

Developments in Commodity
Markets
May 2008



BANCO CENTRAL
DE LA REPÚBLICA ARGENTINA

Executive Summary

Despite the deterioration in international financial market conditions and the economic slowdown in the world's leading economies, since mid-2007 raw materials prices have intensified their upward trend, so that the current growth cycle in commodity prices has become one of the longest and most widespread in recent history. From the beginning of this decade, soft commodity prices have accumulated increases ranging from 170% to 250%, while hard commodities have also posted a significant growth, multiplying 2002 values threefold in the case of oil and derivatives.

This document of the Central Bank of Argentina aims to examine the possible reasons of price increases, their impact on the global economy and the main policy responses in different countries. From our viewpoint, the rise of commodity prices reflects a wide range of factors. Some are of a structural nature, associated both with a rising demand for food, metals and energy in emerging nations, and with the demand coming from biofuel industry in advanced economies, in a context of low stocks worldwide. In the last seven years the stock-to-consumption ratio of corn and wheat was reduced by 50%, reaching the lowest figures since the mid sixties, while in the case of soybean the situation is not as tight in historical terms, although it exhibited a significant worsening during 2007. This took place in a context where near 20% of grain stocks in leading producer countries are being transformed into ethanol or biodiesel.

Factors of a more transitory nature are also involved in these developments, including supply shocks from changing climate conditions and geo-political conflicts. The increased speculative demand since the middle of 2007 triggered by the decline in the value of the dollar and other financial assets has also been important.

Such dynamism in prices has led to changes in the global economy, benefiting countries that are net exporters of commodities while harming net importers. At the same time it has fostered inflationary pressures worldwide. This impact is particularly significant in emerging countries, where food accounts for an average of 25% of the consumption basket, with grains representing approximately 50% of the daily diet.

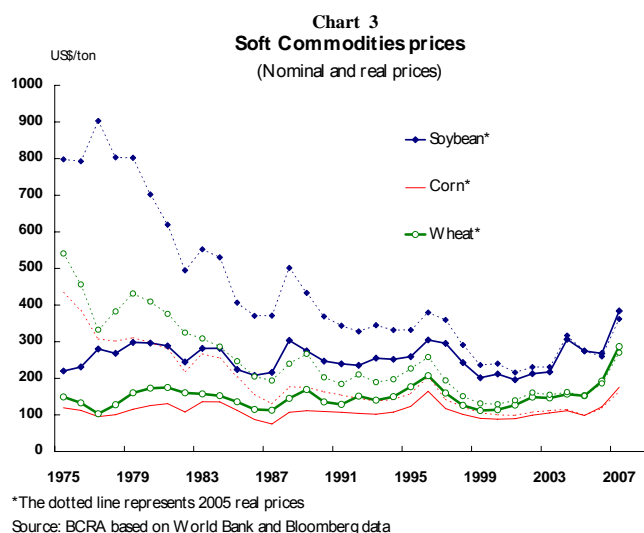
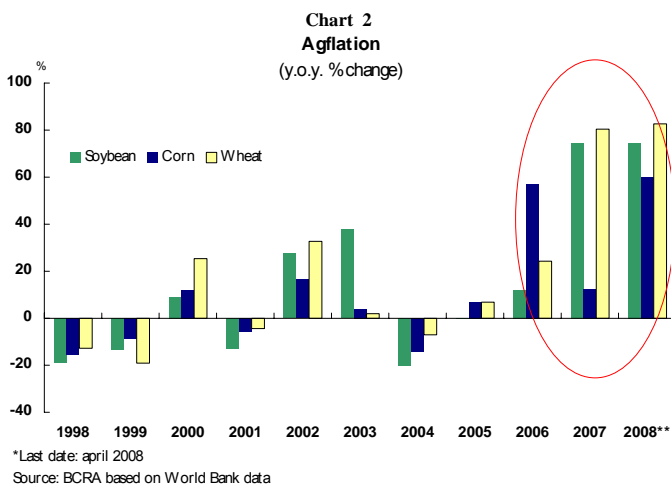
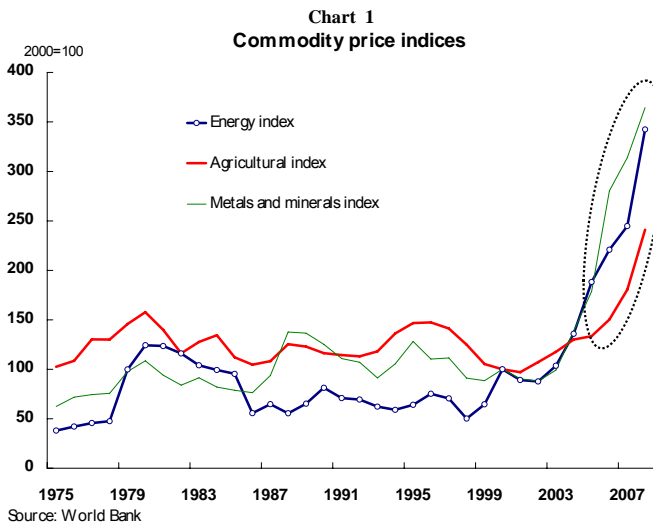
This new scenario has presented major challenges to economic policy, and despite the fact that no single, uniform policy response has been observed in addition to monetary policy, trade and fiscal measures have proliferated with the aim of softening the inflationary impact of higher prices, particularly in the case of certain goods such as food items.

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I. The upward cycle in Commodity prices

Since the beginning of the current decade, soft commodity prices, mainly agricultural (soybean, wheat and corn), have accumulated increases ranging from 170% to 250%. Also hard commodities (such as energy and metals) have also posted significant increases, multiplying 2002 values threefold in the case of oil and derivatives. Furthermore, since early 2007 this upward trend has accelerated, with year-on-year increases well in excess of average rises of previous years. In the first months of 2008, prices for leading agricultural goods rose between 10% and 30%, while the price of the WTI crude oil barrel rose 22% (67% y.o.y.; see Charts 1 and 2).

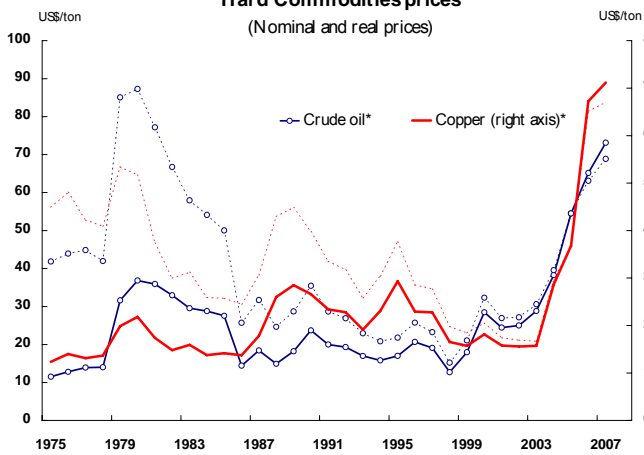
It is evident that the depreciation of the dollar in recent years has influenced commodity prices, as most of these products are quoted and traded in US currency. Also, fast growing countries with currencies that have appreciated against the dollar have experienced an increase in their purchasing power and consequently their demand. At the same time, producing regions experienced a reduction in income measured in local currency, adding pressure on prices. In this context, the persistent and pronounced rise in commodity prices has taken place measured in dollars and in other currencies. Furthermore, since the end of 2006 prices of energy, agricultural products and metals have risen close to 42%, 35% and 8%, respectively, in euro terms.

In any case, soft commodity prices are at their nominal peak in historical terms. However, at constant prices while the trend is upward during the current decade, it has not been strong enough to reach the levels seen in the seventies and eighties. Hard commodity prices are close to their all-time peaks (see Charts 3 and 4).

Possible reasons for rising prices

The acceleration in soft commodity prices observed in 2007 and early 2008 has in part been explained by their own fundamentals, following the significant growth in demand from emerging countries in recent years and the development of biofuels in developed

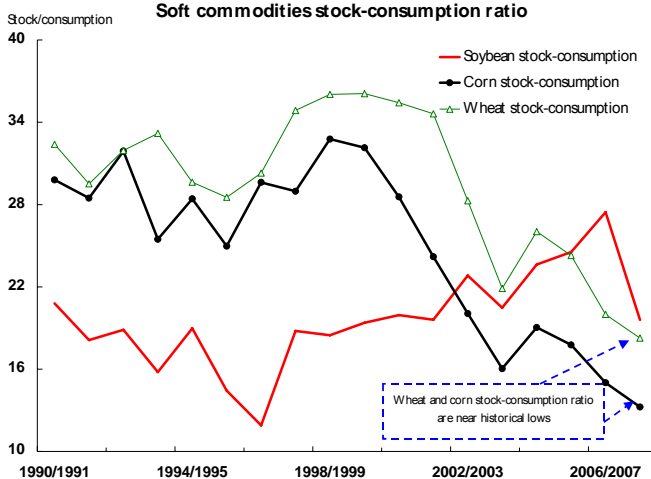
Chart 4
Hard Commodities prices
(Nominal and real prices)



*The dotted line represents 2005 real prices
Source: BCRA based on World Bank and Bloomberg data

nations, within a context of low stocks worldwide. In the case of this second aspect, the stock to consumption ratios for corn and wheat are currently at the lowest levels since the mid-seventies. In the case of soybean, the situation is not as tight in historical terms, although it showed a sharp deterioration last year (see Chart 5).

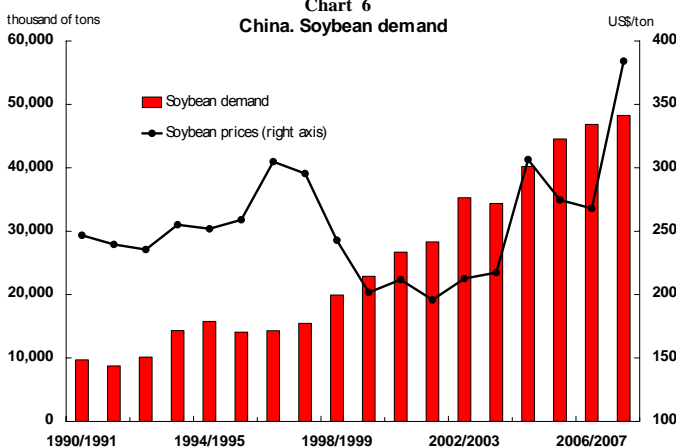
Chart 5
Soft commodities stock-consumption ratio



Source: BCRA based on USDA data

Rising wheat prices were largely a result of major grain shortages explained by adverse weather conditions in leading producer nations (severe droughts in Australia, the world's leading exporter, and in Eastern Europe), and no sign of any slowdown in the demand for food and forage use. Regarding corn, although the supply has grown considerably in recent years (forecasts imply the current season's harvest will be 11% higher than the average for the last decade, in part because of increased production by the United States), demand for food and from the ethanol industry generated a sharp drop in world stocks. Inventories are currently 30% below the average of 1997-2007. In the case of soybean, the 2007/2008 harvest will be somewhat lower than previous season, while demand levels are almost 30% above the average for 1997-2007, leading to a reduction in world oilseed stocks.

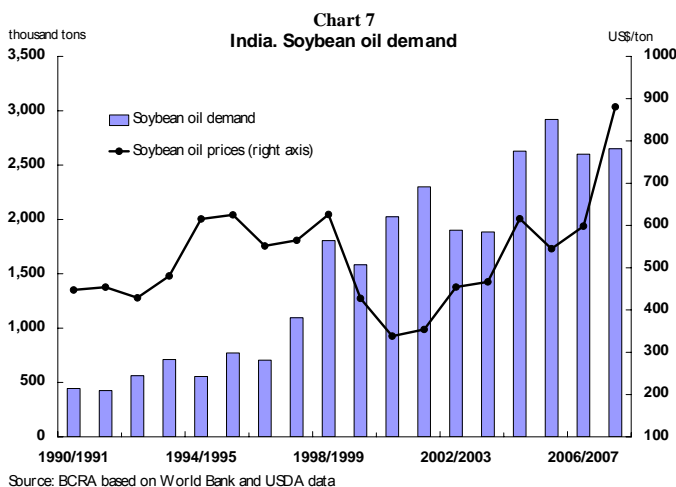
Chart 6
China. Soybean demand



Source: BCRA based on World Bank and USDA data

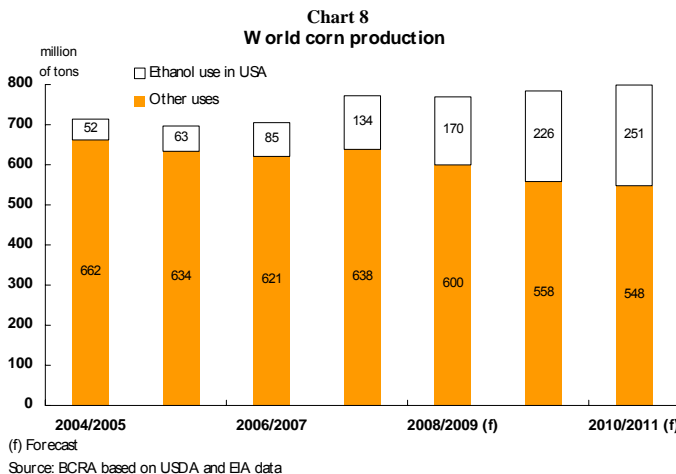
The significant growth of demand for cereals in recent years has in part been due to rising consumption by emerging economies, led by China and India, in a framework of growing industrialization and urbanization. A key fact is the increase in meat consumption: when population growth takes place, cereal consumption rises. However, when there is an improvement in the quality of life due to economic growth, there is an increase in meat consumption as well as other protein-rich products, such as oils, fruit and vegetables. According to FAO data, in 1985 each inhabitant of China consumed barely 44 pounds of meat per year, whereas today consumption is over 110 pounds. This increase in meat consumption in turn boosts grain consumption, as approximately 7 pounds of grain are required for 2 pounds of pork produced, and 17 pounds for 2 pounds of beef (see Charts 6 and 7).

Although demand from China could eventually slowdown, there are consumers in other



emerging countries willing to demand larger quantities of meat and protein-rich food. In such countries, direct grain consumption has grown at a much slower rate than that of meat, which has doubled over the last 25 years.

In turn, the acceleration in soft commodity prices that has taken place in recent years is also strongly linked to the growth of demand for biofuels in developed countries, and in particular for ethanol, manufactured from corn, which counts on significant government support and subsidies. For example, the United States, the world's leading corn exporter, currently uses more corn for ethanol than it exports, allocating at present 134 million tons of this grain for biofuels use, whereas the total in 2000 was barely 15 million tons. In coming years over one-third of the US corn harvest will be used to produce subsidized ethanol. For its part, Europe is the leading importer of vegetable oils (soybean, rapeseed, sunflower and palm-oil) as an input for the manufacture of biodiesel¹ (see Chart 8).

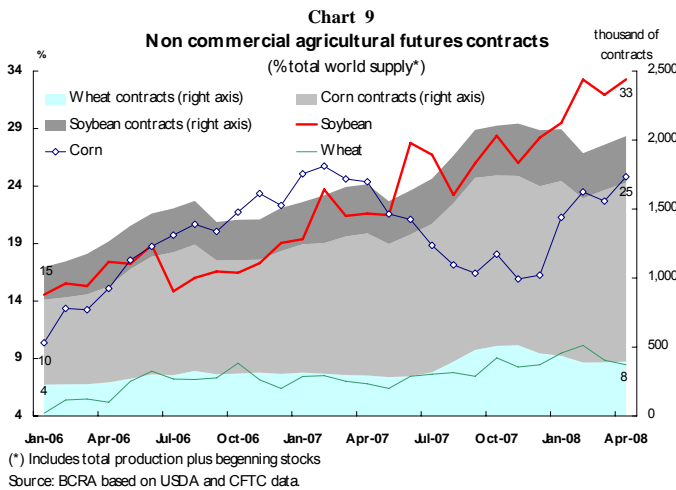


This situation is developing in a context of an already low stock to consumption ratio, which generates greater pressure on agricultural prices. In addition, biofuels development has a growing influence on food markets (given that over 20% of grain stocks in leading producer countries are being transformed into ethanol or biodiesel), while it involves no significant impact on fuel markets (so far biofuels account for less than 2% of total energy supply consumed by transportation).

Other factors that could have influenced slower reaction of supply is the relatively low level of investment in the past (including infrastructure) within the world's leading producers, in response to low prices during the nineties.

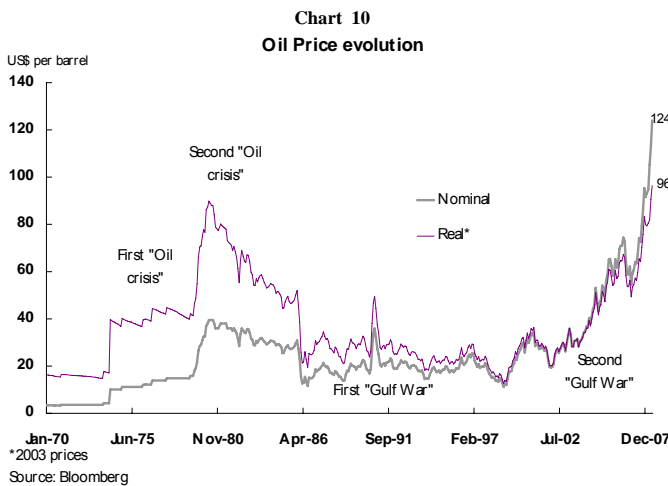
In addition to these structural changes, some factors of a more temporary kind have also had an influence, including supply shocks caused by weather conditions and geopolitical conflicts. As from the second half of 2007 speculative demand started to play a bigger role.

¹ In the United States, the 2007 Energy Act raised the biofuels target almost five-fold to 35 billion gallons by 2022, and the European Union has resolved that by 2020 10% of the fuel used by transport should be biofuels, compared with the current 2%.

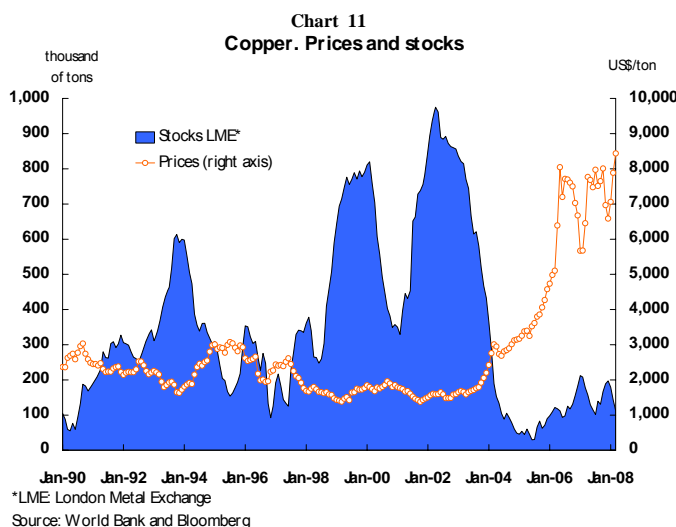


The growth of financial markets for commodities in recent years created opportunities for an improvement in liquidity and depth of transactions, as well as contributing to a more efficient risk allocation, by extending the use of hedge instruments. Nevertheless, this factor also leads to higher volatility in prices,

Financial markets participation in commodity markets has traditionally been more significant in the case of oil and metals, but recently it has extended to agriculture. Therefore it tends to magnify the impact on prices from imbalances between supply and demand for grain and oilseed. Since the beginning of 2006 speculative positions have doubled in the case of the three most important grains (wheat, corn, soybean), although the impact of such non-commercial funds on global supply varies according to the item and the quantity of future contracts for agricultural goods has been relatively stable in recent years (see Chart 9).

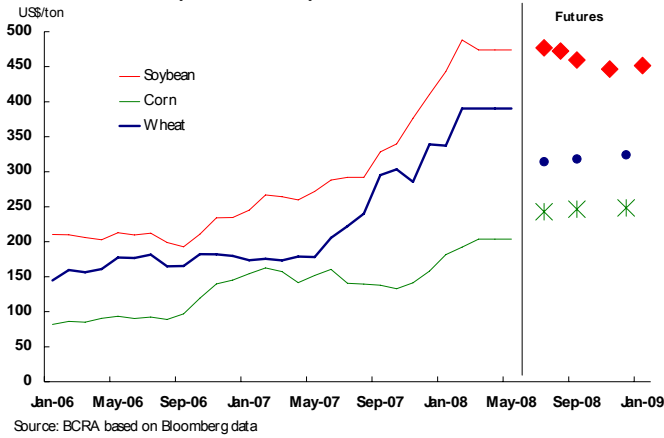


In the case of hard commodities, crude oil prices have risen significantly in recent years, mainly driven by supply shortages in the main producer regions at the same time as demand has maintained its upward trend. On the supply side, weather difficulties caused by hurricanes, and geopolitical conflicts in Iraq, Iran, Venezuela, and Nigeria among others, have contributed to the rise in prices, as well as the refusal to increase supply by OPEC members, who account for 40% of world output (see Chart 10).



This situation has developed in a context in which demand has been increasing steadily, particularly from emerging countries such as China and India. Indeed, demand from these two countries and other emerging nations has been responsible for more than half the growth in oil demand since the beginning of the decade. This is explained by both the rise in demand for cars associated with higher per capita income levels, and the demand for electricity generated using oil derivatives as industrialization and urbanization increase, empowered by the impact of subsidies that decoupled local market values from international prices in certain countries.

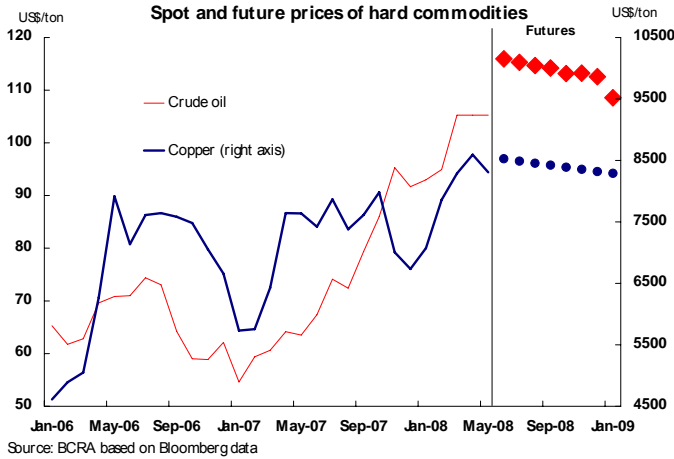
Chart 12
Spot and future prices of soft commodities



In the case of metals, copper prices have been rising steadily since the beginning of the decade, mainly in response to supply shortages experienced by leading producers (Chile, Peru and Mexico). At the same time, demand continued to be driven by increased purchases from Asian countries such as China to satisfy the needs of their expanding industrial base. This led to stocks reaching record lows and reflected in a sharp rise in prices (see Chart 11).

Although the possibility of downward adjustments cannot be ruled out, the outlook for agricultural commodity prices is to remain at historically high levels in the short term, pressing on domestic prices in most countries (see Charts 12 and 13). Even though slower growth in the United States, and its eventual effects on the world economy, would restrict non-speculative demand for commodities, particularly oil and metals, agricultural products are expected to be less affected because of their lower income elasticity and the relative strength of the fundamentals of emerging economies, where the demand increases the most. At the same time, although it is likely that speculative demand will switch back to financial assets as capital markets return to normal, short-term volatility and low level of interest rates in several of the world's leading economies could help shore up speculative demand for commodities.

Chart 13
Spot and future prices of hard commodities



Box 1 / Argentina's role in world production and export of grain and oilseed

Natural conditions and the intense process of innovation and investment in Argentina's agricultural sector have recently enabled the country to regain a position as one of the leading players in world commodity markets.

Commodity production and exports
in million tons

	Production 2007/08			Exports 2007/08		
	World	Argentina	%	World	Argentina	%
Soybean	220.0	47	21.4	75.5	11.5	15.2
Soybean meal	161.7	29.5	18.2	57.8	29.0	50.1
Soybean oil	38.3	7.28	19.0	11.3	6.3	55.6
Wheat	606.7	15.5	2.6	107.3	9.5	8.9
Corn	772.2	21.5	2.8	95.7	15	15.7
Total	1798.9	120.8	6.7	347.6	71.3	20.5

Source: USDA

Over the last years there has been a significant increase in productivity and an expansion of the agricultural frontier that made possible a doubling in agricultural output.

From a share of 4% in world production of the main agricultural products (corn, wheat, soybean and its derivatives) in 1990, participation has risen to 7% at present. This increase has taken place not only by production but also from a more active participation on world markets, where the country's share amounts to 20% of world traded.

Argentina is the leading exporter of soybean oil and pellets, the second largest exporter of corn, the third largest exporter of soybean, and the sixth most important exporter of wheat.

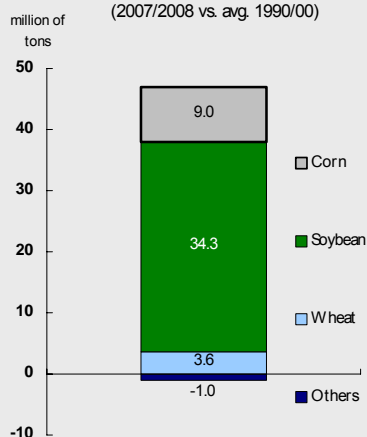
The boom in commodity prices coincided with the devaluation of the domestic currency at the beginning of 2002, with a strong response by agricultural output, evidenced by a rise in the area sown with soybean and productivity gains for corn and wheat. The increase was due to a big push on investment and the use of new technologies.

The change of relative prices and the increase of profits encouraged producers to invest in machinery and equipment. Investment in imported capital goods raised from \$37 million in 2002 to \$550 million in 2007.

The application of new technologies allowed to reach international standards and reduce the difference with the yield in the United States, and even surpass it, despite the different endowment of capital and labor used. In particular, the yield of the 2007/08 crop in Argentina was the same at the US in wheat and soybean, and 20% lower in the case of corn, while a decade earlier the difference in yields were 3% in the case of wheat and 30% in soybeans and corn.

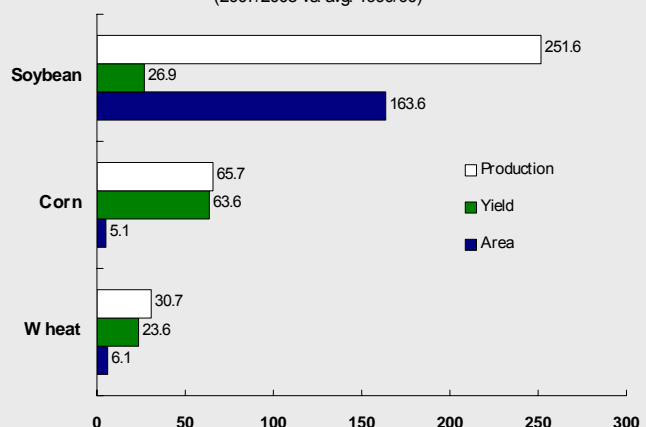
This situation took place together with recovery from one of the worst economic and social crises in the country's history, during which measures were adopted such as the setting of differential export duties on raw materials and some by-products, with the aim of decoupling the international prices from the domestic ones.

Contribution to production growth
(2007/2008 vs. avg. 1990/00)



Source: Department of Agriculture of Argentina

Production, crop area and yield growth
(2007/2008 vs. avg. 1990/00)



Source: BCRA based on Department of Agriculture of Argentina data

II. Global impact and policy responses

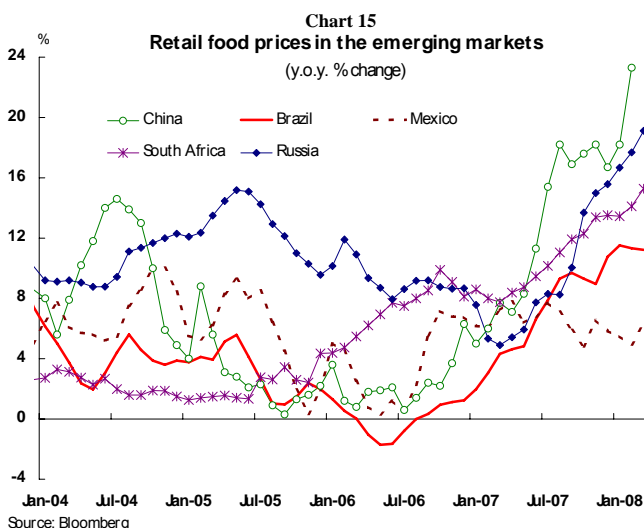
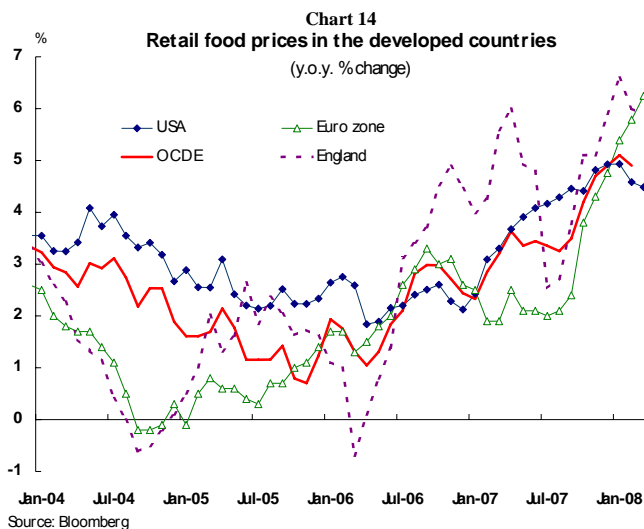
Since the beginning of 2007, high food prices derived from the persistent rise in agricultural commodities worldwide have generated pressure on global wholesale and retail prices, increasing inflationary risk and posing new challenges on monetary and macroeconomic policy.

This phenomenon is of particular importance in the case of emerging economies, where food accounts for a large proportion of the consumer goods basket, although it is also evident in developed countries (see Charts 14 and 15). Food items have risen from accounting for 25% of headline inflation globally between 2000 and 2006 to over 40% in 2007, with a particularly significant effect in emerging Asia (where the direct impact is in the order of 68%, led by China, where food items are responsible for almost three-quarters of the increase in CPI), and Latin America (where the contribution is about 40% on average, although with great dispersion between countries; see Table 1).

There are also second round effects from increased pressure on non-food-related prices, for example, through wage increase demands amid rising food costs in lower-income countries. Whereas in developed nations, food and beverage items make up close to 15% of the CPI in developing regions on average such items account for over one quarter of the index, with grains having a weight of approximately 50% in daily diet (see Chart 16).

Furthermore, even though the pass-through from commodities to domestic wholesale and retail prices has been low, the reduction in business margins increase the risk of greater transfers in the future, based on cost pressures observed. In addition, the surge in food prices has affected household inflation perception, given the heavy weight and frequency of such products in the consumption basket, raising inflation expectations.

Monetary policies have shown considerable disparity between countries in recent months. On the basis of a concise overview of the policies implemented by central banks around



the world, it is possible to find countries that have cut their reference interest rates, such as the United States, the United Kingdom, Canada and Turkey. At the same time, another group of countries, including Australia, Chile, China, Pakistan, Poland, the Czech Republic and Rumania have implemented policies with a contractive bias.

Table 1
Contribution to headline inflation of food and energy in 2007

Region	Headline inflation (y.o.y % chg)	Food		Energy	
		(y.o.y % chg)	contribution %	(y.o.y % chg)	contribution %
World	3.9	6.2	44.3	4.1	8.0
Developed economies	2.2	3.0	19.5	3.8	12.1
Emerging Asia	4.9	10.0	67.5	3.1	3.4
Emerging Europe	5.4	8.2	34.9	6.9	11.8
Latin America	5.4	8.5	40.8	2.3	3.4

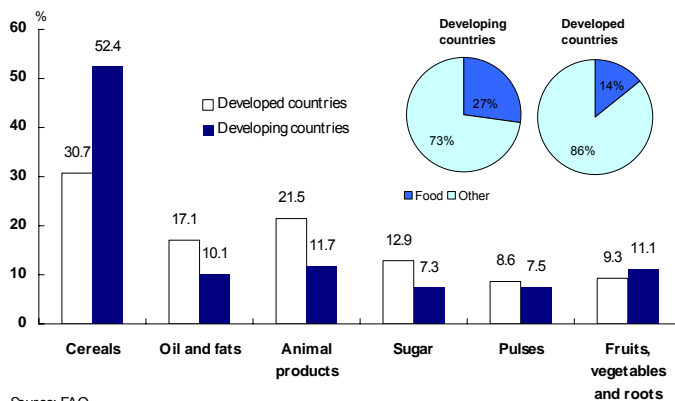
Source: IMF

The differences in policies implemented are explained by the different circumstances prevailing in each country and differing perceptions regarding the balance of risks between inflation and growth.

In addition to the monetary policy reaction in different regions around the world, the measures adopted to moderate food prices initially arose either from the fiscal or trade areas, possibly as a response to the identification problem faced by monetary policy.

Over the course of 2007 and the beginning of 2008 there has been an escalation in the measures adopted by various producer and consumer countries, coinciding with the period in which the largest rises took place in commodity prices since the current cycle began. These measures have ranged from broad based trade and economic policies (such as the reduction in import duties, increased export duties and price controls) to programs for social protection (transfers, food for work, food vouchers, etc.; see Tables 2 and 3).

Chart 16
Composition of diet



Source: FAO

There is an asymmetry in governments capacity to respond, as commodity producers possess a greater scope for action, counting on a greater number of tools with which to face the price situation, such as setting taxes on exports, or directly restricting foreign sales, as well as being able to manage sales abroad by means of grain boards, such as happens in the case of wheat in Canada (through the Canadian Wheat Board) and Australia (with the Australia Wheat Board).

The implementation of an appropriate mix of economic policies to limit the domestic effects of the current upward cycle of international commodity prices is essential. Increasing restrictions on international trade derived from policy measures are placing greater pressure on

Table 2
Economic policies to address rising food prices

Selected countries	Reduce taxes on foodgrains*	Increase supply using foodgrain stocks	Export restrictions	Price Controls / Consumer Subsidies
China	□	□	□	□
Indonesia	□	□		□
Kazakhstan	□			
Russia			□	□
Ukraine				□
Argentina			□	□
Brazil			□	
Mexico				□
Peru	□			
Egypt			□	□
Morocco	□	□		□
India	□	□	□	

*These taxes include import tariffs, customs duties, VAT excise and other
Source: World Bank

Table 3
Social protection programs to address rising food prices

Selected countries	Cash transfers	Food for work	Food ration / stamp	School feeding
China	□			□
Indonesia			□	
Mongolia				
Kazakhstan				
Russia				
Ukraine				
Argentina	□			□
Brazil	□	□	□	□
Mexico				
Peru				
Egypt	□		□	
Morocco				□
India		□	□	□

Source: World Bank

the inflation trend, hindering macroeconomic conditions at global level, raising the need for greater international coordination. A suitable dose of incentives to expand supply of commodities, the adoption of temporary trade policy measures, and the use of direct subsidies specifically aimed at the consumption of the more vulnerable population, appears to be the path to be followed by most countries in the current international situation, in a framework of close vigilance on domestic inflation.

In turn, in the markets for leading agricultural products it would be advisable for progress to be made on policies to ensure efficient and realistic use of biofuels and discourage protectionism, contributing to a reduction in corn and edible oil prices. Current policies in the United States and the European Union will require considerable adjustment, given the wide-ranging subsidies and domestic producers preferences that exist, despite the latter's relative inefficiency. Therefore, the optimum policy would be to permit free trade in biofuels, and to incorporate emission costs in the prices of all fuels.

Lastly, the problem of food inflation and the challenges presented by the need for greater coordination acquire particular relevance if it is considered that high commodity prices, and specially those for food, lead to deterioration in income distribution, given the heavy weight of food spending for the lower-income population. The FAO's Food Programme has recently warned about the increase in the cost of its supplies, which is reducing its ability to assist at a time when the demand for food is rising, not only from poorer, net food-importing countries, but also from developing economies, where growing sectors of the population are beginning to encounter difficulties in meeting their basic calorie intake requirements.