

The food prices explosion

Root causes and how to regulate them

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Food prices surged in 2007 by 26% in Vietnam, 25% in Liberia, 16% in Chile and West Africa, compared to only 4% in the US and 3.1% in France. In the six months of 2008 the surge of food prices accelerated in all countries further increasing the number of chronically hungry people. The U.S. Department for Agriculture (USDA) projects that the number of hungry people would reach 1.2 billion by 2017. This article aims to appraise the upstream explosion in the prices of staple agriculture commodities and their root causes. To analyse the upstream explosion of agricultural commodity prices, we need a meaningful comparison of agricultural commodity and food trade between countries. Many authors, countries and international institutions are confounding agricultural trade with food trade. For a meaningful comparison of trade flows among countries, I have revalued and developed comparable data from the UN COMTRADE data base. In this data, agricultural trade includes the products listed in the Agreement on Agriculture except manufactured tobacco, and food trade excludes non edible agricultural raw materials but includes fish products (Berthelot, 2008)

The recent explosion in the prices of agriculture commodities

Almost all agricultural commodities have been affected by the explosion of prices since January 2006, with the exception of sugar¹ and pork. The increase in prices of cotton and coffee has been much lower than that of the staple products (cereals, oilseeds, dairy) produced mainly in countries with temperate climates. To understand the root causes, one must understand that the U.S. is the »price maker« for the world prices of »grains« (cereals, rice, oilseeds, pulses, cotton). Other exporters base their prices for agricultural commodities on the US FOB² prices that are quoted in Chicago, Kansas City or Minneapolis (Ray/ de la Torre Ugarte/ Tiller, 2003, 26). Because grains feed animals, grain prices affect the prices of animal products, which underlines the major role of the U.S. in determining most world agricultural prices.

By March 2008, US wheat prices had grown 2.8-fold³ for both the Hard Red Winter (HRW) and Soft Red Winter (SRW) varieties but then they fell by 29% and 37% in August, remaining at \$ 341 and \$ 250 per ton (\$/t) respectively (Berthelot, 2008). The U.S. renewable fuels standard is driving much of the recent market demand for agrofuels. This standard explains the 2.9-fold increase of the corn price by June 2008 to 294 \$/t, which was driven up further by the floods in the Midwest to 307 \$/t in early July before falling at 250 \$/t in August. The price of rice had hardly risen until October 2007 (+11%), but then skyrocketed to reach 963 \$/t by May 2008 before falling at 787 \$/t in August. Oilseeds prices have jumped almost as much as cereal prices: soybean prices increased 2.5-fold until July 2008 to 586 \$/t, rapeseed 2.9-fold until July 2008 to 754 \$/t. Soybean oil increased by a factor of 2.9 until June 2008 as

palm oil did until March 2008, and rapeseed oil by 2.2 until June 2008. The price of meat also increased dramatically: beef by 46% (2,898 \$/t in April 2008), poultry by 50% (1,974 \$/t in June 2008), mutton by 32% (4,893 \$/t in May 2008). Only the pork price almost stagnated, with a mere 7% increase until June 2008 at 2,204 \$/t.

These price increases must be viewed against an analysis of global supply and demand for cereals. According to the USDA's own estimates (10 September 2008), global cereals production between 2005–06 and 2006–07 has only fallen by 0.6% (i. e. from 2,017 Mt (million tons) to 2,005 Mt.)⁴. The USDA also indicates that output is expected to reach 2,113 Mt in 2007–08. At the same time global demand for cereals has risen by 3.9% (from 2,032 Mt in 2005–06 to a projected 2,111 Mt in 2007–08). The volume of global trade in cereals has hardly changed: from 253 Mt in 2005–06 to an expected 264 Mt in 2007–08.

Increases and decreases of world agriculture commodity prices are inversely correlated with the level of global ending stocks (i. e. stocks available at the end of the marketing year). The recent food price explosion is not an exception: global ending stocks have fallen by 12.8% from 2005–06 (390 Mt) to 2006–07 (340 Mt) but have slightly recovered in 2007–08 (346 Mt). For 2008–09, USDA expects a rise in production at 2,195 Mt, and a demand of 2,174 Mt, raising global ending stocks to 367 Mt. Abbott et al. (2008) explain why global ending stocks in the past years have fallen: liberalization policies and increased levels of world trade have induced governments, particularly the U.S. and EU, to minimize storage costs whilst private traders have opted for just-in-time-delivery, holding only minimum stocks.

However the reduction of global cereals stocks from 70.1 days of consumption in 2005–06 to 60.1 days in 2006–07 and 59.8 days in 2007–08 can hardly explain the more than 200% price surge in 2.5 years. In 1995–96 global ending stocks had fallen to 52 days of consumption, yet the HRW wheat price had risen by only 38% between 1994–95 and 1995–96 and the SRW wheat price by 32.4%. Therefore low global ending stocks alone cannot explain the price explosion. To understand it we have to identify the reasons for the decrease in supply and the dynamics of demand. On the supply side among relevant short term factors we find climate variations in several exporting countries, increased production and transport costs due to the oil price spike, and export restrictions. Long term factors affecting the supply of agricultural commodities are smaller yield increases in developed and reduced agricultural production in developing countries due to the dumping practices of developed countries. Short term factors that impact the demand side include the creation of a new market due to the mandatory agrofuels standards and financial and commercial speculation. On the other hand, increased food consumption and changing consumption patterns in emerging countries like China and India, and a generally increasing world population are long term factors.

China, India, and export restrictions: the false culprits of the agricultural prices explosion

In the public debate in most industrialized countries, changing food consumption patterns in China and India (increased meat and dairy production which requires grains for feedstock) and export restrictions of agricultural exporters in the Global South, who have decided to prioritize domestic food needs over exports, are often

cited as key factors in the current explosion of food prices. An analysis of the food trade balance of China and India does not lend strong support to this argument. China's food trade balance maintained an average surplus of \$ 4 billion from 2000 to 2006. China has always been a net exporter of cereals (mainly corn) except in 2004 and its cereals stocks have risen from 107.5 Mt in 2005–06 to 118.4 in 2007–08. Its net imports in oilseeds and vegetable oils have been rising fast, reaching 28 Mt of oilseeds and 8.5 Mt of vegetable oils in 2006–07 against respectively 20.5 Mt and 5.4 Mt in 2003. Due to the price increase of pork by 42% in 2006, China drastically reduced its domestic corn-based ethanol production from 3.8 billion liters in 2006 to 1.8 billion liters in 2007. China continues to export corn and increased investment in agriculture by 31% in 2007 to increase agricultural production. Consequently, it is hard to hold China responsible for the current food price explosion.

Also India is a net exporter of food products (since 1995), and of meat and dairy. It is also a net exporter of cereals (despite the import of 6 Mt of wheat in 2006), and its stocks have risen from 13.1 Mt in 2005–06 to 16.6 Mt in 2006–07 and 20.9 Mt in 2007–08. As for oilseeds, India is a large importer of vegetable oils (5.4 Mt/year), but exports almost as much oilcake (5.2 Mt in 2007–08). Its trade deficit in oilseed products almost disappeared in 2006 (\$ 291million). Despite the fact that in 2006 India was the 5th largest ethanol producer (at 1.9 billion liters – mostly from sugar cane), its production has dropped to 200 million liters in 2007. Biodiesel is produced from the non edible oil of jatropha, cultivated on arid lands. Based on these facts, it is hard to sustain the argument that India could be responsible for the explosion in grain prices. Because Indian agricultural production is much less dynamic than China's (its agricultural value added has increased by only 2.7% per year from 2003 to 2007 compared to 4.5% average annual growth in China during the same period), it will be more difficult for India to satisfy its domestic food needs through domestic production in the long run. The expected 54% rise of the Indian population by 2050 plays a big role in that. China's population is forecast to grow by only 9% over the same period.

Export restrictions to safeguard food security should not be blamed

Several developing countries introduced export taxes, quantitative restrictions or bans on exports of basic staples when food prices soared. Vietnam, India, Egypt, China, Cambodia, Indonesia, Uzbekistan have imposed such measures for rice. Even Thailand, the largest rice exporter, has decided to sell rice 40% cheaper on its domestic market than for export, which effectively taxes exports. Argentina, Ukraine, Russia, Kazakhstan, Pakistan, China and India have restricted wheat exports. Other countries have imposed such restrictions on still other agricultural products. Generally, the WTO forbids export restrictions by developed countries but tolerates them on a temporary basis by developing countries. Clearly, export restrictions have exacerbated the surge in world prices, but they have also reduced food inflation in the countries taking such measures. Their governments gave priority to the food security of their own citizens. Thus, the argument of many international institutions and developed countries that export restrictions – and more generally the lack of free trade in agricultural products – are the root causes of soaring prices, cannot be sustained. In most cases export restrictions were only adopted after prices had already exploded to levels that put domestic food security at risk.

The main culprits of the current food price explosion: the US and EU

The U.S. and EU have promoted unsustainable agriculture and agrofuels policies, and devised unfair agriculture trade rules at the World Trade Organisation (WTO) and via bilateral free trade agreements. This has led to huge food trade deficits of both countries. Their policies are at the heart of the current explosion of agricultural commodity prices, the subsequent rise of food prices and occurrence of hunger riots.

The unnoticed U.S. and EU large food trade deficits

The general confusion of agricultural products with food products and differences in the list of products included in trade statistics have obscured the huge food trade deficits of the U.S. and the EU. The US food trade deficit exceeded \$ 11 bn in 2005 and 2006, most of which is due to the fish trade deficit of around \$ 9 billion. In 2007, the US food trade deficit shrunk due to the spike in its agricultural export prices. The EU food trade deficit is even larger, exceeding \$ 20 billion in 2005 and 2006 (€ 16.7 billion). It is also due to a huge deficit in fish trade (\$ 16.7 billion or € 13.3 billion in 2006).

In 2007–08, the EU-27 has become the fifth largest net importer of cereals, at 10 Mt. In the two previous marketing years, the EU was still a net exporter of cereals (9.5 Mt in 2005–06 and 4.4 Mt in 2006–07). Compared to the 11.9 Mt outfall of Australian cereals exports over the past two marketing years due to droughts, the outfall of net EU cereals exports of 19.5 Mt, is almost twice as much. Furthermore, the EU is still the first net importer of oilseed products, with 17 Mt of oilseeds, 27 Mt of oil cake and 8.2 Mt of vegetable oils in 2006–07, far ahead China.

In addition to these huge trade deficits, both U.S. and EU ending stocks of cereals declined by 41.2 Mt from 2005–06 to 2007–08, which represents 93.6% of the reduction of global cereals ending stocks in this period⁵. The inverse correlation between world prices and stocks for agricultural commodities underscores the U.S. and EU overwhelming responsibility in the surge of global cereals prices. This situation raises the question of what the root causes for lower global ending stocks of cereals are. The answer lies in the current agrofuels policies of the U.S. and the EU.

The US and EU agrofuels policies

As a result of the U.S. renewable fuels standard, the use of U.S. corn for ethanol has jumped from 12% in 2004 to 23% in 2007. It is expected to be at 32% in 2008 (Collins, 2008, 11). The 79 Mt of corn allocated to ethanol production in 2007–08 are 24% more than total US corn exports for that period. The 79 Mt figure represents 82.5% of world corn exports. At the same time, the U.S. stocks-to-use⁶ ratio of U.S. corn has dropped from a 24% average (1980 to 2004) to 11.1% in 2007–08. It is expected to fall to 5.4% in 2008–09. This means that available U.S. stocks only guarantee 20 days of supply. This low level of stocks puts the world at a high risk of a further corn price explosion and other grain and food price rises, if supplies are lower than expected due to climate variations. According to Collins (2008), the enormous existing and future diversions from domestic and exported food and feed stocks will only drive »corn prices and the prices of related major crops to unexpectedly ever-higher levels« given their substitution effects. The surge in corn prices in 2006–07 has fostered a large increase in corn-growing areas and a record harvest in 2007. On the other hand, areas planted with wheat and soybeans declined. Wheat production dropped by 8

Mt and soybeans by 16 Mt; their prices increased even more than that of corn. As a consequence the corn-growing area for the 2008 harvest declined by 8%, while wheat and soybean areas increased by 6% and 18% respectively.

All international institutions have attributed the main responsibility for the explosion of world food prices to the U.S. use of corn for ethanol. U.S. corn ethanol explains one third of the rise in the world corn price according to the FAO, and 70% according to the IMF. The World Bank estimates that the U.S. policy is responsible for 65% of the surge in agricultural prices, and for Keith Collins, the former USDA Chief economist, it explains 60% of the price rise. The World Bank (2008, 10) states that: »Prices for those crops used as bio-fuels have risen more rapidly than other food prices in the past two years, with grain prices going up by 144%, oilseeds by 157% and other food prices only up by 11%.« The U.S., as a result of its corn ethanol production, is clearly responsible for the explosion of world agricultural prices. The second largest world corn exporter, Brazil, produces ethanol from sugarcane and hence has not influenced world market prices for corn. In addition to the U.S. corn ethanol program, the U.S. biodiesel program also contributes to soaring prices. Collins (2008, 26) estimates that »It is reasonable to assume that 60 percent of the increase in soybean and soybean product prices between 2006 and the expected levels for 2008 are also due to biofuels. Biodiesel production has accounted for 52 percent of the increase in soybean oil use between 2005/06 and 2007/08.«

The EU-27 agrofuels policy (5.75% of biofuels in the fuels for transportation by 2010 and 10% in 2020) also contributed significantly to the explosion of grains prices. In 2006, 80% of the EU's agrofuels were biodiesel (4.9 Mt versus 1.2 Mt ethanol), which represents 77% of world biodiesel production. 64% of the rapeseed oil used in the EU-25⁷ were processed into biodiesel even as the EU trade deficit in vegetable oils grew. To date the EU on average imports 45% of its needs in vegetable oils, it is the largest importer of oilseeds products. The growing demand for oilseeds resulting from the EU agrofuel policy has contributed to the growth of world prices of that commodity.

The U.S. and EU are jointly responsible for devising unfair agricultural trade rules

The Agreement on Agriculture (AoA) of the WTO, bilateral and bi-regional Free Trade Agreements (such as the North American Free Trade Agreement, NAFTA) and the EU's Economic Partnership Agreements (EPAs) with African, Caribbean and Pacific countries (ACP) have progressively deregulated national and international agricultural markets, based on the argument that the »free play of market forces« will optimize prices for all actors, and in particular for consumers. The reduction of the developing countries' agricultural import protections (tariffs, import quotas) together with the massive dumping of U.S. and EU agricultural exports have had ruinous impacts on these countries' agri-food industries and displaced farmers. With the exception of the three largest southern exporters (Argentina, Brazil and Thailand), all developing countries have become net food importers, with total food imports reaching \$ 28.7 billion in 2004. Increased dependency on food imports makes these countries very vulnerable. Developed countries have a low dependency on imports of staple foods, but today the contrary is the case for developing countries. The U.S. imports 1.4% of its cereals compared to 18.9% for West Africa; EU-25 dairy imports

are at 2% compared to 39% for West Africa. The transnational agri-food corporations are the winners in agriculture trade liberalisation; their profits surged, particularly due to the recent explosion of agricultural prices.

In spite of these facts, all international institutions are pressing to finalize the WTO Doha Round and to further liberalize agricultural trade, pretending that this will solve the current crisis of exploding food prices. Pressure on developing countries for further cuts in their import protections for agricultural and non agricultural products by the U.S. and EU continues. Their proposals to cut domestic and export subsidies and to change domestic subsidy schemes toward direct payments would not put an end to dumping. The definitions of dumping and allowed subsidies in the AoA rules and the reforms of the U.S. Farm Bill and the CAP (Common Agricultural Policy) would serve to legalize further dumping in the markets of developing countries. Why? Because, according to the WTO, there is no dumping as long as export prices are the same as domestic prices regardless of the real average cost of production. The CAP reforms since 1992 go in this direction: by bringing domestic agricultural prices closer to world prices and making up the difference with the farmers' real production costs by direct payments, the EU can export increasingly without export subsidies or only very low ones. Within the current WTO Doha negotiations the EU wants direct payments to be classified as non-distorting subsidies, which are permitted by the AoA. Similar reforms have been undertaken with the U.S. Farm Bills since 1996: domestic prices of »grains« were lowered to eliminate foreign competitors on the world market; U.S. farmers are compensated for low domestic prices by payments such as marketing loans, countercyclical payments, and fixed direct payments to cover the gap between the market price and average production cost. Thus direct export subsidies have been replaced by indirect export subsidies, for which both the U.S. and the EU seek legalization within the Doha Round. One example: the EU has reduced its export subsidies on cereals from 1992 to 2002 by 90%, but when the domestic subsidies to cereal producers are taken into account, it becomes clear that the subsidy per exported ton of cereals has actually increased by 20%. Three fourths of the average € 329 million subsidy to poultry exported between 1995 and 2000 were domestic subsidies. Such subsidies also represented 62% of the average € 462 million given to pork producers, 38% of the average € 2.7 billion given to dairy producers, and 52% of the average € 1.8 billion given to beef producers.

Financial and commercial speculation

International institutions, Western governments and experts play down the role of financial speculation in the explosion of agricultural prices as well as of oil prices, underlining that speculators could not bid up prices much beyond the fundamentals of physical supply and demand. For Collins (2008, 8), »Investors and traders are not creating the environment that is increasing farm prices; they are reacting to the opportunity presented by tight markets to invest funds to earn a return as prices move higher«. However, the U.S. and EU agrofuel policies constitute a powerful incentive for hedge funds and index funds to amplify the price hikes. How can the surge in a single day (27 March 2008) of the rice price by 31%, or of the HRW wheat price by 29% (25 February 2008) be explained otherwise? If financial speculation did not alter the normal working of commodities futures why is it that, according to The New-York

Times (2008), for Fred Grieder, an Illinois farmer on 600 hectares,

»Futures... are less reliable. They work as a hedge only if they fall due at a price that roughly matches prices in the cash market, where the grain is actually sold. Increasingly... grain futures are expiring at prices well above the cash-market price... Farmers or elevator owners wind up owing more on their futures hedge than the crops are worth in the cash market. Such anomalies create uncertainty about which price accurately reflects supply and demand – a critical issue, since the C.B.O.T. (Chicago Board Of Trade) futures price is the benchmark for grain prices around the world«. Furthermore »Today's crop prices are not just much higher, they also are much more volatile... Traders in March expected wheat prices to swing up or down by more than 72 percent in the coming year, three times the average volatility for that month... Those wild swings in expected prices are damaging the mechanisms – like futures contracts and options – that in the past have cushioned the jolts of farming.«

In addition to speculation on futures markets, there is also hoarding by various market players, including farmers and exporters, which is amplified by the appreciation of national currencies against the dollar, in which most agricultural products are traded (including rice between Asian countries). For example, the dollar dropped from 40.77 Thai baths in January 2006 to 31 baths in mid-March 2008; exporters who had sold for future delivery complained that rice growers and mills were hoarding stocks in the expectation of new price surges, which meant that the exporters often had to buy the rice at a higher price than their selling price (Hill, 2008, 15). Another perverse effect of the explosion of agricultural prices is the correlative surge in farm land prices. In the United Kingdom *»the value of farmland rose by 28 per cent during the second half of 2007... [and] by more than 10 per cent in the first quarter of 2008«*. In the US the average price of arable land rose by 13% in 2007 and is likely to rise again by 15% in 2008.

Conclusion: Change agricultural and trade policies and regulate agriculture and food prices

The root causes of the current food price explosion and of the food crisis come from the liberalization of agricultural policies of the U.S. and the EU, which have also promoted the deregulation of agricultural trade as well as from structural adjustment programs implemented in developing countries and pushed by the World Bank and IMF. As a consequence most developing countries have been deprived of policy instruments to stimulate agricultural production, to protect their agriculture markets from dumping or to stabilize prices for producers and consumers alike. Indeed the recent explosion of agricultural and consequently food prices will again be replaced by a decline because agricultural commodity prices have always followed a declining trend. Grains prices in August/September 2008 have already lost one third of the levels reached in March-May of this year. The looming economic crisis linked to the financial markets disruption will most likely lead to a continuation of the decline of agricultural commodity prices.

In order to overcome the current crisis policies, regulations and instruments securing investment in agriculture and stabilizing agriculture and food prices must be

put into place again. Agriculture production in net food importing countries of the global south must be supported. This requires to rebuild agricultural and trade policies on the priority to feed each country's population. Because food is a basic need for survival, each country or region should have the right to define its trade policy according to its domestic food security interests, as long as it does not harm other countries through its agriculture exports. Appropriate import protections (i. e. tariffs, import quotas etc.) are not the same as a regime of autarchy. Import protection is the only means for developing countries to rebuild their domestic agricultural markets through market oriented agricultural policies and it is the least protectionist type of agricultural support and the most affordable one for poor countries, because they do not have the financial means to support their farmers with direct payments. In a globally deregulated agricultural market, only rich countries can use subsidies to protect their domestic agriculture from imports without measures such as tariffs or quotas *at* the import level. Multilateral and bilateral trade agreements must be reviewed and changed on that basis. Such policies should allow producers to earn most of their incomes based on prices that allow a fair and adequate return to producers instead of subjecting them to the highly volatile, dumping-influenced, world market prices that also fluctuate with exchange rates. To avoid large fluctuations in the prices of basic staples and to promote prices that are fair and equitable for producers and consumers, exporting countries should establish mechanisms of supply management to avoid surpluses of non-competitive products, i.e. of products requiring an import protection, or export subsidies, or domestic subsidies on exported products. Exporting countries must commit to coordinate their agricultural export policies to minimize fluctuations in international prices. Countries must also rebuild minimum food security stocks in order to prevent new explosions of food prices. Speculation on agricultural commodities futures as it occurred recently must be banned. India has implemented such bans successfully for rice and wheat in 2007. As a consequence Indian wheat price rose only by 5.9% between April 2007 and February 2008 (Sen, 2008), whilst the world price of HRW wheat surged by 112.7% and that of SRW wheat by 131.1%.

Given the high volatility of world agricultural prices, and the resulting ineffectiveness of *ad valorem* tariffs (fixed percentage of the CIF price), countries should be able to use variable import levies to stabilize domestic prices of agricultural commodities, or price band systems that would mitigate the transmission of fluctuations in world prices to domestic prices. Entrance prices or price bands should be calculated to ensure fair and equitable prices for the large majority of the small family farms of each country. Developed countries and the more advanced developing countries should enhance market access opportunities for less developed countries. This could be done through special agreements that do not demand reciprocal preferences, or through duty-free quota access to products originating in, or of export interest to developing countries, when it is clear that increased exports would actually benefit small farmers and not be detrimental to poor consumers.

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Endnotes

- 1 Sugar reached a very high price in February 2006, exceeding the price level of 1981.
- 2 Free on board (freight on board) price means a price which includes goods plus the services of loading those goods onto some vehicle or vessel at an export location.
- 3 All price surges in the article have been computed from the base year 2006, unless specified otherwise.
- 4 Marketing years go from July of one year to June of the next year.
- 5 2005–06 to 2006–07: US ending stocks fall by 21.8 Mt, EU ending stocks by 7.5 Mt. 2006–07 to 2007–08: EU ending stocks minus 15.1 Mt, US ending stocks plus 3.2 Mt.
- 6 Stocks-to-use ratio: the level of ending stock for a given commodity as a percentage of the marketing year total demand or use.
- 7 Some of the data still refers to years in which the EU had 25 members.