

Rare Earths 101

■ What are Rare Earth elements?

Rare earth is a term used for a collection of 17 chemical elements in the periodic table which include scandium, yttrium and fifteen lanthanoids. Rare earth elements are not as rare as the name suggests and with the exception of one or two elements, rare earths are available in relatively high concentrations in the earth's crust.

■ Applications of rare-earth metals

Rare earth elements are used in a wide range of green energy technologies (energy reduction, energy production and energy efficiency). They find applications from lifestyle products like i-pods, LCDs, industrial applications like petroleum refining to military applications like missiles.

■ Demand supply outlook

China controls approximately 97% of the rare earth's supplies and there are very few companies outside of China that produce rare earth elements. Demand is expected to grow at +10% CAGR. As per Arafura Resources, China will probably supply only 160-170kt of Rare Earth Oxides (REO) against forecast demand for 200-210kt by 2014. The global availability of the rare earths depends to a large extent on the Chinese government's export quota policies, which recently completely banned exports of some rare-earths like Dysprosium, Terbium and Yttrium.

■ Lynas Corp, Arafura, Alkane provide rare-earths exposure

Lynas Corp (LYC.AX), Arafura Resources (ARU.AX) and Alkane Resources (ALK.AX) – all not rated - provide exposure to rare-earths. Lynas is in advanced stage of development of its Mt. Weld project, Western Australia. Arafura and Alkane have poly-metallic deposits at Nolan Bore and Dubbo, respectively in Australia.

11 September 2009

www.ubs.com/investmentresearch**Glyn Lawcock**

Analyst
glyn.lawcock@ubs.com
+61-2-9324 3675

Jo Battershill

Analyst
jo.battershill@ubs.com
+61-2-9324 2834

Mark Busuttill

Analyst
mark.busuttill@ubs.com
+61-2-9324 3623

Daniel Morgan

Analyst
daniel.morgan@ubs.com
+61-2-9324 3844

Rare earth metals

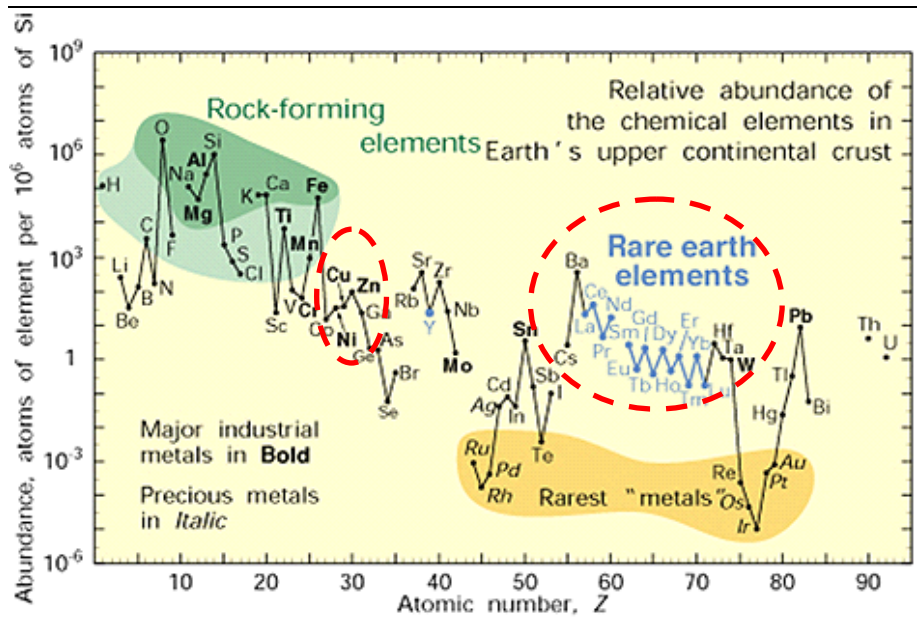
Rare earth is a term used for a collection of 17 chemical elements in the periodic table which include scandium, yttrium and fifteen lanthanoids. Although scandium and yttrium are not rare earth elements, they are generally included because they are found in the same ore deposits as lanthanoids and exhibit similar chemical properties.

How rare are the rare-earth elements?

Unlike their name, rare earths are a moderately abundant group of metallic elements. The term ‘rare earth’ arises from the minerals from which they were first isolated, which were scarce oxide type minerals. However, these elements are not as rare as once thought. With the exception of one or two elements, rare earths are available in relatively high concentrations in the earth’s crust. They range in abundance from Cerium (Ce), the most abundant at 60ppm (parts per million) which is more than copper and nickel, to thulium and lutetium, the least abundant ones at about 0.5ppm. However, discovered minable concentrations are less common than for most other ores.

The figure below shows the availability of rare earth metals in the earth’s crust vis-à-vis other metals. The more common of the rare earth elements (Ce and Lanthanum) are as abundant as copper and zinc, and even the rarest amongst them are more abundant than precious metals like gold and platinum.

Figure 1: Abundance of elements in the earth’s crust



Source: USGS

Discovery of Rare earths

Rare earth elements first became known in the year 1787 with the discovery of black mineral ytterbite by Lieutenant Carl Axel Arrhenius. Yttrium and cerium were the first two known rare earth elements. Researchers took almost 30 years to determine other elements contained in the ores ceria and ytteria. By 1842, six rare earth elements had been identified. Further discoveries between 1886 and 1901 led to the identification of several other elements.

Minerals such as bastnasite, monazite and loparite are the primary sources for of rare earth elements. In spite of having a high relative abundance, these minerals are difficult to mine and extract as compared to transition metals which makes the rare earth elements relatively expensive. Introduction of efficient separation techniques such as ion exchange, fractional crystallization and liquid-liquid extraction during the early 1960s enhanced their industrial use which was otherwise very limited.

Production process

In order to recover rare earth elements from their ores, the ore is crushed, ground, classified and concentrated to increase the rare earth concentrations. In order to extract these elements from bastnasite and monazite, they are dissolved in a hot concentrated base or acid solution at 140-150°C. Once the solution cools down, hydroxides of rare earth elements are extracted through filtration. Further processing of recovered hydroxides is required to produce individual rare earth metal compounds. Different processes such as fractional crystallization, ion exchange and solvent extraction are used for this purpose.

In case of **fractional crystallization**, salt concentrations in the solution are changed in order to precipitate rare earth elements in the mixture. Fractional precipitation involves adding a precipitating agent to remove a selective metal from the solution. As a result of these processes, salt solutions are produced which require further treatment and disposal.

Ion exchange is used for producing highly pure rare earths in small quantities. An ion exchange resin is prepared for the purpose of separating a lanthanide mixture. As a result, lanthanides are deposited on the resin as a mixture. A chemical solution is passed over the resin to separate individual rare earth elements.

The above production process can be carried out by one entity or can be divided among various entities. In China, which dominates the rare earths market, the production process is normally carried out by more than one entity due to the high fragmentation of the regional industry. The top 12-26 companies supply ~80% of the market, which has 150-200 processors.

The life cycle chart later in this report shows the production of a rare earth magnetic powder for use in the production of bonded neodymium iron boron magnets. The process can be similar for the production of a rare earth oxide for either a phosphor producer or an autocatalyst producer as well.

Properties of rare-earths

The rare earth elements share many common properties making them difficult to distinguish and even separate from each other.

- Pure rare earth metals are bright and silvery. Yttrium and lutetium remain bright and shiny for years. However, europium gets tarnished immediately on being exposed to air. Lanthanum and cerium too corrode readily in air and bars of such metals become covered with a thick layer of oxide in several weeks.

- The properties of rare earth metals are quite sensitive to the presence of impurities. For example, presence of calcium or magnesium will corrode the metals much more rapidly. Similarly, melting points can be changed drastically, even by several hundred degrees, when metals are alloyed with other elements. Presence of non-metallic impurities also affects their properties.
- Almost all of the rare earth elements have high electrical conductivity.
- Used in making the strongest permanent magnets known. These magnets are cheaper, lighter and stronger than samarium-cobalt magnets.

Applications of rare-earths

Rare earth elements are used in a wide range of green energy technologies (energy reduction, energy production and energy efficiency). They find applications from lifestyle products like iPods, LCDs, industrial applications like petroleum refining to military applications like missiles. These elements are heavily used in glass and metallurgical industry and as catalysts for several purposes.

The unique physical and chemical properties of rare earth metals have significantly expanded the scope of their industrial applications and have an ever expanding potential of applications in modern technology. Table 1 shows the various applications of selected rare earth metals.

Table 1: Selected rare earth elements and their uses in various industry segment

Element	Category	Uses	Industry segment
Lanthanum	Energy Production	Petroleum cracking catalyst	Petroleum Refining
	Energy Production	Catalyst in Hydrogen fuel cell technology	New Generation Vehicles
	Energy Efficiency	Key component in rechargeable NiMH batteries used in Hybrid cars	Rechargeable batteries
Neodymium	Energy Production	Used in making strongest magnet known, which achieve superior output in power generation from wind.	High powered electric motor
	Energy Reduction	Used in electric motors in hybrid cars, which reduces fuel consumption	Reducing Fuel consumption
	Energy Efficiency	Used in making permanent magnets to achieve superior torque and power	New Generation Vehicles
	Lifestyle	Magnets are used in Hard disk drives; Rare Earths are essential components in MRIs	H/W components, Medical Services
Dysprosium	Energy Production	Used in making strongest magnet known, which achieve superior output in power generation from wind.	High powered electric motor
	Energy Reduction	Rare Earths improve performance and lower car weight resulting in improved performance	Lighter, Faster Cars
Terbium	Energy Production	Used in making strongest magnet known, which achieve superior output in power generation from wind.	High powered electric motor
	Lifestyle	Used as phosphor in electronic screens	Colour Screen LCDs, PDPs
Cerium	Energy Reduction	Cerium added to glass is a filter of UV radiation used in many vehicles	UV Filters in Glass
	Lifestyle	Used in environmental catalysts including exhaust converters, chemical scrubbers etc.	Autocatalysts
Samarium	Energy Efficiency	Used in making permanent magnets to achieve superior torque and power	New Generation Vehicles
Praseodymium	Energy Efficiency	Key elements in rare earths used in energy efficient lighting	Energy efficient lighting
Europium	Energy Efficiency	Key elements in rare earths used in energy efficient lighting	Energy efficient lighting
Yttrium	Lifestyle	Used as phosphor in electronic screens	Colour Screen LCDs, PDPs

Source: Arafura Resources

Market Dynamics

Demand

As already mentioned, rare earth metals have a myriad of uses ranging from being used as a catalyst in crude oil production to being used in iPods and laptops. These elements are particularly vital in new green technologies such as super magnets, energy efficient lighting and rechargeable batteries. A lot of technologically advanced products are dependent on them. As a result, demand for rare earths is expected to grow rapidly. The following table shows the various segments where rare earths are used.

Table 2: Demand of rare earth elements

Role as	Element used and market
Catalysts	Petroleum cracking catalysts and autocatalysts, which use lanthanum and cerium
Glass	Cerium is the major constituent of this sector where it is used in ultra-violet light filtering
Polishing	A rapidly growing sector that is based on the unique chemical and mechanical properties of cerium in the polishing of glass, including multi-level electronic components
Metal Alloys	Lanthanum nickel hydride batteries is the key driver of demand and could put pressure on lanthanum supply
Magnets	Currently, the most dynamic market for rare earths with growth in demand increasing at >15% for the past 5-10 years, which have driven the prices for neodymium and terbium to increase by more than 40% over the past 12 months
Phosphors	Necessary for the production of phosphors for TVs and energy efficient lamps this the smallest sector by volume (only 6-8%), but the largest sector by value (30-40%) as europium and terbium are among the rare earths with the lowest abundance
Ceramics	Yttrium stabilised zirconia is used throughout the resources industry where a material with high wear resistance is required
Other	Many applications from RE use in the agriculture and textile industries in China to diagnostic equipment for the health industry

Source: Arafura Resources

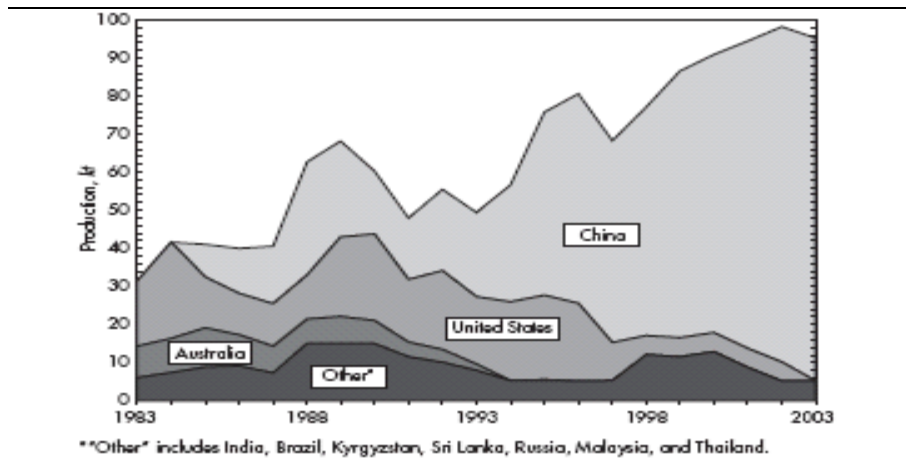
As per reports by Arafura Resources, actual consumption is forecast to be 180kt REO by 2014 or 200-210kt REO on an 'Adjusted Global Demand' basis. This is because the consumption of the individual rare earths that make up the total spectrum of demand is not in the same ratio as the mix in which they occur in the various deposits around the world.

Supply

The supply side of the equation is largely dominated by China, which currently controls approximately 95% of the global production. Approximately 50% of the world's total supply comes from the Baotou mine in China.

The graph below shows China surpassing the US as the leading producer of rare earths in the mid 1980s. Very large reserves of rare earths (approx 44% of the worldwide total at that time) coupled with China's price advantage through economies of scale, made most of the mining operations in other parts of the world unprofitable. This has strengthened China's position as the leading supplier of the rare earths.

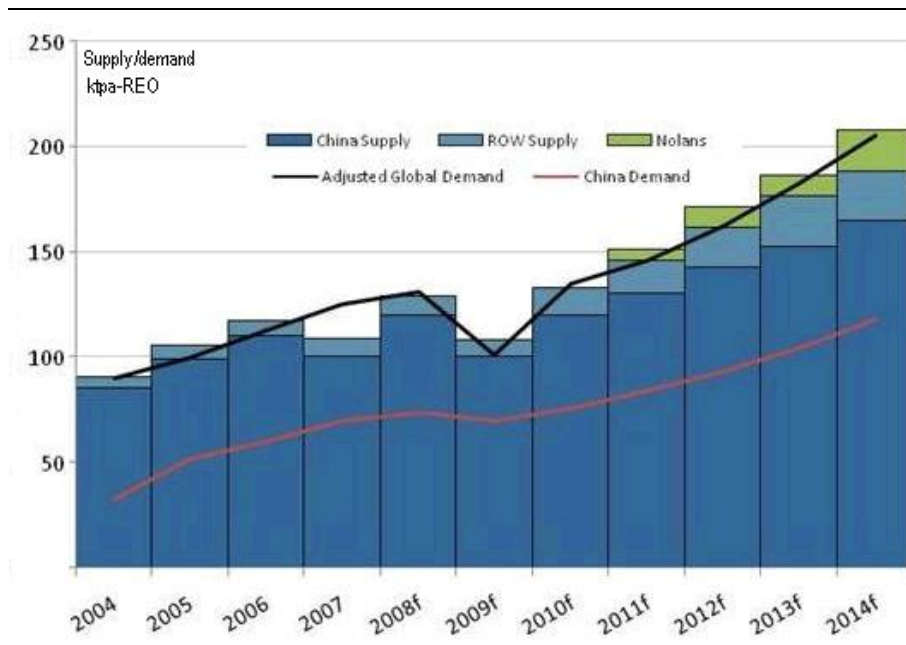
Figure 2: Global production of rare earth oxides



Source: Rare Earth Elements (Stephen B. Castor and James B. Hedrick)

As per Arafura Resources, China will probably supply only 160-170kt of REO against the demand of 200-210kt by 2014. During this time, China's demand for the rare earths is also expected to increase significantly such that the total supply from China is likely to be sufficient for its own needs (approx. 120kt REO) plus some exports. The total supply is not likely to be able to meet the growing global demand and may have to be met by non-Chinese production as shown in the chart below.

Chart 1: Indicative global supply-demand of REO



Source: Arafura Resources

New and upcoming projects

The following table from Roskill (MolyCorp Minerals corporate site) highlights the sources of rare earth supply that are based outside China. Mt. Pass is owned by MolyCorp Minerals which is not a listed entity. Among the Australian rare-earth projects, Mt. Weld is owned by Lynas Corp while Nolans project is controlled by Arafura resources.

Table 3: New and upcoming projects

	New and expanding projects		Potential Projects			
	Mt. Pass (USA)	Mt. Weld (Australia/Malaysia)	Nolans (Australia)	Hoidas Lake (Canada)	Dubbo Zirconia (Australia)	Thor lake (Canada)
Status	Separation plant restarted in 2007, purchased by MolyCorp LLC in October 2008	ROM stockpile excavated, most of the project approvals are in place	Project approval process commenced	Advanced Exploration, some preliminary lost work	Demonstration pilot plant in place, some preliminary lost work to produce light rare earth conc.	Scoping study in place, resource definition drilling programme in 2008
Resource	50Mt @ 8-9% REO=4.3Mt REO contained	12.2Mt @9.7% REO = 1.2Mt REO contained	18.6Mt @ 3.1% REO = 0.58Mt REO contained	1.2Mt @ 2.8% REO = 0.03Mt REO JORC equivalent	37.5Mt @ 0.745% REO and 0.14% Y203	14Mt @ 1.2% REO = 0.2Mt REO Preliminary
Potential Production	Potential upto 10-20,000tpy REO, actual production not disclosed	10,500tpy REO from late 2009, increasing to 21,000 tpy REO in 2011	Target 5,000 tpy REO in 2011, 20,000 tpy by 2013	3-5,000tpy REO, target start up 2011/12	Targets: 1,000t REO in 2011, 2,000tpy by 2012	3-5,000tpy REO, target start up 2012/13
Company	MolyCorp Minerals (private firm)	Lynas Corp (ASX:LYN)	Arafura Resources (ASX:ARU)	Great Western Minerals Group Ltd. (TSX-V:GWG)	Alkane Resources (ASX:ALK)	Avalon Ventures (TSX-V:AVL)

Source: Roskill (MolyCorp corporate site)

Pricing

The price of rare earth products have rose significantly in the three years before the recent financial turmoil began. The table below shows the average yearly prices of the rare earth products in 2006, 2007, 2008 and current prices. The prices in earlier years rose because of the constraints placed on mining, processing and export by the Chinese authorities. As mentioned above there are not many non-Chinese producers and with Chinese government discouraging exports the above price trend might continue as demand returns.

Table 4: Price of rare earth oxides (US\$/kg on an FOB China basis)

Rare Earth Oxide	2006	2007	2008	Q2 2008	Q2 2009	7/9/2009
Lanthanum Oxide	2.14	3.44	8.71	8.83	6.05	5.9
Cerium Oxide	1.64	3.04	4.56	4.38	4.6	4
Neodymium Oxide	15.81	30.24	31.9	32.88	14.58	14.5
Praseodymium Oxide	14.89	29.05	29.48	32.61	14.5	14.5
Samarium Oxide	2.44	3.6	5.2	4.8	4.75	4.75
Dysprosium Oxide	72.6	89.1	118.49	120.8	108.62	112
Europium Oxide	244.1	323.9	481.92	491	465.38	495
Terbium Oxide	471.9	590.4	720.77	740	360	360

Source: Lynas corporation

The table above shows the average annual price for a 'standard' 99% purity of individual elements. Purity levels are largely set by the specifications for each application and higher purity level products attract higher prices. The table also highlights that there is significant variance in the relative market value for selected Rare Earths oxides. Composition of various oxides in the company's product portfolio would thus affect the company's average realisations across the rare earth suite. The market value depends on the availability of the element and its estimated demand. Cerium's relative availability in comparison to Terbium's is one of the reasons of the difference in the prices of the two (Fig 1).

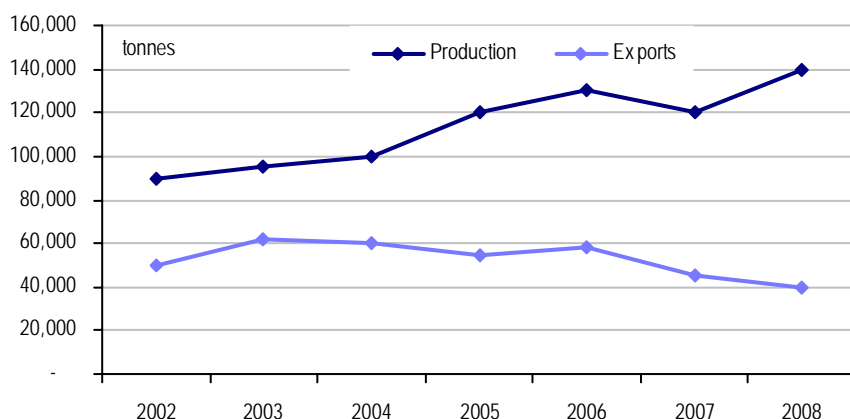
Investment View

As shown in the chart above, there are very few projects outside China which can supply rare earth elements. Chinese companies either have a stake or are eyeing a stake in these companies. As such, the Chinese government's export policies could have a huge bearing on the rare-earths market.

Some of the companies which have projects outside of China are Molycorp Minerals LLC, Lynas Corp (LYC.AX), Arafura Resources (ARU.AX) etc. In general, the potential upside for these companies producing rare earths looks positive because of:

- **Fundamentals of the market.** Rare-earths are used in modern green technology and have practically no substitute. As per Lynas, demand is expected to increase +10% CAGR with forecast supply lagging demand.
- **Chinese governments' export policies.** China provides approximately 95% of the global rare-earth production. Exports of this strategic resource are tightly controlled by the Chinese governments' exports quota limitations. Global supply of rare earth can easily get disturbed if China were to enact policy discouraging exports of the mineral. The last few years have seen China establishing various regulations on the export of these elements. The following graph underlines this fact.

Chart 2: China - Widening gap between production and exports of rare earth elements

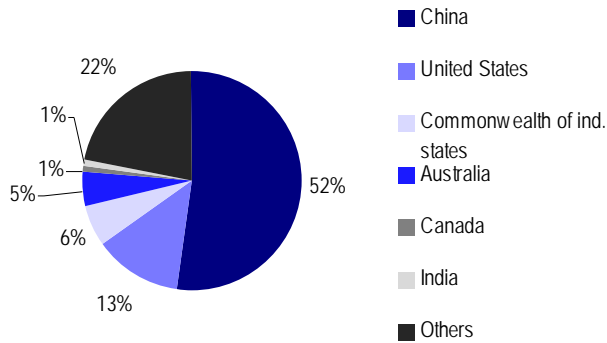


Source: Adapted from Global trade atlas (<http://www.molycorp.com/globaloutlook.asp>)

Rare-earths Industry

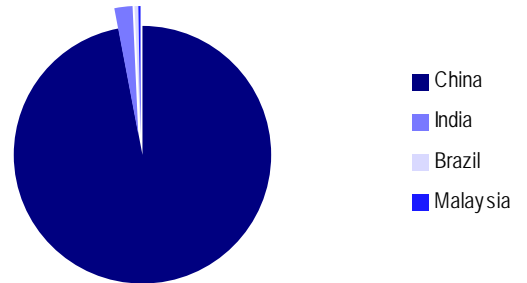
The charts below show the major end users and producers of rare-earths and also the major region in terms of demand and supply of the metal.

Chart 3: Rare-earths resources



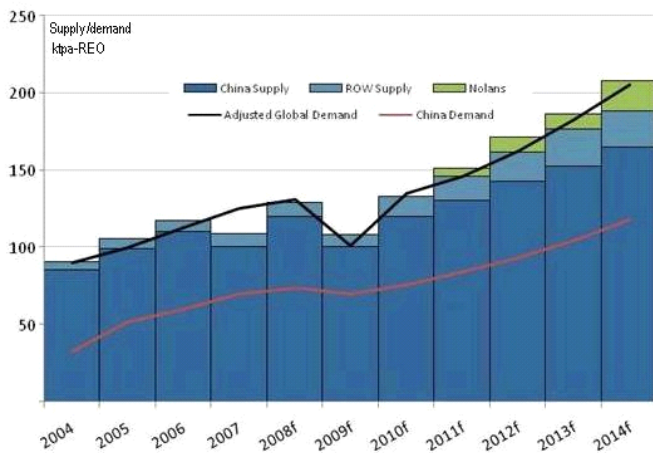
Source: Asian Metals Ltd.

Chart 4: Production of rare-earths



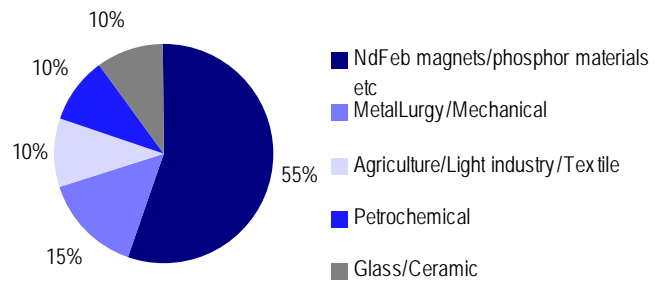
Source: USGS

Chart 5: Indicative global supply-demand of REO



Source: Arafura Resources

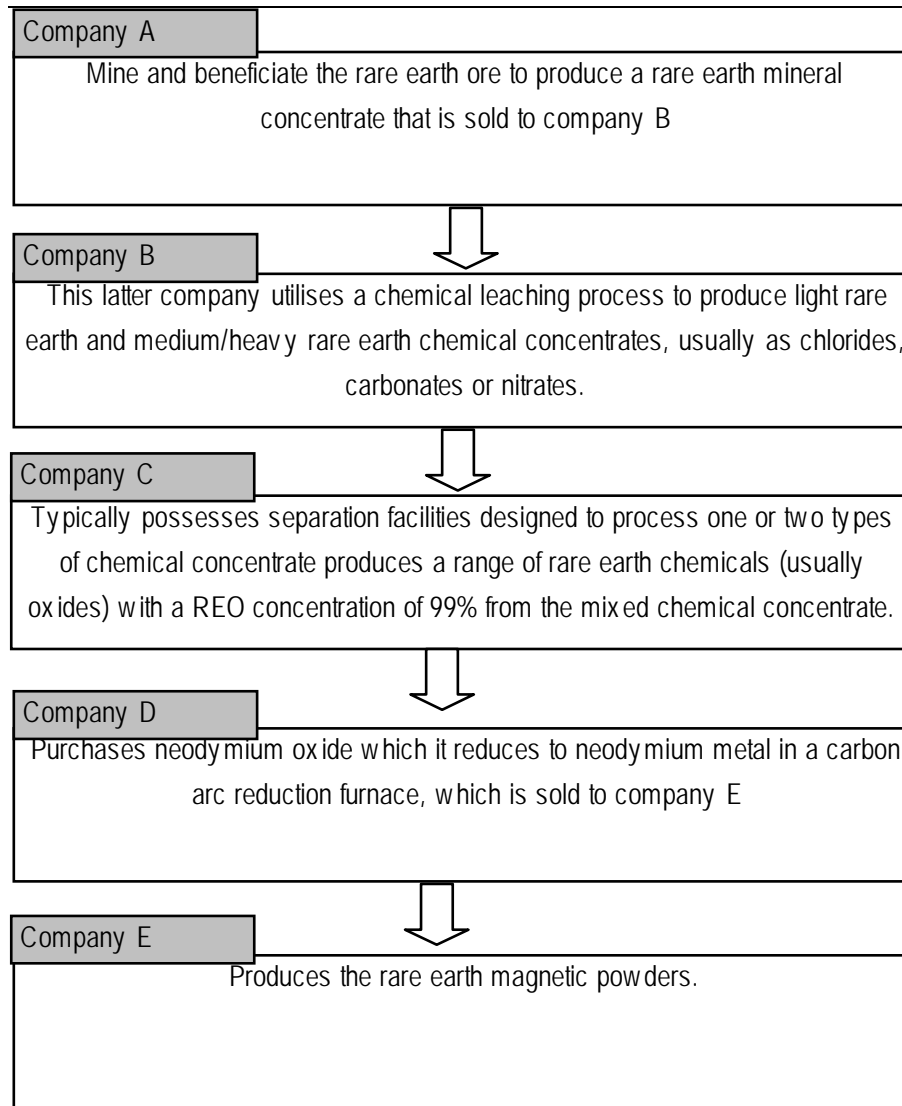
Chart 6: End Uses of rare-earths



Source: Asian Metals Ltd.

Life Cycle of Rare Earth Magnetic Powders

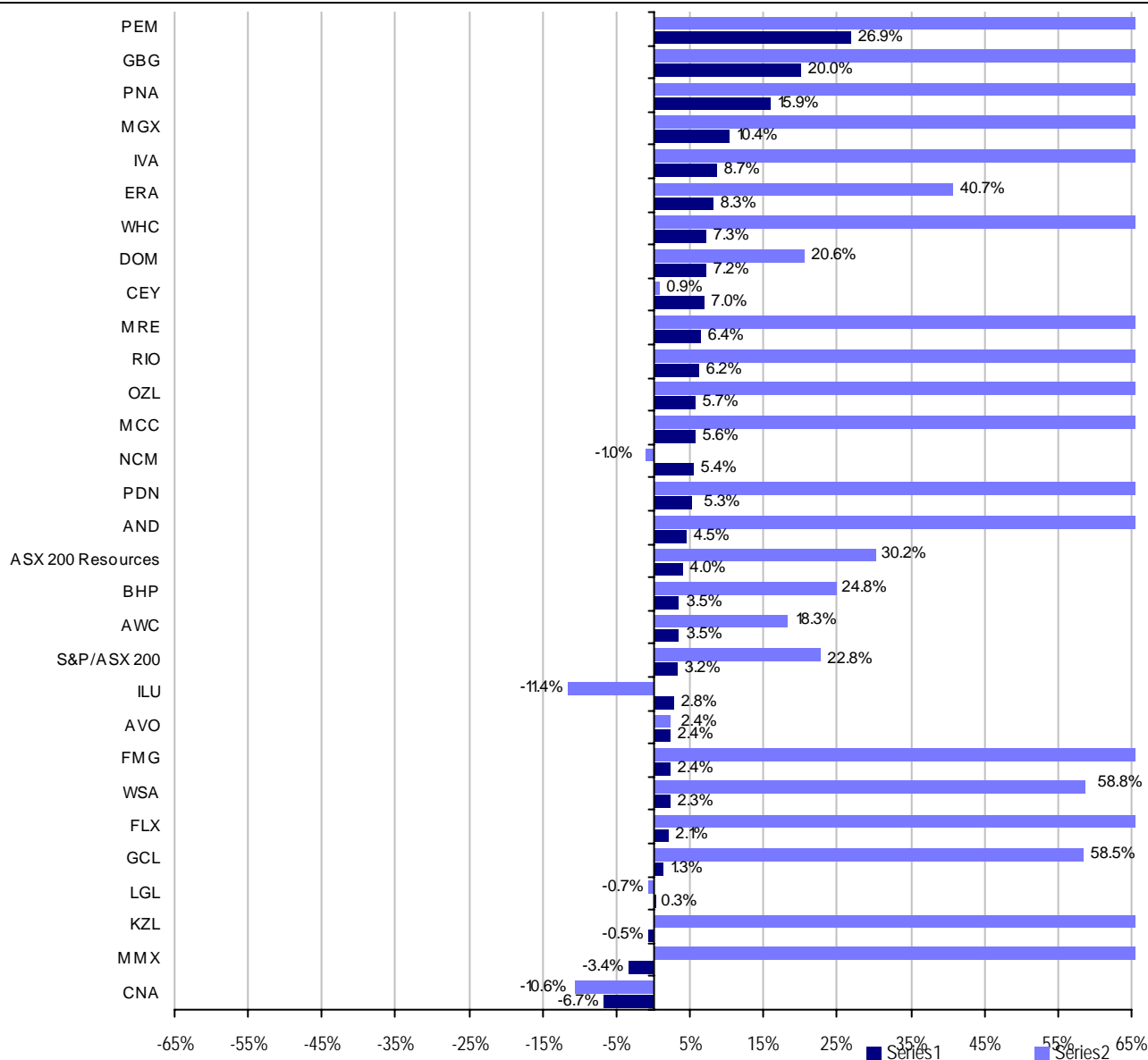
Chart 7: Life cycle of production of rare earth magnetic powders (Chinese small coys)



Source: Arafura Resources

Weekly share price movement

Chart 8: Weekly price changes



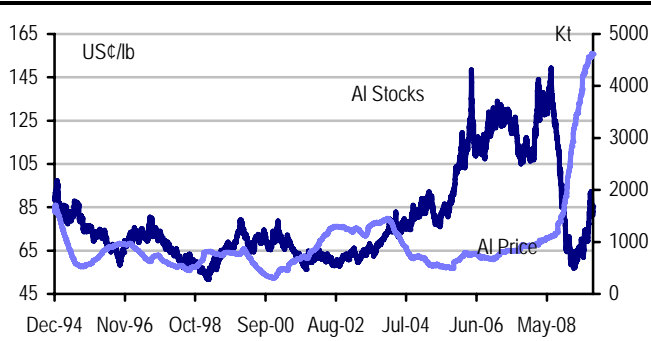
Source: IRESS

Resources outperformed the broader market with the S&P/ASX200 Resources index gaining 4.0% w/w to the 3.2% gain by the broader market. RIO Tinto outperformed BHP, gaining 6.2% w/w, while BHP gained 3.5%.

Perilya was the best performing stock, gaining 27% due to a 8% increase in the Zn price and 14% increase in the Pb price w/w. Gindalbie also outperformed, gaining 20% w/w after gaining WA state environmental approval for the Karara project.

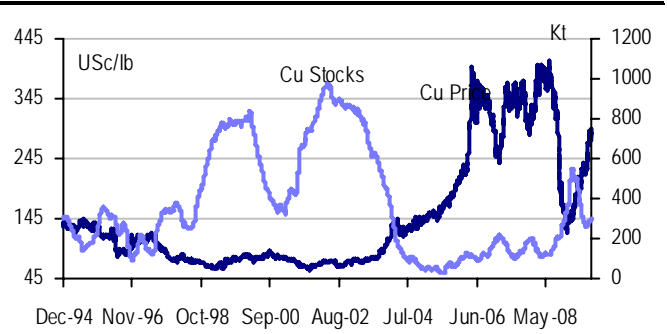
Coal & Allied was the worst performing stock, falling 6.7% w/w. We believe share price weakness may be due to the block trade of Mitsui's stake conducted on 21 August at \$76, and the potential for institutions who took stock to be selling down into an illiquid market.

Chart 9: Aluminium – LME price vs LME stocks



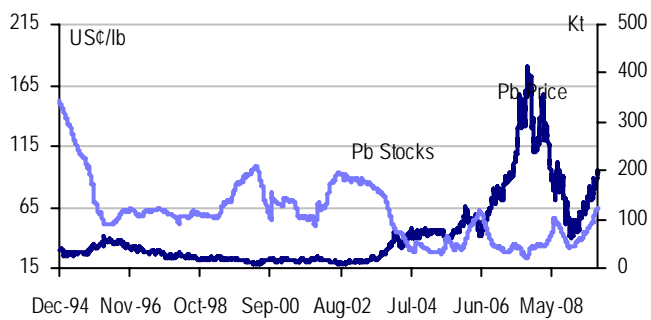
Source: Datastream

Chart 10: Copper – LME price vs LME stocks



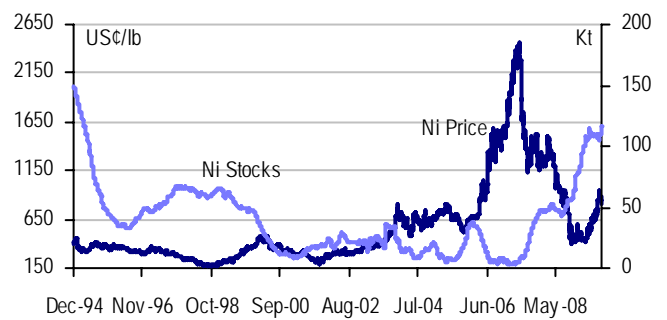
Source: Datastream

Chart 11: Lead - LME price vs LME stocks



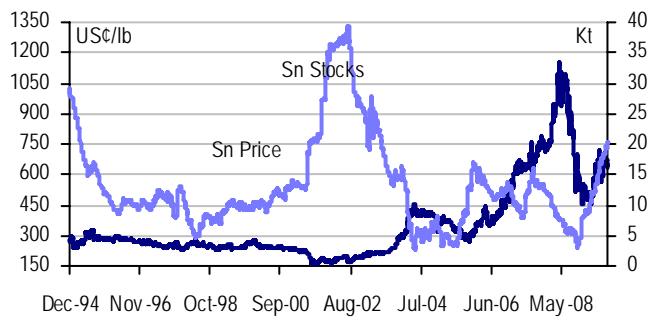
Source: Datastream

Chart 12: Nickel - LME price vs LME stocks



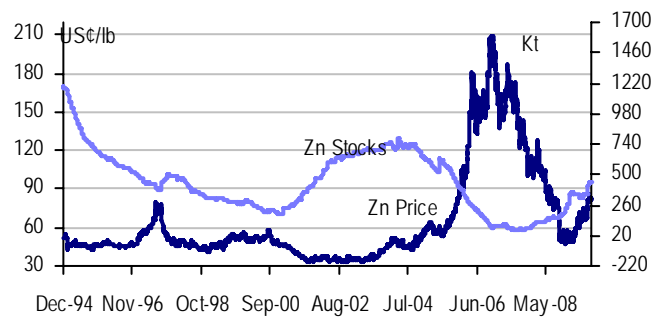
Source: Datastream

Chart 13: Tin - LME price vs LME stocks



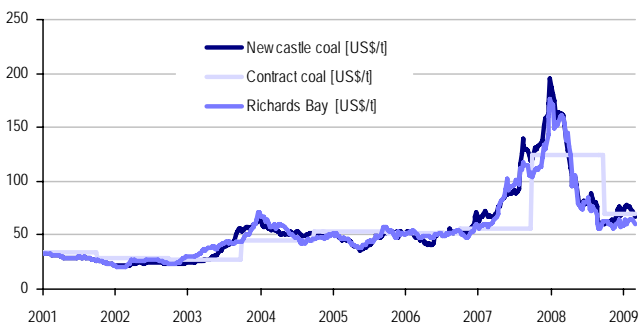
Source: Datastream

Chart 14: Zinc - LME price vs LME stocks



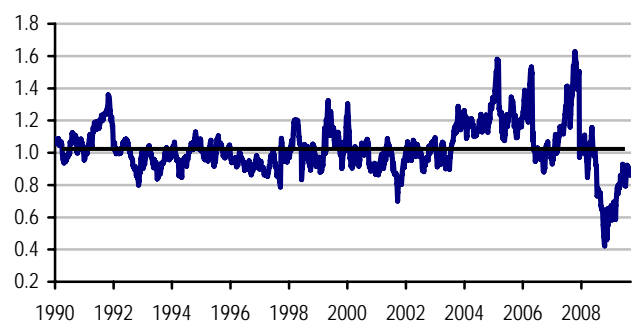
Source: Datastream

Chart 15: Spot steam coal pricing



Source: Global Coal

Chart 16: P/NPV BHP



Source: UBS estimates

Table 5: Recent Research

Company	Share Price	Rec'n	Date	Analyst	Research
Gindalbie Metals	A\$0.99	Buy	10-Sep	Glyn Lawcock	FY09 results. Upcoming milestones are key
MMK	US\$8.60	Buy	10-Sep	Alexei Morozov	2Q09 results above expectations
Inmet Mining Corp	C\$54.85	Buy	10-Sep	Onno Rutten	A potential partner for Petaquilla
Gindalbie Metals	A\$0.92	Buy	9-Sep	Glyn Lawcock	Receives State environmental approval
Avoca Resources	A\$1.68	Buy	9-Sep	Jo Battershill	Potential for royalty deal to be done?
Australian Steel			9-Sep	Mark Busutil	Updating estimates following results
Anglogold	RCnt32,117	Neutral	9-Sep	Simon Kendall	Tightening our near-term earnings forecasts
MMK	US\$8.60	Buy	9-Sep	Alexei Morozov	0Q09 results preview
Klöckner	€16.70	Buy	9-Sep	Andrew Snowdowne	Updated Target for Proposed Rights Issue
IAMGOLD	US\$13.44	Neutral	8-Sep	Dan Rollins	Downgrade to Neutral on share price appreciation
Barrick Gold Corp	US\$40.04	Restricted	8-Sep	Brian MacArthur	ABX sells silver stream to SLW
DOWA Holdings	Y567	Buy	8-Sep	Atsushi Yamaguchi	Signs of a 'revival'
Non-Ferrous Metals Q&A (Part 3)			8-Sep	Atsushi Yamaguchi	Background of the indium price recovery
UK/Euro Mining Weekly Focus			7-Sep	Peter Hickson	Weekly focus - what to believe in?
General Trading Company Sector			7-Sep	Katsuya Takeuchi	Coking coal supply-demand tightening
Sumitomo Metal Mining	Y1,496	Buy	7-Sep	Atsushi Yamaguchi	Company raises earnings estimates
Global Steel Market Watch			7-Sep	Atsushi Yamaguchi	Vol. 241: Direction of Japan's export prices
Hyundai Steel	Won76,900	Neutral	7-Sep	Yong-Suk Son	Too much, too early; affirm Neutral
ThyssenKrupp	€23.10	Buy	7-Sep	Andrew Snowdowne	Few new positives, but more cash delivery
Severstal	US\$6.30	Neutral	7-Sep	Alexei Morozov	1H09 results review

Source: UBS

Table 6: Upcoming Events

Company	Date	Event
Murchison Metals	30-Sep	FY Result

Source: Company data

Profitability measures

Diversified mining	52-week high	52-week low	DPS 2007e	Div. (%)	EBITDA margin (%)				EBIT margin (%)				RoIC (EBIT) (%)				RoE (net) (%)			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
Domestic																				
BHP Billiton Limited	39.70	21.10	0.56	1.47	NA	45.3	48.3	42.0	NA	39.4	41.7	32.9	NA	46.2	55.7	27.5	NA	44.6	43.7	23.0
Rio Tinto Ltd	87.55	25.24	1.36	2.31	47.5	37.5	36.0	33.8	39.7	29.5	28.9	25.4	41.3	23.4	32.1	20.4	42.4	32.6	40.3	20.2
International																				
Anglo American	25.02	9.14	0.62	3.06	35.1	38.6	40.1	NA	26.4	29.9	30.3	NA	27.7	32.3	28.0	NA	20.1	22.4	22.7	NA
BHP Billiton Plc	16.66	7.53	0.23	1.41	NA	45.3	48.3	42.0	NA	39.4	41.7	32.9	NA	46.2	55.7	27.5	NA	44.6	43.7	23.0
Vale S.A. (PN)	37.30	20.24	0.63	1.83	48.8	51.0	47.1	45.4	43.7	44.2	39.6	34.7	35.2	35.3	31.7	15.4	41.2	44.2	32.7	13.2
Rio Tinto Plc	38.35	8.96	0.69	2.69	47.5	37.5	36.0	33.8	39.7	29.5	28.9	25.4	41.3	23.4	32.1	20.4	42.4	32.6	40.3	20.2
Diversified Mining wtd avg					45.6	44.4	44.5	41.2	38.8	37.6	37.2	31.7	35.8	37.0	41.1	22.2	37.3	39.4	37.6	19.4

EPS growth, value measures

Diversified mining	Mkt cap. (US\$ m)	Net Debt 07e (US\$ m)	EV 07e (US\$ m)	Shares o/s (m)	EPS Growth (%)				EV/EBITDA				P/E				P/BV			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
Domestic																				
BHP Billiton Limited	182564	12156	182418	5605.0	NA	NA	16.9	-38.4	NA	7.9	6.4	10.6	NA	11.1	11.6	17.0	7.0	6.2	4.7	4.3
Rio Tinto Ltd	98783	45224	131072	1958.3	46.3	2.9	32.0	-57.3	7.4	11.8	8.8	10.3	7.9	8.5	6.5	13.9	4.8	3.3	4.0	2.7
International																				
Anglo American	45444	5170	88326	1336.8	45.0	17.4	-0.8	NA	5.7	7.8	7.4	NA	9.0	7.7	7.7	NA	2.7	3.3	2.2	NA
BHP Billiton Plc	154419	12156	154272	5565.4	NA	NA	16.9	-38.4	NA	7.4	5.7	9.2	NA	9.4	9.8	14.3	5.9	5.2	4.0	3.6
Vale S.A. (PN)	101356	17984	116622	5340.6	51.6	75.2	2.6	-49.4	7.0	7.1	7.0	10.1	13.6	7.8	7.6	15.0	2.6	3.3	2.2	1.7
Rio Tinto Plc	76991	45224	146177	1958.3	46.3	2.9	32.0	-57.3	7.1	13.1	8.1	8.2	6.6	7.1	5.4	11.6	3.7	2.6	3.1	2.1
Diversified Mining wtd avg					47.8	33.1	12.5	-47.0	6.8	8.5	6.8	9.2	11.0	9.6	8.6	15.1	4.2	3.9	3.1	2.7

Cash flow, capital intensity measures

Diversified mining	Rating	P/NPV or P/NAV	NAV/Share	Target Price	Net Debt/Equity (%)				P/CF				Capex (US\$ m)				Capex % sales			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
Domestic																				
BHP Billiton Limited	Buy	7.73	4.92	42.50	30.5	39.9	11.0	16.3	NA	NA	NA	NA	NA	7417	9152	8734	NA	14.6	14.4	20.5
Rio Tinto Ltd	Buy	4.90	12.01	72.50	14.3	172.0	171.8	63.6	NA	NA	NA	NA	4064	4948	8666	4691	18.1	16.6	16.0	12.5
International																				
Anglo American	Restricted	1.22	16.72	NA	15.1	25.1	60.1	NA	5.9	5.3	5.2	NA	3750	3932	5146	4564	11.3	13.3	19.6	NA
BHP Billiton Plc	Buy	NA	#N/A	20.00	30.5	39.9	11.0	16.3	NA	NA	NA	NA	NA	7417	9152	8734	NA	14.6	14.4	20.5
Vale S.A. (PN)	Buy (CBE)	0.83	41.24	43.00	80.6	50.2	12.4	16.3	12.0	6.6	6.3	10.8	6316	9177	11759	10039	32.1	28.5	31.4	42.4
Rio Tinto Plc	Buy	0.71	36.09	32.50	14.3	172.0	171.8	63.6	NA	NA	NA	NA	4064	4948	8666	4691	18.1	16.6	16.0	12.5
Div Mining wtd avg or sum		0.87			38.8	67.8	50.0	27.2	10.1	6.2	5.9	10.8	14130	25474	34723	28027	23.1	18.6	19.9	25.3

Absolute measures

Uranium Producers	Share Price	Trading curr.	Rptg curr.	Year end	Sales (US\$ m)				EBITDA (US\$ m)				Net income (US\$ m)				EPS (Reporting curr.)			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
BHP Billiton Limited	38.00	AUD	USD	Jun	NA	50899	63714	42642	NA	23036	30775	17931	NA	13265	15501	9548	NA	2.37	2.77	1.70
Cameco Corporation	30.70	CAD	CAD	Dec	1615	2160	2698	2704	441	842	1078	953	331	389	425	666	0.82	1.67	1.68	1.71
ERA	26.74	AUD	AUD	Dec	236	299	421	591	77	129	186	348	33	64	101	216	0.23	0.40	0.62	1.46
Paladin Energy	4.75	AUD	USD	Jun	1	48	117	NA	-19	-47	10	NA	-19	-55	-36	NA	-0.04	-0.08	-0.06	NA
Rio Tinto Ltd	58.85	AUD	USD	Dec	22465	29744	54264	37496	10670	11152	19517	12666	7438	7446	9828	5773	5.61	5.77	7.62	3.26

Profitability measures

Uranium Producers	52-week high	52-week low	DPS 2007e	Div. (%)	EBITDA margin (%)				EBIT margin (%)				RoIC (EBIT) (%)				RoE (net) (%)			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
BHP Billiton Limited	39.70	21.10	0.56	1.47	NA	45.3	48.3	42.0	NA	39.4	41.7	32.9	NA	46.2	55.7	27.5	NA	44.6	43.7	23.0
Cameco Corporation	31.70	15.46	0.20	0.65	27.3	39.0	40.0	35.2	16.4	29.2	29.7	25.6	10.9	21.5	23.3	17.5	13.1	13.2	12.7	16.3
ERA	27.53	10.10	0.20	0.75	32.7	43.0	44.3	58.9	22.0	30.2	34.7	51.4	14.0	21.8	37.3	74.8	7.9	13.1	19.2	31.9
Paladin Energy	5.47	1.79	0.00	0.00	NA	-99.5	8.9	NA	99.5	-114.3	0.0	NA	-30.5	-38.8	0.0	NA	-8.9	-6.8	-3.9	NA
Rio Tinto Ltd	87.55	25.24	1.36	2.31	47.5	37.5	36.0	33.8	39.7	29.5	28.9	25.4	41.3	23.4	32.1	20.4	42.4	32.6	40.3	20.2
Uranium Producers wtd avg					45.0	41.2	43.5	39.3	38.1	34.4	36.6	30.4	35.8	36.7	46.0	25.5	37.2	38.6	40.7	22.0

EPS growth, value measures

Uranium Producers	Mkt cap. (US\$ m)	Net Debt 07e (US\$ m)	EV 07e (US\$ m)	Shares o/s (m)	EPS Growth (%)				EV/EBITDA				P/E				P/BV			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
BHP Billiton Limited	182564	12156	182418	5605.0	NA	NA	16.9	-38.4	NA	7.9	6.4	10.6	NA	11.1	11.6	17.0	7.0	6.2	4.7	4.3
Cameco Corporation	11186	595	15628	392.6	32.4	103.2	0.4	1.7	30.5	18.6	10.2	12.0	37.4	18.4	18.3	18.0	5.5	5.8	3.1	2.8
ERA	4372	33	3441	190.7	6.9	74.6	56.4	133.8	25.7	26.7	16.8	12.2	117.1	67.0	42.9	18.3	9.2	8.4	6.7	5.3
Paladin Energy	2539	133	4020	623.5	NA	NA	NA	NA	NA	-84.9	298.3	NA	NA	-57.3	-83.7	NA	8.1	2.2	5.9	NA
Rio Tinto Ltd	98783	45224	131072	1958.3	46.3	2.9	32.0	-57.3	7.4	11.8	8.8	10.3	7.9	8.5	6.5	13.9	4.8	3.3	4.0	2.7
Uranium Producers wtd avg					45.7	7.5	22.0	-44.2	10.4	9.1	9.9	10.6	15.0	NA	NA	18.3	6.3	5.2	4.4	3.7

Cash flow, capital intensity measures

Uranium Producers	Rating	P/NPV or P/NAV	NAV/Share	Target Price	Net Debt/Equity (%)				P/CF				Capex (US\$ m)				Capex % sales							
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e				
BHP Billiton Limited	Buy	6.57	5.79	42.50	30.5	39.9	11.0	16.3	NA	NA	NA	NA	NA	7417	9152	8734	NA	14.6	14.4	20.5				
Cameco Corporation	Buy (CBE)	1.17	26.16	35.00	12.2	18.7	24.3	10.4	22.1	13.3	12.2	12.4	405	462	594	436	25.1	21.4	22.0	16.1				
ERA	Neutral	9.52	2.81	26.00	-1.7	6.2	-14.1	-21.6	NA	NA	NA	NA	31	78	13	16	13.1	26.0	3.0	2.6				
Paladin Energy	Restricted	2.18	2.18	NA	-5.9	10.1	79.9	NA	NA	NA	NA	NA	87	72	196	NA	NA	150.4	167.8	NA				
Rio Tinto Ltd	Buy	4.90	12.01	72.50	14.3	172.0	171.8	63.6	NA	NA	NA	NA	4064	4948	8666	4691	18.1	16.6	16.0	12.5				
Uranium Producers wtd avg or sum					5.82				23.7	81.9	64.7	31.2	22.1	13.3	12.2	12.4	4587	12977	18621	13876	18.6	16.8	16.3	17.4

Source: - UBS estimates

Absolute measures																						
Coal Producers		Share Price	Trading curr.	Rptg curr.	Year end	Sales (US\$ m)				EBITDA (US\$ m)				Net income (US\$ m)				EPS (Reporting curr.)				
10-Sep-09						2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic (Diversified)																						
BHP Billiton Limited		38.00	AUD	USD	Jun	#N/A	50899	63714	42642	#N/A	23036	30775	17931	#N/A	13265	15501	9548	#N/A	2.37	2.77	1.70	
Rio Tinto Ltd		58.85	AUD	USD	Dec	22465	29744	54264	37496	10670	11152	19517	12666	7438	7446	9828	5773	5.61	5.77	7.62	3.26	
Domestic (Coal-only)																						
Centennial Coal		3.35	AUD	AUD	Jun	670	672	722	618	134	148	184	132	-1	29	78	36	0.00	0.11	0.24	0.12	
Coal & Allied		76.00	AUD	AUD	Dec	1066	1142	2245	1633	288	177	1075	534	155	92	685	325	2.38	1.26	9.28	4.83	
Gloucester Coal Ltd		6.15	AUD	AUD	Jun	105	114	198	209	32	21	77	62	22	10	51	41	0.39	0.15	0.76	0.67	
Macarthur Coal Ltd		8.48	AUD	AUD	Jun	356	246	560	436	125	48	231	148	82	32	140	78	0.57	0.20	0.81	0.47	
International (Diversified)																						
Anglo American		20.40	GBX	USD	Dec	33072	29537	26311	NA	11615	11395	10544	NA	5497	5761	5237	NA	3.74	4.40	4.36	NA	
BHP Billiton Plc		16.65	GBX	USD	Jun	#N/A	50899	63714	42642	#N/A	23036	30775	17931	#N/A	13265	15501	9548	#N/A	2.37	2.77	1.70	
Rio Tinto Plc		25.45	GBX	USD	Dec	22465	29744	54264	37496	10670	11152	19517	12666	7438	7446	9828	5773	5.61	5.77	7.62	3.26	
Teck Resources		28.60	CAD	CAD	Dec	5765	5958	6514	6646	3209	2642	2498	2732	2143	1510	618	1073	5.11	4.02	1.45	1.55	
International (Coal-only)																						
Banpu		422.00	THB	THB	Dec	881	1005	1534	1557	161	145	380	464	95	206	280	396	11.41	19.73	33.49	51.05	
Bumi Resources		3025.00	IDR	IDR	Dec	1852	2339	3470	2973	391	518	1229	1077	222	856	650	380	113.86	192.35	331.11	238.21	
Peabody Energy		36.17	USD	USD	Dec	5256	5393	6593	5730	1040	991	1786	1163	601	419	974	455	2.23	1.56	3.59	1.70	
Yanzhou Coal		11.54	HKD	CNY	Dec	1506	1915	3512	2936	585	740	1405	1211	298	425	934	752	0.48	0.66	1.32	1.04	
Profitability measures																						
Coal Producers		52-week high	52-week low	DPS 2007e	Div. (%)	EBITDA margin (%)				EBIT margin (%)				RoIC (EBIT) (%)				RoE (net) (%)				
10-Sep-09						2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic (Diversified)																						
BHP Billiton Limited		39.70	21.10	0.56	1.47	NA	45.3	48.3	42.0	NA	39.4	41.7	32.9	NA	46.2	55.7	27.5	NA	44.6	43.7	23.0	
Rio Tinto Ltd		87.55	25.24	1.36	2.31	47.5	37.5	36.0	33.8	39.7	29.5	28.9	25.4	41.3	23.4	32.1	20.4	42.4	32.6	40.3	20.2	
Domestic (Coal-only)																						
Centennial Coal		5.29	1.58	0.08	2.39	20.0	22.1	25.5	21.4	3.6	8.5	15.0	10.3	1.9	7.4	31.4	9.7	-0.2	5.2	18.9	7.6	
Coal & Allied		117.00	70.00	0.25	0.33	27.0	15.5	47.9	32.7	20.2	8.0	44.1	27.6	23.2	8.0	97.2	47.9	25.0	13.6	79.0	28.9	
Gloucester Coal Ltd		10.40	2.60	0.11	1.79	30.3	18.5	39.1	29.8	26.3	13.9	36.4	27.5	59.2	23.3	125.1	91.6	45.7	15.5	69.7	35.5	
Macarthur Coal Ltd		11.60	2.36	0.10	1.18	35.1	19.4	41.3	33.9	31.7	14.0	38.1	29.6	56.5	11.8	72.0	36.7	28.3	9.3	32.7	11.4	
International (Diversified)																						
Anglo American		25.02	9.14	0.62	3.06	35.1	38.6	40.1	NA	26.4	29.9	30.3	NA	27.7	32.3	28.0	NA	20.1	22.4	22.7	NA	
BHP Billiton Plc		16.66	7.53	0.23	1.41	NA	45.3	48.3	42.0	NA	39.4	41.7	32.9	NA	46.2	55.7	27.5	NA	44.6	43.7	23.0	
Rio Tinto Plc		38.35	8.96	0.69	2.69	47.5	37.5	36.0	33.8	39.7	29.5	28.9	25.4	41.3	23.4	32.1	20.4	42.4	32.6	40.3	20.2	
Teck Resources		39.01	3.42	0.97	3.39	55.7	44.3	38.4	41.1	51.6	39.1	30.9	28.8	85.1	35.9	12.4	8.2	45.6	22.5	7.3	9.7	
International (Coal-only)																						
Banpu		426.00	140.00	8.00	1.90	18.3	14.4	24.8	29.8	13.5	9.5	21.2	25.9	25.6	15.1	44.4	46.4	16.6	21.7	21.5	26.8	
Bumi Resources		3950.00	425.00	86.80	2.87	21.1	22.1	35.4	36.2	17.4	17.9	32.8	31.6	28.4	32.3	67.7	36.5	77.1	95.9	36.4	15.7	
Fording		100.69	69.51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Peabody Energy		57.30	16.25	0.24	0.66	19.8	18.4	27.1	20.3	12.6	10.5	20.9	13.2	11.8	8.4	21.6	12.1	26.4	17.1	35.9	13.7	
Yanzhou Coal		12.64	3.02	0.28	2.41	38.8	38.7	40.0	41.2	29.9	30.0	35.3	33.6	30.0	30.4	53.4	38.7	12.9	15.9	27.1	18.4	
Coal Producers wtd avg						41.3	40.7	42.4	38.5	33.9	33.9	35.3	29.6	38.7	36.3	42.8	24.3	35.9	37.2	37.5	21.0	
EPS growth, value measures																						
Coal Producers		Mkt cap. (US\$ m)	Net Debt 07e (US\$ m)	EV 07e (US\$ m)	Shares o/s (m)	EPS Growth (%)				EV/EBITDA				P/E				P/BV				
10-Sep-09						2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic (Diversified)																						
BHP Billiton Limited		182564	12156	182418	5605.0	NA	NA	16.9	-38.4	NA	7.9	6.4	10.6	NA	11.1	11.6	17.0	7.0	6.2	4.7	4.3	
Rio Tinto Ltd		98783	45224	131072	1958.3	46.3	2.9	32.0	-57.3	7.4	11.8	8.8	10.3	7.9	8.5	6.5	13.9	4.8	3.3	4.0	2.7	
Domestic (Coal-only)																						
Centennial Coal		1073	-265	1296	373.8	-103.6	NA	116.3	-51.5	14.5	8.7	7.7	10.6	-975.3	30.1	13.9	28.7	1.2	2.1	2.2	1.9	
Coal & Allied		5640	274	5796	86.6	-29.0	-46.9	634.9	-48.0	17.7	32.8	6.6	10.0	31.9	60.2	8.2	15.7	8.1	8.2	4.4	4.6	
Gloucester Coal Ltd		430	12	333	81.7	2.1	-60.8	402.1	-12.6	7.2	15.7	7.8	6.2	15.8	40.4	8.0	9.2	7.0	5.8	4.8	2.7	
Macarthur Coal Ltd		1849	25	1118	254.3	-19.2	-64.5	305.4	-42.1	4.9	23.4	8.3	8.2	15.0	42.2	10.4	18.0	3.8	3.9	2.5	2.1	
International (Diversified)																						
Anglo American		45444	5170	88326	1336.8	45.0	17.4	-0.8	NA	5.7	7.8	7.4	NA	9.0	7.7	7.7	NA	2.7	3.3	2.2	NA	
BHP Billiton Plc		154419	12156	154272	5565.4	NA	NA	16.9	-38.4	NA	7.4	5.7	9.2	NA	9.4	9.8	14.3	5.9	5.2	4.0	3.6	
Rio Tinto Plc		76991	45224	146177	1958.3	46.3	2.9	32.0	-57.3	7.1	13.1	8.1	8.2	6.6	7.1	5.4	11.6	3.7	2.6	3.1	2.1	
Teck Resources		14547	115	16173	538.4	71.6	-21.3	-64.0	7.1	3.5	6.1	8.2	8.1	5.6	7.1	19.7	18.4	2.4	2.5	1.3	1.2	
International (Coal-only)																						
Banpu		3371	175	2041	271.8	-22.3	72.8	69.8	52.4	5.7	14.1	6.5	6.3	37.0	21.4	12.6	8.3	1.8	2.2	2.5	2.4	
Bumi Resources		5902	-27	5694	19404.0	42.4	68.9	72.1	-28.1	5.8	11.0	8.3	5.5	26.6	15.7	9.1	12.7	4.8	4.8	5.8	2.9	
Peabody Energy		9661	3228	16527	267.1	41.2	-30.2	130.6	-52.6	15.9	16.7	10.2	10.6	16.2	23.2	10.1	21.3	5.5	5.0	5.0	2.5	
Yanzhou Coal		7323	-738	6395	4918.4	NA	36.3	100.7	-20.8	5.0	8.6	4.3	4.8	23.9	17.6	8.7	11.0	1.5	2.5	1.8	1.7	
Coal Producers wtd avg						44.9	4.4	20.3	-42.7	6.8	9.2	6.9	8.8	#N/A	9.4	8.4	13.1	4.7	4.1	3.4	3.0	
Cash flow, capital intensity measures																						
Coal Producers		Rating	P/NPV or P/NAV	NAV/Share	Target Price	Net Debt/Equity (%)				P/CF				Capex (US\$ m)				Capex % sales				
10-Sep-09						2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic (Diversified)																						
BHP Billiton Limited		Buy	6.57	5.79	42.50	30.5	39.9	11.0	16.3	NA	NA	NA	NA	NA	7417	9152	8734	NA	14.6	14.4	20.5	
Rio Tinto Ltd		Buy	4.90	12.01	72.50	14.3	172.0	171.8	63.6	NA	NA	NA	NA	NA	4064	4948	8666	4691	18.1	16.6	16.0	12.5
Domestic (Coal-only)																						
Centennial Coal		Buy	1.19	2.81	4.00	86.1	-61.3	24.0	32.8	NA	NA	NA	NA	128	215	131	154	19.0	32.0	18.1	24.8	
Coal & Allied		Neutral	7.97	9.54	85.00	34.0	39.0	-35.2	-14.5	NA	NA	NA	NA	111	103	127	122	10.5	9.0	5.7	7.5	
Gloucester Coal Ltd		Buy	6.59	0.93	7.00	16.8	16.6	-23.7	-30.8	NA	NA	NA	NA	9	6							

Absolute measures																				
Gold	Share Price	Trading curr.	Rptg curr.	Year end	Sales (US\$ m)				EBITDA (US\$ m)				Net income (US\$ m)				EPS (Reporting curr.)			
10-Sep-09					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
Domestic																				
Avoca Resources Ltd	1.69	AUD	AUD	Jun	0	0	39	169	-2	-5	-2	68	-2	-2	-13	19	NA	NA	-0.07	0.09
Lihir Gold	2.99	AUD	USD	Dec	310	393	680	997	119	131	293	486	55	23	122	222	0.06	0.01	0.07	0.12
Newcrest Mining	33.56	AUD	AUD	Jun	1113	2061	2153	2115	349	662	922	948	99	268	450	454	0.39	0.85	1.14	1.20
International																				
Anglogold	317.00	ZAR	ZAR	Dec	2997	3272	3726	2946	1099	937	-681	441	417	280	-884	-173	10.24	7.03	-22.62	-4.18
Barrick Gold Corp	38.00	USD	USD	Dec	6404	6332	7961	NA	2459	2744	3552	NA	1538	1110	872	NA	1.83	1.28	1.00	NA
Buenaventura	90.00	PEN	USD	Dec	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gold Fields Ltd	105.50	ZAR	ZAR	Jun	2526	3042	3178	3743	819	1131	1159	1487	254	360	358	533	3.22	4.11	4.41	6.61
Harmony	82.85	ZAR	ZAR	Jun	1382	1437	1283	1462	237	305	330	416	-55	51	124	188	-0.84	0.90	2.55	3.91
Newmont Mining Corp.	46.12	USD	USD	Dec	4987	5526	6199	6744	1898	2007	2034	3093	704	631	891	1082	1.57	1.40	1.98	2.23
Profitability measures																				
Gold	52-week high	52-week low	DPS 2007e	Div.Yield (%)	EBITDA margin (%)				EBIT margin (%)				RoC (EBIT) (%)				RoE (net) (%)			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
Domestic																				
Avoca Resources Ltd	2.14	1.05	0.00	0.00	NA	NA	-5.5	40.2	NA	NA	-42.1	18.0	333.4	-14.2	-18.4	26.1	-18.7	-3.3	-15.2	16.7
Lihir Gold	3.56	1.53	0.00	0.00	38.4	33.3	43.1	48.8	26.3	20.4	28.0	34.1	9.4	6.7	10.5	15.8	6.9	1.6	4.8	7.1
Newcrest Mining	36.30	17.01	0.05	0.15	31.3	32.1	42.8	44.8	18.2	21.3	32.1	33.0	9.9	18.8	27.8	21.2	33.8	17.8	18.1	13.7
International																				
Anglogold	359.76	152.00	0.21	0.07	36.7	28.6	-18.3	15.0	16.4	10.6	-33.8	-2.0	13.1	10.9	-41.5	-1.9	14.6	10.3	-35.8	-6.5
Barrick Gold Corp	40.04	18.14	0.30	0.79	38.4	43.3	44.6	NA	26.7	27.7	31.6	NA	18.3	12.3	16.1	NA	17.0	7.5	5.7	NA
Buenaventura	89.59	30.74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gold Fields Ltd	123.50	54.00	0.12	0.12	32.4	37.2	36.5	39.7	19.4	23.1	22.7	26.6	13.3	12.7	12.4	17.5	8.6	8.1	6.1	8.7
Harmony	129.50	56.00	0.00	0.00	17.1	21.3	25.7	28.5	5.6	11.5	14.8	17.5	2.5	5.4	6.5	9.0	-1.7	1.7	4.6	6.0
Newmont Mining Corp.	48.87	21.54	0.40	0.87	38.1	36.3	32.8	45.9	25.3	23.7	20.2	34.6	13.8	13.1	11.7	18.6	7.1	6.5	10.2	11.1
Gold wtd avg					35.6	36.1	31.1	37.6	22.2	22.0	18.0	24.4	14.9	12.4	7.4	14.0	14.4	8.4	2.3	7.0
EPS growth, value measures																				
Gold	Mkt cap (US\$ m)	Net Debt 07e (US\$ m)	EV 07e (US\$ m)	Shares o/s (m)	EPS Growth (%)				EV/EBITDA				P/E				P/BV			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
Domestic																				
Avoca Resources Ltd	375	-3	372	259.1	NA	NA	NA	-218.6	-33.8	-56.6	-172.4	8.1	NA	NA	-23.3	19.6	8.8	3.3	3.7	2.4
Lihir Gold	6071	-173	5898	2368.7	466.0	-74.5	360.5	83.8	23.9	37.2	18.2	13.1	52.8	206.6	44.9	24.4	3.7	2.3	1.6	1.8
Newcrest Mining	13904	88	13992	483.3	-17.2	117.4	34.1	5.1	22.4	14.0	13.4	14.8	85.9	39.5	29.5	28.1	21.2	5.2	4.4	3.3
International																				
Anglogold	14837	883	13199	354.1	NA	NA	-421.8	-81.5	13.2	14.1	-15.4	34.9	31.0	45.1	-14.0	-75.9	4.3	5.3	3.8	4.6
Barrick Gold Corp	33212	946	31439	874.0	245.5	-30.0	-21.9	NA	10.8	11.5	10.5	NA	20.8	29.7	38.0	NA	1.8	1.9	2.2	NA
Buenaventura	5778	NA	274.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gold Fields Ltd	9826	648	17009	704.8	52.4	27.6	7.4	49.7	11.7	15.0	7.0	9.6	32.7	25.7	23.9	16.0	2.6	1.8	1.3	1.5
Harmony	4664	581	5277	426.0	-73.1	-207.3	183.9	53.4	13.1	17.3	16.5	12.4	-98.9	92.2	32.5	21.2	1.9	1.8	1.4	1.3
Newmont Mining Corp.	22599	1646	20961	490.0	67.7	-10.4	41.2	12.7	12.0	10.4	11.2	8.4	29.5	32.9	23.3	20.7	2.4	2.6	2.8	2.4
Gold wtd avg					152.0	-10.6	-32.0	117.4	13.7	13.8	7.1	15.9					5.1	3.0	2.7	2.8
Cash flow, capital intensity measures																				
Gold	Rating	P/NPV or P/NAV	NAV/Share	Target Price	Net Debt/Equity (%)				P/CF				Capex (US\$ m)				Capex % sales			
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e
Domestic																				
Avoca Resources Ltd	Buy	3.37	0.50	2.20	10.7	-3.4	99.4	2.2	NA	NA	172.7	6.1	0	60	41	32	NA	NA	105.8	19.0
Lihir Gold	Buy	2.33	1.28	3.20	28.8	-8.0	-2.2	-12.9	NA	NA	NA	NA	171	212	251	322	55.0	53.8	37.0	32.2
Newcrest Mining	Buy	12.22	2.75	35.00	265.3	3.4	19.4	-1.0	NA	NA	NA	NA	224	211	504	373	20.2	10.2	23.4	17.6
International																				
Anglogold	Neutral	0.94	339.01	350.00	31.5	36.4	54.0	27.9	12.6	14.5	-40.4	35.5	1338	671	348	277	44.6	20.5	9.3	9.4
Barrick Gold Corp	Restricted	1.22	31.11	NA	7.5	6.2	18.8	NA	14.0	15.7	17.4	NA	1207	1205	3765	2063	18.8	19.0	47.3	NA
Buenaventura	Suspended	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40	44	42	NA	NA	NA	NA	NA
Gold Fields Ltd	Buy	1.54	68.44	135.00	3.1	11.2	10.6	12.6	14.2	11.6	10.7	8.2	2435	2312	830	1011	96.4	76.0	26.1	27.0
Harmony	Neutral	1.02	81.59	81.00	11.6	20.9	17.9	-5.8	44.4	24.6	15.3	11.4	325	481	258	251	23.5	33.5	20.1	17.1
Newmont Mining Corp.	Buy	1.34	34.30	58.00	6.1	18.3	36.5	20.8	15.5	15.7	12.4	12.1	1551	1671	1875	1578	31.1	30.2	30.2	23.4
Gold wtd avg or sum		2.75			45.6	12.9	25.9	12.3	15.8	15.5	5.9	17.9	7290	6865	7914	5906	34.8	28.5	31.6	20.2

Absolute measures																					
Metals	Share Price	Trading curr.	Rptg curr.	Year end	Sales (US\$ m)				EBITDA (US\$ m)				Net income (US\$ m)				EPS (Reporting curr.)				
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic																					
Alumina Ltd	1.65	AUD	AUD	Dec	0	0	0	0	-7	-9	-13	-6	385	366	172	30	0.44	0.38	0.16	0.02	
Iluka Resources	4.11	AUD	AUD	Dec	804	772	897	536	240	237	189	138	95	43	22	-13	0.54	0.21	0.07	-0.04	
Minara Resources Ltd	0.92	AUD	AUD	Dec	570	657	363	358	327	330	19	85	255	230	-16	40	0.73	0.59	-0.02	0.04	
OZ Minerals	1.11	AUD	AUD	Dec	961	920	750	435	626	509	-983	245	428	272	-1296	80	0.40	0.20	-0.65	0.03	
International																					
Alcoa	12.84	USD	USD	Dec	30379	30748	26901	17290	5639	4779	3313	917	2466	2131	1012	-625	2.84	2.48	1.26	-0.67	
Freeport-McMoRan	69.26	USD	USD	Dec	5791	16939	17796	13911	3103	7823	6052	5293	1453	3485	2259	1084	7.62	10.22	5.91	2.63	
Norilsk Nickel	111.00	USD	USD	Dec	11550	17119	13980	9458	7610	10253	5807	3461	4996	7319	4308	1199	26.29	38.39	23.15	6.87	
Southern Copper	29.04	USD	USD	Dec	5460	6086	4851	3475	3314	3824	2529	1780	2016	2217	1406	926	2.28	2.51	1.59	1.05	
Teck Resources	28.60	CAD	CAD	Dec	5765	5958	6514	6646	3209	2642	2498	2732	1897	1623	618	729	5.11	4.02	1.45	1.55	
Umicore	19.15	EUR	EUR	Dec	11167	11392	13488	10218	500	698	639	346	202	307	325	65	1.27	1.87	1.92	0.42	
Xstrata Plc	9.00	GBX	USD	Dec	26877	28542	27952	NA	10605	10904	9669	NA	4806	5525	4826	NA	2.92	3.24	2.81	NA	
Profitability measures																					
Metals	52-week High	52-week low	DPS 2007e	Div. Yield (%)	EBITDA margin (%)				EBIT margin (%)				RoIC (EBIT) (%)				RoE (net) (%)				
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic																					
Alumina Ltd	3.83	0.84	0.24	14.59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30.7	25.7	10.1	1.2	
Iluka Resources	5.04	2.74	0.10	2.43	29.8	30.7	21.0	25.9	17.9	14.6	5.7	-1.8	12.3	8.6	4.1	-0.7	16.9	7.0	3.2	-1.5	
Minara Resources Ltd	1.84	0.26	0.40	43.48	57.4	50.2	5.3	23.8	52.9	45.2	-5.7	13.9	77.0	66.1	-4.4	9.7	53.1	37.9	-2.7	6.1	
OZ Minerals	1.85	0.50	0.08	7.21	65.1	55.3	-131.2	56.3	56.9	46.1	-155.3	38.9	84.3	39.5	-53.1	8.4	72.3	25.0	-71.7	3.5	
International																					
Alcoa	28.67	5.22	0.68	5.30	18.6	15.5	12.3	5.3	14.3	11.4	7.7	-1.1	17.9	12.5	7.0	-0.6	15.9	12.2	6.2	-4.3	
Freeport-McMoRan	73.88	16.80	1.25	1.80	53.6	46.2	34.0	38.0	49.7	38.8	24.0	30.6	105.9	43.0	19.0	24.4	61.5	38.4	23.9	24.9	
Norilsk Nickel	145.00	37.50	8.97	8.08	65.9	59.9	41.5	36.6	60.8	55.1	32.6	26.6	71.6	60.9	24.7	17.5	40.7	41.9	25.6	9.6	
Southern Copper	29.46	9.19	2.27	7.80	60.7	62.8	52.1	51.2	55.6	57.5	45.4	41.8	81.0	89.8	56.3	34.0	57.6	58.9	38.7	25.2	
Teck Resources	39.01	3.42	0.97	3.39	55.7	44.3	38.4	41.1	51.6	39.1	30.9	28.8	85.1	35.9	12.4	8.2	40.4	24.1	7.3	6.6	
Umicore	26.67	10.27	0.65	3.40	4.5	6.1	4.7	3.4	2.8	4.0	3.5	1.8	15.9	20.2	18.2	6.8	21.5	20.5	15.0	3.1	
Xstrata Plc	13.72	2.98	0.25	2.80	39.5	38.2	34.6	NA	31.0	30.8	26.0	NA	34.0	21.2	16.4	NA	34.5	24.6	19.4	NA	
Metal wtd avg					48.9	45.3	32.9	37.3	43.2	39.0	24.5	27.9	64.5	43.3	22.1	19.3	43.5	33.9	19.7	14.5	
EPS growth, value measures																					
Metals	Mkt Cap (US\$ m)	Net Debt 07e (US\$ m)	EV 07e (US\$ m)	Shares o/s (m)	EPS Growth (%)				EV/EBITDA				P/E				P/BV				
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic																					
Alumina Ltd	3441	861	5244	2440.2	61.7	-12.4	-57.2	-90.3	-661.5	-568.4	-173.8	-186.9	3.8	4.3	10.0	102.6	1.1	1.2	0.9	1.2	
Iluka Resources	1475	527	1671	418.7	-40.0	-60.8	-67.4	-160.1	7.2	7.1	8.6	12.7	7.6	19.5	59.7	-99.3	1.5	1.5	1.6	1.5	
Minara Resources Ltd	921	-138	2450	1167.8	688.4	-18.9	-102.8	-369.3	3.1	7.4	65.7	9.2	1.3	1.6	-56.7	21.0	0.6	0.6	1.3	1.2	
OZ Minerals	2970	154	4247	3121.3	630.5	-48.6	-418.7	-104.9	4.7	8.3	-4.3	8.9	2.8	5.4	-1.7	34.7	1.5	1.1	1.1	1.3	
International																					
Alcoa	10369	7570	45125	807.6	93.7	-12.8	-48.9	-152.9	6.6	9.4	12.1	30.6	4.5	5.2	10.2	-19.2	1.8	1.8	2.0	1.1	
Freeport-McMoRan	26457	9560	32944	382.0	46.9	34.2	-42.1	-55.5	3.5	4.2	7.0	7.0	9.1	6.8	11.7	26.3	NA	NA	14.6	7.1	
Norilsk Nickel	19380	4068	41340	174.6	116.1	46.0	-39.7	-70.3	2.6	4.0	7.1	6.5	4.2	2.9	4.8	16.2	1.7	2.1	3.5	1.6	
Southern Copper	25653	40	27696	883.4	6.7	10.0	-36.6	-34.1	4.1	7.2	9.9	14.6	12.7	11.6	18.2	27.7	3.7	7.2	7.2	6.4	
Teck Resources	14547	115	16173	538.4	71.6	-21.3	-64.0	7.1	3.5	6.1	8.2	8.1	5.6	7.1	19.7	18.4	2.4	2.5	1.3	1.2	
Umicore	3369	259	5949	120.7	5.7	47.1	2.4	-78.2	9.3	8.5	8.7	11.4	15.0	10.2	10.0	45.8	6.3	2.5	2.1	1.5	
Xstrata Plc	43794	11975	69164	2920.0	90.0	10.8	-13.1	NA	3.5	6.3	6.9	NA	5.1	4.6	5.3	NA	1.8	2.3	1.8	NA	
Metal wtd avg					78.6	12.8	-41.2	-59.4	-11.1	-6.8	4.0	5.3	#####	#####	#####	#####	#####	2.3	3.2	5.1	3.9
Cash flow, capital intensity measures																					
Metals	Rating	P/NPV or P/NAV	NAV/Share	Target Price	Net Debt/Equity (%)				P/CF				Capex (US\$ m)				Capex % sales				
					2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	2006	2007	2008	2009e	
Domestic																					
Alumina Ltd	Buy	1.24	1.32	2.20	23.9	58.7	35.1	3.4	NA	NA	NA	NA	0	0	0	0	NA	NA	NA	NA	
Iluka Resources	Buy	1.44	2.85	4.40	103.2	97.2	23.4	41.3	NA	NA	NA	NA	130	87	191	535	16.2	11.2	21.2	99.9	
Minara Resources Ltd	Sell	0.54	1.71	0.86	-38.0	-22.3	-17.5	-26.6	NA	NA	NA	NA	41	93	66	10	7.1	14.1	18.2	2.7	
OZ Minerals	Buy	1.16	0.96	1.32	-24.2	11.2	33.4	-43.3	NA	NA	NA	NA	206	846	2041	442	21.4	91.9	272.2	101.5	
International																					
Alcoa	Neutral	0.67	19.17	13.50	41.4	41.1	69.1	59.0	3.0	3.3	4.6	25.3	3091	3636	3438	1840	10.2	11.8	12.8	10.6	
Freeport-McMoRan	Buy (CBE)	0.82	84.48	86.00	-8.6	61.7	298.6	172.0	7.9	5.0	6.5	13.5	251	414	341	341	4.3	2.4	1.9	2.4	
Norilsk Nickel	Buy	0.64	172.70	140.00	-11.1	23.7	46.5	18.3	3.8	2.6	3.7	9.0	724	1098	2335	1540	6.3	6.4	16.7	16.3	
Southern Copper	Neutral (CBE)	NA	NA	32.00	6.2	1.0	15.0	16.9	11.2	10.1	14.8	20.5	436	304	517	496	8.0	5.0	10.7	14.3	
Teck Resources	Buy (CBE)	0.96	29.83	35.00	-57.6	1.5	109.3	40.7	5.0	6.0	11.1	8.7	309	534	11673	692	5.4	9.0	179.2	10.4	
Umicore	Sell	NA	NA	13.50	194.9	11.9	24.2	23.2	7.7	5.7	6.6	12.9	173	204	275	222	1.5	1.8	2.0	2.2	
Xstrata Plc	Restricted	0.80	11.28	NA	74.4	53.5	77.2	NA	3.5	3.3	3.5	NA	1453	2848	4796	3603	5.4	10.0	17.2	NA	
Metal wtd avg or sum					0.81	21.9	34.7	99.6	60.2	5.9	5.1	7.0	14.9	6818	10137	25709	9728	6.4	8.9	33.6	13.9

Source: - UBS estimates

■ **Statement of Risk**

Investment risk inherent in the resource sector includes, but is not limited to, movement of commodity price and currency, which may differ materially from the assumptions used in this report. Furthermore, the sector is subject to political, financial and operational risks, each of which has the potential to significantly impact industry performance.

■ **Analyst Certification**

Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers; and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

Required Disclosures

This report has been prepared by UBS Securities Australia Ltd, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

For information on the ways in which UBS manages conflicts and maintains independence of its research product; historical performance information; and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures. The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results. Additional information will be made available upon request.

UBS Investment Research: Global Equity Rating Allocations

UBS 12-Month Rating	Rating Category	Coverage ¹	IB Services ²
Buy	Buy	44%	38%
Neutral	Hold/Neutral	39%	36%
Sell	Sell	17%	25%
UBS Short-Term Rating	Rating Category	Coverage ³	IB Services ⁴
Buy	Buy	less than 1%	33%
Sell	Sell	less than 1%	33%

1:Percentage of companies under coverage globally within the 12-month rating category.

2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

3:Percentage of companies under coverage globally within the Short-Term rating category.

4:Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

Source: UBS. Rating allocations are as of 30 June 2009.

UBS Investment Research: Global Equity Rating Definitions

UBS 12-Month Rating	Definition
Buy	FSR is > 6% above the MRA.
Neutral	FSR is between -6% and 6% of the MRA.
Sell	FSR is > 6% below the MRA.
UBS Short-Term Rating	Definition
Buy	Buy: Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.
Sell	Sell: Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.

KEY DEFINITIONS

Forecast Stock Return (FSR) is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months.

Market Return Assumption (MRA) is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium).

Under Review (UR) Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation.

Short-Term Ratings reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case.

EXCEPTIONS AND SPECIAL CASES

UK and European Investment Fund ratings and definitions are: Buy: Positive on factors such as structure, management, performance record, discount; Neutral: Neutral on factors such as structure, management, performance record, discount; Sell: Negative on factors such as structure, management, performance record, discount.

Core Banding Exceptions (CBE): Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified in the Company Disclosures table in the relevant research piece.

Research analysts contributing to this report who are employed by any non-US affiliate of UBS Securities LLC are not registered/qualified as research analysts with the NASD and NYSE and therefore are not subject to the restrictions contained in the NASD and NYSE rules on communications with a subject company, public appearances, and trading securities held by a research analyst account. The name of each affiliate and analyst employed by that affiliate contributing to this report, if any, follows.

UBS Securities Australia Ltd: Glyn Lawcock; Jo Battershill; Mark Busuttill; Daniel Morgan.

Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report.

Global Disclaimer

This report has been prepared by UBS Securities Australia Ltd, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS. In certain countries, UBS AG is referred to as UBS SA.

This report is for distribution only under such circumstances as may be permitted by applicable law. Nothing in this report constitutes a representation that any investment strategy or recommendation contained herein is suitable or appropriate to a recipient's individual circumstances or otherwise constitutes a personal recommendation. It is published solely for information purposes, it does not constitute an advertisement and is not to be construed as a solicitation or an offer to buy or sell any securities or related financial instruments in any jurisdiction. No representation or warranty, either express or implied, is provided in relation to the accuracy, completeness or reliability of the information contained herein, except with respect to information concerning UBS AG, its subsidiaries and affiliates, nor is it intended to be a complete statement or summary of the securities, markets or developments referred to in the report. UBS does not undertake that investors will obtain profits, nor will it share with investors any investment profits nor accept any liability for any investment losses. Investments involve risks and investors should exercise prudence in making their investment decisions. The report should not be regarded by recipients as a substitute for the exercise of their own judgement. Any opinions expressed in this report are subject to change without notice and may differ or be contrary to opinions expressed by other business areas or groups of UBS as a result of using different assumptions and criteria. Research will initiate, update and cease coverage solely at the discretion of UBS Investment Bank Research Management. The analysis contained herein is based on numerous assumptions. Different assumptions could result in materially different results. The analyst(s) responsible for the preparation of this report may interact with trading desk personnel, sales personnel and other constituencies for the purpose of gathering, synthesizing and interpreting market information. UBS is under no obligation to update or keep current the information contained herein. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS, into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this report is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues, however, compensation may relate to the revenues of UBS Investment Bank as a whole, of which investment banking, sales and trading are a part.

The securities described herein may not be eligible for sale in all jurisdictions or to certain categories of investors. Options, derivative products and futures are not suitable for all investors, and trading in these instruments is considered risky. Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates and other market conditions. Past performance is not necessarily indicative of future results. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument mentioned in this report. For investment advice, trade execution or other enquiries, clients should contact their local sales representative. Neither UBS nor any of its affiliates, nor any of UBS' or any of its affiliates, directors, employees or agents accepts any liability for any loss or damage arising out of the use of all or any part of this report. For financial instruments admitted to trading on an EU regulated market: UBS AG, its affiliates or subsidiaries (excluding UBS Securities LLC and/or UBS Capital Markets LP) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms in the UK) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this research report. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein.

Any prices stated in this report are for information purposes only and do not represent valuations for individual securities or other instruments. There is no representation that any transaction can or could have been effected at those prices and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions, by UBS or any other source, may yield substantially different results.

United Kingdom and the rest of Europe: Except as otherwise specified herein, this material is communicated by UBS Limited, a subsidiary of UBS AG, to persons who are eligible counterparties or professional clients and is only available to such persons. The information contained herein does not apply to, and should not be relied upon by, retail clients. UBS Limited is authorised and regulated by the Financial Services Authority (FSA). UBS research complies with all the FSA requirements and laws concerning disclosures and these are indicated on the research where applicable. **France:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities France SA. UBS Securities France S.A. is regulated by the Autorité des Marchés Financiers (AMF). Where an analyst of UBS Securities France S.A. has contributed to this report, the report is also deemed to have been prepared by UBS Securities France S.A. **Germany:** Prepared by UBS Limited and distributed by UBS Limited and UBS Deutschland AG. UBS Deutschland AG is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). **Spain:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities España SV, SA. UBS Securities España SV, SA is regulated by the Comisión Nacional del Mercado de Valores (CNMV). **Turkey:** Prepared by UBS Menkul Degerler AS on behalf of and distributed by UBS Limited. **Russia:** Prepared and distributed by UBS Securities CJSC. **Switzerland:** Distributed by UBS AG to persons who are institutional investors only. **Italy:** Prepared by UBS Limited and distributed by UBS Limited and UBS Italia Sim S.p.A.. UBS Italia Sim S.p.A. is regulated by the Bank of Italy and by the Commissione Nazionale per le Società e la Borsa (CONSOB). Where an analyst of UBS Italia Sim S.p.A. has contributed to this report, the report is also deemed to have been prepared by UBS Italia Sim S.p.A.. **South Africa:** UBS South Africa (Pty) Limited (Registration No. 1995/011140/07) is a member of the JSE Limited, the South African Futures Exchange and the Bond Exchange of South Africa. UBS South Africa (Pty) Limited is an authorised Financial Services Provider. Details of its postal and physical address and a list of its directors are available on request or may be accessed at <http://www.ubs.co.za>. **United States:** Distributed to US persons by either UBS Securities LLC or by UBS Financial Services Inc., subsidiaries of UBS AG; or by a group, subsidiary or affiliate of UBS AG that is not registered as a US broker-dealer (a 'non-US affiliate'), to major US institutional investors only. UBS Securities LLC or UBS Financial Services Inc. accepts responsibility for the content of a report prepared by another non-US affiliate when distributed to US persons by UBS Securities LLC or UBS Financial Services Inc. All transactions by a US person in the securities mentioned in this report must be effected through UBS Securities LLC or UBS Financial Services Inc., and not through a non-US affiliate. **Canada:** Distributed by UBS Securities Canada Inc., a subsidiary of UBS AG and a member of the principal Canadian stock exchanges & CIPF. A statement of its financial condition and a list of its directors and senior officers will be provided upon request. **Hong Kong:** Distributed by UBS Securities Asia Limited. **Singapore:** Distributed by UBS Securities Pte. Ltd or UBS AG, Singapore Branch. **Japan:** Distributed by UBS Securities Japan Ltd to institutional investors only. Where this report has been prepared by UBS Securities Japan Ltd, UBS Securities Japan Ltd is the author, publisher and distributor of the report. **Australia:** Distributed by UBS AG (Holder of Australian Financial Services License No. 231087) and UBS Securities Australia Ltd (Holder of Australian Financial Services License No. 231098) only to 'Wholesale' clients as defined by s761G of the Corporations Act 2001. **New Zealand:** Distributed by UBS New Zealand Ltd. An investment adviser and investment broker disclosure statement is available on request and free of charge by writing to PO Box 45, Auckland, NZ. **China:** Distributed by UBS Securities Co. Limited. **Dubai:** The research prepared and distributed by UBS AG Dubai Branch, is intended for Professional Clients only and is not for further distribution within the United Arab Emirates.

The disclosures contained in research reports produced by UBS Limited shall be governed by and construed in accordance with English law.

UBS specifically prohibits the redistribution of this material in whole or in part without the written permission of UBS and UBS accepts no liability whatsoever for the actions of third parties in this respect. © UBS 2009. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.

