading to a risk to our earnings estimates. We also expect lead and zinc prices to remain volatile over the next several years.
 - Currency:** All of FRES's operations are in Mexico. The revenue stream is denominated in US\$ and upwards of 70% of the cost base denominated in Mexican pesos, thus any significant shift in the US\$:peso exchange rate could impact profitability. We estimate that a $\pm 10\%$ move in the US\$:peso exchange rate would influence profitability by $\pm 3\%$.
 - Cost pressures:** One of the key challenges facing the mining industry is rising cost pressures. Cyclical costs are under pressure from inflationary issues driven by the upswing in the commodities cycle. If we continue to see cost escalation against the backdrop of stable commodity prices, we could see margin erosion and reduced profitability for the mining industry.
 - Political risk:** FRES's assets are predominantly based in Mexico. Consequently, while its revenue will be driven by the global demand for silver and gold, its cost base will be influenced by local currency rates, as well as country-specific economic issues such as labour availability, wages and inflation. 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.

Figure 162. PE Absolute



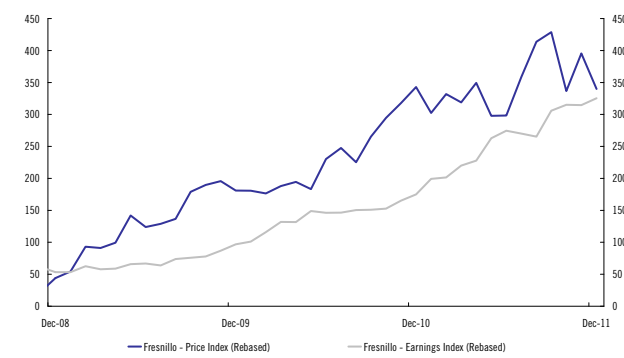
Source: Citi Investment Research and Analysis

Figure 163. PE Relative



Source: Citi Investment Research and Analysis

Figure 164. Price & Earning Absolute



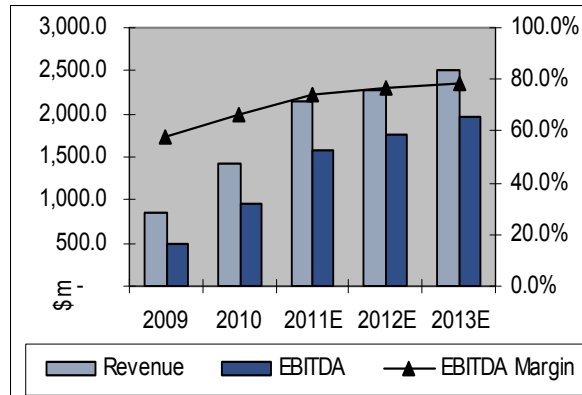
Source: Citi Investment Research and Analysis

Figure 165. Fresnillo - Summary

Financials \$m	2009	2010	2011E	2012E
Income Statement				
Revenue	847.1	1,421.4	2,145.5	2,278.7
EBITDA	490.7	947.7	1,588.8	1,747.1
EBITDA Margin	57.9%	66.7%	74.1%	76.7%
Net Income	362.1	540.7	890.6	1,038.6
EPS (US\$)	0.5	0.8	1.2	1.4
DPS	0.2	0.4	0.9	0.6
Number of shares (m)	717.0	717.0	717.0	717.0
Cash Flow Statement				
Cash flow from Ops	368.5	707.7	940.3	1,117.9
Capex	212.1	314.4	739.5	276.5
Free Cash Flow	184.0	474.5	301.8	924.7
Dividends Paid	93.5	182.6	663.9	394.1
Net Cash Flow	91.4	257.4	362.2	530.7
Balance Sheet				
Cash	312.2	559.0	468.4	999.1
Fixed Assets	688.7	896.0	1,276.3	1,322.5
Total Assets	1,543.4	2,348.0	2,732.4	3,310.7
Debt	-	-	-	-
Net debt/(cash)	- 312.2	- 559.0	- 468.4	- 999.1
Total Liabilities	240.2	428.6	520.8	513.2
Shareholder Equity	1,303.2	1,919.4	2,211.7	2,797.5
Operations				
EBITDA by Asset				
Fresnillo	437.8	639.2	970.6	915.8
Cienega	72.4	123.2	170.9	195.3
Herradura	135.6	260.4	391.0	414.8
Saucito	-	-	180.0	222.7
Soledad Dipolos	15.0	96.7	196.4	216.4
Other	170.1	171.9	320.1	217.9
Total	490.7	947.7	1,588.8	1,747.1
Silver Prod Koz				
Fresnillo	35,434.9	35,899.4	30,854.6	32,877.1
Cienega	1,543.7	1,266.0	1,278.9	1,382.9
Herradura	295.1	398.9	356.7	356.1
Saucito	-	-	5,546.8	7,537.2
Soledad Dipolos	-	-	-	-
Total	37,273.7	37,564.2	38,037.0	42,153.2
Metal Production				
Silver (Koz)	37,273.7	37,610.8	38,094.8	42,212.3
Gold (Koz)	391.2	538.2	641.6	650.8
Lead (Kt)	17.1	18.2	20.4	22.7
Zinc (Kt)	19.5	22.0	25.0	28.8
Capex				
Fresnillo	67.2	64.1	75.0	80.0
Cienega	35.4	52.3	109.8	23.4
Herradura	53.0	20.0	15.6	16.1
Saucito	51.0	210.0	22.0	9.0
Soledad Dipolos	-	62.0	57.0	12.0
Other	-	-	300.0	-
Total	206.7	408.4	739.5	276.5

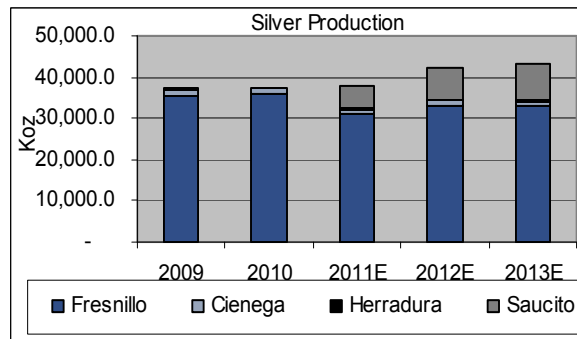
Source: Company reports, Citi Investment Research and Analysis

Figure 166. Revenue, cash costs and EBITDA margin



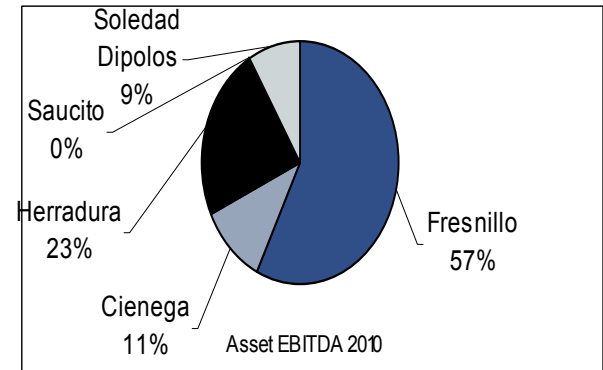
Source: Company reports, Citi Investment Research and Analysis

Figure 168. Silver Production



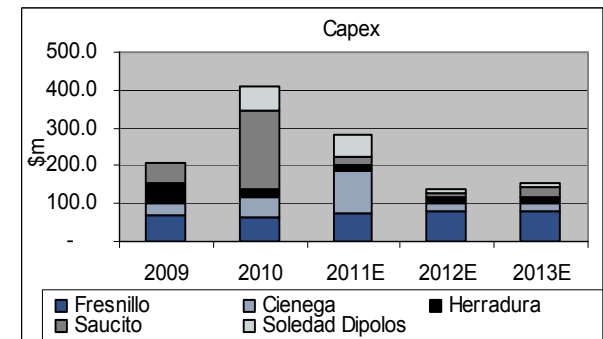
Source: Company reports, Citi Investment Research and Analysis

Figure 167. Asset EBITDA 2010



Source: Company reports, Citi Investment Research and Analysis

Figure 169. Capex



Source: Company reports, Citi Investment Research and Analysis

Gem Diamonds (GEMD.L)

Buy: (1)
Target Price: £2.61

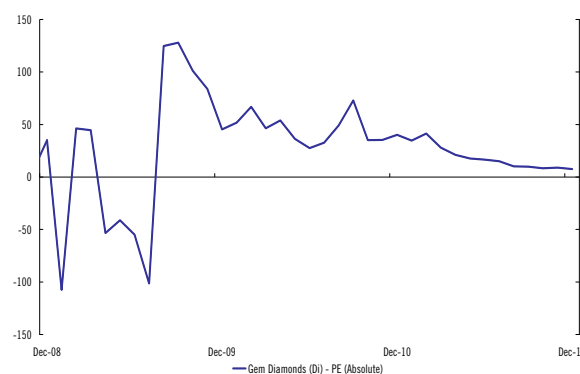
■ **Valuation:** Our £2.61 target price is based on a 1.0x P/NPV ratio applied to our NPV of £2.61, derived by using a 10% discount rate. The 1.0x P/NPV is in line with the average P/NPV ratio in the UK mining sector.

■ **Risks:** We highlight the following risks:

Country/political risk: GEM has operations and development projects in Lesotho and Botswana. These two countries would be considered to be lower risk than Central African countries but are not low risk in relation to mature economies. GEM operations in Australia provide a stable political and economical environment and geographical diversification but represent only a small part of the long-term value of GEM. **Project execution:** GEM is contemplating a new project in Botswana where there is a risk of some time slippage in delivery and budget overruns. **Diamond prices:** The diamonds produced by GEM are for the luxury goods market. We are positive on the outlook for diamond prices, particularly for large, high-value stones. Any change in consumer spending habits and/or further economic deterioration could result in lower demand and lower prices. **Currency risk:** GEM reports in US\$, and the revenue stream is priced in US\$. However, operating costs are denominated in A\$, ZAR and US\$. Depreciation of the US\$ against these currencies will cause the cost base to rise and could negatively impact earnings.

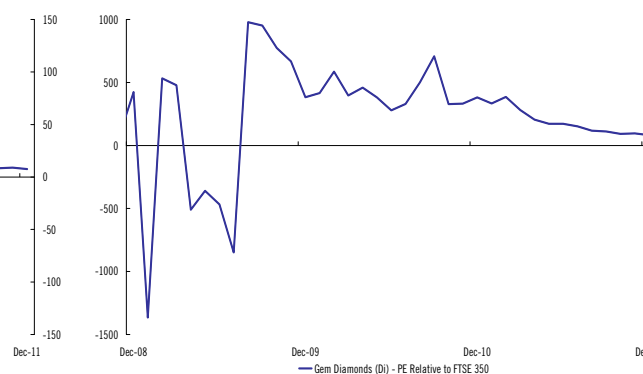
If the impact from any of these factors proves to be more negative than we anticipate, the stock will likely have difficulty achieving our financial and price targets. However, if any of these factors proves to have less of an effect than we anticipate, the stock could materially outperform our target.

Figure 170. PE Absolute



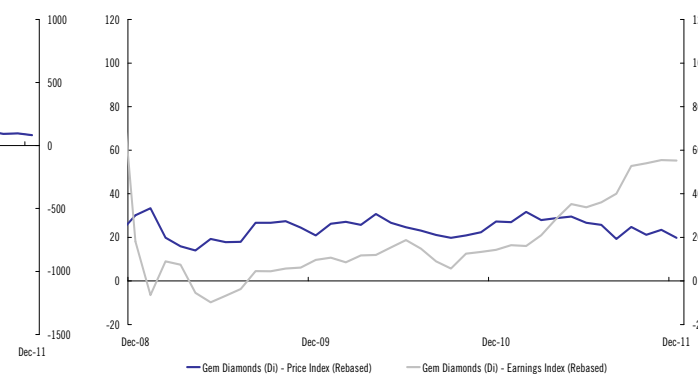
Source: Citi Investment Research and Analysis

Figure 171. PE Relative



Source: Citi Investment Research and Analysis

Figure 172. Price & Earning Absolute



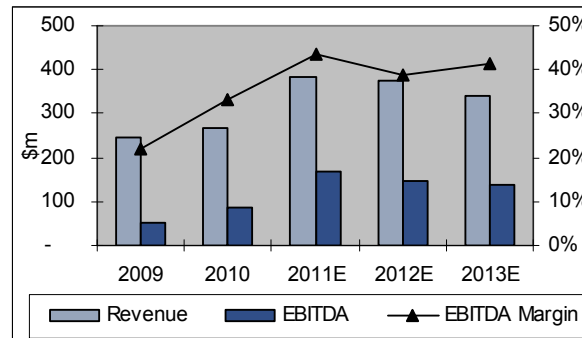
Source: Citi Investment Research and Analysis

Figure 173. GEM Diamonds - Summary

Financials \$m	2009	2010	2011E	2012E
Income Statement				
Revenue	244	267	383	377
EBITDA	54	88	167	145
EBITDA Margin	22%	33%	44%	39%
Net Income	16	19	49	47
EPS (US\$)	0.13	0.14	0.35	0.34
DPS (US\$)	-	-	-	-
Number of shares (m)	121	139	139	139
Cash Flow Statement				
Cash flow from Ops	47	65	132	79
Capex	- 59 -	77 -	95 -	119
Free Cash Flow	- 14 -	11	37	40
Dividends Paid	- 3	-	-	-
Net Cash Flow	52	14	35	40
Balance Sheet				
Cash	114	130	165	126
Fixed Assets	357	414	453	540
Total Assets	550	636	713	760
Debt	0	-	-	-
Net debt	- 114 -	130 -	165 -	126
Total Liabilities	131	150	177	177
Shareholder Equity	351	401	448	495
Operations				
EBITDA by Asset				
Letseng	61	90	186	159
Kimberley	5	26	7	4
Corporate/Others	- 10 -	28 -	12 -	18
Total	54	88	167	145
Attributable Prod Kct				
Letseng	64	63	72	73
Cempaka	-	-	-	-
Kimberley	361	167	123	133
Total	425	230	195	206
Capex				
Letseng	15	9	45	116
Cempaka	-	-	-	-
Gope	-	-	-	-
Kimberley	6	4	5	3
Other	38	64	45	-
Total	59	77	95	119

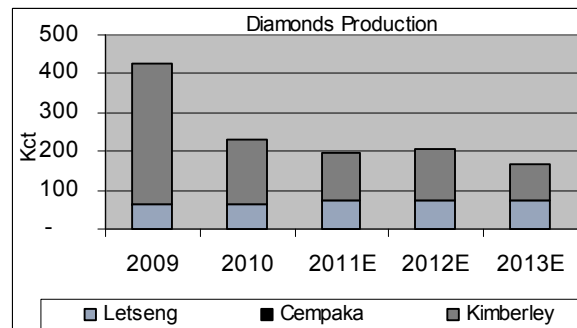
Source: Company reports, Citi Investment Research and Analysis

Figure 174. Revenue, cash costs and EBITDA margin



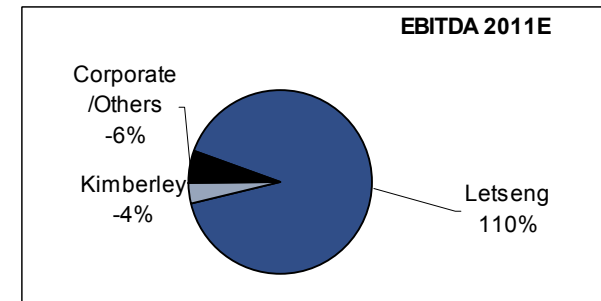
Source: Company reports, Citi Investment Research and Analysis

Figure 176. Diamonds Production



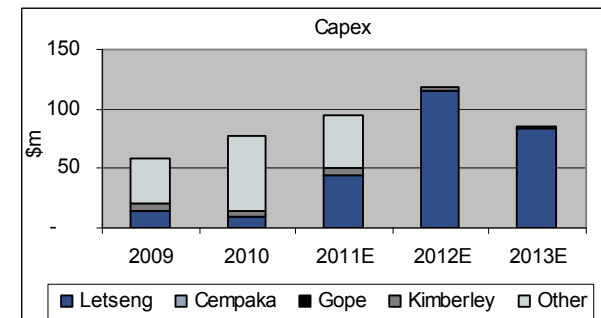
Source: Company reports, Citi Investment Research and Analysis

Figure 175. EBITDA 2011E



Source: Citi Investment Research and Analysis

Figure 177. Capex



Source: Company reports, Citi Investment Research and Analysis

Hochschild Mining Plc (HOCM.L)

Neutral: (2)
Target Price: £4.75

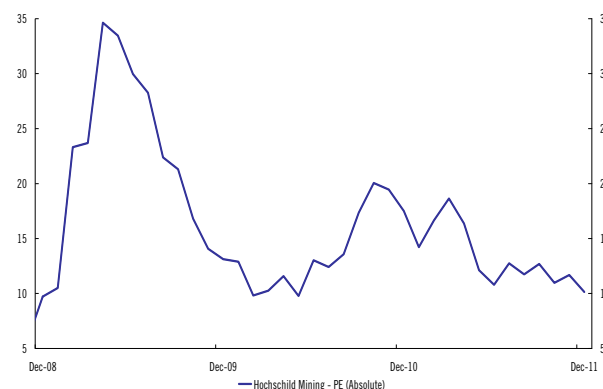
■ **Valuation:** We prefer to use longer-term P/NPV ratios to value this subsector and set our target price of £4.75 by applying a 1.3x P/NPV ratio to our NPV estimate of £3.65 (derived using a discount rate of 10%). We set our target P/NPV multiples with reference to absolute and relative historical average levels, peer multiples, and our view on the current stage of the cycle and on the quality of each company's assets and management. HOCM does not warrant the higher P/NPV rating of its key silver peers, in our view, because of the present uncertain phase of Peruvian politics.

■ **Risks:** The main risks to our investment thesis and target price revolve around either positive or negative moves in the following key areas:

Politics. Following the recent Peruvian election, there is a higher risk of excessive taxes. **Commodity price:** Silver has displayed a greater degree of volatility than other precious metals over recent years. The volatility and oversupply potential could see silver prices fluctuate away from our forecasts leading to risk in our earnings estimates.

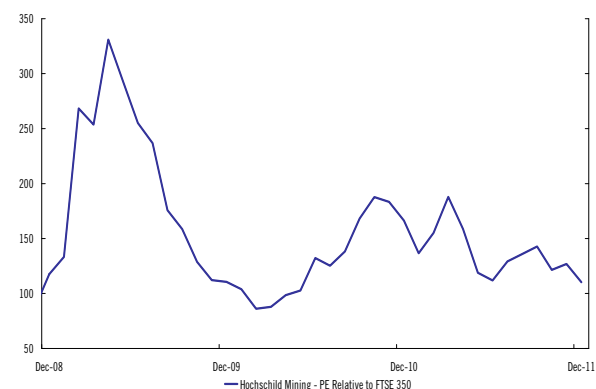
Currency risk: The bulk of HOC's earnings are generated from Peru. With their revenue denominated in US\$ and 40% of the cost base denominated in the Peruvian Sole, any significant shift in the US\$:Sole exchange rate could impact profitability. **Political risk:** HOC's assets are based largely in Peru and Argentina. While these regions have a history of mining, it is nowhere near as extensive or deep-rooted as their neighbour Chile. We have seen an elevation in royalties in these regions in the past year, as well as extensive labour strikes, as sections of the government and labour try to increase their financial windfalls from the mining boom.

Figure 178. PE Absolute



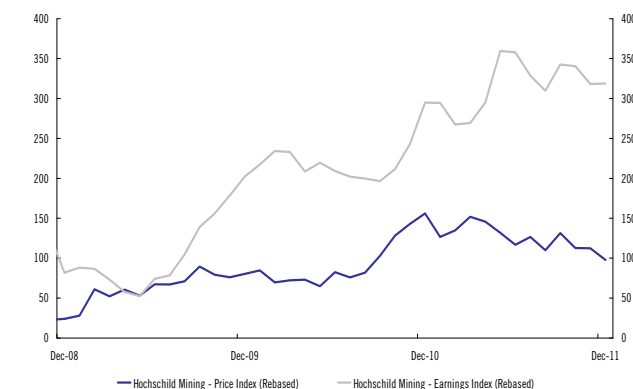
Source: Citi Investment Research and Analysis

Figure 179. PE Relative



Source: Citi Investment Research and Analysis

Figure 180. Price & Earning Absolute



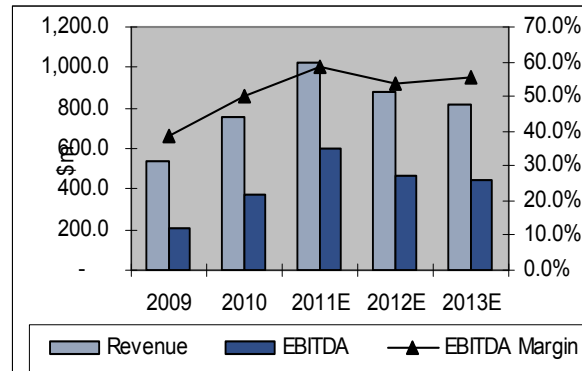
Source: Citi Investment Research and Analysis

Figure 181. Hochschild - Summary

Financials \$m	2009	2010	2011E	2012E
Income Statement				
Revenue	538.0	752.6	1,021.1	876.7
EBITDA	208.3	374.9	598.0	469.9
EBITDA Margin	38.7%	49.8%	58.6%	53.6%
Net Income	52.0	94.8	218.7	141.1
EPS (USc)	0.17	0.28	0.65	0.42
DPS	0.04	0.05	0.13	0.08
Number of shares (m)	307.4	338.0	338.0	338.0
Cash Flow Statement				
Cash flow from Ops	199.2	296.6	381.6	267.4
Capex	116.6	123.0	83.6	372.4
Free Cash Flow	-	174.4	504.6	337.4
Dividends Paid	20.0	11.7	54.6	36.9
Net Cash Flow	-	39.4	447.9	299.9
Balance Sheet				
Cash	77.8	524.6	822.8	681.0
Fixed Assets	495.0	457.0	393.0	639.1
Total Assets	1,305.4	1,662.7	1,849.6	1,953.9
Debt	333.0	317.3	292.7	292.7
Net debt	255.2	207.3	530.1	388.3
Total Liabilities	502.4	609.3	589.9	589.9
Shareholder Equity	803.0	1,053.4	1,259.7	1,364.0
Operations				
EBITDA by Asset				
Arcata	93.9	122.9	160.1	124.3
Ares	23.7	18.1	20.7	11.6
Selene	-	0.2	-	-
Pallancata	101.8	191.7	283.0	228.9
San Jose	77.7	132.0	225.7	212.0
Mina Moris	11.9	11.9	20.4	7.4
Other	-	100.4	101.7	99.4
Total	208.3	374.9	598.0	469.9
Silver Prod Koz				
Arcata	8,800	7,832	5,796	5,759
Ares	898	808	541	313
Selene	620	-	-	-
Pallancata	8,430	10,135	8,770	9,023
San Jose	4,989	5,345	5,976	6,287
Mina Moris	87	94	63	8
Total	23,825	24,214	21,146	21,389
Capex				
Arcata	36.5	44.0	19.3	14.7
Ares	6.4	3.3	-	-
Selene	20.2	-	-	-
Pallancata	32.5	44.0	21.0	16.5
San Jose	30.6	34.0	16.3	14.7
Mina Moris	6.4	2.7	1.0	126.4
San Filepe	-	-	-	-
Other	-	-	-	-
Total	132.6	128.0	57.6	372.4

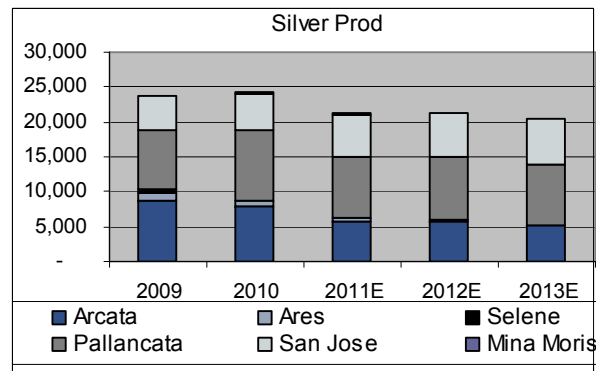
Source: Company reports, Citi Investment Research and Analysis

Figure 182. Revenue, cash costs and EBITDA margin



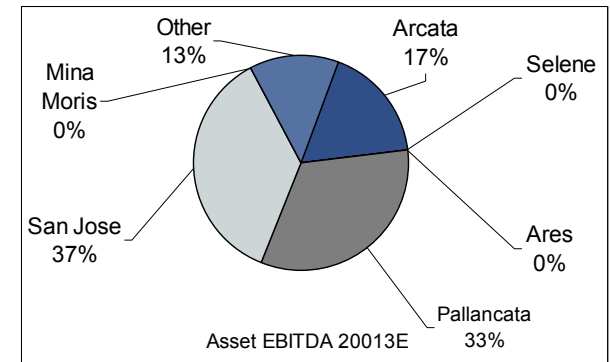
Source: Company reports, Citi Investment Research and Analysis

Figure 184. Silver Production



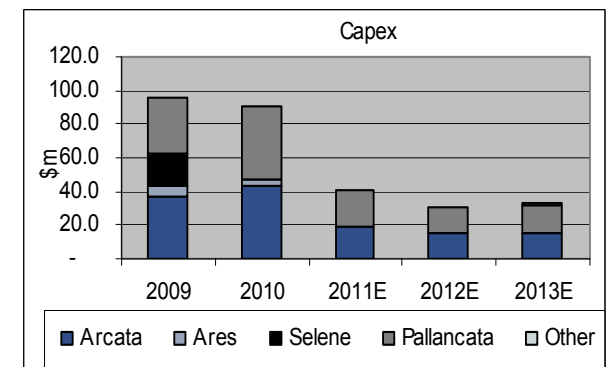
Source: Company reports, Citi Investment Research and Analysis

Figure 183. Asset EBITDA 2013E



Source: Citi Investment Research and Analysis

Figure 185. Capex



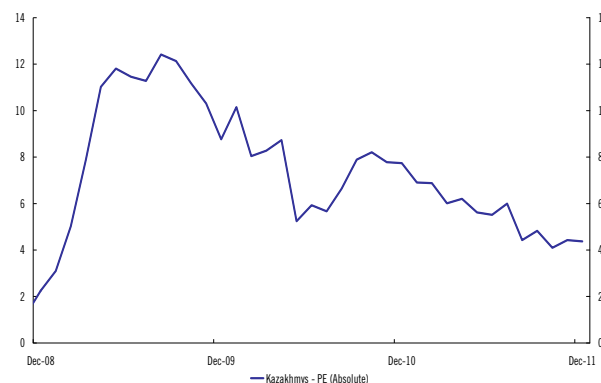
Source: Company reports, Citi Investment Research and Analysis

Kazakhmys Plc (KAZ.L)

Buy: (1)
Target Price: £15.20

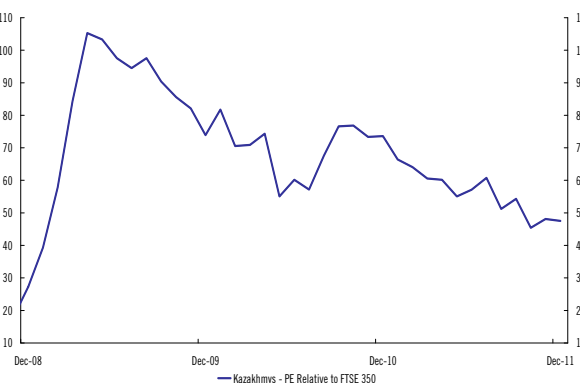
- Valuation:** We have a target price of £15.2 on Kazakhmys. Our target price is based on a blend of NPV and earnings-based multiples (2011E EV/EBITDA). We derive a DCF value of £17.4 (based on a DR of 14.1%, terminal growth of 2% and a premium of 5%), which is supported by our multiples-based fair value estimate. We calculate £11.8/share from a SOTP EV/EBITDA valuation and £18.7/share from free cash flow analysis, which are equally weighted with our DCF value of £17.4 to give a target price of £15.20.
- Risks:** Adverse movements in the copper price away from our forecasts could see a significant delta in our forecasts from actual profits, both positively and negatively. The company conducts the bulk of its business in Kazakhstan and geopolitical risks could cause the share price to deviate significantly from our target price. If the impact on the company from any of these factors proves to be more or less negative than we anticipate, the stock could have difficulty achieving or exceed our financial and price targets.

Figure 186. PE Absolute



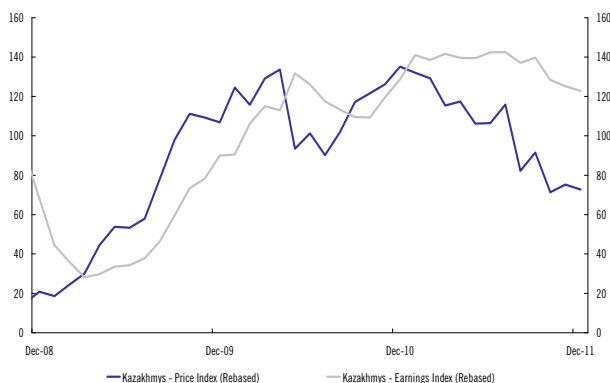
Source: Citi Investment Research and Analysis

Figure 187. PE Relative



Source: Citi Investment Research and Analysis

Figure 188. Price & Earning Absolute



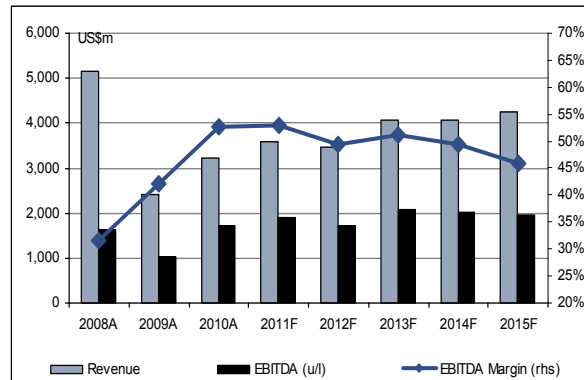
Source: Citi Investment Research and Analysis

Figure 189. Kazakhmys - Summary

	2009A	2010A	2011F	2012F
US\$m unless specified				
Summary Income Statement				
Revenue	2,404	3,237	3,583	3,458
EBITDA (u/l)	1,015	1,707	1,892	1,707
EBITDA (incl ENRC)	1,634	2,796	3,203	2,992
EBIT	860	1,783	2,058	1,916
Underlying Net Income	602	1,489	1,722	1,554
HEPS (US\$)	1.04	2.71	2.30	2.91
DPS (US\$)	0.09	0.22	0.37	0.52
No. of Shares (m)	535	535	535	535
EBITDA Margin	42%	53%	53%	49%
EBIT Margin	36%	55%	57%	55%
Summary Cash Flow				
Operating Cash Flow	736	1,036	1,262	1,100
Capex	423	590	708	1,064
Free Cash Flow	783	-79	607	36
Net Investments	-470	525	48	0
Dividend to Equity	0	80	129	284
Dividend to Minorities	0	0	0	0
Total Financing Cash Flow	-319	261	-50	-37
Net Cash Flow	464	182	557	-1
Summary Balance Sheet				
Cash	961	1,113	1,663	1,662
Total Current Assets	1,940	2,518	3,161	3,202
PPE	3,601	2,022	2,470	3,013
Total Non-Current Assets	8,777	8,023	8,477	9,188
Total Current Liabilities	1,532	992	1,406	1,481
Working Capital	408	1,526	1,754	1,722
Total Debt	1,650	1,819	1,908	2,158
Shareholders' Equity	6,584	8,206	9,371	10,516
Net Debt	689	706	245	496
ND/Equity	10%	9%	3%	5%
Production				
Copper (kt)	320	303	299	299
Zinc (kt)	18	0	0	0
Gold (koz)	135	127	118	128
Silver (koz)	16,899	14,093	13,115	11,931
Divisional EBITDA				
Copper	1,027	1,715	1,924	1,714
MKM	0	0	0	0
Power	0	0	0	0
Gold	24	29	0	0
Petroleum	-1	-1	0	0
Corporate/Others	-35	-36	-42	-10
Total EBITDA	1,015	1,707	1,882	1,704
Commodity/Fx Assumptions				
Copper (US\$/lb)	233	342	394	355
Zinc (US\$/lb)	75	98	102	93
Gold (\$/oz)	970	1,197	1,343	1,709
Silver (\$/oz)	15	18	27	30

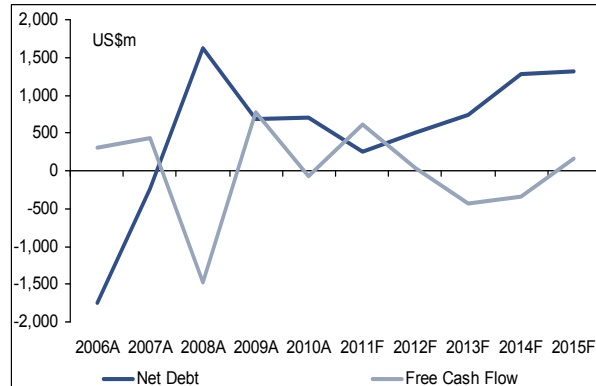
Source: Company reports, Citi Investment Research and Analysis

Figure 190. Group Revenue, EBITDA and EBITDA Margin



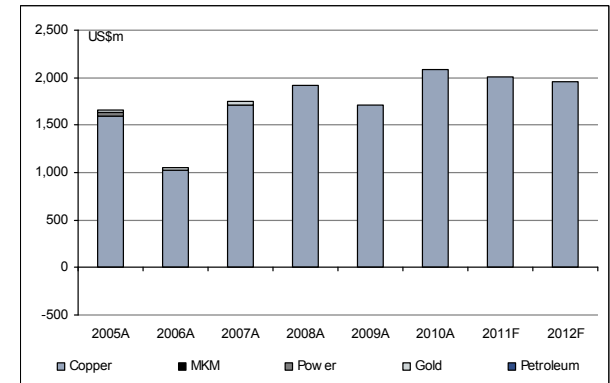
Source: Company reports, Citi Investment Research and Analysis

Figure 192. Net Debt vs FCF



Source: Company reports, Citi Investment Research and Analysis

Figure 191. Divisional EBITDA Split



Source: Company reports, Citi Investment Research and Analysis



Klöckner & Co. (KCOGn.DE)

Neutral: (2)
Target Price: €12.00

- **Valuation:** Our €12 target price is set at the average of our DCF (€18), multiples (€3), free cash flow (€9) and residual income (€18) valuation methods. We use a 4.5x EBITDA multiple for Europe and a 5.0x multiple for the US based on peer multiples. Our DCF uses a 3.75% equity risk premium, a 3% terminal growth rate and a WACC of 9%.
- **Risks:** We consider several risk factors, including an assessment of industry-specific risk, financial risk and management risk. In particular, we see the following key risks to the share price reaching our target price:

KCO's business model carries inherent inventory risk. Cash conversion days are over 100 at the moment and a sharp decline in the steel price could trigger inventory losses. KCO has, in the past, taken a proactive view on the steel price, such as reducing inventories when it has perceived prices to be at a peak or close to a peak. In 2010 for instance, this helped avoid severe inventory losses in Q3 and Q4.

KCO's growth partly relies on acquisitions. This creates the risk of overpaying for assets and buying assets at the wrong time in the cycle. Given some of the deals are fairly sizeable (€200-400m), this can stress the balance sheet and require a capital injection (as was the case in 2009). So far, most acquisitions have been small to mid-sized deals, but recent deals indicate an increased appetite for larger deals. We think this implies a higher likelihood of paying close to fair value multiples and relying on cost cutting and synergies in order to crystallise value.

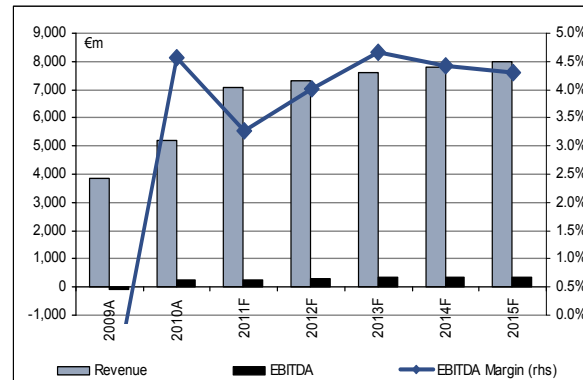
KCO has not had much competition so far from mills, as it executes its strategy of consolidating the distribution sector. The area has been relatively non-core for mills, but if this were to change, KCO would be forced to pay higher multiples for acquisitions. We think this risk is fairly unlikely as mills have indicated that M&A is likely to focus on either mining assets or on mill assets.

Figure 193. Klöckner & Co - Summary

YE March	2007A	2009A	2010A	2011F	2012F	2013F
€m unless specified						
Group Summary						
Europe Sales	5,197	3,186	4,311	5,051	4,892	5,113
North America Sales	1,077	674	887	2,029	2,444	2,490
Consolidation	0	0	0	0	0	0
Revenue	6,274	3,860	5,198	7,081	7,335	7,602
EBITDA	369	-66	238	232	294	354
EBIT	305	-176	152	131	187	252
Underlying Net Income	133	-149	78	28	109	165
Diluted No. of Shares (m)	63	78	78	113	113	113
HEPS (€)	2.12	-1.92	1.00	0.25	0.96	1.46
DPS (€)	0.80	0.00	0.30	0.30	0.00	0.16
Operating Cash Flow	31	537	35	-17	138	229
Capex	-61	-25	-27	-49	-60	-60
Free Cash Flow	-30	511	8	-66	78	169
Working Capital	18	764	-185	-170	-77	-37
Net Debt	732	-156	124	966	372	219
Net Debt + Unfunded Pensions	882	-6	274	1,116	522	369
EBITDA Margin	5.9%	-1.7%	4.6%	3.3%	4.0%	4.7%
EBIT Margin	4.9%	-4.5%	2.9%	1.8%	2.6%	3.3%
ND/Equity	87%	-14%	10%	53%	19%	11%
BVPS (€)	12.9	15.2	17.5	17.8	18.9	20.4
ROIC	14.9%	-2.9%	9.8%	4.7%	5.5%	7.0%
Shipments (kt)						
Europe	0	3,156	4,184	4,437	4,270	4,347
North America	0	963	1,130	2,266	2,793	2,850
Total Shipments	0	4,119	5,314	6,703	7,063	7,197
Divisional EBITDA						
Europe EBITDA €mn	326	57	223	178	189	214
N.America EBITDA €mn	65	-44	33	79	125	160
Consolidation	-20	-82	-18	-25	-20	-20
Group EBITDA €mn	371	-68	238	232	294	354
EBITDA/t (€)						
Europe EBITDA/t	18	53	40	44	44	49
N.America EBITDA/t	-45	29	35	45	45	56

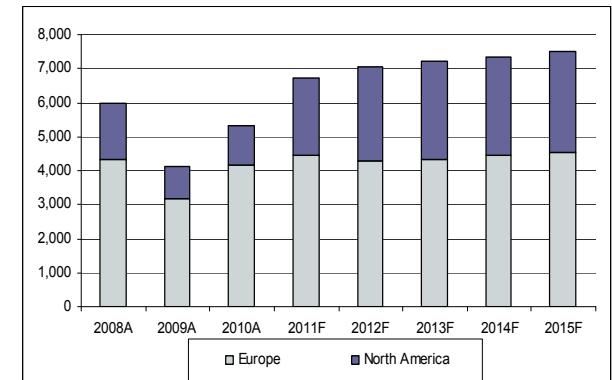
Source: Company reports, Citi Investment Research and Analysis

Figure 194. EBITDA/t and EBITDA Margin



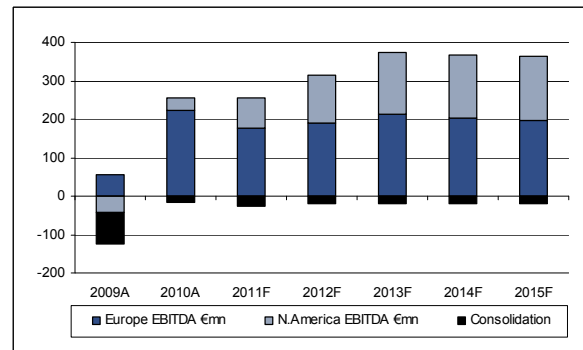
Source: Company reports, Citi Investment Research and Analysis

Figure 195. Shipments by geography (kt)



Source: Company reports, Citi Investment Research and Analysis

Figure 196. Divisional EBITDA Split €mn



Source: Company reports, Citi Investment Research and Analysis

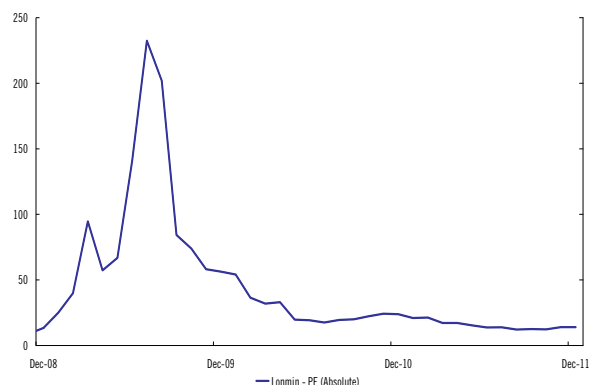


Lonmin PLC (LMI.L)

Neutral: (2)
Target Price: £11.05

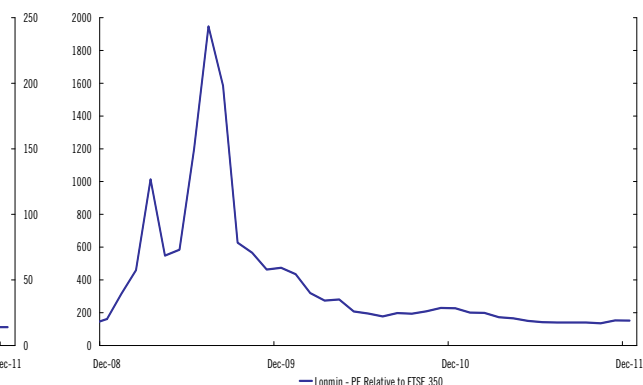
- Valuation:** Our target price for Lonmin is £11.05. We value Lonmin based on a sum-of-the-parts discounted cash flow (DCF) analysis. Our model uses a nominal WACC of 9% and discounts forecast cash flows over the life of the group's individual assets. We apply a 1.05 P/NPV multiple to our £10.52 NPV.
- Risks:** Our valuation of LON is exposed to macroeconomic developments affecting PGM prices and exchange rates, operational risks that might affect volumes and input costs, and political and regulatory risks that might affect costs and the company's reputation.
 - Macroeconomic risks:** Our valuation of LON is highly dependent on input assumptions for platinum, palladium, and rhodium prices, as well as the rand-dollar exchange rate. Upside risks to our view include higher-than-expected PGM prices and a weaker-than-expected rand. Conversely, downside risks to our view include lower-than-expected PGM prices and a stronger-than-expected rand.
 - Operational risks:** We base our production and cost outlook for LON's individual mines on management guidance and by applying our discretion to management's guidance and targets. The main downside risk to our view is that significantly more capex is required in order to sustain current production levels than that assumed in our valuation model. We also caution downside risk to our generally favorable cost assumptions, given the inflationary environment in which LON operates. The main upside risk to our view is the platinum market moving into deficit, in which case LON might be able to expand production above our forecast levels.
 - Political and regulatory risks:** LON's operations and future projects are based in SA. The company is subsequently exposed to government and regulatory-related risks in SA. Specific risks include higher-than-expected royalties, production delays from government intervention and labour unrest. 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.

Figure 197. PE Absolute



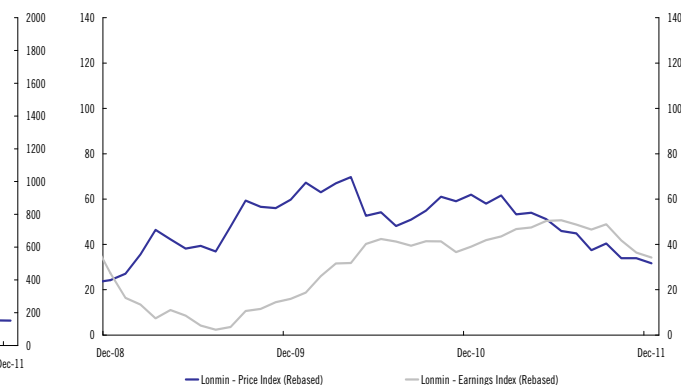
Source: Citi Investment Research and Analysis

Figure 198. PE Relative



Source: Citi Investment Research and Analysis

Figure 199. Price & Earning Absolute



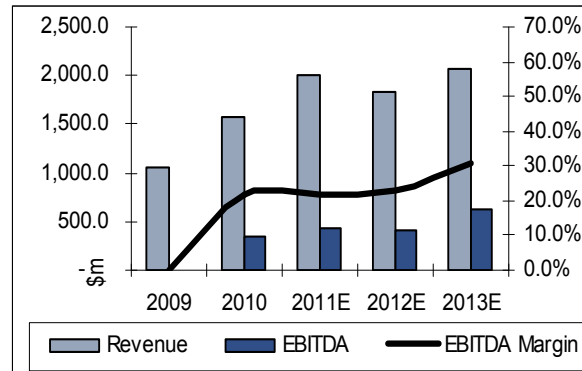
Source: Citi Investment Research and Analysis

Figure 200. Lonmin - Summary

Financials \$m	2009	2010	2011E	2012E
Income Statement				
Revenue	1,062.2	1,579.3	1,996.6	1,822.7
EBITDA	2.1	345.1	438.7	414.7
EBITDA Margin	0.2%	21.9%	22.0%	22.8%
Net Income	-	103.0	133.7	231.4
EPS (USc)	-	0.59	0.69	1.14
DPS	-	0.15	0.29	0.23
Number of shares (m)	180.1	193.0	203.0	203.0
Cash Flow Statement				
Cash flow from Ops	136.0	72.3	664.6	337.3
Capex	237.0	259.0	408.0	318.3
Free Cash Flow	-	101.0	471.7	256.6
Dividends Paid	-	-	22.0	53.0
Net Cash Flow	56.0	138.7	64.0	32.2
Balance Sheet				
Cash	282.0	143.3	76.0	47.2
Fixed Assets	2,036.0	2,199.0	2,567.0	2,755.2
Total Assets	4,213.0	4,818.3	4,862.0	4,981.5
Debt	407.0	523.0	310.0	310.0
Net debt/(cash)	125.0	379.7	234.0	262.8
Total Liabilities	1,411.0	1,742.0	1,520.0	1,474.1
Shareholder Equity	2,417.0	2,703.3	2,931.0	3,096.3
Operations				
EBITDA by Asset				
Marikana	1.4	293.0	357.9	358.2
Pandora	17.5	30.5	30.1	21.5
Limpopo	-	1.9	0.0	0.0
Other	-	15.0	21.6	50.8
Total	2.1	345.1	438.7	414.7
Platinum Prod (attributable) Koz				
Marikana	612	682	697	747
Pandora	46	25	25	22
Limpopo	5	0	0	0
Total	663	706	722	769
Other PGM Prod (attributable) Koz				
Marikana	545	607	621	665
Pandora	40	21	21	19
Limpopo	5	0	0	0
Total	590	628	642	684
Capex				
Marikana	220.0	264.0	334.1	300.0
Pandora	3.0	4.0	4.1	4.3
Limpopo	4.0	4.0	4.0	4.0
Other	-	-	-	-
Total	227.0	272.0	342.1	308.3

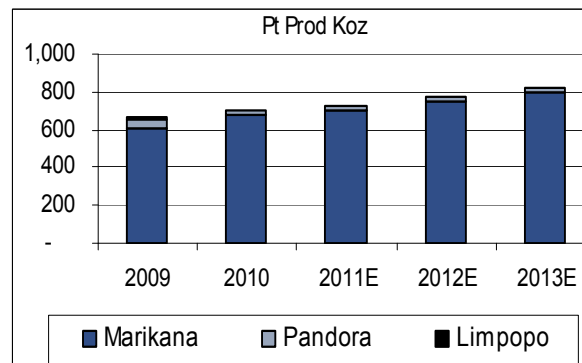
Source: Company reports, Citi Investment Research and Analysis

Figure 201. Group Revenue, EBITDA and EBITDA Margin



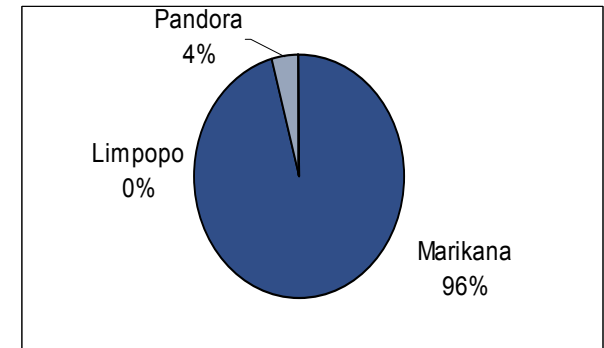
Source: Company reports, Citi Investment Research and Analysis

Figure 203. Platinum Production



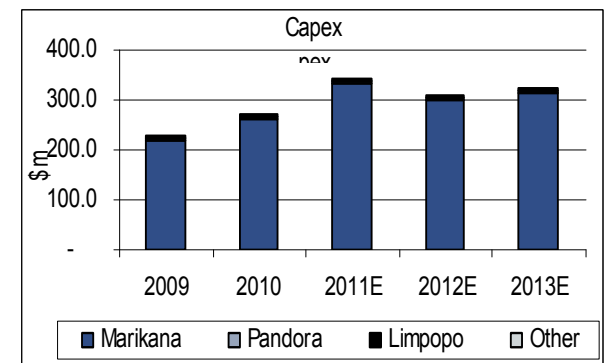
Source: Company reports, Citi Investment Research and Analysis

Figure 202. Asset EBITDA 2013E



Source: Citi Investment Research and Analysis

Figure 204. Capex



Source: Company reports, Citi Investment Research and Analysis

New World Resources (NWRR.L)

Buy: (1)
Target Price: £7.20

■ **Valuation:** Our target price of £7.20 is set using a rounded average of NPV and multiples based valuation. We apply a 4x EV/EBITDA ratio based on 2012 forecast EBITDA (£6.18/sh), at the lower end of NWR's historical trading multiples. Our DCF derived NPV is £8.19, using a WACC of 12% - reflecting regional and commodity exposure along with its high position on the cost curve.

■ **Risks:** The key risks to our target price are:

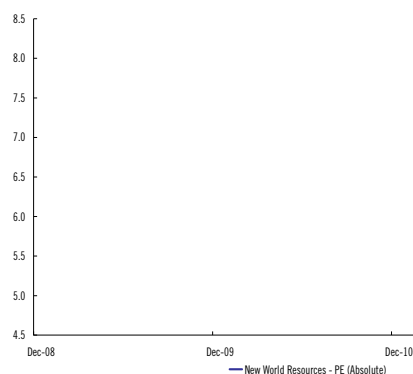
Operational costs: Inflationary pressures on labour, raw materials and energy could negatively influence NWR's cost base, which is already high compared with its global coal peer group.

Customer base: changing technology from the steel plants, or the steel plants developing their own mines, could remove the end-market for some of NWR's product.

Macroeconomic factors: Further drops in industrial production would put additional pressure on steel production and energy consumption - the two key markets for NWR's products.

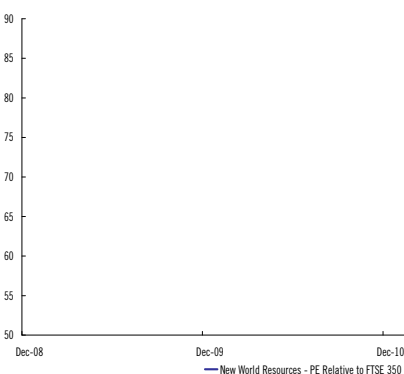
If the impact on the company from any of these factors proves to be more negative than we anticipate, the stock will likely have difficulty achieving our financial and price targets. However, if any of these factors proves to have less of an effect than we anticipate, the stock could materially outperform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

Figure 205. PE Absolute



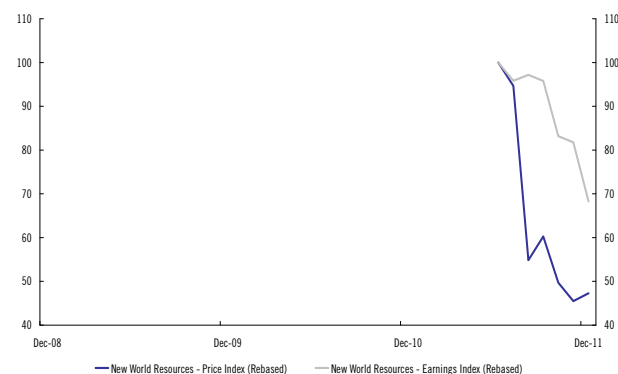
Source: Citi Investment Research and Analysis

Figure 206. PE Relative



Source: Citi Investment Research and Analysis

Figure 207. Price & Earning Absolute



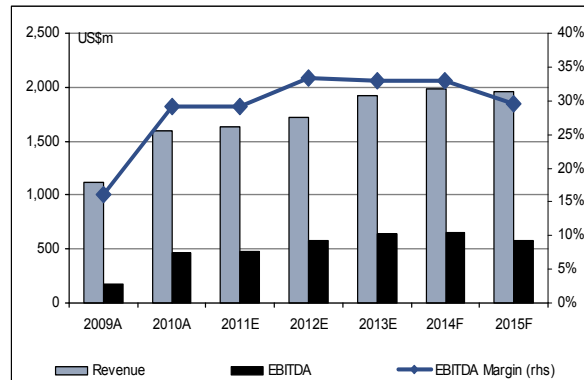
Source: Citi Investment Research and Analysis

Figure 208. New World Resources - Summary

	2009A	2010A	2011E	2012E	2013E
€m unless specified					
Summary Income Statement					
Revenue	1,117	1,590	1,636	1,722	1,926
EBITDA	179	464	478	574	635
EBIT	10	295	301	406	447
Underlying Net Income	-62	233	152	259	295
HEPS (€/sh)	-0.23	0.88	0.58	0.98	1.12
DEPS (€/sh)	-0.23	0.88	0.57	0.97	1.11
DPS (€/sh)	0.00	0.43	0.29	0.49	0.56
No. of Shares	264	264	264	263	263
EBITDA Margin	16%	29%	29%	33%	33%
EBIT Margin	1%	19%	18%	24%	23%
Summary Cash Flow					
Operating Cash Flow	176	315	265	396	485
Capex	-250	-221	-199	-190	-195
Free Cash Flow	-74	94	61	125	239
Dividend to Equity	-47	-56	-184	-92	-147
Total Financing Cash Flow	-59	-255	-194	-105	-160
Net Cash Flow	-131	-19	-124	20	79
Summary Balance Sheet					
Cash	548	529	405	425	504
Total Current Assets	787	783	754	815	921
PPE	1,158	1,281	1,303	1,405	1,462
Total Non-Current Assets	1,429	1,475	1,496	1,598	1,655
Total Current Liabilities	350	270	279	288	317
Working Capital	437	513	475	527	604
Total Debt	1,034	850	842	829	816
Shareholders' Equity	560	809	789	956	1,103
Net Debt	486	321	437	404	312
ND/Equity	87%	40%	55%	42%	28%
Production/Sales					
Production					
Total Coal Production (mt)	11.00	11.44	11.25	11.00	12.00
Coke production (mt)	0.84	1.01	0.77	0.85	0.85
External Sales					
Coking Coal (mt)	5.17	5.26	4.42	5.15	6.03
Thermal Coal (mt)	4.89	5.46	6.23	5.15	5.26
Coke (mt)	0.71	1.10	0.56	0.85	0.85
Divisional Revenue					
Coking Coal	449	739	800	786	908
Thermal coal	351	343	437	475	531
Coke	105	303	203	255	251
Other Revenue	212	206	195	206	235
Total Revenue	1,117	1,590	1,636	1,722	1,926

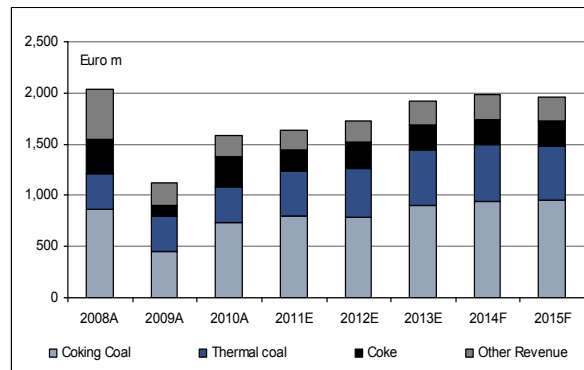
Source: Company reports, Citi Investment Research and Analysis

Figure 209. Group Revenue, EBITDA and EBITDA Margin



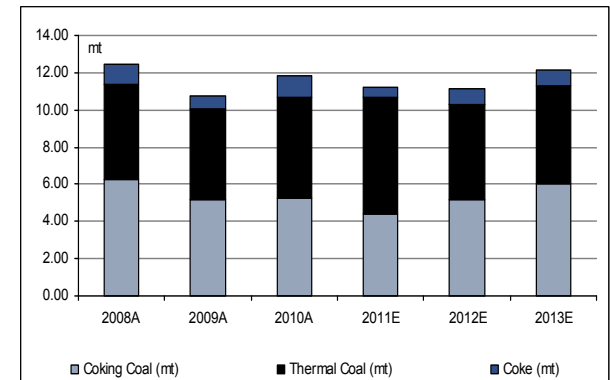
Source: Company reports, Citi Investment Research and Analysis

Figure 211. Divisional Revenue Split



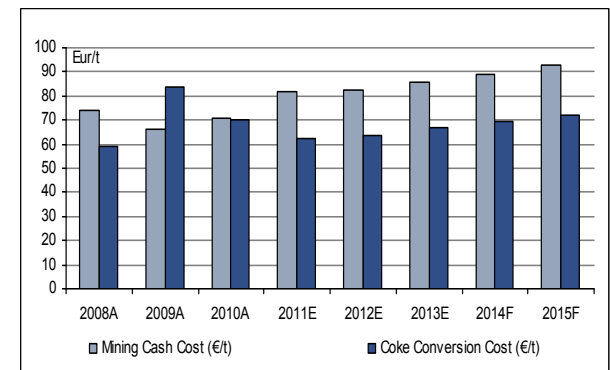
Source: Company reports, Citi Investment Research and Analysis

Figure 210. Coal/Coke sales volumes



Source: Company reports, Citi Investment Research and Analysis

Figure 212. Cash Costs €/t



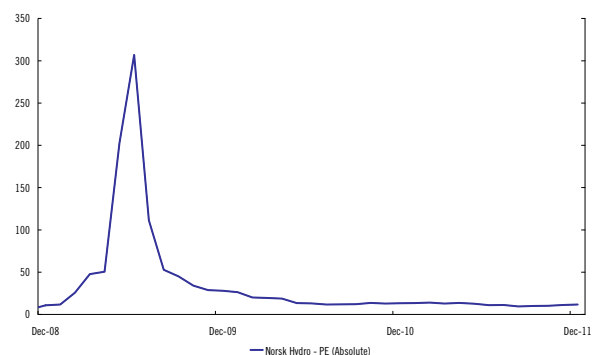
Source: Company reports, Citi Investment Research and Analysis

Norsk Hydro ASA (NHY.OL)

Sell: (3)
Target Price: Nkr30.00

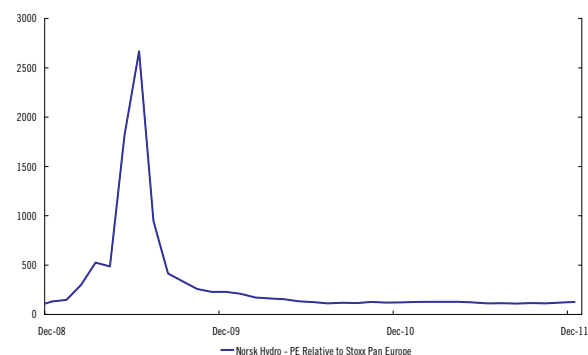
- **Valuation:** Our Nkr30.00 target price is based on the rounded average of our NPV and PE fair values. Our NPV fair value is based on a zero premium to our calculated NPV for the stock of Nkr36.00, which is based on a discount rate of 9.53%. Our P/E valuation is based on an 12.0x 2012E multiple, to derive a value of Nkr24.60, resulting in a blended price target of 50% P/NPV and 50% PE target of Nkr30.00; after rounding.
- **Risks:** The key risks surrounding our investment thesis and to our target price are the aluminium price, currency risk and the cost base. The company, as a pure-play aluminium business, is highly leveraged to the aluminium price; any material and sustained deviation from our price forecasts will affect our earnings forecasts and valuations. Hydro's revenue is priced in US\$, however, the business has operations based throughout Europe, Brazil and Jamaica and the company reports in Nkr. Any material movement in foreign exchange rates will therefore affect earnings. Rising costs, particularly energy costs, have been a negative theme for the aluminium industry. Cost increases above our estimates would affect margins and valuation. 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.

Figure 213. PE Absolute



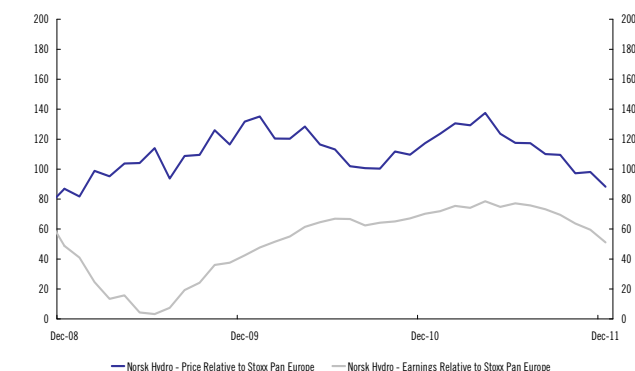
Source: Citi Investment Research and Analysis

Figure 214. PE Relative



Source: Citi Investment Research and Analysis

Figure 215. Price & Earning Absolute



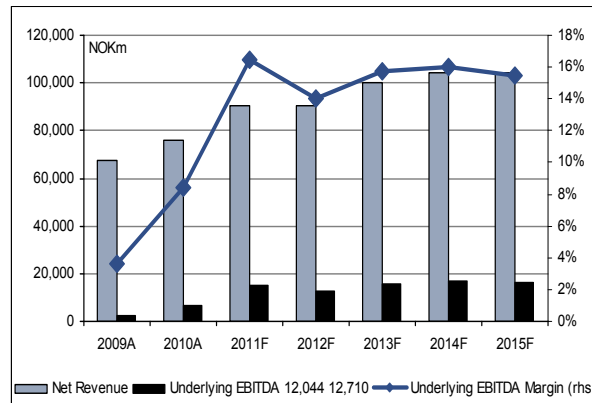
Source: Citi Investment Research and Analysis

Figure 216. Norsk Hydro ASA - Summary

	2009A	2010A	2011F	2012F	2013F
NOKm unless specified					
Summary Income Statement					
Net Revenue	67,409	75,754	90,635	90,684	100,180
Underlying EBITDA	2,431	6,344	14,921	12,711	15,766
Underlying EBIT	-2,555	3,352	5,964	7,176	10,115
Underlying Att. Net Income	-3,187	1,643	3,796	4,176	5,868
Underlying Diluted HEPS (NOK)	-2.64	1.16	1.93	2.05	2.88
DPS (NOK)	0.50	0.75	0.00	0.62	0.86
No. of Shares	1,205	1,419	1,964	2,036	2,036
Underlying EBITDA Margin	4%	8%	16%	14%	16%
Underlying EBIT Margin	-4%	4%	7%	8%	10%
Summary Cash Flow					
Operating Cash Flow	4,547	6,362	7,098	8,017	11,131
Maintenance Capex	-1,000	-1,300	-3,017	-3,660	-3,734
Growth Capex	-1,743	-838	-1,159	-1,400	0
Free Cash Flow	1,804	4,224	2,922	2,957	7,397
Net Investments	-3,129	-3,936	-6,181	0	0
Dividend to Equity	-166	-866	-1,670	0	-1,253
Change in Equity	-81	9,910	63	0	0
Change in Debt	915	-1,069	1,485	0	0
Net Cash Flow	-689	8,235	-2,575	2,957	6,145
Summary Balance Sheet					
Cash	2,573	10,929	8,179	11,136	17,281
Total Current Assets	27,802	36,818	38,470	43,734	51,719
PPE	25,647	24,849	65,644	65,263	63,442
Total Non-Current Assets	49,797	51,971	94,778	94,379	92,532
Total Current Liabilities	15,043	15,835	21,323	21,492	22,146
Working Capital	12,759	20,983	17,147	22,242	29,573
Total Debt	2,098	1,268	8,585	8,585	8,585
Equity Capital	47,194	57,248	85,511	90,207	95,691
Net Debt	-475	-9,661	406	-2,551	-8,696
ND/Equity	-1%	-17%	0%	-3%	-9%
Production					
Attributable Alumina (kt)	2,090	1,976	4,937	6,144	6,293
Attributable Aluminium (kt)					
Albras (Brazil)	0	0	392	464	464
Karmoy (Norway)	187	182	172	186	189
Ardal (Norway)	191	201	196	198	198
Sunnal (Norway)	321	291	296	300	402
Hoyanger (Norway)	60	61	62	63	64
Slovakia (Slovakia)	150	163	167	174	176
Neuss (Germany)	82	52	52	54	54
Kurri Kurri (Aus)	177	179	184	132	132
Qatalum (Middle East)	0	63	230	300	300
Soral (Norway)	49	44	43	44	45
Tomago (Aus)	65	65	68	69	70
Alouette (Canada)	115	114	117	115	117
Total Aluminium (kt)	1,397	1,415	1,979	2,098	2,210
Rolled Products (kt)	794	945	950	1,000	1,000
Extrusion (kt)	463	529	555	560	560
Remelt Production (kt)	455	603	574	600	600
Power (Twh)	7.9	8.1	9.4	9.4	9.4
Divisional Underlying EBIT					
Bauxite & Alumina	-397	634	776	1,922	1,442
Primary Aluminum	-2,215	617	2,331	2,580	5,240
Metal Markets	-84	321	588	769	850
Rolled Products	27	864	686	472	582
Extruded Products	-67	444	259	49	322
Power	1,240	1,416	1,880	1,684	2,011
Corporate/Others	-1,059	-944	-555	-300	-332
Total Underlying EBIT	-2,555	3,352	5,964	7,176	10,115

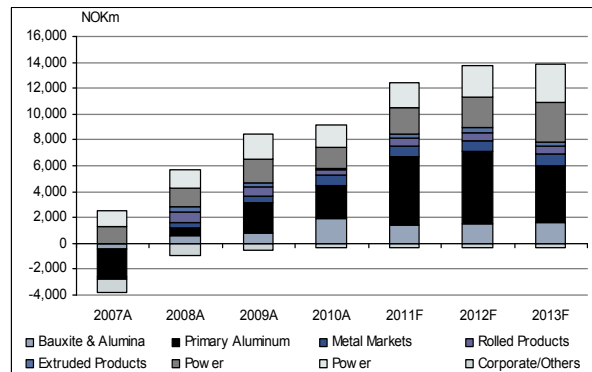
Source: Company reports, Citi Investment Research and Analysis

Figure 217. Group Revenue, EBITDA and EBITDA Margin



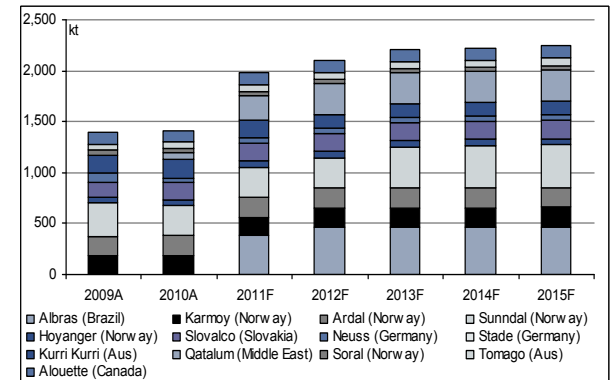
Source: Company reports, Citi Investment Research and Analysis

Figure 219. Divisional Underlying EBIT Split



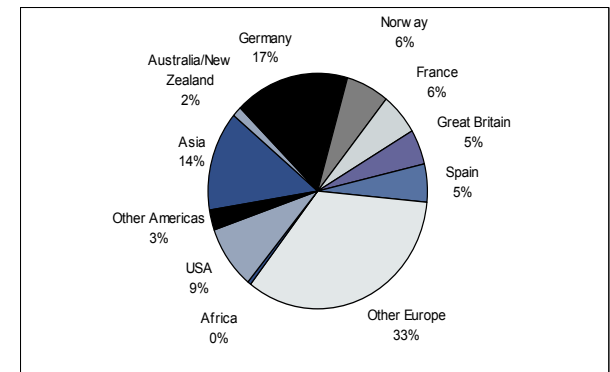
Source: Company reports, Citi Investment Research and Analysis

Figure 218. Attributable Aluminium Production by Operation



Source: Company reports, Citi Investment Research and Analysis

Figure 220. 2010 Revenue by Destination



Source: Company reports, Citi Investment Research and Analysis



Nyrstar NV (NYR.BR)

Buy: (1)
Target Price: € 9.10

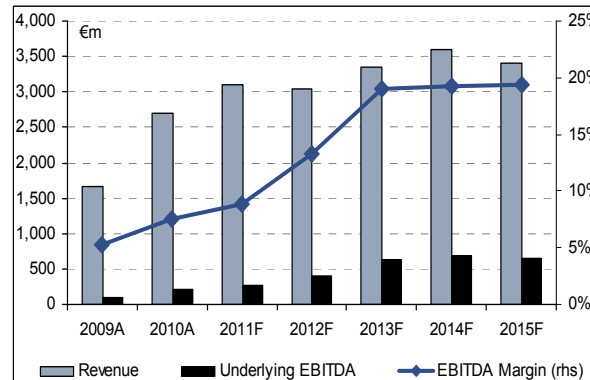
- **Valuation:** Our € 9.10 target price for Nyrstar is an outcome of equal weighted blend of DCF (€ 13.97), EV/EBITDA multiples (€ 7.55), FCF (€ 5.47), and Residual Income (€ 9.55) based valuation methods. For our DCF valuation, we use a WACC of 13.0% (RFR 4%, Beta 1.6, ERP 8%, Kd 6% and Gearing 35%). Our multiple based valuation uses a 4.5x 1Y forward EV/EBITDA multiple. Our residual income valuation method uses a 14% expected rate of return on equity.
- **Risks:** Key risks for Nyrstar include zinc/lead prices and zinc/lead Treatment Charges (TCs), execution risk of mining production ramp up, change in royalties/tax regimes especially in mining locations, and currency movements. If the impact of these risk factors is greater/less than we currently anticipate, then the share price could fail to meet/exceed our target price.

Figure 221. Nyrstar - Summary

	2009A	2010A	2011F	2012F	2013F
€m unless specified					
Summary Income Statement					
Revenue	1,664	2,696	3,104	3,034	3,358
Underlying EBITDA	87	204	274	402	637
EBIT	17	98	134	232	443
Underlying Net Income	31	97	78	147	318
Underlying Diluted EPS (€)	0.28	0.79	0.51	0.88	1.84
DPS (€)	0.08	0.13	0.10	0.10	0.10
Avg Diluted No. of Shares (m)	128	136	174	178	178
EBITDA Margin	5%	8%	9%	13%	19%
EBIT Margin	1%	4%	4%	8%	13%
Divisional EBIT					
Smelting	46	129	150	125	291
Mining	-3	4	41	173	234
Summary Cash Flow					
Operating Cash Flow	-19	211	137	289	489
Capex	-68	-145	-131	-211	-172
Free Cash Flow	-87	65	6	78	317
Net Investments	-103	-288	-726	30	0
Net Cash Flow	-211	75	82	95	305
Summary Balance Sheet					
Cash	84	161	223	318	624
Total Current Assets	770	980	1,009	1,111	1,418
PPE	611	759	1,528	1,584	1,581
Total Non-Current Assets	747	1,123	1,946	1,978	1,962
Total Current Liabilities	381	594	511	503	497
Working Capital	389	387	498	608	921
Total Debt	122	457	870	870	870
Total Equity	779	832	1,234	1,376	1,673
Net Debt	38	296	647	552	247
ND/(ND+Equity)	5%	26%	34%	29%	13%
Smelting Production (Att.)					
Zinc by Smelters (kt)					
Auby - France	161	163	162	164	164
Balen/Overpelt - Belgium	137	281	299	290	288
Budel - Netherlands	224	264	259	260	261
Clarksville - USA	94	120	106	123	123
Hobart - Australia	264	247	266	264	264
Port Pirie - Australia	35	32	31	32	32
Other	1	0	0	0	0
Elimination	-106	-30	-40	-39	-38
Total Zinc (kt)	810	1,077	1,083	1,094	1,093
Total Lead (kt)	227	198	218	210	210
Silver (moz)	16.7	13.4	17.2	16.2	16.0
Gold (koz)	24.0	22.0	41.1	36.9	39.3
Mining Production (Att.)					
Zinc in Conc (kt)	84	201	352	427	
Lead in Conc (kt)	0.7	7.8	18.4	18.9	
Copper in Conc (kt)	0.2	11.5	29.0	32.4	
Gold (koz)	5.0	49.6	92.1	97.7	
Silver (koz)	0.3	3.5	6.2	7.3	
Zinc Integration	8%	18%	31%	38%	
Commodity/Fx Assumptions					
Zinc (US\$/t)	1,732	2,161	2,212	2,050	2,295
Lead (US\$/t)	1,744	2,148	2,391	2,150	2,400
Copper (US\$/t)	5,318	7,543	8,829	7,825	8,528
Gold (US\$/oz)	972	1,229	1,574	1,709	1,912
Silver (US\$/oz)	14.48	20.24	35.39	29.75	27.13
Realised Zn TC (US\$/t)	209.3	257.2	217.5	196.0	243.8
Realised Pb TC (US\$/t)	220.4	250.2	229.1	225.0	290.0
US\$/€	1.394	1.327	1.394	1.377	1.370

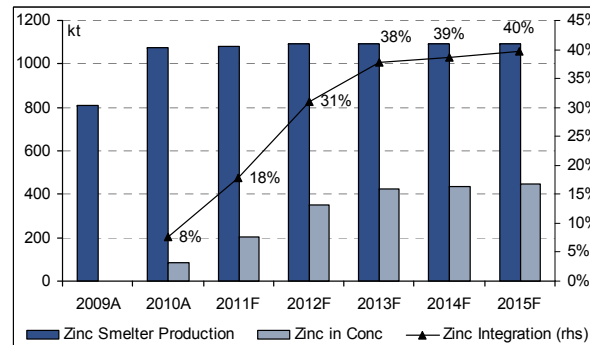
Source: Company reports, Citi Investment Research and Analysis

Figure 222. Group Revenue, EBITDA and EBITDA Margin



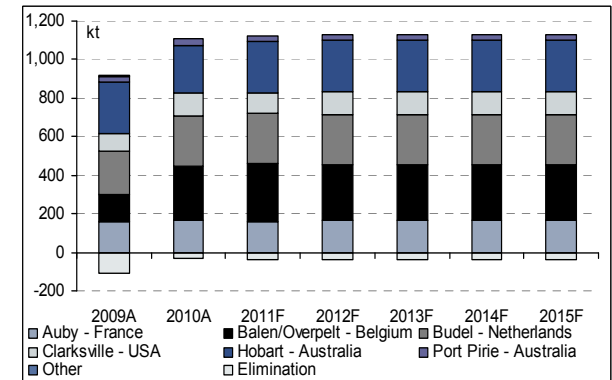
Source: Company reports, Citi Investment Research and Analysis

Figure 224. Zinc Production and Integration



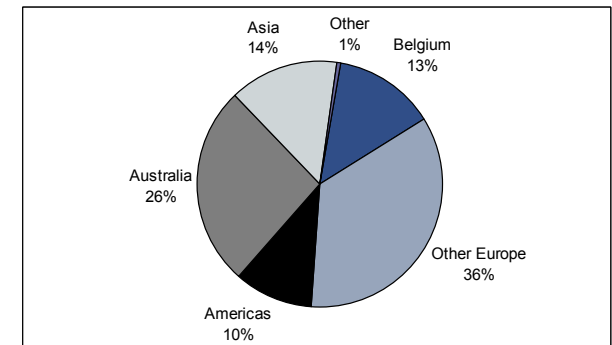
Source: Company reports, Citi Investment Research and Analysis

Figure 223. Zinc Production by Smelter



Source: Company reports, Citi Investment Research and Analysis

Figure 225. 2010 Revenue by Destination



Source: Company reports, Citi Investment Research and Analysis

Petropavlovsk PLC (POG.L)

Buy: (1)
Target Price: £8.34

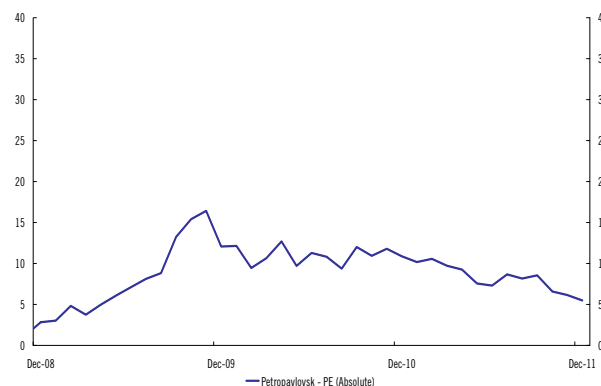
- **Valuation:** We set our target price of £8.34 by applying a 1.3x P/NPV multiple to POG's gold assets (NAV of £5.69 per share; derived using a discount rate of 10%) while we apply a 15% conglomerate discount to the market value of its quoted iron ore assets (currently £1.10 per share). We use a 1.3x P/NPV ratio for POG's gold assets, in line with UK gold peers of a similar size.

We set our target P/NPV multiples with reference to absolute and relative historical sector average levels, taking into account our views on the current stage of the cycle and on the quality of each company's assets and management.

- **Risks:** We would highlight in particular that it is a single commodity play with the bulk of its earnings being derived from gold. Adverse movement in the gold price away from our forecasts could see a significant delta in our forecasts from actual profits, both positively and negatively. POG also faces technical risk in relation to its POX technology. Finally the company conducts the bulk of its business in Russia which has higher risk than developed countries.

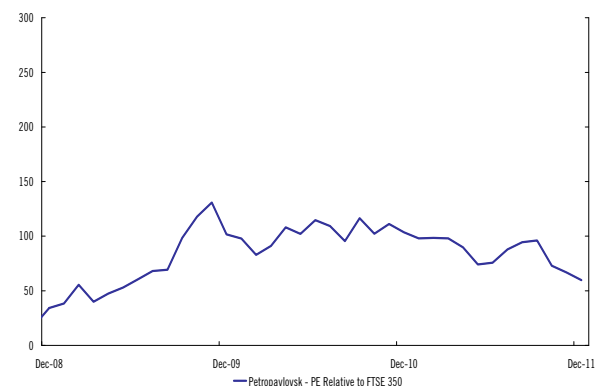
If the impact of these risk factors is more or less negative than we currently anticipate, then the share price could fail to reach or exceed our target price.

Figure 226. PE Absolute



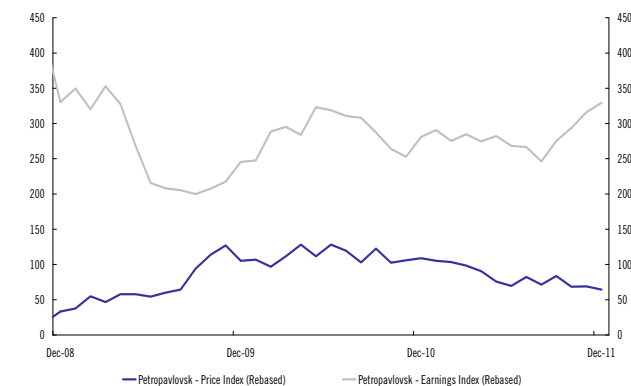
Source: Citi Investment Research and Analysis

Figure 227. PE Relative



Source: Citi Investment Research and Analysis

Figure 228. Price & Earning Absolute



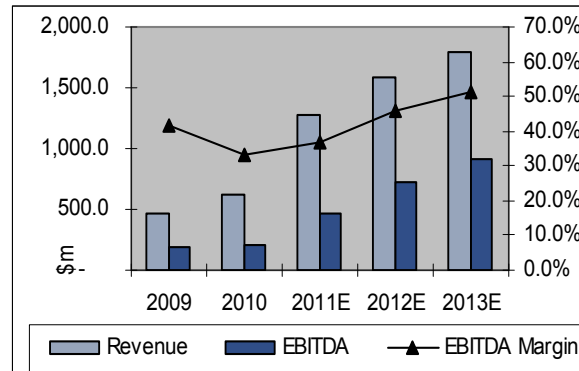
Source: Citi Investment Research and Analysis

Figure 229. Petropavlovsk - Summary

Financials \$m	2009	2010	2011E	2012E
Income Statement				
Revenue	472.7	612.2	1,276.0	1,587.0
EBITDA	195.4	204.8	471.0	729.3
EBITDA Margin	41.3%	33.5%	36.9%	46.0%
Net Income	124.9	40.5	276.1	398.3
EPS (USc)	0.85	0.25	1.49	2.15
DPS	0.07	0.08	0.08	0.08
Number of shares (m)	146.3	180.0	185.0	185.0
Cash Flow Statement				
Cash flow from Ops	143.2	38.2	38.9	420.9
Capex	258.7	491.6	533.3	260.4
Free Cash Flow	101.1	-	494.4	160.5
Dividends Paid	-	27.3	-	14.8
Net Cash Flow	50.3	248.5	234.4	145.7
Balance Sheet				
Cash	76.4	320.9	89.5	235.1
Fixed Assets	1,065.0	1,320.0	1,704.1	1,835.8
Total Assets	1,572.2	2,488.2	3,075.7	3,403.0
Debt	95.5	492.1	760.0	760.0
Net debt	19.1	171.2	670.5	524.9
Total Liabilities	272.3	789.1	1,184.7	1,165.0
Shareholder Equity	1,299.9	1,699.1	1,891.0	2,238.0
Operations				
EBITDA by Asset				
Pokrovskiy	140.6	92.2	63.6	50.1
Pioneer	155.9	150.1	335.3	428.0
Omchak JV	11.5	68.7	106.4	110.3
Malomir	-	17.6	71.7	86.6
Albyn	-	-	-	-
Other	-	112.6	123.8	54.3
Total	195.4	204.8	471.0	729.3
Gold Prod Koz				
Pokrovskiy	213	154	93	93
Pioneer	235	243	314	382
Alluvials; Other	63	54	96	100
Malomir	-	36	83	93
Albyn	-	-	0	44
Total	512	487	586	713
Capex				
Pokrovskiy	13.8	10.0	19.4	2.0
Pioneer	63.5	79.6	44.4	29.4
Omchak JV	-	-	-	-
Malomir	50.0	107.0	139.0	24.0
Albyn	-	49.0	128.5	23.0
Other	52.0	36.0	152.0	182.0
Total	179.2	281.6	543.3	295.4

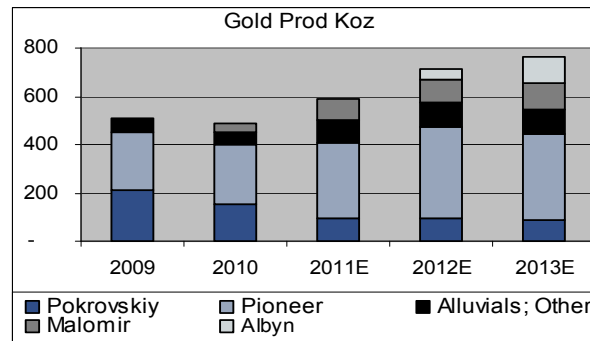
Source: Company reports, Citi Investment Research and Analysis

Figure 230. Group Revenue, EBITDA and EBITDA Margin



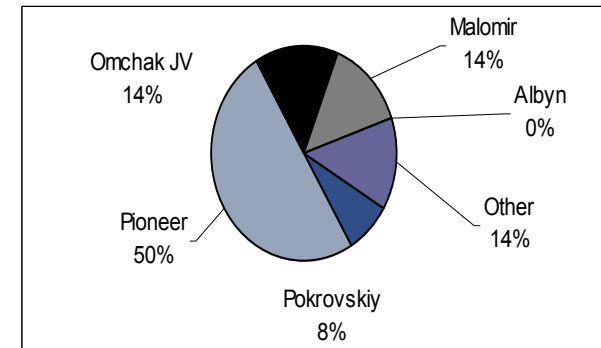
Source: Company reports, Citi Investment Research and Analysis

Figure 232. Gold Production



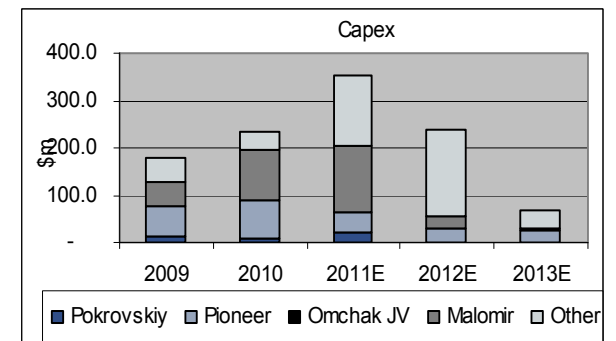
Source: Company reports, Citi Investment Research and Analysis

Figure 231. Asset EBITDA 2013E



Source: Citi Investment Research and Analysis

Figure 233. Capex



Source: Company reports, Citi Investment Research and Analysis

Randgold Resources Ltd (RRS.L)

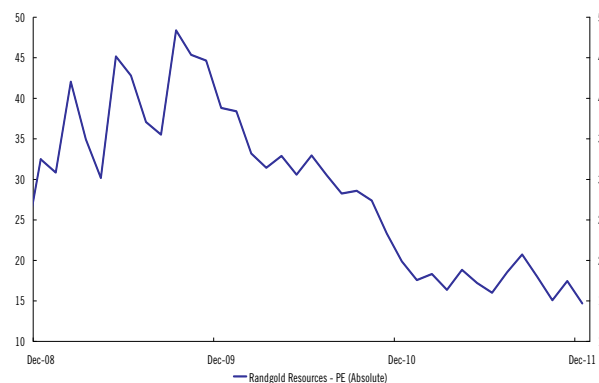
Buy: (1)
Target Price: £88.84

- **Valuation:** We use a 1.7x P/NPV ratio for RRS in comparison to the 1.3x used for other UK gold peers as RRS has a much longer history than other UK peers and has its assets spread across four countries, thus aiding in diversification. We also believe that RRS deserves a premium P/NPV rating vs. UK peers based on the quality and diversity of its projects and its superior production growth. We derive our target price of £88.84 by applying the 1.7x P/NPV ratio to our NPV estimate of £52.26 (derived using a discount rate of 10%).

We set our target P/NPV multiples with reference to absolute and relative historical average levels, taking into account our views on the current stage of the cycle and on the quality of each company's assets and management.

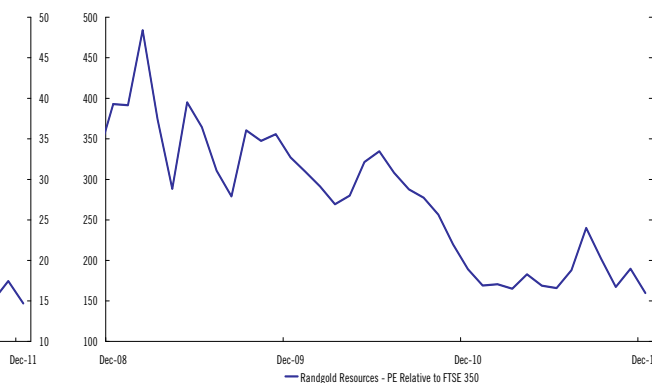
- **Risks:** The key risks that could prevent the achievement of our target price are gold price, currency risk, political risk and cost base. Currently RRS faces high political risk in the Ivory Coast, where one of its three operating mines, Tongon, is located. Gold Price: Any material deviation from our price forecasts, either from 'stronger for longer' prices or a sharper and sooner decline, would impact on our earnings forecasts. Currency Risk: Randgold reports in US\$, and the revenue stream is priced in US\$. However, operating costs are split 40:60 between the Communauté Financière Africaine franc (CFA) and US\$. The CFA is fixed against the euro, therefore, depreciation of the US\$ against the euro would cause the cost base to rise and negatively impact earnings.

Figure 234. PE Absolute



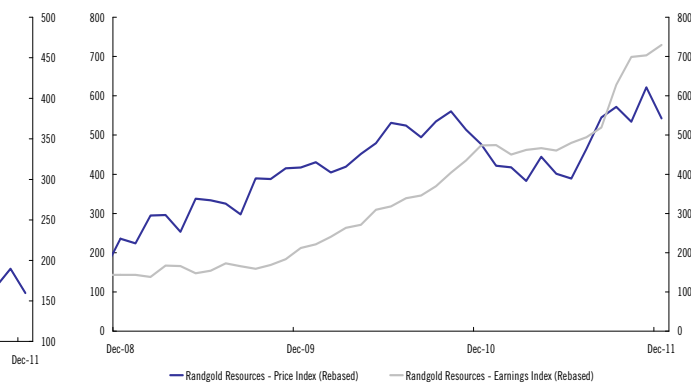
Source: Citi Investment Research and Analysis

Figure 235. PE Relative



Source: Citi Investment Research and Analysis

Figure 236. Price & Earning Absolute



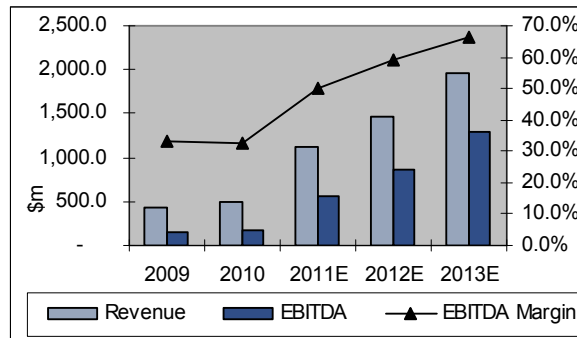
Source: Citi Investment Research and Analysis

Figure 237. Randgold - Summary

Financials \$m	2009	2010	2011E	2012E
Income Statement				
Revenue	441.3	505.2	1,131.1	1,459.6
EBITDA	147.1	164.2	568.2	866.4
EBITDA Margin	33.3%	32.5%	50.2%	59.4%
Net Income	69.9	103.7	377.2	593.3
EPS (USc)	0.86	1.14	4.13	6.50
DPS	0.08	0.11	0.82	1.29
Number of shares (m)	81.0	90.6	91.3	91.3
Cash Flow Statement				
Cash flow from Ops	64.1	106.0	567.2	668.7
Capex	184.4	410.8	448.0	647.5
Free Cash Flow	- 6.3	- 239.0	119.2	21.2
Dividends Paid	10.0	15.5	18.2	74.6
Net Cash Flow	345.2	- 225.1	120.5	- 53.5
Balance Sheet				
Cash	602.7	366.0	487.6	434.1
Fixed Assets	507.0	1,057.0	1,279.0	1,862.8
Total Assets	1,825.7	1,994.0	2,533.1	3,063.5
Debt	3.9	3.2	3.2	3.2
Net debt/(cash)	- 598.8	- 362.8	- 484.4	- 430.9
Total Liabilities	136.9	148.8	238.2	238.2
Shareholder Equity	1,688.8	1,845.2	2,294.9	2,825.3
Operations				
EBITDA by Asset				
Morila	66.9	59.0	79.0	81.0
Loulo	113.7	156.4	108.6	216.6
Tongon	-	2.1	273.8	331.2
Massawa	-	-	-	-
Goukoto	-	-	154.7	281.5
Other	- 33.5	- 53.3	- 48.0	- 43.8
Total	147.1	164.2	568.2	866.4
Gold Prod (attributable) Koz				
Morila	137	96	100	87
Loulo	281	250	166	198
Tongon	-	4	242	251
Massawa	-	-	-	-
Goukoto	-	-	116	201
Total	418	351	623	736
Capex				
Morila	9.8	1.4	2.0	0.7
Loulo	58.5	112.1	136.0	275.0
Tongon	115.0	180.7	96.0	74.6
Kibali	-	-	-	-
Massawa	-	-	14.0	14.0
Goukoto	-	-	120.0	121.3
Other	-	-	-	-
Total	183.3	294.2	429.5	677.5

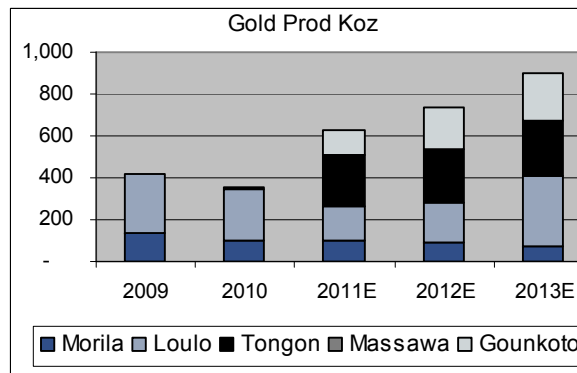
Source: Company reports, Citi Investment Research and Analysis

Figure 238. Group Revenue, EBITDA and EBITDA Margin



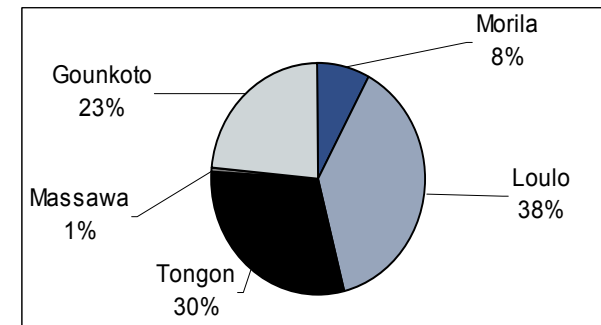
Source: Company reports, Citi Investment Research and Analysis

Figure 240. Gold Production



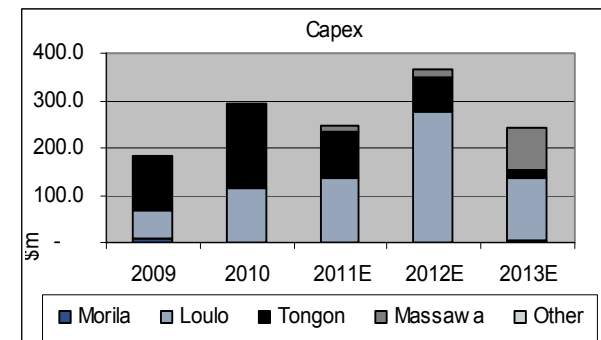
Source: Company reports, Citi Investment Research and Analysis

Figure 239. Asset EBITDA 2013E



Source: Citi Investment Research and Analysis

Figure 241. Capex



Source: Company reports, Citi Investment Research and Analysis

Rio Tinto PLC (RIO.L)

Buy: (1)
Target Price: £49.00

■ **Valuation:** Our RIO target price is £49.00. Our RIO valuation (NPV) of £54.86 per share is based on DCF analysis using a 7.8% real, after-tax, unlevered discount rate and a beta of 1.1. Long-term equilibrium commodity prices and key assumptions are available in our Metals & Mining Strategy reports. We calculate our one-year target price using a combination of: 1) a valuation based on 0% premium to NPV; and 2) a multiple-based valuation (a combination of 10x PE and 6x EV/EBITDA multiples for FY12E); with a 50/50 weighting between each methodology.

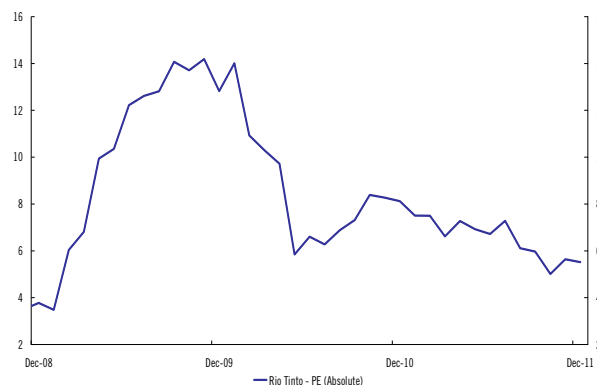
■ **Risks:** We consider a number of risks to our investment thesis, driven by the high financial leverage in the company offset by operational and geographical diversification. Key risks to our projected earnings, cash flows and target price relate to weaker-than-expected commodity prices/economic growth and currency fluctuations.

Country risk is a consideration with about 20% of operations by NPV in Africa and South America and Indonesia.

Operating risk in RIO is lower than in smaller metals and mining companies with fewer operations.

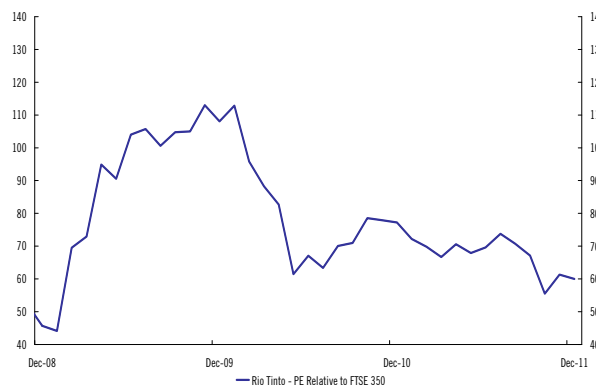
If the impact on the company from any of these factors proves to be more or less negative than we currently anticipate, the stock price might fail to reach or rise above our target price.

Figure 242. PE Absolute



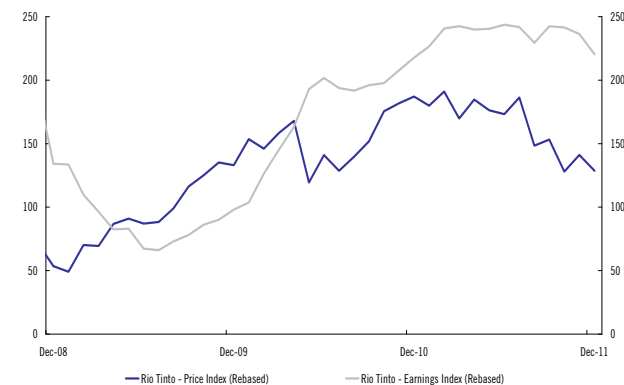
Source: Citi Investment Research and Analysis

Figure 243. PE Relative



Source: Citi Investment Research and Analysis

Figure 244. Price & Earning Absolute



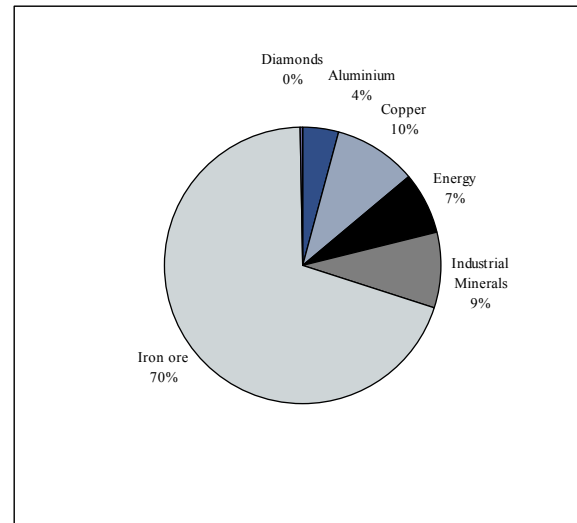
Source: Citi Investment Research and Analysis

Figure 245. Rio Tinto - Summary

Production data	2009A	2010A	2011E	2012E	2013E
Iron ore (mt)	173	184	186	200	202
Copper (kt)	815	734	562	669	861
Aluminium (kt)	3,803	3,789	3,837	3,690	3,956
Thermal coal (mt)	31	30	34	36	40
Coking coal (mt)	8	9	12	11	13
Borates (kt)	423	501	505	489	499
Gem diamonds (mcts)	4	4	4	5	5
Gold (koz)	1,004	910	650	396	903
Segmental EBIT information (US\$m)					
Aluminium	(5,645)	(1,678)	284	82	634
Copper	3,247	4,262	3,356	2,620	4,920
Energy	2,307	1,745	2,255	2,384	3,246
Diamonds	(109)	90	20	(117)	179
Other Operations	0	0	0	0	16
Industrial minerals	1,213	320	503	2,253	4,017
Iron ore	6,284	15,621	19,907	17,709	14,841
Total	7,297	20,361	26,325	24,932	27,852
Income statement (US\$m)	2009A	2010A	2011E	2012E	2013E
Revenue	44,036	60,323	64,266	62,912	69,745
EBITDA	13,059	24,808	28,920	29,849	33,703
Depreciation	(3,504)	(4,008)	(4,965)	(6,256)	(7,190)
EBIT	9,555	20,800	23,954	23,593	26,513
Net interest	(809)	(615)	(435)	(567)	(338)
Tax	(2,076)	(5,296)	(6,948)	(7,741)	(8,795)
Reported earnings	4,872	14,324	15,223	14,364	16,416
Adjustments	(1,426)	337	(9,723)	0	0
Pre Exceptional Profit	6,298	13,987	24,946	14,364	16,416
Cash flow statement (US\$m)					
Cash flow from operations	8,645	18,002	20,873	23,339	26,759
Capex	(5,338)	(6,069)	(10,480)	(13,942)	(12,802)
Net acquisitions	2,031	2,880	(5,316)	0	0
Dividends paid	(876)	(1,754)	(2,466)	(2,493)	(2,711)
Net cash flow	2,876	4,203	(1,743)	(0)	831
Free cash flow	5,339	14,813	4,126	8,353	12,887
Balance sheet (A\$m)					
Fixed assets (PPE)	45,803	56,024	64,796	72,763	78,661
Total assets	97,236	112,402	125,832	134,558	141,668
Total liabilities	53,405	54,069	54,955	49,296	40,824
Shareholder equity (Net assets)	43,831	58,333	70,877	85,262	100,844
Total debt	23,048	14,387	16,205	10,345	1,000
Cash	4,233	9,948	7,498	7,498	8,329
Net debt	18,815	4,439	8,707	2,847	(7,329)
Working capital	1,474	1,603	10,085	10,106	10,382

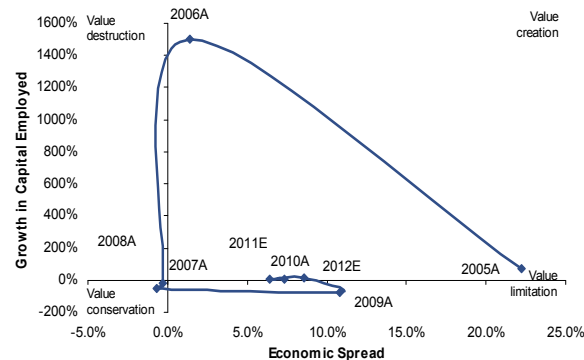
Source: Company reports, Citi Investment Research and Analysis

Figure 246. 2012E EBIT By Commodity



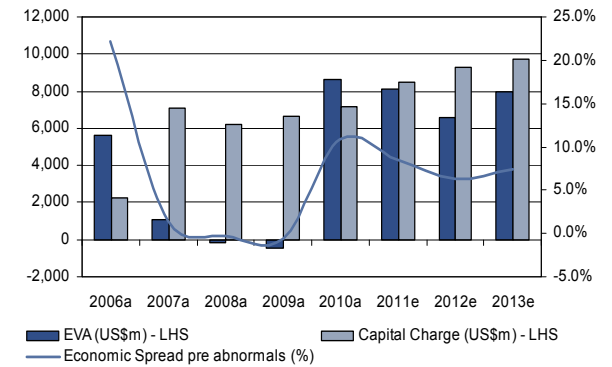
Source: Citi Investment Research and Analysis

Figure 248. Value creation / destruction



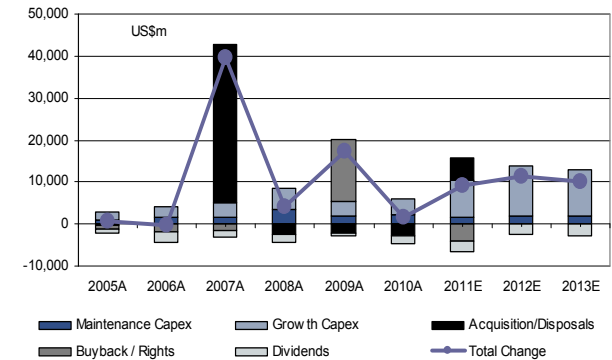
Source: Company reports, Citi Investment Research and Analysis

Figure 247. EVA creation



Source: Company reports, Citi Investment Research and Analysis

Figure 249. Invested capital changes



Source: Company reports, Citi Investment Research and Analysis



Salzgitter AG (SZGG.DE)

Buy: (1)
Target Price: €55.00

- **Valuation:** We set our target price of €55 for SZG using an average of four valuation methodologies: DCF, multiples, free cash flow and residual income.

Additionally, we include Salzgitter's 6mn treasury shares in our diluted share count (in addition to 3.6mn shares from the convertible).

Our multiples/sum-of-the-parts valuation uses multiples that are consistent with our European steel and distribution coverage - 5.5x EBITDA for steel assets and 6.0x EBITDA for distribution.

- **Risks:** Salzgitter and other participants in the steel industry are subject to significant external risks that could affect the results of the business. The major external risks are:

Steel Price Risk: We believe steel prices will remain volatile in the near term, despite the consolidation of the industry. Steel companies have high capital intensity and their cash flows are exposed to steel price fluctuations.

Contract Sales Structure: Salzgitter sells a high proportion of its flat carbon steel (60%) and large diameter tubes sales (70%) on longer-term contracts. A mismatch in the movement of raw materials and contract price adjustments can materially affect margins.

Acquisitive Growth: The group intends to invest the cash on its balance sheet in growth opportunities. Although the group allocates cash conservatively, the risk remains that the cash is spent at the top of the cycle.

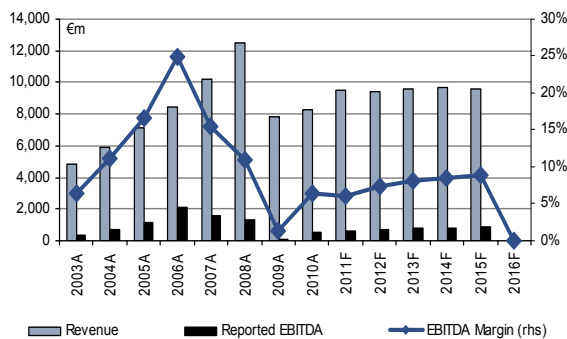
If the volatility of these factors proves to be more or less negative than we currently anticipate, then the stock price might deviate significantly from our target price.

Figure 250. Salzgitter AG - Summary

YE March	2009A	2010A	2011F	2012F	2013F
€m unless specified					
Group Summary					
Crude Steel Capacity (kt)	6.9	6.9	6.9	6.9	6.9
Crude Steel Production (kt)	4.1	5.2	5.5	5.7	5.8
Steel Capacity Utilisation (%)	59%	75%	80%	82%	84%
Revenue	7,818	8,305	9,542	9,413	9,604
Reported EBITDA	100	540	581	688	777
Reported EBIT	-468	160	257	356	440
Underlying Net Income	-384	30	101	163	221
Diluted No. of Shares (m)	60	60	64	64	64
HEPS (€)	-6.39	0.50	1.72	2.69	3.60
DPS (€)	0.25	0.32	0.17	0.27	0.36
Operating Cash Flow	1,190	209	15	475	448
Capex	-653	-446	-398	-357	-362
Free Cash Flow	537	-237	-383	118	86
Working Capital	3,273	3,432	3,346	3,389	3,484
Net Debt (Incl. Pensions)	452	1,071	1,488	1,395	1,340
EBITDA Margin	1.3%	6.5%	6.1%	7.3%	8.1%
EBIT Margin	-6.0%	1.9%	2.7%	3.8%	4.6%
ND/Equity	12%	28%	38%	34%	31%
BVPS (€)	71.7	70.6	72.1	74.9	78.7
ROIC	-6.7%	1.4%	2.5%	3.9%	5.0%
Shipments (kt)					
Steel	3.87	4.93	5.21	5.40	5.48
Tubes	1.17	1.17	1.20	1.20	1.20
Trading	4.32	4.24	4.75	5.22	5.32
EBITDA (€m)					
Steel	-12	262	330	363	375
Tubes	211	115	128	120	174
Trading	-87	91	78	119	126
Services	36	50	46	54	54
Processing/Technology	-105	8	-14	-5	10
Other/Consolidation	56	13	13	38	39
Total EBITDA	100	540	581	688	777
EBITDA Margins (%)					
Steel	-0.7%	11.6%	12.3%	13.2%	13.5%
Tubes	10.3%	6.6%	8.0%	9.6%	13.4%
Trading	-2.9%	3.1%	2.1%	3.1%	3.2%
Services	11.8%	12.1%	10.0%	11.4%	11.4%
Processing/Technology	-14.6%	0.9%	-1.4%	-0.5%	1.0%
Corporate/Other	0.0%	0.0%	0.0%	0.0%	0.0%
Group EBITDA %	1.3%	6.5%	6.1%	7.3%	8.1%

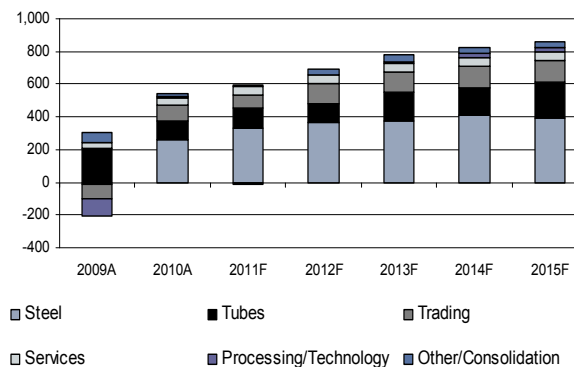
Source: Company reports, Citi Investment Research and Analysis

Figure 251. Revenue and EBITDA



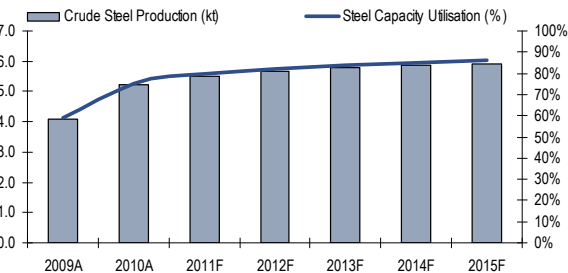
Source: Company reports, Citi Investment Research and Analysis

Figure 253. FY 2009/10 Revenue by Industry



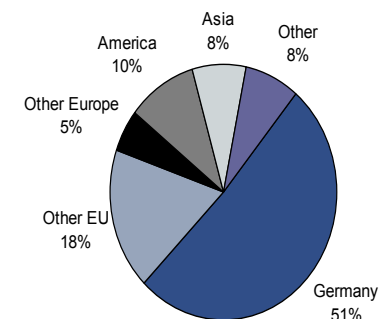
Source: Company reports, Citi Investment Research and Analysis

Figure 252. Production (mt) and Capacity Utilisation (%)



Source: Company reports, Citi Investment Research and Analysis

Figure 254. FY 10 Revenue by Destination



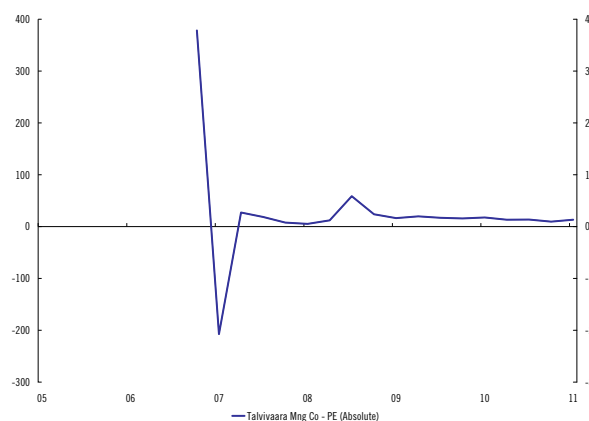
Source: Company reports, Citi Investment Research and Analysis

Talvivaara Mining Company (TALV.L)

Neutral: (2)
Target Price: £3.25

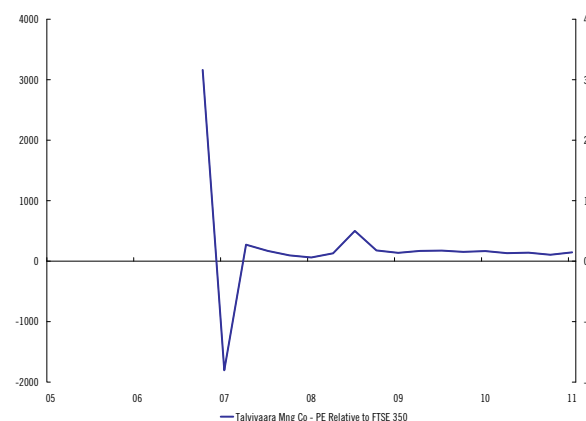
- **Valuation:** Our £3.25 target price is based on an equal weighting of 5x 2012E EBITDA, in line with previous trading ranges, and 1.0x DCF derived NPV. Our 11% WACC is lower than global nickel peers, which are skewed by Russia but higher than European mining names due to the elevated risks that an early-stage ramp-up project represents.
- **Risks:** The following risks could cause the shares to deviate from our target price. Variations in the nickel price. Sensitivity analysis shows that a 5% increase in nickel across the curve would raise our NPV valuation by 27%. Given the novelty of the technology and the early-stage nature of the project we feel that a prudent approach is appropriate when assessing the operations. As such should expected delays not materialise then there will be upside risk to our estimates. This conservative approach extends to the 13kt of back precipitated metal that the company predicts will begin to leach in the secondary heap. While this is possible at this stage there is little evidence to suggest that the particle size that was such a problem in the primary heap will not repeat now the material has been moved to the secondary. **Uranium permit.** Following conversations with the company we are confident that the uranium permit will be approved by the government. However, should this not be the case our NPV is at risk of a fall of around 9%. **Exchange rate.** 90% of costs are in Euros while revenues are denominated in USD. Should movements in the Euro not correspond with an inverse move in commodity prices, earnings risk could develop. **Environmental risk.** The company is just within emission limits however it is in the process of re-applying for its environmental license. Should regulations be tightened the costs of compliance will create downside risk to our valuation.

Figure 255. PE Absolute



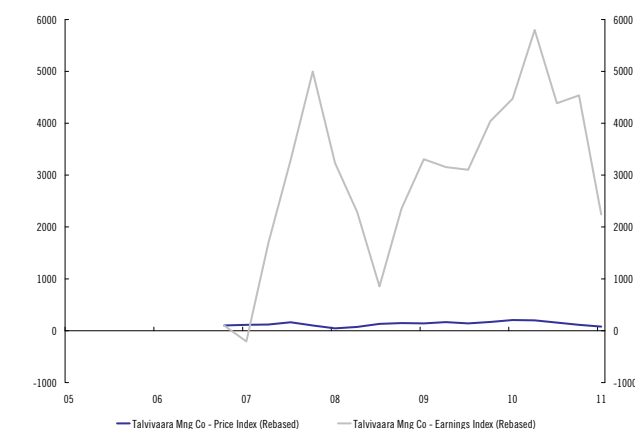
Source: Citi Investment Research and Analysis

Figure 256. PE Relative



Source: Citi Investment Research and Analysis

Figure 257. Price & Earning Absolute



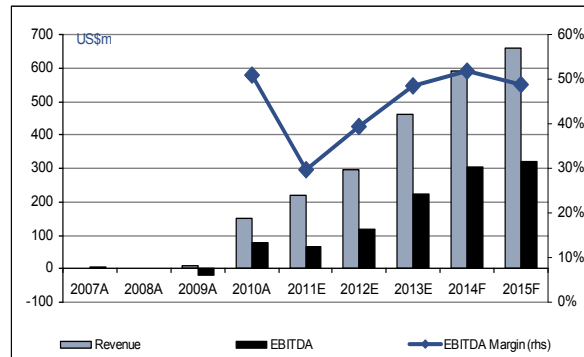
Source: Citi Investment Research and Analysis

Figure 258. Talvivaara - Summary

	2009A	2010A	2011E	2012E	2013E
€m unless specified					
Summary Income Statement					
Revenue	8	152	221	296	460
EBITDA	-18	77	66	116	224
EBIT	-55	25	19	65	173
Underlying Net Income	-45	-8	-17	16	83
HEPS (€/sh)	-19.36	-3.09	-6.80	6.45	33.86
DEPS (€/sh)	0.00	0.00	0.00	0.00	0.00
No. of Shares	234	245	246	246	246
EBITDA Margin		51%	30%	39%	49%
EBIT Margin		17%	8%	22%	38%
Summary Cash Flow					
Operating Cash Flow	-100	14	-29	46	164
Capex	-118	-115	-67	-65	-25
Free Cash Flow	-228	-97	-32	21	168
Dividend to Equity	0	0	0	0	0
Total Financing Cash Flow	142	261	-15	-21	-27
Net Cash Flow	-71	159	-152	-39	102
Summary Balance Sheet					
Cash	12	166	27	-12	90
Total Current Assets	191	441	304	332	512
PPE	644	728	749	763	738
Total Non-Current Assets	688	773	796	804	758
Total Current Liabilities	107	163	133	171	219
Working Capital	84	188	236	298	366
Total Debt	438	481	449	449	449
Shareholders' Equity	371	370	302	318	401
Net Debt	426	315	422	461	359
ND/Equity	115%	85%	140%	145%	90%
Production/Sales					
Production					
Nickel (kt)	1	10	16	24	32
Zinc (kt)	3	25	25	59	76
Cobalt (kt)		0.1	0.4	1.0	1.4
Copper (kt)		0.0	0.0	0.0	3.2
Uranium (kt)		0.0	0.0	0.0	0.2
Divisional Revenue					
Nickel			186.1	265.7	404.6
Zinc			12.2	20.6	26.5
Cobalt			6.5	9.4	13.0
Copper			0.0	0.0	16.2
Uranium			0.0	0.0	0.0
Total Revenue			205	296	460

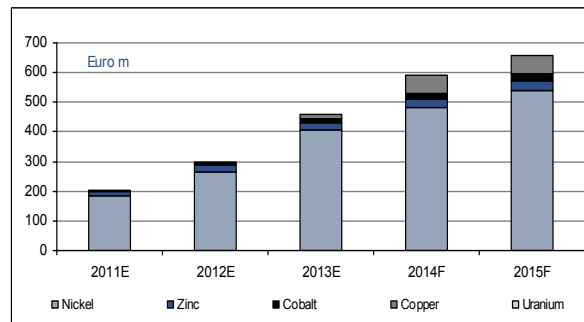
Source: Company reports, Citi Investment Research and Analysis

Figure 259. Group Revenue, EBITDA and EBITDA Margin



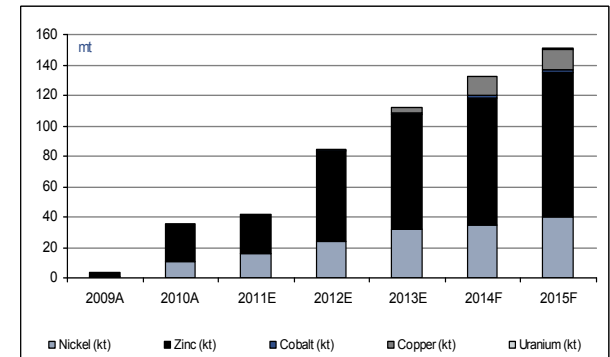
Source: Company reports, Citi Investment Research and Analysis

Figure 261. Divisional Revenue Split



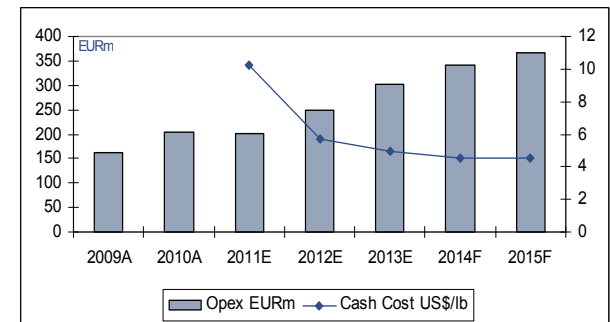
Source: Company reports, Citi Investment Research and Analysis

Figure 260. Production volumes



Source: Company reports, Citi Investment Research and Analysis

Figure 262. Cash Costs



Source: Company reports, Citi Investment Research and Analysis



Voestalpine AG (VOES.VI)

Buy: (1)
Target Price: €35.00

- **Valuation:** We have a €35 target price for voestalpine. We use an equal-weighted combination of DCF, multiples, residual income and free cash flow to equity.

Our DCF-based model calculates a value of €42 (WACC of 7.9%, beta 1.18x, risk-free rate 3.5%, equity risk premium 4.5%, terminal growth 2%).

The steel sector has historically traded at 5x EV/EBITDA. We use a 10% premium to this to reflect the average excess margin generated by VOE vs. its European peer group. Our SOTP valuation suggests a €30 valuation. We also use a residual income model and a free cash flow model which value VOE at a fair value of €39 and €28 respectively.

We arrive at our €35 price target as a rounded average of the four methods.

- **Risks:** Voestalpine is exposed to industry- and company-specific risks:

Inland Location: Voestalpine's major production sites have land-locked locations, which increases the comparative transportation cost of raw materials. This risk is partly offset by the group's closer proximity to finished product customers.

Steel Price Risk: voestalpine focuses on high-strength steels and processing activities to minimise the impact of volatile steel prices and volumes.

Raw Material Costs: Higher iron ore, coking coal, scrap steel, ferro-alloy and energy costs are major cost risks.

Industry Exposure: voestalpine strategically targets increased processing activities directed at the automotive sector in several of its divisions.

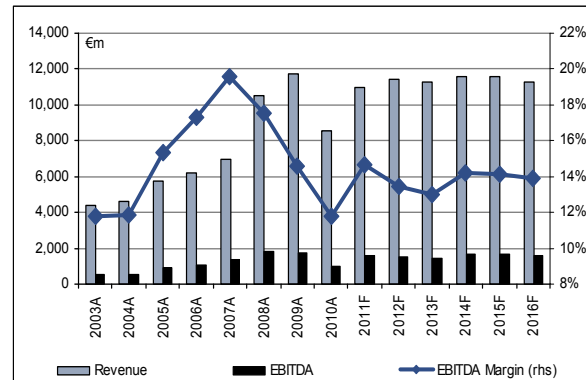
If the impact of these risk factors is more or less negative than we currently anticipate, then the share price could fail to reach or rise above our target price.

Figure 263. voestalpine AG - Summary

YE March	2009A	2010A	2011F	2012F
€m unless specified				
Group Summary				
Crude Steel Capacity (kt)	5,800	5,800	5,850	6,000
Crude Steel Production (kt)	4,590	4,367	5,455	5,112
Steel Capacity Utilisation (%)	79%	75%	93%	85%
Revenue	11,725	8,550	10,954	11,417
EBITDA	1,710	1,004	1,606	1,535
EBIT	989	350	985	913
Underlying Net Income	530	106	513	522
Diluted No. of Shares (m)	164	167	168	169
HEPS (€)	3.24	0.63	3.05	3.09
DPS (€)	1.05	0.50	0.80	0.85
Operating Cash Flow	1,358	1,606	958	1,050
Capex	-979	-615	-479	-595
Free Cash Flow	378	991	479	455
Working Capital	1,912	1,615	2,060	2,228
Net Debt	4,724	4,004	3,645	3,325
EBITDA Margin	14.6%	11.7%	14.7%	13.4%
EBIT Margin	8.4%	4.1%	9.0%	8.0%
ND/Equity	112.9%	95.6%	78.9%	66.4%
BVPS (€)	25.3	24.6	27.0	28.7
ROIC	4.7%	0.3%	5.6%	4.9%
Realised Price Assumptions (€/t)				
Steel Price	940	743	773	870
Railways	1,563	1,670	1,670	1,924
Profilform	1,354	1,459	1,560	1,525
Automotive	210	156	186	199
Special Steel	4,917	3,879	3,128	3,327
Production (kt)				
Steel	4,590	4,367	5,455	5,112
Railways	1,474	1,199	1,422	1,503
Profilform	850	605	730	760
Automotive	480	535	558	610
Special Steel	744	509	841	865
Divisional EBITDA				
Steel	736	423	595	517
Railways	415	368	422	421
Profilform	164	83	159	158
Automotive	72	74	121	112
Special Steel	363	94	388	405
Corporate/Others	-39	-37	-80	-77
Total EBITDA	1,710	1,004	1,606	1,535

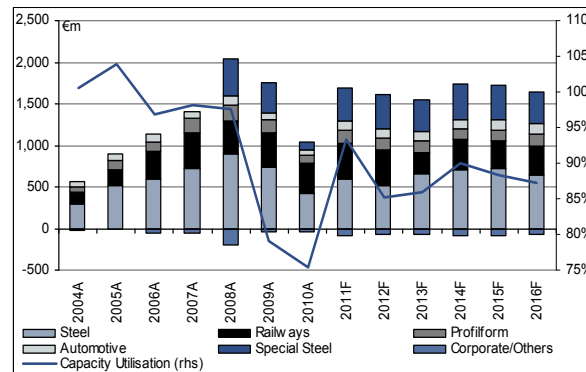
Source: Company reports, Citi Investment Research and Analysis

Figure 264. EBITDA/t and EBITDA Margin



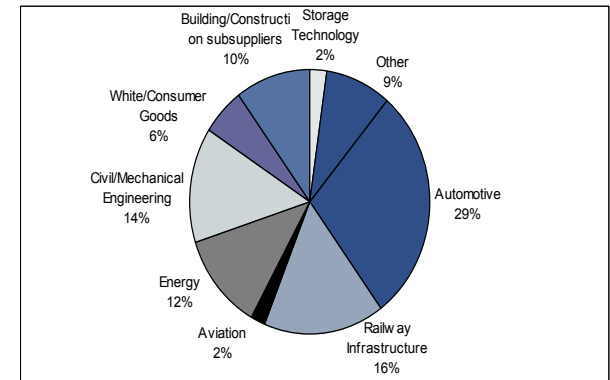
Source: Company reports, Citi Investment Research and Analysis

Figure 266. Divisional EBITDA Split



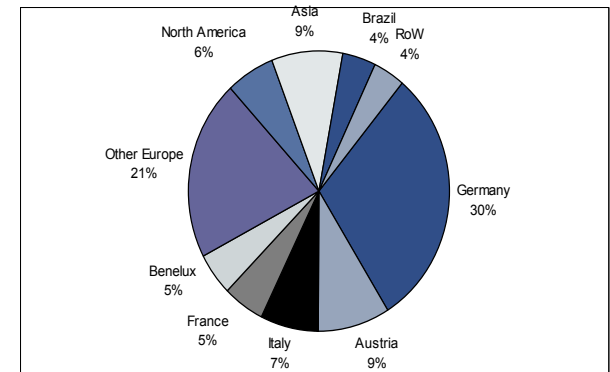
Source: Company reports, Citi Investment Research and Analysis

Figure 265. FY 2009/10 Revenue by Industry



Source: Company reports, Citi Investment Research and Analysis

Figure 267. FY 2009/10 Revenue by Destination



Source: Company reports, Citi Investment Research and Analysis



Notes



Notes



Notes

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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A director of Citi serves on the board of Alcoa Inc.

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One or more directors of Grupo Mexico, S.A. de C.V. are members of the board of directors of an affiliate of Citigroup Global Markets Inc.

DMBH rating distribution versus Investment Banking service provision in the past 12 months as at 31st December 2011 is as follows: Buy (1) representing 58% of the DMBH coverage 0% of which are IB clients, Hold (2) representing 29% of the DMBH coverage 0% of which are IB clients, Sell (3) representing 13% of the DMBH coverage 0% of which are IB clients.

DMBH rating distribution versus Investment Banking service provision in the past 12 months as at 31st December 2011 is as follows: Buy (1) representing 58% of the DMBH coverage 0% of which are IB clients, Hold (2) representing 29% of the DMBH coverage 0% of which are IB clients, Sell (3) representing 13% of the DMBH coverage 0% of which are IB clients.

One or more directors of Southern Copper Corporation SA is a member of the board of directors of an affiliate of Citigroup Global Markets Inc.

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

Pradeep Mahtani, Analyst, holds a long position in the securities of Sterlite Industries (India).

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

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