

# More Super, Less Cycle

An update on global commodities



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- ▶ **Commodity prices are 115% above their 1990s average, despite falling from their 2011 peaks**
- ▶ **With emerging economies at the commodity-intensive stage of development, prices should stay high**
- ▶ **Higher-grade commodities – zinc, nickel, gas, meat, edible oils, dairy and sugar – should be in strongest demand**

Despite slower growth in emerging economies, global commodity prices remain structurally high: while they have fallen by 18% since 2011, they are still 115% above their 1990s average in inflation-adjusted terms. For some time now we have argued that commodity prices are likely to stay structurally high. This report discusses why this is still the case, answers investors' questions, with help from HSBC's equity analysts, and looks at price trends for 50 commodities.

On the demand side, we see continued strength because emerging economies are dominating global growth and they are at the commodity-intensive stage of their development. On the supply side, production costs for a range of commodities, particularly energy and metals, are higher than they were in the 1990s.

As emerging economies continue to develop, we also expect consumption patterns to change. Countries tend to consume more higher-grade commodities such as zinc, nickel, aluminium, meat, edible oils, dairy and sugar, as per capita GDP rises and middle class incomes increase. China is expected to continue to be a key source of commodity demand, as urbanisation continues and its rising middle class drives strong demand for higher-quality foods. The recent change of government in India is expected to result in greater demand for energy and metals, as better infrastructure is a priority for the Modi administration.

On the supply side, for most metals we see little risk of significant oversupply, despite the recent mining investment boom. The rise in global shale gas production should help to keep energy prices from rising, although we see some upside risk to oil prices. We expect LatAm and Australia to benefit from rising demand for 'finer foods', such as meat.

# More super, less cycle

- ▶ Although global commodity prices are 18% lower than their 2011 peak, they are still 115% higher than their 1990s average
- ▶ We expect them to remain high as global growth is expected to remain more commodity-intensive than it was in the 1990s
- ▶ Although metals prices have fallen, partly due to rising supply, they remain high: we expect energy prices to remain high and see upside potential to higher-grade agricultural and metals prices

## Prices are still high

Slower growth in emerging economies has led to concerns that commodity prices could fall. But, so far, these fears have proved largely unwarranted. Despite slower growth in a range of emerging economies over the past year, commodity prices remain structurally high. Indeed, the IMF commodity price index is broadly flat over the past year in nominal terms. A longer term comparison shows that commodity prices are still 115% higher than their 1990s average in inflation-adjusted terms (Chart 1.1).

For some time now, we have argued that commodity prices would remain structurally high. Our key argument has been that the ongoing structural shift in global growth from West to East means that the main drivers of global growth are now countries at the commodity-intensive stage of their development, which is expected to continue to support strong demand for commodities (see Bloxham, P. et al (2012) *Commodities and the global economy: Are current high prices the new normal?*, 8 August).

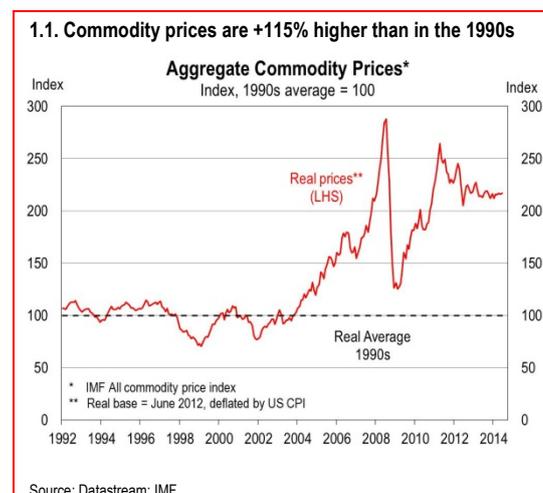
Although there has been significant investment in new capacity to produce energy and metals over the past decade, which has seen a rise in supply, this has only been sufficient to meet demand and, so far, has not delivered enough 'oversupply' to see aggregate commodity prices fall significantly.

In short, we expect the so-called commodity prices 'super-cycle' to be more 'super' and less 'cycle'.

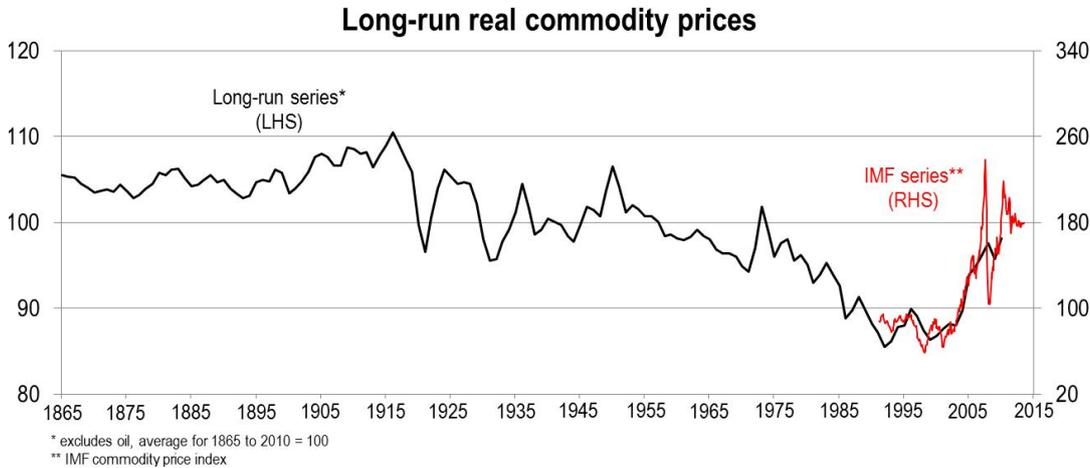
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1.2. Commodity prices are well above the 1990s levels and are around their long run average levels in inflation-adjusted terms



## Our view: global growth is more 'commodity-intensive'

A key part of our view relies on a long run perspective. Historical comparisons reveal that commodity prices are not exceptionally high right now, but rather, they were historically low in the 1980s and 1990s. Indeed, a long run comparison suggests that commodity prices are currently around their 150-year average in inflation-adjusted terms (Chart 1.2).

Our view is that the low level of commodity prices in the 1980s and 1990s was due to the composition of global growth at the time. Back then, global growth was dominated by Western economies and their services sectors. Global growth was being driven by activity in industries such as information technology and finance, rather than the building of infrastructure, which is far more 'commodity-intensive'.

This story changed in the first decade of the 21st century. Emerging economies became the key drivers of global growth and their main need was better infrastructure and housing. A surge in urbanisation and infrastructure development, particularly in China, saw a sharp rise in demand for commodities, particularly metals and energy.

Initially, this ramp-up in commodity demand saw a sharp rise in commodity prices, as strong demand was met by only weak supply. At their 2008 peak, real commodity prices were +188% higher than their 1990s average level. The strongest gains were in energy and metals prices, where the initial supply response was weakest, due to the long lead time required to build new capacity. Many large projects can take 7-10 years from exploration to completion. For some commodities, such as oil, supply is constrained by institutional features, such as OPEC. In terms of prices, the outstanding performers were oil, iron ore, nickel and uranium, which all saw prices peak at levels over 700% higher than their 1990s averages (for more details on individual commodities see the final chapter below).

Because of the long period of low and declining commodity prices through the 1980s and 1990s, resources companies had been reluctant to invest in new mines and extractive capacity. Even with the initial sharp rises in key commodity prices in 2003 and 2004, it took some time before resources sector investment plans were made. The 2008-09 global financial crisis then further delayed the supply response. However, the supply response has begun to arrive over the past couple of years,

which has seen commodity prices stabilise, as supply is now keeping up with growth in demand. But despite this rise in supply, commodity prices remain high, as there are few commodities that have seen an excessive supply response.

Looking ahead, we continue to expect that commodity demand will be strong, as we see emerging economies remaining the largest contributors to global growth, and we expect their path to development to remain 'commodity-intensive'. Estimates from across HSBC's global research team suggest that overall commodity supply is unlikely to substantially exceed demand, supporting our view that commodity prices are likely to remain structurally high.

Before we provide more empirical support for our view, which we do below, we briefly discuss competing theories about the commodity prices 'super-cycle'.

## Competing theories

Perhaps unsurprisingly, the downward trend in commodity prices through most of 20th century saw the development of many theories to explain it. The most commonly tested proposition is the Prebisch-Singer hypothesis, which suggests that in the long term, commodity prices will fall relative to the prices of manufactures. This was clearly the case in the period before 1950, when this hypothesis was proposed, as Chart 1.2 shows (Prebisch (1950) and Singer (1950)).

The key explanation given for this empirical trend by these theorists was that technical progress meant that less material would be required to produce output, weakening demand for commodities relative to manufactures. Other related theories suggested that technology also affected the cost of production of commodities, thereby making it cheaper to produce commodities. Still others suggested that as the world got richer, the demand for commodities

would fall, as commodity-intensive goods became a smaller share of global gross value-added.

With the benefit of a few more years of data and a sharp increase in commodity prices over the past decade, the key challenge to the Prebisch-Singer hypothesis is empirical. Although commodity prices fell relative to other prices through most of the 20th century, the first decade of the 21st century significantly bucked this trend. This has led many to re-test the Prebisch-Singer hypothesis against the data. Recent empirical work by researchers at the IMF finds only weak empirical support for Prebisch-Singer when they look at long run data for a basket of 25 commodities, using time series data reaching back as far as 1650 in some cases (Arezki et al 2013).

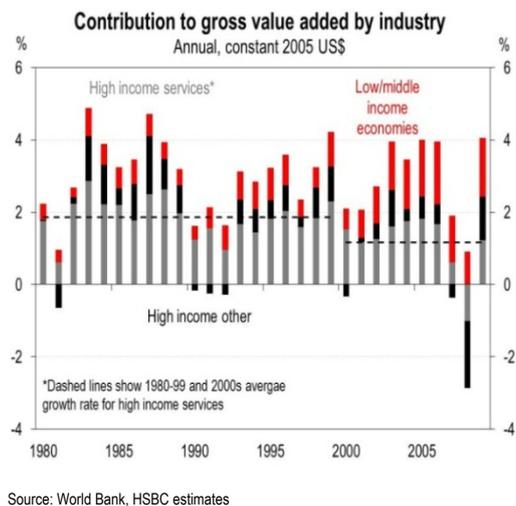
Of course, it is possible that the rise in commodity prices over the past decade is a temporary break in an otherwise downward trend and that once all of the new capacity currently being built in the resources sector comes on stream, commodity prices could once again trend lower relative to other goods and services prices. However, this is not our view. In the next section, we set out why we expect commodity prices to stay structurally high.

## A 'commodity-intensive' stage of development

In our view, the 1980s and 1990s were quite different to earlier, as well as more recent, periods, in terms of the commodity intensity of global growth. Global growth in the 1980s and 1990s had an unusually low 'commodity intensity'.

One way to assess this is to look at the industry composition of global GDP. According to our estimates, the services sectors in high-income economies accounted for more than 60% of global growth in the 1980s and 1990s; however, by the 2000s, this had fallen to 45% of global growth, as low- and middle-income economies became larger contributors to global growth (Chart 1.3).

### 1.3. High-income country services dominated the 1990s

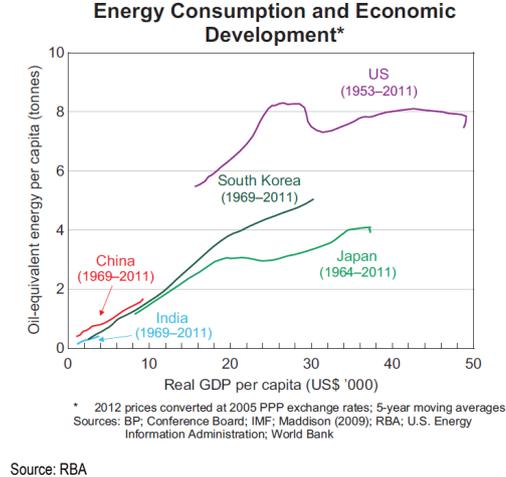


Historical assessment shows that demand for hard commodities and energy tends to be low in poor countries. But, as an economy moves from the agricultural/subsistence stage to the industrialisation/urbanisation stage of development, commodity demand takes off. This reflects a growing need for better quality housing and infrastructure and greater energy usage. In previous work, we have estimated that this take-off point is typically when a country's per capita GDP is around USD3,000.

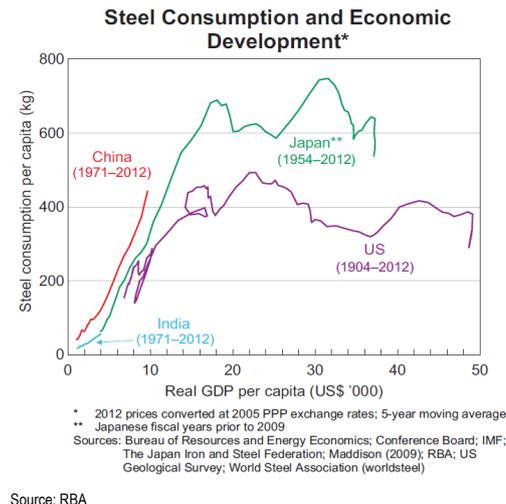
For many commodities, this demand continues to rise until countries get to per capita GDP of around USD20,000. At that level of development, countries have typically built much of their required infrastructure and much of their urbanisation has already occurred.

Clear examples of this phenomenon can be seen when looking at historical demand for steel and energy across a range of major economies (Chart 1.4 and 1.5). These charts show that if Chinese and Indian demand for energy follows the patterns of development set by the US, Japan or Korea, there is a substantial rise in demand for energy yet to come from these countries. Likewise, India's demand for steel is likely to rise significantly from here, although China's demand may or may not have much further to run.

### 1.4. There is a 'commodity intensive' stage of development

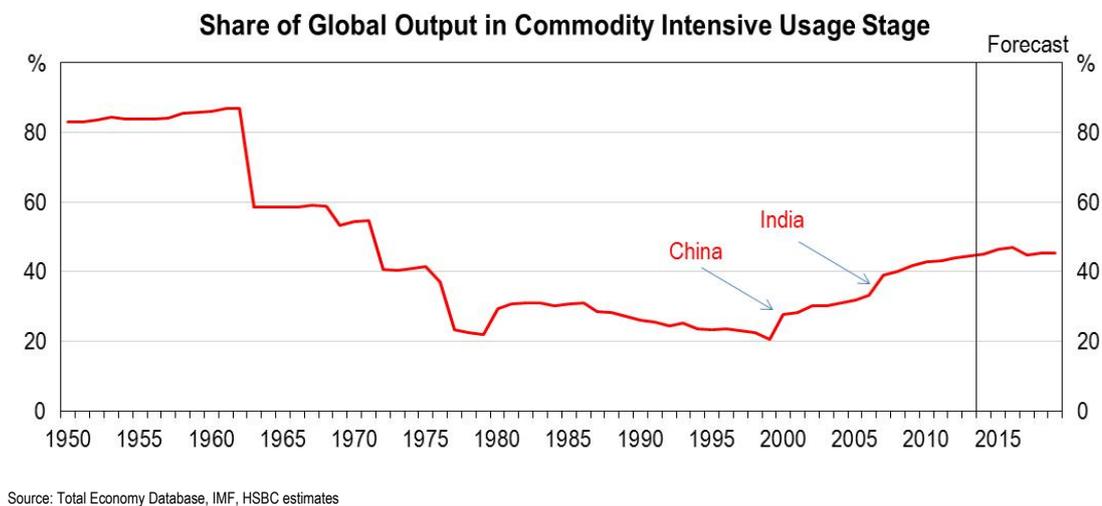


### 1.5. China and India are climbing the demand curves



The number of countries that are now at the 'commodity-intensive' stage of development – with per capita GDP between USD3,000 and USD20,000 – has also increased substantially over the past decade, which helps to explain why commodity prices have risen (Chart 1.6). In the 1990s, around 20-25% of global output was accounted for by countries at the 'commodity-intensive' stage of development. This has increased to over 40% of global output in the 2000s and is trending higher.

1.6. The share of global output accounted for by countries at the 'commodity-intensive' stage is expected to keep rising



Perhaps even more importantly, *growth* in global GDP is now dominated by countries at the 'commodity-intensive' stage of development (Chart 1.7). Indeed, the proportion of global growth accounted for by countries at the 'commodity-intensive' stage is now similar to the proportion in the 1960s and 1970s, when commodity prices were at similar levels to now.

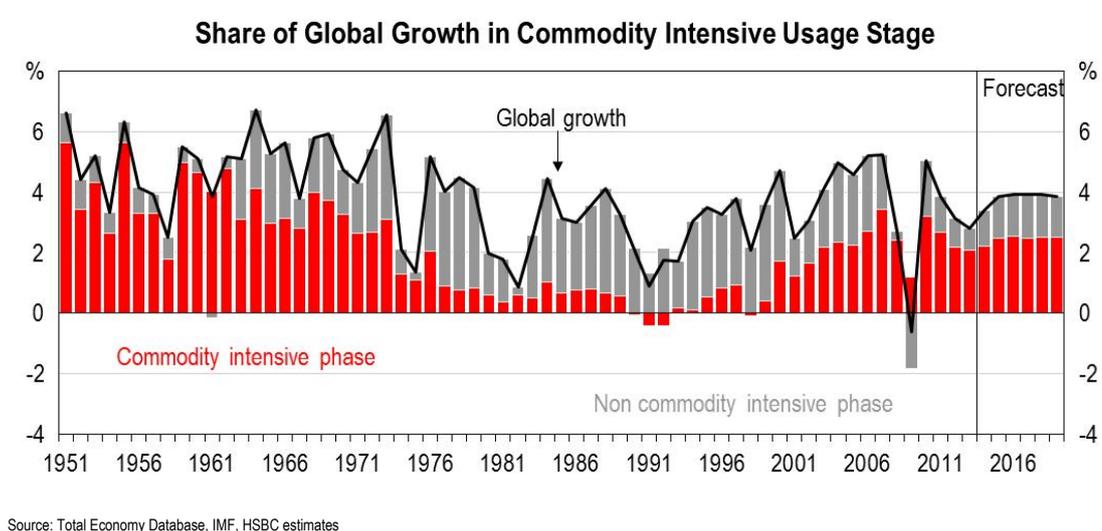
In short, the small red bars in Chart 1.7 may help to explain why commodity prices were so low in the 1980s and 1990s: global growth is now more

'commodity-intensive' than it was in the 1980s and 1990s, and thus the red bars are larger.

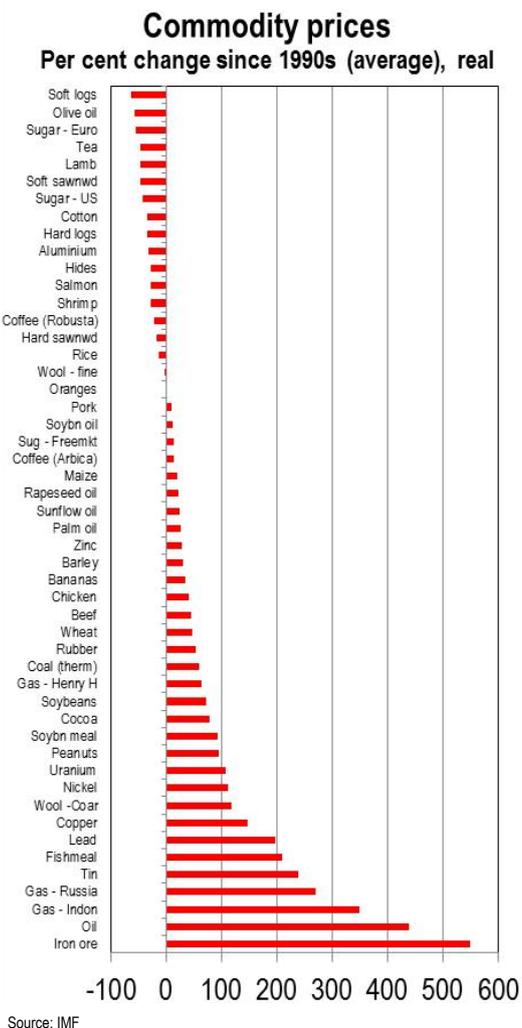
### Most commodity prices are higher than in the 1990s

Evidence for a structural rise in commodity prices is not just apparent in aggregate prices, but also across the distribution of different commodities. Two-thirds of commodities have seen price gains in excess of inflation since the 1990s, while one-quarter of commodities have more than doubled in price in inflation-adjusted terms (Chart 1.8).

1.7. Global growth is already dominated by countries at the 'commodity-intensive' stage of development



1.8. Most commodity prices have risen since the 1990s



## Different commodities at different stages

What is also clear from Chart 1.8 is that there are varying trends in prices across different commodities. Here our measures of commodity demand at different stages of a country's development can also help to explain differing trends on commodity prices and may help as a guide to which commodities are likely to be in high demand in the future.

An examination of historical patterns of reveals some stylised facts about commodity demand. At early stages of development, when incomes begin to rise in subsistence economies, demand is

generally highest for grains but low for other types of commodities. Demand for grains is highest in these economies because grains are the cheapest source of calories. At the same time, these least developed economies might be expected to have low demand for metals and energy as their populations are mostly in rural areas and have limited infrastructure.

When an economy emerges, its demands change. As countries develop their consumption of grains declines, as they substitute towards better quality foods, such as meat, dairy, sugar and edible oils. At the same time, as countries urbanise and industrialise more infrastructure and housing is built, which increases demand for hard commodities and energy. As we noted above, we estimate that for many countries this take-off point has occurred when they have attained per capita GDP of around USD3,000.

When countries become developed, these patterns change again. Demand for finer foods remains strong, while cereals demand weakens even further. Demand for metals appears to peak when countries get to upper middle income levels, as once they have built much of the required infrastructure and housing, their demand for metals slows. Demand for energy continues to trend higher until high levels of per capita GDP (Table 1.9 summarises these stylised trends).

In previous work, we have demonstrated these historical patterns empirically (see Bloxham, P. et al (2014) *Global agricultural commodities: Demand is shifting to the finer foods*, 18 March).

Because of these different patterns, so far, agricultural prices have not played a significant role in the 'more super, less cycle' story. In contrast to metals and energy prices, food prices peaked at only 35% above their 1990s average and now they sit only 11% above the 1990s levels in inflation-adjusted terms (Chart 1.10). Agricultural raw

1.9. Types of commodities in demand may change as countries develop

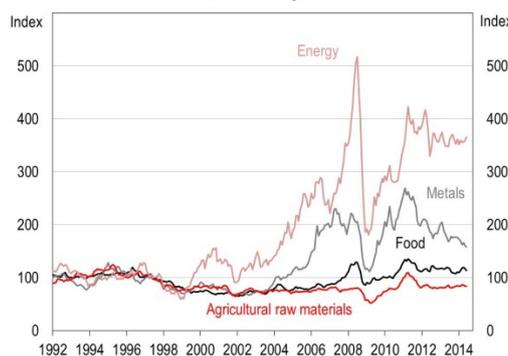
	Commodity demand growth by development stage		
	Least developed	Emerging	Developed
Cereals	High	Modest	Low
Metals	Low	High	Modest
Animal products	Low	High	High
Vegetable oil	Low	High	High
Energy	Low	High	High

Source: HSBC

materials – which include cotton, hides, logs and wool – are actually 17% lower than they were in the 1990s, in inflation-adjusted terms.

1.10. Energy and metals prices have risen the most so far

Real Commodity Prices by Major Category  
Index, 1990s average = 100



Source: IMF, HSBC estimates

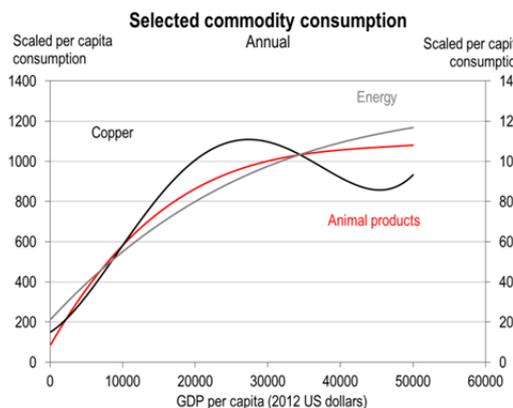
But agricultural commodity prices could be the next story, led by increased demand for ‘finer foods’. As middle class incomes rise in the emerging world, diets are expected to shift. These shifting trends are likely to have a significant effect on commodity demand. Our estimates suggest that an additional 1.3bn people are likely to attain at least middle income status by 2030, with 2.6bn more expected to be there by 2050 (see Neumann, F. and Ward, K. (2012) *Consumer in 2050: The rise of the EM middle class*, 15 October).

Higher-grade commodities to see more demand

Estimates based on historical data for 37 of the world’s largest economies between 1961 and 2009 show that different commodities are in highest demand at different stages in a country’s

development. In particular, our empirical assessments have shown that demand for a range of lower-grade base metals tends to peak earlier than for energy and higher-grade foods, such as animal products (Chart 1.11).

1.11. Different commodities show different demand patterns



Source: FAO, World Bank

There is expected to be some differentiation in demand for lower-grade metals, such as iron ore and copper, and higher-grade metals, such as aluminium and zinc. Infrastructure and housing investment require significant quantities of iron ore and copper, while aluminium and zinc tend to be used more in manufactured goods, such as automobiles. Shifting environmental priorities as countries develop are also likely to see greater demand for cleaner forms of energy, supporting demand for gas over less clean forms of energy, such as coal.

## More super, less cycle

We remain of the view that commodity prices are likely to remain structurally high (Table 1.12). The analysis we have presented above also suggests that, given the stages of development that various countries are entering, it would be

reasonable to expect different rates of demand for different commodities. We expect that the strongest potential upside should be in demand for higher-grade commodities, such as zinc, nickel, aluminium, gas, meat, edible oils, dairy and sugar.

1.12. The prices of most key commodities are expected to stay much higher than their 1990s average levels

### Commodity price forecasts

	Unit	2013	2014e	2015e	2016e	2017e	2013-2017 (%)	2015 relative to 1990s <sup>^</sup>
<b>Base metals</b>								
Aluminium	USD/t	1,847	1,875	2,065	2,065	2,098	13.6	-22
Copper	USD/t	7,335	7,100	7,250	8,000	8,500	15.9	161
Nickel	USD/t	15,020	18,000	22,000	20,000	20,000	33.2	154
Zinc	USD/t	1,911	2,140	2,350	2,665	3,070	60.6	43
<b>Precious metals</b>								
Gold	USD/oz	1,412	1,292	1,310	1,345	1,475	4.5	208
Silver	USD/oz	23.9	19.5	19.3	21.5	27.3	14.5	231
Platinum	USD/oz	1,487	1,505	1,700	1,825	1,938	30.3	264
Palladium	USD/oz	725	825	900	925	1055	45.5	274
<b>Bulks &amp; Energy</b>								
Alumina	USD/t	327	311	310	310	315	-3.7	-
Iron ore	USD/t	136	109	105	100	100	-26.5	636
Coking coal	USD/t	159	127	142	158	170	6.9	-
Thermal coal spot	USD/t	100	85	83	84	85	-15.0	72
Oil (Brent)	USD/bbl	109	102	95	96	97	-11.0	354
Natural gas* (Henry hub)	USD/mmbtu	3.7	4.4	4.5	4.7	4.5	21.4	54
<b>Food and Agriculture</b>								
Beef and veal**	USD/t	4,476	4,644	4,776	4,817	4,809	7.4	27
Palm Oil	USD/t	767	808	853			-	44
Coarse grains**	USD/t	201	195	198	222	229	13.9	-
Sugar	cents/lb	18.3	18.0	23.0			-	54
Wheat**	cents/bu.	778	721	681	678	681	-12.5	28

\*Bloomberg consensus estimates \*\* OECD-FAO estimates

\*\*\* All other forecasts HSBC estimates ^ Real prices

Source: Bloomberg; IMF; OECD; FAO; HSBC estimates

# Some questions answered by HSBC's research team

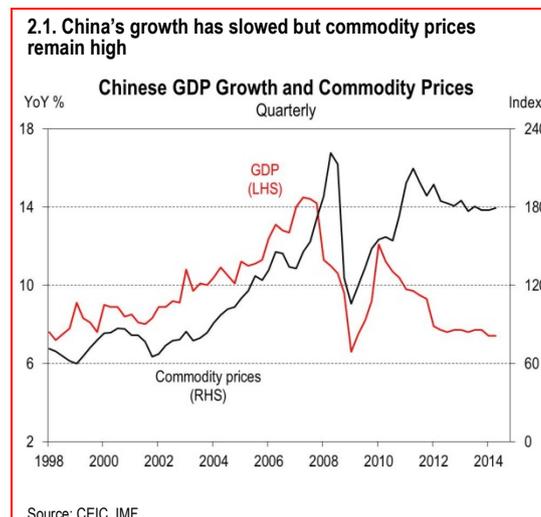
- ▶ Over the past year we have received many questions from investors about our 'more super, less cycle' hypothesis and the risks to it
- ▶ Highlights include: How is China's slowdown affecting commodity markets? What does India's Modi mean for demand? How important is Africa to commodity supply? What about LatAm? What will US shale gas and oil mean for global energy prices?
- ▶ Here we draw on the expertise from across HSBC's research team to provide brief answers to these questions

## 1) How is China's slowdown affecting commodity demand?

*Answered by Paul Bloxham*

China is the main source of demand for a range of commodities, so a view on China's demand is needed for an outlook on commodity prices. China is the world's single largest consumer of iron ore, cement, coal, copper, lead, zinc, aluminium, nickel, pork, rice, and soybeans, among other commodities. A key question amongst investors remains: What will China's slowdown mean for commodity prices?

The primary answer to this question is that China's growth has already slowed and despite this, most commodity prices remain high (Chart 2.1). HSBC is forecasting China's economy to grow by around 7.5% in 2014 and 7.7% in 2015, which are similar rates to last year, but well below the double-digit rates achieved on average over recent decades.



At these rates of growth, we expect Chinese demand to be sufficient to continue to support commodity prices at high levels for at least two reasons.

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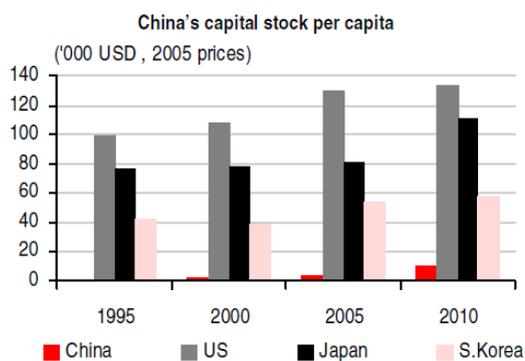
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First, China is a much larger economy than it used to be. Indeed, it is 65% larger than it was only six years ago. So, even though growth has slowed, it is off a much larger base. In terms of China's contribution to overall global demand, 7.5% growth this year is similar to growth of 11% six years ago, simply because China is so much larger than it was back then. Keep in mind that it is the dollar value of GDP that matters more than the growth rate in terms of global demand for commodities.

Second, China is still at the 'commodity-intensive' stage of its development. This means that more commodities are needed each year to grow the Chinese economy, not less. China is continuing to climb the development curve we showed in the first chapter.

The other major concern raised by investors is about China's high investment share of GDP and the possibility of over-investment in some areas. Our view remains that while there are clearly some examples of mis-allocation of capital, at a macro level, China's capital stock per worker is still low (Chart 2.2). China's development into a modern economy is far from finished and much more infrastructure investment is needed to cope with the urbanisation that is yet to occur.

2.2. China has a low amount of capital per person



Among other examples, China's railway network is still shorter than that of the US in the 19th century. China's urbanisation rate is currently

only 54% and we expect it to head towards the US rate of 74% over coming decades. This is expected to support demand for hard commodities, such as iron ore and copper.

Further urbanisation of China and deregulation of the household registration system are also expected to provide support for food and energy demand. As Chinese middle class incomes rise, their preferences are expected to shift towards greater consumption of higher-grade foods, including meat, sugar and edible oils.

Energy demand also tends to rise as more households enter middle class income levels. Environmental standards that are being adopted by Chinese authorities are also expected to see greater demand for cleaner forms of energy, such as gas, and a shift away from coal usage. Chinese authorities have recently announced plans to cease building new coal-fired power stations.

**For further information see:**

Hongbin, Q. and Zhu, J. (2014) [China Economic Spotlight: Rebalancing – A Dangerous Obsession](#), 25 June.

Hongbin, Q. (2013) [China Inside-Out: Hey, 260m new spenders](#), 29 July.

## 2) What does India's change of government mean for commodity demand?

*Answered by Paul Bloxham and Frederic Neumann*

This year's change of government in India could be a decisive event for commodity demand. The election of Narendra Modi and his Bharatiya Janata Party (BJP) has given him a strong mandate for reform and we are of the view that although the political change will take some time to filter through to an economic recovery, we do expect growth to lift in coming years.

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Moreover, a major constraint for India's growth in recent years has been investment in transport and utilities infrastructure. To build and operate these typically requires significant amounts of hard commodities and energy, so any success the government has in boosting infrastructure and utilities construction is likely to see higher hard and energy commodity demand in the future. The Modi government has made it clear that building infrastructure is a key priority for the new administration.

India's infrastructure remains poor by global standards and there is significant scope for substantial investment. With transport infrastructure, for example, only half of India's roads are paved and many of its major highways have only two lanes, limiting the average travel speed on highways to 30-40 km per hour. The previous BJP government is credited with building the express highways that connect major cities in the country (5,850km in length) and there is a hope that they will be able to deliver again.

Energy infrastructure is also insufficient and is constraining GDP growth. Official estimates from the Indian planning commission suggest that for GDP to grow 9% a year during the 2012-17 Five-Year Plan period, energy supplies need to grow at 6.5-7.0% a year. To meet this demand, energy imports will need to rise (Table 2.3). The BJP is expected to announce a comprehensive 'National Energy Policy' in coming months.

**Table 2.3. Energy demand and supply gap to widen**

	Projected Primary Commercial Energy Requirement (million tonnes of oil equivalent)	
	2010-11	2016-17
Oil	164.3	204.8
% imported	76%	81%
Natural Gas & LNG	58.0	87.2
% imported	19%	28%
Coal	272.9	406.8
% imported	20%	22%
Lignite	9.5	14.0
Hydro	10.3	14.9
% imported	5%	4%
Nuclear	6.9	9.1
Renewables	1.0	1.3
Total Energy	522.8	738.1
% imported	37%	38%

Source: Planning Commission, Approach to the 12th Five-Year Plan

The housing stock is also underdeveloped. While China has invested heavily in quality housing over recent decades, such that 45% of rural housing is constructed using 'reinforced concrete structures', census estimates suggest that only around 3.5% of households in India live in a dwelling with concrete walls.

These factors help to explain why India currently has low levels of usage of hard commodities and energy. India is at around the level of development (per capita GDP of around USD4,000 in PPP terms) at which historical patterns suggest is typically a turning point for rising hard commodity demand.

**For further information see:**

Neumann, F. and Srinivas, P. (2014) [Modi's moment: The reforms India needs to tackle](#), 3 July.

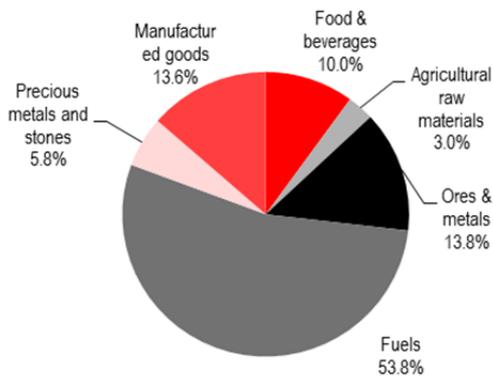
### 3) How important is Africa for the commodity supply story?

*Answered by David Faulkner and Thomas Hilboldt*

Natural resources have been central to sub-Saharan Africa's (SSA) growth boom since 2000, as the region benefited from soaring demand from China and rapidly rising commodity prices. Many resource-rich economies in SSA, in particular those with oil and metals, have experienced rapid GDP growth, rising per capita incomes and surging FDI inflows, with a large share coming from China.

Commodities dominate the SSA export story. In 2013, commodities accounted for 86.1% of total SSA exports, having grown almost five-fold since 2000. Chart 2.4 shows that the majority of commodity exports comprise fuels (primarily crude oil), metals and metal ores, and food, with smaller shares for precious metals and stones and agricultural raw materials (3.0%).

#### 2.4. The composition of SSA exports, 2013



Source: UNCTAD, HSBC

Yet, despite the importance of commodities for SSA's growth revolution and exports, the region remains a small contributor to global commodity supply. Tables 2.5 to 2.7 document SSA's current share of global supply across a range of commodities, including energy, metals and minerals, and food and agriculture. Table 2.6 shows that there are pockets where SSA is critical for global supply, in particular precious metals and stones, such as platinum, palladium, and diamonds.

#### 2.5. SSA share of global energy production and proven reserves

	2013
Oil	
Production	6.7%
Proven reserves	4.2%
Natural gas	
Production	1.6%
Proven reserves	3.1%

Source: OPEC, HSBC

#### 2.6. SSA share of global metals and minerals production and forecasts

Metal	2011	2018f
Aluminium	4.0%	4.0%
Bauxite	8.2%	17.3%
Coal	3.9%	5.0%
Copper	9.0%	14.7%
Refined copper	5.1%	8.0%
Diamonds	56.7%	57.7%
Gold	19.5%	23.8%
Iron ore	3.3%	12.0%
Palladium	47.7%	48.5%
Platinum	81.4%	81.4%
Crude Steel	1.1%	1.9%
Tin	3.3%	4.3%

Source: United States Geology Survey, HSBC

#### 2.7. SSA share of global food and agriculture production and forecasts

	2013	2020f
Cereals		
Wheat	0.8%	0.7%
Coarse grains	7.1%	8.0%
Rice	2.7%	3.2%
Livestock		
Beef	7.1%	7.9%
Pork	0.9%	1.0%
Poultry	1.2%	1.4%
Lamb	14.3%	16.0%
Dairy		
Milk	3.5%	4.0%
Sugar		
Molasses	4.1%	4.5%
Fish	3.8%	3.8%
Cotton	5.4%	5.9%

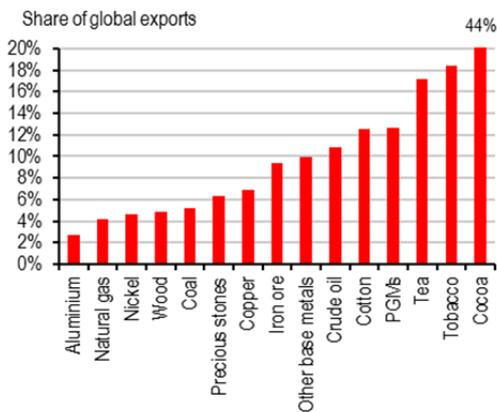
Source: OECD/FAO Agricultural Outlook, HSBC

For many hard and soft commodities, where forecasts are available, SSA is expected to become a more important source of supply, in particular for metals, such as iron ore, bauxite, copper and gold. However, a more seismic shift in exploration activity and investment will be needed to make Africa a true 'heavyweight' and a material influence in terms of global commodity production and supply.

Available data suggest that there is substantial under-exploration for natural resources in SSA. The value of known underground assets per square kilometre is just a quarter of that for high-income countries (World Bank, 2012), while expenditure on mining exploration has averaged just USD5 per square kilometre compared with an average of USD65 per square kilometre in Canada, Australia and Latin America (Ncube, 2012).

Together, these findings suggest that sub-Saharan Africa will have a modest impact on the commodity supply story in the medium term, with significant upside potential to influence long-term trends should exploration and investment activity experience a meaningful acceleration (Chart 2.8).

2.8. Global share of SSA commodity exporters, 2013



Source: UNCTAD, HSBC

## 4) LatAm has been doing it tough recently, is the agricultural export story still positive?

*Answered by Andre Loes, Alex Falcoa and Ravi Jain*

LatAm, especially Brazil, has recently faced significant bottlenecks in exports of key agricultural commodities. The 2012-13 agricultural season saw long queues of trucks waiting to offload their cargo at the port of Santos with waiting times sometimes extending to two months.

Although the situation has improved in the 2013-14 season, we saw large cancellations in soybeans orders from Chinese importers, who switched to US soybeans, even paying a premium to the Brazilian crop. In addition, Argentinian exports were also hit by the substantial volatility in the country's foreign exchange, resulting in farmers preferring to hold on to their stocks rather than sell them and hold the domestic currency. However, despite these short-term difficulties, we still believe LatAm's long-term agricultural export story is positive.

First, the large size of farm holdings means that producers in LatAm are expected to remain at the lower end of the cost curve (Chart 2.9). The cost of production is inversely proportional to the average size of land holdings, mainly driven by economies of scale. Larger land holdings increase the effectiveness of farm machinery, which can be utilised for a longer period of time and also spreads the overhead costs (such as labour) over larger volume, thus reducing the cost per unit of agricultural output.

For gas supply, over the next 10 years, Mozambique LNG's partners plan to develop a number of offshore natural gas fields and a multi-train LNG facility collectively requiring tens of billions of investment dollars. These projects are expected to materially transform the composition of GDP, investment and exports from east Africa, as well as the supply of LNG and potentially piped gas to domestic markets.

In phases, the project may reach up to 40-50mtpa of capacity, which would be meaningful in the context of the 240mtpa of existing liquefaction capacity, and as a result, it could represent a supply overhang on the global LNG market, depending on the volume and price formation of other sources of liquefied and piped supply and how quickly gas demand continues to grow.

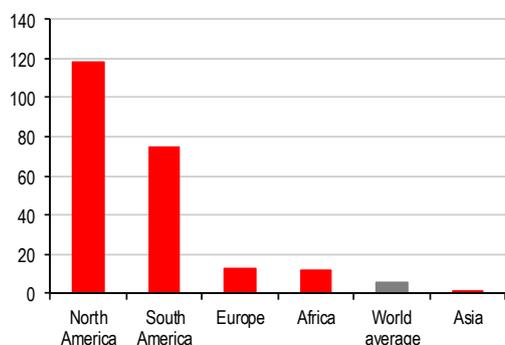
### For further information see:

Faulkner, D. and Ulgen, M. (2013) [Sub-Saharan Africa: The last boomtown](#), 5 December.

Ulgen, M. (2014) [South-South Special: What a globalising China means for Africa and the Middle East](#), 21 May.

Hilboldt, T. et al (2013) [Asia Natural Gas: China and India: Domestic/LNG price convergence is as tailwind](#), 10 September.

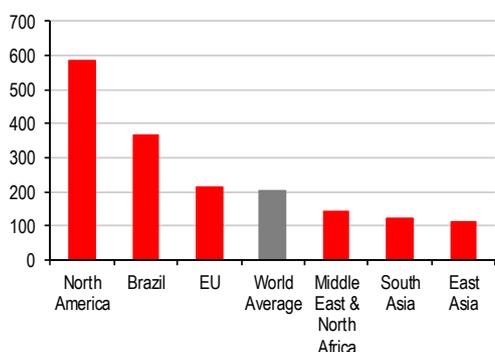
2.9. Average farm size is high in South America



Source: FAO

Second, the Mercosur region (Brazil, Argentina, Paraguay, Uruguay and Venezuela) boasts of one of the highest per capita availability of arable land, second only to North America (Chart 2.10). In addition, the region has an abundance of water. Although Asia has the largest water reserves in the world, around 36%, it also has as much as 60% of the global population. In contrast, LatAm has around 8% of the world's population, and 26% of the world's water reserves. This, coupled with a low cost of production, implies that LatAm will continue to have a large exportable surplus of agricultural commodities for consumption. We see Asia and Middle East continuing to account for the largest growth in imports, given significantly lower per capita availability of arable land and the rising income levels.

2.10. Per capita availability of arable land (ha per '000 people)



Source: World Bank

Finally, there are significant infrastructure projects currently planned in Brazil, and although they could take time to complete, they are likely to ultimately reduce the cost of transportation and transit wastage. The government has already auctioned the expansion of BR-163 (a key highway connecting the soybean-producing regions to the ports in the South).

ALL, which operates the railroads that carry the agricultural commodities for exports, is also in the process of increasing the capacity of its network near the port of Santos and also extending its rail tracks further north, closer to the newly developed farms.

In the long term, the government and the private players have a plan to increase the capacity at the northern ports and link the newly developed agricultural regions in central Brazil.

Bunge started port operations in the Northern Corridor in April 2014 and expects to ship 2m tonnes of grain this year and increase it to 4m tonnes by 2015 and 8m tonnes by 2018. Several other grain traders are expected to expand operations in the Northern Corridor, and by 2020, as much as 22m tonnes of grains could be shipped from the region, surpassing the port of Santos. The Northern Corridor not only decongests the Southern Brazil ports but also reduces the cost of transportation by more than a third, ensuring the long-term competitiveness of LatAm's agricultural exports.

**For further information see:**

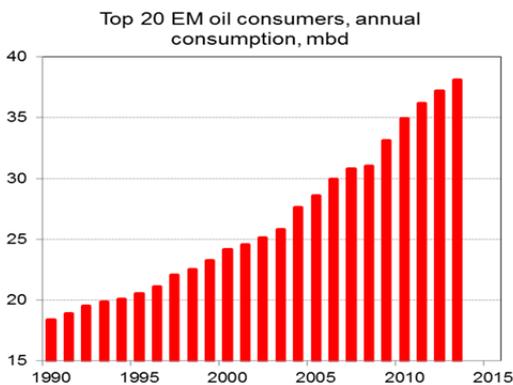
Bloxham, P. et al. (2014) *Global Agricultural Commodities: Demand is shifting to the finer foods*, 18 March.

## 5) How does US shale oil affect the energy prices story?

Answered by Kevin Logan

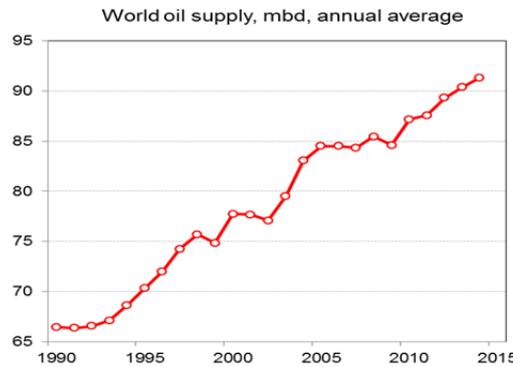
Increases in shale (and other “unconventional”) oil production over the next few years should help maintain relatively stable prices for crude oil and oil products. The sharp increases in oil prices from 2004 to 2008 occurred as rapid growth in demand from emerging economies ran up against dwindling growth in global oil supplies (Chart 2.11). The rise in prices eventually brought out new supplies, particularly supplies from previously uneconomic ‘tight’ geological formations such as shale. Global oil production, which had stagnated before 2009, began to climb again, enough to satisfy the ongoing increase in demand from emerging economies without upward pressure on prices (Chart 2.12).

2.11. Emerging economies have been driving new demand



Source: EIA

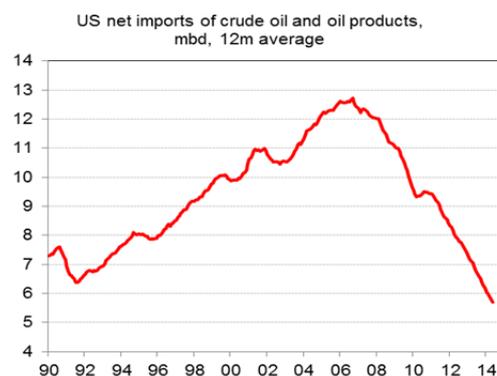
2.12. Oil supply was constrained in 2005-09, but now shale oil is lifting supply



Source: EIA

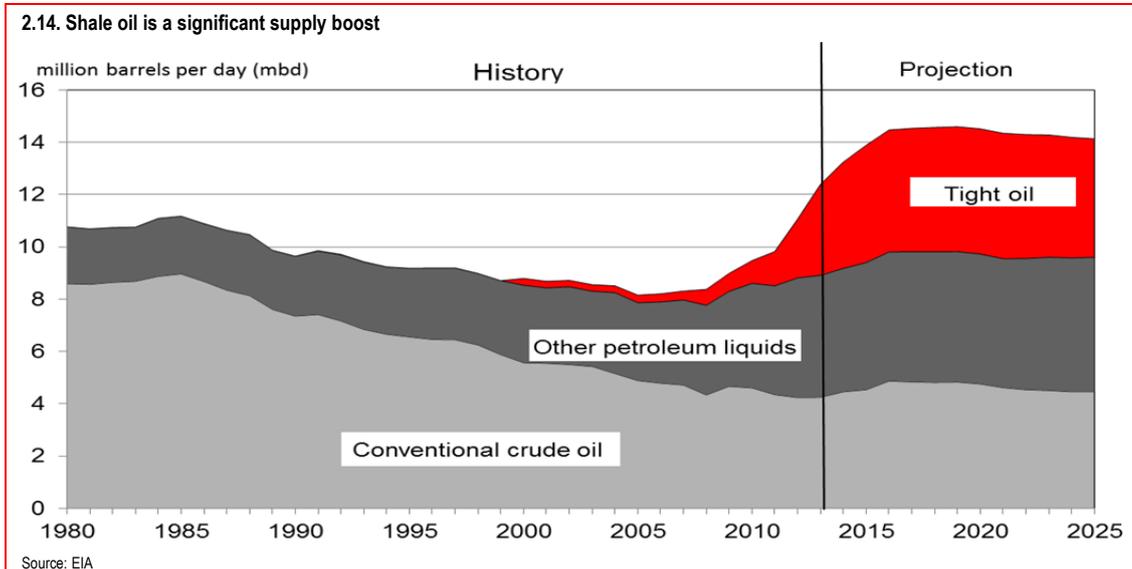
Much of the global increase in tight oil production has occurred in the United States. At the same time, demand for oil has been declining in the US due to slower economic growth and advances in energy efficiency. Consequently, net imports of oil into the US have declined 50% after hitting a peak in 2006 (Chart 2.13). By reducing its imports, the US has, in effect, ‘released’ about 6.0mbd of oil into the global markets, helping to stabilise prices as demand from emerging economies continues to increase.

2.13. The US has been meeting its own demand



Source: EIA

The US Energy Information Administration (EIA) projects further increases in US shale oil production over the next few years (Chart 2.14), a development that should help provide stability to global oil prices.



Note, however, that total US oil production is expected to peak in 2017. Further increases in global supplies are likely to come from other producing countries. High oil prices have encouraged exploration and development in other parts of the world for both conventional and unconventional sources of oil. The EIA expects that Latin American economies along with Canada will increase overall oil production by roughly 18%, or about 2.0mbd by 2020. Barring large-scale geopolitical disruptions, high prices are also expected to induce OPEC countries to increase production sufficiently in coming years to meet expected increases in demand.

High oil prices also led to more production of natural gas as a substitute fuel. Much of the global increase in natural gas production has occurred in the United States, where ample supplies of natural gas in shale formations have been accessed with new horizontal and fracturing drilling techniques. However, since natural gas is not as easily transported as oil, average prices for natural gas differ substantially across different regions of the world. In 2013, the price of liquefied natural gas imports in Japan averaged USD16.75 per Btu. In the US, dry natural gas averaged USD3.71 per Btu,

down from USD6.95/Btu in 2007 before the start of the boom in shale gas production.

The price differences may narrow in coming years as facilities for the export of natural gas are developed in the US and other countries. Anticipated increases in shale and conventional gas production in other countries, such as Australia and Argentina, could keep natural gas prices from moving much higher than current levels over the next several years.

**For further information see:**

Logan, K. et al (2013) *Shale oil and gas: US revolution, global evolution*, 22 September.

Gray, G. and Hilboldt, T. (2014) *Global Oil and Gas Insights: Big oils back in favour*, 3 June.

**6) Are shale gas and potential US LNG exports a game changer for the global energy market?**

*Answered by Thomas Hilboldt, Tingting Si and Paul Bloxham*

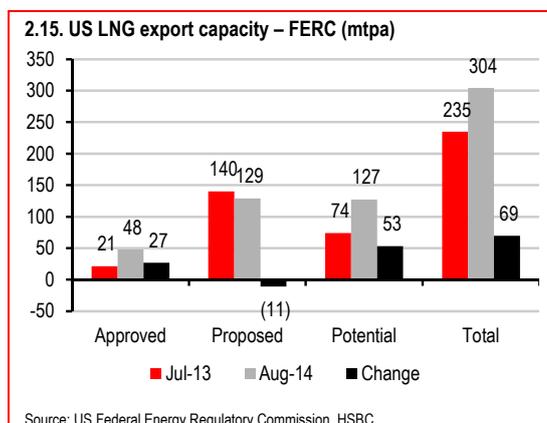
US LNG export approval is racing ahead as approval volumes and speed both exceeded expectations. Overall, the EIA forecasts the US to

turn into a net exporter of piped natural gas (PNG) and liquefied natural gas (LNG) by 2018.

Ultimately, however, US LNG export volumes will be determined by the economics of US export projects relative to other options in the global gas supply portfolio, as well as the appetite for US gas supply. Regulatory decisions of the US government will also have a direct impact on supply/demand dynamics.

Currently, 304mtpa of US LNG export terminal capacity has been approved (Chart 2.15).

Although many projects are unlikely to be built, due to technical, commercial, financial and regulatory constraints, in 2014 some notable projects have progressed beyond significant regulatory hurdles.



US LNG export terminals require approvals from the Federal Energy Regulatory Commission (FERC) and the US Department of Energy (DOE). The DOE is obligated to approve export licenses to Free Trade Agreement (FTA) countries without modifications or undue delay.

In May 2014, the Obama administration announced a major overhaul of its review process. The DOE ceased issuing conditional project approvals. Instead, the DOE will decide whether a LNG export project is in the national interest after the FERC issues a final environmental review. (*Reuters*, 29 May 2014). As a result, this may

accelerate commercially advanced projects by eliminating conditional decisions on applications.

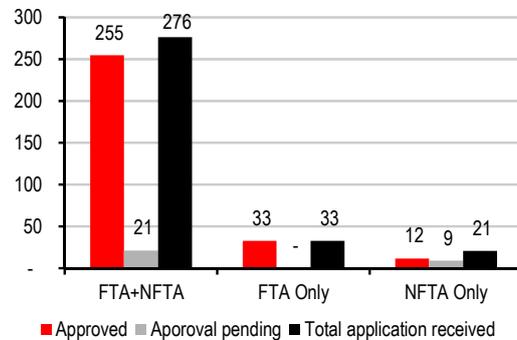
There are, however, still some regulatory hurdles yet to pass.

First, the FERC is the ‘bottleneck’. Only three projects were approved so far out of a total 304mtpa of LNG export capacities identified. The three projects are Cheniere/Sabine Pass LNG (21mtpa), Sempra-Cameron LNG (13mtpa) and Freeport LNG Dev/Freeport LNG Expansion/FLNG Liquefaction (13.8mtpa). Only the Cheniere/Sabine Pass LNG project (originally a financially distressed import terminal) is under construction; the first two trains, with 9 mtpa of liquefaction capacity, should be operational by 2015-16.

Second, the DOE is more advanced in granting approvals. To date, a total of 304mtpa of LNG export capacities at 43 LNG export terminals have been registered at the DOE.

Overall, FTA country approvals = 288mtpa, while non-FTA approvals = 94mtpa. There are 36 project export approvals to countries with Free Trade Agreements (FTAs) with the US, representing 288mtpa (Chart 2.16). The US has FTAs in place with 20 countries, including Australia, Bahrain, Canada, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Jordan, Korea, Mexico, Morocco, Nicaragua, Oman, Panama, Peru and Singapore. Non-FTA country approvals are emerging more slowly, but seven approvals have been granted, including: Sabine Pass Liquefaction, LLC (17mtpa), Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC (11mtpa), and Lake Charles Exports, LLC (15mtpa).

2.16. US LNG export capacity – DOE (mtpa), end-July 2014



Source: US Department of Energy, HSBC

Developments in other countries also matter for the global gas story.

China’s newly contracted Central Asian, Southeast Asian and Russian gas supplies may change Asian natural gas supply/demand and pricing dynamics. Most of the planned North American LNG export facilities are conveniently situated to capitalise on US unconventional gas development. However, delivered LNG prices in Japan, Korea and China have started to moderate compared to the Fukushima-driven 2012 price peaks and US Henry Hub prices have bounced off the bottom.

More PNG supplies are also a factor that may bring lower regional LNG prices. Russia and China recently signed a USD400bn 30-year deal. Pipelines are currently under construction and supplies will likely start in 2019-20, eventually reaching 38bcm annually, roughly 20% of estimated 2014 consumption.

Australia is also set to see a significant ramp-up in its LNG exports to Asia over the coming years, as capacity that is currently being built begins to come online. Seven of the world’s largest LNG projects are currently being built in Australia, with production expected to be begin to ramp up strongly from 2015 onwards. The amount of capacity that is being built is set to see Australian exports of LNG rise from 24m tonnes to 79m tonnes by 2019, which could make Australia the world’s largest exporter of LNG, ahead of Qatar. All of these projects have

forward-sold their product to China, Japan, Korea and India on long-term contracts with most linked to the oil price.

**For further information see:**

Hilboldt, T. and Si Tingting (2014) *PetroChina (857 HK): Russia-China gas contract, finally*, 14 May.

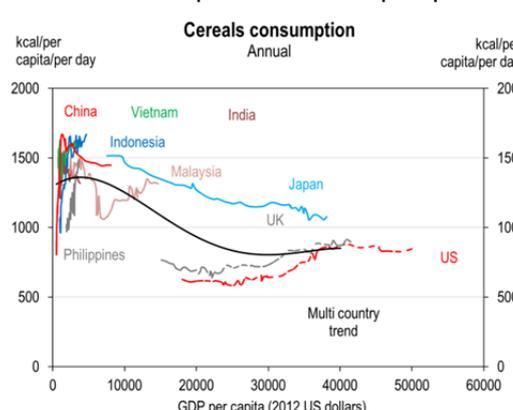
**7) Are we seeing signs of rising demand for ‘finer foods’, such as meat, dairy, sugar and edible oils, as the emerging economy middle class incomes rise and preferences shift?**

*Answered by Alex Falcao, Ravi Jain, Thilan Wickramasinghe and Paul Bloxham*

The trend of rising demand for ‘finer foods’ has been in place since the past few years and can be expected to intensify, given that many more countries are expected to join the middle income group.

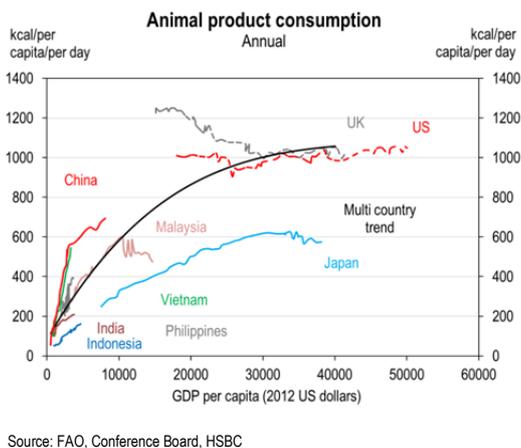
As we showed in the first chapter, consumer spending accelerates rapidly as a country’s GDP increases beyond USD3,000 per capita. Historical comparisons reveal that demand for cereals peaks at low levels of economic development, but that demand for higher-grade food, such as animal products, rises strongly as per capita GDP increases (Chart 2.17 and 2.18).

2.17. Cereals demand peaks at low levels of per capita GDP



Source: FAO, Conference Board, HSBC

**2.18. Animal product demand rises as countries develop**



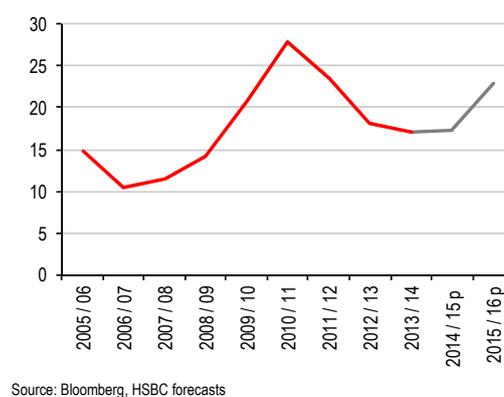
In the countries that have recently crossed this threshold on the curves above, we can already see evidence of this increase in demand. Chinese meat consumption has grown by c6% CAGR over the past three decades, while Thai poultry consumption has more than doubled over the past 20 years.

This story is also evident in some food products like sugar and edible oils where almost the entire growth in global demand is being driven by lower income countries. Over the past 15 years sugar consumption in developed markets has more or less remained flat, while in the rest of the world it has increased at a 2.4% CAGR. Per capita edible oil consumption in India is currently less than half of that of US and is growing at a 5.4% CAGR (compared to 2.6% for US). Similarly, Chinese per capita edible oil consumption is c30% lower than that of the US.

There are large differences in consumption levels between countries for food products such as sugar and edible oils. That is mainly due to the fact that a large proportion (up to 30-40% for edible oils) of these products is not consumed directly but used as ingredients in higher value-added products such as ice creams, biscuits and packaged foods. Thus, the demand for these products is largely dependent on the level of

disposable incomes and we continue to see increasing demand for “finer foods” as many countries enter the middle income levels that bring about significant changes in consumption patterns. We expect these trends to continue to support the prices of ‘finer foods’, including sugar (Chart 2.19).

**2.19. NY11 sugar prices and HSBC forecast (USDc/lb)**



Indonesia is a clear example of how countries with rising affluence are driving per capita consumption of ‘finer foods’ – particularly edible oils. Of course, per capita edible oil consumption trails richer countries. However, economic indicators here have generally seen strong growth over the past nine years with the country clearly leaving the shadow of the Asian Financial Crisis of 1997.

According to CEIC, monthly minimum wages have grown at a 12% CAGR between 2004 and 2014. Monthly expenditure on food has grown at a similar clip during this time, pointing to Indonesia moving up the curve from sustenance living to higher-value food consumption.

Importantly, total per capita consumption expenditure has grown at a 13% CAGR during the same period, which is a faster pace than wages. To us, this implies that rather than just spending a large proportion of income on food, items of higher value are also being consumed, including personal care products, pharmaceuticals, etc.

Many consumer staples outside of food also contain sizable proportions of edible oils.

Multiple emerging markets are seeing their own version of this Indonesian example. As urbanisation and affluence continue to rise, we expect these trends to become stronger.

**For further information see:**

Bloxham, P. et al. (2014) *Global Agricultural Commodities: Demand is shifting to the finer foods*, 18 March.

Wickramasinghe, T. and Pradhan, T. (2014) *Asia Animal Protein: Going low carb: initiate coverage*, 31 July.

## 8) For which commodity prices do we see the most upside or downside risk in the medium term?

*Answered by Alex Falcoa, Gordon Gray, Thomas Hilboldt and Paul Bloxham*

For **food prices**, we are most optimistic about sugar and meat prices, while we see downside risk to the outlook for soybean prices.

Over the medium term we see the most upside potential from sugar, given that current prices are hovering close to the Brazilian cost of production (the lowest in the world). Consecutive years of global sugar surpluses have resulted in an inventory pile-up and have consequently depressed global sugar prices. Low sugar prices have meant that debt levels at Brazilian sugar mills are near record highs and it is becoming increasingly difficult for sugar mills in Brazil to service their debt obligations. Indeed, 12 additional mills closed in the last crushing season, taking the total mill closures since 2007-08 to 51. We believe that sugar prices would have to increase substantially to incentivise some of the closed mills to restart production when the global sugar surplus eventually runs out.

The high cost of production in other major producers, such as India and Europe, means that these countries would not be able to export at the current levels of sugar prices (in the absence of short-term market-distorting export subsidies). The situation has been exacerbated by the recent drought in Brazil affecting sugarcane yields. As a result, Brazilian sugar production is expected to decline y-o-y, increasing the chances of a global sugar deficit.

We see downside risks to global soybean prices. Soybean prices had run up substantially over the past few years from increasing Chinese imports, expectation of increasing consumption for bio fuels, coupled by a drought in Brazil, which was immediately followed by another major drought in the US that brought the global stock to use of these commodities to record lows. Although production normalised in the 2013-14 season, logistical bottlenecks in Brazil meant that most soybean importers relied more on US supplies, which resulted in extremely low US soybean inventories. With another year of record soybean production being forecast by the USDA and the logistical bottlenecks in Brazil easing, we expect ample soybean supplies in the current agricultural marketing year. The USDA expects the global soybean stock to use at the end of 2014-15 to be c30%, the highest it has ever been. Additionally, lower crude oil prices would mean that demand from biodiesel would also remain muted.

For **energy prices**, crude oil has come under near-term pricing pressure as higher output from Saudi Arabia has compensated for weaker Iraqi production and continued outage in Libya, bringing Brent back close to USD100/bbl. The continued pace of growth in North American unconventional output makes further near-term price weakness possible.

However, for the medium to longer term, we believe pricing risks are skewed to the upside.

On the one hand, a number of major project cancellations/deferrals in the past two years highlight how close to marginal economics have become in certain cases (particularly offshore), despite current price levels. As a result, we believe the rate of growth in non-OPEC output outside of North America will continue to be limited over the next few years.

Meanwhile, we think any moderation of the rate of growth in North American output would lead to a material rise in the call on non-OPEC crude between now and the end of the decade, unless global demand growth slows appreciably (which we don't expect). OPEC's available spare capacity is already limited by historic standards, and political developments in North Africa and the Middle East present a key risk, given that much of the potential upside to supply from current levels is in the likes of Iraq, Iran and Libya.

For **metals prices**, we expect demand for higher-grade commodities, such as aluminium, zinc and nickel, to support the prices of these commodities. For these commodities, production and new investment has not seen a ramp-up of excess supply in recent years (Table 2.20).

For iron ore prices, the story is more complicated. Significant supply is coming online with a further supply boost expected over the next year or so. However, a large share of what is currently produced occurs at a marginal cost that is around the current spot price. If the price falls further, production is likely to be cut back, which would, in turn, limit supply on the market.

## 2.20. Most metals are not expected to be oversupplied

### World supply and demand estimates for key metals

	2013	2014e	2015e	2016e	2017e	2013-17 (%)*
<b>Aluminium (kt)</b>						
Production	50,503	52,306	55,515	59,015	62,473	16.9
Consumption	49,922	52,768	55,602	58,619	61,811	17.4
Balance	722	92	554	899	899	<b>0.3</b>
<b>Copper (000t)</b>						
Refined production	21,169	21,870	23,027	23,526	23,824	11.1
Refined consumption	20,988	21,828	22,635	23,541	24,412	12.2
Balance	86	4	415	-17	-17	<b>-0.4</b>
<b>Iron Ore (Mt)</b>						
Production	2,104	2,162	2,274	2,388	2,463	13.5
Consumption	2,078	2,120	2,167	2,213	2,248	6.5
Balance	-2	36	83	120	120	<b>5.0</b>
<b>Nickel (000t)</b>						
Production	1,991	1,896	1,830	1,918	2,062	-3.7
Consumption	1,823	1,919	2,004	2,083	2,159	14.3
Balance	87	48	28	17	17	<b>-3.4</b>
<b>Zinc (000t)</b>						
Production	13,001	13,182	13,774	13,988	14,263	7.6
Consumption	13,321	13,825	14,317	14,790	15,244	11.0
Balance	-126	25	-18	-220	-220	<b>-0.7</b>

\*Bolted number is expected change in net balance divided by total supply

Source: HSBC Metals and Mining Research

### For further information see:

Keen, A. et al (2014) *Metals Quarterly: Q3 2014*, 15 July.

# A quick look at each commodity

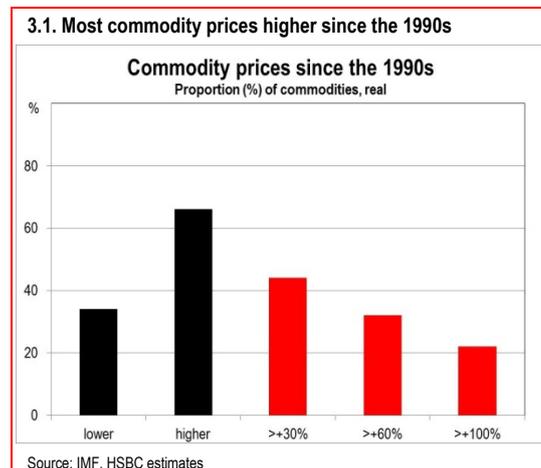
- ▶ Two-thirds of commodities have seen price gains in excess of inflation since the 1990s, while one-quarter of commodities have more than doubled in price in inflation-adjusted terms
- ▶ Metals prices have risen the most since the 1990s, although they have levelled out more recently: the best performers over the past year have been ‘finer foods’, such as beef, lamb and fish prices
- ▶ This chapter looks at the price trends of 50 commodities and describes the medium-term patterns

## Most commodity prices higher than in the 1990s

As we noted in the first chapter, the prices of most commodities have risen by more than inflation since the 1990s. Indeed, in real terms, 66% of them have risen, 44% have risen by more than 30%, 32% have risen by more than 60%, and 22% have more than doubled (Chart 3.1). The strongest gains have been in metals and energy prices, while most agricultural prices have not increased since the 1990s in real terms.

## A look at each commodity

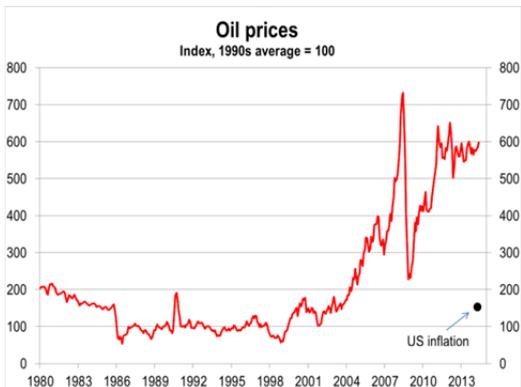
Below we briefly describe the price trends over the past three decades for 50 commodities and some key issues we see concerning the outlook. We exclude precious metals, which are often driven by financial rather than supply and demand factors. See here for details on gold and other precious metals see: Steel, J. (2014) *Gold Outlook: Searching for Equilibrium*, 2 September.



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**3.2. Oil prices are still 500% higher than in the 1990s...**

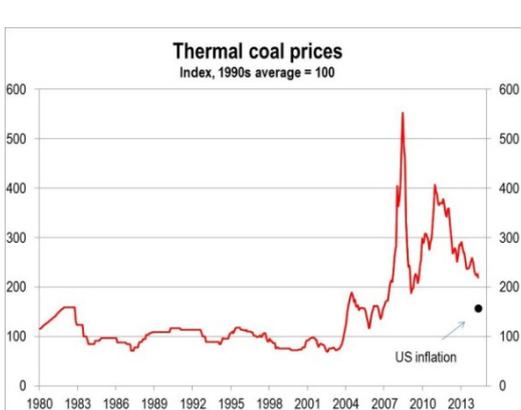


Source: IMF

**...and have been broadly steady for three years**

- ▶ Oil prices rose substantially over the past decade, peaking in 2008, just prior to the failure of Lehman Brothers, before falling sharply. The decline was, however, short-lived, with rising demand from China supporting a solid rise in oil prices through to 2010. Over the past four years, prices have been relatively stable, averaging around 500% above their 1990s average.
- ▶ High oil prices have motivated investment in higher cost extraction projects, such as oil sands, shale oil and deep water drilling, which has helped to keep supply growing in line with rising demand in recent years.
- ▶ The on-going development of shale oil in the US is helping to mitigate upward pressure on oil prices, despite rising emerging economy demand for oil.

**3.3. Thermal coal prices spiked in 2008 and 2010...**

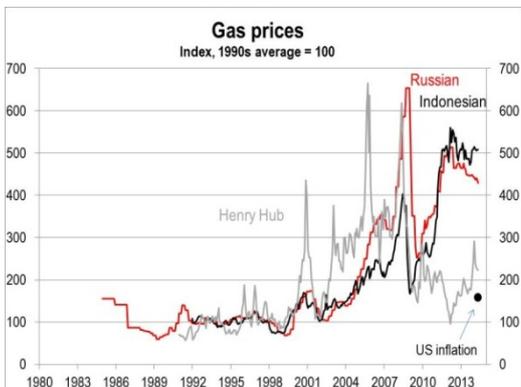


Source: IMF

**...as strong demand, particularly from China, was met by only weak supply**

- ▶ Like many other energy commodities, thermal coal prices peaked prior to the global financial crisis (at around USD190/t). Prices then fell sharply, rebounded by early 2011, and have steadily declined since then – currently sitting below USD80/t.
- ▶ The steady decline in prices reflects increased supply coming online and increasing substitution towards cleaner energy sources. Demand from emerging economies, particularly China, continues to grow, albeit at a slowing pace. Chinese authorities have recently announced plans to cease building new coal-fired power stations.
- ▶ HSBC's metals team is forecasting thermal coal prices to lift modestly from a current spot price of USD74/t to USD80/t in 2015 (see Keen, A. et al (2014) *Metals Quarterly*: Q3 2014, 15 July).

**3.4. Gas markets are highly segmented...**



Source: IMF

**...US onshore prices are much lower than Asian prices**

- ▶ Following the pre-global financial crisis peak, US onshore gas prices have remained at fairly low levels. However, prices elsewhere, particularly in Asia, have rebounded to high levels.
- ▶ Low US prices are a result of the shale gas boom and slow growth in energy demand. In Asia, demand growth has been much stronger. In addition, most gas contracts are linked to the oil price, which has pushed gas prices higher in many markets.
- ▶ Demand for gas in emerging economies looks set to continue to grow strongly. However, the outlook for gas prices is highly dependent on how quickly supply expands. The US market provides an example of how new technology can rapidly alter the supply-demand balance.

### 3.5. Uranium prices spiked in 2007...

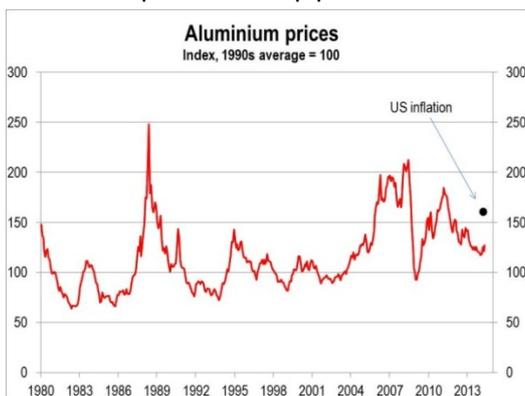


Source: IMF

#### ...but have fallen sharply since the peaks

- ▶ The ramp-up in uranium prices prior to 2007 is widely cited as a 'bubble', with the flooding of a Canadian mine and projections of strong Indian and Chinese demand all proximate causes. The fall has had a limited impact on energy producers, as they mostly have long-term contracts. However, it did squeeze out exploration.
- ▶ The March 2011 Fukushima disaster in Japan had a major impact on prices, with all Japanese power plants shut down and uranium inventories therefore accumulating.
- ▶ Relative to the 1990s, uranium is still one of the top performers in terms of price gains (11th strongest). Long-term demand is likely to be strong, but the current oversupply is expected to continue for some time yet. Much depends on whether the Japanese choose to restart their power plants.

### 3.6. Aluminium prices have not kept pace with inflation...



Source: IMF

#### ...reflecting strong supply growth

- ▶ Aluminium prices have been the poorest performer amongst the base metals since the 1990s, with prices underperforming inflation over that period. Aluminium prices doubled from 2003 through 2005, but output increases were such that the market has been in a state of oversupply since then.
- ▶ The situation is improving though, with demand continuing to grow and voluntary output reductions occurring due to low prices over recent years.
- ▶ HSBC's metals team is forecasting the market to shift into a period of undersupply this year, with prices expected to stabilise just above USD2,000/t (up from around USD1,800/t over much of 2013) (see Keen, A. et al (2014) *Metals Quarterly*: Q3 2014, 15 July).

### 3.7. Copper prices are well ahead of inflation since 1990s...



Source: IMF

#### ...with limited supply expected to keep prices high

- ▶ Copper prices are one of the strongest performers since the 1990s, having risen by 240% in real terms. Apart from a short-lived dip in 2009, after Lehman Brothers failed, copper demand has been growing steadily and is expected to continue doing so, driven by demand for building construction and electronics.
- ▶ Prices have drifted slightly lower over the past few years as the market has moved into a small surplus. That is likely to be short-lived, with global inventories having already fallen to the lowest level since 2008.
- ▶ The market is expected to return to a position of undersupply from 2016 onwards, supporting a recovery in prices. HSBC's metals team expects broadly steady prices in 2015 (see Keen, A. et al (2014) *Metals Quarterly*: Q3 2014, 15 July).

**3.8. Iron ore prices were the strongest performer...**

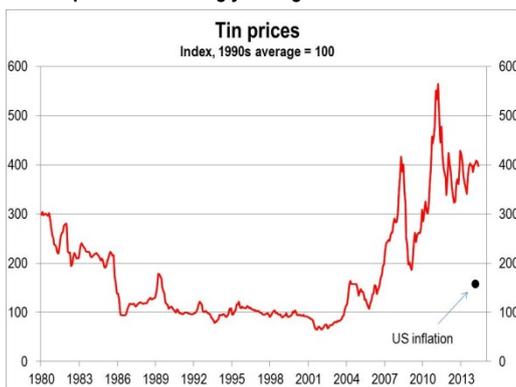


Source: IMF

**...but have fallen sharply as supply has come online**

- ▶ Iron ore prices soared during the mid-2000s as demand from China accelerated strongly and supply was slow to come online, due to the long lead times for investment. More supply is now coming online, with a further surge in supply expected in 2015 and 2016.
- ▶ Current prices are, however, close to the marginal cost of production for a large range of producers, which is expected to prevent prices from falling too much further.
- ▶ HSBC's metals team is forecasting prices to rebound a little over the next year, averaging USD109/t over 2014 and USD105/t over 2015 before stabilising around USD100/t (see Keen, A. et al (2014) *Metals Quarterly*: Q3 2014, 15 July).

**3.9. Tin prices rose strongly through the 2000s...**



Source: IMF

**...with limited supply growth likely to support prices**

- ▶ Tin prices surged during the 2000s and have held up at a high level due to supply limitations.
- ▶ Solder used in electronics is the most important source of demand for tin, which should support steady demand growth.
- ▶ The pipeline of new supply coming online is limited, and new restrictions on Indonesian exports may also restrict supply over coming years. The emergence of Myanmar as a major potential supplier may be an important offsetting factor.

**3.10. Lead prices rose strongly through the 2000s...**

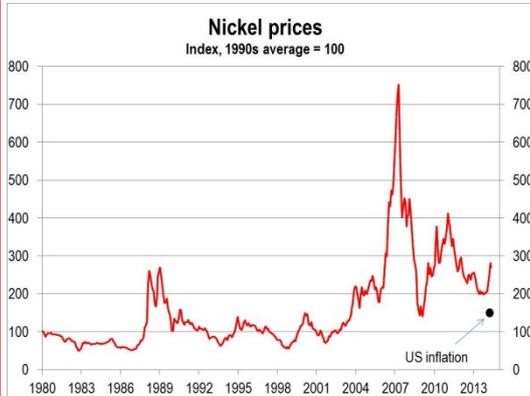


Source: IMF

**...with limited supply growth likely to support prices**

- ▶ Demand for lead is expected to remain strong, as it is used for a range of goods, including batteries and automobiles, where demand is rising strongly, and in construction. Slower Chinese construction growth this year has, however, reduced the degree of undersupply in global markets over the past year.
- ▶ Supply growth is expected to be relatively modest over the next few years, with the closure of major mines such as Australia's Century project, in 2015, expected to partly offset strong growth in Chinese production.
- ▶ Slow growth in supply is likely to see an undersupply of lead continue, meaning prices should remain well supported.

**3.11. Nickel prices are well below their 2007 peaks...**



**...but demand is starting to run ahead of supply**

- ▶ Nickel, mostly used in stainless steel production, saw a large price spike prior to the global financial crisis. Prices have fallen back since then, although an uptick is now underway.
- ▶ Nickel prices have increased sharply since the beginning of 2014, since Indonesia, which is a leading supplier of nickel, announced a ban on exports of unprocessed nickel ores, which commenced in January 2014.
- ▶ HSBC's metals team is forecasting steady growth in demand, while the Indonesian supply shock is likely to create a significant undersupply. Prices are expected to rise further in 2015. However, with new projects in the pipeline, the imbalance should moderate from 2016 onwards (see Keen, A. et al (2014) *Metals Quarterly*: Q3 2014, 15 July).

**3.12. Zinc prices have risen broadly in line with inflation...**



**...but supply constraints are starting to emerge**

- ▶ Demand for zinc in a range of uses, including in batteries, automobiles and construction, suggests steady growth across both the developed and developing world.
- ▶ Supply growth is expected to be relatively modest over the next few years, with the closure of major mines such as Australia's Century project, in 2015, partly offsetting strong growth in Chinese production.
- ▶ Global inventories are falling, with exchange inventories down -43% YTD. HSBC's metals team is forecasting a continuing undersupply over the next few years, supporting steady price growth of 10-15% per annum (see Keen, A. et al (2014) *Metals Quarterly*: Q3 2014, 15 July).

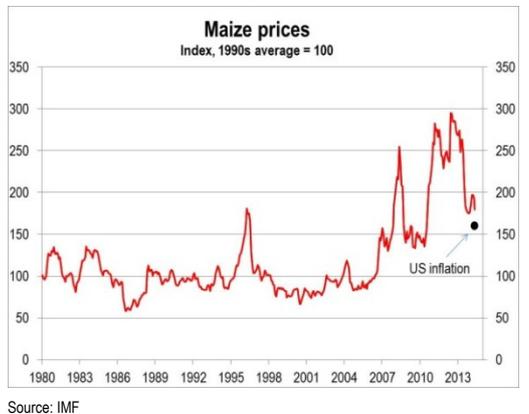
**3.13. Barley prices have trended higher in the 2000s...**



**...and are running ahead of broader inflation**

- ▶ Demand for barley is mostly driven by feedstock demand and in brewing/distilling. It is highly substitutable with other coarse grains such as maize.
- ▶ Barley prices rose sharply both before and after the global financial crisis. In both cases, the move was driven by reduced global stocks. There has been a long-term trend of less land being used to grow barley, possibly in favour of other coarse grains.
- ▶ More recently, prices have fallen quite steeply as better weather suggests strong harvests in the US and Russia in particular. That is likely to push global stocks higher once again.

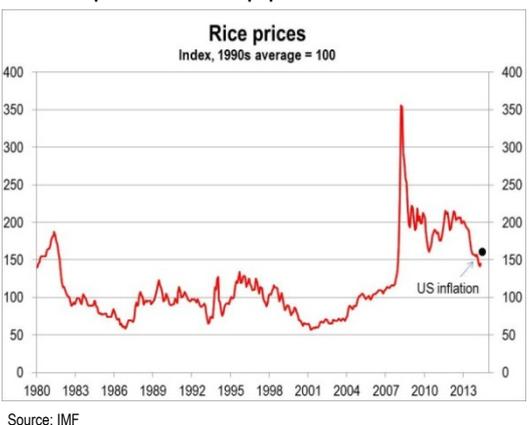
**3.14. Maize prices rose through the 2000s...**



**...but are only slightly ahead of inflation since the 1990s**

- ▶ Maize's main uses are as food and feedstock for livestock. It is often substitutable with other coarse grains such as barley.
- ▶ Much like barley prices, maize prices rose sharply both before and after the global financial crisis. In both cases, the move was driven by reduced global stocks, exacerbated by events like a severe US drought in 2012.
- ▶ More recently, prices have fallen quite steeply as good weather suggests strong harvests in the Northern hemisphere. That is likely to push global stocks higher once again.

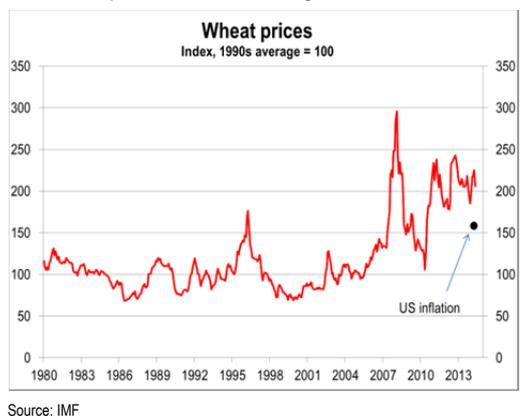
**3.15. Rice prices have not kept pace with broader inflation...**



**...although they have risen solidly through the 2000s**

- ▶ Despite a short-lived spike in 2008, rice prices have risen by less than inflation since the 1990s.
- ▶ For rice, supply growth has more than kept up with demand. As a result, global rice stocks have been steadily growing and price growth has been restrained.
- ▶ A major factor in rice consumption trends over the longer term will be shifting diets in developing Asia. As incomes rise, significant numbers of people will shift from rice-based diets to higher quality diets featuring more protein (meat and dairy, in particular), which could see further downward pressure on rice prices.

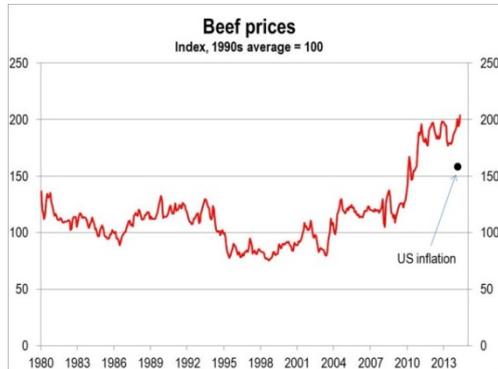
**3.16. Wheat prices have risen through the 2000s...**



**...and are well ahead of inflation since the 1990s**

- ▶ Most wheat is used in food production for human consumption. Unlike coarse grains, only low-quality or damaged wheat is used for livestock feed.
- ▶ Up until the mid-2000s, supply and demand generally grew at a similar pace, which kept price movements restrained. In the mid-2000s, demand growth started to outstrip supply, pushing stock levels down and prices up. Since then, stocks have recovered but are still below the long-run average (relative to consumption).
- ▶ In particular, prices have been supported recently by a sharp drop in production since 2012 due to poor weather.

**3.17. Beef prices have been ramping higher in recent years...**

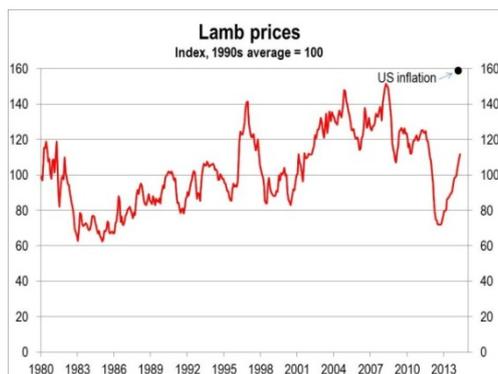


Source: IMF

**...and are running well ahead of inflation since the 1990s**

- ▶ Beef prices were fairly stable through the 1980s, 1990s and 2000s. But over the last few years prices have increased quite sharply.
- ▶ Recent higher prices appear to have been driven by weather impacts on cattle herds. There have been several major droughts in recent years, which have increased feed prices and seen farmers downsize their herds, particularly in the US. US cattle inventories are currently at the lowest level in 60 years.
- ▶ Several years of good weather, like 2014, will be needed for herd sizes to grow meaningfully. The other key factor over the medium term will be the speed of demand growth in developing markets as preferences shift towards consuming more meat.

**3.18. Lamb prices have not kept pace with inflation...**

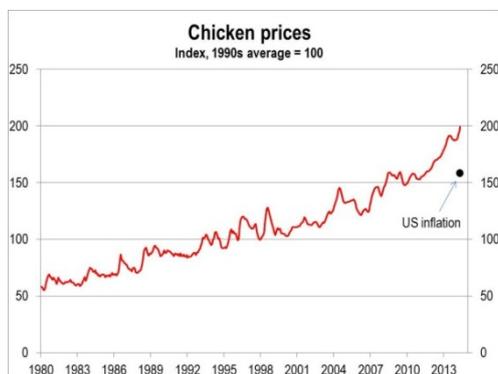


Source: IMF

**...but have risen strongly recently**

- ▶ Lamb prices have historically been fairly stable and compared to most commodities are essentially flat to 30 years ago in nominal terms.
- ▶ In 2012, lamb prices reached their lowest level since the 1980s. This was partly driven by farmers reducing herd sizes in response to drought and high feed prices. The increased slaughter rates gave a short-term boost to supply.
- ▶ However, prices have recovered since then. Looking ahead, lamb supplies are not likely to grow strongly without significantly higher prices, given the higher profits on offer in dairy or cattle farming. Demand in emerging economies is expected to continue growing strongly though.

**3.19. Chicken prices have risen steadily...**

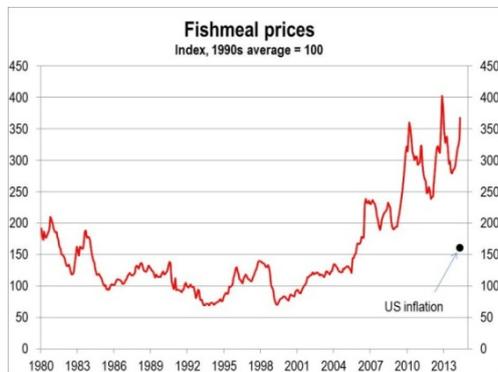


Source: IMF

**...and are running ahead of inflation since the 1990s**

- ▶ Chicken prices are far less volatile than many other commodity prices, rising at a steady rate a little ahead of overall inflation. Because of short breeding times, supply is able to adapt quickly to short-term shifts in demand.
- ▶ Prices have grown at a faster rate over the last few years, most likely influenced by higher feed costs. The recent decline in grain prices may reverse some of that impact.
- ▶ As with other meats, the growth of demand in the developing world is expected to be a key driver of demand going forward.

**3.20. Fishmeal prices have risen strongly in the 2000s...**

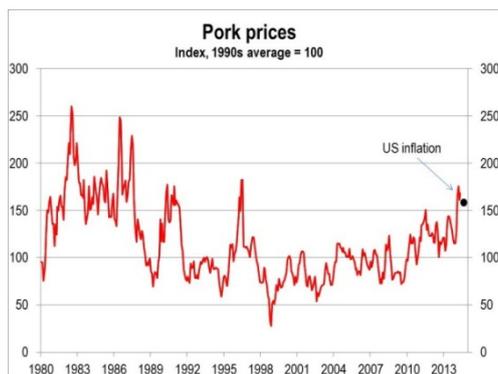


Source: IMF

**...and are running well ahead of inflation since the 1990s**

- ▶ Fishmeal prices ended a gradual downwards trend in 2000 and have risen strongly since then.
- ▶ The long-term upwards trend is most likely a result of increased demand from the aquaculture industry, where fishmeal is an important feedstock.
- ▶ Marine and inland seafood capture has plateaued since the early 1990s. Increased demand for seafood is therefore likely to be met from continued growth in aquaculture (see Wikramasinghe, T and Prahan, T, (2014) *Asia Animal Protein*, 31 July). That should continue to provide support for fishmeal prices.

**3.21. Pork prices have risen in line with inflation...**

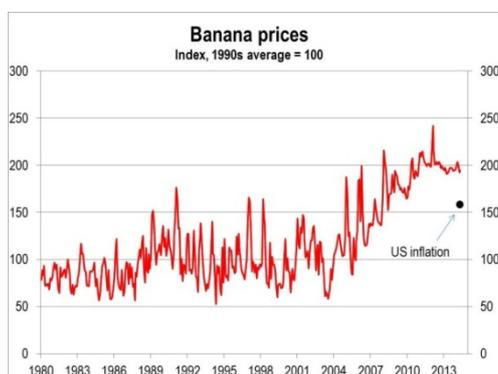


Source: IMF

**...trending modestly higher through the 2000s**

- ▶ After falling for much of the 1980s and 1990s, pork prices have since risen slowly but steadily.
- ▶ At the beginning of 2014 a virus outbreak in the US impacted supply and sent prices sharply higher. Part of that price response has since been unwound.
- ▶ Chinese consumption of pork has so far risen more rapidly than for other meats. In fact, China has one of the highest per capita pork consumption rates in the world. However, production has also expanded rapidly due to more industrialised farming methods. The Chinese government also runs a 'pork reserve' to regulate prices.

**3.22. Banana prices trended higher through the 2000s...**

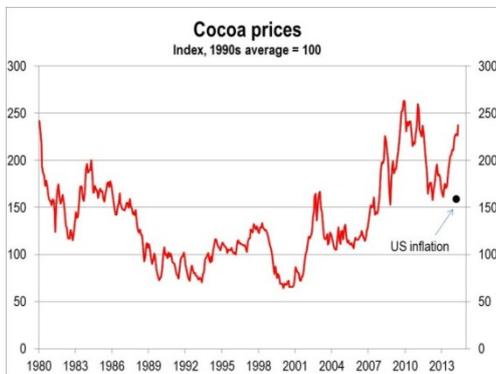


Source: IMF

**...and are running ahead of inflation since the 1990s**

- ▶ Banana prices followed a generally flat trend over the 1980s, 1990s and for much of the 2000s. From 2005 to 2010, prices shifted higher, and have been flat since then.
- ▶ That increase was started by the pre-global financial crisis increase in general commodity prices, especially oil, and continued, thanks to solid demand and reduced supply, in particular from the Philippines (a key exporter).

**3.23. Cocoa prices trended higher in the 2000s...**

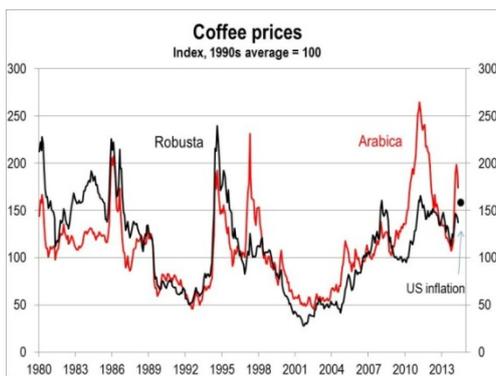


Source: IMF

**...and are running a little ahead of broader inflation**

- ▶ Cocoa prices rose steadily through the 2000s, but then fell back in 2010-11 due to a bumper crop and modest demand growth.
- ▶ Over the past year, prices have surged, thanks to stronger demand growth in the developed world. At the same time, supply growth has been limited since the 2010-11 price declines.
- ▶ Supply is expected to respond to the recent surge in prices, but may lag behind demand growth for several years, given the economic recovery in the developed world and increased demand for higher-grade foods in the emerging world.

**3.24. Coffee prices have kept pace with inflation...**

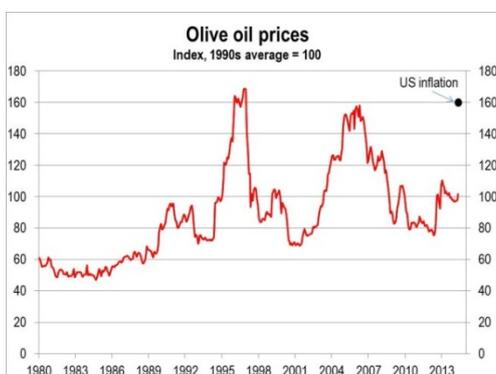


Source: IMF

**...and have been on an upward trend through the 2000s**

- ▶ Coffee prices rose steadily over the 2000s, but have not outpaced overall inflation in the longer term.
- ▶ Prices for Arabica beans spiked in 2010-11 due to poor harvests. There was another price spike in early 2014 following a severe drought in Brazil, a major supplier, as well as diseased crops in many other Latin American countries.
- ▶ As with other 'luxury' commodities, demand in developing Asia is likely to grow rapidly in coming years. The ability of supply to keep pace with this additional demand will be key to the long-term price outlook.

**3.25. Olive oil prices have not kept pace with inflation...**

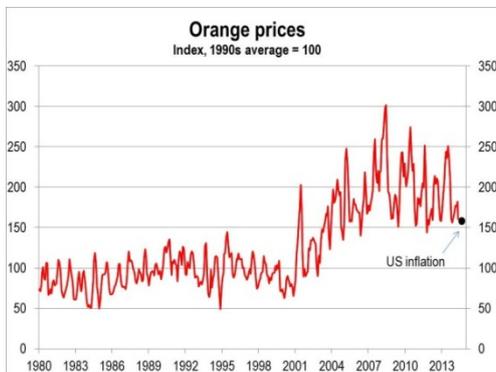


Source: IMF

**...though there remains near-term upside risk due to recent drought conditions in Spain**

- ▶ Olive oil prices are currently in line with their 1990s average, meaning that inflation-adjusted prices are now significantly lower.
- ▶ Prices did increase through the early 2000s, but then fell back again, thanks to strong supply growth. More recently, prices increased in 2012-13 due to limited supply growth and a brighter demand picture, particularly in the developing world.
- ▶ Currently, the drought in Spain is expected to impact this year's production. That will most likely maintain upwards pressure on prices.

**3.26. Orange prices are volatile due to weather effects...**

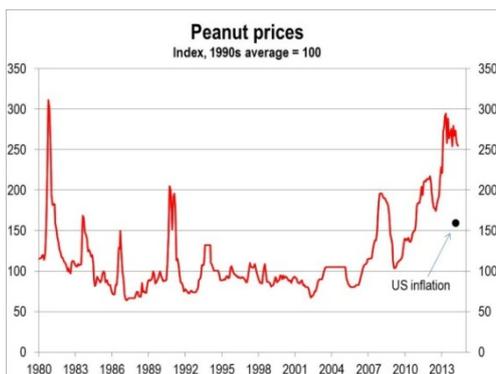


Source: IMF

**...and have kept up with inflation since the 1990s**

- ▶ Orange prices have historically been volatile, subject to seasonal and weather variations. The general trend, though, saw a sustained lift in prices during the 2000s, followed by prices tracking sideways since 2008.
- ▶ US orange production has been on a downward trend for several years due to widespread disease in Florida, one of the world's largest producing regions. That has provided support to prices.

**3.27. Peanut prices have risen through the 2000s...**

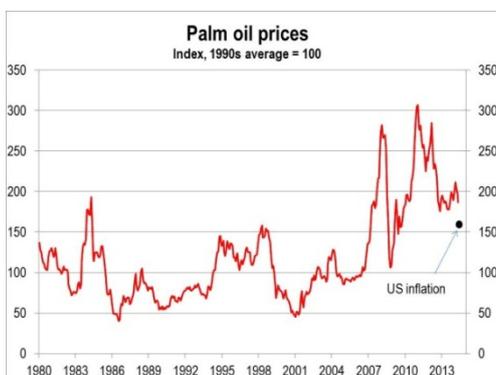


Source: IMF

**...as demand has increased across Asia**

- ▶ Peanut prices fell through the 1980s and were largely flat during the 1990s. Since the mid-2000s, prices have climbed substantially and are currently near historical highs.
- ▶ Prices have been supported recently by the high use of peanut oil in cooking in Asia. Strong demand from Asia has kept prices high despite strong growth in production.
- ▶ China – the world's largest producer of peanuts – has recently begun importing significant quantities for the first time.

**3.28. Palm oil prices have trended higher in the 2000s...**

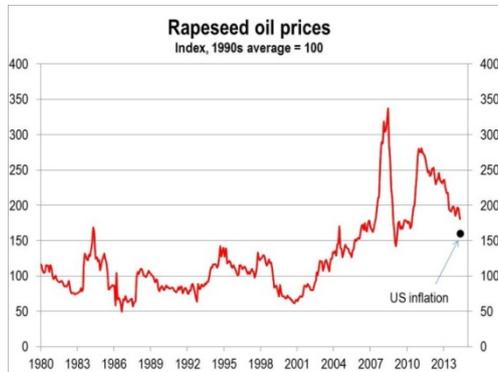


Source: IMF

**...though prices have been held back recently by strong supply of substitutes**

- ▶ Palm oil prices have risen a little above the rate of overall inflation. There were price spikes before and after the global financial crisis, but prices fell back around 2012, as a result of weak demand growth and soaring inventories in Indonesia and Malaysia, the world's largest producers.
- ▶ Since 2012, prices have remained fairly steady, influenced by stable crude oil prices and low prices for soybean oil, a substitute product.
- ▶ The prospect of a good 2014 harvest in the Northern hemisphere is keeping soybean oil prices suppressed, and this is having a flow-on effect on palm oil.

**3.29. Rapeseed oil prices have trended higher in 2000s...**

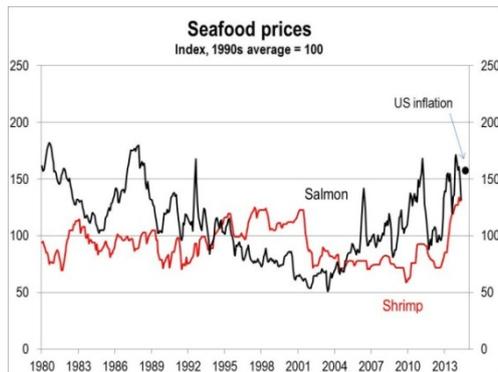


Source: IMF

**...although they have fallen recently, due to increasing supply of substitutes**

- ▶ Rapeseed oil prices surged both before and after the global financial crisis. Over the past few years, they have eased slightly lower but still appear structurally higher than during the 1980s and 1990s.
- ▶ Rapeseed oil prices are influenced by prices for other vegetable oils; the 2010 price surge was influenced by higher palm oil prices.
- ▶ Increased consumption of oils in developing Asia should support demand going forward. Rapeseed oil's future may also be influenced by the biofuels industry.

**3.30. Seafood prices have trended higher in the 2000s...**

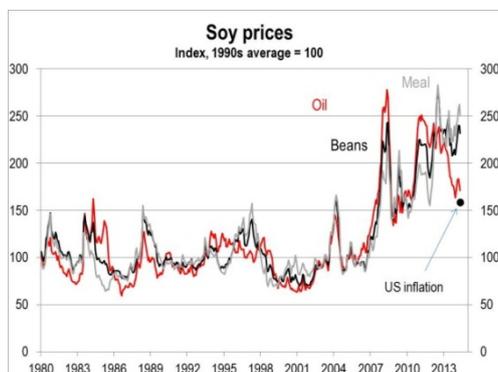


Source: IMF

**...but have only kept up with inflation since the 1990s**

- ▶ Seafood prices have risen slightly below the rate of broader inflation. Shrimp prices were pushed higher by a disease outbreak in 2013.
- ▶ Seafood is likely to see strong demand growth from emerging economies, while the developed world's consumption is also likely to continue growing.
- ▶ Marine and inland seafood capture has plateaued since the early 1990s. Increased demand is, therefore, likely to be met from continued growth in aquaculture (see Wikramasinghe, T and Prahan, T, (2014) *Asia Animal Protein*, 31 July).

**3.31. Soy prices have risen strongly through the 2000s...**



Source: IMF

**...reflecting ongoing strong demand from Asia**

- ▶ Soy prices have risen quite strongly from the mid-2000s onwards. Since 2012, soya oil prices have fallen, diverging from the prices for beans on meal.
- ▶ Soya oil prices have been kept low by low prices for palm oil, a substitute product, thanks to large palm oil inventories that developed in 2012.
- ▶ Rising demand for oils and protein – soybean is used as feed for livestock – in developing Asia should continue to support soy prices over coming years. Strong Northern hemisphere harvests may be a short-term drag.

**3.32. Sugar prices have not kept pace with inflation...**

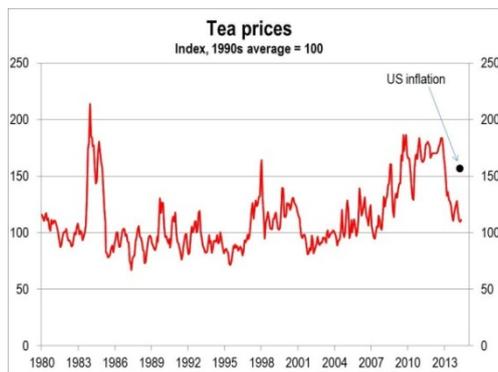


Source: IMF

**...we expect rising demand and weak supply to support prices**

- ▶ Sugar prices been broadly flat over the past 30 years. US and European prices did rise in 2011, but have since eased back.
- ▶ Over the past few years, prices have declined due to weak demand growth and strong supply, especially from Brazil (the world's largest producer). However, a drought is expected to hit Brazil's 2014-15 harvest and support a recovery in prices (see Falcao, A et al (2014) *Brazil Sugar and Ethanol: Unica lowers crushing estimates by 6% for the CS region*, 26 August).
- ▶ Consumption of sugar tends to rise quickly in the earlier stages of economic development (up to around USD10,000 per capita). That suggests potential for strong growth in developing Asia (see Bloxham, P. et al (2014) *Global agricultural commodities: Demand is shifting to the finer foods*, 18 March).

**3.33. Tea prices have not kept pace with inflation...**



Source: IMF

**...and have fallen sharply recently**

- ▶ Tea prices rose to historically high levels in the late 2000s, but over the last few years have dropped back quite sharply to be in line with the average over the past 30 years.
- ▶ The recent decline in prices has partly been a result of strong production, due to favourable weather. At the same time, there was a sharp drop in demand from Egypt, a major importer, due to political tension.
- ▶ Prices have stabilised, and there are reports of inventories being gradually run down. Demand from Egypt is not expected to stay permanently depressed.

**3.34. Dairy prices had risen sharply in recent years...**

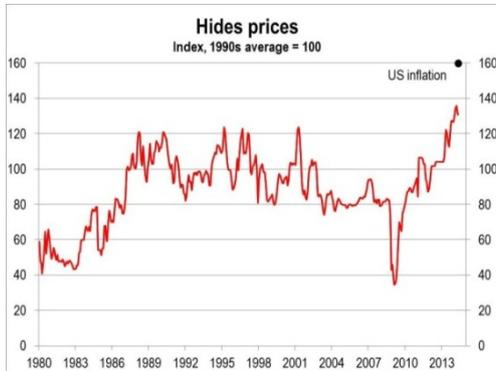


Source: Global Dairy Trade

**...but have fallen this year due to excessive Chinese inventories**

- ▶ Dairy prices have been volatile in recent years, impacted by weather and inventory cycles.
- ▶ Droughts in the US and New Zealand in 2012-13 created concerns over supply and pushed prices sharply higher. Large increases in Chinese imports maintained prices at those levels.
- ▶ Prices have fallen sharply in 2014, although they are still in line with their post-2000 average. This appears to be driven by large inventories of milk powder in China. As these are worked down, Chinese demand will continue to grow rapidly, supporting prices over the medium term (see Bloxham, P. et al (2014) *New Zealand Digest: Milk story may be turning sour*, 19 August).

**3.35. Hides prices have not kept pace with inflation...**

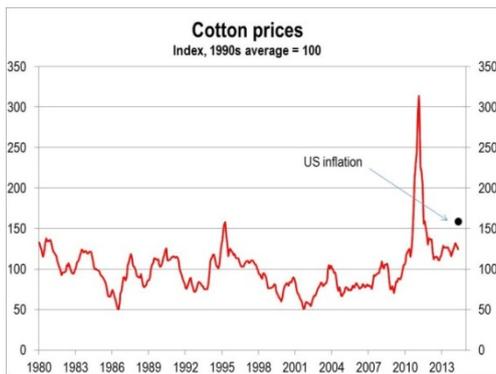


Source: IMF

**...but they have risen significantly in recent years**

- ▶ Hide prices were relatively flat through much of the 1990s and 2000s. Prices briefly fell sharply during the global financial crisis, but recovered and are currently trading at historical highs.
- ▶ Prices are high due to a number of factors. Demand for leather is growing in developing Asia, particularly China, as consumer incomes rise. The global automobile industry is also recovering from the financial crisis, adding another source of growing demand. At the same time, supply is limited – the US cattle herd is at a 60-year low.
- ▶ Demand from consumers in emerging economies should continue to grow as incomes rise. However, historically, supply has matched changes in demand well.

**3.36. Cotton prices spiked in 2011 due to weak supply...**

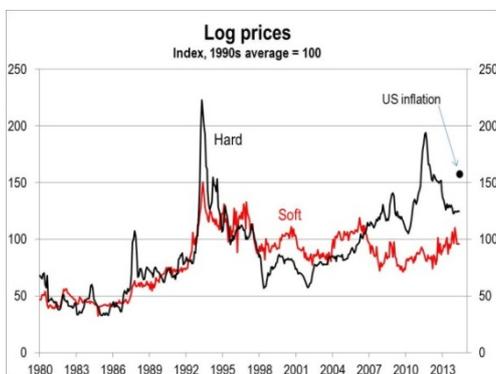


Source: IMF

**...though they have since fallen back to below inflation**

- ▶ Cotton prices have been relatively stable over the last several decades.
- ▶ The exception was a sharp price spike in 2011 that resulted from supply disruptions created by floods in major production regions (particularly Pakistan).
- ▶ Supply is likely to comfortably keep pace with global demand over coming years. In particular, the Chinese authorities have built up a significant cotton reserve. The accumulation of this reserve has supported prices over the past few years, but that process is now expected to reverse.

**3.37. Log prices have not kept pace with inflation...**

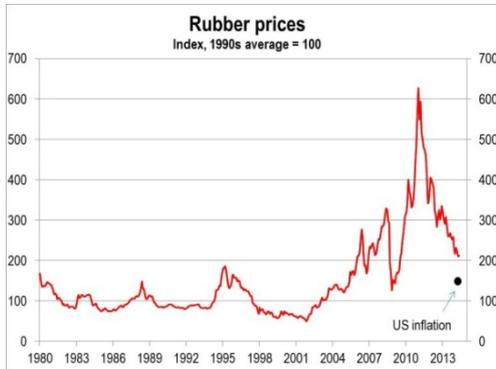


Source: IMF

**...Chinese demand has been the driver of recent trends**

- ▶ Log prices have not kept pace with overall inflation. Softwood prices have been relatively flat since the early 1990s. Hardwood prices rose in 2010-11 due to weak supply, but have since fallen back.
- ▶ The emergence of China as a major importer of softwood logs has been the key development in recent years and has supported modest price growth.
- ▶ However, with China's property market slowing in 2014 and significant log inventories accumulating, prices have fallen this year. Residential construction in China is likely to go through a softer patch, but the medium-term outlook remains positive.

**3.38. Rubber prices spiked sharply in 2011 on weak supply...**

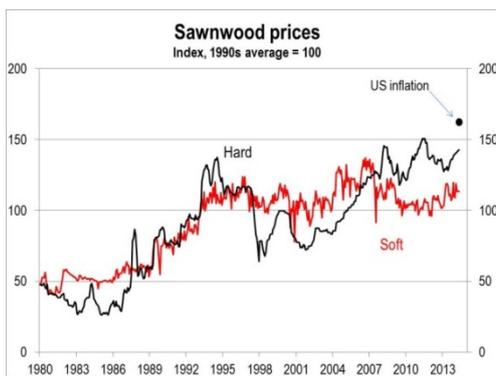


Source: IMF

**...as supply is now coming online, prices have fallen**

- ▶ Rubber prices rose strongly through the 2000s, peaking in around 2010. That was a result of reduced supply combined with strong demand growth, especially in China. Since then prices have fallen back quite sharply.
- ▶ Price falls have come about as supply has rapidly caught up with demand. Plantations set up during periods of high prices (2005-08 and 2010-11) are now starting to add to supply.
- ▶ Supply is expected to continue growing strongly over the next few years as those plantations continue coming online. How this compares to demand, particularly from rising automobile use in the emerging economies, will be key for the outlook.

**3.39. Wood prices have not kept pace with inflation...**

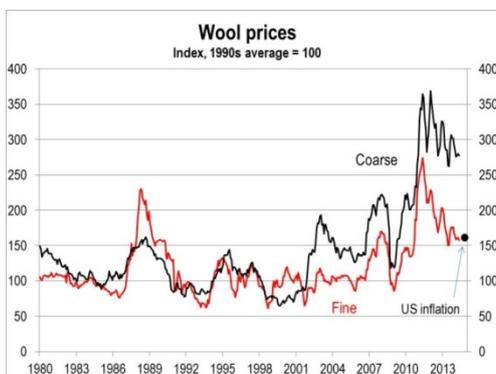


Source: IMF

**...although they have risen solidly since the 1980s**

- ▶ Wood prices have not kept pace with overall inflation. Softwood prices have been relatively flat since the early 1990s. Hardwood prices have been higher in recent years.
- ▶ The emergence of China as a major importer of softwood has been the key development in recent years.
- ▶ However, with China's property market slowing in 2014 and significant log inventories accumulating, prices have fallen this year. Residential construction in China is likely to go through a softer patch, but the medium-term outlook remains positive.

**3.40. Demand for wool has been strong and supply weak...**



Source: IMF

**...since the global financial crisis**

- ▶ Wool prices showed some volatility but generally tracked sideways from 1980 to the mid-2000s.
- ▶ Following the global financial crisis, wool prices rebounded strongly, driven by lower sheep numbers and a recovery in demand. Coarse wool prices have outperformed fine wool due to the stronger recovery in the construction sector compared to clothing.
- ▶ Like lamb, wool supply is likely to remain weak due to the higher profits on offer in cattle and dairy farming. Over the medium term, demand should continue to be supported by ongoing urbanisation in emerging economies.

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# Notes

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# Disclosure appendix

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