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Shocks and ores

Short-term gyrations in commodity prices may do more damage than long-run trends

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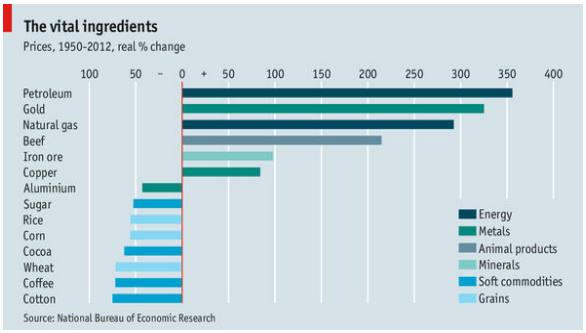
HUMANITY harbours a lingering fear that Thomas Malthus might just have been right. The dour reverend first warned in 1798 that population growth would lead to soaring resource prices, leaving workers destitute. Two centuries of growth later, the worry that the world's natural resources are finite remains.

Paul Ehrlich, a biologist of Malthusian disposition, argued in "The Population Bomb", a 1968 book, that rising populations would inevitably exhaust those resources, sending prices soaring and condemning people to hunger. That pitted him against economists who argued that rising prices should mitigate the squeeze by calling forth more supply. In a famous 1980 wager Julian Simon, an economist, bet Mr Ehrlich that commodity prices would be lower a decade later. He won, as the effects of rising prices in the 1970s showed up in energy conservation and more oil exploration. But when exuberance returned to commodity markets in the 2000s, so did the old arguments. Jeremy Grantham, a money manager, wrote in 2011 that "price pressure and shortages of resources will be a permanent feature of our lives."

In a new paper (https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CDIQFjAA&url=http%3A%2F%2Fwww.sfu.ca%2F~djacks%2Fpapers%2Fworkingpapers%2Fw18874%2520(typology).pdf&ei=UXGwUZOQGsz20gXKtIDgBw&usg=AFQjCNEUL8ENVokgnvrarxOwVWZmJ6B3Bw&sig2=ni-VGBDNYif74oiwt85rPg&bvm=bv.47534661,d.d2k) David Jacks, an economist at Simon Fraser University, assembles figures on inflation-adjusted prices for 30 commodities over 160 years. It turns out Mr Ehrlich was not entirely off the mark. Over the very long run commodity prices display a marked upward trend, having risen by 192% since 1950, and by 252% since 1900. But an upward trend has clearly not translated into global famine, and not all commodities are alike.

Long-run rises have been most pronounced for commodities that are "in the ground", like minerals and natural gas. Energy commodities especially have boomed, soaring by roughly 300% since 1950. Prices of precious metals have also risen, as have industrial ingredients like iron ore. In contrast, prices for resources that can be grown have trended downwards (see chart). The inflation-adjusted prices of rice, corn and wheat are lower now than they were in 1950. Although the global population

is 2.8 times above its 1950 level, world grain production is 3.6 times higher.



These long-run trends can be easy to miss, because medium-term wiggles known as "supercycles" can push prices off trend for a generation. Mr Jacks's data suggest the typical supercycle, defined as a sustained move in the price of a commodity of at least 20% away from trend, lasts for no more than 40 years from beginning to end. Such episodes tend to cluster in periods of rapid industrialisation and urbanisation. Economies in the midst of an industrial boom—like 1890s America, or China in the 2000s—are hungry for basic commodities such as oil, iron ore and beef. Supply is slower to respond. New oil wells or iron-ore mines cannot be developed overnight. Prices surge until supply catches up.

Mr Jacks identifies the start of past clusters of supercycles in the 1890s, 1930s and 1960s, with prices rising above trend to peaks in the 1910s, 1950s and 1970s before subsequently easing off. Half of the commodities in his sample appear to have begun new supercycles between 1994 and 1999, driven by demand in fast-growing emerging markets. These energy-hungry economies started testing available supply for petroleum and natural gas in the late 1990s. Industrial materials like steel, lead and nickel also boomed, alongside precious metals. Rice, rubber and tea are among the "grown" commodities whose prices surged.

But supercycles have historically peaked within 20 years, according to Mr Jacks's analysis. Higher prices lead to more drilling, mining and farming, and to less demand as firms and households learn to be more efficient. Prices then return to trend. The soaring prices that vexed Mr Grantham in 2011 have fallen back since then, and will continue to do so as China's economy evolves away from an investment-led growth model that gobbles up steel and energy. Mr Jacks reckons the natural-gas supercycle has also reached its top: thanks to shale gas, total natural-gas output in America has risen by 34% since 2005.

Going against the grain

It is in the nature of pessimists to find fresh reasons to fret. Even if firms continue to turn up new sources of commodities "in the ground", for example, new fossil fuels will only add to the amount of carbon in the atmosphere, increasing global warming. As for agriculture, steady increases in grain production have kept prices down. But Mr Grantham points out that higher production is mostly a result of rising yields, which are in turn supported by ever more intensive application of fertiliser. That, he argues, cannot continue. Though humans could fertilise crops through clever use of their own waste, they instead rely on phosphorus from a diminishing supply of phosphate-containing rocks.

In response, optimists point to the power of price signals. In agriculture the long-run trend of falling

grain prices has created little reason to use grain, land or waste more efficiently. A shift towards dearer grains would be just the thing to improve behaviour. As for fossil fuels, a global price on carbon would create the right market incentives to limit emissions.

Indeed, the most damaging commodity-price movements may well be short-run booms and busts, which come and go more rapidly than supercycles but can generate far bigger moves in prices. Such spasms are common: over the whole of his dataset, Mr Jacks finds 140 booms and 135 busts (a gap explained by several ongoing booms, in the likes of corn, copper and gold). Most short-term booms produce spikes of at least 50-100% away from trend price growth. That can mean a serious pinch on rich-country wallets—some blame rocketing oil prices in 2007-08 for the start of the global recession—or political unrest in emerging markets. Threats of Malthusian collapse may grab attention but short-run gyrations end up being the bigger headache.

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Correction: A previous version of this chart mislabelled the dates. This was corrected on June 7th. Sorry.

From the print edition: Finance and economics