



# Grains as a Potential Inflation Factor

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*As a result of a growing worldwide demand for grains as well as of their more and more considerable industrial use, the grains are becoming a strategic resource. Experts are talking about a significant interconnection between the energy economy and the economy of the food industry that noticeably draws the trend of the world prices of selected food products closer to the trend of oil prices<sup>1</sup>. As a reaction to the above facts, a new term has emerged in the economic theory – agflation.*

## THE CURRENT STATE AND ESTIMATED DEVELOPMENT OF GRAINS USAGE FOR ENERGY PURPOSES

According to the current data of the IGC - International Grains Council, the estimated worldwide production of grains this year should reach 1,568 million tons which is 34 mil. tons less than last year. Thus the decreasing trend of grains production would continue this year as well. On the other hand the current data signalise a continuous trend of an increase in the worldwide grains consumption (11 mil. tons more than in 2006) which results in a more significant decrease in the storage of grains (58 tons less than in 2006).

The last updated prospect over grains production for 2008 suggests the decreasing trend of grains production will stop, with an estimated increase in worldwide production by 90 mil. tons. However, the worldwide consumption of grains should also increase relatively substantially, due to growing food consumption in China and India in particular but also due to a noticeable increase in grains consumption for technical purposes. As a result of these facts, the worldwide stockpile of grains will decrease by 16 million tons in 2008 compared to 2007 and will reach the lowest level in the last ca. 30 years. The widening chasm between the growing worldwide consumption of grains and their stockpile has already started to manifest in a substantial increase in grains prices on the world markets.

The data of the International Grains Council further indicate that the greatest share of the worldwide grains production (almost 50%) falls on corn. Wheat takes about 36%, barley over 6% and other grains together about 9% of the worldwide grains production.

A substantial proportion of grains is used as fodder (almost 45%). Around 35% of the grains are used for food, more than 12% (around 220 million tons) for industrial purposes and the rest is used otherwise or lost. In the last years a substantial increase in the consumption of grains for industrial purposes has been recorded (at present more than double the amount compared to 2000).

Grains intended for industrial processing are being gradually used more and more for the production of ethanol rather than starch. During the next year more than a half of the grains intended for industrial use (almost 110 million tons) is thought to be used for ethanol production. The crucial grain used for ethanol production on a worldwide scale is corn, however, the proportion of wheat and rape (which in Europe constitutes as much as a 95% share in biodiesel production) used for this purpose is also growing.

From the economic year 2007/2008 grants will be provided to the producers of so-called "energy crops" within the EU amounting to a maximum of EUR 45/ha and a maximum guaranteed EU acreage of 2 mil. ha. Growers of crops intended for production of certain forms of energy will be eligible for this grant, namely of biofuels quoted in Article 2, Clause 2 of the Directive 2003/30/EC on support of the usage of biofuels or other renewable energy sources in transport and also crops used for acquiring electrical and thermal energy from biomass. More information on biofuels production in the EU are stated in the box.

According to the information of The Research Institute of Agricultural and Food Economics (Výskumný ústav ekonomiky, poľnohospodárstva a potravinárstva -VÚEPP)<sup>2</sup>, use of biomass for energy purposes in Slovakia for the time being falls behind the potential energy, economic and environmental possibilities. There is an assumption, however, that in accord with the world trend the grains and rape will start to be more substantially used for biofuel production in the Slovak circumstances as well. Thus in Slovakia, according to the National Programme of Biofuels Development, ca. 155,000 tons wheat, 118,000 tons corn and as much as 190,000 tons of oilseed could be processed gradually by 2010 – especially rape so that enough resources are secured in order to meet the national targets. This implies at least doubling the sowing area of crops intended for energy purposes compared to the present state (in the case of wheat to ca. 33,000 ha, corn to ca. 17,000 ha and rape even more substantially). As a prospect, the share of the acreage

<sup>1</sup> According to the World Bank, the current prices of basic food commodities have increased by more than 21% compared to 2005 and grains and oil prices by more than 30%. (More in Clifton, E.: Energy: Biofuels Pushing Up Food Aid Prices. <http://ipsnews.net>).

<sup>2</sup> More information in the Situation and Perspective Report as of 30 December 2006 - Grains (Situácia a výhľadová správa k 30.12.2006 – Obilniny). VÚEPP, Bratislava 2007 and the Situation and Perspective Report as of 30.12.2006 – Oilseed (Situácia a výhľadová správa k 30.12.2006 – Olejniny). VÚEPP, Bratislava 2007.



## Prospects of Biofuels in the EU

The growing worldwide energy consumption, the question of decreasing or eliminating the dependency on oil supply and efforts to decrease the negative effects of carbon dioxide on the environment have evoked a wave of activities aimed at a more substantial use of biomass for the production of energy.

The support for biomass use in the EU, incorporated in the European Parliament and Council Directive on biofuels No. 2003/30/EC<sup>3</sup>, is also part of the new European energy policy. The spring meeting of the Council in March 2007 passed an binding aim to establish a 20% share of energy from renewable sources in the total energy consumption of the EU by 2020 while taking into consideration the varying situations of the individual countries, their starting positions and potentials. At present, renewable resources in the EU have an approximately 6.5% share in the total energy consumption (with only 1% in Slovakia, although according to the Minister of Economy this share is to rise to 4% by 2010, 8% by 2015 and 12% by 2020).

Efforts to increasing the share of biomass use in energy production have been in the centre of attention during the last few years and ever since the assumption of the initial unequivocally affirmative standpoints, more and more reserved and disapproving standpoints have been emerging, especially those of environmentalists. More than 30 organisations and associations from all around the world jointly demand that the EU impose a moratorium on biofuel production and growing monocultures in a broad scope. The signatories warn that biofuel production will accelerate climatic change, destroy biodiversity and expel the original cultures. According to them the European biofuel policy poses a threat of accelerating global warming by destruction of peat bogs, tropical and subtropical forests which are the biggest eliminator of carbon dioxide. On 26th and 27th June 2007, the environmental groups presented their arguments before the Members of the European Parliament.

An unequivocal support for precipitating investments into renewable resources and for an increase in the effectuality of energy consumption was expressed by the United Nations Framework Convention on Climate Change (UNFCCC) in Vienna. The expert report establishes that mere maintenance of greenhouse gases on the present level would require an amount between

145 - 155 billion EUR worldwide by 2030 which constitutes 0.3% to 0.5% of the whole planet's GDP or 1.1% to 1.7% of worldwide investments which should be designated for fighting climate change.<sup>4</sup>

The EU commitment to decrease the carbon dioxide emissions, increase the use of renewable resources and effectuality of energy use by 2020 caused an uproar in the energy sector. Energy companies, environmental non-governmental organisations as well as groups promoting renewable resources are trying to draw the decision makers' attention to their arguments. Within the EC circles a series of legislative proposals<sup>5</sup> is being prepared that should answer the three-fold challenge of climate change, energy safety and the efforts to maintain low energy prices.

The EC should file a proposal of a Framework Directive on renewable resources before the UN Council on Climate Change (3<sup>rd</sup> - 14<sup>th</sup> December 2007, Bali) or immediately afterwards. Upon ratification of the overall national targets it will be the task of each member state to develop sector targets for each type of renewable resources - solar, wind, water, biomass etc. in the national action plans. It is still not clear, however, whether the passed national action plans will be legally binding and whether the EC will accept each of them by an independent decision.

One of the options considered by the EC is to require from each member state an increase in the proportion of biofuels in energy production by 2020 which, however, would not correspond with the current agreement that on determining the national targets it is necessary to take into consideration the "varying national starting positions and potential". The member states will have the option of independently deciding which targets are to be set as to renewable resources in the sector of heating and cooling of buildings. It is supposed that the EC will only provide "clues". In the July ballot, this method was also supported by the members of the EP Committee on Industry, Research and Energy (ITRE).

The final form of the EC framework Directive for the use of renewable resources will only be made known next year, yet it is possible to presuppose almost with certainty that the course of creating a basis for a broader future use of renewable resources will be confirmed.

of sowing areas of wheat and corn for industrial purposes should constitute ca. 10% of the total areas sown with these crops (wheat 368,000 ha, corn 162,000 ha) and their production ca 8% or 11% of the estimated total production of corn and wheat in 2010 (wheat ca. 2 mil. tons,

corn ca. 1.1 mil. tons). Already this year, consumption of oilseed (rape in particular) in Slovakia for energy purposes has increased by 28% compared to the previous year and constituted 68% of the total rapeseed consumption. In the following years, further increase in rape production for

3 In accordance with Article 3 the Member States should ensure that a minimum share of biofuels and other renewable fuels be introduced into their markets whereas the reference value for these targets is 2%, calculated on the basis of the energy contents of all types of petrol and diesel for transport purposes, to be introduced into their markets by 31.12.2005 and 5.75% by 31.12.2010. The underlying incentive of the creation of a Directive supporting a broader use of biofuels is the strategy of the Sustainable Development Association. The contemporary fossil resources are not only a decisive energy source but also a major source of carbon dioxide emissions. A higher proportion of use of biofuels is therefore also part of the measures taken to meet the obligations of the Kyoto Protocol.

4 See "Maintaining the Present Level of Emissions Would Cost Around EUR 150 Billion" (Udržanie emisii by stálo asi 150 miliárd EUR). <[www.tvojejeniaze.sk](http://www.tvojejeniaze.sk)>.

5 Already on 19 September Commissioner Nellie Kroes (Competition) and Commissioner Andris Piebalgs (Energy) were supposed to have completed a proposal of a further liberalisation of the domestic electric energy and natural gas markets. In December 2007 the EC should submit a proposal of a total "Framework Directive" on renewable energy sources including an update on the Directive on biofuels, reassessment of the need for harmonisation of national systems of support for renewable electric energy sources and a strategic technological plan.



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industrial purposes is expected. However, since the sowing areas of agricultural crops intended for technical purposes can only take a limited proportion of the Slovakia's arable land, the growing demand will have to be satisfied also by increasing the yields.

### LIMITS FOR USE OF BIOFUELS IN ENERGY PRODUCTION

Certain economic and technical limitations exist for the production of biocomponents and their use for energy production, which limit the possibilities of their use:

- Biocomponents are made of biomass and the amount of harvest depends on many parameters, particularly on climatic conditions. Hence the amount and accessibility of raw materials become a risk factor. On the other hand, engine fuels must be permanently accessible and they have to be of a balanced quality. Biocomponents are more expensive and the instability of harvest complicates the use of simple support mechanisms.
- The Directive 98/70/EC on quality of fuel determines the maximum amount of oxygen compounds that can be present in engine fuels. The above requirements can only be met by using an appropriate technological equipment which is associated with investment demands on the completion of the current or creation of new production capacities.
- At the present level of excise duties, not even exempting esters from the excise duty is enough to make them competitive as to their price. Therefore, it is necessary to look for other ways of subsidy (apart from the obvious increase in effectuality of biocomponents production).
- A certain acreage would have to be designated for growing technical crops intended for biofuel production out of the total arable land (in Slovakia the rough assessments estimate ca. 200,000 ha) which would cause the sowing areas of other crops to shrink, with possible impacts on an increase in their prices.

It appears that one of the greatest obstacles to the expansion of biofuels use is their price because the costs involved in their production considerably exceed the prices of fuels made from fossil sources. This is because some specific properties of the biocomponents require not only new technologies but also changes to logistics, particularly at their long-term storage, they also require implementation of a compulsory producers' certification and product checks in the network of filling stations with another associated costs. Therefore, at present the effective sale of biofuels appears to be a greater problem than the actual management of their production.

### DEVELOPMENT OF GRAINS PRICES, PRODUCTION PRICES OF FOOD PRODUCE AND CONSUMER PRICES OF FOOD IN SLOVAKIA AND NEIGHBOURING COUNTRIES

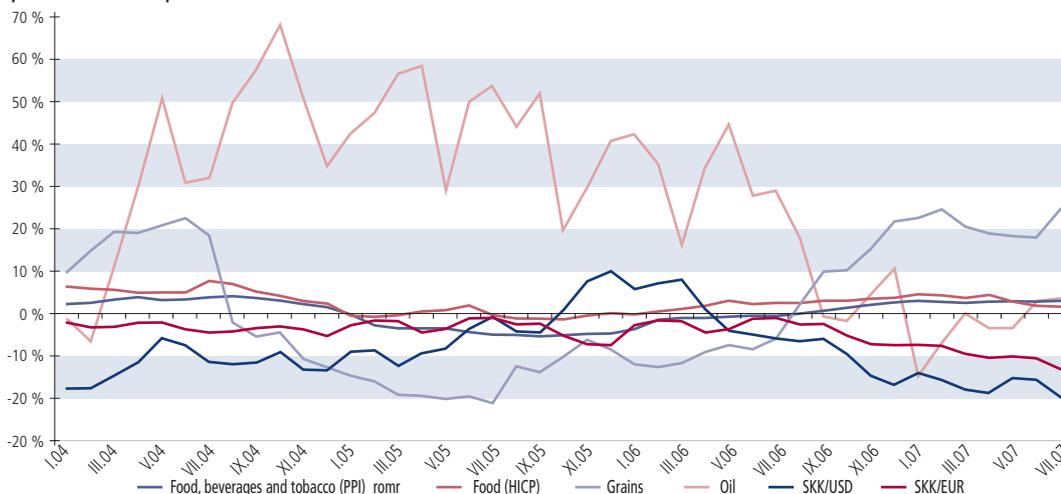
Even despite an expected record harvest of corn and a higher worldwide production of wheat, in the following year we will with great probability witness a further decrease in the world's grains stockpile due to consumption still exceeding production. Proceeding from these facts, in any case the world prices of grains may continue to be kept on a very high level.

Compared to the previous year, the current grains prices in Slovakia are higher by 24.5% on average (in the case of edible wheat on average by 39.4%, forage wheat on average by 53.2% and edible rye on average by 54.3%).

The comparison of the year-on-year development of grains prices, production and consumer prices indicates that the development of production and consumer prices of food in Slovakia has been so far relatively autonomous in relation to the development of grains prices in the last few years. A similar comparison with the neighbouring countries is unfeasible because of missing data on the development of grains prices.

Searching for reasons why the changes to grains prices have not manifested themselves in

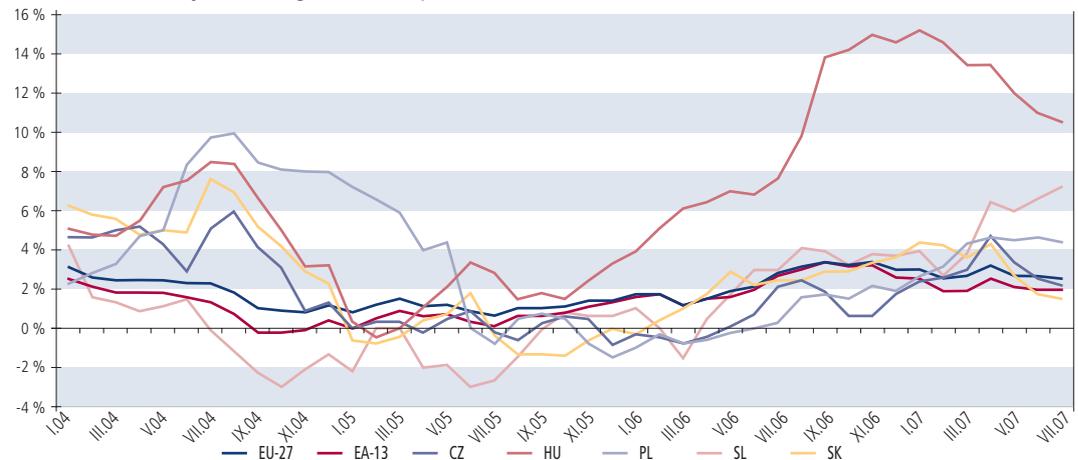
Chart 1 Year-on-year changes in prices of grains, oil, exchange rates, production and consumer prices of food products



Source: Eurostat.



Chart 2 Year-on-year changes in food prices (HICP)



Source: Eurostat.

changes to production and consumer prices more considerably during the last few years is relatively difficult. A whole array of factors is involved, one of the most decisive being the degree of (in) dependence (from) on imports.<sup>6</sup> Another important factor is the degree of appreciation of the national currency against the determinative currencies on the world markets as well the aggressive activities of trade chains on the domestic food market. In the new EU member states, so-called specific transitive factors are also taken into consideration (still a higher share of expenditures on food in the consumer basket than in the old member states etc.).

In respect to the analysis of a possible influence of important commodities' prices on inflation, an interesting thing is e.g. the year-on-year development of grains prices and oil prices in the last few years. In July 2004 the oil prices as well as grains prices increased interannually (by ca. 30%). Subsequently the dynamics of year-on-year oil prices gradually slowed down in cycles spanning several months and in September 2006 a drop occurred whereas the grains prices were showing a predominantly downward trend during the given period on a year-on-year basis. By the end of 2006 the oil prices mainly dropped on an year-on-year basis whereas the grains prices showed an upward trend. For a few years, within the framework of industrial producers' prices there has been an occurrence of a significant compensation of the soaring oil prices by dropping grains prices and vice versa. It is questionable to determine what inflation pressures would occur at a more lasting simultaneous increase in the trends of oil and grains prices.

Food prices in Slovakia within the framework of HICP have been growing slightly faster on an year-on-year basis or rather falling slower than the prices of food products within the framework of industrial producers' prices. The only exception was January 2005. Since May 2007 the food prices within the framework of HICP have been soaring slower than food product prices within PPI. The most significant year-on-year increase was recorded with the prices of food within HICP in

July 2004 (7.6%) when the prices of food products within PPI increased by 3.6% and grains prices by 18.4%. In July 2007 the prices of food within HICP increased in Slovakia by 1.5%, prices of food products within PPI increased by 2.9% and grains prices by 24.5%.

The year-on-year increase in food prices (excluding drinks – CP011 according to the COICOP classification) within HICP in Slovakia was the lowest amongst the neighbouring countries in July 2007 and below the averages of EU-27 (2.5%) and EU-13 (2.0%) as well. Increase in consumer food prices exceeded the EU-27 average in Poland (4.4%), Slovenia (7.2%) and Hungary (10.5%). Since April 2007 the year-on-year dynamics of consumer food prices has been showing a downward trend both in Slovakia and in all the neighbouring countries (probably because of the influence of the basic effect of potato prices among other reasons). An upward trend was only registered in Slovenia.

Consumer behaviour and the weight of food as a whole in the consumer basket influence their contribution to the overall inflation in the individual countries. Whereas in the last four years the share of food in the consumer basket of the euro area countries has been at a standstill, in the new member states a significant decrease in this share has occurred. In Poland to 18.3%, in Hungary to 17.0%, in the Czech Republic to almost 16.0%, in Slovenia to 15.2% and in Slovakia to 15.0%.

The most significant decrease in the share of food in the consumer basket in Central Europe in 2007 as compared to 2004 was recorded in Slovakia (by almost 4 percentage points) with the weight of bread and bakery products having decreased by almost 1.5 percentage points to 2.3%, meat by around 0.6 percentage point to 4.2% and milk and dairy products by 0.9 percentage points to almost 3.0%. Slovakia has thus come the closest to the averages of food share in the consumer basket for the EU-27 (14.3%) and EU-13 (13.9%) countries. Whereas in the old EU member states the shares of expenditures on the individual food groups in the consumer bas-

<sup>6</sup> Box 7 of the September issue of the Monthly Bulletin ECB (Recent food developments in world markets and the euro area) maintains that one of the reasons why the consumer food prices in the euro area have not increased as quickly as the world prices of food commodities is that in the euro area there is a relatively low proportion of imported agricultural products. It is also the consequence of the provisions of the common EU agricultural policy which, to a certain degree, isolate the agricultural market of the euro area from outside influences.



ket only changed slightly during the last 4 years, in the new member states the decrease in these shares has been very differentiated. A slight increase in weight in the consumer basket has been maintained during the last few years by bread and bakery products in Hungary and the EU-13 states as well as by milk and dairy products in Hungary.

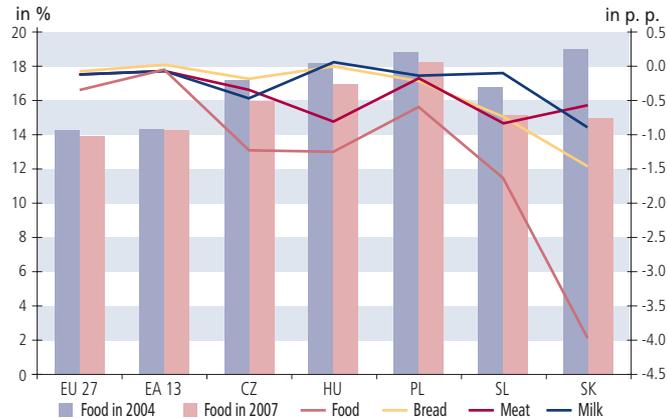
The trend of development of bread and bakery product prices was relatively similar on an year-on-year basis from the beginning of 2005 to roughly the middle of 2006 in the Central European countries and their level was below the averages of both EU-27 and EU-13. Since the middle of 2006 the year-on-year changes to prices of bread and bakery products differentiate considerably in the individual countries. The most significant increase in their prices occurred in Hungary (with a maximum in June 2007 by almost 23%) and in the Czech Republic (with a maximum in May 2007 by over 12%) where, however, the increase has slowed down in the last few months.

The trend of a gradual acceleration of the year-on-year increase in the prices of bread and bakery products is characteristic since the last months of 2006 for Poland (with a maximum in July 2007 by almost 7.5%) and Slovakia (with a maximum in July 2007 by almost 9%). Slovenia has seen the maximum increase in bread and bakery products prices in January 2007 but between March and June the prices were dropping and in July they soared again by approximately 2%.

At present, the year-on-year consumer prices of bread and bakery products are increasing most significantly in Hungary (July 2007 by 18.5%), Slovakia is recording the second most significant increase. The prices of bread and bakery products have been increasing relatively dynamically in the course of 2007 also in Poland (July 2007 by 7.4%). The dynamics of these products' prices is on the average level of EU-27 in the Czech Republic (July 2007 by 3.8%) and below both the EU-27 and EU-13 averages is the rate of increase in the prices of bread and bakery products in Slovenia (July 2007 by 1.8%).

A relatively small spread of year-on-year

Chart 3 Weight development of food as a whole and of selected components in the consumer basket in the years 2004 to 2007



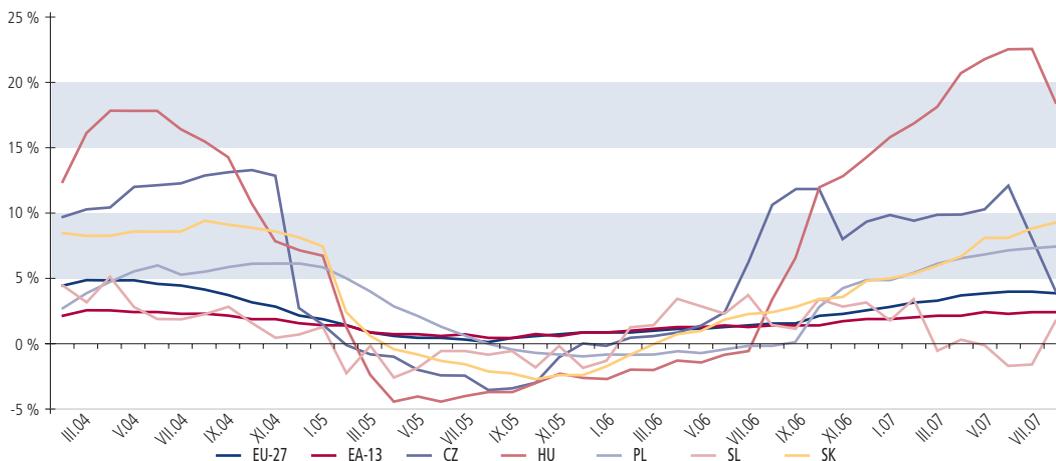
Source: Eurostat.

changes to consumer prices of meat has been maintained in most Central European countries since August 2005. A significant increase in meat prices took place in the second half of 2006 in Hungary (with the maximum in December 2006 by more than 14%). From the outset of 2007, this growth has been gradually slowing down but even so it is presently the highest amongst the V4 countries and Slovenia.

The year-on-year development of meat prices in Slovakia in 2007 is very similar to that of the Czech Republic, with these prices decreasing for virtually the entire first half. In July 2007 in the Czech Republic they increased by 0.6% and in Slovakia by 1%. The dynamics of the consumer prices of meat in the neighbouring countries is presently noticeably higher above the price level in the Czech Republic and Slovakia but also above the EU-27 and EU-13 averages. In July the consumer prices of meat soared on an year-on-year basis in Hungary by 7.6%, in Poland by 6.7% and in Slovenia by 5.5%

In the scope of the slightly increasing year-on-year consumer prices of milk and dairy products for the period of the last one and a half years, Hungary and Slovenia stand out considerably. In Hungary the consumer prices of milk and dairy products were increasing considerably mainly in

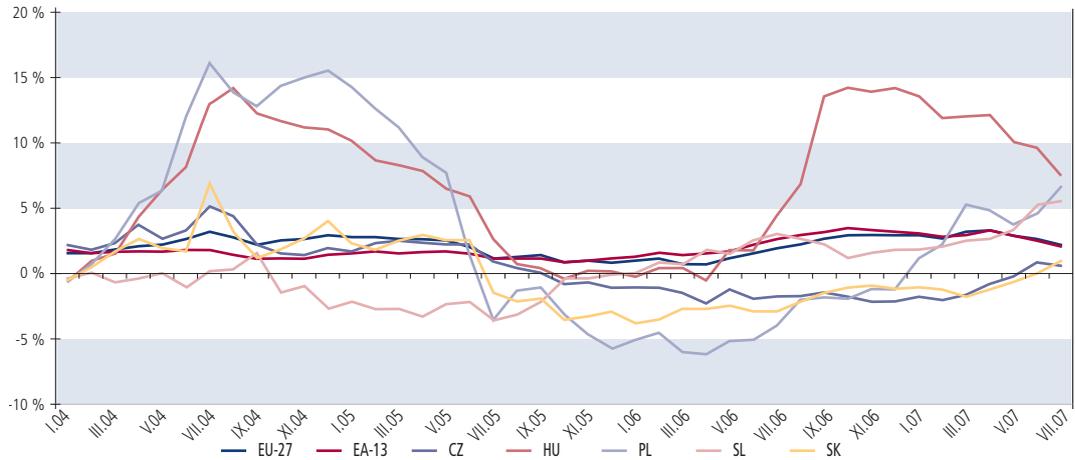
Chart 4 Year-on-year changes in prices of bread and bakery products (HICP)



Source: Eurostat.



Chart 5 Year-on-year changes in meat prices (HICP)



Source: Eurostat.

the second and third quarter of 2006 and since May 2007 their dynamics has been gradually slowing down (with a maximum in April 2007 by 13.5%). In Slovenia a significant year-on-year increase in the consumer prices of milk and dairy products began at the end of 2006 and despite a slowdown in March 2007 it continued at a fast rate in the course of the following months (in July by more than 11.5%).

The growth of consumer prices of milk and dairy products in Slovakia oscillated during 2007 between the EU-13 and EU-27 averages and has been the lowest amongst the V4 countries and Slovenia. In July 2007 prices of milk and dairy products had soared by 1.7% (in the EU-13 by 1.3% on average and in the EU-27 by 2.3% on average).

According to the analysis of year-on-year changes to the consumer prices of the main food groups and food as a whole within the EU it can be generalised that roughly since the middle of 2005 a trend of a gradual increase in food prices has been established both in EU-13 and EU-27 countries. In the EU-27 countries the average consumer prices of bread and bakery products have been increasing most significantly, followed by those of meat, milk and dairy products. In the

EU-13 countries the average consumer prices of meat have been increasing most significantly, followed by those of bread and bakery products and milk and dairy products.

The year-on-year development of the consumer prices of the individual food products groups has been considerably differentiated during the last few years. From March 2005 to February 2006, the consumer prices of bread and bakery products in Slovakia were decreasing on a year-on-year basis but since March 2006 they have been dynamically increasing. In July 2007 in Slovakia, compared to the EU-27 average, the consumer prices of bread and bakery products were increasing much more distinctly (9.3% or 3.8%), however, consumer prices of meat (1.0% or 2.1%) and milk and dairy products (1.7% or 2.3%) were increasing slower.

The prices of food products within the framework of the producers' prices for the domestic market have been showing a similar trend amongst the EU members during the last few years, only with some shifts in their levels in the individual countries. Following their average growth within EU-13 as well as EU-27 up to the first half of 2004, slowdown of growth ensued with a transition to a slight decrease in the first

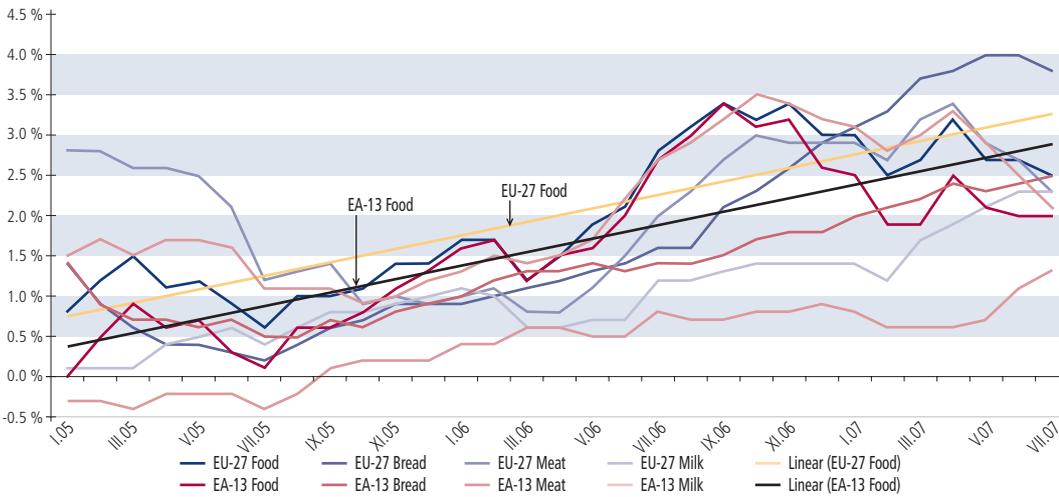
Chart 6 Year-on-year changes in milk and dairy products prices (HICP)



Source: Eurostat.



**Chart 7 Year-on-year development of consumer prices of food products in the EU-13 and EU-27 countries**



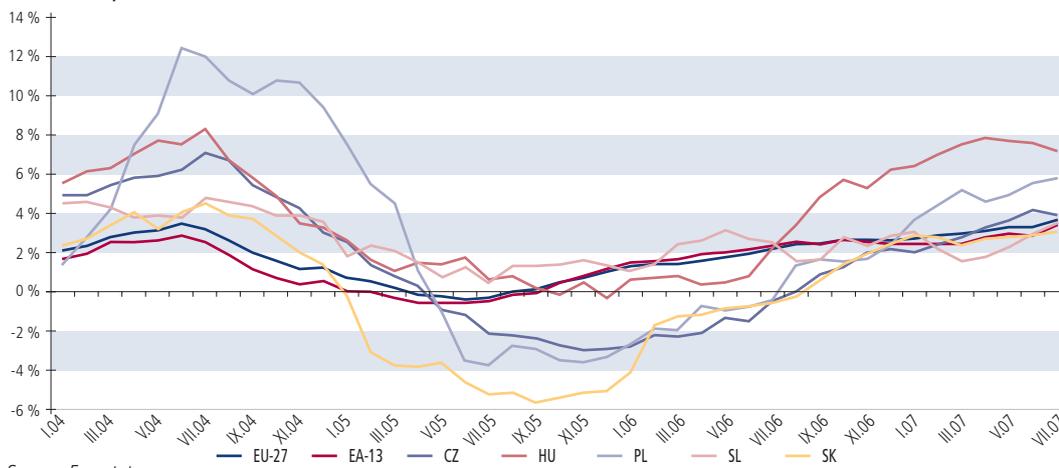
Source: Eurostat.

half of 2005 (in the Czech Republic, Poland and Slovakia this decrease was more substantial and continued up to the middle of 2006) and subsequent repeated growth.

At present, the most significant increase in the food products manufacturers' prices for the do-

mestic market is taking place in Hungary (7.1%) and Poland (5.8%). In Slovakia, the prices of agricultural products within the range of the manufacturers' prices for the domestic market (similarly to the consumer prices of food within HICP) recorded the lowest growth on a year-on-

**Chart 8 Year-on-year development of food and beverages prices within the framework of manufacturers' prices for the domestic market**



Source: Eurostat.

**Chart 9 Year-on-year development of food and beverages export prices within the framework of manufacturers' prices**



Source: Eurostat.



year basis in July 2007 (3.1%) from amongst the V4 countries and Slovenia and they were also tightly below the average levels of the EU-13 (3.4%) and EU-27 (3.7%) countries. It is not possible to perform a more detailed analysis of the development of prices for the individual food products groups in the individual countries because of the unavailability of comparable data.

The export prices of the manufacturers of food products within the EU show a similar trend to that of the manufacturers for domestic markets, they are just more variable in the individual countries.

### CONCLUSION

- As a result of a significant increase in the worldwide demand for grains, this commodity is becoming a strategic resource with corresponding impacts on the economic and pricing policies.
- The support of biomass use in the European Union is incorporated in the European Parliament and Council Directive on biofuels No. 2003/30/EC. From the economic year 2007/2008 onwards, grants will be provided to the producers of so-called "energy crops" within the EU amounting to up to EUR 45/ha and a maximum guaranteed EU acreage of 2 mil. ha.
- The prices of the food products manufacturers as well as consumer prices of food depend on an entire array of factors, with some of them being predictable only with difficulty (meteorological influences in particular).
- In the last few years we have been witnessing an upward trend of the prices of food products

manufacturers as well as consumer prices of food in which, however, the grains prices are not being projected in a direct proportion.

- Since 2005, the variability of year-on-year changes in consumer prices of food in the EU member states has been gradually decreasing.
- The degree of influence of food on the overall inflation in the individual countries also depends on the consumer behaviour of the population and subsequently on the weight of food in the respective country's consumer basket.
- For a few years, there has been occurring a significant compensation of an increase in oil prices by a decrease in grains prices and vice versa within the framework of industrial manufacturers' prices which can have a curbing effect on the overall inflation. What inflation pressures could occur at a long-term maintenance of the current growing prices of oil and grains, remains questionable.
- Since the expected increase in food prices will be of a global character in the following period, it should not threaten the fulfilment of the inflation criterion conditioning Slovakia's entry into the euro area.
- Multiple factors may contribute to the elimination of the influence of increasing food prices on the world markets on the domestic food prices:
  - an effective agricultural policy stimulating the domestic production and food safety,
  - a healthy competition of basic manufacturers and a correct influence of trade chains.

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