

# Metals & Mining

## Diversified Debate II – Why Not To Do NPV Positive Projects

- **Why companies shouldn't do NPV positive projects** — The general belief of mining CEOs is that they should proceed with NPV positive projects, paraphrasing this view goes along the line of “we can invest in project X and beat our cost of capital so therefore we should do it”; the contention in this thinking is how shareholders actually get rewarded for this NPV generated. As an example, over the past three years Rio Tinto has traded at a 30% discount to our calculated NPV since 2009. In essence for every \$1 of NPV created by the company, shareholders have been rewarded with 70c of value.
- **What returns are needed...larger than you think** — In essence it appears the market is implying a much higher WACC than the companies are using for their capital allocation decisions. On our calculations the market is implying a 14% discount rate versus Citi's base case of ~10%; on this basis to generate value creation to shareholders (and a P/NPV rerating) then mining CEOs should be targeting at least a 17% post tax return on new projects. This raises an important question: are the miners or the market right? Looking at the recent history of value destruction in the mining industry along with the future risk of higher capex, royalties, tax and project delays, we would side with the market. On this basis unless the miners can achieve a 17% post tax return they, in our view, should just hand back cash.
- **What can the miners learn from other cycle industries** — It is interesting to look at how other cyclical industries have behaved to maximise shareholder value. In June 2011 Berkeley Group Holding (BKGH.L), a UK housebuilding company, announced that it would repay ~£13.00 per share in dividends (equivalent to its market cap) over a ten-year period. One could argue that there are similarities in the cyclical nature of buying and developing land as to buying and developing resources. Berkeley Group argued this strategy removed timing issues around cash generation coinciding with peak land prices, which has strong parallels to the mining industry.
- **What would be the value if say Rio adopted this policy?** — Rio Tinto is currently trading at a 15% discount to our calculated NPV of \$133bn, after a strong recent run. If Rio Tinto paid out its current market cap (\$115bn in dividends) it would result in our expected payout ratio increasing from around 50% to 86%, which in our view is achievable. We calculate a value of \$167bn under this scenario which would represent \$66bn in dividend payments (using a dividend discount model) and a residual value in 2023 of \$101bn, representing around 45% upside to the current share price.

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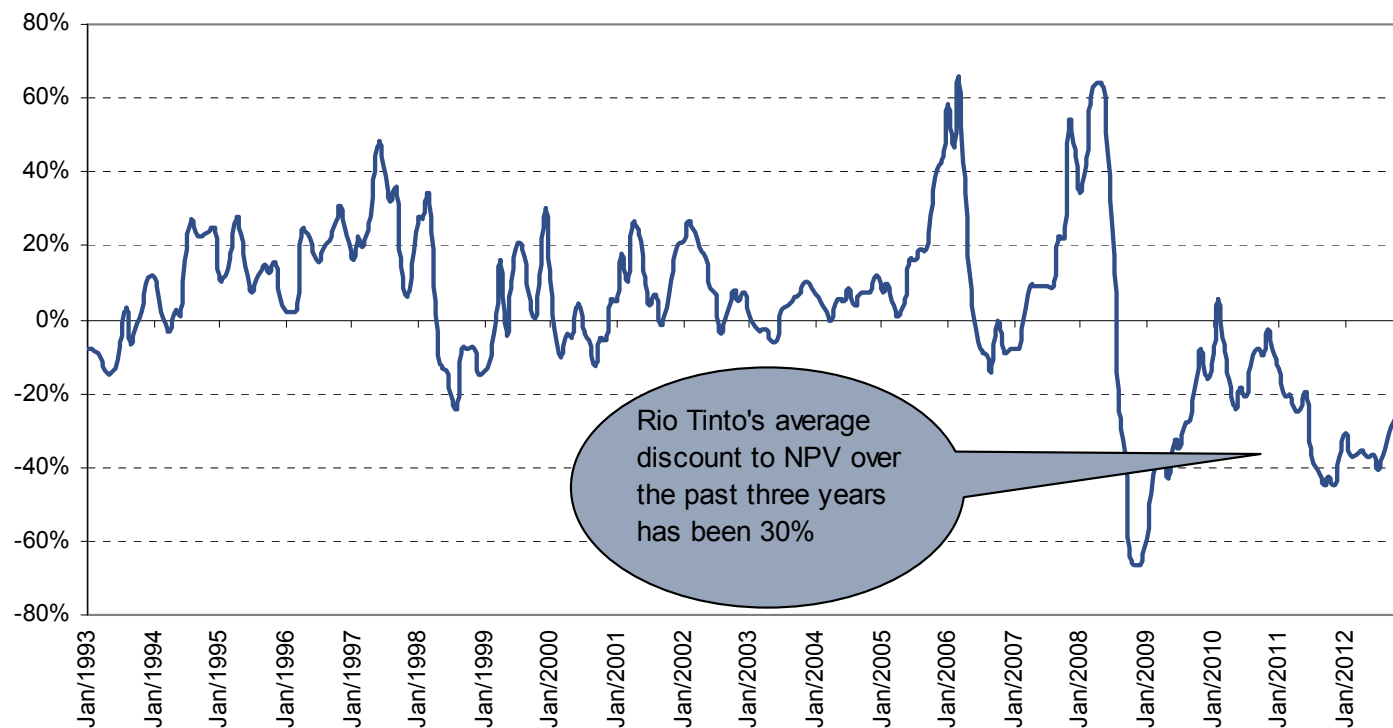
### See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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## Price to NPV

- We calculate a Net Present Value for the large mining companies as a sum of each individual asset, modelled for the life of mine and predicated on our long-term commodity prices. We therefore don't include any blue sky of unapproved growth projects or the potential to extend mine life or increase value beyond what the company has announced or we can identify as analysts. While we can debate the merits of this, we can at least say we have been consistent over the past 20 years.
- As an example Rio Tinto historically traded at a ~20% premium to NPV, arguably up until the Alcan acquisition, rights issue, and unprecedented capex spend. This resulted in a step change on how the company traded relative to our calculated NPV and over the past three years it has traded at a discount of around 30%.

Figure 1. Price to NPV for Rio Tinto

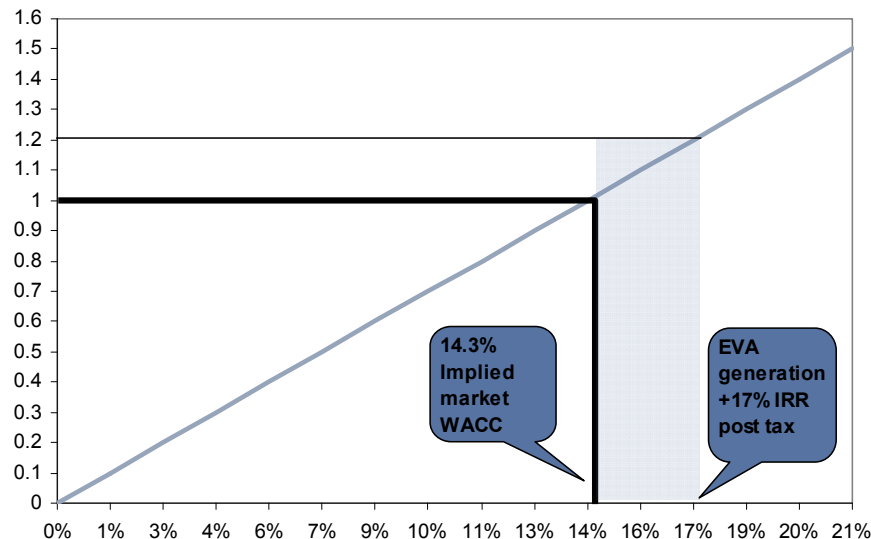


Source: Datastream, Citi Research

## How can this be rectified and what hurdle rates should the companies be targeting?

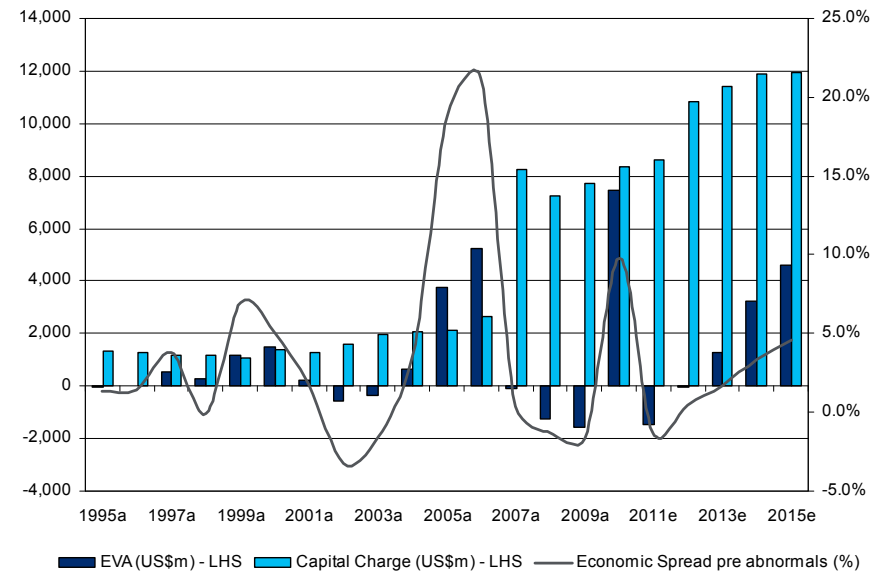
- It appears the market is not willing to give the miners the benefit of the doubt to allocate capital efficiently, and is implying that around 30% the value generated will in effect be destroyed.....which based on recent performance of the sector maybe warranted.
- Arguably, the market is implying a much higher WACC for the companies than our base case; Citi broadly uses a 10% nominal WACC for the majors, and a 0.7x price to NPV would imply a WACC of around 14%. In other words, the market is saying that unless the miners need to cover a cost of capital closer to 14%.
- Taking a long-term view on creating shareholder value, the mining sector has delivered a positive EVA of around 3% (ROIC – WACC); therefore to drive a rerating in the mining sector the mining companies should arguably be targeting a +17% return (post tax) from new projects. This return also assumes no buffer for delays, capex, royalty, taxation increases that would have to be built in.
- We argue therefore if the company can't meet a hurdle rate of 17%, then they should just return cash. The pushback from companies is generally this would result in the companies shrinking, which may not be a bad thing, especially when the companies would still own the resources in the ground realising some intrinsic value which is currently not being priced in.

Figure 2. Implied WACC and Returns – Price to NPV versus IRR (%)



Source: Datastream, Citi Research

Figure 3. Rio Tinto EVA creation 1995 to 2015 (ROIC – WACC)



Source: Company Reports and Citi Research Estimates

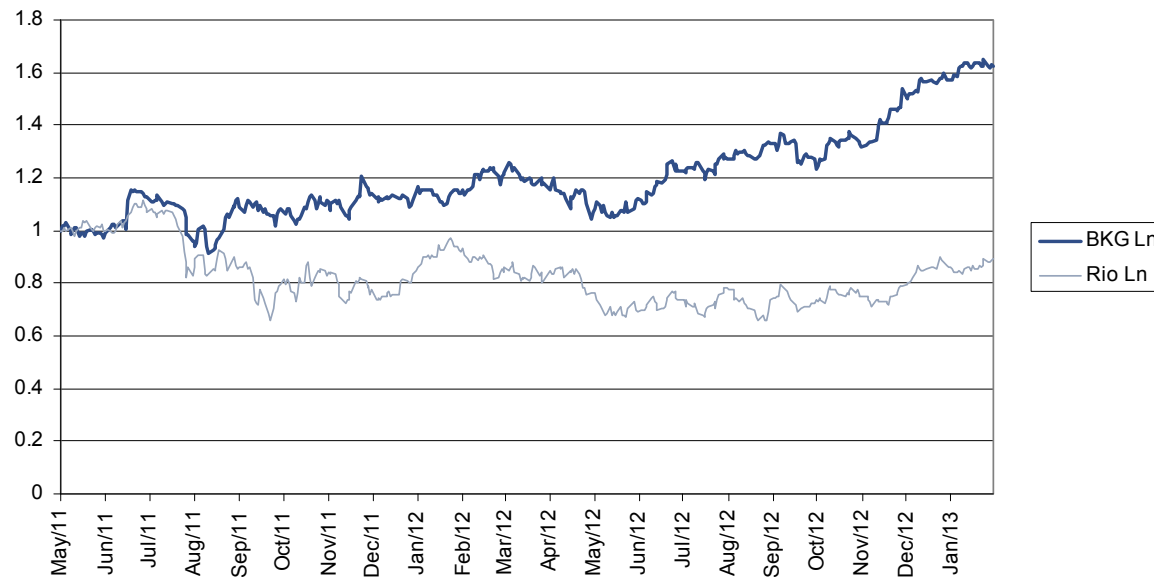
## What can the miners learn from other cyclical industries?

It is interesting to look at how other cyclical industries, and how they have behaved to maximise shareholder value. In June 2011 Berkeley Group Holding (BKGH.L), a UK housebuilding company, announced that it would repay ~£13.00 per share in dividends (equivalent to its market cap) over a ten year period, with defined repayments by 2015, 2018 and 2021. The company in its review concluded the following:

- The natural size of Berkeley group isn't much bigger than the current entity, i.e. management does not believe a bigger group would be better run.
- The housing market is cyclical and as such Berkeley wants to effectively operate on a different basis, buy land when conditions are poor (and there are few buyers) and sell when conditions are good.
- It wanted to commit to visibility in terms of dividends but wanted to retain flexibility with respect to future investment opportunities.

One could argue that there are similarities in the cyclical nature of buying and developing land as to buying and developing resources. It also removes timing issues which is a frustration of many investors, as the peak of cash generation occurs at the peak of the cycle and so do peak capex and M&A prices.

Figure 4. Berkeley Group BKG Ln versus Rio Tinto Rio LN

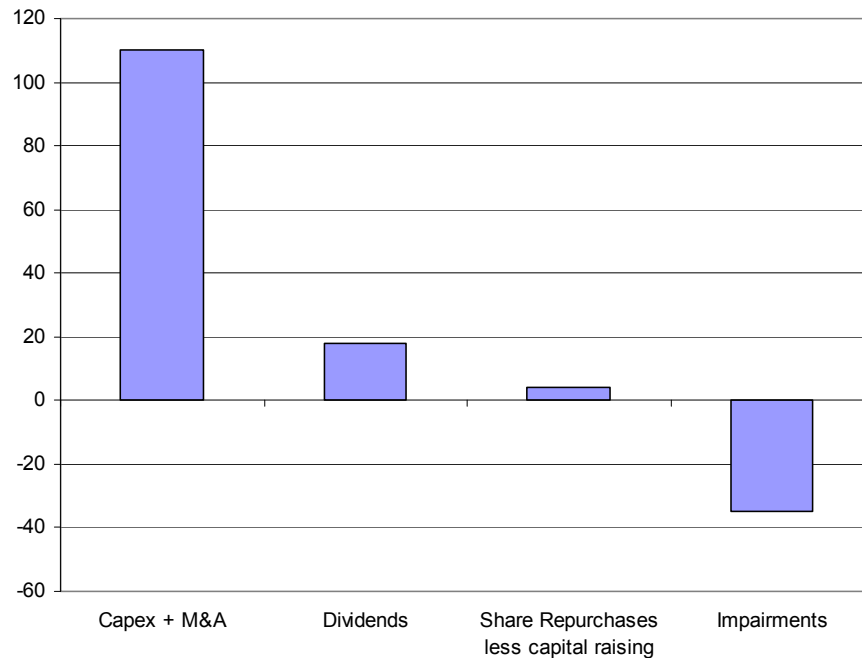


Source: Datastream, Citi Research

## What if Rio Tinto returned its market cap over the next ten years?

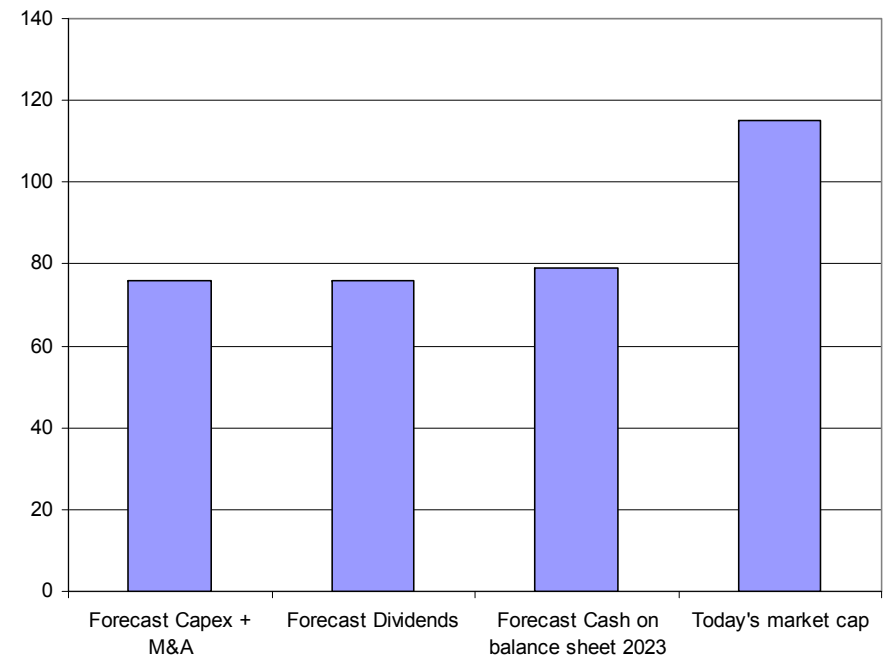
- As an example we look at what could happen if Rio Tinto announced that it would return its market cap to shareholders over the next ten years.
- Interestingly the company has spent \$110bn on capex and net M&A (acquisitions less divestments) over the past ten years and this compares to the company's current market cap of around \$115bn. Rio has paid around \$18bn in dividends and buy backs less the rights issue is positive \$4bn. At least in theory the company could have adopted this strategy in the past and perhaps avoided ~\$35bn in impairments.
- We already forecast dividends of around \$76bn and capex of \$76bn, which on our conservative long-term forecasts (copper \$6,500 and iron ore \$81 real) would interestingly still leave the company in a net cash position of around \$79bn by 2023. In our view the numbers work, and Rio could commit to returning around \$115bn in cash to shareholders with minimal shrinkage to its business (although this is a separate debate).

Figure 5. Capital usage – 2002-2012 US\$bn



Source: Company Reports, Citi Research

Figure 6. Capital Usage Expected – 2013-2023

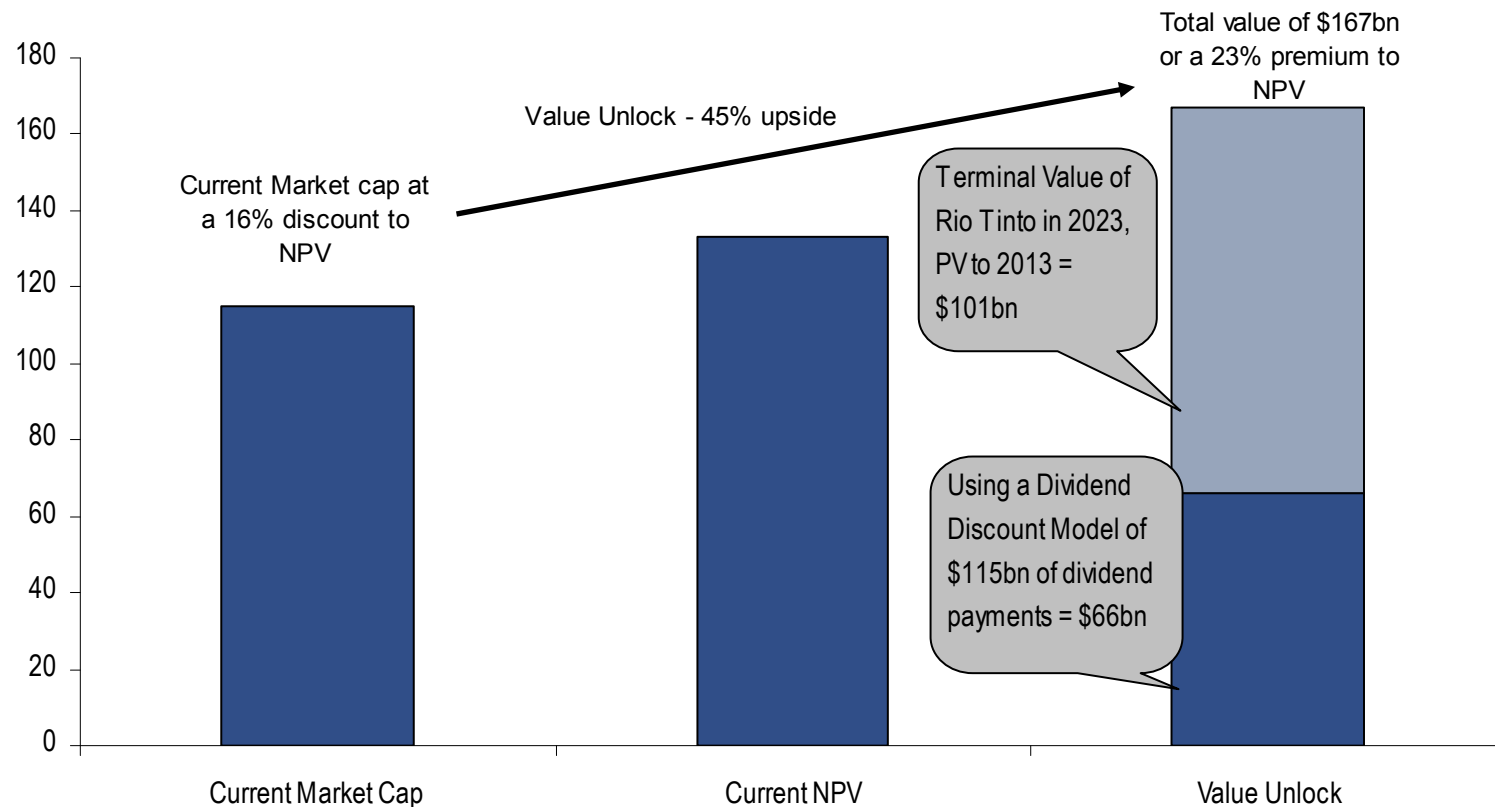


Source: Citi Research

## Valuation Impacts

The valuation impact in our view would be pronounced. Rio Tinto's market cap ~\$115bn is currently trading at a 15% discount to our calculated NPV of \$133bn; we calculate a value of \$167bn or 45% upside on a cash return strategy. If Rio Tinto paid out its current market cap (\$115bn in dividends) over the next ten years we calculate that it would be worth \$66bn in today's money (using a dividend discount model at a cost of equity of 12%) and would result in our expected payout ratio increasing from around 50% to 86%. We then calculated a residual value of Rio Tinto in 2023 and present valued that back to today of \$101bn; this is based on a conservative ~5x earnings and a 20% discount to the residual NPV.

Figure 7. Rio Tinto valuation potential US\$bn



Source: Citi Research

Figure 8. PE Multiples

PE Multiples	RIC	Rating	Listing	Price	Target	Citi Base Case				Spot Fx/Prices				IBES Consensus			
Calendar Years			Ccy	1/2/13		2012E	2013E	2014E	12E-14E CAGR	2012E	2013E	2014E	12E-14E CAGR	2012E	2013E	2014E	12E-14E CAGR
<b>Diversified</b>																	
Anglo American PLC	AAL.L	Neutral	GBP	19.54	20.00	15.9	12.3	10.6	22%	16.2	12.5	11.6	19%	15.1	12.1	10.2	22%
BHP Billiton PLC	BLT.L	Buy	GBP	22.15	22.00	12.4	13.2	11.1	6%	14.5	11.0	10.0	21%	11.9	11.9	10.6	6%
ENRC	ENRC.L	Sell	GBP	3.38	1.70	11.1	11.3	11.2	0%	11.2	9.5	8.5	14%	10.4	10.1	7.0	22%
Norilsk	NKELYq.L	Buy	USD	20.08	23.00	11.9	8.7	7.5	26%	11.9	9.4	10.2	8%	10.6	9.7	9.3	7%
Rio Tinto PLC	RIO.L	Buy	GBP	36.79	40.00	11.5	9.3	7.8	22%	11.7	7.6	6.9	30%	11.4	9.4	8.4	17%
Vale	VALE.N	Buy	USD	20.52	22.00	9.9	10.4	9.2	4%	9.9	6.0	5.9	30%	10.4	9.0	8.5	10%
Vedanta Resources	VED.L	Neutral	GBP	12.59	12.00	13.6	9.6	6.9	41%	12.7	7.4	5.3	54%	12.4	8.0	6.0	44%
<b>Weighted Average</b>						<b>12.0</b>	<b>11.3</b>	<b>9.7</b>	<b>12%</b>	<b>12.8</b>	<b>9.1</b>	<b>8.5</b>	<b>24%</b>	<b>11.6</b>	<b>10.6</b>	<b>9.5</b>	<b>11%</b>
<b>Bulks</b>																	
African Minerals	AMlq.L	Buy	GBP	3.08	4.40	nm	6.3	4.3	na	nm	3.2	2.4	na	nm	10.7	4.8	na
Ferrexpo PLC	FXPO.L	Buy	GBP	2.71	3.20	11.4	9.1	5.8	40%	11.4	4.4	3.3	85%	10.8	7.7	7.3	21%
London Mining	LOND.L	Buy	GBP	1.69	2.00	nm	9.8	2.5	na	nm	2.5	1.4	na	nm	5.1	3.5	na
New World Resources	NWRR.L	Neutral	GBP	2.83		41.4	-11.2	11.1	93%	41.1	nm	nm	na	60.2	nm	11.1	133%
Zanaga	ZIOC.L	Neutral	GBP	0.26		nm	nm	nm	na	nm	nm	nm	na	nm	nm	nm	na
<b>Base Metals</b>																	
Antofagasta PLC	ANTO.L	Sell	GBP	11.59	9.90	14.1	14.5	16.5	-7%	14.1	13.1	13.9	1%	13.5	12.7	13.5	0%
Boliden	BOL.ST	Sell	SEK	118.80	109.00	9.2	10.4	9.3	0%	9.2	9.1	7.3	13%	9.8	9.3	7.7	13%
First Quantum Minerals	FQM.L	Sell	GBP	13.06	11.00	20.1	17.1	13.3	23%	20.6	15.9	13.6	23%	19.0	12.6	11.1	31%
Kazakhmys Plc	KAZ.L	Neutral	GBP	7.54	8.20	9.7	7.8	6.6	21%	9.6	6.8	5.5	33%	9.8	9.0	9.0	4%
Nyrstar	NYR.BR	Buy	EUR	4.39	5.90	nm	9.0	6.9	na	nm	26.6	10.4	na	nm	11.4	5.4	na
Talvivaara	TALV.L	Neutral	GBP	0.88		nm	-14.0	4.1	na	nm	nm	nm	na	nm	nm	4.2	na
<b>Aluminium</b>																	
Norsk Hydro	NHY.OL	Sell	NOK	26.78	26.00	117.1	21.0	15.4	176%	117.1	21.9	20.1	141%	111.6	24.2	13.9	183%
UC Rusal	0486.HK	Neutral	HKD	4.60	5.18	58.9	6.0	4.4	265%	54.8	10.4	8.6	153%	29.7	9.9	6.7	111%
<b>Precious Metals</b>																	
African Barrick Gold	ABGL.L	Sell	GBP	3.66	3.35	14.4	8.2	8.3	32%	14.7	8.2	8.0	36%	15.7	9.1	8.3	37%
Aquarius Platinum Plc	AQP.L	Buy	GBP	0.71	0.92	nm	21.7	36.4	na	nm	24.6	nm	na	nm	44.7	13.3	na
Centamin Egypt	CEY.L	Neutral	GBP	0.60		5.6	3.8	5.3	3%	5.6	3.8	5.2	4%	5.2	3.6	4.9	3%
Fresnillo Plc	FRES.L	Neutral	GBP	17.05	19.56	22.7	19.0	21.5	3%	22.7	18.7	18.2	12%	26.1	22.6	19.9	15%
Gem Diamonds	GEMD.L	Buy	GBP	1.67	1.95	14.4	11.8	10.6	16%	nm	11.4	11.0	na	19.9	12.7	12.8	25%
Hochschild Mining	HOCM.L	Neutral	GBP	4.33	5.16	26.7	19.6	18.4	20%	26.7	19.2	13.8	39%	31.3	21.5	16.7	37%
Lonmin Plc	LMI.L	Buy	GBP	3.80	4.11	94.0	81.9	27.5	85%	89.8	74.5	31.8	68%	nm	74.6	22.2	na
Nordgold	NORDNq.L	Neutral	USD	4.21	4.62	6.8	10.3	7.9	-7%	6.8	10.4	7.6	-6%	10.2	6.1	5.0	42%
Petra Diamonds	PDL.L	Buy	GBP	1.11	1.45	17.8	8.3	7.2	58%	12.7	7.9	7.4	31%	19.1	14.1	10.7	33%
Petropavlovsk PLC	POGL	Buy	GBP	3.60	5.01	7.3	5.5	4.4	29%	7.3	4.8	3.6	43%	8.0	5.2	4.5	33%
Polymetal	POLYP.L	Neutral	GBP	10.93	11.31	12.7	8.6	8.8	20%	13.1	8.6	7.7	30%	12.2	9.1	8.3	22%
Randgold Resources	RRS.L	Neutral	GBP	60.85	68.30	19.6	15.1	12.1	27%	19.6	15.2	11.9	28%	19.2	15.0	11.4	29%
<b>South Africa</b>																	
African Rainbow	ARIJ.J	Neutral	ZAR	207	200	16.1	14.7	12.1	16%	16.1	12.1	10.4	25%	13.1	12.0	10.5	12%
Assore	ASRJ.J	Sell	ZAR	439	270	14.9	15.8	15.3	-1%	14.9	12.3	10.1	21%	13.3	13.8	13.4	-1%
Exxaro	EXXJ.J	Neutral	ZAR	178	190	10.6	10.7	10.7	0%	10.8	9.3	8.8	10%	11.2	10.1	8.5	15%
Kumba Iron Ore Ltd	KIOJ.J	Sell	ZAR	617	360	16.3	13.5	15.0	4%	16.3	10.4	9.3	33%	15.9	13.2	13.7	8%

Source: dataCentral

Figure 9. EV/EBITDA Multiples

EV/EBITDA	RIC	Rating	Listing	Price	Target	Citi Base Case				Spot Fx/Prices				IBES Consensus			
Calendar Years			Ccy	01/02/13		2012E	2013E	2014E	12E-14E CAGR	2012E	2013E	2014E	12E-14E CAGR	2012E	2013E	2014E	12E-14E CAGR
<b>Diversified</b>																	
Anglo American PLC	AAL.L	Neutral	GBP	19.54	20.00	7.1	4.9	4.5	26%	7.2	4.8	4.6	25%	6.3	5.1	4.8	15%
BHP Billiton PLC	BLT.L	Buy	GBP	22.15	22.00	7.3	7.4	6.3	8%	8.1	6.4	5.8	18%	7.0	6.9	6.2	7%
ENRC	ENRC.L	Sell	GBP	3.38	1.70	6.0	6.5	6.0	0%	6.1	5.9	5.3	7%	6.0	5.6	4.5	16%
Norilsk	NKELYq.L	Buy	USD	20.08	23.00	7.5	6.2	5.5	17%	7.5	6.6	6.9	4%	7.1	6.7	6.3	6%
Rio Tinto PLC	RIO.L	Buy	GBP	36.79	40.00	6.8	5.3	4.5	24%	6.9	4.5	4.0	32%	7.3	6.0	5.6	14%
Vale	VALE.N	Buy	USD	20.52	22.00	6.7	6.9	6.0	6%	6.6	4.3	4.2	25%	6.6	5.7	5.2	13%
Vedanta Resources	VED.L	Neutral	GBP	12.59	12.00	6.2	5.7	5.3	8%	6.1	5.2	4.9	11%	5.9	5.1	4.8	11%
<b>Weighted Average</b>						<b>7.0</b>	<b>6.5</b>	<b>5.6</b>	<b>13%</b>	<b>7.3</b>	<b>5.4</b>	<b>5.0</b>	<b>22%</b>	<b>6.9</b>	<b>6.2</b>	<b>5.7</b>	<b>10%</b>
<b>Bulks</b>																	
African Minerals	AMlq.L	Buy	GBP	3.08	4.40	nm	2.4	1.5	na	nm	1.4	1.0	na	nm	3.2	1.6	na
Ferrexpo PLC	FXPO.L	Buy	GBP	2.71	3.20	7.1	6.0	4.3	29%	7.1	3.4	2.7	63%	6.4	5.3	5.2	10%
London Mining	LOND.L	Buy	GBP	1.69	2.00	nm	4.9	1.9	na	nm	2.4	1.2	na	nm	3.7	2.5	na
New World Resources	NWRR.L	Neutral	GBP	2.83		5.7	10.1	3.9	20%	5.7	12.6	16.0	-40%	5.5	6.4	4.3	14%
Zanaga	ZIOC.L	Neutral	GBP	0.26		nm	nm	nm	na	nm	nm	nm	na	nm	nm	nm	na
<b>Base Metals</b>																	
Antofagasta PLC	ANTO.L	Sell	GBP	11.59	9.90	5.2	5.9	6.6	-11%	5.2	5.5	5.7	-5%	5.2	5.4	5.6	-4%
Boliden	BOL.ST	Sell	SEK	118.80	109.00	5.7	6.0	5.7	1%	5.7	5.5	4.8	9%	5.6	5.4	4.8	8%
First Quantum Minerals	FQM.L	Sell	GBP	13.06	11.00	8.3	6.5	5.1	28%	8.5	6.0	4.9	32%	8.1	5.7	4.5	34%
Kazakhmys Plc	KAZ.L	Neutral	GBP	7.54	8.20	6.5	6.7	6.3	2%	6.5	6.1	5.3	11%	6.7	6.1	6.8	-1%
Nyrstar	NYR.BR	Buy	EUR	4.39	5.90	6.6	3.6	3.2	43%	6.6	4.5	3.6	35%	6.2	4.3	3.3	37%
Talvivaara	TALV.L	Neutral	GBP	0.88		104.2	10.3	3.8	424%	104.2	25.8	8.1	259%	82.5	8.7	4.4	334%
<b>Aluminium</b>																	
Norsk Hydro	NHY.OL	Sell	NOK	26.78	26.00	13.1	7.7	6.7	40%	13.1	7.9	7.8	30%	12.3	9.1	7.0	33%
UC Rusal	0486.HK	Neutral	HKD	4.60	5.18	23.1	11.4	9.6	55%	23.3	17.0	16.6	19%	20.7	13.8	10.7	39%
<b>Precious Metals</b>																	
African Barrick Gold	ABGL.L	Sell	GBP	3.66	3.35	5.1	3.4	3.5	21%	5.2	3.4	3.4	23%	5.1	3.7	3.5	21%
Aquarius Platinum Plc	AQP.L	Buy	GBP	0.71	0.92	35.5	7.6	8.1	110%	35.1	8.0	14.9	54%	13.5	7.4	4.5	73%
Centamin Egypt	CEY.L	Neutral	GBP	0.60		3.6	2.6	2.2	27%	3.6	2.6	2.2	28%	3.6	2.3	2.3	24%
Fresnillo Plc	FRES.L	Neutral	GBP	17.05	19.56	11.9	10.3	11.1	4%	11.9	10.2	9.8	11%	13.5	11.6	10.2	15%
Gem Diamonds	GEMD.L	Buy	GBP	1.67	1.95	2.6	2.5	2.4	5%	2.7	2.4	2.5	5%	2.9	2.9	2.7	3%
Hochschild Mining	HOCM.L	Neutral	GBP	4.33	5.16	5.1	4.4	4.5	7%	5.1	4.3	3.7	18%	5.4	4.6	3.8	20%
Lonmin Plc	LMI.L	Buy	GBP	3.80	4.11	20.2	20.4	20.1	0%	19.6	19.4	13.6	20%	19.6	17.5	9.7	42%
Nordgold	NORDNq.L	Neutral	USD	4.21	4.62	2.7	2.9	2.6	2%	2.7	3.0	2.5	3%	3.2	2.5	2.2	20%
Petra Diamonds	PDL.L	Buy	GBP	1.11	1.45	6.3	3.9	3.3	39%	5.8	3.8	3.3	33%	8.2	5.8	4.4	36%
Petropavlovsk PLC	POGL	Buy	GBP	3.60	5.01	3.8	3.7	3.5	4%	3.8	3.4	3.1	11%	4.2	3.6	3.3	12%
Polymetal	POLYP.L	Neutral	GBP	10.93	11.31	7.5	6.0	6.4	8%	7.7	6.0	5.7	16%	7.9	6.3	5.8	17%
Randgold Resources	RRS.L	Neutral	GBP	60.85	68.30	11.6	8.8	6.8	30%	11.6	8.8	6.7	31%	11.6	8.8	6.6	33%
<b>South Africa</b>																	
African Rainbow	ARIJ.J	Neutral	ZAR	207.00	200.00	7.7	6.7	5.8	16%	7.7	5.9	5.1	23%	6.7	6.0	5.4	11%
Assore	ASRJ.J	Sell	ZAR	439.00	270.00	10.9	11.8	11.5	-3%	10.9	9.6	8.2	15%	na	10.4	10.4	na
Exxaro	EXXJ.J	Neutral	ZAR	178.00	190.00	15.8	21.8	17.2	-4%	15.3	23.0	23.8	-20%	17.3	19.2	13.2	15%
Kumba Iron Ore Ltd	KIOJ.J	Sell	ZAR	617.13	360.00	8.2	7.1	7.8	2%	8.2	5.6	5.0	28%	8.1	6.9	7.3	5%

Source: dataCentral



Figure 10. NPV Valuation

NPV	Ccy	RIC	Rating	Price 01/02/13	Target	Premium(Discount)								
						NPV per share Base	Spot	Spot vs. Base	Share Price LST CCY	USD	Price/NPV Base	Spot	Base	Spot
Diversified														
Anglo American PLC	GBP	AAL.L	Neutral	19.54	20.00	20.66	21.54	4%	19.54	30.66	95%	91%	-5%	-9%
BHP Billiton PLC	GBP	BLT.L	Buy	22.15	22.00	21.20	22.40	6%	22.15	34.75	104%	99%	4%	-1%
ENRC	GBP	ENRC.L	Sell	3.38	1.70	0.70	1.21	71%	3.38	5.31	480%	280%	380%	180%
Norilsk	USD	NKELYq.L	Buy	20.08	23.00	11.06	8.79	-21%	20.08	20.08	181%	229%	81%	129%
Rio Tinto PLC	GBP	RIO.L	Buy	36.79	40.00	45.94	45.73	0%	36.79	57.73	80%	80%	-20%	-20%
Vale	USD	VALE.N	Buy	20.52	22.00	26.71	35.78	34%	20.52	20.52	77%	57%	-23%	-43%
Vedanta Resources	GBP	VED.L	Neutral	12.59	12.00	16.30	18.60	14%	12.59	19.76	77%	68%	-23%	-32%
Bulks														
African Minerals	GBP	AMIQ.L	Buy	3.08	4.40	4.96	9.03	82%	3.08	4.83	62%	34%	-38%	-66%
Ferrexpo PLC	GBP	FXPO.L	Buy	2.71	3.20	4.06	7.32	80%	2.71	4.25	67%	37%	-33%	-63%
London Mining	GBP	LOND.L	Buy	1.69	2.00	2.78	5.72	106%	1.69	2.64	61%	29%	-39%	-71%
New World Resources	GBP	NWRR.L	Neutral	2.83		3.77	1.48	-61%	2.83	4.44	75%	191%	-25%	91%
Zanaga	GBP	ZIOC.L	Neutral	0.26		0.72	0.98	36%	0.26	0.41	36%	27%	-64%	-73%
Base Metals														
Antofagasta PLC	GBP	ANTO.L	Sell	11.59	9.90	8.66	9.56	10%	11.59	18.19	134%	121%	34%	21%
Boliden	SEK	BOL.ST	Sell	118.80	109.00	133.65	150.96	13%	118.80	18.83	89%	79%	-11%	-21%
First Quantum Mineral	GBP	FQM.L	Sell	13.06	11.00	14.23	14.17	0%	13.06	20.49	92%	92%	-8%	-8%
Kazakhmys Plc	GBP	KAZ.L	Neutral	7.54	8.20	8.38	10.22	22%	7.54	11.83	90%	74%	-10%	-26%
Nyrstar	EUR	NYR.BR	Buy	4.39	5.90	6.40	5.60	-13%	4.39	5.99	69%	78%	-31%	-22%
Talvivaara	GBP	TALV.L	Neutral	0.88		3.22	2.78	-14%	0.88	1.38	27%	32%	-73%	-68%
Aluminium														
Norsk Hydro	NOK	NHY.OL	Sell	26.78	26.00	41.60	41.80	0%	26.78	4.91	64%	64%	-36%	-36%
UC Rusal	USD	0486.HK	Neutral	4.60	5.18	5.21	2.31	-56%	4.60	0.59	88%	199%	-12%	99%
Precious Metals														
African Barrick Gold	GBP	ABGL.L	Sell	3.66	3.35	2.46	2.74	12%	3.66	5.74	149%	133%	49%	33%
Aquarius Platinum Plc	GBP	AQP.L	Buy	0.71	0.92	0.92	0.82	-11%	0.71	1.11	77%	86%	-23%	-14%
Centamin Egypt	GBP	CEY.L	Neutral	0.60		1.02	1.06	4%	0.60	0.95	59%	57%	-41%	-43%
Fresnillo Plc	GBP	FRES.L	Neutral	17.05	19.56	9.78	10.56	8%	17.05	26.76	174%	161%	74%	61%
Gem Diamonds	GBP	GEMD.L	Buy	1.67	1.95	2.17	2.13	-2%	1.67	2.62	77%	79%	-23%	-21%
Hochschild Mining	GBP	HOCM.L	Neutral	4.33	5.16	3.69	4.08	11%	4.33	6.79	117%	106%	17%	6%
Lonmin Plc	GBP	LMI.L	Buy	3.80	4.11	3.92	3.31	-15%	3.80	5.96	97%	115%	-3%	15%
Nordgold	USD	NORDNg.L	Neutral	4.21	4.62	3.56	4.02	13%	4.21	4.21	118%	105%	18%	5%
Petra Diamonds	USD	PDL.L	Buy	1.11	1.45	1.45	1.44	-1%	1.11	1.75	77%	77%	-23%	-23%
Petropavlovsk PLC	GBP	POG.L	Buy	3.60	5.01	4.20	4.73	13%	3.60	5.64	86%	76%	-14%	-24%
Polymetal	GBP	POLYP.L	Neutral	10.93	11.31	8.70	9.69	11%	10.93	17.15	126%	113%	26%	13%
Randgold Resources	GBP	RRS.L	Neutral	60.85	68.30	45.53	46.77	3%	60.85	95.49	134%	130%	34%	30%
South Africa														
African Rainbow	ZAR	ARIJ.J	Neutral	207	200	180	195	9%	207	17.17	115%	106%	15%	6%
Assore	ZAR	ASRJ.J	Sell	439	270	139	139	0%	439	36.41	316%	316%	216%	216%
Exxaro	ZAR	EXXJ.J	Neutral	178	190	358	358	0%	178	14.76	50%	50%	-50%	-50%
Kumba Iron Ore Ltd	ZAR	KIOJ.J	Sell	617	360	344	480	39%	617	69.81	179%	129%	79%	29%

Source: dataCentral

# Appendix A-1

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