



Where are food prices heading?

March 10, 2011

Short-term drivers, trends and implications

The current surge in food prices is due to the superposition of short-term drivers and a structurally tight supply-demand balance. Short-term food price fluctuations have been largely related to supply-side factors. Over the long-term, rising global demand is exerting significant upward pressure (in a context of supply constraints). It is driven by strong income growth in emerging market economies – also by population growth and increased demand for biofuels.

Food price increases are likely to remain an important driver of headline inflation in emerging market economies, where consumers spend over 50% of their income on food. Pass-through from commodity prices to consumer prices is particularly low in the OECD where more processed food is consumed.

Weather-related production shortfalls, policies (e.g. export bans), oil prices and exchange rates are all factors impacting food prices in the short-term. Though the role of speculation is not clear, it is probably not as important as supply and demand fundamentals but potentially amplifies price spikes. Increased transparency and appropriate regulation of derivative markets, if necessary, should be helpful in reducing excesses.

Food prices are likely to start decreasing in the course of 2011 but remain high for the remainder of this decade. The situation is particularly tense for corn, also for soybeans. Wheat prices may subside in the next months in the absence of further weather disruptions. (The persistence of the current drought in China could have dramatic consequences). The rice situation is of no concern at the moment and rice prices should not rise substantially.

Spikes in food prices are expected to occur with increasing frequency in the future, mostly due to weather disruptions and intensified by climate change. The situation can be alleviated in the long-term by a sustainable increase in supply, especially by boosting smallholders yields in developing countries.

Concerted action is needed for emergency responses to shocks. Building food reserves is part of the solution. Better information on production, consumption and stock levels would lead to better educated market decisions and would likely stabilise markets.

It is also important to avoid restrictions in the flow of food – keeping in mind the interests of developing countries. Export restrictions usually disrupt world markets, often drive global prices up and reduce domestic incentives to increase supply.

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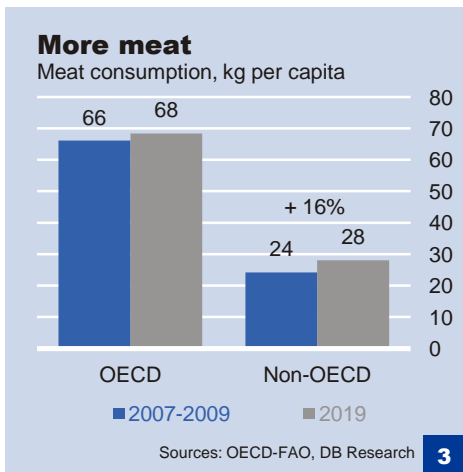
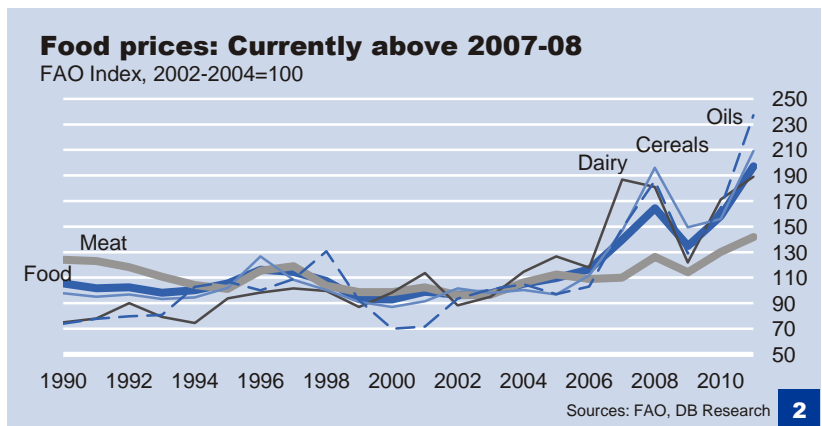
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Food prices reached a new record high in February 2011, according to the UN Food and Agricultural Organisation, as some prices increased drastically over the last year: wheat by 74%, corn by 87%. The food price inflation is giving rise to fear of lower spending capacity for some, fear of hunger for others, with potential consequences for global growth and political turmoil. OECD Secretary-General A. Gurria commented that “surging food and commodity prices are undermining efforts to tackle global poverty and hunger and threaten economic growth.”

The current surge in food prices is due to the combination of a short-term supply shock and longer-term structural factors. What is up for debate is the extent and the time-frame of their impact, including their relative importance as well as their interconnectedness. This paper aims to review the main considerations around food price movements. It includes a discussion on the impact of speculation.



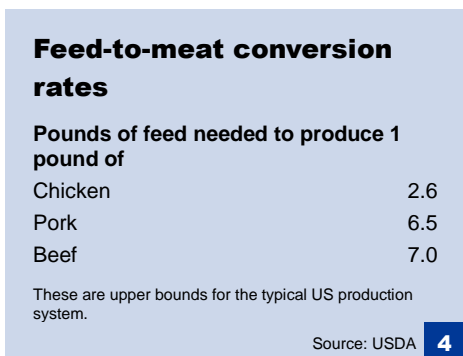
1. The structural context: A tight supply-demand balance

Trends affecting the supply-demand equation provide the background on which shorter-term factors may operate¹. If food supply is large enough to meet demand in the long-term, prices are not on an increasing trend and are also not as likely to experience spikes.

1.1 More demand for food, especially meat

The consumption of agricultural products is increasing, due to population growth and income growth in developing countries as well as biofuel production – subsidised, but also influenced by rising prices for fossil energy.

In combination with rising incomes, globalisation and urbanisation are contributing to a switch of dietary preferences towards Western diets, including foods requiring intensive use of resources (water, energy and grains). The consumption of animal proteins in particular is rising fast in developing countries. And as a rough rule of thumb, 2000 pounds of grain must be supplied to livestock in order to produce enough meat and other livestock products to support a person for a year, whereas 400 pounds of grain eaten directly will support a person for a year. (Thus meat requires between 5-10 times the agricultural area to obtain the same amount of calories as a vegetarian diet).



¹ See also Schaffnit-Chatterjee (2009). “The global food equation”. Deutsche Bank Research.

We are likely to witness a global increase in meat consumption for many years to come, even if alternative protein sources gain importance. Proteins of vegetable origin are becoming more popular in developed countries. Scientists and business are also developing an interest in insects as an attractive protein alternative - due to their highly nutritive qualities, their lower environmental footprint (also in terms of greenhouse gases) and their ability to reproduce easily².

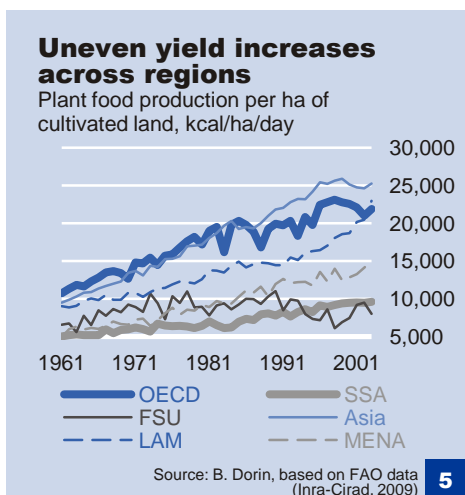
The globalisation of diets is also associated with a reduction in the range of agricultural products consumed (often at the expense of local species). This may decrease the possibility of substitution between food items when some prices increase.

1.2 Output growth: Constrained

Output growth is limited by natural resource constraints. Competition for arable land is fierce, due to land degradation, urbanisation, other agricultural crops (especially biofuel crops) and potentially carbon sequestration. Water is also becoming increasingly scarce³, a critical limitation in agriculture. Indeed water usage has been growing due to increases in both global population and per capita usage. Irrigation and urbanisation have already started depleting water stocks. Changing diet patterns also contribute to unsustainable water usage: bovine meat production requires roughly 8-10 times more water than cereal production.

Yield increases have also been limited by decades of underinvestment in agricultural research and development as well as rural infrastructure. In addition, farmers often have limited access to good quality agricultural inputs and credit. Some regions, for instance parts of Asia and Sub-Saharan Africa, have not benefited from the Green Revolution. Small farms in these regions offer huge opportunities for productivity gains and yield improvements.

Food availability is also limited by inefficiency of food energy from field to fork: less than half of the food produced is available for human consumption, as the result of harvest and post-harvest losses as well as use of grains for animal feed⁴. Better links between farmers and markets would help in increasing efficiency along the food supply chain.



Cereal utilisation and production
Domination of the developing world
Million tons

Asia	Utilisation	1,022
	Production	945
Africa	Utilisation	195
	Production	144
Latin America	Utilisation	183
	Production	176
Developing world	Utilisation	1,320
	Production	1,214
Developed world	Utilisation	877
	Production	1027

Sources: FAO Stat, DB Research **6**

2. Outlook for short-term price drivers

The factors above are structural and here to stay. They will affect future food prices over the next decades. A number of shorter-lived drivers may exacerbate or dampen the effect of these trends from one year (or one month) to the next.

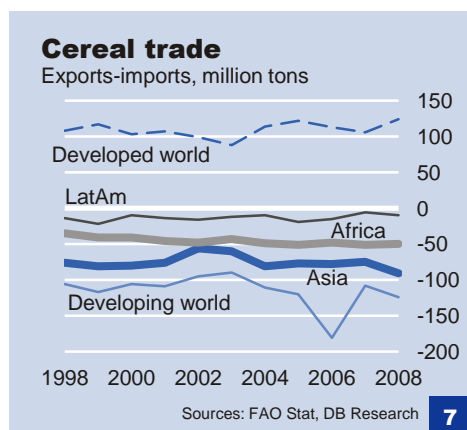
2.1 Weather events, intensified by climate change

The current surge in food prices has been partly driven by poor harvests following adverse weather events: drought in Russia last Summer and later in Argentina, heavy rains in Canada, and in Australia at the beginning of this year. The La Nina phenomenon is expected to persist through the first months of 2011. This incidence

² The resistance to eating insects or worms prevalent in Western societies is being circumvented by some companies through selling muesli bars and chicken nuggets containing (hidden) worms. The FAO is also exploring insects as a sustainable food source <http://www.fao.org/forestry/65422/en/>.

³ See Heymann, Lizio and Siehlow (2010). "World water markets". Deutsche Bank Research.

⁴ United Nations Environment Programme. "The environmental food crisis" (2009).



of lower oceanic surface temperatures off the western coast of South America over to the Philippines has far-ranging implications, typically a colder winter in the northern hemisphere, drought in South America and the southern United States and a precipitation increase in Indonesia, Malaysia and Australia. This may reduce soybean production in Argentina and Brazil and lower coffee production in Brazil and Columbia. (Soybeans are important both as a source of vegetable oil and as an animal feedstock.) An on-going lack of rain in China could devastate harvests in June and lead to higher wheat prices.

Given the large consensus in the scientific community that climate change will increase the frequency of extreme weather events, the weather's role in driving agricultural prices up could actually be considered as structural⁵. Climate change is likely to cause major disruptions in agriculture.

2.2 Trade policies

We have repeatedly witnessed in recent years how short-term focused policy responses to supply shocks can exacerbate a tense situation – e.g. Russia's and Ukraine's decisions to ban and restrict exports last Summer. In response to the last food crisis, governments of at least thirty countries had also implemented export restrictions by July 2008 as a means to promote domestic food security.

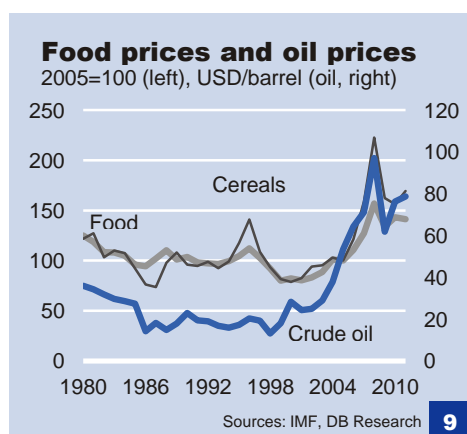
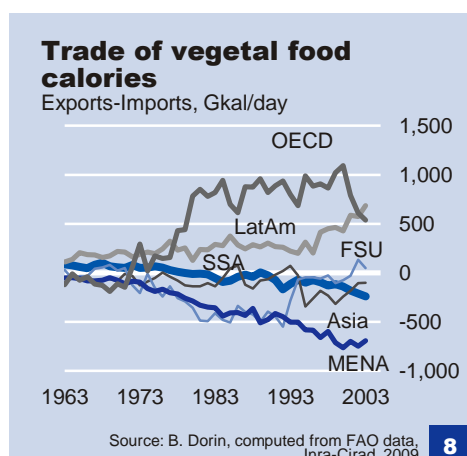
Although export bans, quotas or taxes may bring short-term relief to domestic prices, their overall impact on both the domestic economy and the international situation is not positive. Globally, export restrictions are likely to exacerbate price instability and price increases in world markets. Indeed, they limit the balancing of supply and demand and also send a signal which may lead to panic buying. Moreover, by depressing domestic prices, they mask incentives for farmers to increase supply.

Agricultural trade rules need to change in order to address importers concern about unreliability of supply (including in developing countries where domestic production has to compete with EU-sponsored "cheap" commodities). It is important to conclude the WTO Doha negotiations. The main source of growth for world agricultural production, consumption and trade will be in developing countries.

The future of trade patterns for specific food items will depend on different considerations. For corn, an important question is whether China may become a major corn importer (along with Japan, the EU and Mexico) to feed a growing livestock population. For wheat, China and India are both major producers and consumers with relatively small imports and exports. Whether they have surpluses or shortages may have a major impact on world markets⁶.

2.3 Oil prices

The links between food and energy economies are stronger than ever. The food sector uses about 10% to 15% of all energy in the industrialised countries⁷: for chemical fertilisers, transport fuel, on-farm activities (irrigation, crop drying, heating of green houses and livestock sheds, tractor fuel) and for the end of the value chain (processing of crops and foods, refrigeration and cooking).



⁵ Kahn and Zaks (2009). Investing in agriculture. Deutsche Bank.

⁶ Westhoff (2010). The economics of food. Pearson Education, Inc.

⁷ Hawken, Lovins and Lovins (1999). Natural Capitalism. Rocky Mountain Institute.

At the same time, crops are increasingly used to produce fuel, which contributes to higher food prices by driving up demand⁸. The possibility of diverting agricultural feedstocks from biofuel production into the food chain when required is being discussed. One way may be the establishment of call options on grains and oilseeds: the governments could purchase them from biofuel producers to redirect crops towards food production when needed. This may help to reduce extreme food prices⁹. Moving from crop-based towards cellulosic-based biofuels once they become commercially viable should also help (assuming they are environmentally sound).

The two-way link between food and energy makes the level of oil prices a significant factor for the production and distribution of food. Higher oil prices will tend to contribute to higher food prices – by increasing input and production costs and reinforcing demand for biofuels. A tighter connection between oil and food prices also likely drives an increased occurrence of spikes in food prices.

2.4 Macroeconomic factors

The levels of inflation rates, exchange rates and interest rates are also known to impact agricultural prices. The increase in internationally-traded food prices due to the decline of the dollar is considered significant by some sources¹⁰. Since the US is the largest exporter of agricultural commodities and most prices are quoted in US dollars, the depreciation of the dollar in recent years has made it cheaper for some countries to import such commodities from the US, thus boosting demand for these imports and changing trade patterns.

2.5 The debate on speculative influences

"Fundamentals are surely strong drivers of commodities prices. Speculation is there also, but we cannot say how big the role of speculation is" OECD Chief Economist Pier Carlo Padoan, January 2011.

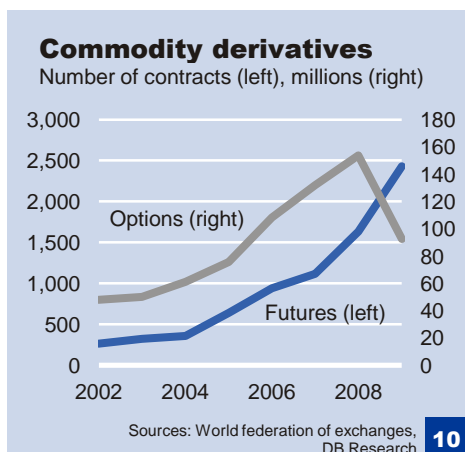
Since the Middle Ages, producers and buyers have entered speculative contracts, locking in a price for future purchases and sales in order to reduce their market risk exposure. Today's derivative markets for agricultural products provide hedging – through futures, options, swaps and other tools – and bring liquidity to the markets (by allowing sellers to find buyers and vice-versa), thus contributing, in principle, to decrease volatility. They also provide strong price signals to which supply will react in the medium term.

Role of derivatives in driving up prices: Likely minor

There is however a concern that derivative markets promote a speculation which drives prices up and undermines the right to food. There is no consensus on the role of financial markets in determining food prices, since it is not easy to separate price movements caused by "unjustified" speculation from movements resulting from adequately considering supply and demand fundamentals. Statistical tests and analyses of speculative flows have not provided evidence that speculative flows caused rather than followed price movements in 2007-2008. It is likely that

"Prices probably overshot (to an unknown extent) due to "exuberant" expectations of all market participants, but changes in market fundamentals were the main drivers of the boom and bust cycle"

Kappel, Pfeiffer and Werner (2010)



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⁸ The current US ethanol mandate may cause world food prices to increase by 20-30% according to Roberts and Schlenker (2010). "Identifying supply and demand elasticities of agricultural commodities". NBER working paper.

⁹ Wright (2011). Biofuels and food security IPC Policy focus.

¹⁰ Responsible for about 15% of food prices increases between 2002 and 2008, according to Mitchell (2008) "A note on rising food prices". World Bank.



speculation generally follows market fundamentals and price development rather than creates a price bubble¹¹.

However, there are times when excessive market positions may temporarily distort the normal functioning of the market – with potentially serious consequences for farmers and consumers¹². If speculators drive prices to levels inconsistent with market fundamentals, the results can be disruptive.

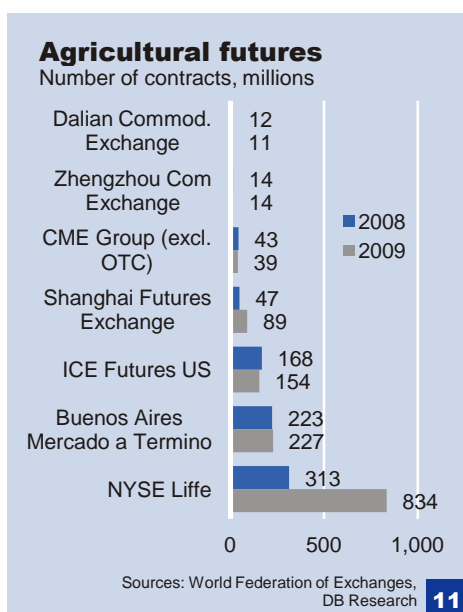
Agricultural commodities have become an attractive asset class since their prices are more influenced by agricultural fundamentals than by the usual factors driving financial markets. Given this low correlation with other asset classes, agricultural commodities are likely to remain an interesting instrument for portfolio diversification.

A continuum between pure risk avoidance and pure speculation

The main actors on futures markets are often classified into three groups: i) the hedgers (farmers and agri-business buyers) who want to protect themselves from price risk, ii) the speculators who hope to make a profit by correctly guessing how prices will move and iii) the investors who regard commodities as assets (like equities, bonds, real estate, etc.) and are also speculators, with a longer-term orientation. Speculators are necessary counterparts for hedgers: indeed, since hedgers' positions usually do not cancel each other out, the functioning of the futures requires a party willing to accept the risk in exchange for an expected profit. There is, however, no clear-cut distinction between the various actors on commodity future markets (as often assumed in analyses): price bubbles can result from the misguided expectations of all market participants. Indeed, producers, processors and merchants, when aware of supply shortages and declining stocks will expect food prices to rise and likely try to hold back commodities¹³. It is also important to note that for prices to grow, it is sufficient that "physical traders *want* to hold bigger stocks", it is not necessary that they succeed.¹⁴ The price of a futures contract on any given day is whatever traders decide it should be, i.e. it is determined by their collective behaviour in the market. (Market fundamentals will usually make sure that higher-than-justified prices are short-lived, with market participants looking at both current and future supply-demand balance.)

Proper functioning of derivative markets

Nicolas Sarkozy has made it a priority of the G20 this year to address the issue of commodity prices and food security. The useful role of derivatives along the whole food supply chain in reducing price risk and discovering prices has been widely recognized. A regulatory environment promoting markets' efficiency and transparency may ensure that derivatives keep on fulfilling their roles¹⁵. This is particularly important in a context where tighter budgets as well as environmental and trade considerations are leading some countries, for instance those in the EU, to reduce



Transparency and regulation in order to avoid excesses

¹¹ Kappel, Pfeiffer and Werner (2010) provide a literature review in "What became of the food price crisis in 2008?" *Aussenwirtschaft* 65, p.21-47 (2010).

¹² De Schutter (2010). "Food commodities speculation and food price crises". Briefing Note 02. United Nations.

¹³ Kappel et al. (2010) as above.

¹⁴ *The Economist* 9.1.2008, p.67.

¹⁵ See also European Commission "Tackling the challenges in commodity markets and on raw materials". Brussels. 2.2.2011.

Animal diseases or food safety threats

market interventions (public risk management tools) – prompting farmers and buyers to rely more heavily on derivatives¹⁶. In any case, the future price of commodities will continue to be determined by market participants making decisions to buy and sell based on information which is necessarily imperfect. So food prices will sometimes be higher or lower than they would be if everyone had a fully accurate picture of the supply and demand situation, current and future.

2.6 Further sources of unpredictability

The factors described above likely played some part in the recent booms and busts in food prices. There are others which may be rare but have a significant impact, even if in the short-term. Animal diseases or food safety threats have resulted in some food prices suddenly being driven up or down, either through reduced production or lower demand. Examples include Avian influenza, mad cow disease, blue ear disease (which affected Chinese hogs in 2006), or earlier this year the dioxin scandal in Germany. The incidence of diseases (for livestock and crops) may be increasing due to global warming and globalisation. More stringent safety regulations may also affect food prices in the future.

Popular diet plans may also shift food consumption patterns and temporarily affect prices.

Geopolitical events can also play a major role. For instance, the dissolution of the Soviet Union significantly impacted world food markets, exerting downward pressure on grain prices: a major grain importer – with a large and heavily subsidized livestock sector – was replaced by several republics which are, as a group, major grain exporters¹⁷.

3. Agricultural supply response to shocks

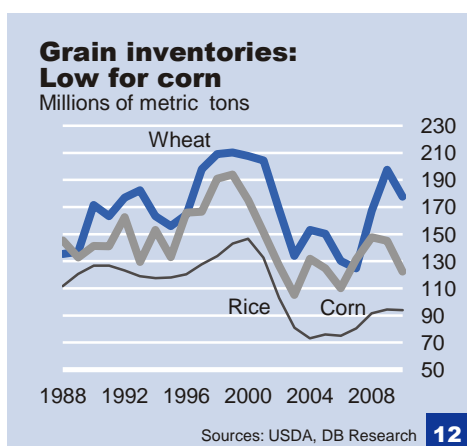
3.1 Inherently low

Since agricultural commodities are subject to seasonal patterns, their supply typically needs time to adjust to changes in prices or demand. And since food answers a basic human need, substitutes are not always an option, especially for staple foods: people may give up other expenditures (including health and education if required) in order to continue to eat. So demand responses to price increases are also low – until, for the poorest, they translate into hunger. This also means that a bumper crop will have a limited effect on consumption volume but will have a large price effect. So even small changes in either supply or demand of agricultural commodities typically result in substantial price changes.

3.2 The role of stock levels

The low price elasticity of supply can be partly compensated by holding stocks. When stock levels are low, the absence of a buffer translates into stronger price responses to a shock in supply or demand. For instance in 1972/73, a decline in world wheat

Low price elasticities of both supply and demand



¹⁶ See also Schaffnit-Chatterjee (2010). "Risk management in agriculture". Deutsche Bank Research.

¹⁷ Westhoff (2010). The economics of food. Pearson Education, Inc.



production of less than 2% occurred at a time when stocks were low and caused the price to more than double¹⁸.

At the moment, corn stocks are quite low. Wheat inventories are fairly high, which should help wheat prices to subside. (World stocks are notoriously difficult to assess. As the USDA notes, they are normally based on an aggregate of different local marketing years and cannot be interpreted as representing world stock levels at a fixed point in time).

3.3 Mean reversion

An observation of price spikes in seven agricultural commodities since 1972 shows that they average 140% from trough to peak and last around 20 months. Both magnitude and duration are lower than in the energy and metal sectors where they reach 300% and 2 to 3 years respectively, which reflects the slower supply response: bringing a new mine to production after discovery can take five to seven years, whereas agricultural production can recover within one or two years¹⁹.

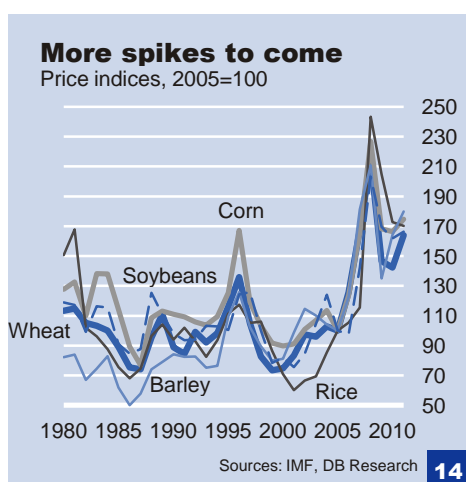
Agricultural price hikes

Averages trough to peaks since 1972

		Change (USD)	Change (%)	Duration (months)
Corn	Average	2.46	129%	17
	Current	3.04	94%	7
Wheat	Average	3.77	165%	25
	Current	3.78	88%	7
Soybeans	Average	5.72	127%	15
	Current	4.33	47%	7
Sugar	Average	13.7	219%	22
	Current	20.7	152%	7
Coffee	Average	1.34	218%	16
	Current	1.39	137%	24
Cocoa	Average	16	171%	26
	Current	-	-	-

Sources: Deutsche Bank, Bloomberg

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3.4 Outlook

If current developments are in line with historical averages, the actual price spikes in corn and soybean are just starting and could last until autumn. Given that wheat stocks are high, wheat prices may subside within a few months if no further bad harvest occurs, for instance due to dry weather in China or potentially in South America and the Western US plains. The ongoing drought in China could have dramatic consequences if it persists and forces a major exporter of wheat to become a net importer.

Contrary to wheat and corn, international rice prices are still well below their peak of 2008 and slightly lower than a year ago. The situation in the coming months will depend on how the crops which are now in the field evolve but relatively abundant supplies are expected to moderate the pressure stemming from other markets: global production is a record and stocks are the highest in 8 years.

¹⁸ Wright (2008). "Speculators, storage and the price of rice". ARE Update 12 No. 2 University of California.

¹⁹ Deutsche Bank (2011). Commodities Outlook. Global Market Research.

The rice market: A special case

Although small, the international rice market has political importance (most of the food riots in 2007-2008 involved rice). Indeed, rice is the staple food in much of Asia and an important food in central and western Africa. Its price development differs to those of other food commodities for the following reasons. Rice production (on different types of land, in different countries) and consumption (different group of consumers) have little to do with those of other grains. Moreover, most major rice consumers are also major rice producers, so only about 7% of rice produced is traded (exported) internationally (compared to close to 19% for wheat and 10% for coarse grains²⁰). Another distinction is that rice is not currently traded on a liquid future market (rice futures markets are found in Bangkok and Chicago but are not very active).

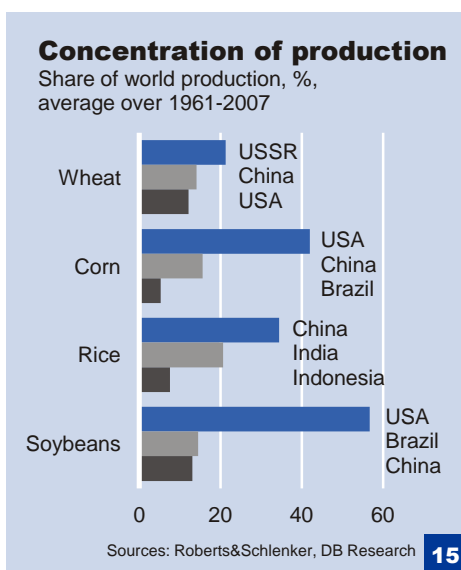
4. There are prices and prices

Price transmission reflects the actual or potential movement of imports or exports to take advantage of price differentials in spatially separated markets. Since trade constitutes a low percentage of global transactions, one could argue that movements of prices in domestic markets are more important than those on global markets.

4.1 International vs domestic prices

The impact of higher global prices on domestic prices varies substantially across countries according to known factors²¹. Through price controls or managed trade environments (import/export tariffs/taxes or restrictions), commodity markets in many developing countries are often disconnected from world markets: if world price signals are transmitted at all, it will be with a time-lag²². However when world prices fall substantially, these countries can be quickly inundated with lower cost imports. It is likely that increasing globalisation and macroeconomic integration will result in increased transmission from world shocks to domestic markets through exchange rates.

In the opposite direction, domestic markets may affect global markets, for instance through export restrictions. A high concentration of agricultural exports (distributed over only two or three countries for major commodities) also means that a bad harvest or a change in regulation in one of these countries can strongly impact global prices. Chart 15 shows the share of world production for the top three producers of four commodities – as yearly averaged over 1961-2007²³. The geographical concentration of production translates into a concentration of exports. Thailand, Vietnam and Pakistan account for 64% of global exports of rice. The US, Brazil and Argentina are responsible for a combined 88% of global exports of soybeans (with China and the EU as the major importers), and Malaysia and Indonesia account for almost 90% of global exports of palm oil²⁴.



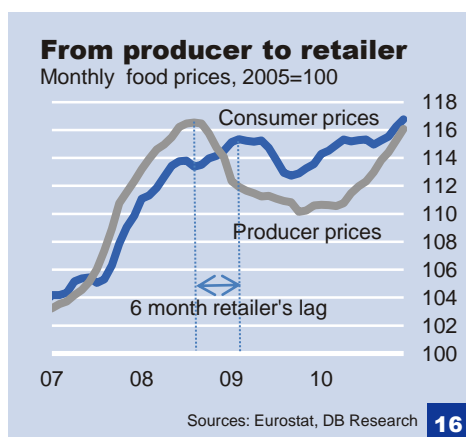
²⁰ FAO figures for 2007/2008.

²¹ These factors include the share of the production which is internationally traded, the level of exchange rates, the level of trade management, the state of domestic infrastructure as well as the extent of competition within domestic supply chains.

²² OECD-FAO Agricultural Outlook (2010).

²³ Roberts and Schlenker (2010). "Identifying supply and demand elasticities of agricultural commodities". NBER working paper.

²⁴ Deutsche Bank (2011). Commodities Outlook. Global Market Research.



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The food supply chain: efficiency and structural weaknesses

4.2 Producer prices vs consumer prices

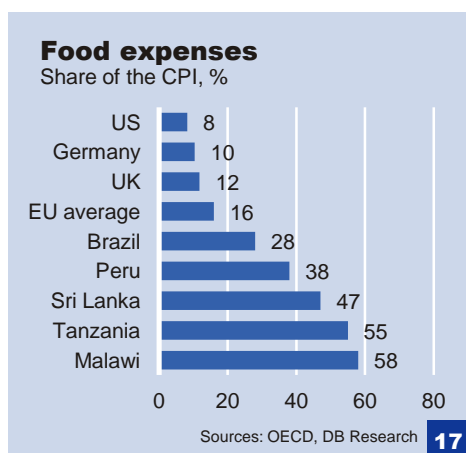
Price transmission also occurs within domestic markets, with vertical price movements along the food chain. Large increases in commodity prices may have a small impact on final product prices, especially in developed countries where more processed food is consumed. Indeed, agricultural commodities as raw materials often amount to only a small portion of processed foods. Retail food prices include additional costs such as labour, processing, transportation, distribution and taxes. For instance, the share of agricultural commodities in the US food basket is only 20-25% according to the USDA. It varies considerably depending on which food item one considers. Wheat prices are known to account for only a few percentage points of bread prices (around 6%).

In 2007-2008, after agricultural commodities prices rapidly increased, food producer and consumer prices in Europe started to increase as well, but at a slower rate for two reasons: the share in the total price of the food is small and also, in the most competitive markets, food processors and distributors absorbed part of the increase.

The food industry is becoming more global, vertically integrated and concentrated. On one hand, this helps maintain prices low (partly due to scale effects). On the other hand, this growing market power raises concerns about price transmission. In 2007-2008, the reaction of food processors and distributors to the decrease in commodity prices was both slower and weaker compared to their reaction to their increase²⁵. The European Commission is looking at ways to increase transparency along the food supply chain and to reduce the imbalances in bargaining power – potentially leading to unfair trading practices when large and powerful actors try to impose prices or alter terms and conditions to their own advantage²⁶.

4.3 Spill-over effects across agricultural commodities

The reach of a price increase partly depends on the nature of its driver(s). Its impact may be initially limited to a particular agricultural commodity and potentially spread across several other commodity markets - due to substitution effects or other links (e.g. soybean and meat, or the fact that corn and soybeans compete for the same land in the US²⁷). There are also common drivers directly affecting several (or most) agricultural commodities, for instance demand growth, high oil prices or dollar depreciation. What made the food crisis of 2007-2008 extraordinarily dramatic is that prices rose for all major crops. (The occurrence of price hikes for specific crops is a regular feature of agricultural markets.)



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5. Consequences of food price increases

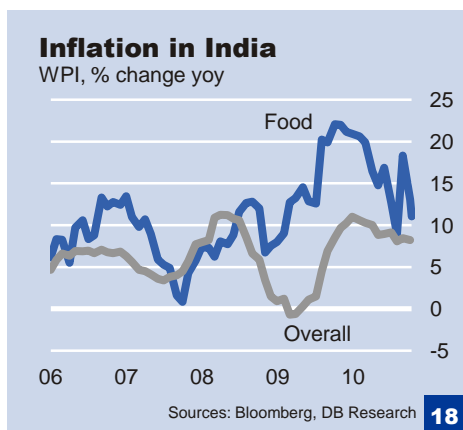
5.1 Potentially far-reaching consequences on individuals ...

Surges in food prices potentially have far-reaching consequences including increased malnutrition and hunger, social unrest, budgetary implications and dampened economic growth.

²⁵ European Commission (2009). „A better functioning food supply chain in Europe“. Brussels.

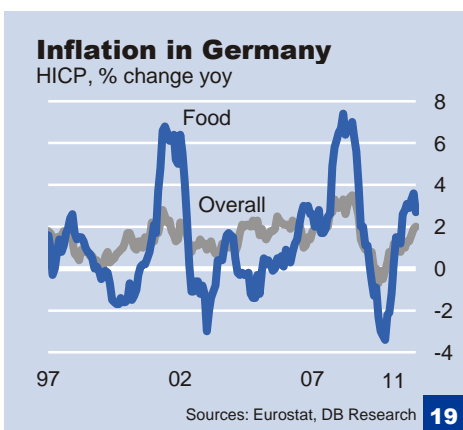
²⁶ European Commission (2009) and De Schutter (2009). „Addressing concentration in food supply chains“. Briefing note 3. December 2010. UN.

²⁷ Schmitz and von Ledebur (2008). Maispreisverhalten. JH von Thuenen Institut.



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Low-income countries and low-income individuals (who may spend 70-80% of their total income on food) are obviously the most affected by rising food prices, especially rising grain prices. In these countries, overall consumer price indices (CPI) are more closely related to food prices (assessed as the food component of the CPI, measuring the cost of a fixed basket of foods at the retail level (see charts 1 and 18). In 2009 after the last food crisis, the contribution of food price increases to overall inflation was still 9 percentage points in Tanzania, 7 percentage points in Ghana and 4 percentage points in the Russian Federation²⁸. Consumers in the poorest countries paid about 20% more for food in 2010 than in 2009. In the US, retail food prices rose only 1.5% last year²⁹. In OECD countries, because of relatively moderate food price increases and their small share in total household expenditure on average, the contribution of food price increases to overall inflation tends to be low. It was generally less than 0.5 percentage points in 2009 and often negative – on average for the OECD, food prices contributed 0.3 percentage points to overall inflation. However, food heavily impacts consumers' perception of inflation relative to its share of expenses since it provides for a basic human need. And lower-income households are obviously more affected.



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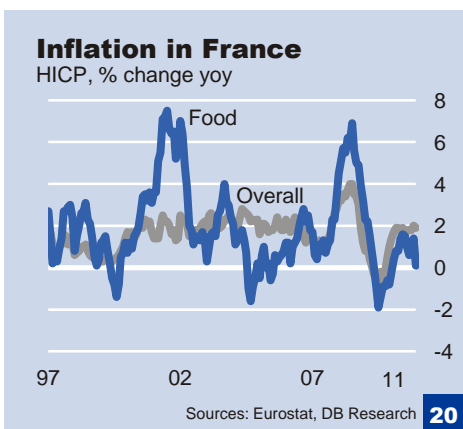
Basic food security concerns relate largely to supplies of rice in Asia, and of white corn in southern and eastern Africa. An increase in meat prices is felt more acutely at middle levels of income. Some foods have a particular cultural significance (e.g. onions in India or tortillas in Mexico) and an increase in their price has a high potential to cause social unrest. In developing countries, food price increases are expected to remain significant drivers of headline inflation.

There are also winners of high food prices, at least in the short-term, for instance farmers in the developed world. According to the USDA, income for US farmers is expected to jump 20% in 2011. Farmers in developing countries often do not benefit from higher food prices for several reasons: smallholders tend to be net food buyers, increase in prices for agricultural inputs mean higher costs which are harder to manage, and higher international prices are not always fully transmitted to domestic markets (see 4.1).

5.2 ... and countries

At country level, significant changes in food prices may affect the trade bill, especially for the majority of poorer countries which are net importers of food. High cereal import costs can lead to a significant widening of the current account deficit in poor countries (greater than 3% of GDP in some cases³⁰). Increases in soybean prices translate into increases in meat prices, and particularly impact China, a major world importer of soybeans. In principle, net food exporters should derive more income from high food prices but the food crisis in 2007-2008 showed that most developing countries did not experience an increase in supply due to various constraints.

Higher food prices may also motivate demands for higher wages to compensate for the former, especially in countries with strong growth and low unemployment. Wages in India are currently rising as workers demand pay that keep up with the cost of living. This is not likely in developed countries given the low share of household income spent on food on average (typically 10-15%).



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²⁸ OECD-FAO Agricultural Outlook (2010).

²⁹ Estimates from the UN and the USDA respectively.

³⁰ FAO (2008). Soaring food prices.



6. Looking ahead

Short-term food price fluctuations have been largely related to supply-side factors, mostly weather disruptions, intensified by climate change. Over the long-term, rising global demand is exerting significant upward pressure (in a context of supply constraints). It is driven by strong income growth in emerging market economies – also by population growth and increased demand for biofuels.

Until supply has caught up with increasing demand for agricultural commodities, we expect both:

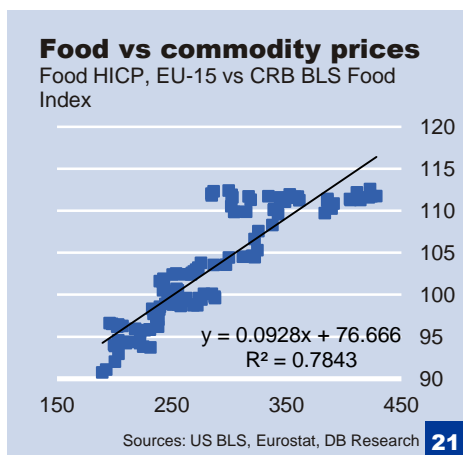
- more frequent occurrences of price spikes
- a reversal of the long-term downward trend of prices for agricultural commodities

Food price increases are likely to remain an important driver of headline inflation in emerging market economies. For developed countries, we investigated the impact of commodity prices on consumer prices by exploring how food inflation at the consumer level responds to changes in commodity prices, as expressed by the US CRB-BLS Foodstuffs Index³¹. Past experience has shown that a 50% increase in commodity prices translates into a 10% to 15% increase in food inflation. If commodity prices increase by 15% in 2011, food inflation may increase by 5%, based on past developments. This may in turn drive a 0.5% increase in headline inflation (based on a 10% share of food expenses in the consumer basket).

Given the anticipation of increased price spikes as well as higher food prices (in relation to the pre 2007-2008 prices), it is important to concentrate efforts in two directions. On one hand, emergency responses to shocks need to be available for the short-term. On the other hand, it is necessary to sustainably increase supply where it is most needed, especially by boosting the production of smallholders in developing countries. At the same time, there is a need for improved public governance. Indeed, hunger is often more a problem of access to food than shortage of food: economic, social and political factors are key. Improved public governance is also a necessary condition for investment programmes to be effective in boosting yields and improving the infrastructure necessary for storage, transport, market access, etc.

Concerted global action is called for. The establishment of physical grain reserves could help counter extreme fluctuations in food prices and meet emergency needs. At country level, the World Bank and the OECD also advocate to impose stricter discipline on the use of export and import restrictions. It would also be very useful to have better public information available: on national and regional food production, consumption and stocks, as well as prospects in the medium term. This would lead to better educated market decisions and would likely stabilise markets.

The food industry is confronted with the challenge of securing the supply of raw materials in a context of rising prices. Some companies may decide to absorb some of the higher costs in the short-term in order to avoid a sales slump. In the longer-term, they may increasingly consider partnering farmers: supporting them with access to good quality inputs and knowledge will boost their crop



Sustainably boost supply and improve governance

Organise emergency responses

A challenge for the food industry

³¹ Commodity research Bureau, Bureau of Labor Statistics Foodstuffs Spot Index (Hogs, steers, lard, butter, soybean oil, cocoa, corn, Kansas City wheat, Minneapolis wheat, and sugar).

yields and quality, thus benefiting the company through supply and traceability³². Being more sophisticated in understanding and managing their risk will be beneficial. Diversifying their supply sources, e.g. through geographical spread may also help.

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³² See Schaffnit-Chatterjee (2010). „Agribusiness and hunger“. Deutsche Bank Research.

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