

Metals and Mining

Diversified Debate IV – I wanted growth, but now I want yield

- **Mixed Message** — It is understandable why mining managements are confused, as recently as 18 months ago the mining investors were craving growth, now investors have flipped and are craving yield. We can empathize with mining executives who are running the company on a long-term basis but are being impacted by short-term investor sentiment. However we believe the message from investor is slightly misunderstood; we believe that mining investors actually wanted **value-added growth** rather than just growth. Our analysis suggests returns on new projects over the past 5-6 years have struggled to make the cost of capital and therefore investors are right to be cautious and demand a higher cash return on the belief they can redeploy that capital into other sectors or smaller companies that can deliver growth. We therefore believe the large diversified mining companies will derate until investors receive an appropriate free cash flow/yield outcome.
- **Working hard for your money** — In our opinion, mining managers are going to have to work extremely hard over the foreseeable future to deliver returns and as investors will adopt a 'wait and see' approach. It is the view of a number of investors that the mining executives will have to prove themselves before they will buy the shares, and that headline announcements on cost reductions, asset optimisation or divestments are likely to be dismissed (or may be very short lived in share price reactions).
- **The dilemma for the diversified mining CEO is do we go ex-growth?** — In our opinion, the biggest challenge facing the diversified mining CEO is when will their company go ex-growth? While the CEOs may not want to admit it, in an environment where they shelve capex plans, they will at some point go ex-growth (certainly from a volume perspective).
- **The dilemma for investors is are we ever going to see any of the cash?** — The worry for investors is when will they see cash returns in the form of dividends or buybacks, or will the companies just turn on the capex tap, as and when cash flow improves?
- **Our view, the miners need to give greater transparency on cash returns and hurdle rates** — We believe the miners need to trade on a 5-6% dividend yield and have explicit hurdle rates of greater than 20% on new growth projects to achieve a market-based return. Our analysis suggests BHPB has the best position based on growth potential with yield. However we favour Rio Tinto, based on a higher FCF generation with a potential for higher near-term returns. However, in our view, Rio is likely to go ex-growth this decade and needs to acknowledge this with a higher payouts to shareholders.

■ Equities

EMEA Metals, Mining & Steel Research Team

Heath R Jansen

+44-20-7986-3921

heath.jansen@citi.com

Jon H Bergtheil

+44-20-7986-4453

jon.bergtheil@citi.com

Thomas O'Hara

+44-20-7986-4557

thomas.joseph.ohara@citi.com

Michael E Flitton

+44-20-7986-3943

michael.flitton@citi.com

Jatinder Goel, CFA

+44-20-7986-9924

jatinder.goel@citi.com

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

Citi Research is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Diversified Debate IV

- This is the fourth report in our series on the issues facing the large diversified mining companies.
- In our first report, we argued that the large miners have struggled to deliver volume growth, are now facing margin compression, and the only way out is to spin, shrink and grow.
- The second report argued that investors were not being paid for NPV-positive growth projects and the market WACCs were closer to 14% and hurdle rates on new projects need to be closer to 20% for investor to be paid for the risks.
- The third report argued that the large diversified miners are just too big to grow.
- This is the fourth note and in it we explore the taboo subject on when the large diversified miners will go ex-growth and the dilemma facing CEOs (when to grow again) and investors (am I ever going to see the cash?) and if the cycle improves, won't the companies just go and spend again?

Figure 2. Diversified Debate II – Why Not To Do NPV Positive Projects – 11 February 2013



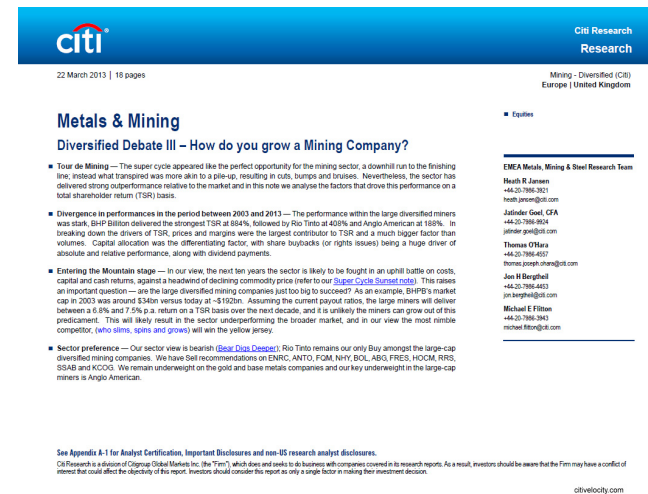
Source: Citi Research

Figure 1. The Diversified Debate – 1 February 2013



Source: Citi Research

Figure 3. Diversified Debate III – How do you grow a Mining Company? – 22 March 2013

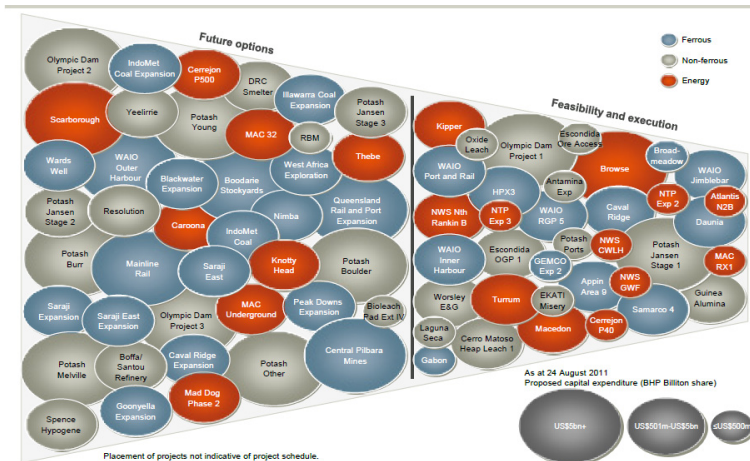


Source: Citi Research

The bubble has burst

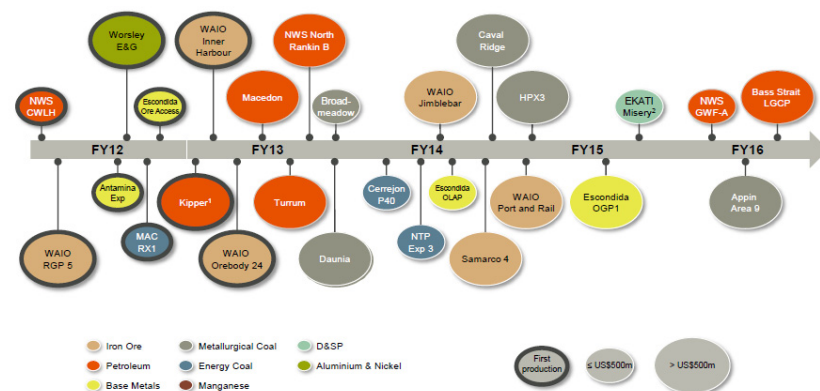
- There has been a dramatic shift in capex expectations over the past 18 months, as the following bubble charts highlight — the project pipelines have been cut or opportunities dramatically slimmed down by all the major miners.
- Generally this leaves the major miners with just a handful of major projects that are being completed, or that are likely (in our view) to go to board for approval this year, namely the Jansen Potash for BHPB, the 360Mt iron ore expansion for Rio Tinto and the Quellaveco copper project Anglo American.
- This raises an important question — when do the major miners go ex growth? Assuming all things being constant on commodity prices, costs, inflation, taxation, royalties and interest (yes a big assumption), then the only growth the companies will deliver would be from volume growth and once that peaks, in theory the market caps will also peak. In theory, the large miners are turning themselves into cash cows, arguably without the dividend yields to support the change in strategy.
- The concern for investors is that a lower growth outcome should be rewarded with a higher dividend yield; the mining sector is yielding around 3.5% versus oil and gas at 4.8%, Utilities 6.0%, and Teleco's around 5.5%. Cash flows are expected to improve beyond 2013 (refer Diversified Debate I), but investors are questioning if the cash flow does improve, then will the companies go on another growth splurge?

Figure 4. BHP Billiton project pipeline as at 24th August 2011



Source: Company Reports

Figure 5. BHPB Project Schedule 20th February 2013



Source: Company Reports

Figure 7. Anglo American – Future Options 15th February 2012 – bubble burst



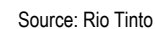
- The completion of Minas Rios in construction.
- The 5Mt Grosvenor Metallurgical coal project in Queensland which is in construction
- The Quellaveco copper project, which has completed a feasibility study, approximate capex of \$5bn so it is a possibility that it goes to the board this year.
- The Venetia diamond project, with regulatory clearances received last year and a capex cost of around \$2bn.

Source: Citi Research

Figure 9. Growth Program 14th February 2012

Source: Rio Tinto

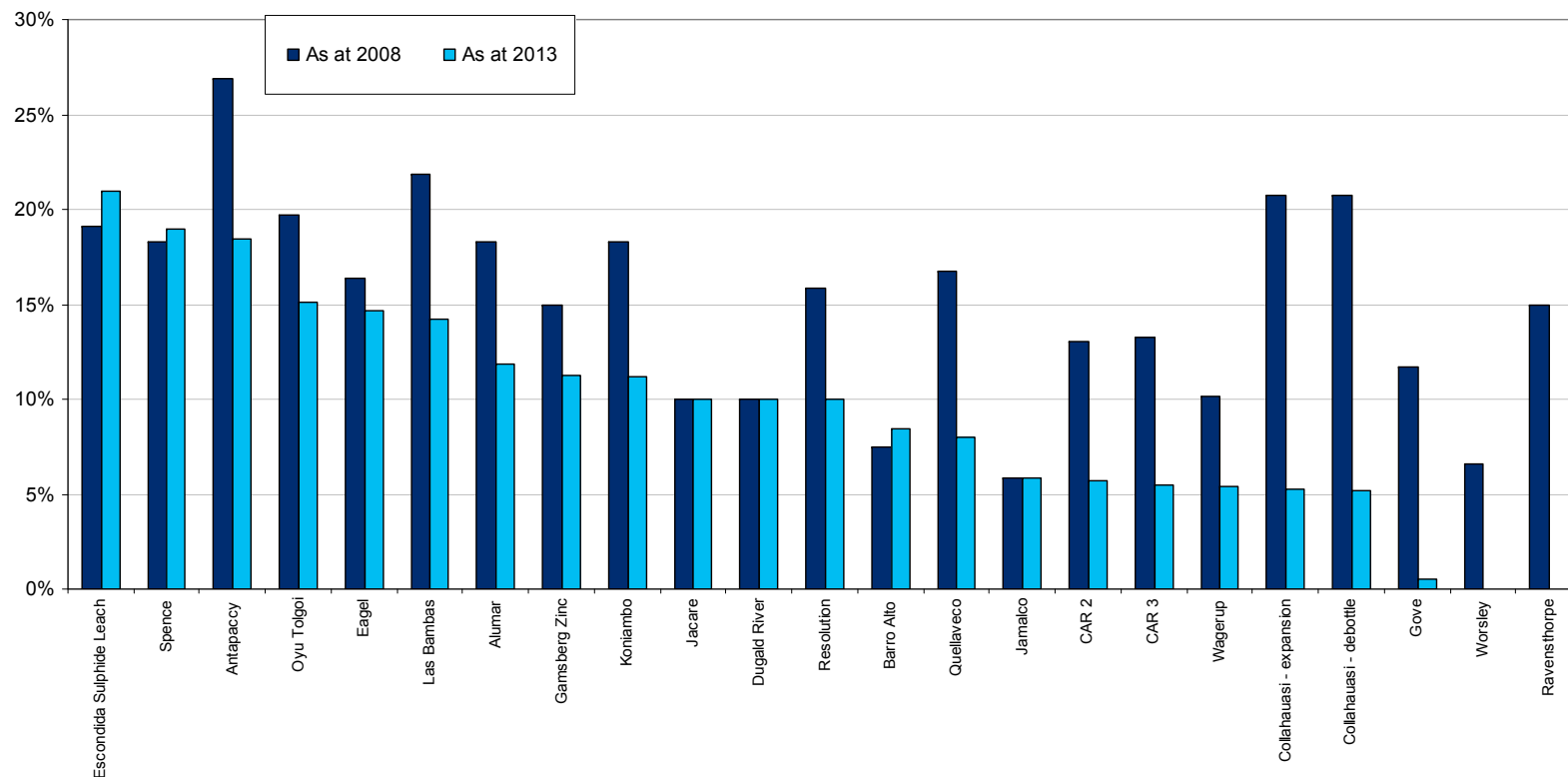
Figure 9. Growth Program 14th February 2012



Under a constant price environment, what have the companies achieved?

- We have back tested the projects that the large diversified miners have built or are currently completing by comparing the expected IRR of the growth projects as at the beginning of 2008 (pre crisis) and versus what actually occurred (or is occurring). We have kept the commodity price assumptions constant but adjusted the capex costs (either actual or guidance), production rates, and operating costs. .
- Overall the IRR disappointed. Our results highlight very poor returns in aluminium; in 2008 we calculated an average IRR of around 11% versus actual IRR delivered of less than 5% today. The base metal projects at the time were expected to deliver an IRR of 17% in 2008 versus our calculated deliver of around 11%, today.

Figure 10. IRR by project

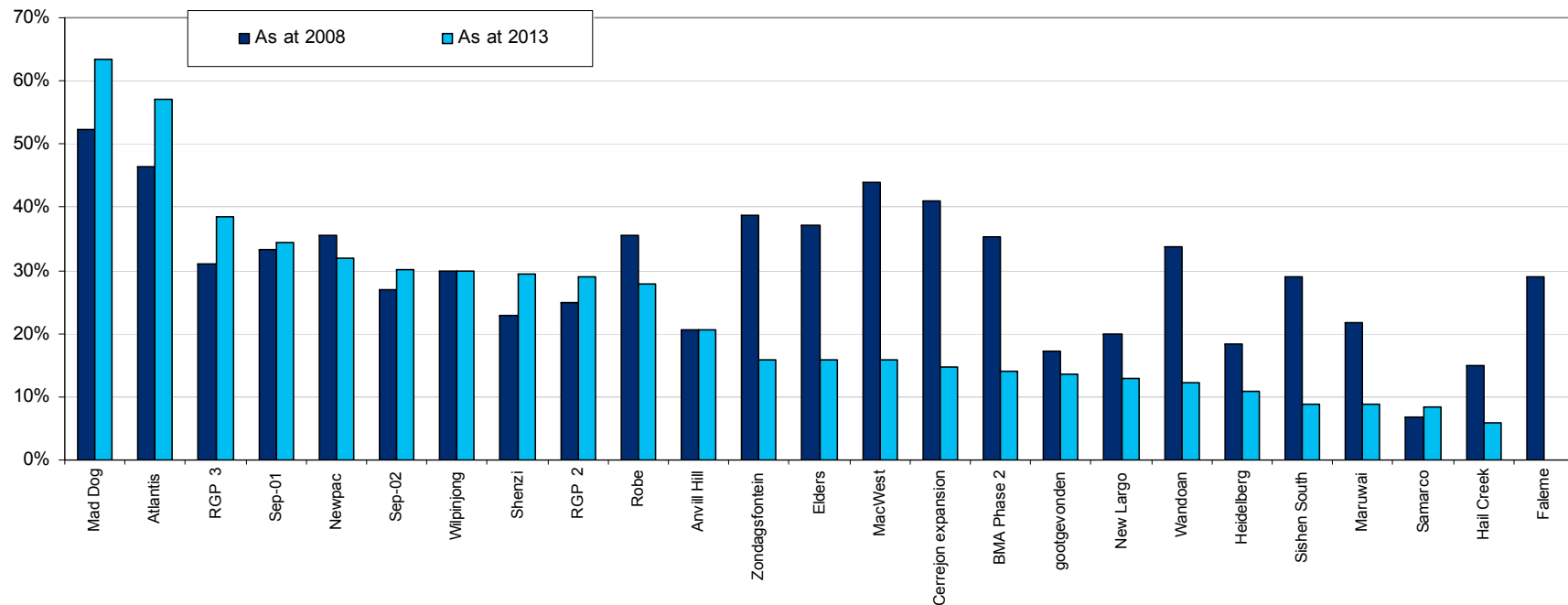


Source: Citi Research

Iron ore and Oil were the best

- Interestingly, coal returns dropped the most, from an expected IRR of 31% in 2008 versus actual of 13% today; capex costs increased but operating costs were the biggest killer.
- Iron ore was one of the best-performing commodities, where 2008 returns were targeted at 25% and actual delivered was around 20%
- Oil projects in the deepwater were impressive for BHPB; on our calculation, the IRRs of the Gulf of Mexico projects were around 50%

Figure 11. Coal, Iron ore and Petroleum projects

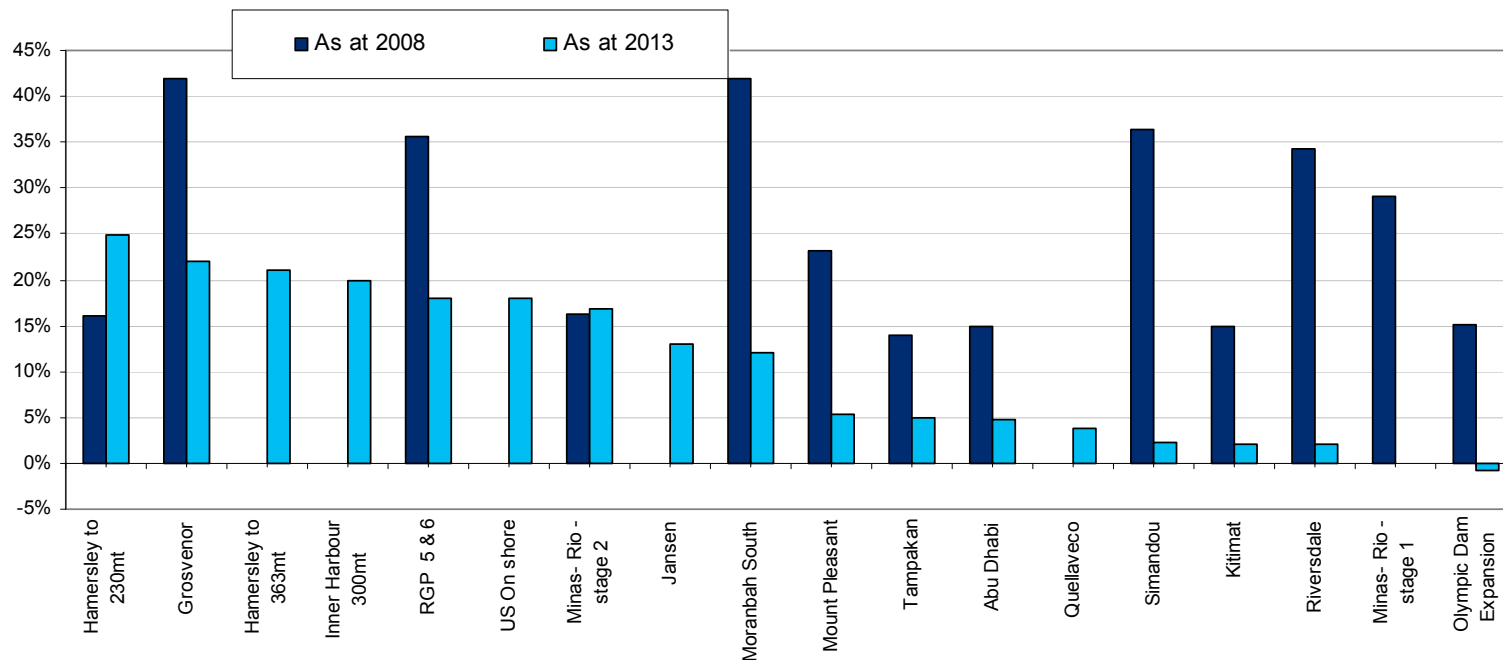


Source: Citi Research

What does the future hold?

- We have completed a similar IRR analysis for future growth projects and where possible we have included the data as at 2008. Our analysis suggests that returns in base metals are likely to be difficult, with few projects making a hurdle rate close to the companies' WACC and certainly well below a 20% return, which we believe needs to occur on new projects (refer diversified debate II). In addition, a number of Greenfield projects in coal and iron ore have seen IRR slashed (Simandou, Minas Rio, Mount Pleasant, Moranbah South, Riversdale). The Pilbara iron ore expansions are forecast to deliver the highest returns at close to 20%. US Onshore for BHPB stacks up (excluding the M&A price), however the Jansen project wouldn't achieve this hurdle rate.
- Our conclusion is that the growth options are shrinking, or certainly growth options that can deliver excess returns. Moreover, while iron ore expansions make sense, ultimately this should result in a substantial fall in iron ore prices, which would be akin to shooting yourself in the foot. BHPB has the widest breadth of growth options as it appears to us to have higher return growth options.

Figure 12. Future Projects

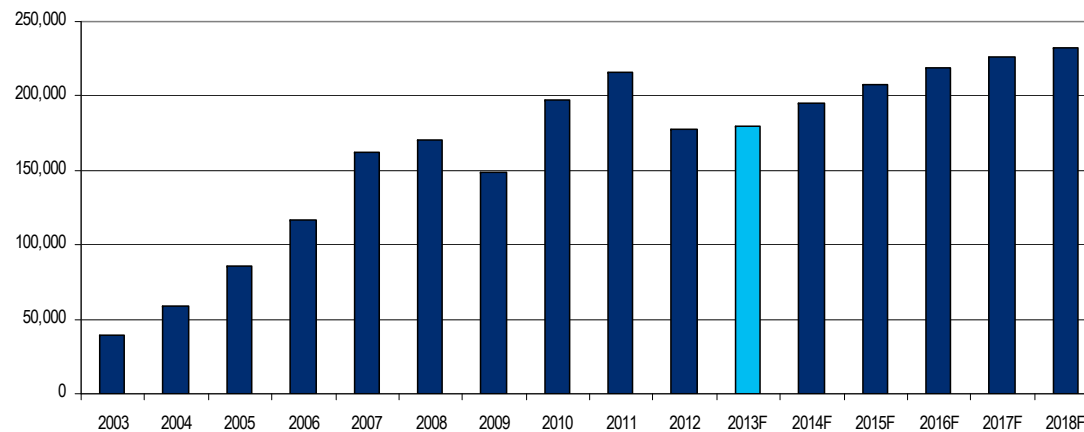


Source: Citi Research, note US Onshore IRR excludes the M&A price

The key question is what does this mean for share performance

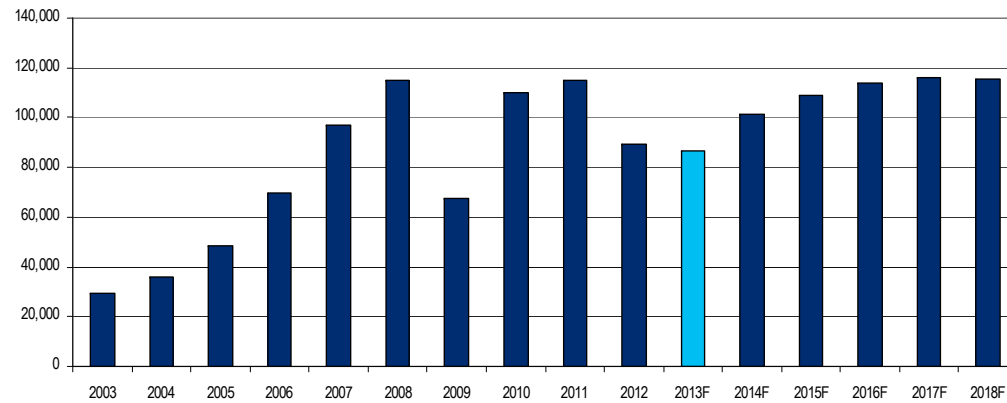
- BHPB has delivered a CAGR of around 14% on its share price performance since 2004. We expect the company to spend around \$78bn on capex until the end of this decade; if the company delivers a 15% return on new growth projects, under constant prices, we have calculated the expected market cap profile. We calculate that the company could deliver a 5% CAGR from here purely on its asset base. This analysis excludes any cash returns or cash building up on the balance sheet.
- In the case of Rio Tinto, it has delivered a CAGR of 10% on its share price since 2004. We expect the company to spend around \$27bn on capex until the end of this decade; if the company delivers a 15% return on new growth projects, under constant prices, we have calculated the expected market cap profile, yielding a 6% CAGR to 2017, after which interestingly the company would go ex-growth on our numbers.
- A similar exercise for Anglo American suggests the company has delivered a CAGR of around 1% since 2004, and growth capex of \$16bn would result in a CAGR of around 3% from a lower base.
- The conclusions for the mining companies are: on our calculations, they will struggle to deliver market returns of closer to 10% assuming the current dividend yields of 3.5%. Yield arguably needs to be closer to 6% to deliver a market return of 10%, assuming growth rates of 4-5%. BHPB is the closest assuming a dividend yield of 4% and a 5% CAGR to achieving a market growth rate, while based on free cash flow generation, we calculate that Rio has the most potential to increase yields or conduct a buyback in the short term. We believe the large diversified miners need to readdress their thought process in terms of yield versus growth.

Figure 13. BHP Billiton – calculated market cap based on growth.



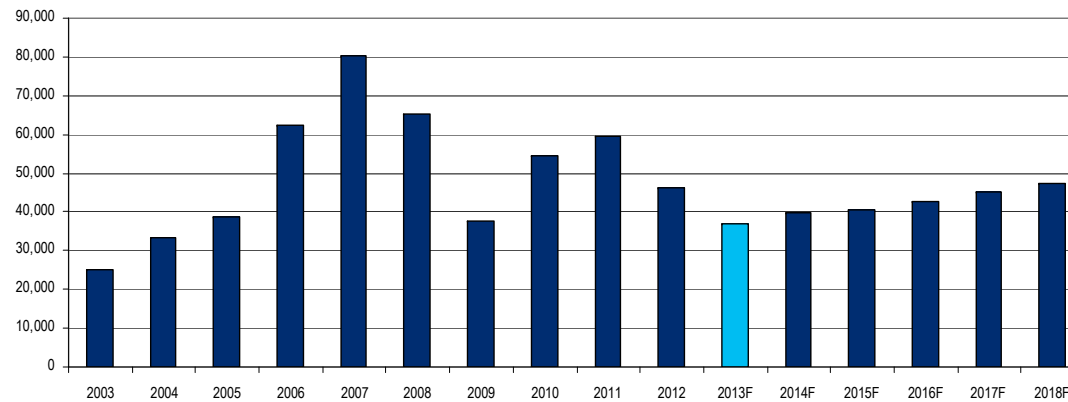
Source: Citi Research and company reports

Figure 14. Rio Tinto calculated market cap based on growth.



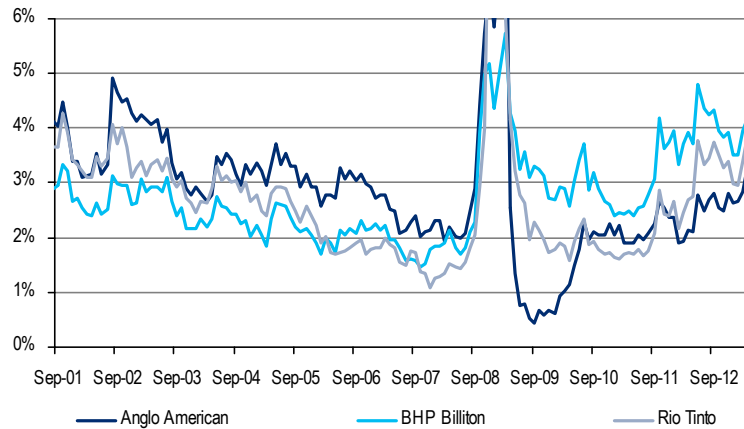
Source: Citi Research and company reports

Figure 15. Anglo American calculated market cap based on growth.



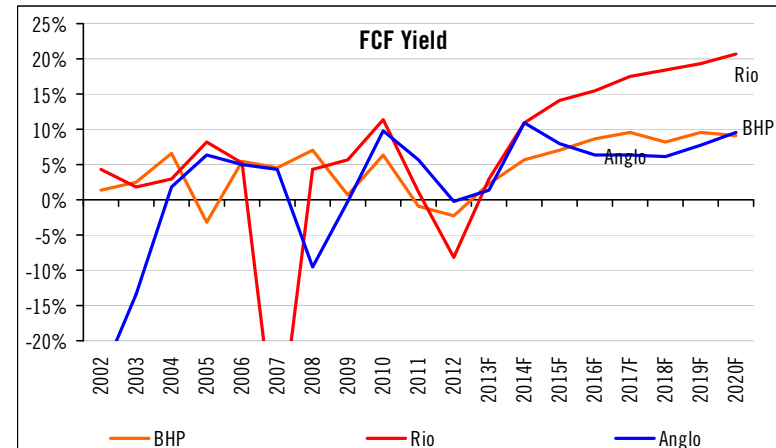
Source: Citi Research and company reports

Figure 16. Consensus forward dividend yield



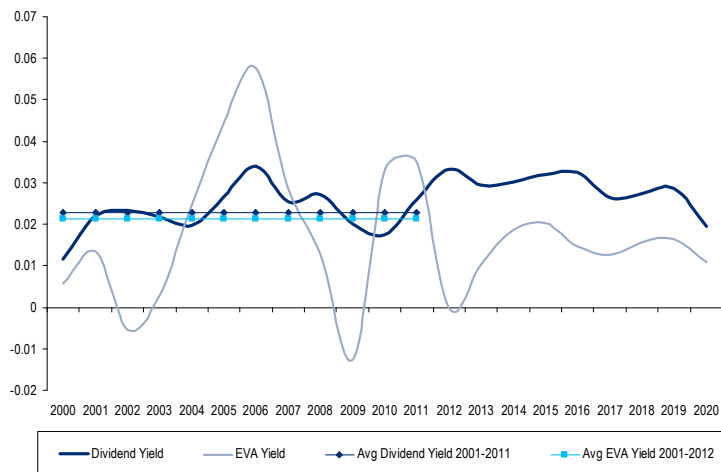
Source: Datastream, Citi Research

Figure 17. Free cash flow yield favours Rio Tinto



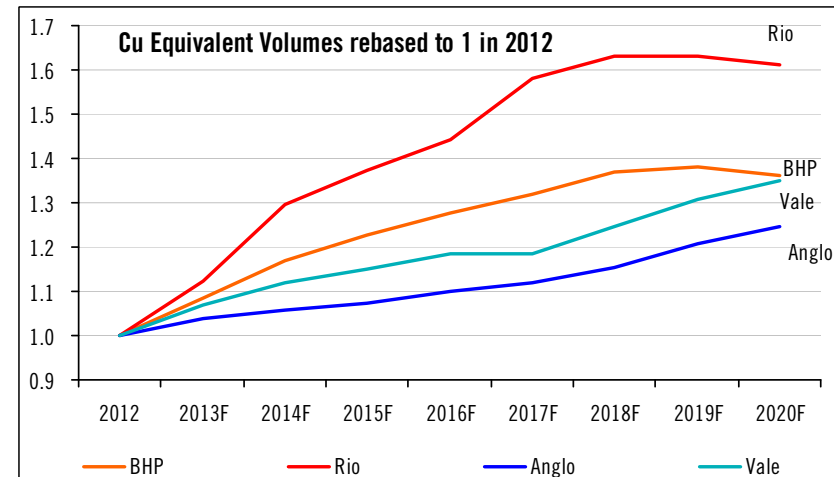
Source: Datastream, Citi Research and company reports.

Figure 18. Sector EVA yield versus dividend Yield would suggest a divergence in the ability to fund dividends going forward. It favours BHPB and RIO over Anglo



Source: Citi Research and company reports

Figure 19. Volume growth near term favours Rio but it goes ex volume growth in 2018



Source: Citi Research and company reports

Figure 20. Spot vs Base

PE Multiples	RIC	Rating	Listing	Price	Target	Citi Base Case				Spot Fx/Prices				IBES Consensus			
Calendar Years			Ccy	11/4/13		2013E	2014E	2015E	13E-15E CAGR	2013E	2014E	2015E	13E-15E CAGR	2013E	2014E	2015E	13E-15E CAGR
Diversified																	
Anglo American PLC	AAL.L	Neutral	GBP	16.61	21.00	10.0	8.8	8.4	9%	10.2	13.4	15.6	-19%	10.8	9.1	8.2	15%
BHP Billiton PLC	BLT.L	Neutral	GBP	19.39	23.00	11.3	9.5	8.4	16%	10.8	9.7	9.3	8%	10.4	9.2	8.6	10%
ENRC	ENRC.L	Neutral	GBP	2.56	2.80	10.0	6.7	5.9	30%	8.8	5.6	5.1	31%	7.4	5.3	4.2	33%
Norilsk	NKELYq.L	Buy	USD	16.99	25.60	7.8	6.3	6.2	12%	11.1	11.2	11.9	-3%	8.6	8.0	7.4	7%
Rio Tinto PLC	RIO.L	Buy	GBP	31.26	40.00	8.4	6.7	5.9	20%	8.2	7.4	6.6	11%	8.0	7.2	7.2	6%
Vale	VALE.N	Buy	USD	17.77	22.00	8.6	8.5	7.7	6%	7.0	7.0	6.8	1%	7.4	7.5	8.6	-7%
Vedanta Resources	VED.L	Neutral	GBP	11.55	12.00	8.6	6.2	4.5	37%	15.3	12.7	7.8	41%	8.1	6.1	na	na
Weighted Average						10.0	8.4	7.4	16%	10.6	9.8	9.0	9%	9.4	8.4	7.8	10%
Bulks																	
African Minerals	AMlq.L	Buy	GBP	2.64	4.40	5.3	3.6	4.9	4%	3.5	2.6	3.2	4%	8.4	4.4	5.9	19%
Ferrexpo PLC	FXPO.L	Buy	GBP	1.87	3.20	6.5	4.1	3.6	35%	4.0	3.0	2.7	23%	5.5	6.2	6.8	-10%
London Mining	LOND.L	Buy	GBP	1.18	2.00	6.7	1.7	1.6	104%	2.6	1.2	1.2	49%	3.9	2.6	2.8	17%
New World Resources	NWRR.L	Neutral	GBP	2.10		nm	nm	nm	na	nm	nm	nm	na	nm	70.0	16.8	na
Zanaga	ZIOC.L	Neutral	GBP	0.17		nm	nm	nm	na	nm	nm	nm	na	nm	nm	na	na
Base Metals																	
Antofagasta PLC	ANTO.L	Sell	GBP	10.18	10.00	13.1	14.8	15.9	-9%	17.3	16.6	16.4	3%	12.6	12.9	13.6	-4%
Boliden	BOL.ST	Sell	SEK	107.00	105.00	10.0	8.5	7.8	13%	15.2	10.5	9.0	30%	10.2	8.0	7.6	16%
First Quantum Minerals	FQM.L	Sell	GBP	12.42	11.00	15.4	12.3	7.6	42%	23.1	20.1	10.9	46%	12.4	10.4	7.5	29%
Kazakhmys Plc	KAZ.L	Buy	GBP	3.88	5.80	6.1	5.7	4.3	19%	9.2	6.9	4.5	43%	6.4	6.9	5.0	13%
Nyrstar	NYR.BR	Buy	EUR	3.96	5.30	nm	7.8	6.4	na	nm	nm	nm	na	18.2	6.4	6.8	64%
Aluminium																	
Norsk Hydro	NHY.OL	Sell	NOK	25.67	24.00	37.1	22.5	14.9	58%	nm	nm	nm	na	26.3	15.3	11.5	51%
UC Rusal	0486.HK	Neutral	HKD	4.40	4.60	12.3	8.0	7.7	26%	26.1	49.0	177.5	-62%	10.3	7.7	6.2	29%
Precious Metals																	
African Barrick Gold	ABGL.L	Sell	GBP	1.98	2.67	7.7	7.0	8.0	-2%	10.7	9.1	7.6	19%	8.0	5.6	6.5	11%
Aquarius Platinum Plc	AQP.L	Buy	GBP	0.44	0.92	13.1	22.0	10.6	11%	17.1	nm	nm	na	nm	8.3	3.7	na
Centamin Egypt	CEY.L	Neutral	GBP	0.46		3.4	4.4	8.0	-35%	4.0	4.5	7.6	-27%	3.3	3.8	4.0	-10%
Fresnillo Plc	FRES.L	Sell	GBP	12.90	15.20	17.4	19.0	20.0	-7%	20.8	19.7	17.4	9%	18.5	16.3	15.1	11%
Gem Diamonds	GEMD.L	Buy	GBP	1.35	1.95	9.3	8.4	7.3	13%	nm	8.3	7.7	na	10.7	10.7	7.8	17%
Hochschild Mining	HOCM.L	Sell	GBP	2.82	3.90	16.1	13.5	10.9	21%	18.7	12.7	7.6	57%	17.6	13.8	8.5	44%
Lonmin Plc	LMI.L	Buy	GBP	2.92	4.25	62.5	20.7	14.8	106%	42.8	19.0	18.6	52%	37.1	13.0	8.8	106%
Nordgold	NORDNq.L	Neutral	USD	3.80	4.30	9.3	7.1	4.4	45%	12.3	8.8	4.2	71%	6.3	4.7	4.5	19%
Petra Diamonds	PDL.L	Buy	GBP	1.18	1.43	13.1	7.8	6.2	45%	8.9	7.7	6.7	15%	15.7	11.1	10.7	21%
Petropavlovsk PLC	POG.L	Neutral	GBP	2.02	2.74	3.5	2.9	5.0	-16%	3.7	3.3	3.9	-2%	4.7	4.0	3.6	14%
Polymetal	POLYP.L	Neutral	GBP	8.80	11.31	6.8	6.9	8.5	-11%	8.2	7.4	7.6	4%	8.5	7.4	7.9	4%
Randgold Resources	RRS.L	Sell	GBP	54.55	55.40	15.1	10.4	11.0	17%	17.7	11.6	10.7	29%	14.7	10.7	11.7	12%
South Africa																	
African Rainbow	ARIJ.J	Neutral	ZAR	179	210	11.9	11.2	9.1	14%	11.0	11.5	11.5	-2%	10.2	9.1	na	na
Assore	ASRJ.J	Sell	ZAR	309	270	10.2	11.5	10.3	-1%	9.0	8.6	8.5	3%	9.7	9.4	na	na
Exxaro	EXXJ.J	Neutral	ZAR	154	180	9.4	9.8	9.0	2%	9.9	9.5	9.8	1%	9.8	8.3	7.7	12%
Kumba Iron Ore Ltd	KIOJ.J	Sell	ZAR	467	470	10.3	10.5	10.4	-1%	8.3	7.9	8.3	0%	10.5	11.0	12.8	-10%

Source: Citi Research, dataCentral priced as at 11 April 2013

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.

IMPORTANT DISCLOSURES

Citi is providing fairness opinion to Sesa Goa Limited on in the proposed merger of Sterlite Industries and other Vedanta Resources PLC group companies.

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Vale SA

An employee of Citigroup Global Markets or its affiliates is a non - executive director of Anglo American Plc.

Citigroup Global Markets Limited acted as Joint Bookrunner and Joint Broker in relation to the recent Rights Issue by Lonmin Plc.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of Kumba Iron Ore Ltd, Vale, Fresnillo Plc, First Quantum Minerals Ltd, Anglo American PLC, Lonmin PLC.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from Kumba Iron Ore Ltd, Vedanta Resources Plc, New World Resources, Vale, First Quantum Minerals Ltd, Rio Tinto PLC, African Barrick Gold Plc, Kazakhmys Plc, Norsk Hydro ASA, BHP Billiton PLC, Norilsk Nickel, Anglo American PLC, Lonmin PLC.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from Vedanta Resources Plc, Vale, BHP Billiton PLC, Norilsk Nickel, Nordgold, Ferrexpo PLC.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from Kumba Iron Ore Ltd, Vedanta Resources Plc, New World Resources, Vale, Eurasian Natural Resources Corporation PLC (ENRC), Fresnillo Plc, First Quantum Minerals Ltd, Rio Tinto PLC, African Rainbow Minerals, African Barrick Gold Plc, Kazakhmys Plc, Norsk Hydro ASA, BHP Billiton PLC, Gem Diamonds, Hochschild Mining Plc, Exxaro Resources Limited, Norilsk Nickel, United Company Rusal, Zanaga Iron Ore Company, Anglo American PLC, Randgold Resources Ltd, Nordgold, Lonmin PLC, Antofagasta, Ferrexpo PLC in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): Kumba Iron Ore Ltd, Vedanta Resources Plc, New World Resources, Vale, First Quantum Minerals Ltd, Rio Tinto PLC, African Barrick Gold Plc, Kazakhmys Plc, Norsk Hydro ASA, BHP Billiton PLC, Norilsk Nickel, Anglo American PLC, Nordgold, Lonmin PLC, Ferrexpo PLC.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: Kumba Iron Ore Ltd, Vedanta Resources Plc, New World Resources, Vale, Fresnillo Plc, First Quantum Minerals Ltd, Rio Tinto PLC, Nyrstar NV, African Barrick Gold Plc, Kazakhmys Plc, Norsk Hydro ASA, BHP Billiton PLC, Hochschild Mining Plc, Exxaro Resources Limited, Norilsk Nickel, United Company Rusal, Zanaga Iron Ore Company, Anglo American PLC, Randgold Resources Ltd, Lonmin PLC, Antofagasta, African Minerals Ltd.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: Kumba Iron Ore Ltd, Vedanta Resources Plc, New World Resources, Vale, Eurasian Natural Resources Corporation PLC (ENRC), Fresnillo Plc, First Quantum Minerals Ltd, Rio Tinto PLC, African Rainbow Minerals, African Barrick Gold Plc, Kazakhmys Plc, Norsk Hydro ASA, BHP Billiton PLC, Gem Diamonds, Hochschild Mining Plc, Exxaro Resources Limited, Norilsk Nickel, United Company Rusal, Anglo American PLC, Randgold Resources Ltd, Nordgold, Lonmin PLC, Antofagasta, Ferrexpo PLC.

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

The Firm is a market maker in the publicly traded equity securities of Kumba Iron Ore Ltd, First Quantum Minerals Ltd, Norsk Hydro ASA, Exxaro Resources Limited, Norilsk Nickel, Anglo American PLC, Randgold Resources Ltd, Antofagasta.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Research product ("the Product"), please contact Citi Research, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures,

are contained on the Firm's disclosure website at https://www.citivelocity.com/cvr/epublic/citi_research_disclosures. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Research Equity Ratings Distribution

Data current as of 31 Mar 2013	12 Month Rating			Relative Rating		
	Buy	Hold	Sell	Buy	Hold	Sell
Citi Research Global Fundamental Coverage	48%	39%	12%	7%	87%	7%
% of companies in each rating category that are investment banking clients	53%	49%	43%	65%	49%	51%

Guide to Citi Research Fundamental Research Investment Ratings:

Citi Research stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.

Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

Investment Ratings: Citi Research investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Citi Research management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation.

Relative three-month ratings: Citi Research may also assign a three-month relative call (or rating) to a stock to highlight expected out-performance (most preferred) or under-performance (least preferred) versus the geographic and industry sector over a 3 month period. The relative call may highlight a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Absent any specific catalyst the analyst(s) will indicate the most and least preferred stocks in the universe of stocks under consideration, explaining the basis for this short-term view. This three-month view may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of NASD/NYSE ratings-distribution-disclosure rules, most preferred calls correspond to a buy recommendation and least preferred calls correspond to a sell recommendation. Any stock not assigned to a most preferred or least preferred call is considered non-relative-rated (NRR). For purposes of NASD/NYSE ratings-distribution-disclosure rules we correspond NRR to Hold in our ratings distribution table for our 3-month relative rating system. However, we reiterate that we do not consider NRR to be a recommendation.

Prior to October 8, 2011, the firm's stock recommendation system included a risk rating and an investment rating. **Risk ratings**, which took into account both price volatility and fundamental criteria, were: Low (L), Medium (M), High (H), and Speculative (S). **Investment Ratings** of Buy, Hold and Sell were a function of the Citi Research expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating. Additionally, analysts could have placed covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and/or trading in the company's securities (e.g. trading suspension). Stocks placed "Under Review" were monitored daily by management and as practically possible, the analyst published a note re-establishing a rating and investment thesis. For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings were: Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return). For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings were: Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Ltd

Heath R Jansen; Jon H Bergtheil; Thomas O'Hara; Michael E Flitton; Jatinder Goel, CFA

ZAO Citibank

Daniel Yakub

Citigroup Global Markets (Pty) Ltd

Johann Pretorius

Citigroup Global Markets Inc

Alexander Hacking, CFA

OTHER DISCLOSURES

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to Vale, First Quantum Minerals Ltd, Kazakhmys Plc, Norsk Hydro ASA, BHP Billiton PLC, Exxaro Resources Limited, Norilsk Nickel, Anglo American PLC, Lonmin PLC. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citiVelocity.com.)

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Citigroup Global Markets Inc. or its affiliates acts as a corporate broker to Kazakhmys Plc, BHP Billiton PLC, Zanaga Iron Ore Company.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Research to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers: Morgan Stanley & Co. LLC (Morgan Stanley) research reports may be available about the companies that are the subject of this Citi Research research report. Ask your Financial Advisor or use smithbarney.com to view any available Morgan Stanley research reports in addition to Citi Research research reports.

Important disclosure regarding the relationship between the companies that are the subject of this Citi Research research report and Morgan Stanley Smith Barney LLC and its affiliates are available at the Morgan Stanley Smith Barney disclosure website at www.morganstanleysmithbarney.com/researchdisclosures.

For Morgan Stanley and Citigroup Global Markets, Inc. specific disclosures, you may refer to www.morganstanley.com/researchdisclosures and https://www.citivelocity.com/cvr/epublic/citi_research_disclosures. This Citi Research research report has been reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval was conducted by the same person who reviewed this research report on behalf of Citi Research. This could create a conflict of interest.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in **Australia** through Citi Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e

Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is made available in **France** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product is distributed in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A, Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Italy** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. <http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03030&pageDiv=02>. The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold/Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company

registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in **Spain** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gasset, 4th Floor, Madrid, 28006, Spain. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan and/or through Citibank Securities (Taiwan) Company Limited ("CSTL"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the respective license scope of each entity and the applicable laws and regulations in the Republic of China. CGMTS and CSTL are both regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS and CSTL]. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Büyükdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E.**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different Citi Research ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority.

Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Research's Products can be found at https://www.citivelocity.com/cvr/epublic/citi_research_disclosures.

Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations.

The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted.

Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.

With the exception of our product that is made available only to Qualified Institutional Buyers (QIBs) and other product that is made available through other distribution channels only to certain categories of clients to satisfy legal or regulatory requirements, Citi Research concurrently disseminates its research via proprietary and non-proprietary electronic distribution platforms. Periodically, individual Citi Research analysts may also opt to circulate research posted on such platforms to one or more clients by email. Such email distribution is discretionary and is done only after the research has been disseminated via the aforementioned distribution channels. Citi Research simultaneously distributes product that is limited to QIBs only through email distribution.

The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints.

Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes Citi estimates, data from company reports and feeds from Reuters and Datastream.

© 2013 Citigroup Global Markets Inc. Citi Research is a division of Citigroup Global Markets Inc. Citi and Citi with Arc Design are trademarks and service marks of Citigroup Inc. and its affiliates and are used and registered throughout the world. All rights reserved. Any unauthorized use, duplication, redistribution or disclosure of this report (the "Product"), including, but not limited to, redistribution of the Product by electronic mail, posting of the Product on a website or page, and/or providing to a third party a link to the Product, is prohibited by law and will result in prosecution. The information contained in the Product is intended solely for the recipient and may not be further distributed by the recipient to any third party. Where included in this report, MSCI sourced information is the exclusive property of Morgan Stanley Capital International Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, disseminated or used to create any financial products,



including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI, Morgan Stanley Capital International and the MSCI indexes are services marks of MSCI and its affiliates. The Firm accepts no liability whatsoever for the actions of third parties. The Product may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the Product refers to website material of the Firm, the Firm has not reviewed the linked site. Equally, except to the extent to which the Product refers to website material of the Firm, the Firm takes no responsibility for, and makes no representations or warranties whatsoever as to, the data and information contained therein. Such address or hyperlink (including addresses or hyperlinks to website material of the Firm) is provided solely for your convenience and information and the content of the linked site does not in anyway form part of this document. Accessing such website or following such link through the Product or the website of the Firm shall be at your own risk and the Firm shall have no liability arising out of, or in connection with, any such referenced website.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST
