

2014 commodity prices reviewed



David Denham AM
denham1@inet.net.au

It's probably a good thing that we can't forecast the future. If we'd known what was going to happen to the price of coal, iron ore and petroleum at the start of 2014 we might have thought it would a good idea to hibernate for a while, or to just take the year off. As we know, that is not allowed and it would not necessarily have been beneficial.

Anyway, I am going to review a few key issues during 2014. These include commodity prices, exploration expenditure and the fate of resource stocks on the Australian Stock exchange (ASX). The commodity data are taken from http://www.imf.org/external/np/res/commod/External_Data.xls, the exploration information from the Australian Bureau of Statistics and the ASX information from The Australian and the Sydney Morning Herald.

The oil price plummets

Who would have thought that the price of crude oil would have dropped (see Figure 1) from \$US104/bbl in July to \$US60/bbl at the end of December? The global economy did not shrink by more than 40 percent during the same period, so what caused the fall and why?

We all probably know the answer to the first part of the question. The Saudis have upped their oil production to maintain market share and, in a simplistic supply and demand relationship, when supply exceeds demand the price is bound to fall. But, that only begs another question. Why have the Saudis upped their production? And here we can only speculate.

There are two main theories. The first is that the Saudis want to kill off competition from the more costly

unconventional oil being produced from shale deposits in the United States of America. The second is that the Saudis are part of a CIA plot to destroy the economies of some of the enemies of the USA such as Iran, Russia and Venezuela. These economies depend on selling oil and if the price drops too much they could run out of money.

It is difficult to support this second theory because North Korea and China are also benefitting from low oil prices. And, while China is not an enemy, it is seen by some in the USA as a dangerous competitor. So, if we run with the first theory, the question is how long will the Saudis want to continue to flood the market? In the long run the Saudis would benefit from a higher oil price, but this is not an issue for them at the moment. My forecast is that the Saudis will cut their output sometime in 2015, the oil price will recover and that by the end of the year it will be back up the at least \$US80/bbl – but we shall see!

Coal and iron ore prices continue to fall

The situation with coal and iron ore prices is very different to the situation with the oil price. The price of both commodities has been falling steadily since the beginning of 2011 (see Figure 1). The iron ore price has decreased from \$US187/t in February 2011 to approximately \$US68/t in December 2014. In other words, the price now is

almost one third of what it was in 2011. The reasons for this drop are clear. The growth in the Chinese economy has slowed down and new deposits of iron ore have now come on-line. For Australia the situation is very serious, particularly in Western Australia where the wellbeing of that State is dependent on the value of its iron ore production.

The coal situation is a little different. The decline in price is not only a result of a decline in the economic growth in China but also a result of the global pressure to reduce greenhouse gas emissions. Global emissions of CO₂ continue to rise. The total emissions from fossil fuels, cement and land-use change amounted to 9.9 Gt CO₂ in 2013 (<http://co2now.org/>). As a result the CO₂ in the atmosphere continues to increase. CO₂ concentrations are now hovering around 400 ppm and have been increasing at about 2 ppm per year for the past 40 years. Sea level has been rising at 3.2 mm/yr and the world's top 10 warmest years have occurred since 2000. Consequently, there is considerable pressure to reduce the number of coal powered power stations and the world's two largest CO₂ producers, USA and China are taking steps to reduce the use of coal. Notice in Figure 1 that before 2007 prices were steady; this cannot be said for more recent years.

Aluminium and gold

The prices for gold and aluminium (Figure 2), while showing considerable

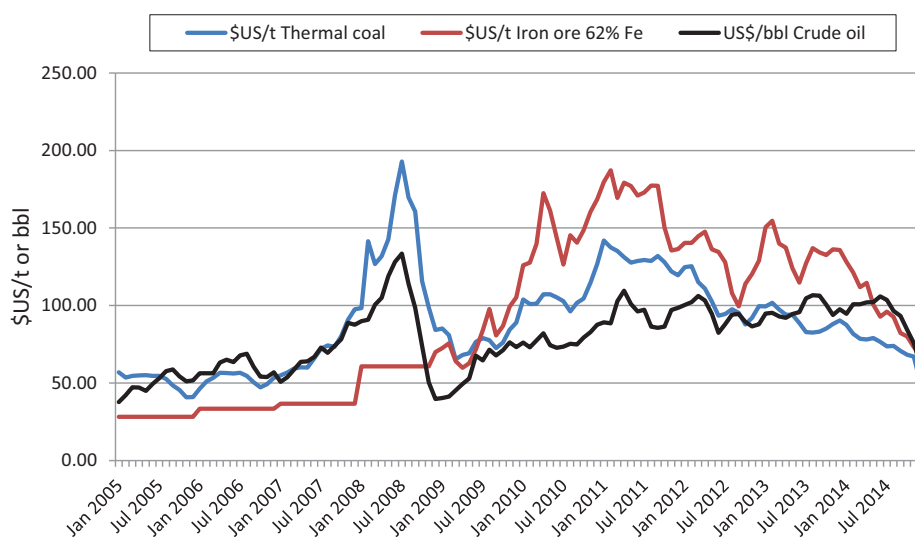


Figure 1. Monthly prices for thermal coal, iron ore and crude oil from 2005 to 2014. The numbers are all in \$US and have not been corrected for CPI inflation.

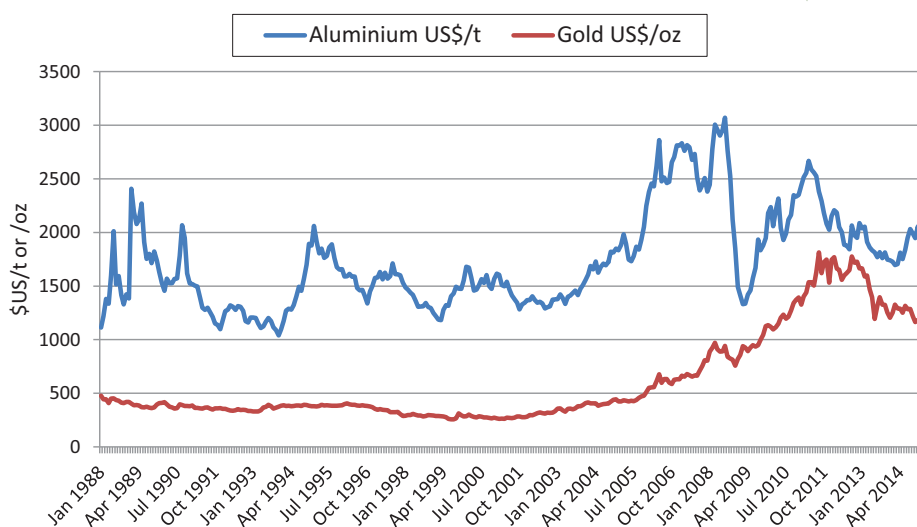


Figure 2. The price of aluminium and gold from 1988 to 2014. The data have not been corrected for CPI changes.

volatility, have performed reasonably well. Aluminium's price has increased steadily during the last 25 years. The average price per tonne has increased

from \$1100/t to \$2000/t, which is close to the increase in the CPI from 48.4 to 106.4 over the same period. In comparison, gold has done better since

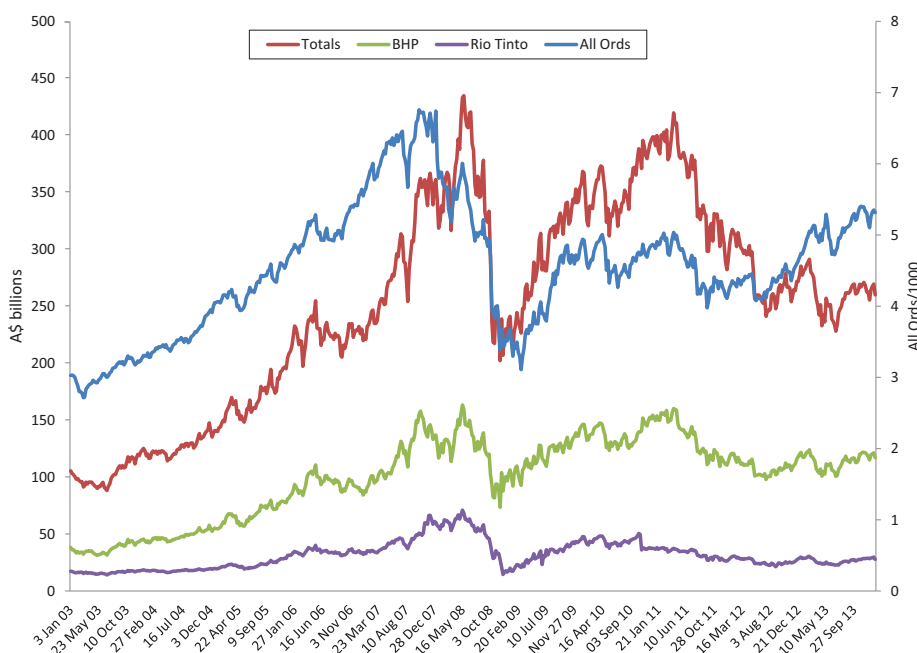


Figure 3. Market capital of resource companies listed on the ASX between 2000 and 2014. The ASX All Ordinaries index is shown together with the market capital of BHP and Rio Tinto and a total for the market capital of all resource stocks in the top 150 companies. The data have not been adjusted for CPI changes.

2006. Its price has increased from \$US450/oz to \$US1200/oz in December 2014. This is better than the CPI and putting money into your bank. So, it's good to see that some commodities are performing satisfactorily – it's just a matter of trying to pick the winners.

Resource Stocks perform badly on the Australian Stock Exchange

Falling commodity prices played havoc with the value of resource stocks on the ASX. 2014 was the year that BHP, after being on the top of the heap for seven years, slipped from number 1 to number 2 in September and to number 3 in November. The CBA and Westpac are now at the top, with the two other major banks (ANZ and NAB) breathing down their necks. It's a strange world where the most valuable companies just shuffle money around and make nothing while the market value of a company like BHP, which provides the essential resources to sustain our way of life, declines. Figure 3 shows what happened. Notice that changes in the All Ordinaries index and the total market capital correlate well until 2006. At that point the value of resource companies declines and the All Ordinaries index rises.

Petroleum exploration rises, minerals exploration falls

Figure 4 shows how the minerals and petroleum exploration investment has tracked from 1986 through to September 2014. There are two issues of note. The first is that investment in petroleum exploration rose dramatically in 2007 and continues to rise. Over the last two years approximately A\$1 billion has been spent on petroleum exploration in each quarter. The second point is that investment in mineral and petroleum exploration was similar until 2012 when investment in the petroleum sector powered ahead. Expenditure on petroleum exploration is now more than twice the level of expenditure on minerals exploration.

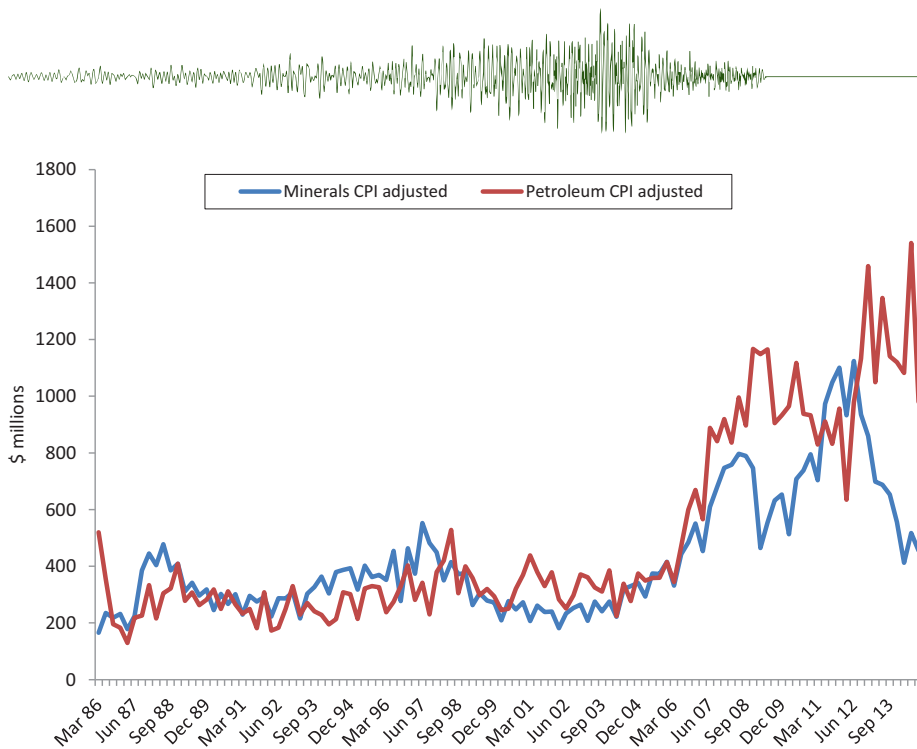


Figure 4. Quarterly investment in petroleum and mineral exploration between 1986 and September 2014. The data have been normalised to 2014 Australian dollars to allow for CPI changes.

The big question for the petroleum sector is: how will the dramatic drop in oil prices in the last quarter of 2014 affect

the take-up of new exploration leases and the general level of activity? I await the December ABS results with interest.



EMVision™ - 3D large-scale geophysical inversion

The only large-scale 3D AEM inversion with moving sensitivity domain

3D inversion of entire AEM surveys to models with millions of cells, delivered in industry standard formats
RESOLVE - DIGHEM - VTEM - AEROTEM - HELITEM - SkyTEM - TEMPEST - GEOTEM - MEGATEM - SPECTREM

The largest joint 3D gravity and magnetic inversion

3D inversion of regional surveys to models with hundreds of millions of cells, delivered in industry standard formats
Gravity - Gravity Gradiometry - Magnetics - Magnetic Gradiometry - Joint inversion with Gramian constraint

The largest joint 3D magnetotelluric and ZTEM inversion

3D inversion to models with millions of cells, delivered in industry standard formats
Principle Component - Full Tensor - Tipper - MT - AMT - ZTEM

3D CSEM inversion

3D inversion of entire surveys to models with millions of cells, delivered in industry standard formats
Frequency-domain CSEM - Time-domain CSEM - Towed Streamer EM - Downhole EM

The only 3D inversion with focusing regularization

To produce sharp images of geological structures

Contract R&D

+1 801 264 6700

www.technoimaging.com

emvision@technoimaging.com

