

# The Resources Rout

SPECIAL REPORT

December 2015



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## Is the Chinese led boom really over and what does that mean for commodity prices?

By Gaurav Sodhi

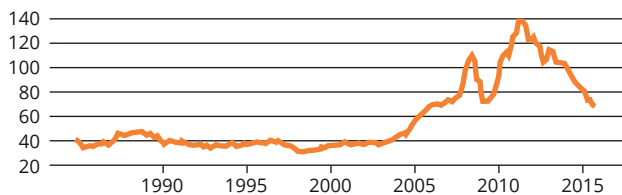
# The China boom is over

For over a decade, commodity bulls slayed sceptics of the 'stronger for longer' mantra with a single word: China. The mobilisation of the Chinese economic juggernaut generated demand never before seen in human history and, with long lags impacting supply, prices predictably rose.

Chart 1 tells the tale: all commodity prices soared with such surety and alacrity that many believed this was no ordinary cycle. The supercycle was thus born and, like all bubbles and legends, spawned from a truth.

**Chart 1: RBA commodity price index, 1990–2015**

SDR, 2013/14 average = 100



Source: RBA, 2015

Chinese demand had swelled. As late as last year, China – which accounts for 16% of global GDP – accounted for the bulk of commodity consumption. Over 70% of the world's metallurgical coal, half of global thermal coal output and half of aluminium output was consumed by China. Table 1 reveals similarly remarkable consumption levels for all commodities.

**Table 1: China's share of consumption, % of total, 2014**

RESOURCE		RESOURCE	
METALLURGICAL COAL	74%	Iron ore	44%
CEMENT	60%	Lead	44%
THERMAL COAL	50%	Platinum	30%
ALUMINIUM	48%	Hydropower	25%
NICKEL	47%	Palladium	20%
ZINC	45%	Oil	15%
COPPER	45%		

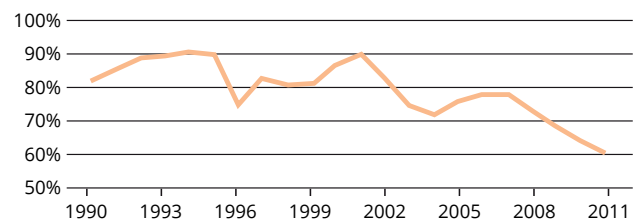
Source: BOAML, 2015

That voracious appetite can be explained by *how* China has grown, not merely *how much*. The Chinese growth model up to now, has relied on fixed asset investment. That is, GDP has grown because of investment in new buildings, equipment, infrastructure and industrial capacity.

The evidence of this growth model is everywhere. Over the past 30 years, investment alone has accounted for 50% of China's growth. Some of it has been spent well – a visitor to China will notice gleaming airports, perfect roads and fast trains. Some of it hasn't.

The evidence of malinvestment are also everywhere. Industries such as construction, steel and shipbuilding suffer from chronic overcapacity. China's utilisation of industrial capacity has fallen from 90% 20 years ago to just 60% now (see Chart 2), a classic mark of overinvestment.

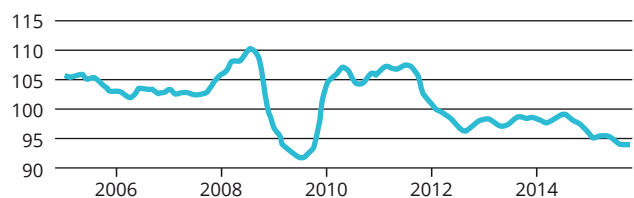
**Chart 2: China's average capacity utilisation, %**



Source: IMF, 2013

As excess capacity has been built, it has forced prices lower generating deflation and impacting growth. The Chinese producer price index measures the prices of industrial goods. Persistent falls are evidence of too much investment chasing too little demand.

**Chart 3: Chinese producer price index, 2005–2015**



Source: Trading economics.com

Still not convinced? Consider this: between 2011 and 2013, China used more cement in three years than the US did over the entire 20th century. Read that sentence again, it is no mistake.

Overcapacity and deflation are signs that returns on capital are low and that the investment led model has reached its limit. This cannot persist indefinitely.



**“Between 2011 and 2013, China used more cement in three years than the US did over the entire 20th century.**

What happens when this growth model stops working? Economic growth will slow unless other parts of the economy offset the decline. Most investors understand this and it is why so many are wildly pessimistic about China. If investment has to fall, what will replace it?

### Here comes the consumer

China's growth has certainly slowed – it is now growing at less than 7% per year compared to a 30 year average of 10% and we expect growth to slow to around 5% over the next few years. This growth, however, comes from a much larger base so, in absolute terms, China is generating greater wealth today than it was a decade ago at higher growth rates.

What matters isn't the absolute growth rate but the composition of that growth. The old industrial China is indeed slowing, and perhaps shrinking, but a new economy dominated by consumption and services is flourishing and now accounts for the bulk of Chinese growth.

For most big economies, the consumer is the growth engine. In Australia, domestic consumption accounts for two thirds of GDP, in the US it is 80%. In China, that sum is just 35%. China needs to make the transition from growth led by investment to one led by consumption.

This transformation is happening but has been hard to capture by economists and statisticians accustomed to looking for the old economy.

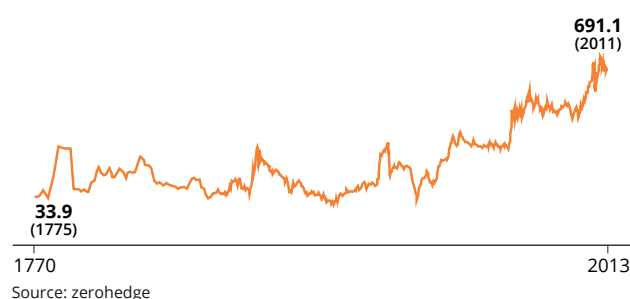
Measuring Chinese growth used to rely on watching figures for electricity generation, credit flows, freight movements – all of which have fallen substantially. Even smog indicators around industrial areas are lower, suggesting lower output. The new economy, however, is growing. Power consumption in the services sector is growing at 7% per year; retail sales are growing at 10% a year and more than 100m tourists flew overseas last year. This year, 75m Chinese shoppers have visited one of Ikea's 18 stores.

All this suggests that the Chinese economy has changed but it isn't in crisis. We just haven't been measuring the growth of the new economy as diligently as we're watching the decline of the old.

### Bad for resources

There may be no economic crisis in China but a change in the composition of growth means the beneficiaries will change. Resource producers who have enjoyed high volumes and high prices as they supply Chinese consumption will be severely impacted. Prices have fallen for good reason.

**Chart 4: Commodity price index, 1770–2013**



The current falls in commodity prices aren't an opportunity, they are a return to normality. A ten year chart of commodity prices presented in Chart 1 suggests prices have sunk precipitously. Look further, however, and the exceptional period isn't today – it's the previous decade. History suggests commodity prices will remain low for a long while yet, which should temper our enthusiasm for the sector.

### India to follow

There is another argument presented by bulls that has nothing to do with China. Acknowledging the change in Chinese growth, they claim another giant will take up the slack. Many say India will replace China as an engine of growth.

There are two problems with this. Firstly, a \$10tn Chinese economy cannot easily be offset by growth in the \$2tn Indian economy. China is so much larger that Indian growth rates would have to be unprecedented to make a difference.

Second, the structure of the Indian economy is very different. China's economic boom was fueled by manufacturing and investment spending; India's growth comes from agriculture and services. China's growth has been commodities intensive and India's isn't.

**“ To offset Chinese demand, India would not only have to grow faster than it ever has, it would have to change the composition of its growth entirely.**

To offset Chinese demand, India would not only have to grow faster than it ever has, it would have to change the composition of its growth entirely. Manufacturing would be needed to lure workers from rural areas into cities and massive fixed asset investment would be required to stimulate resource demand.

It is easy for a single party autocracy to mobilise those resources than for a noisy democracy. India has struggled to match the Chinese model for 30 years. It is hard to see why that should change now.

### **So what should investors do?**

Resources have been crunched for a good reason. Chinese growth has slowed and the composition of that growth has changed. Both these changes are necessary and permanent.

The past ten years of booming commodity prices will not be replicated. Investors should expect a future of subdued prices, much like the previous half century.

That doesn't mean there aren't opportunities. The decline of commodity prices is well known and, with equity prices falling, it is priced into valuations.

Just as high prices encourage new output to eventually end every boom, low prices will force supply to exit and stabilize the industry in time. Now, when pessimism and fear reign, is when we should be looking at resources businesses that have been sold off.

**We explain why oil prices have fallen and where they might land.**

# Will the oil price ever recover?

'The internet will soon go supernova and, in 1996, it will catastrophically collapse', proclaimed Robert Metcalfe in 1995. Metcalfe was no fool. As the inventor of the Ethernet, he was an early internet pioneer and part of the intellectual establishment. His ludicrous prediction tells us two things about prognostication.

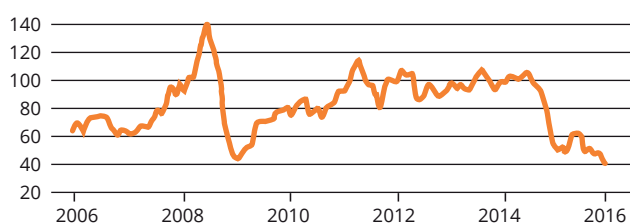
## Key Points

- **Price fall is supply led**
- **Shale output depends on credit conditions**
- **Most shale output uneconomic today**

Firstly, the worst predictions don't come from lunatics on the fringe; they are announced by experts and accepted by insiders. Secondly, predictions should be made sparingly and with humility.

We note the above as we embark on a prediction of our own. Oil prices have sunk 40% in a matter of weeks and the share price of energy producers has tumbled. Before we can assess whether those stocks are good value now, we must establish a view on the oil price. Are today's prices simply a short-term tumble or is this the end of the great oil price boom?

**Chart 1: WTI oil price, 2006–2015**



Source: www.nasdaq.com

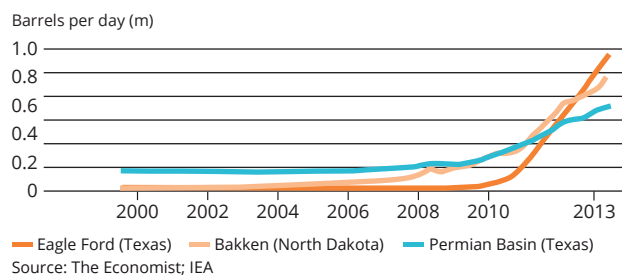
While the speed and ferocity of the price fall has surprised (see Chart 1), the causes of the decline are classic. Too much supply is chasing too little demand.

## It's supply, stupid

As oil bears point out, oil demand from the OECD (a club of rich countries) has fallen seven years in a row. Yet this is more than offset by growth in developing economies. In aggregate, oil consumption has been growing – albeit slowly – at about 1.5% per year. The world now consumes more than 90m barrels of oil a day.

Demand, although not strong, isn't to blame for lower prices. For that, we turn to the supply side. American oil production, in decline since the 1970s, has almost doubled in the past few years to 9m barrels per day. Shale producers have drilled more than 20,000 wells in the past five years, more than 10 times the level of Saudi Arabia. As a result, about 90% of the world's additional output has come from America, almost all of that from shale basins (see Chart 2).

**Chart 2: US output from shale basins, 2000–2013**



Source: The Economist; IEA

Whether the oil price remains at today's lows depends on the sustainability of the American shale revolution. Our prediction on oil depends on the predicament of shale.

## Shale shock

Shale production involves different economics to conventional production because initial output is high but falls away quickly. Whereas conventional reservoirs will decline steadily about 5–6% per year, shale production can fall 60–70% in the first year before tailing off more gradually. Maintaining production requires continuously drilling new wells.

To illustrate the different production characteristics, imagine production of 1m barrels of oil a day. To extract this volume from a conventional reservoir would require a producer to sink perhaps 50 wells in total. That same volume from shale would require about 2,000 wells. Sustaining the shale revolution requires copious amounts of cash and constant drilling. There are two threats to production: lower oil prices and access to cash. Let's take each in turn.

## Lower prices hurt

Two years ago, we estimated that the marginal cost of shale production required prices of about US\$90 a barrel. That number needs updating because drillers are getting more efficient and lowering costs.

## “ If oil prices stay low enough for long enough, output will fall.

In the Permian Basin, drillers increased output per rig by 20% last year by tweaking their method. Productivity per well in the Eagle Ford Shale is similarly up 20% as drillers get better at their art. Production costs in the best basins can be as low as US\$20 and, in less productive ones, as high as US\$90.

Wood Mackenzie, a consultancy, estimates that the median shale producer requires an oil price of US\$75 to break even on a total cost basis. Over time, we should expect supply to adjust to around US\$70–80 although, in the short term and medium term, oil prices could stay low.

Tens of thousands of previously drilled wells are still producing declining amounts of oil and, because capital has already been sunk, they incur almost no cost. A long tail of existing capacity will continue to flow and could keep prices down for a while.

These are merely lags that delay an inevitable supply response. If oil prices stay low enough for long enough, output will fall. Lower prices have already cut investment. Since maintaining output requires additional wells to be drilled, falling investment is sure to lower output.

This has already begun. The number of rigs drilling the most productive shale areas – the Bakken and Permian basins – has halved. Applications to drill in the Bakken and Eagle Ford shale have collapsed and capital expenditure budgets have now been slashed.

These are early signs that shale output is adjusting to lower prices and we expect to see less drilling activity lead to lower output over time.

The known unknown in this case is the extraordinary innovation shown by shale driller to allow them to cut costs and increase productivity. By drilling so much, producers have learnt to target the most productive areas and perfect their work.

Although it is possible that more cost cuts are made it is more likely that easy productivity gains have been made.

### The cash crunch

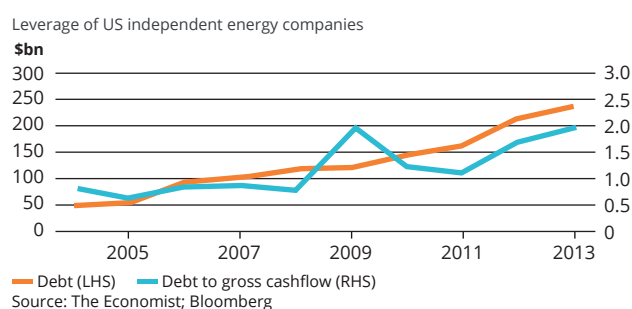
While the shale revolution was born because of specific technical breakthroughs, it has thrived because of zero interest rates, easy credit and enthusiastic investors.

Last year, shales accounted for 20% of global investment in the oil industry despite accounting for less than 5% of output.

In aggregate, hundreds of billions of dollars have been spent increasing shale output over the past decade, yet few (we're aware of none) producers generate free cash flow.

Shale producers have accumulated enormous levels of debt. Debt for listed US producers stands at a quarter of a trillion dollars (see Chart 3) and producers rely on bond markets to fund production growth.

**Chart 3: US shale debt (\$bn)**



At lower oil prices, output is at risk from the whims of banks and bond markets. Operating cash flow hasn't yet been able to sustain, let alone grow, shale output.

### This is what we know

It is clear that shale production has been more tenacious than anyone expected. Producers have innovated, cut costs and become more productive in response to lower prices and, barring an exodus of capital from lenders, their demise cannot be assured.

Oil prices, however, have also adjusted. Producers are battling admirably but the price mechanism rarely loses. There are two things we can say for certain.

Firstly, there is currently too much supply swamping markets. The price will get as low as it needs to eliminate excess capacity and, since shale producers are covering their cash costs but not their total costs, they are likely to ease output at some stage.

Secondly, producer profits are miserable. No oil producer in the world is generating adequate returns and little investment is being made for future output. All oil fields decline so, without investment, supply will fall and prices will rise. Over time, the best solution to low prices is low prices.

## The oil price crash has crimped this former giant. Is there an opportunity today?

# The gas giants: Santos

A decade ago, the board of Santos met to decide the future of Australia's premier gas producer. As custodian of the largest tenement portfolio in the country, Santos was often criticised for failing to exploit its resource position. The board had a plan to change that.

### Key Points

- **Lower oil prices reduce value**
- **GLNG is threatened by sustained lower oil prices**
- **Balance sheet impaired**

### Santos (STO)

COMPANY INFO	
PRICE AT REVIEW	\$3.28
MARKET CAP.	\$5.9bn
12 MTH PRICE RANGE	\$9.18–\$3.24
BUSINESS RISK	High
SHARE PRICE RISK	High
PORTFOLIO WEIGHTING	4%
OUR VIEW	<b>HOLD</b>

It approved the pursuit of several LNG projects that would monetise its gas resources. Santos had been selling gas domestically earning about \$3 per gigajoule. By freezing that same gas into a liquid and shipping it to Asia, the company would earn up to \$15 per gigajoule. It seemed like a grand idea.

A decade later, that idea has been realised. Santos is now a major LNG producer. Operationally the transformation has been a success, but unfortunately, it has coincided with a spectacular fall in oil prices. With Santos now trading at distressed levels, it's time to take a fresh look and decide whether today's troubles are temporary or permanent.

No amount of planning or cunning can escape the fact that the future of Santos is inextricably linked to the future of oil prices: at least half the value of the business is now tied to LNG which is, in turn, tied to oil.

Gladstone LNG, the \$20bn coal seam gas-to-LNG project, was once an attractive option; it is now a grindstone. There are two issues. Firstly, returns from GLNG will be materially lower and potentially even zero if current oil prices persist.

GLNG is a high-cost, high-risk asset; we never expected it to generate bonanza returns but it is a 20 year project. Oil prices

are unlikely to remain below US\$40 a barrel over the next two decades and we expect prices to rise to about US\$70–80 a barrel – the marginal cost of production.

There is a second problem. Santos carries too much debt. Even after raising capital, its balance sheet is stretched with over \$6bn of debt supported by diminishing cash flow while capital expenditure requirements remains high.

To see how lower oil prices impact cash flow, we'll have to estimate earnings for Santos's major asset, GLNG.

### Gladstone LNG

As a coal seam gas business, GLNG will always face higher costs because it requires more drilling and more processing. Since pure methane has a lower energy value than traditional gas, it also attracts slightly lower prices. Despite these shortcomings, with an Australian dollar oil price above \$80 even this high-cost venture generates significant profit and cash flow to Santos.

Table 1 shows estimated financial outcomes at Australian dollar oil prices of \$100, \$80 and \$50.

**Table 1: Gladstone LNG potential returns (STO share), \$m**

	\$100	\$80	\$50
REVENUE	\$1,673	\$1,338	\$836
OP COST	\$781	\$781	\$781
OP PROFIT	\$892	\$558	\$56
DA	\$335	\$335	\$335
NET PROFIT	\$558	\$223	-\$279

At \$100, GLNG would contribute almost \$900m in cash flow and \$500m in profit. At \$80, cash flow would fall to \$500m and profit to \$200m. But at \$50 the economics of GLNG would collapse, with Santos's share making a loss of over \$200m and generating just \$50m in cash flow. Australian dollar oil prices are currently under \$50.

GLNG's fragile economics are behind the huge fall in Santos's share price. The company has signed up to 20-year contracts and must continue to supply LNG regardless of price. Losses would be hard to stem.



“ At \$100, this is an outstanding business; at \$80 it is a decent business and at \$50 it is a disaster.

### Too much debt

PNG LNG, the second of Santos's LNG projects, boasts better economics and will generate far stronger returns because it is an onshore conventional project that also yields plenty of oil.

We've combined estimated returns from both projects in Table 2 which makes an earlier claim. At \$100, this is an outstanding business; at \$80 it is a decent business and at \$50 it is a disaster.

**Table 2: Potential returns from LNG, \$m**

	\$100	\$80	\$50
REVENUE	\$2,348	\$1,878	\$1,174
OP PROFIT	\$1,495	\$1,026	\$321
NPAT	\$1,035	\$565	-\$139

The investment decision is complicated by Santos's troubled balance sheet. Over the longer term we are confident oil prices will rise to meet marginal production costs. In the short term, however, they could remain low, which could trigger Santos to fail or be taken over cheaply. The upside might be capped and downside is still significant.

There is little doubt Santos is undervalued now. It's stake in PNG LNG alone covers the entire market capitalization, but, with its balance sheet impaired, that cheapness is justified. There may be an opportunity here but it is speculation rather than investment. Making money doesn't have to be this hard. With new management and an active takeover bid, there are enough reasons to **HOLD**.

**Staff members may own securities mentioned in this article.**

## A once stable energy retail business hasn't saved Origin from the oil price slump.

# The gas giants: Origin Energy

It was a bold idea from the start. Take gas trapped within coal seams hundreds of metres underground, pipe it to gigantic freezers to be converted into a liquid and then transport it aboard colossal ships to generate power in Asia. Only 100 years ago, the very notion of LNG would have been considered madness or magic. That perception hasn't completely disappeared.

### Key Points

- **LNG revenues slashed**
- **Debt still high**
- **Potential disruption to retail business**

### Origin Energy (ORG)

COMPANY INFO	
PRICE AT REVIEW	\$4.35
MARKET CAP.	\$7.8bn
12 MTH RANGE	\$13.46-\$4.35
BUSINESS RISK	Med-High
SHARE PRICE RISK	Med-High
PORTFOLIO WEIGHTING	4%
OUR VIEW	<b>HOLD</b>

Origin Energy, which has a 37.5% stake in the Australian Pacific LNG (APLNG) project, is just weeks away from beginning LNG production. Rather than celebrate the achievement, however, shareholders are wary.

APLNG will generate substantial revenues for decades and has contracts in place for 20 years of supply, yet the business has taken on enormous debt – which will peak at \$13bn – to complete the project.

It was expected that cash flows from APLNG and a stable energy retail business would help to rapidly lower this debt. Instead, cash flows will be far lower than expected because of lower oil prices, while Origin's formerly stable retail business is being disrupted by solar panels and lower demand (see [Electricity disrupted part one](#)). Less cash flow must now repay a towering debt.

Origin does have additional funding options but, after seeing its peer Santos forced to sell assets and Glencore punished for its dependence on debt, it is taking no chances. It recently

launched a heavily discounted rights issue to raise \$2.5bn from shareholders.

That raising was part of a package of cuts and changes that will, collectively, generate \$6.9bn of cash over the next two years. The aim is to lower debt from \$13bn to about \$9bn within two years, reducing the risk of forced asset sales.

While these measures reduce balance sheet problems, Origin can do nothing about the oil price which has been the source of its woes.

### Oil price effects

At \$100 oil (Australian dollars, Brent), Origin was expected to generate about \$1bn in free cash flow per year from APLNG. Instead, in its first year, APLNG will record a loss as some costs are recognised upfront and production ramps up slowly. As the project reaches full production by 2017, it should generate about \$400m in free cash flow at current oil prices.

With a breakeven of about \$35 a barrel, APLNG will still generate cash but all of that will go towards debt repayments in early years, raising total costs to about \$55 a barrel. Shareholders won't see the cash bonanza expected earlier but Origin also doesn't face the existential crisis of, say, Santos.

**Table 1: Origins valuation, \$m**

	BEAR		BULL	
	EARNINGS	VALUATION	EARNINGS	VALUATION
RETAIL	800	10,000	1,100	13,750
PRODUCTION	100	2,000	400	4,500
APLNG	400	4,000	1,000	10,000
DEBT		-11,000		-11,000
TOTAL		5,000		17,250
PER SHARE		\$4.03		\$11.09

The big problem now is the dilution caused by raising money at a hefty discount to book value. Net assets that stood at about \$14 a share before the raising, for example, are now worth just \$10.50 a share because so many new shares will be issued.

**“With cash flow from the retail business, Origin remains far from fragile but there are no points for being the strongest amongst weaklings.”**

The valuation of the business likewise takes a heavy hit. As Table 1 shows, we estimate Origin to be worth \$4 a share in the bear case – that is, with permanently lower oil prices and weaker energy retail earnings – and about \$11 a share in the bull case, where we assume \$100 oil and less disruption to the base business.

### **Lower valuation**

The base case is likely to fall in between those numbers so, Origin appears mildly cheap rather than an outright bargain.

There are two sources of potential upside. One is from higher oil prices, which would lift the value of APLNG; the other is the opportunity from lowering Origin's massive debt. The business carries debt worth about \$6 a share which cripples value for equity holders. Cash flow that once was risked on new projects will now be earmarked for lowering debt, which should help rebuild equity value. Our bull case therefore probably undercooks the long-term upside.

Debt repayment, however, is still a long way off and dependent on volatile oil prices so caution is warranted. Sustained lower oil prices destroy the investment case completely.

Because it boasts the best resource position, even at today's oil price of \$50 a barrel, APLNG should still generate between \$300–400m of free cash flow per year. That doesn't sound like a disaster but, against a stagnant retail energy business and a colossal \$11bn in debt, it's simply not enough to rapidly repay debt. At today's oil price, there isn't enough upside to tempt.

We do acknowledge, however, that with cash flow from the retail business, Origin remains far from fragile but there are no points for being the strongest amongst weaklings. Without enough upside to compensate for risks, we're keeping Origin as a **HOLD**.

**Staff members may own securities mentioned in this article.**

## Booming Chinese steel production rescued commodities from the last rout. Not this time.

# Steel, the bulks and metals

Imagine waking one morning to find **Bluescope Steel** was moving into pig farming. The decision would be met with equal parts mirth and disbelief. Yet this is exactly what Wuhan Steel, the fourth biggest steel producer in China, is doing.

### Key Points

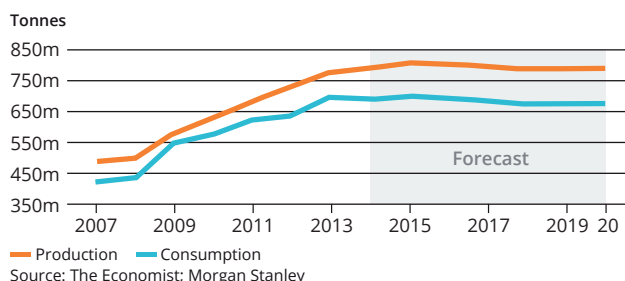
- **China's steel output to fall**
- **Iron ore and coal are permanently impaired**
- **Few opportunities in metals**

Last year, Wuhan has announced plans to build a 10,000-head pig farm. As the price of pork (26 yuan/kg) is many times that of steel (less than 2 yuan/kg), it's not entirely senseless and is in fact part of a broader trend.

Wuhan's chairman describes the move as the first wave of diversification. More than US\$6bn—10 times last year's profit—will be spent developing new businesses in the areas of real estate, manufacturing and a service that replaces light bulbs for busy households. It will be followed by Wuhan Steel-branded vegetables.

Baosteel, the largest steel producer in China, is following a similar path. The company already makes about half its profits from real estate, retail and telecommunications. Ansteel, another local giant, is diverting money into coal mining and tyre manufacturing.

**Chart 1: Chinese steel production, 2007–2020, tn**



So the question is this: If the biggest steel mills in China are finding it more profitable to change light bulbs and rear pigs than to make steel, the Chinese steel industry must be in strife. What affects will that have on iron ore?

### Chinese steel

Throughout its modern history, steel in China has been more than just another industry; it's an instrument of the state.

Following a period of civil war in the 1940s, Chinese steel production was decimated. In 1949, there were just seven blast furnaces and 19 mills in the entire country. Steel output was just 150,000 tonnes. Then came the **Great Leap Forward**. Steel production rocketed, but at a huge cost.

Today, the state is just as involved in the industry as ever. Production is far more sophisticated and output is a colossal 800m tonnes—more than half the world's total—but there are reasons to doubt the sustainability of production at this scale.

Just four countries in history have managed to produce 200mtpa of steel. China now purports to produce four times that sum and, if some forecasts are to be believed, output will peak at over 1bn tonnes annually. We disagree.

Chinese steel making is a woeful business. Operating margins and returns on equity are now negative. Low profitability is matched with huge debts: the industry carries about US\$400bn of debt and this year collectively generated losses of US\$11bn. Strip out profits from non-steel income and that loss would be even greater.

Ordinarily, such low returns would force production cuts and businesses bleeding cash would exit the industry. Supply would then fall and prices rise. That's not happening because decisions about production are made by the state, not by producers.

### The madness

China's abundance of people seeking work and cheap capital merge in the steel industry. To flatter unemployment targets, local governments encourage overproduction. Steel producers, terrified of being absorbed by a larger producer by government order, comply.

For example, in order to protect itself from consolidation, between 2003 and 2010 Rizhao Steel, a Shandong steelmaker, expanded output tenfold. In other cases, production cuts are simply forbidden. Under such circumstances, pig farming looks quite rational.



## “Renewables are a serious threat to the economics of coal generation.”

An oversupply of steel, as much as 15% of annual supply, swamps China's market, but ensures the demand for iron ore remains strong. The iron ore miners have been a chief beneficiary of irrational production decisions in China.

Irrationality can last a long time but it can't last forever. It now appears that artificially inflated steel output is finally falling. This year, 50m tonnes of output has shut. The government, unwilling to backstop enduring losses, is encouraging further cuts. With demand at 680mtpa, there is still ample room to lower production.

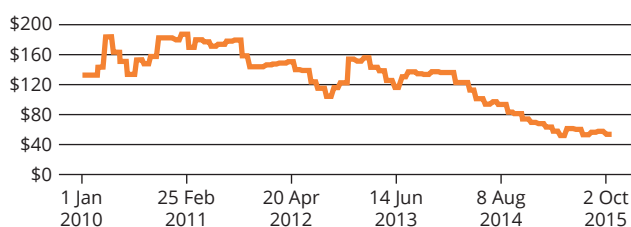
That is bad news for iron ore and metallurgical coal producers as each tonne of crude steel requires about 1.7 tonnes of iron ore and about half a tonne of metallurgical coal. Less steel means less demand for resources.

### Iron ore and coal

While demand has been falling, supply has grown swiftly with big miners increasing iron ore output spectacularly to flatten the industry cost curve. With expanding supply chasing diminishing demand, prices will continue falling until iron ore supply exits the industry.

Last year about 80m tonnes was idled but that isn't enough. These are dire times for iron ore. Until we see major production cuts (accompanied, most likely, by business failures) prices will continue to fall. Currently, only BHP and Rio and, perhaps, Vale, have profitable mines.

**Chart 2: Iron ore spot price, 2010–2015, USD/t**



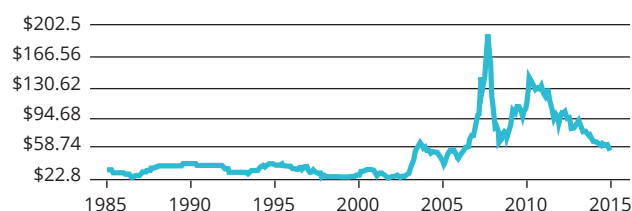
Source: InfoMine.com

It is a similar story for coal. Supply has not expanded as swiftly but adjusting to lower demand is difficult because fixed costs are a large proportion of total costs. That

means costs remain static regardless of production levels, incentivising excess output until prices undercut cash costs. Like iron ore, prices will not recover until we see production cuts and business failures.

Thermal coal faces the same problems for different reasons. Too much supply was added during the boom and, like metallurgical coal, the cost structure makes supply sticky. Thermal coal isn't threatened by lower steel output but it does face disruption by burgeoning generation of renewable energy.

**Chart 3: Thermal coal price, 1985–2015, USD/t**



Source: indexmundi.com

Coal power plants need to run all the time to be profitable but, on sunny and windy days, renewables are adding generation capacity to lower prices or displace coal power. Renewables are a serious threat to the economics of coal generation.

In our view, rising renewables output will be complemented by flexible gas generation to meet new power needs. Coal consumption may not fall – there are still new plants constructed in Asia, but demand is unlikely to rise much either. Unless significant production cuts are made, it's hard to see prices rising. We remain bearish on thermal coal.

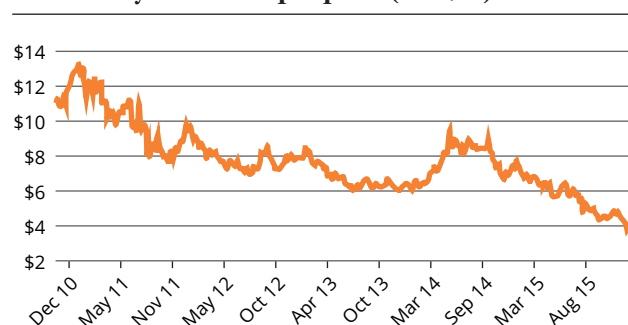
### Base metals

Over production has been a common – and predictable – curse. The long boom created ample incentives to lift output and miners around the world have done just that for every conceivable resource. Charts below confirm that when excess production meets lower demand, prices will fall.

**“Over 70% of the nickel industry is currently losing money and we should expect production cuts, lower investment spending and mine depletions to restore higher prices.**

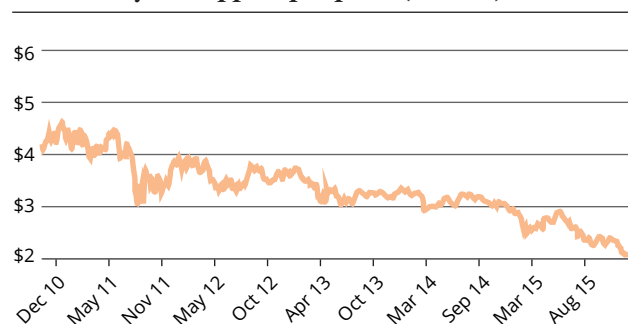
The funk in nickel and zinc prices has much to do with weakening steel production. We explained in Part 1 of this special report that the structure of Chinese growth was changing from one dependent on investment to one dependent on consumption. For now, that reduces metals demand as construction activity falls but, over time, higher consumption should restore demand. Copper, in particular, is sensitive to consumer behaviour.

**Chart 4: 5-year nickel spot price (USD/lb)**



Source: kitco.com

**Chart 5: 5-year copper spot price (USD/lb)**

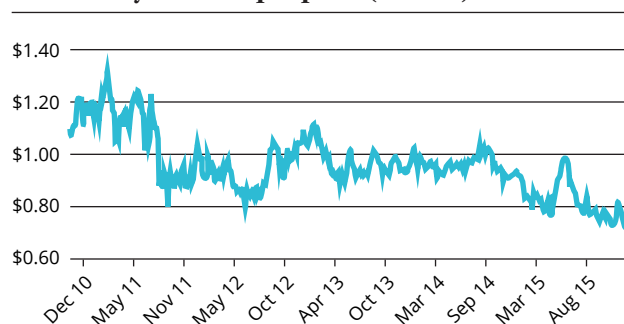


Source: kitco.com

Over the long term, metal prices should reflect the marginal cost of production. We don't have strong opinions on copper, zinc and lead except that they will not return to boom time

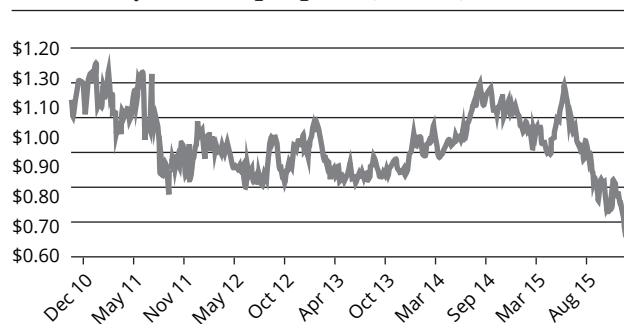
highs. We don't view these metals as obvious opportunities as prices still hover above marginal production costs. Nickel, however, is a bit different, with prices well below marginal production costs.

**Chart 6: 5-year lead spot price (USD/lb)**



Source: kitco.com

**Chart 7: 5-year zinc spot price (USD/lb)**



Source: kitco.com

Over 70% of the nickel industry is currently losing money and we should expect production cuts, lower investment spending and mine depletions to restore higher prices.

We now turn our attention to producers themselves to decipher if any value exists.

## BHP will withstand the downturn far more comfortably than almost all its peers.


# Biting on BHP

Upgrading BHP Billiton isn't the act of a blind contrarian. We're upgrading because this is not the business it appears to be. Falling prices, so often the death of miners, will not doom BHP. Mostly, this is because the Big Fella holds the best mining assets in the world – an unmatched collection of the lowest-cost, largest, irreplaceable mines.

### Key Points

- **Increasingly concentrated on iron ore and oil**
- **Should make excellent returns from iron ore; average returns from oil**
- **Start building a position now. Buy**

### BHP (BHP)

COMPANY INFO		RECOMMENDATION GUIDE	
PRICE AT REVIEW	\$16.27		<b>SELL</b> Above \$40.00  <b>HOLD</b>  <b>BUY</b> Below \$27.00
MARKET CAP.	\$37bn		
12 MTH RANGE	\$34.29–\$16.27		
BUSINESS RISK	Low–Med		
SHARE PRICE RISK	Medium		
PORTFOLIO WEIGHTING	8%		
OUR VIEW	<b>BUY</b>	\$16.27	

Less obvious, but just as important, is the change BHP is undergoing right now. An aggressive, acquisitive miner, intent on domination through relentless expansion, is being replaced by a more humble beast interested in the dull virtues of prudence, profitability and shareholder returns.

Although we expect modest commodity prices in the future, a combination of asset quality and management change should result in higher free cash flow and a decent return on assets.

### Financial scars

Although miners are thought to be captives of the commodity price cycle, BHP shows few scars from cyclicalities.

Over the past 25 years, a time that covers a variety of manias, panics and crashes, BHP has not made a single operating loss. When incurred, losses have come from errors in capital allocation rather than as a consequence of low prices.

The resilience of the business comes from the quality of its assets. BHP boasts the second most profitable iron ore business in the world; its Bowen Basin coal mines have no

equal; the petroleum business is among the world's top dozen oil producers and it controls some of the largest copper orebodies in the world.

BHP's weakness has always been management, not mines. After wasting the greatest resources boom in history, management now shows signs of penance.

Over the past decade, BHP has spent \$32bn in capital expenditure on its petroleum business, a sum that doesn't include about US\$25bn in additional acquisitions. Over the decade, it has spent over \$27bn on iron ore while spending just half that sum on copper and coal and just a third on aluminium and manganese.

Iron ore and petroleum accounted for 30% of BHP's asset base in 2004; last year it was 55%. It is here where the case for the Big Fella will be made or unmade. Price weakness in these commodities is also why an opportunity exists today.

### Iron ore

BHP's return on assets from iron ore has averaged 54% over the past decade. Even though iron ore prices have crashed, BHP should still generate a return on assets of around 30% and it has never generated a return of less than 25%. With or without a resources boom, this is a wonderful business.

The basis of this splendour are hundreds of kilometres of railway connecting four colossal mining hubs in the Pilbara. This intricate network of rail, ports and dirt has been finely tuned over decades to deliver iron ore from the middle of nowhere to China and Japan. A combination of accomplished logistics and high grade make this business hard to replicate.

Despite iron ore prices crashing over the year, generous returns are still likely. At US\$40 a tonne, prices are back to where they were in 2005. In that year, BHP produced 100m tonnes of iron ore and generated a return on assets of 37%. This year it will produce 240m tonnes of iron ore, albeit at higher cost than a decade ago.

Costs that had risen over the decade are falling again. By spreading infrastructure costs over more output, BHP can

**“ At lower prices the petroleum business can still be profitable but will have to shrink to exclude shale. We are relying on an improving oil price to realise our investment case.**

reduce unit costs while tweaks to logistics – debottlenecking in the parlance – will lower them again. Iron ore is a logistics business where small cost savings accumulate over time. BHP suggests it can lower costs from about \$40 a tonne to \$25 a tonne over the long term. We believe it.

The enlarged iron ore business should continue to generate decent returns even if prices never recover to boom levels. Only BHP and Rio can make this claim. The pessimism surrounding iron ore returns is unjustified.

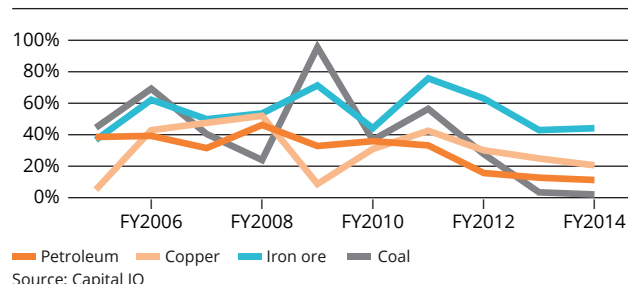
It's worth noting that when the iron ore price was under US\$20 a tonne in 2002, BHP still generated ROA of 35%, suggesting the potential for further improvement.

## Petroleum

Posting one of the swiftest declines on record, the oil price collapse has stunned producers and will be painful, even for BHP.

BHP's oil business can be split between legacy production, which encompasses production from the Bass Strait, offshore Western Australia, the Gulf of Mexico and elsewhere, and newly acquired shale oil and gas assets.

**Chart 1: ROA by commodity, 2005–2015**



The legacy assets are hugely profitable, able to produce oil for less than US\$10 a barrel. They continue to generate stunning returns. The shale business, however, which now accounts for the bulk of capital expenditure and output, is more worrying.

In BHP's favour is that it commands a huge land holding and can switch drilling strategies depending on the oil price. When prices were above \$100, for example, the company moved drill

rigs to oil rich shales and drilled ferociously to expand output. Now that prices have slumped, it has cut rig numbers by 40% and will focus only on the highest yielding shales.

This flexibility is possible because of the geological properties of shales. Output from a single well begins strongly but falls by 50–80% in the first year, tailing off after that. To maintain or grow output, producers must continue to drill, which is why so much capital expenditure is allocated to this division.

As prices have fallen, however, BHP can move its fleet of rigs to shales that suit the oil price or it can cull them altogether. Using this flexible approach means that capital expenditure and output can easily adjust to absorb the impact of lower prices.

We expect BHP to announce big asset writedowns on its shale business this year, at least US\$5bn worth. Output will likely fall too. Petroleum isn't the impregnable force it once was and it's clear that buying shales was a mistake.

Yet, over time, even a mistake need not be a disaster. Although we expect writedowns, returns should still average 8–10% over the course of the cycle, implying earnings from petroleum of US\$3–4bn.

**Table 1: Base case ROA**

ROA	FY2015	FY2016	FY2017	10 YR AVE
PETROLEUM	6%	8%	10%	30%
COPPER	15%	20%	20%	31%
IRON ORE	30%	30%	30%	54%
COAL	3%	5%	8%	40%

It's always hard to recognise cheapness in a resources business because prices can always be justified by commodity prices. Low prices today, especially for iron ore and oil, justify today's lower share price but, competitors with higher cost assets will be forced to adjust production well before BHP will. That's true for iron ore, copper and coal.



**“Miners always warn that booms sow the seeds of a bust by encouraging overproduction. The opposite is also true.”**

Oil is a more difficult case. We expect prices to return to \$70–80 a barrel, at which point BHP can generate reasonable returns. At lower prices the petroleum business can still be profitable but will have to shrink to exclude shale. We are relying on an improving oil price to realise our investment case.

### **A fair price**

Using our ROA estimates in the base case (see Table 1), we expect BHP to generate about US\$1 a share in earnings this year. As costs fall, productivity rises and prices modestly recover, we expect sustainable earnings of around US\$1.70 per share. This suggests a current PER of about 26 will fall to about 16 by 2017. Even better, the free cash flow yield (which deducts capital expenditure from cash flow) should grow from zero now to about 5% over the same time. These are fair prices for a high-quality business.

Miners always warn that booms sow the seeds of a bust by encouraging overproduction. The opposite is also true. If we can generate decent returns during lean years, holding BHP when the cycle inevitably turns will be highly profitable.

### **Summary: An obscure buy**

BHP rarely looks obviously cheap or dear because the share price responds to changes in commodity prices that can justify both high and low valuations.

BHP is no slave to cyclicalities and it's not enough to simply buy when prices fall. As investors, we must heed the advice of fund manager Howard Marks and think about second order outcomes. Yes, commodity prices have fallen. Yet those falls have prompted BHP to change for the better. It is spending less on expansion and it is focusing more on costs.

The business has proven over decades it can generate decent rates of return in low price environments and we expect today's miserly returns to improve as excesses from the boom years are corrected. Profits will rise slightly but free cash, for the first time since the company was built in its modern guise, should start to flow freely.

With commodity prices still falling, we recommend staggering purchases. Start with a small position today and build on it if prices get cheaper. **BUY.**

**Staff members may own securities mentioned in this article.**

**Rio Tinto has some of the best mining assets in the world and its shares have been getting cheaper. Is now the time to pile in?**

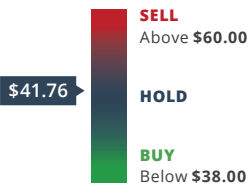
# Is Rio Tinto a steel?

Commodity prices are crashing. From oil, gold and coal to nickel, copper and iron ore, the demise of China's investment-led growth model has been crushingly brutal on both commodities and equity prices. We've responded to the carnage by selectively upgrading stocks; **South32** is terrific value now and we've suggested gingerly buying **BHP Billiton** as it struggles through its operating crisis.

## Key Points

- **Rio has forsaken diversification**
- **Iron ore earnings hard to replace**
- **Free cash flow to increase**

## Rio Tinto (RIO)

COMPANY INFO		RECOMMENDATION GUIDE	
PRICE AT REVIEW	\$41.76		
MARKET CAP.	\$75bn		
12 MTH RANGE	\$65.73-\$40.39		
BUSINESS RISK	Low-Med		
SHARE PRICE RISK	Medium		
PORTFOLIO WEIGHTING	6%		
OUR VIEW	<b>HOLD</b>		

What then, of the second largest miner on the market? Is Rio Tinto also worth buying?

It is certainly a fine business with outstanding operating credentials. Yet it has changed enormously over the recent boom and bust and stands apart from its peers today. To see how, we must peer into its fabled iron ore division.

## Hot rocks

In the Pilbara, NASA comes to test vehicles in inhospitable terrain, some of the earliest life on the planet is literally being unearthed and, of course, miners arrive in search of iron ore. The region is a treasure trove of minerals and Rio was among the first to mine here more than half a century ago.

Rio's iron ore business has grown from a small dusty outpost to a hub of 15 separate mines connected by 1,700km of railways and four port terminals. The scale is immense: Rio moves enough earth to fill the MCG to its brim every two days. That ore is moved along the longest conveyer system on earth, the equivalent of crossing the English Channel and back four

times a day. Each day, ore will travel the distance of the Trans-Siberian railway to get from mine to port. This is more than just a business, it is an engineering marvel and a financial colossus.

Despite low iron ore prices, Rio still generated EBITDA margins of more than 60% last year and a return on assets (ROA) of 40%. Ten years ago, when iron ore prices were less than \$30 a tonne, Rio generated ROA of 24%. This is perhaps the finest mining asset anywhere. Yet it is this very quality that has changed the business and what worries us today.

## Diversity is dead

Rio was the first miner to embrace the diversified mining model. It bought together far-flung commodities – coal, iron ore, copper, diamonds – and housed them under one business arguing that diversification would limit volatility. And, for years, it did. However, the company reinvested cash flows where it was making the best return – in iron ore. As a result of the great boom, the business has morphed from a diversified miner to one dominated by iron ore.

Ten years ago, iron ore accounted for about 35% of earnings; last year it accounted for 80%. The diversified miner is dead. This is largely an iron ore business now. By pouring almost \$40bn into the business over the past decade, Rio increased output from 125m tonnes per annum to 350mtpa. It is hard to separate Rio's fate from that of iron ore.

We were among the first to warn about an implosion in iron ore markets way back in 2010 (see, for example, [Iron ore: it's \(not\) different this time](#) on 15 Nov 10 and [Why you should Sell Rio Tinto](#) on 11 Feb 11 (Sell – \$83.65)). We remain concerned. Although prices have collapsed from a peak of over \$180 a tonne, supply continues to expand. The iron ore price will go as low as it must to force excess capacity out. In our view, that means a price with a 2 or a 3 in front of it.

## It's still good

At those prices, Rio has the asset quality and experience to continue to generate decent returns. Rio collects the highest price for its blended ore and reports the lowest costs. In order to cut costs, it has pioneered the use of autonomous drill rigs

## “Iron ore will still remain an outstanding business but the rest of the empire could face a tougher future.”

and trucks; it saved \$16m last year just by managing the tyres on its trucks a little better. All up, the cash cost of production has fallen from US\$24 a tonne in 2012 down to under US\$15 today, the lowest in the industry.

Quality, however, cannot offset lower Chinese demand. Although Rio forecasts Chinese steel output to surpass 1bn tonnes – it is currently 800m tonnes per annum – we are far more bearish and expect Chinese steel output to shrink dramatically, triggering further iron ore weakness.

Although higher cost iron ore supply is exiting the industry – 120m tonnes will disappear in 2015 – that volume is being displaced by lower cost output. As the industry cost curve flattens, so do producer returns.

We expect Rio's iron ore ROA to fall from a ten-year average of 52% to 35% as a result of lower prices. That is still high but it means earnings from iron ore will halve from about \$13bn to about \$6bn. Iron ore will still remain an outstanding business but the rest of the empire could face a tougher future.

### Aluminium, copper and coal

Aluminium accounts for 40% of Rio's assets but just 10% of profits. There are high quality assets here; a collection of hydro dams limit energy costs and bauxite resources are large and profitable. The aluminium division earns the highest EBITDA margins in the industry but financial returns remain abysmal because of chronic oversupply. Industry profits are largely determined by access to cheap energy and the abundance of cheap power in Saudi Arabia (which is building the largest aluminium complex in the world to utilise gas produced as a by-product of oil production) and China mean overcapacity is likely to depress producer profits. Over the past decade, Rio generated median ROA of just 3% from aluminium. Even after writing off US\$30bn, it struggles to generate meaningful returns.

Whereas BHP's oil business (ex-shale, anyway) generates excellent returns and remains a counter-cyclical buffer, Rio's aluminium business is a dead weight. Petroleum generated over US\$7bn of cash flow for BHP in 2015; aluminium brings

in less than US\$1bn for Rio. Things could change, of course, but it's hard to see how aluminium might offset the expected decline in iron ore.

**Table 1: Est FCF per share, US\$**

	FY2015	FY2016	FY2017
BASE	(0.03)	1.00	1.70
BULL	0.15	2.00	3.85
BEAR	(0.55)	(0.45)	(0.20)

The copper business is also high quality, but only generates about 10% of earnings. This is a weakness of Rio: next to its dominant iron ore business, its other assets struggle for relevance. New copper orebodies such as Oyu Tolgoi, Resolution and La Granja promise decades of profitable output but only if the copper price recovers and after billions of capital expenditure. Without sustained higher prices, copper is unlikely to rescue profits either.

The coal business is largely thermal coal (about 66%) and lacks BHP's asset quality or scale in metallurgical coal. We are pessimistic about thermal coal but acknowledge that Rio's coal resources are better than average. Rio appears to share our pessimistic outlook and has signalled it will exit the coal business entirely. Coal currently generates no profit.

### Free cash flow rising ... a little

Our investment case for BHP has been to buy in tranches as prices fall because we expect capital expenditures and costs to fall and free cash flow to rise (see *Biting into BHP Billiton*, parts [one](#) and [two](#), from Jan 15). That is also true for Rio, but on a smaller scale.

There are two big differences: Rio was more sensible in its expenditure so the turnaround isn't as acute and it is the highest taxed business in the country. The reliance on iron ore means Rio pays an effective tax rate of 40% compared to BHP's effective tax of 28%. That makes a difference.

**“ With over US\$20bn of assets tied up in aluminium, higher returns from this business will have a meaningful impact on profit.**

In our base case, we expect ROA from iron ore of 35% and returns from copper to rise from 10% to 20% by 2017 as the copper price recovers. We expect little recovery from coal, generating ROA of 2% and modest, though rising, returns from aluminium at 9%.

**Table 2: Est EPS, US\$**

	FY2015	FY2016	FY2017
BASE	1.70	2.00	2.40
BULL	1.95	3.70	5.90
BEAR	0.80	(0.30)	(0.65)

By 2017, those returns would generate EBITDA of about US\$12bn and, assuming Rio cuts capital expenditure to US\$5.5bn, would result in free cash flow of about US\$3bn.

That isn't a bad outcome and demonstrates Rio's quality amid low commodity prices. Yet it implies free cash flow per share of about US\$1.70, or a yield of under 4% by 2017. Although not a disaster, it is not attractive enough considering the risks posed by persistently weak iron ore prices.

In terms of net profit, we expect Rio to generate earnings per share of about US\$1.60, rising to about US\$2.40 by 2017 as it cuts costs and conditions improve. Again, this is a fair outcome but doesn't justify a buy at current prices.

## Back to iron ore

What would change our mind? A cheaper share price, for a start. We would consider an upgrade at around \$38, which implies an expected free cash flow yield of over 5% and we will be watching two things carefully. With over US\$20bn of assets tied up in aluminium, higher returns from this business will have a meaningful impact on profit, so capacity cuts in the industry could trigger action.

Mostly, however, Rio is an iron ore business. So, if enough supply exited the industry, we would also consider changing our recommendation.

Despite a diversity of assets and high-quality management, the investment case for Rio comes down to Pilbara iron ore. It was here that the business forged its wealth and reputation and it will be here that Rio's future will be decided. For now, **HOLD**.

**Staff members may own securities mentioned in this article.**



## Newly spun off from BHP, South32 has halved since listing. Does this signal danger or opportunity?


# South32 gets cheap

South32 currently trades at just 40% of its net asset value and has more than halved since splitting from BHP earlier this year. At that price, the market is making some dire predictions about the future performance of the business. Is Mr Market right?

### Key Points

- **Price fallen back to attractive levels**
- **Includes high quality assets**
- **Profits to rise**

### South32 (\$32)

COMPANY INFO		RECOMMENDATION GUIDE	
PRICE AT REVIEW	\$1.02		<b>BUY</b> Below \$2.30
MARKET CAP.	\$5.3bn		
12 MTH RANGE	\$0.97-\$2.45		
BUSINESS RISK	Low-Med		
SHARE PRICE RISK	Medium		
PORTFOLIO WEIGHTING	7%		
OUR VIEW	<b>BUY</b>		

The hefty discount to net asset value suggests South32 will make subpar returns from its assets. For miners that expanded with marginal projects during the boom, low returns should be expected and, if they loaded their balance sheets with debt, survival will be in doubt. South32 isn't in that camp.

Although its assets were deemed too small and insignificant for its giant parent, BHP, they are still relatively high quality, with 90% of earnings coming from the lowest half of the industry cost curve.

Low prices will lower profit – that is why the share price has plummeted – but it won't imperil the business. It continues to generate cash and has just begun the task of lowering costs. Debt is low and the business will return 40% of its underlying profit back to shareholders, limiting the scope for reckless capital allocation.

Mining is notoriously cyclical. The time to buy quality mining assets is when prices are low and neglect is rampant. The boom is the time for worry; now is the time to be looking at South32.

### Cannington and GEMCO

Although commonly derided as the dregs of BHP, South32 operates some high-quality mines, which produce from the lowest or second lowest quartile on the cost curve. Two of the best assets are the Cannington silver mine and the GEMCO manganese business which together accounted for 40% of operating profit last year.

Cannington, which made a return on assets of almost 200% as silver prices peaked in 2012 (see Table 1), still generates a return on assets of over 100% amid far lower prices. Although reserves are stated at less than 10 years, converting the underground operation to an open-cut mine could add another 20 years of mine life at high rates of return.

A recorded asset value of just US\$280m grossly undervalues this marvelous mine where we think true value sits closer to US\$3bn. As the largest, lowest-cost silver mine in the world it should be a consistent cash generator.

**Table 1: ROA by asset, 2012–2015**

	FY2012	FY2013	FY2014	FY2015
WORSELY ALUMINA	–3%	–3%	1%	5%
SOUTH AFRICAN ALUMINIUM	–5%	0%	8%	22%
MOZAL ALUMINIUM	2%	0%	2%	18%
BRAZIL ALUMINIUM	–6%	–3%	4%	20%
SOUTH AFRICAN ENERGY COAL	8%	–4%	0%	24%
ILLAWARRA MET COAL	47%	10%	–2%	–2%
AUST MANGANESE	25%	34%	30%	9%
SOUTH AFRICAN MANGANESE	–5%	5%	4%	–4%
CERRO MATOSO	27%	13%	0%	8%
CANNINGTON	192%	149%	95%	103%

GEMCO, the Australian manganese business, is the largest producer of manganese in the world and one of the lowest cost. Although manganese prices have plummeted, we expect supply to be forced from the market. Indeed, South32's joint

**“South32 was the only major miner in the world to lift returns in the face of lower prices last year and, with cost cuts only starting, there is scope to lift returns further.”**

venture partner at GEMCO, **Anglo American**, is believed to be seeking an exit which could allow South32 additional exposure to this fine asset at a time of cheap prices.

A recorded asset value of US\$1.3bn undervalues GEMCO. We aren't bullish on manganese prices but lower industry supply should continue to deliver return on assets of close to 30% over the cycle.

Identifying quality is sometimes as easy as picking high returning assets. More often, however, we need to identify assets that might generate higher profits tomorrow than they do today. Worsley alumina in Australia is such an asset.

### **Worsley and aluminium**

As the recipient of over \$3bn of capital over recent years, Worsley was one of the few South32 assets to receive lavish attention from BHP. Last year's operating profit of US\$174m follows years of losses and still represents a lowly ROA of just 5%. Yet Worsley is one of the lowest cost producers of alumina and a significant business, with a carrying value of over US\$3bn.

The replacement cost of this asset is even higher although, as current low prices persist, the asset value could fall to around US\$2bn.

As one of the largest integrated mines and refineries anywhere, the asset is highly geared to prices and could be a significant profit engine in years ahead. It is also a strategically important mine that feeds alumina into aluminium smelters in Africa.

The largest of those is the Hillsdale smelter in South Africa which is a large, modern and low cost facility that generated a quarter of South32's operating profit last year. Profitability

is underwritten by attractive energy contracts with South Africa's energy monopoly, Eskom.

Energy is supplied under long-term contracts but a disruption in supply, or a change in contract terms, would lower profitability at Hillside. The asset carries a book value of over US\$1bn which we think understates profitability.

Together, Cannington, GEMCO, Worsley and Hillside account for 80% of profits and, with an estimated value of about US\$8bn, are worth more than twice the current market capitalisation of South32. On a sum of parts valuation, this is cheap.

Even if assets that are losing money today never recover and are sold or closed – South African manganese, metallurgical coal in NSW and a nickel mine in Colombia – South32 is attractively priced today for the long-term investor.

### **Not risk free**

It is not, however, without risk. Our chief concern is the risk of operating so many South African assets. Specifically, there is a growing risk that the dysfunctional local utility, Eskom, will not be able to supply electricity to the South African mining industry in general and to South32's aluminium smelters in particular. Such risks are hard to price or anticipate but they appear to be reflected in prices today.

South32 was the only major miner in the world to lift returns in the face of lower prices last year and, with cost cuts only starting, there is scope to lift returns further. With little net debt, likely dividends and an attractive price, South32 is a **BUY**.

**Disclosure:** The author, Gaurav Sodhi, owns shares in South32.



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