



# Global growth of food commodity prices and the impact on inflation and monetary policy

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*The current strong growth of food commodity prices has a significant impact on the growth of inflation in many countries of the world. Based on information about the factors influencing the development of food commodity prices, we may also identify the main risks from the point of view of development of inflation and global economic growth. Therefore to keep the stable price level, it is necessary to know these risks to prevent the performance of monetary policy in accomplishing its targets from resulting in the slump of economic growth.*

As a result of the current concur of several factors, at present there is significant growth of food commodity prices in the world. These factors may be divided into fundamental ones, i.e. those operating in the long term, and into so called short-term factors. Slowing down of dynamics of the growth of agricultural production and speeding up of demand for food commodities belong to the fundamental factors influencing the growth of prices. Increased demand resulted from developing Asian countries on one hand, but also from the growth of the biofuel production.

Another factor influencing food commodity prices markedly is the price of crude oil, which subsequently increases the production cost of food producers. Factors influencing food commodity prices for a relatively short period of time and resulting from the current economic condition include depreciation of the dollar, biological factors and the introduction of barriers in the commodity trade.

## LONG-TERM FACTORS INFLUENCING FOOD COMMODITY PRICES

Global prices of food commodities have experienced a significant growth rate since the second half of 2007, which was brought to 2008 as well. Considerable acceleration occurred mainly in Q3 and Q4 2007.

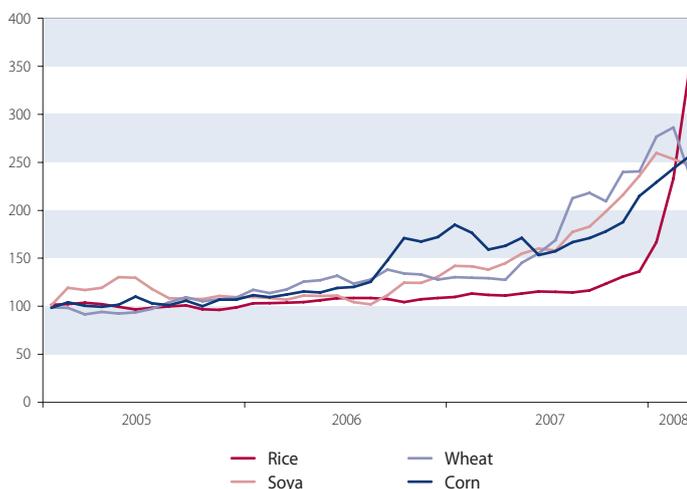
In 2007, global growth of food prices reached 15.1 % (on a year-to-year basis they grew by 25.6 % in December). Food commodity prices reach their historic peaks, and in comparison with the levels from 2005 they have grown by 78 % on the average.

One of the most important factors contributing to high food commodity prices is increased demand in the long term. Dynamics of the growth of demand for food products are higher than dynamics of the growth of commodity production. This trend is reflected mainly in cereals (wheat,

corn, rice). In the previous decades, commodity prices were on relatively stable levels (except short-term fluctuations in 1973, 1980, 1983, 1988, 1996). In the period between 1980 and 2002, in terms of dollar there was even a gradual drop in prices. After 2001, there was a slight increase in prices, and in 2004 the prices reached roughly the levels from the half of the 1980s. These developments were partially reflected in reduced investments in agriculture, science and research, which resulted also in a slowdown in the growth of yields per hectare.

On the demand side is there the opposite trend, predominantly from the emerging Asian economies and oil exporting countries. In the above mentioned countries economic growth is reflected as higher income of households. The households spend this income to a large extent for the purchase of food products. As a result of

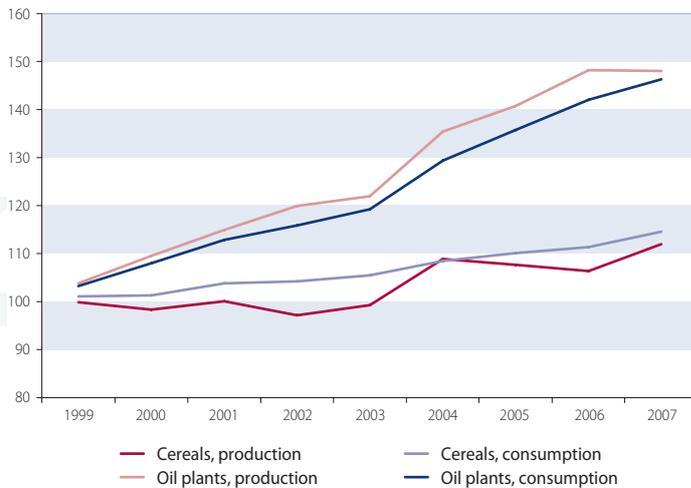
Chart 1 Prices of selected commodities



Source: World Economic Outlook, IMF, April 2008.  
Note: January 2005 = 100.

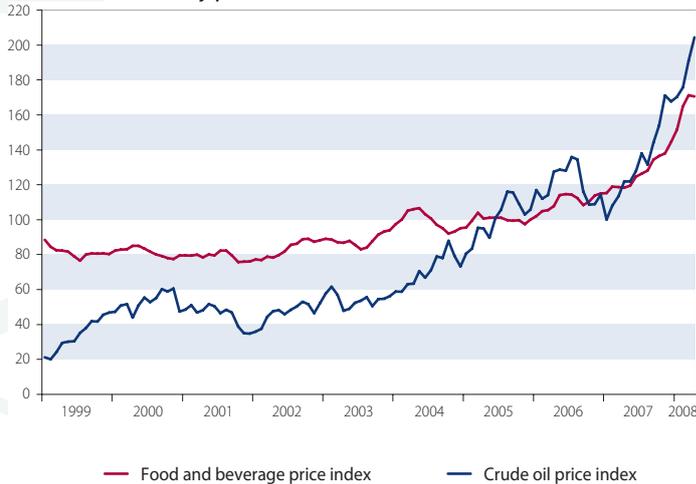


Chart 2 World production and consumption of cereals and oil plants



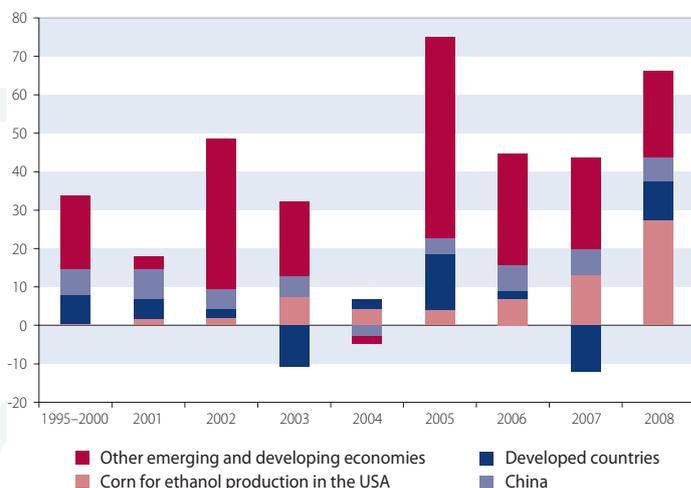
Source: USDA PS&D Database.  
Note: 1999 = 100.

Chart 3 Commodity price index



Source: World Economic Outlook, IMF, April 2008.  
Note: January 2005 = 100.

Chart 4 Change in demand for major farm crops



Source: World Economic Outlook, IMF, April 2008.  
Note: Change compared to the previous year in millions tons. For period 1995 – 2000, an average is stated.

higher income, households in emerging Asian economies purchase higher quality types of food products and to a larger degree prefer food products not typical for the given region. Diversification of the consumption of food products causes higher demand for meat, dairy products and vegetable oils.

Thus higher meat production (poultry, beef) exerts additional pressure on the growth of cereals prices, since cereals are used as the feed for animal production as well. Thus as a result of increased meat consumption there is a secondary increase in demand for cereals. Important fact is that despite decelerated dynamics of the population growth in the recent decade the Asian countries have experienced considerable increases in the number of inhabitants, which also contributed to increased demand for food products.

Another important factor contributing markedly to food commodity price increases is energy prices, in particular the prices of crude oil. Strong economic growth of Asian countries caused high demand for crude oil and industrial commodities. As a result of this, since the half of 2004, there has been marked growth of crude oil prices, which was later reflected in production cost of food commodity producers, in particular through fuels and the prices of fertilisers and chemicals.

### BIOFUELS

A specific fundamental factor influencing food commodity prices is the production of biofuels.

Energy prices growing in the long term along with concern about global warming and efforts to reduce the production of pollutant emissions made individual countries to introduce a policy for the support of biofuel production. Biofuels may be produced from several types of farm crops. The current technology of biofuel production is so called first generation technology, when biofuels are obtained mainly from farm crops, such as sugar cane (Brazil), corn (production of bioethanol – USA), vegetable oils and for the production of biodiesel (oilseed rape – EU), and also from soya and palms. So called second generation technology should be able to produce biofuels even from a wider range of raw materials than only from farm crops. The second generation technology should be able to produce biofuels even from cellulose, special crops (jatropha – an Indian type of tree species) or e.g. from municipal waste. The major ethanol producer is the USA and the major biodiesel producer is the EU.

In spite of that in practice the growth of biofuel production has had no impact on the price of crude oil, biofuel production affected food commodity prices considerably. Biofuels account for only 1.5 % in the world fuel production; in 2006 – 2007 however, they caused approximately a half growth rate of demand for the major farm crops usable for biofuel production (Chart 4). In 2008, in comparison with 2006, commodities intended for ethanol and biodiesel production reached a significant price increase, e.g. the price of corn in the



given period increased by 86 %, rape oil by 81 %, sunflower oil by 69 % and palm oil by 159 %.

Higher demand for these commodities induced food producers to extend the harvested area acreage for crops intended for production of the given commodities at the cost of the other crops (wheat, barley), which subsequently resulted in increased prices of the other food commodities. In 2008, in comparison with 2006, the price of wheat increased by 108 %, barley by 90 %, and rice by 111 %.

Within the production chain, the said price increase was reflected in further production of food commodities, e.g. the production of poultry and of other types of meat and meat products, which are dependent on plant production.

In the future, increased contribution of biofuels is expected in the world fuel production, however, its share will considerably depend on costs for its production and use of so called second generation biofuels.

### SHORT-TERM FACTORS INFLUENCING FOOD COMMODITY PRICES

Factors influencing food commodity prices but having no long-term fundamental character can be referred to as short-term factors. Short-term factors contribute to faster growth dynamics of the food commodity prices and their higher volatility. A relatively low price level as a result of fundamental factors developments was not sustainable, however, combined with the current short-term factors it has caused considerable growth of food commodity prices in a relatively short period.

Among these short-term factors we may include weakening of the US dollar. With regard to economic developments in the USA as well as in the Asian countries the dollar has gradually depreciated vis-à-vis the currencies of these countries, which resulted in, among other things, cheaper imported commodities. This factor along with increased disposable household income supported the demand growth of food products,

and thus the growth of their prices in international markets. On the other hand, depreciation of the dollar resulted in lower revenues from food commodities for the exporting countries because they are quoted in dollars. That's why by exporters depreciation of the dollar brought about pressure on the growth of food commodity prices, so that through the growth of prices they were able to compensate losses resulting from dollar weakening.

Another short-term factors were the climatic factors, which caused crop failure in cereals and oil plants. This was mainly the drought, e.g. in Russia, Ukraine, Australia, South Africa, Canada. With regard to the biological character of agriculture, however, such risks that are hardly predictable must be taken into account. In the long-term, climatic factors may be affected adversely by global warming.

As a result of crop failure many countries producing food commodities have introduced various types of restrictions and barriers on trade, creating even more significant pressure on price growth for the major food commodities. These include various types of export restrictions and ban on export (Ukraine and Argentina on cereals, India and Vietnam on rice, Kazakhstan on oil plants), export taxes and duties (China, Argentina, Russia, Kazakhstan, Malaysia). On the part of importers certain customs duties on import have been cancelled (EU – cereals, Indonesia – soya, Thailand – pork, India – wheat flour).

An important short-term factor, which influenced the growth of food commodity prices was also the activity of hedging and investment funds. With regard to the crisis on financial markets and their long-term considerable volatility, international investors have tried to diversify their portfolios and searched for new investment opportunities. Thus, in the short-term, higher flow of speculative investments in commodity derivative instruments contributed to more significant growth of food commodity prices and their volatility.

Tab. 1 Developments of inflation and contribution of food and energy prices to headline inflation (in %)

	2006					2007				
	Head-line inflation	Food products		Energies		Head-line inflation	Food products		Energies	
		Inflation	Contribution	Inflation	Contribution		Inflation	Contribution	Inflation	Contribution
World	3.4	3.4	27.0	11.2	19.9	3.9	6.2	44.3	4.1	8.0
Advanced economies	2.3	2.0	12.4	11.1	28.0	2.2	3.0	19.5	3.8	12.1
Africa	7.2	8.5	46.6	8.7	22.3	7.4	8.7	43.6	6.7	6.5
CIS	9.3	8.5	40.0	17.1	7.6	9.6	9.2	41.1	11.7	7.2
Developing Asia	3.7	4.4	37.7	12.3	19.4	4.9	10.0	67.5	3.1	3.4
Central and Eastern Europe	5.2	4.6	22.0	9.7	18.2	5.4	8.2	34.9	6.9	11.8
Middle East	3.4	5.1	57.0	1.9	5.3	10.1	13.6	42.3	10.1	24.4
Latin America	5.4	4.5	23.1	8.7	9.8	5.4	8.5	40.8	2.3	3.4

Source: World Economic Outlook, IMF, April 2008.



1 Including alcohol and tobacco.

### IMPACT OF THE GROWTH OF FOOD COMMODITY PRICES ON INFLATION AND MONETARY POLICY

Considerable growth of food commodity prices from the point of view of monetary policy increases fear from its impact on headline inflation. While in 2006 the contribution of the food prices growth to headline inflation in the world was only 27 %, in 2007 it was even 44.3 %. With regard to long-term expectations of high food commodity and energy prices, there is strong concern about keeping the level of headline inflation. This problem is most evident in emerging and developing economies. While in advanced economies the contribution of food products to headline inflation is approximately 19.5 % (2007), in emerging and developing economies it ranges from 40 % to 67 %. The highest year-to-year growth contribution of food prices to headline inflation was experienced in the emerging Asia countries. The contribution of food prices to inflation is in considerable negative correlation with the level of population income.

In countries with the lowest income per capita there is the highest contribution of food products to the inflation growth. Therefore as a result of higher share of food products in the food basket, from the emerging and developing economies react to a change in food commodity prices more sensitively.

In certain countries food commodities have a considerable contribution in export or import of goods, which is reflected in the trade balance. While in many advanced economies being major exporters of food commodities (Canada, USA, Australia, New Zealand) high food commodity prices have had a positive impact on the trade balance, in many poor countries that belong to food importers even more considerable deterioration has occurred.

Growth of food commodity prices occurs both as a direct impact on inflation (contribution of food prices to the growth of headline inflation) and as an indirect impact, mainly as pressure on salary growth and also as the growth of prices for the other goods and services. The indirect impact is reflected most strikingly in the countries where food products have higher representation in the consumer basket. Models of the International Monetary Fund estimate that 1-percent growth of food commodity prices in advanced economies should not be reflected markedly in the prices of non-food goods and services. In developing economies this 1-percent growth may result in the growth of inflation by 0.1 – 0.6 percentage points in case of non-food goods and services over a period of 6 to 12 months; in emerging countries this 1-percent growth may appear as 0.1 – 0.9 percentage points over a period of more than 12 months.

Therefore the growth of food commodities exerts considerable pressure on the tightening of monetary policy, mainly in emerging and developing countries. This trend appears mark-

edly in China, where as a result of the inflation growth the interest rates and minimum reserve requirements have risen. As one of measures for dampening of Chinese inflation, the issue of more considerable appreciation of Chinese jūan comes into focus, which could finally influence the status of global imbalances. Several countries of emerging economies also proceeded to tightening of monetary policy over the course of 2007. In most cases the growth of inflation in these countries is an accompanying sign of their strong economic growth. Therefore tightening of monetary policy should lead to slowing down of dynamics of the economy and inflation growth, or in some countries (e.g. in China) also to preventing from possible economy warming.

Despite the fact that up till now the growth of food commodity prices has not had such a considerable impact on advanced economies, for countries where central banks apply inflation targeting it remains a source of certain fear. Although in 2007 the contribution of food products in the consumer basket in the euro area accounted for only 19.6 %<sup>1</sup>, food products were one of the main sources of headline inflation growth. Their contribution is approximately 0.5 percentage point to headline inflation of the euro area. Significant growth of food prices occurred mainly at the end of 2007 and this trend persists further also in 2008. More striking growth of prices may lead to tightening of monetary policy (ECB Governing Council on 3. 7. 2008 decided on an increase in the interest rate by 25 basis points) despite that economic developments indicate a slow-down in the dynamics of economic growth.

On the opposite side within performing monetary policy stands the USA, where as a result of developments of the real estate sector and financial crisis a marked decrease in interest rates has occurred since the second half of 2007. In spite of that Fed has no explicit inflation target, one of its aims is also to keep the price stability. Price developments in the USA have had a similar process as in the euro area, when at the end of 2007 there was significant growth of the level of headline inflation and this trend persists also in 2008. Food and energy prices contributed to increases most markedly. In 2007 the contribution of food products to headline inflation was approximately 0.5 percentage point and the contribution of energies was 0.25 percentage point. Despite low interest rates the economic growth of the USA remains further slow and reflects continuous problems of the real estate sector, decreasing domestic demand and worsening of the economic sentiment of the households and of the business sector.

Thus, in advanced economies, there is the divergent trend, when inflation developments may require tightening, and, on the contrary, economic developments may require loosening of monetary policy. In this context the development of monetary policy in advanced economies may face more complicated challenges than in emerg-



ing economies. While in emerging economies to a large extent inflation is an accompanying sign of their economic growth, inflation growth in advanced economies results from external factors, in particular from the growth of global commodity prices. Thus monetary policy decision-making in emerging economies is easier to a large extent as in these countries there is not the opposite inflation trend and economic development. On the

contrary, monetary policy decisions in advanced economies are made difficult due to divergent movement of the inflation and economic development. Therefore the monetary policy stance in advanced economies requires much more sophisticated decision-making and a more prudential approach, so that in asserting the price stability there is no significant dampening of the economic activity.

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