This looks like the start of a commodity super-cycle

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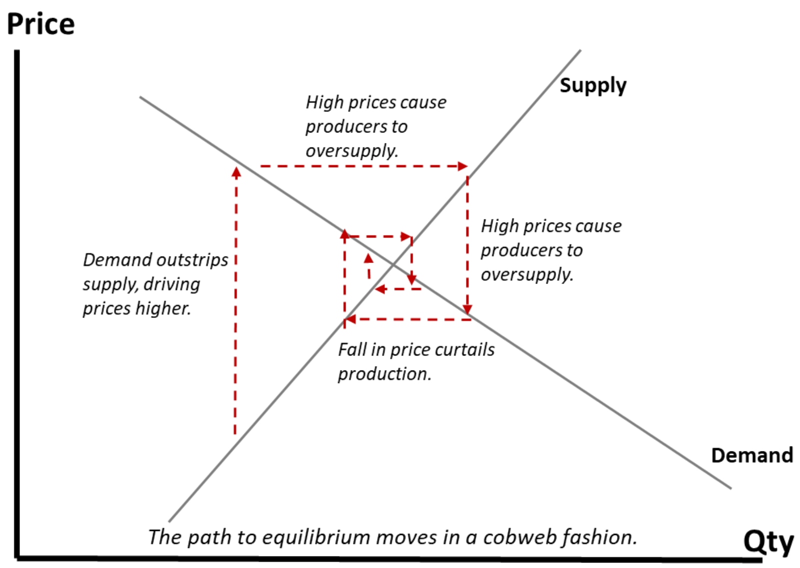
- **We attempt to create a price cycle for commodities and observe prices may just be beginning its upswing.**
- **Each cycle lasts about 5-7 years; in the current cycle, prices may reach its peak in the next 1-2 years.**
- **We identify several reasons for commodities to sustain its uptrend, including China's restocking, global infrastructure stimulus and reflation.**

Why do commodities move in super-cycles?

Perhaps the best theory to explain the cyclical nature of commodities is the *Cobweb Theorem.* In this theory, markets eventually head towards price equilibrium, but the route to steady state is not immediate. When demand picks up, producers require lead time to increase their supply – building a new mine, drilling a new oil rig, or increasing acreage of a crop.

This temporary dislocation in equilibrium drives prices higher, creating a feedback loop to buyers in stockpiling inventories for fear of further rising prices. Eventually, this results in overzealous producers supplying more than demand, driving down prices. This to-and-fro dynamic continues in a reduced magnitude until equilibrium is reached.

In other words, the market's attempt to move to equilibrium is not always immediate.

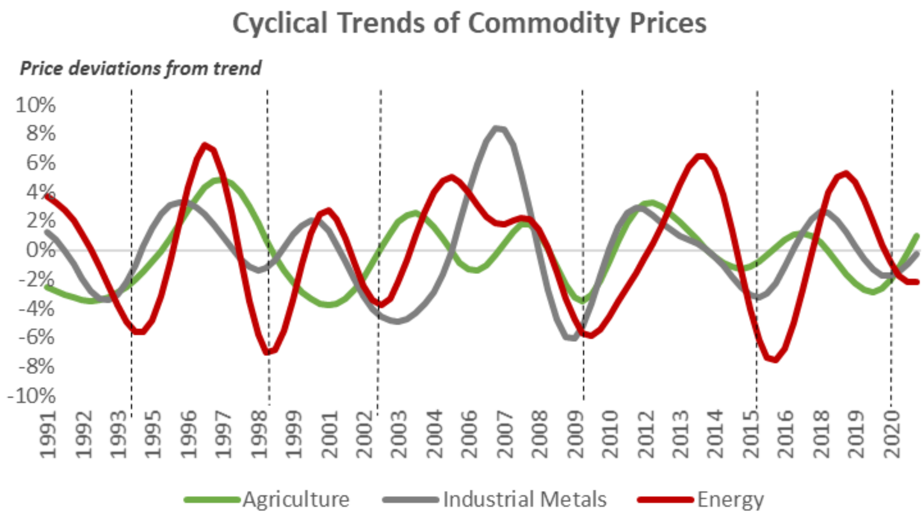


Source: OCBC Bank

Plotting the commodity cycle

At this point, we are now what looks to be the cusp of a major commodity price upcycle. Using aggregate price indices of cyclical commodities – energy, base metals and agriculture – we attempt to create the price-cycle of these asset classes. This is done by first calculating the current price levels from its trend via a Hendrick-Prescott filter (HP filter). We then use kernel density estimation to smoothen the trend to identify broad cycles. The statistical methodology may be found in Annex I.

Using the above, we obtained the below graph.



Source: Bloomberg, OCBC estimates

Here is what we can infer from the cyclicality of commodities based on the graph above:

1) In most instances, the three broad sub-commodity classes – agriculture, industrial metals and energy – tend to swing in tandem.
2) The three sub-commodity classes tend to peak within 1-2 years of each other.
3) Each cycle (defined as a trough to trough movement) typically lasts 5-7 years.

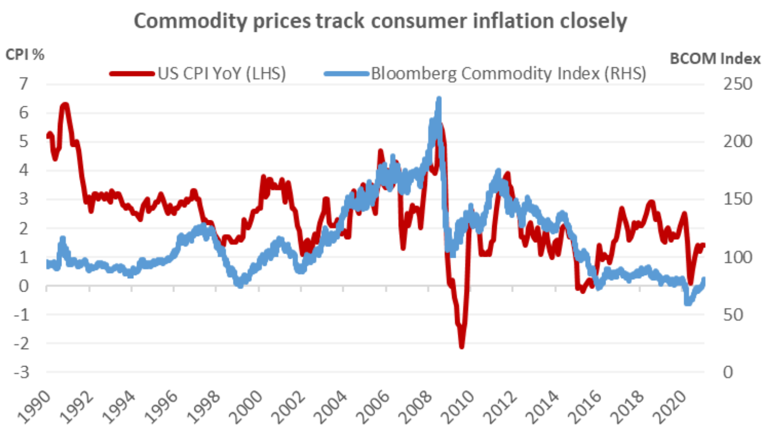
   It can be argued that what we plotted really is a medium-term cycle rather than a long-term cycle, the latter which normally lasts decades. Nonetheless, this should not discount the notion that we might see fresh record high prices for many commodities in the coming 1-2 years. This, on its own, is a super-cycle in its own right.

Supporting factors for commodities to continue rallying.

1) **Policymakers are reluctant to cease support even in a recovering global economy.**
   Authorities have been quick to act with unprecedented fiscal and monetary stimulus in the wake of the 2020 pandemic, but are likely to sit on their hands even as economic recovery is underway. Consumers find themselves increasingly awashed with liquidity and have suffered a year of pent-up demand due to Covid restrictions. We are expecting a sharp, explosive rebound in demand in 2021 and 2022.

2) **Under-investment in 2020 leading to supply issues.**
   Companies largely focused on survival in 2020, with most cash flows directed to operational expenses rather than CAPEX. S&P Global estimates that in 2020, within the mining industry, total CAPEX across 15 metals to have fallen 6.4% yoy to 2018 levels. Frac spread count has yet to recover while planted acreage last year in the US was unusually low. The rebuilding of supply chains requires time and current diminished stockpiles will be unable to meet the demands of the pent-up demand that we are expecting to come. It will also be naïve to assume that supply will recover seamlessly this year.

3) **Inflation hedge instrument.**
   There are few instruments as suitable as commodities to capture the current reflation trade theme, with TIPS being the other. Even with the vaccine roll-outs, the headwinds on commodities are expected to be minimal, if not a boost. 10-year Treasury breakeven yields are already trading above 2% as testament to rising inflation expectations.



Source: Bloomberg, OCBC Bank

4) **China expected to continue buying.**
There is little to suggest China will put a stop on its stimulus in the coming year. Its voracious appetite for building materials is set to continue, as seen in the trade balance numbers in December. Even if the growth in infrastructure project approval has peaked in 2020, the long tail of projects are expected to last deep into 2021 and possibly 2022, supporting Chinese demand for construction related materials. Aside, a recovering hog count in China is propelling an acceleration of soybean inventory rebuilding after two years of destocking due to the US-China trade war. The restocking is also in-line with its five-year plan for building up strategic commodity reserves, particularly food supplies.

5) **Commodities still yet to clock fresh record highs post pandemic.**
Both US equities and Treasury bonds have hit record highs in 2020, but with the exception of gold and iron ore, few commodities have come close to testing their record highs so far. With equity valuations already at unprecedented levels and record-low bond yields showing limited downside, the cyclical rotation of funds may flow into commodities next. IGs now return an average of 1.45%. With inflation expectations already above 2%, there is little upside in increasing exposure to an instrument that is returning negative real yields. Commodities remain a viable hedge and is an asset still yet to fully capture the upside movements that equities and bonds already have in 2020.

6) **Global 'green wave' complete with Biden's appointment.**
With a democrat back at the helm in the White House, a global 'green wave' is set to, somewhat ironically, increase demand for raw commodities in the short term. While ultimately negative for oil and other base metals in the long run, for now many of these green policies require a large initial outlay of capital to build new

infrastructure for the implementation of these projects. This is true whether for Biden's ambitious zero-carbon emission plan by 2050, Europe's Green Deal of China's latest five-year plan to create a domestic green movement.

Trade recommendations

1) **Cross-asset:** To best capture the overall expected upswing in commodities, in our opinion, is via the use of broad-commodity ETFs already available in the market. These funds are well-diversified in their composition of sub-commodity asset classes and present to the average investor a less complex method of investing in commodities other than the futures market.

2) **Copper our top pick.** We are most bullish on copper in this commodity cycle. Not only is copper a proxy for bullish Chinese industrial activity, the demand for EV adoption and electrical grid infrastructure would be major supportive factors for the base metal. We expect copper to eventually break above its record high of $10,500/mt in the current cycle, which may happen either this year or next.

3) **Oil unlikely to return to $100, but will likely still trend higher.** High inventory levels mean energy may start its upswing later than metals. However, as the proceedings of early January has shown, Saudi Arabia has displayed a detachment from OPEC+ cooperation and can choose to go alone to prop up prices if the kingdom so wishes to. Biden's appointment should also slow the growth of shale supply.

4) **Limited upside for agriculture at this stage.** Agriculture commodities may be the first to peak, which may happen within the coming year and before base metals do. The entire agriculture complex will likely continue to be supported by China's needs for restocking, particularly in strategically important reserves like soybeans, as well as increased weather volatility. Planting intentions in March should show a much improved interest in increasing acreage this year, but the long lead time from now till harvest means prices are expected to rise higher on inter-crop supply tightness.

5) **Gold to set record highs once more.** As has been well telegraphed by the US Federal Reserve, there is little urgency in raising interest rates or even halting QE purchases for now. Biden's outsized fiscal stimulus should continue to stoke inflationary fears. The precious metal may have a rough start

to the year but as an increasing proportion of the world gets inoculated, inflationary fears will likely begin to surface. That will probably be the turning point for gold, which we expect it to occur by late 1H 2021.

Conclusion: we are on the cusp on a major commodity price upswing.

2021 looks to be the start of a major commodity price upswing – a move that is expected to last possibly through 2021 and 2022. The inability of supply to quickly regulate to what we perceive as incoming pent-up demand for raw goods and materials could send prices of many commodity assets above their record highs in this current cycle. Factors that support the rise in prices include ample liquidity, prior under-investment, China's continued buying, attractive valuations relative to other assers, rising inflation expectations and the global green wave of stimulus. We see copper outperforming. Oil is likely to continue trending higher, while agriculture will be supported by China's restocking of key strategic food reserves. Commodity ETFs represent the best way to capture this price upswing due to its diversification of commodities in its portfolio.

Annex I

Data: We use the sub-indices of Bloomberg Energy, Industrial Metals and Agriculture to reflect the price levels of these three sub-asset classes respectively. We then take the average price levels of each year. Data has varying lengths for each sub-index, but we begin our cycle from 1990 as the industrial metals sub-index data begins from that year.

Methodology: On HP Filter, we use a frequency of 6.25 to capture annual effects of trend deviation. We also allowed a true drift to reflect the inflationary effects on commodities. The output is measured as % deviation from its long-term trend. On kernel density, we use a bandwidth of 2 for better smoothing effects and to better reflect the medium-term cyclical effects of prices. A smaller bandwidth was insufficient to smoothen the curve, while a bigger bandwidth would have reflected a longer cycle, which was not the purpose of this analysis.

Software: All output on HP Filter and kernel smoothing performed on R Studio.

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