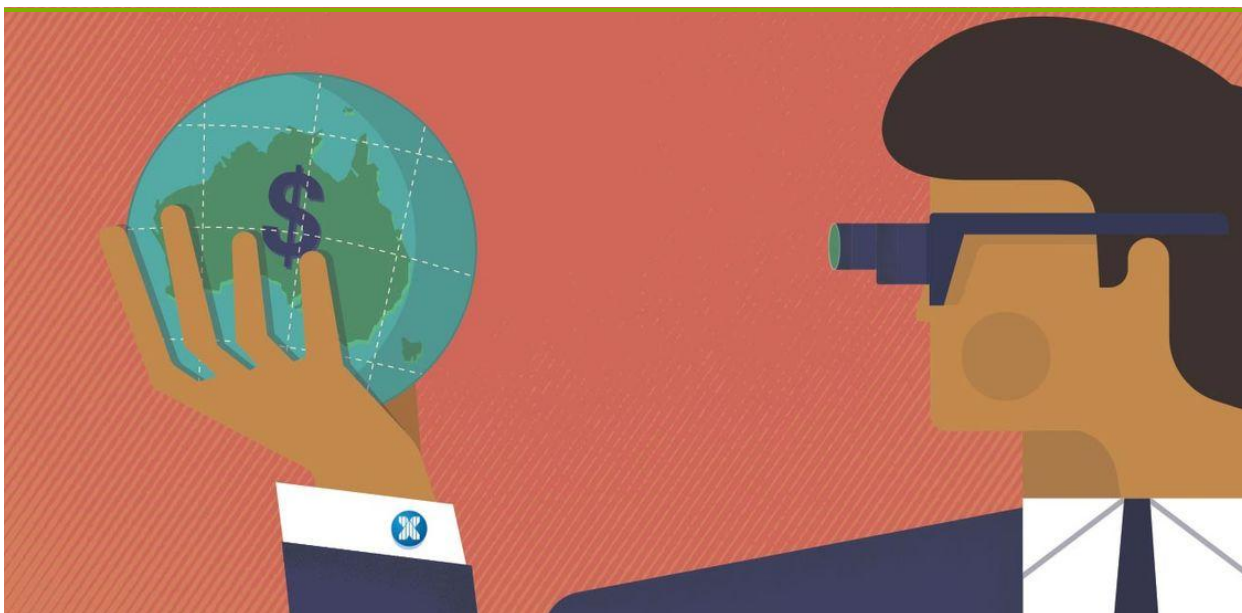


Growth beats supply as price driver

Metal price cycles are fortuitous events over which the mining industry exerts minimal control. Unanticipated changes in global demand are usually at the heart of cyclical swings in prices.

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Last week's column reviewed data about the frequency and duration of metal price cycles over the past six decades. After more than two years since the start of the price upswing which began in early 2016, the historical parallels suggest a rising risk of cycle fatigue.

This column, the second in a series of three, discusses which of the forces driving cycles has been the most potent.

The third column in the series will make some observations about how different phases of commodity price cycles affect equity returns, sometimes in ways contrary to conventional wisdom about the nature of the connection.

In their modelling, analysts typically treat metal price changes as a function of changes in market balances. Falling inventories, when metal demand exceeds short-term production, is usually a precursor to higher prices. Rising inventories, in general, herald price weakness.

Importantly, the relationship is not linear. Past a point, falling inventories result in disproportionately large price rises as supply shortages loom and markets inject a sometimes rapidly rising risk premium into prices.

At the other end of the cycle, as inventories build, industry cost structures cushion price falls to limit the downside. After an unusually large inventory accumulation, the price responsiveness to even a highly favourable inventory change may be muted

until perceived risks about the adequacy of supply force a price adjustment.

The past 12 months could be characterised as being as good as it gets

The role of exchange rates in this US dollar-denominated price setting model is often erroneously neglected.



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Over the past 45 years, a 1% fall in the US dollar trade-weighted index of major trading partner currencies has coincided with an average rise of 3% in nonferrous metal prices. In 2011-16, a 32% rise in the currency accompanied the 53% fall in the metal price

index.

Between January 2016 and February 2018, the US dollar fell against the currency basket by 10% while daily traded non ferrous metal prices rose 69%, in an above average response.

Despite its decline over the past two years, the US dollar index remains cyclically elevated. The 20% difference between its current level and its trend value dating from the early 1970s suggests longer-term potential for metal price gains, or lesser falls than might otherwise occur.

The strongest cycles are likely to occur when a weakening US dollar coincides with tightening market balances. Such a combination would normally require synchronised global growth accompanied by capital flows toward less developed economies and, more generally, higher risk non-US dollar denominated investments.

Largely out of convenience, analysts usually place the same importance on a supply-side movement as on the equivalent movement in demand when assessing the significance of short-term market balances. In practice, the price impacts have differed greatly.

Dallas Federal Reserve Bank economist Martin Stuermer ('Demand Shocks Fuel Commodity Price Booms and Busts' Economic Letter, December 2017) has described changes in market balances affecting prices as the product of three potential "shocks": an aggregate demand shock, a commodity supply shock and a demand shock specific to the commodity. The last might also include demand for inventory due to changes in short-run expectations.

Stuermer's 2017 commentary is based on an earlier paper ('What Drives Commodity Price Booms and Busts?', Working Paper 1614) written with David Jacks, which used a new dataset for 12 commodities covering 1870-2013. Among the commodities studied over this lengthy historical period were copper, tin, lead and zinc.

Using a vector autoregressive model, a common econometric technique, to decompose changes in commodity prices into responses to different types of shocks, the researchers found that aggregate demand shocks explained 38% of the variation in real prices for the four metals. Market specific demand shocks explained another 42%.

Commodity supply shocks explained the remaining 20% over the 150 years examined. The study also found that supply shocks had lost importance over time. In 1949-2013, demand shocks accounted for 84% of the price variation displayed by the four metals studied.

On average, Stuermer and Martin found, the effects of aggregate demand shocks lingered for up to 10 years. They described the effects of commodity supply shocks, with the exception of those affecting tin because of periods of government intervention, as being insignificant for the most part.

These analytical conclusions imply that production cuts have a short-lived impact on prices. The analysis

also points to China's economic expansion having had a prolonged but now diminished influence on prices.

The most recent aggregate demand shock overlaying the lingering China effect occurred through 2017 when global economic growth accelerated by more than at any time since 2010, with an immediately positive effect on prices.

Recent generally upbeat assessments of the outlook for raw material demand have relied heavily on what happened in late 2017 rather than on what lies ahead. Aggregate demand momentum is now widely expected to move in the opposite direction.

The International Monetary Fund (IMF) World Economic Outlook released on April 17 shows key regions of the world - the US, Europe, emerging Asia - with downward trending growth trajectories.

The IMF analysis is similar to that of the World Bank released in January. Neither foresees any difference between average growth outcomes in the next six years and those achieved in the past six years. The past 12 months could be characterised as being as good as it gets.

Unusually low productivity growth in most advanced economies, reflecting low business investment spending and governments with little enthusiasm for reform agendas, are constraining how quickly global output can expand. Chinese economic restructuring is pushing growth in aggregate demand in the same direction.

A loss of aggregate growth momentum in the absence of countervailing policies is an ominous sign for a metal mining industry pushing out higher volumes in the face of an already aging cycle.

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