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RESEARCH PAPER

PRODUCTS (TAKING STOCK)

Resources: should I still be listening?

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With mining companies around the world doubling in value over the last two years, and energy companies rising well in excess of 60% over the same time frame, is it a bubble ready to burst? Is this just another fad or are we seeing a material, sustainable change in global demand conditions? This paper investigates why resources still represent an attractive investment proposition, and the best way to incorporate this opportunity into portfolios.

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The possibility that globalisation has not just brought about a level shift in oil and commodity prices, but a rather prolonged upward trend, is now becoming less of an intellectual curiosity and more of a practical concern for policymakers.[1]

This was a statement made in May 2006 by Jean-Phillippe Cotis, Chief Economist for the OECD. If Cotis believes that the substantial rise of oil and commodity prices is of concern to policy makers, investors surely need to consider this when structuring portfolios. With a sustained rise in commodities and commodity-related stocks, many investors are in a quandry and confused as to whether this is a super cycle – and, if so, where we are in it. This is the first time that younger investors, accustomed to buying stocks for intellectual capital, have seen "old economy" stocks rise with such velocity. For others, the 1970s looms in recent memory as commodity prices, driven by oil supply side shocks, saw huge volatility.

While recent returns have prompted interest in the resources sector, so too has the increasing relative importance of the sector in the broader equity market. In June 2006, metals and mining and energy represented a combined 13.78% of the MSCI World Index, up from 6.35% in June 2000.[2]

This paper seeks to explore demand and supply fundamentals within the natural resource sector. It does not attempt to predict short-term commodity price movements but, rather, the longer-term prospects of resource companies in an environment that many observers are increasingly accepting as a super cycle (defined as "a prolonged (decade or more) trend rise in real commodity prices, driven by urbanisation and industrialisation of a major economy"[3]). Some may argue that commodities may have already reached price peaks, however the strength and sustainability of demand presents a strong case for sustained strong fundamentals for resource company equities.

Finally, this paper discusses the investment proposition for a global resources allocation in portfolios, in particular volatility and correlations with broader global equities.

The primary demand driver – China's urbanisation

The two prior commodity super cycles have been driven by a material change in the fundamentals underlying demand for a sustained period of time. This is distinctly different from typical commodity cycles where an increase in supply is often coupled with a reduction in demand (due to the slow supply response), amplifying price decline and adding cyclical volatility. In a super cycle, the sustained demand growth absorbs growing productive capacity – thus maintaining for longer the rise in commodity prices and stronger profits for resource companies.

The most talked about demand driver for natural resources at present is China, and with good reason. Industrialisation and urbanisation in the US in the late 1800s and early 1900s caused a commodities super cycle, while post-World War II reconstruction in Europe and the economic rise of Japan caused a super cycle during 1945 to 1975.

Much is spoken of the rise of the BRIC nations (Brazil, the Russian Federation, India, and China). Amongst this group, however, China is almost exclusively responsible for the current growth in demand of oil and industrial metals. The increase in demand for metals and energy from the other BRIC countries has grown at a rate slower than their underlying economic growth rate. Both Brazil and Russia have substantial natural resources and are net exporters. While India has substantial undeveloped resources, the hurdles to development have slowed the pace of exploitation and it remains a net importer. The challenge for the Indian government is to improve living standards for its population (with an aim of bringing one third of its population above the poverty line), and this will invariably require significant infrastructure investment, giving further impetus to the commodities super cycle.

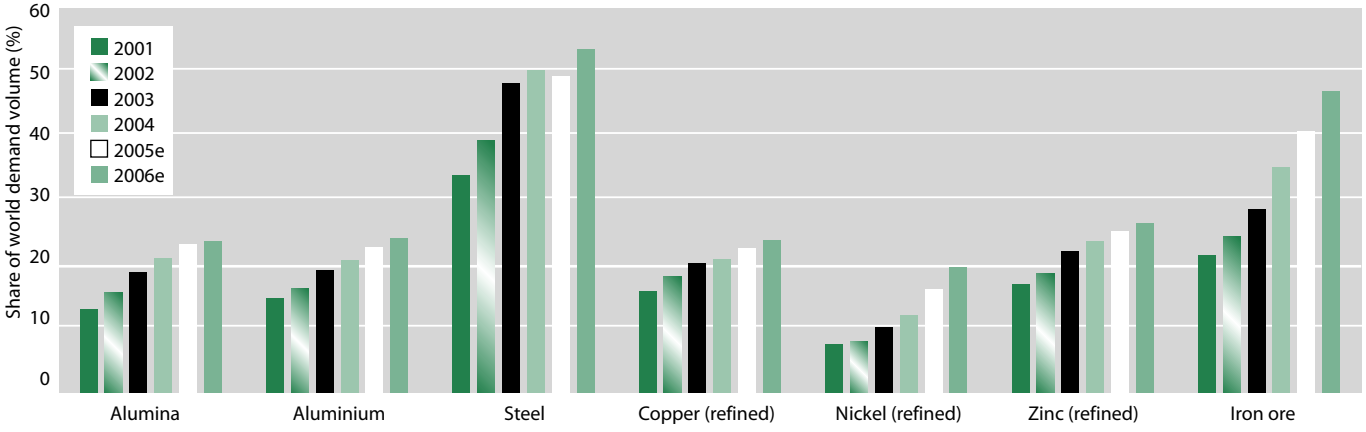
It is estimated that between 2005 and 2010, more than 100 million Chinese will move into urban dwellings from rural provinces, with another 300 million estimated to urbanise in the period to 2020.[4] Vast infrastructure expenditure will be required – roads, power, water, housing, etc. The road task alone

is extraordinary – some 50,000 kilometres of highway needs to be built to accommodate this population move, larger that the current US interstate network.

Commensurate with this urbanisation, China's appetite for metals has markedly increased in recent years, driven by both substantial economic growth (now over 12% of world industrial production and over 4% of global GDP)[5] and increasing intensity of resources usage (use of resources per unit of GDP). In the last few years, China has significantly increased its demand share of oil (now 18.6% of world demand)[6], and base and industrial metals.

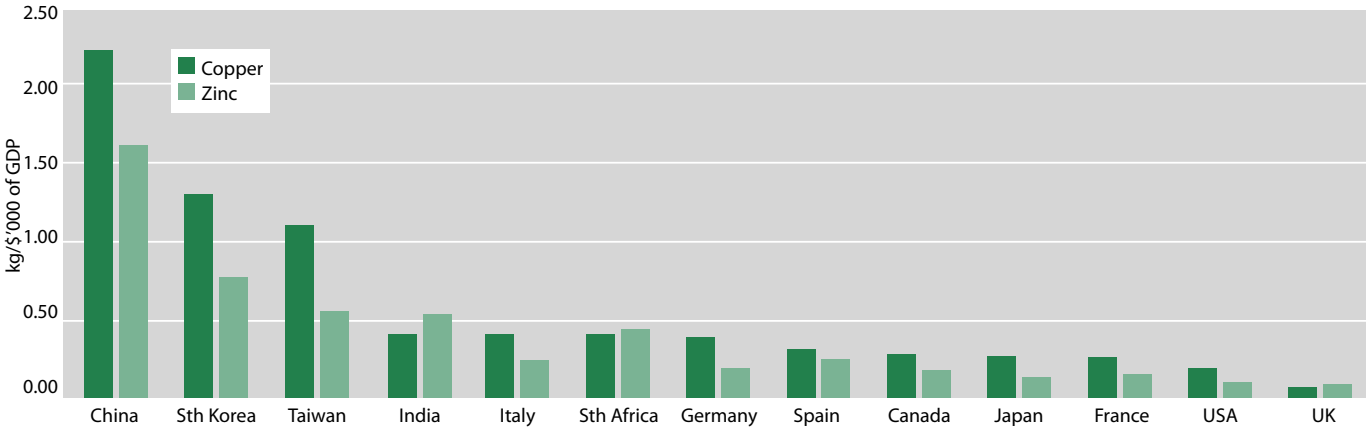
China's share of world demand for metals continues to increase, as highlighted in Figure 1. This is driven

Figure 1: China's growing appetite for metals 2001-2006 – calendar year share of world demand volume



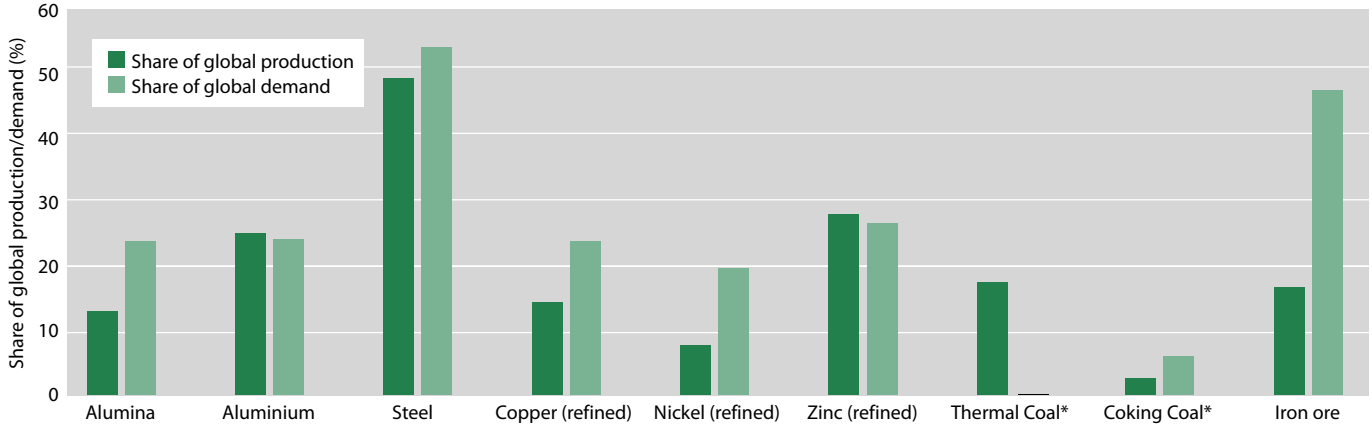
Source: Citigroup Investment Research, JFK, WBMS, TEx Rpt, INSG, ILZSG

Figure 2: Intensity of copper and zinc use – calendar year 2005



Source: Citigroup Investment Research, JFK, WBMS, TEx Rpt, INSG, ILZSG

Figure 3: China's share of global production and demand – calendar year 2006 estimates



*Notes: * = % of global seabourne exports/imports*

Source: Citigroup Investment Research, JFK, WBMS, Tax Rpt, INSG, ILZSG

by high levels of economic growth and high intensity of metals usage (Figure 2). Meanwhile, inadequate domestic supply has required a call on imports and has maintained strong prices (Figure 3). It is evident that Chinese demand for natural resources is growing substantially and appears as though it may continue for a sustained period of time as the government continues with its long-term urbanisation plans. China's productive capacity is growing, but at present it is failing to meet demand.

Non-OECD demand growth will moderate at some point, driven by an eventual slowdown in economic activity and commensurate urbanisation, returning global resources to their normal cycle. This will more than likely cause a short-term oversupply, however the super cycle argument (with China in particular driving a structural change in demand) suggests this is some time off yet.

OECD demand

One of the risk factors leading to a reduction in commodity demand and prices is the economic performance of OECD countries and, more importantly, inflation and interest rate concerns in the immediate future. This poses a risk to OECD demand (particularly if the US slows), however the OECD's forecast is for strong economic growth, providing some reassurance that the world economy remains robust in the near term. This relationship also holds true over the longer term – with intensity of commodity use having stabilised for the most part, economic growth will be the primary driver of commodity demand (Figure 4).

Figure 4: OECD real GDP forecasts – May 2006

COUNTRY	2006 (%)	2007 (%)
UNITED STATES	3.6	3.1
EURO AREA	2.2	2.1
JAPAN	2.8	2.2
TOTAL OECD	**3.1**	**2.9**
CHINA	9.7	9.5

Source: OECD Economic Outlook Number 79, May 2006

The supply side – constrained in the short term

In the short term, basic microeconomic theory tells us that oligopolistic industries with high barriers to entry exhibit inelastic supply, assuming full production and low or nonexistent inventory balances. This is particularly apparent in the resources industry where lead times to add productive capacity can be considerably greater than for other industries. That is, by and large, supply inelasticity for resource companies is a longer-term phenomenon than that exhibited for most other industries. Longer-term, supply will meet the increase in demand – it always does – but how long and at what cost will the supply side take to fully respond to the increased demand?

In reality, the response from suppliers is somewhat stepped (Figure 5). As demand increases, in the very short term, existing inventory balances can be used to meet demand. If demand remains strong, and exceeds current production levels, inventories among both producers and consumers become depleted. In the near term, the economic cut-off grade in the mine plan at the existing operations may be lowered as previously marginal material becomes economic under higher price assumptions. This may drive an open pit or underground mine deeper than previously planned, leading to exploitation of the lower quality parts of the ore body to meet demand, driving up the marginal cost of production but, in a high price environment, increasing profit for shareholders of the company. Greenfields exploration may also take place, but due to the long lead time (typically in the vicinity of four to eight years), its influence on the demand/supply equation (and therefore price) in the near term is immaterial.

Figure 5: Increased demand for resources

THE SHORT RUN	Increased demand –> higher prices, declining inventories –> brownfields expansions –>lower ore grades –> higher production at higher prices
THE LONG RUN	Increased demand –> greenfields exploration and development –> higher production, price stabilisation or decline

Source: Colonial First State

The resources market today is constrained in its ability to increase supply in the short term.

1. Political/industrial action is slowing the response

The potential scale of the impact is very significant. Merrill Lynch estimates that over 3.6Mt of copper (20% of world supply) could be disrupted by strikes in Peru, Chile and Canada.[7] Additionally, an energy crisis looms in South America as Argentina (where domestic demand for gas exceeds supply) has threatened to stop the supply of gas to Chile and Bolivia, and is seeking gas price increases of circa 60% (Chile imports over 75% of its energy needs, and gas is required in the extraction of copper).[8] An acute water shortage also has potential to slow supply of copper from Chile due to its use of hydropower. Industrial and political disruptions are not limited to copper or to South America. Industrial action is increasing worldwide as unions seek improved working conditions and higher wages in light of improving company profits.

2. Miners choose to mine lower quality

Generally, reserve calculation and mine planning has been based upon lower commodity price assumptions. As companies become more comfortable with sustained higher prices, these are re-engineered to maximise the net present value of the deposit. Typically, the grade of

the ore being mined will drop, but the tonnes available will increase. Where possible, companies will increase their rate of mining and processing to compensate for the lower head grade and increase their overall production of metal. However, for mature assets where additional capital expenditure cannot be justified, it is likely that the revised mine plan will only lead to an extension of mine life, and not increased production.

3. Demand rationing

In the case of some commodities (particularly industrial metals), supply has become so tight that demand rationing has become necessary, resulting in higher prices for longer, as demand builds while productive capacity is increased. If sustained, this can lead to the threat of substitution.

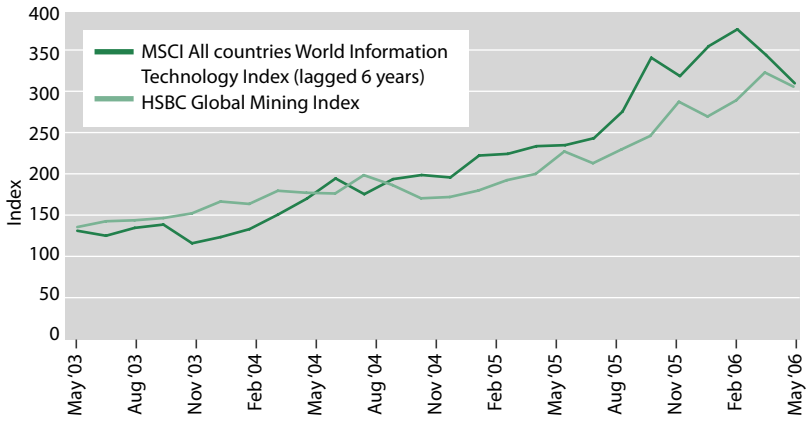
4. Government influence

As prices escalate, governments (particularly in less developed countries) are increasingly interested in participating in the price rally. Mongolia has recently passed legislation introducing a new single rate royalty of 5% for all metals (this doubles the previous royalty of 2.5% on copper and hard rock gold).[8] Similar regimes are being implemented in South America, providing further impetus for continued high prices in the long term.

5. Corporate discipline

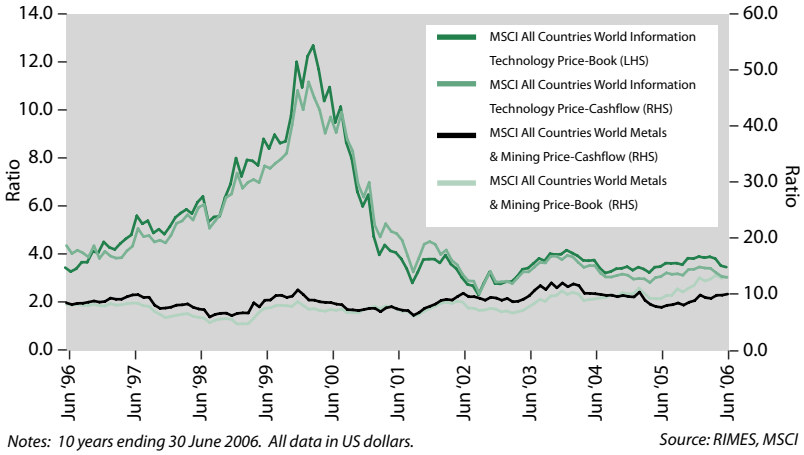
Whereas over history, senior management and boards of mining companies have typically been dominated by geological or engineering backgrounds, we have seen an influx over recent years of skilled financial professionals into the management of global resource companies. This has brought about a marked improvement in corporate discipline. Importantly, despite the relatively high spot prices, long-term price predictions used by management have not changed materially. As a result, large scale, low grade projects that require large capital expenditure are not meeting the minimum internal rates of return required for board approval. In addition, the current skills shortage and cost inflation on most capital projects further reduces their attractiveness. Projects with a five- to seven-year payback after a two- to three-year construction period are failing feasibility studies due to concerns over the long-term price sustainability. This augers well for the sector over the long term and continues to constrain supply in the current period. Additionally, due to escalating costs (for labour and equipment) and lead time (in permitting, etc) in commencing greenfields developments, merger and/or acquisitions amongst producers has become more attractive. While most companies have a large cash surplus available for investment, it is a lower risk strategy for a board to approve the takeover of an existing producer. In this way, the acquired company will generate strong cashflows in the current high price environment to help pay for the cost of the transaction. By contrast, it might take five to eight years for a new project to come into production, and there is much greater uncertainty about how long the current high price environment can be sustained. Substantial activity in this area is consolidating the supply side and improving returns to shareholders.

Figure 6: MSCI Information Technology Index vs HSBC Global Mining Index



Notes: Three years ending 31 May 2006. All data in US dollars. *Source: Bloomberg, HSBC, MSCI*

Figure 7: Price to Book and Price to Cashflow comparisons



Notes: 10 years ending 30 June 2006. All data in US dollars. *Source: RIMES, MSCI*

Market volatility

The above presents an attractive argument for a more sustained commodity cycle, as demand remains strong and the supply side response remains sluggish. However, critics abound, citing this as just another speculative bubble, much like we saw not long ago with technology stocks. The important difference is that these companies' price movements have been based upon earnings growth, they also have strong balance sheets and, to date, have exhibited diligent capital management. Cashflow reinvestment has primarily been for brownfield expansion of existing operations, share buy-backs, increasing dividends and more recently acquisitions. All of these factors should help to support returns to shareholders over the longer term as commodity prices inevitably begin to come down.

Whilst prima facie, prices have moved in a similar fashion (Figure 6) underlying valuations are far superior and remain largely unchanged (Figure 7).

Importantly, during super cycles, business cycles still take place – that is, despite a prolonged upward trend, short-term volatility exists and investors need to be aware of this if investing in global resources stocks.

Speculation and an emerging group of commodity index funds have led to a substantial increase in the volatility of the derivative markets in recent years. There was recent evidence of the negative impact of this speculation through Q2 2006. While some companies have experienced earnings volatility as a result of this (both producers and consumers), contract prices on bulk commodities such as iron-ore and coal have appreciated more rationally than the metals, and thus company earnings represent fundamentals better. Additionally, tight inventories have facilitated increased derivative market speculation and volatility, moving some spot prices significantly away from underlying demand and supply conditions.

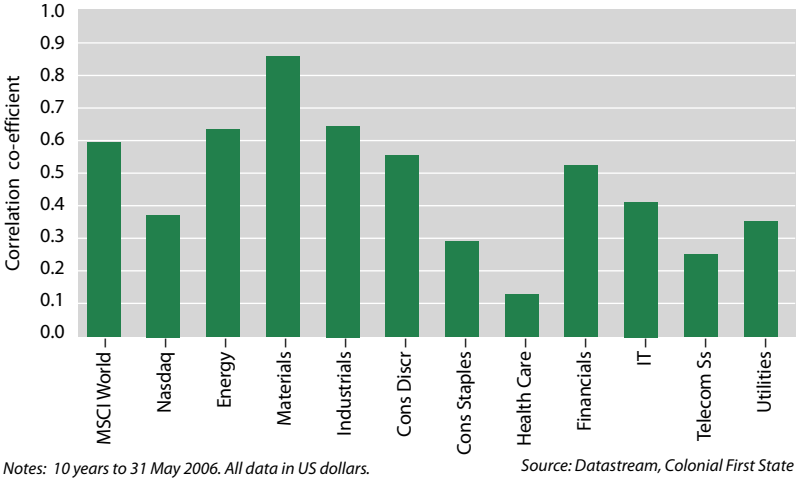
The more rational rise in contract prices has been important for resource companies, as extreme price rises promote substitution, and ultimately declining volumes. To date, substitution has been limited, for two key reasons. Firstly, contract price rises, while substantial, have not been extreme (in most cases manufacturers have passed on the higher cost of raw materials to their customers, sometimes expanding their own margins at the same time). Secondly, in many cases where a substitute is available, these prices have risen at similar rates.

Speculative bubbles may exist from time to time in the spot commodities markets, however these often do trade differently to resource company equities, where the market is inclined to take a longer-term view on earnings, rather than day-to-day price movements. While volatility in commodity prices may affect sentiment for resource equities, often more conservative prices have been used to forecast earnings and this provides some support for the share price. In recent years, investors in highly volatile direct commodities have taken substantially more risk than investors with a diversified portfolio of global resource companies.

Portfolio considerations

The growing importance of resource companies in the global economy – for example, in June 2000, Energy represented 5.17% of the MSCI and Metals and Mining represented 1.18%, compared to 10.38% and 3.40% respectively in June 2006[9] – leads to important portfolio construction considerations. This is particularly the case with Australian investors, with many domestic equity managers holding underweight positions in resource stocks (and some specifically operating ex-resources mandates) for a sustained period of time. As part of a broader equities portfolio, resources may offer an attractive diversification opportunity, with low correlation to broader equities. Figure 8 highlights that the low levels of correlation with MSCI sub indices warrant the inclusion of global resources within an international equities portfolio. While the HSBC Global Mining Index is a significantly riskier asset than the MSCI World Index, over the last 15 years, diversification has improved through an allocation to resource companies. Figure 9 highlights that an allocation of 20% of global equities assets to global resources companies (represented here by the HSBC Global Mining Index) would have reduced risk and improved returns over this period. In light of the diversification benefits of holding resource stocks, it is likely that portfolio efficiency would be improved by their inclusion.

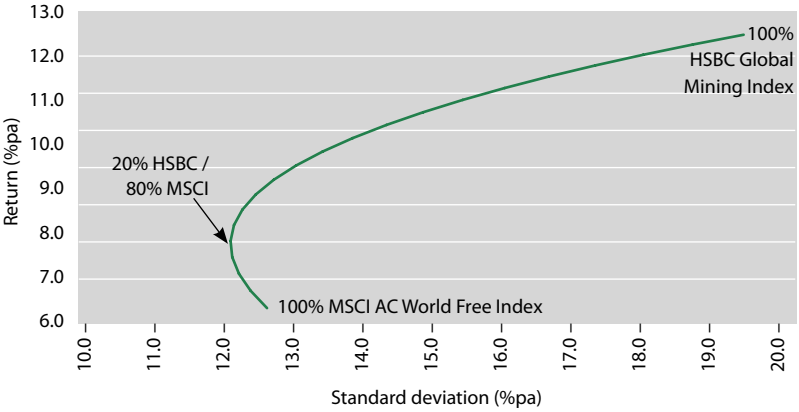
Figure 8: Correlations – HSBC Global Mining Index vs MSCI Sub Indices



Notes: 10 years to 31 May 2006. All data in US dollars.

Source: Datastream, Colonial First State

Figure 9: Efficient frontier – HSBC Global Mining Index vs MSCI Sub Indices



Notes: 15 years ending 30 June 2006. All data in Australian dollars.

Source: Bloomberg, HSBC, MSCI

The analysis above may be considered a relatively short timeframe to analyse correlations between indices, however volatility of returns over this period improves the merit of this analysis.

Some investors may consider a discrete allocation to commodity derivatives. However, this allocation should be considered carefully:

- As mentioned above, commodity prices and indices are subject to significant speculative activity, driving volatility very high. That is to say, fundamentals within the resources sector are not always well represented by commodity prices. For this reason, investors who seek exposure to demand and supply fundamentals would be ill advised to

attain leverage via direct commodity investment; and,

- Investment in a diversified portfolio of global resources companies gives exposure to both quantity of production and movement in prices, thus providing a more robust exposure to demand and supply fundamentals.

Summary

The investment opportunity in global resources stocks may continue to be favourable for some time, driven by strong long-term demand fundamentals and assisted by a sluggish supply side response. Recent experience of the technology bubble has left some investors understandably timid. However, unlike the technology boom, investors can take reassurance that super cycles are not new, and, rather than bold predictions citing a new paradigm that have been typical of the short-lived bubbles of the past, history serves as a valuable lesson that commodity super cycles do occur. Particularly in this environment, but more importantly for the longer term, portfolio construction should address an investment into global resources, both due to market significance and investment opportunity.

ENDNOTES

1. *OECD Economic Outlook,* 2006, Number 79.
2. RIMES, MSCI
3. Citigroup (Heap), 2005, "China – The Engine of a Commodities Super Cycle", Working Paper
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5. Citigroup (Heap), 2005, "China – The Engine of a Commodities Super Cycle", Working Paper
6. Goldman Sachs/IEA (Lawson et al), 2006, "BRICs Monthly", Working Paper
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9. RIMES, MSCI

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Colonial First State has been helping Australians with their investment needs since 1988, in that time becoming one of Australia's leading wealth management providers. The Colonial First State Group currently manages or administers more than $100 billion globally. Colonial First State provides investment, superannuation and retirement products to individuals, corporate and superannuation fund investors. This investment management expertise spans Australian and global shares, property, fixed interest, credit, hedge funds, infrastructure and private equity.