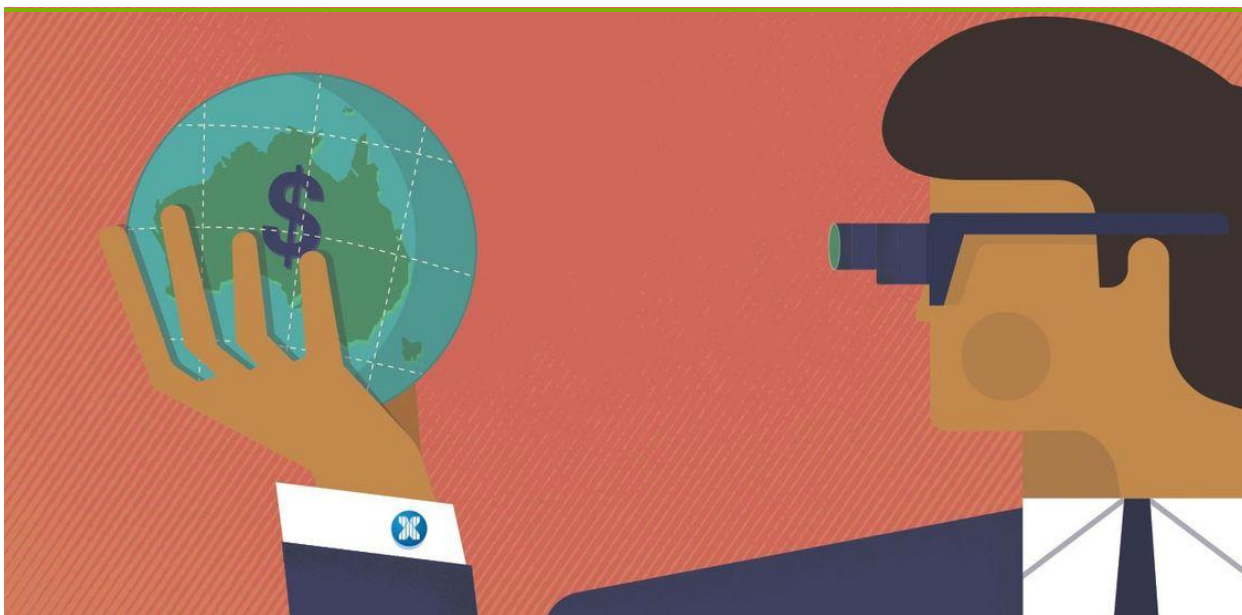


Understanding the commodities cycles

More than two years after a cyclical trough in metal prices, the current cycle has matured and may already be in the earliest stages of decline.

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Despite metal price cycles dominating the fortunes of the mining industry, it has shown little inclination to prepare for their repetition. A history of buying expensive assets near the top of a cycle or expanding production in response to peak prices are examples of an often cavalier disregard for the discrete changes in business conditions accompanying cyclical change.

Policymakers, too, put on the blinkers, often urged on by those in the mining industry. Nobel economics laureate Angus Deaton ('Commodity Prices and Growth in Africa', 1999) documented a succession of poor commodity price forecasts over 20 years, which he described as "potentially catastrophic" when an ultimately temporary windfall is misdiagnosed as permanent or as the first instalment of something even larger.

The historical lessons continue to fall on deaf ears. In April 2017, the World Bank forecast, in the face of all the evidence to the contrary, that metal prices would rise modestly every year over the subsequent 15 years without a single annual retracement.

This column, the first in a series of three, reviews the data about the frequency and duration of metal price cycles over the past six decades with a view to drawing conclusions about the current cyclical positioning of the mining industry.

Next week's column will look more closely at what drives cycles, particularly how policy, supply and demand shocks interact, and which is the most potent of these

forces.

The third column in the series will make some observations about how different phases of commodity price cycles affect equity returns.

Since the beginning of 1960, US-dollar copper prices have risen at an annualised rate of 3.9%. At the same time, the US consumer price index has risen at an annual rate of 3.7%, suggesting little change in real price levels in the modern history of markets.



Extreme price movements signal approaching price troughs and price peaks

Over the same timeframe, there have been 10 periods in which copper prices have experienced a cyclical upturn - defined as a change lying within the upper 10% of the distribution of returns. To qualify, prices will have risen by at least 55% over a single 12-month period. The average trough to peak cyclical upswing was 175%.

The track of metal prices bears out the observation of Deaton that "what commodity prices lack in trend, they make up for in variance".

Aluminium prices, with annualised increases of just 2.6%, increased at the lowest rate among the prices of the principal London-traded nonferrous metals but had seven cyclical upswings averaging 152%.

Nickel prices, which are the most volatile of the London metal prices, increased at a 3.8% rate since 1960 but the average cyclical upswing was 298%.

The peaks and troughs of the individual metals tend to bunch around the same dates. Excluding tin prices, which have been affected by periods of government supported intervention, correlations among the metals have averaged 0.79.

For purposes of drawing general conclusions about cyclical positioning, I use an index of the six main London Metal Exchange nonferrous prices - aluminium, copper, lead, nickel, tin and zinc. The index has increased at an annualised rate of 3.9% since the beginning of 1960 with a standard deviation in returns of 26%.

The median duration between one of the 10 cyclical peaks in the index and a subsequent trough has been 25 months. The longest decline - 74 months in the early 1980s - occurred when high interest rates designed to control rising inflation stifled economic growth and cut raw material demand. Without it, the arithmetic average duration has been 28 months.

The average index decline through this cyclical phase has been 39%.

The median duration of cyclical upswings between a price trough and subsequent peak has been 30 months. This average has been affected by the conspicuously long post-2001 upswing lasting 67 months and associated with the rising influence of China in metal markets. That period aside, this cyclical phase has also averaged 28 months.

During the upswing phase, the average gain has been 128% or 95% if the 2001-2007 period is excluded. Intriguingly, all but two of the cyclical peaks have occurred in the first five months of the calendar year, with half of those in January and February.

Putting aside the two outliers, the two cyclical phases of the index have been symmetric. This outcome runs contrary to a 2002 Journal of Economic Development paper analysing cycles in 36 commodities ('Booms and Slumps in World Commodity Prices'), which was notable for its finding that the duration of slumps exceeded the duration of booms by nearly a year.

Disaggregated, the data contained in the journal paper for the six metals show them being in the downswing phase 57% of the time. The index used here, analysed over the same period, contracted 54% of the time suggesting that the duration of slumps has narrowed (and upswings increased) over the past 20 years.

Another consideration in drawing conclusions about cyclical positioning is highlighted in a University of Western Australia Business School discussion paper ('Commodity Price Changes are Concentrated at the End of the Cycle', 2014), which highlighted how extreme price movements signal approaching price troughs and price peaks.

The strongest surge in the index value over the course of the most recent price upswing occurred in the third quarter of 2017.

Time alone does not define a cycle. That said, time is needed to permit markets long enough to settle around a new equilibrium after a price shock.

Potentially, different combinations of industry and macro influences may prolong or truncate the cyclical adjustment. They also need to be taken into account in coming to judgements about current cyclical positioning and whether prices have the legs to push higher.

Leaving aside for the moment those macro-oriented forces impinging on cycle duration, the key statistics summarising recent price action - a 25-month upswing of 69% with prices rising, in late 2017, at the strongest rate since late 2010 - are consistent with prices having made another cyclical peak in February 2018.

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