



Brussels, 13/11/2007
CM/WM/PB D(2007) 34703

NOTE TO THE FILE

Subject: The impact of the developments in agricultural producer prices on consumers

Executive summary

Producer price developments

After a steady increase in 2006, the prices of many agricultural commodities exhibited very significant rises during the first semester of 2007, with **exceptional levels** reached during the summer (increases against august 2006: wheat 78%, poultry 30%, butter 46%, SMP 76%). These price developments mainly result from the combination of **supply-side** factors at EU and world levels and **demand-side drivers**.

Some of the factors are of a **structural nature** and have already transformed market conditions away from supply to a demand driven markets. The underlying sustainable price level reached firmer levels than those observed in more than a decade. These structural factors have been largely anticipated in the "Medium-term prospects of agricultural markets and income 2007-2014" that was published last July. These factors cause a gradual change over time:

- (1) the steady rise in global commodity demand driven by record economic growth rates, urbanisation and changes in dietary patterns (notably for meat) in many parts of the world;
- (2) the emergence of new market outlets such as the biofuels market. This is particularly striking in the US where this market is estimated to absorb currently around 25% of US maize production and an even greater share in future. By contrast, in the EU, biofuels only use between 1 and 2 % of EU cereals production, which is hardly influencing at all;
- (3) the successive reforms of the CAP have certainly contributed to making agriculture more competitive but they have also produced shifts in production responses between sectors. This has notably affected the dairy sector, where support price reductions have led to some producers leaving the sector, whilst quotas have restricted other producers' capacity to increase production. Moreover, large public

(and private) stocks seen in the last decade have been largely reduced for a number of commodities resulting in a higher volatility of agricultural markets.

- (4) the growth in cereal yields in the EU, contrary to many of our competitors, has considerably slowed down since 1995. This could increasingly constrain the capacity of the agricultural sector to meet a rising domestic and global demand.

Structural conditions have set conditions for tighter, demand driven markets and thus firmer price levels. Starting from this higher underlying structural price level, market prices hiked in 2006 and 2007 due to a series of adverse climatic conditions in many producing and exporting regions. The continuation of a very significant drought in Australia, a heat wave in central and eastern Europe, excessive rain falls during harvest in western Europe as well as very low temperatures in Ukraine and Russia considerably affected the level of crop production in these countries. The combination of structural and short-term factors has generated very tight market conditions with a further fall in world cereal stocks to their lowest in more than 30 years. The impact of these factors on prices has been exacerbated by the restrictive policy of some exporting countries, which led to what can be considered as extremely nervous markets with prices at exceptional levels.

While most commodity markets (like those for metals or oil) have recently shown similar developments, the impact on agricultural prices is amplified by the seasonality that characterizes agricultural production and which limits its capacity for short-term adjustment as compared to other industrial sectors. However, the impact of these short-term factors on prices should slowly decline over the next few months.

Whilst caution is necessary in asserting that we have entered a new period of strong market prices after two decades of price decreases, it is becoming increasingly clear that **structural factors** like the growth in global food demand and the development of new market outlets **can be reasonably expected to maintain prices at sustained levels over the medium-term**. This factor should increase export opportunities of EU cereals, as displayed in the medium term prospects.

However, the existing production structure and potential in the major producing countries seems largely sufficient to supply global demand so that **the risk of food shortages appears low**. For instance in the EU, additional production will be stimulated by both policy measures (with the proposed removal of the set-aside obligation for 2008) and economic incentives (as the very high cereal prices should constitute an appropriate incentive for farmers to increase production).

Potential impact on food consumer prices

The high agricultural prices can be expected to be reflected in consumer prices to a much lower extent given (1) the low and declining **share of agricultural raw materials** in food production costs and (2) the **competitive structure of the food supply-chain** (over the medium- to long-term there is no significant evidence of partial transmission of price changes between the farm and consumer levels, although this may happen in the short run in some sector/country specific situation).

Higher cereal prices should lead to a limited increase in the prices of **bread and cereal-based products** (unless the current peaks in prices persist over several months). The

main reason for this being the fact that the share of cereals in production costs is around 5%¹. Yet, the consumer price of pasta should show a much greater increase as the cost of durum wheat should make up for a greater share of the consumer price of **pasta**. The 45% increase in wheat prices between the first semesters of 2006 and of 2007 can be expected to lead to an increase of bread prices of around 2.2%. As a result the price of a standard role, say 0.6 EUR, should only increase by less than 1.2 cent as compared to 2006 due to the increase in cereal prices (the impact of higher energy and wage increases influences bread prices more significantly). Should cereal prices stay at their exceptional August levels (i.e. 225 EUR/t for wheat), consumer prices of **bread and cereal-based products would increase by 4.2%**;

Given the high share of cereal feed in the production costs of livestock (about 50% to 70% in pork and poultry production costs), producer (and consumer) prices for **animals (meat)** should be affected by the rise in cereal prices. The 45% increase in feed cereal prices between the first semesters of 2006 and of 2007 could have been expected to lead to an increase in the producer prices of **pig** and **poultry** prices of around 22 %. These developments at producer levels should then have led to an increase in the consumer prices of pork and poultry meat products of 4.4%. In particular, the consumer prices of fresh raw meat should have increased by 9%.

Owing to the production constraints of the poultry and pig markets (notably the production cycle in the pig sector), observed changes at producer levels showed that poultry and pig producer prices changed by 21% and -8 % over the corresponding semester of 2006 and 2007 (i.e. the changes remained below the anticipated effect on producer costs). The observed changes in producer prices would correspond to a rise in consumer prices for poultry meat products by 4% and a fall for pork products by -1.5%. However, price developments recorded in July and August 2007 (i.e. an increase of 10% and 12 % respectively over the first semester of 2007) suggest that the consumer prices for **poultry meat products** and **pork products** could increase by a further 2.2% and 2.3 % in the second semester of 2007 (and by a further 2% for poultry meat and around 6% for pork products if the feed price increase is fully transmitted by the end of 2007, i.e. **an overall increase of 8% in consumer prices as a result of cereal feed price increase**). Towards the end of 2008, beef consumer prices could also show a 1% increase when all feed cost increases are fully reflected.

Over the last few years, the consumer prices of **dairy products** and eggs have steadily increased, largely unaffected by the development of butter, cheese, SMP producer prices as well as by the development of the producer prices for milk, all of which showed a declining trend until the beginning of 2007. Producer prices of milk should follow the rise in the prices of bulk dairy products but to a lesser extent and with a certain delay given the specificities of milk price formation (under contractual arrangements). Given the increase in the producer prices of **butter** and **SMP** (5% and 32% respectively between the first semester of 2006 and 2007), the consumer prices of these two dairy products can be expected to have increased by 3.5% and 22%. The consumer prices of butter and SMP could increase much further (since about 70% of the consumer price consists of the producer price): **the 34% and 35% increase in August 2007 respectively should lead to a further increase of 24% and 25% at the consumer**

¹ The main cost factors again are labour, energy and capital. This is why, bread prices even increased in times of extremely low cereal prices like in 2002, 2003 and 2005. Nominal cereal producer prices benefited only to a limited extent from the increasing consumer prices for bread. In real terms however, producer prices of cereals have declined over the last seven years.

level. This is by far much lower than recent increases of consumer prices of butter of 50% in some Member States. However, the low supply of butter in the EU might push consumer prices further up, though not related to increases in production cost of butter.

The producer prices of bulk cheese (e.g. gouda, cheddar) remained relatively stable between the first semester 2006 and 2007. Prices however increased in July and August by 15% as compared to the first semester 2007. Whilst these price developments should induce stable consumer prices for bulk cheeses between the first semesters of 2006 and 2007, consumer prices should increase by some 9% (should the recent increases in August persist over the next few months). However, cheese is a very heterogeneous group of products and the prices for higher value added cheeses could increase even more, in case supply remains scarce.

Potential impact on food expenditure and purchasing power of households

- (1) The changes in producer prices during the first semester of 2007 compared to the same period in 2006 should lead to an increase in consumer prices of bread, meat, butter and cheese of 2 %, 0%, 4 % and 0% on average respectively.

This increase in consumer prices can be expected to generate:

- An overall **increase in consumer food expenditure of 1.1 %**;
- Final consumers should be affected to an even more limited extent since the latter only spend 12% on average of their overall expenditure on food. Therefore the **purchasing power of EU households** should only be affected by **0.1 % on aggregate**.

- (2) However, should the most recent exceptional price developments which took place in August 2007 continue in the next future, the impact would be much more pronounced:

- **Overall consumer food expenditure would increase by 4.5 %**;
- **The purchasing power of an average EU-27 household would decrease by around 0.5%.**

- (3) Furthermore, in the extreme case where the August price developments were to persist towards the end of the year and were fully transmitted to meat products, the overall **consumer food expenditure would increase by 8%** and the **purchasing power of an average EU-27 household would decrease by around 0.9%.**

However, it should be taken into account that the degree of recent price developments and transmissions along the supply chain varies across Member States, so that the impact considerations elaborated in this note for theoretical EU-27 average consumer prices and households do not hold true for the diversity of implications actually felt in single Member States.

Increasing agricultural prices should affect the population differently:

- Low income households spend a higher share of their disposable income on food and they have less flexibility in adjusting expenditure to other budget items. Any increase of food prices will be earlier felt by this group than other groups of the population. Particularly affected are households in danger of poverty.
- Regional differences in income lead to different consumption patterns (e.g. more processed foods in Luxembourg and less processed foods in Romania). Consuming predominantly less processed foods leads to lower absolute consumer spending on foods. However, price increases of agricultural commodities are then more directly transmitted and earlier felt (also in price levels) than in regions with different consumer patterns.

Therefore, for example, low-income households which shelter around 37% of the overall population in Portugal may face a drop in their standard of living of around 1.2 %. Taking account of (the probably) higher shares of agricultural raw product value in end product value in the calculations for this country would aggravate further the impact.

1. INTRODUCTION

The prices of certain agricultural commodities (cereals, oilseeds) and staple foods (butter, drinking milk) have risen remarkably over the most recent months, and we may reasonably expect that market prices may stay at sustained level for some time.

Given the provisions of the Treaty establishing the European Community (one of the objectives of the CAP shall be 'to ensure that supplies reach consumers at reasonable prices'² (Article 33, Paragraph 1.(e)), these price developments clearly justify to review the price formation and transmission processes between the producer and consumer stages in order to assess the potential impact these changes in producer prices may induce for the consumer prices of food products as well as for the purchasing power of household in the EU.

The first part of this note introduces the most recent developments at producer level for the cereal, oilseed, meat and dairy sectors, as well as the main determining factors. The transmission of price changes between the producer and consumer stages is then investigated in the second section. Finally an estimate of the potential impact of an increase in food prices for EU household purchasing power is given in the third section of this note.

2. DEVELOPMENTS IN AGRICULTURAL PRODUCER PRICES

Cereals

Cereal prices exhibited a significant increase since 2006 after nearly two decades of a decline in cereal prices in real terms (= without inflation). The increase of prices started at the end of the first semester of 2006 and continued throughout the first semester 2007. Prices reached record levels in July and August 2007 due to expectations of a low harvest and very low availabilities.

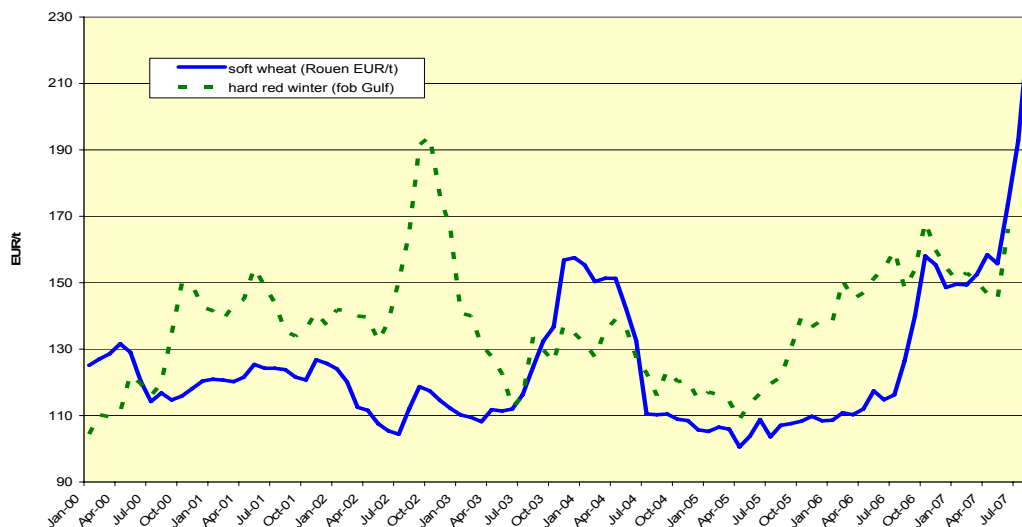
The remaining months of 2007 certainly will show higher price levels than during the first semester 2007, though probably not at the levels seen today. Soft wheat prices increased from 112 EUR/t during the first semester 2006 to 161 EUR/t on average for the first semester 2007. Soft wheat prices reached 225 EUR/t in August 2007. World markets displayed a similar tendency to the EU: prices increased from 95 EUR/t to 130 EUR/t over the same period. Prices also showed an increase in July.

Similar developments have happened on the maize markets. The surging maize demand in the US drove prices up to 130 EUR/t. However the expected record harvest in 2007 has led to a lower level of prices. Maize market prices in the EU saw a significant increase as well between the first semester 2006 and 2007: prices increased from 125

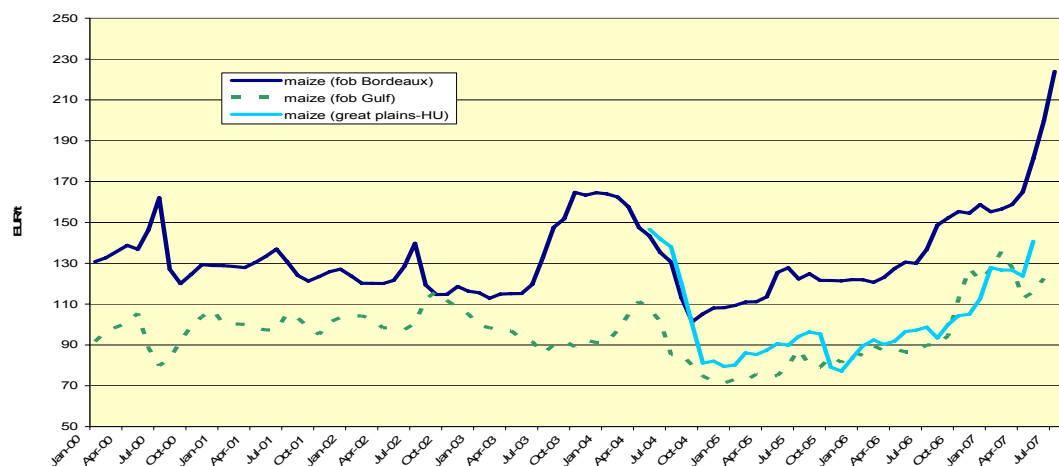
² An operational definition - the EC Treaty and related secondary legislation leave such definition open - of 'reasonable' food prices could focus on consumer prices which would range at levels allowing for (1) a demand-tailored domestic offer at agricultural producer level; (2) an inclusion of (perfectly) market-oriented trade and processing margins up to the end of the supply chain; (3) and, finally, a sustainable relation between disposable income and food expenditure at household level.

EUR/t to 163 EUR/t in the western EU production centres and increased from 90 EUR/t to 125 EUR/t in the production basins in Hungary.

Graph 1: Development of wheat prices in the EU and on world markets (EUR/t).



Graph 2: Development of maize prices in the EU and on world markets (EUR/t).



The main reasons are:

(1) On the supply side: a low global cereal harvest in 2006 and 2007 with short harvests in the main exporting nations due to a number of unfavourable climatic conditions: drought in Australia, low temperatures in the Black sea region (notably Ukraine), dry conditions and heat wave in central and eastern Europe, and rain during harvesting season in the US. However, whilst US wheat production should stand at low level, maize production in the US is expected to rebound strongly to reach 330 mio t (+23%) in 2007;

(2) On the demand side:

- a gradual rise in (feed) cereal consumption in Eastern Asia (notably India and China) over the last few years supported by population and income growth, dietary changes and urbanisation.;

- A surge in maize demand for bioethanol production in the US (+40 mio t estimated for 2007/08) should trigger a further increase in maize demand (and a spillover effect on the other feed cereals); on the other hand, bioethanol production from cereals in the EU used 3 mio t in 2006 and is expected to absorb some 4.5 mio t on 2007 (i.e. less than 2% of cereal production) which should hardly have an impact on market prices.

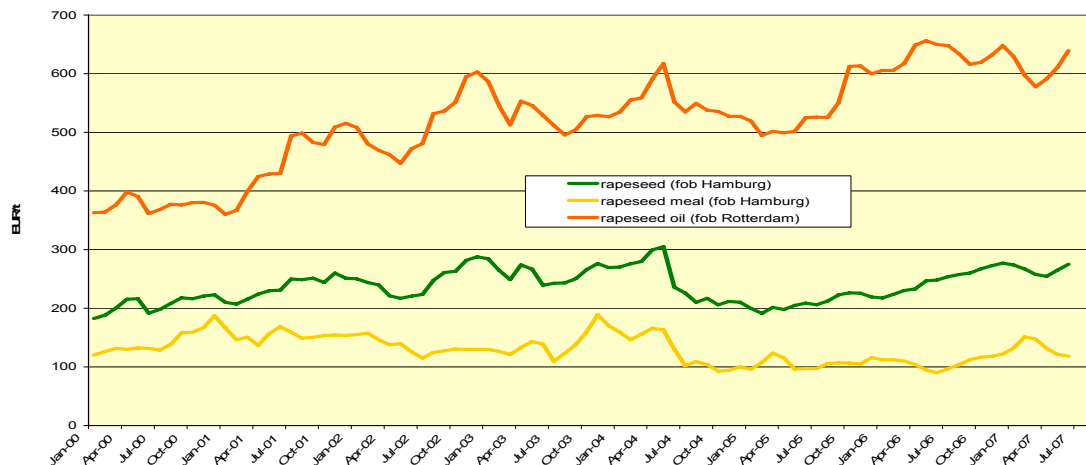
These developments on the supply and demand side are projected to lead to a further tightening of global grain supply and a steep further fall in world cereal stocks to their lowest level in more than a decade. Cereal prices in 2007 and 2008 are thus expected to reach high levels again. This should be particularly the case in the EU, which should record a low harvest due to adverse weather conditions for the second time in a row.

Oilseeds

Global oilseeds and vegetable oil markets have seen a strong increase in demand over the last years. The substantial increase in demand of vegetable oils for food in Eastern Asia as well as in other emerging markets has been the main driver for expanding global production. In recent years also the increasing biodiesel demand has become another important driver. The EU produces and consumes most of the biodiesel by mainly using rapeseed oil. Most of the rapeseed oil is now used for biodiesel production.

Rapeseed oil prices showed an increase by more than 70% over the last seven years. They now stand at 640 EUR/t. On the other hand, rapeseed meal prices largely held their price level of 100-120 EUR/t. They reached recently 120 EUR/t again. Rapeseed prices reflect rather the developments of rapeseed meal than in rapeseed oil prices. Recently prices reached 280 EUR/t. Prices for oilseeds and particularly for vegetable oils should continue to remain high due to the increasing global food demand and to the increasing global biodiesel demand.

Graph 3: Development of rapeseed, rape meal and rape oil prices (EUR/t)

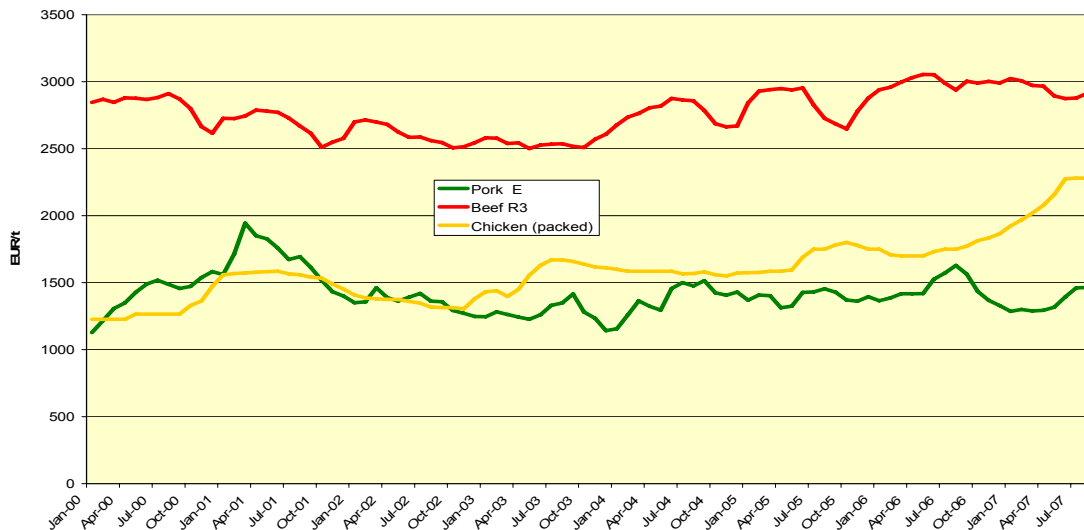


Meat

Global poultry and pig meat prices have exhibited an increase since Jan. 2007 onwards, though at a moderate level, caused by high feed cereal prices, but balanced by relatively low oilseed meal prices. However, it should be reminded that meat prices were at high levels in 2006 owing to a set of specific circumstances (including sanitary crises in many exporting countries). Poultry prices in the EU have seen a significant increase from mid last year confirming that producers had been able to transmit some of the higher feed

costs to consumers. Pork prices recently picked up as recently well, although they showed only a moderate growth. Prices for pork and poultry should continue to reflect the development of cereal and oilseed meal prices over the next few months. So far only poultry prices have reflected the increase in feed prices. Pork prices are expected to follow with a delay.

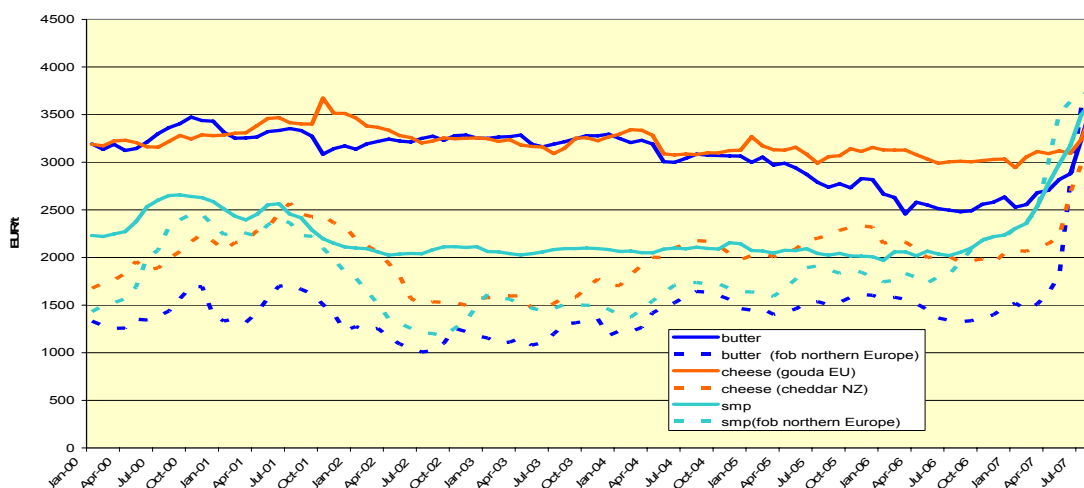
Graph 4: Development of pork, poultry and beef prices in the EU (EUR/t)



Milk and dairy products

The EU and world prices for dairy products reached very high levels in recent months. The increase in world dairy prices is due to both structural and short-term decline in milk production. Again, the main causes are to be found in unfavourable climatic conditions with the drought in Australia and, to a lesser extent, in New Zealand, the two main (price determining) exporting countries of dairy products.

Graph 5: Development of butter, SMP and cheese prices (EUR/t)



In the EU, milk deliveries to dairies (for processing) have been lower than expected for the last two years with an overall undershoot of the quota level (in most Member States and most notably in the UK and France). In 2007, a modest recovery is projected (driven by increasing deliveries in the EU-10). Given the inertia of the sector, this tight supply

situation is expected to maintain commodity prices at high levels as world demand is expected to continue to increase for all dairy products (driven by population and income growth, dietary changes and urbanisation, particularly in the emerging markets).

Overall comments

Agricultural prices have increased in 2006 and 2007. Whilst most of the factors causing these sudden developments tend to be on the supply side and related to lower production, they coincided with a period of a steady rise in global commodity demand supported by record economic growth rates at global level and changes in dietary patterns of many emerging economies.

Despite the relatively tight cereal and dairy markets in the EU, it appears that there is no real shortage of cereals or dairy products. Particularly the EU dairy markets show the results of continuous restructuring on the dairy as well as on the milk producer side. The dairies start to bear the fruits of adjusting their production away from subsidized bulk products which now face a consumption driven market: For the first time in years, butter prices have shown an increase. The current undershoot of quotas in a number of Member States could as well be interpreted as ongoing restructuring, i.e. inefficient producers are dropping out of production. An increase in the producer price of raw milk (that is demanded by farmers in a number of producing regions), could trigger additional supply by giving incentives for the producers to increase milk production.

In "normal" years the existing production structure appears sufficient to supply global demand, with traditionally higher risks of surplus than of shortage. That is why nearly all industrial countries have programmes in place to control/reduce supply. Set aside of agricultural land and milk quotas in the EU are an example. This additional supply potential available can be mobilised either by policy measures or by economic incentives from high prices from global markets.

It seems too early to assert that we have entered a new period of healthy market prices after two decades of price decreases. However, structural factors like the growth in global food demand and the development of new market outlets like biofuels can be reasonably expected to continue over the medium-term and to maintain prices at sustained levels (though admittedly at lower level than now). For example, the return of cereal production to "normal" harvest levels over the medium term could lead to lower price levels, though at levels above 150 EUR/t. The extent to which changes in macro-economic factors (such as exchange rates and world economic growth), the policy framework, technological developments, the sanitary environment and/or climatic conditions could alter these trends remains a source of major uncertainty over the medium-term.

The impact of these uncertainties on price developments is amplified but the perishability and seasonality that characterize agricultural production and which limit its short-term adjustment.

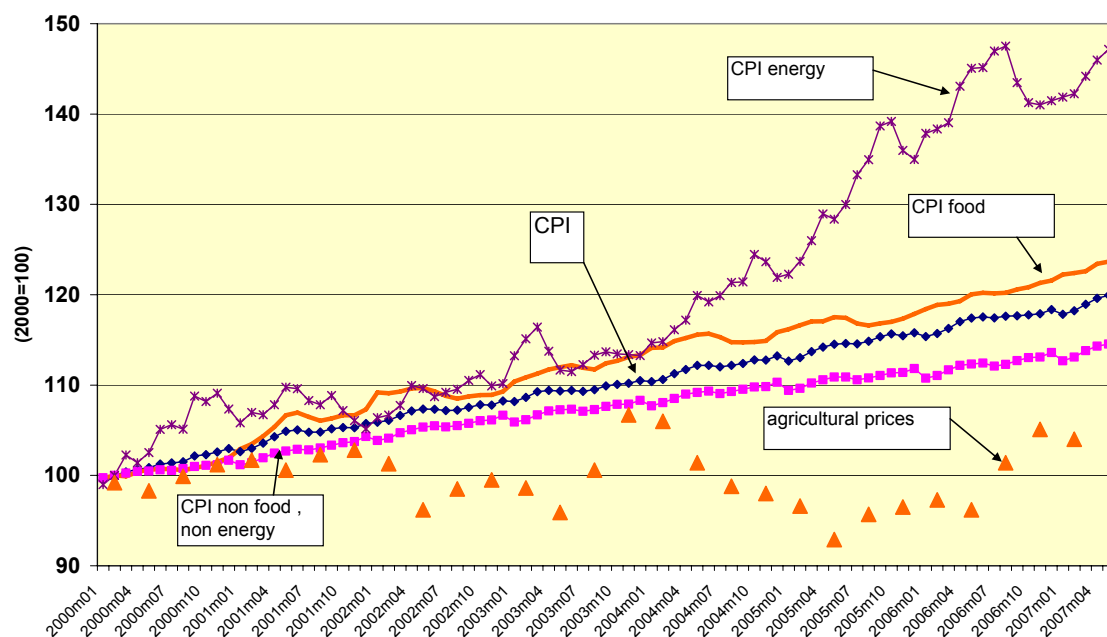
3. PRICE TRANSMISSION BETWEEN THE AGRICULTURAL AND CONSUMER STAGES

3.1. Comparative developments in agricultural producer prices and food consumer prices: recent evidence

3.1.1. Producer and consumer prices

The prices in agriculture are more volatile than consumer prices even on an aggregate level, with peak prices in the last seven years recorded in 2004 and in 2007 (coinciding with low world cereal harvests and high world cereal prices). Over the last seven years agricultural producer prices tended to slightly decline in nominal terms and more strongly in real terms, while consumer prices in general and consumer prices for food steadily increased in nominal terms as well as slightly in real terms.

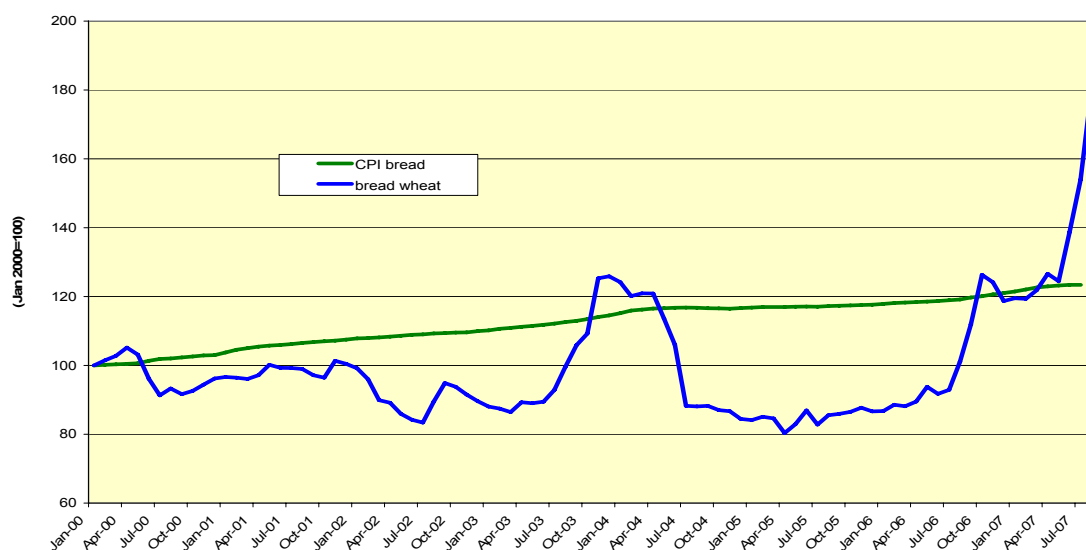
Graph 6: Development of nominal agricultural producer prices and consumer prices in the EU (Jan. 2000=100)



3.1.2. Cereals and related products

Only extreme peaks in prices tend to lead to slightly higher consumer prices. The main reason for this being the fact that the share of cereals in production costs is around 5%. The main cost factors again are labour, energy and capital. Therefore, bread prices even increased in times of extremely low cereal prices like in 2002, 2003 and 2005. Nominal cereal producer prices benefited only to a limited extent from the increasing consumer prices for bread. In real terms however, producer prices of cereals have declined over the last seven years.

Graph 7: Development of producer prices for bread making wheat and consumer prices for bread and cereal based products in the EU-27 (Jan. 2000=100)



The 45% increase of wheat prices between the first semester 2006 and 2007 should lead to an increase of bread prices by 2.2%. As a result the price of a standard role, say 0.6 EUR, should only increase by 1.2 cent due to the increase in cereal prices. Should cereal prices remain for the second half of this year at the level seen in August (i.e. with wheat at 225 EUR/t), the cost of production of bread and cereal-based products would increase by a further 2%.

For breads which contain more flour, like German type breads, with around 700g of flour per kilo of bread, and a consumer price of 2.2 EUR, similar results are yielded. With bread wheat/rye prices at 112 EUR/t in the first semester 2006 the necessary cereals would cost around 9 cents per loaf. The rise of cereal prices to 170 EUR/t would increase the costs of raw cereals to 14 cents.

Any other price increase should stem mainly from higher salaries and energy prices.

3.1.3. Meat and related products

Consumer prices of meat saw a steady increase over the last seven years to almost about the same as the trend in nominal producer prices for livestock. Price fluctuations at producer level had been felt at consumer level, though not fully. Consumer prices reacted less to a decline in animal prices than to an increase. The share of agricultural raw materials in raw meat consumer prices is about 40%, meaning that labour, capital and energy costs are less influential than in the cereal sector. However, the further value is added in the processing chain, e.g. with sausage production, the lower the cost share of meat. In the total aggregate about 20% of the costs relates to raw materials. Retailers often use low raw meat prices to attract consumers, thus decreasing the margin of the less concentrated meat processors. The latter points to some decreases of margins of processors and retailers in this food segment.

Cereal and oilseed prices have an indirect effect on consumer prices for meat through the feed component in the costs of producing animals which is then reflected in the changes in animal prices. The cost share of feeds is about 50% to 70% in pork and poultry in production costs and a typical feed ration is consisting about 70% cereals and 30% protein.

Animal prices tend to react with a delay depending on the time production takes between decision and realisation and eventual lengths of production cycles. The latter is particular important for pork and sees usually a three months delay before pork prices react to increasing feed costs.

Feed costs for poultry and pork increased by 22% in the first semesters 2007 against the first semester 2006. Should the prices recorded in August stay for the rest of the season, feed prices in the second semester 2007 would cause a further cost increase by 20%.

Against this theoretical background, the actually observed poultry prices have increased by 21% between the first semester 2006 and 2007. Prices continued to increase in July and August by a further 10% relative to the first semester 2007. Poultry producers were therefore largely able to transmit the increasing feed costs to product prices. A further increase of poultry prices by additional 10% on top of the August 2007 prices can be reasonably expected for the second semester, should the feed prices remain on the level of August 2007 for the rest of the year.

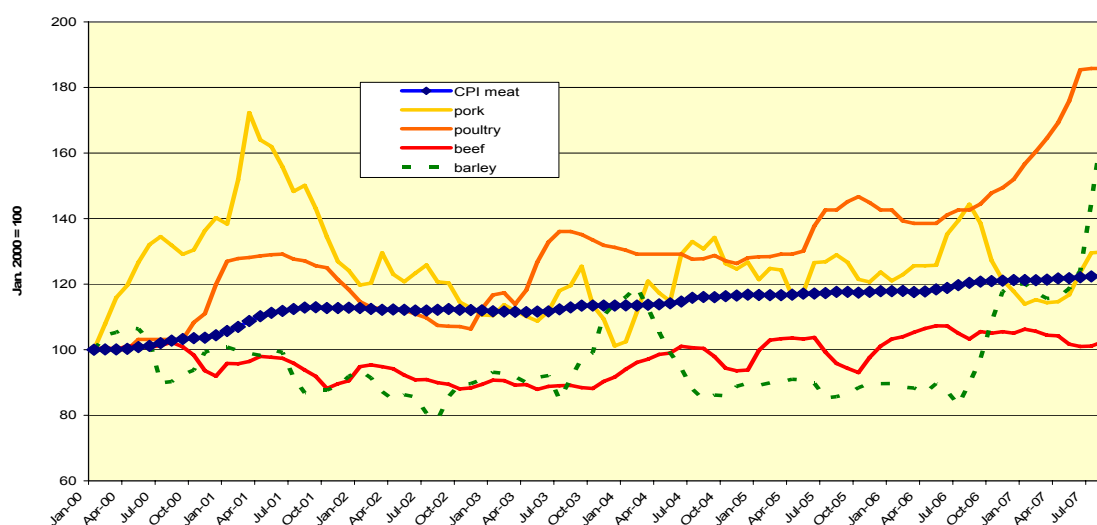
Relative to the developments in the poultry sector, pig prices only recently started to reflected the pressure of increasing feed costs on their margin. Pig prices showed a steep increase in first semester 2006 and then dropped in 2007 despite the increasing costs and due to the up swinging production cycle. They fell on average by 8 % between the first semesters of 2006 and 2007. Prices started to rise from June 2007 onwards (in relation to earlier increases in feed prices) to stand in August some 12 % higher than during the first semester of 2007. Given the pressure by feed prices, the prices for pork should show stronger increases once the production cycle starts to downswing. On top of the price increase of 12% seen in August 2007 about 10% price increase would compensate the higher feed costs in the first semester 2007. The recent price increases in cereals would then translate to a further increase of 20%. Should this happen, pork prices would increase by 30% towards the end of the 2007 and at the beginning of 2008.

Beef prices remained relatively high but little affected by increasing cereal prices as margins decreased only a little and substitution possibilities in feed appear possible. The length of the production cycle suggests that any adjustments of prices by +7%, if at all, should be seen only in the cause of next year. However, beef prices might increase as a reaction to consumers growing beef demand in the presence of strongly increasing pork and poultry prices.

As a consequence of the already observed producer price developments until August 2007, consumer prices for poultry meats and related products should have increased by 4.25% owing to the 21% increase between the first semesters 2006 and 2007. By contrast, the producer prices of pig meat and the consumer prices of pork products should have fallen by 8% and 1.6% respectively over the same period. Beef meat and beef products should remain fairly stable. Since about half of the meat consumed in Europe is pork, the increase in poultry prices should be outbalanced also by relatively stable beef meat prices.

The possible upswing of poultry and pig prices in the second half of this year, could cause consumer prices to increase by 4% for poultry meat products and by 6% for pork meat products. Consumer prices for fresh meat could increase by 8% and 12% for poultry and pork respectively.

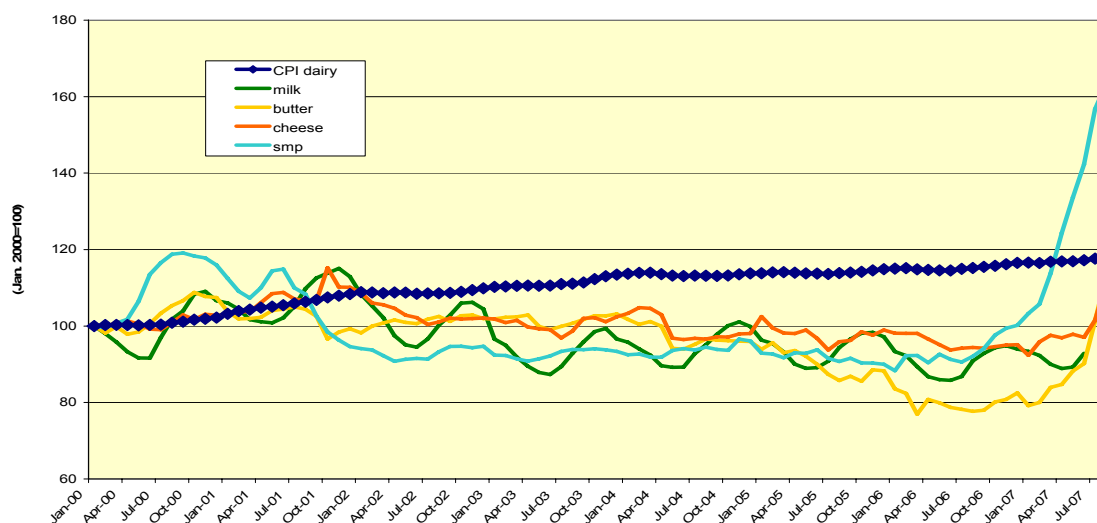
Graph 8: Development of consumer prices for meat, producer prices for beef, poultry, pork and feed barley, EU-27 (Jan. 2000 = 100)



3.1.4. Milk and dairy products

Until early this year producer prices of milk showed a decline of around 6% as compared to the early 2000s. Butter prices dropped by 10 to 20% in the same period, skimmed milk powder prices picked up earlier and saw a 5% increase. Prices for cheese dropped as well by some 5%. The consumer prices of dairy products did not reflect this decline in the prices of basic consumer dairy products but exhibited an increase of 17% as compared to the early 2000s.

Graph 9: Development in the consumer prices for dairy products, the producer prices for butter, cheese and skimmed milk powder, EU-27 (Jan. 2000 = 100)



The speed of price increases gained pace since the beginning of this year with a large increase in butter and cheese prices in August (+34% and 15% as compared to June), after an average increase between the corresponding semesters of 2006 and 2007 of 5% and stable cheese prices respectively. The producer prices of milk have not so far fully reflected these price increases, though some anecdotal evidence from the press suggests

increases of 8% to 10% in some countries. Consumer prices for dairy products have continued their gradual, though moderate increase so far.

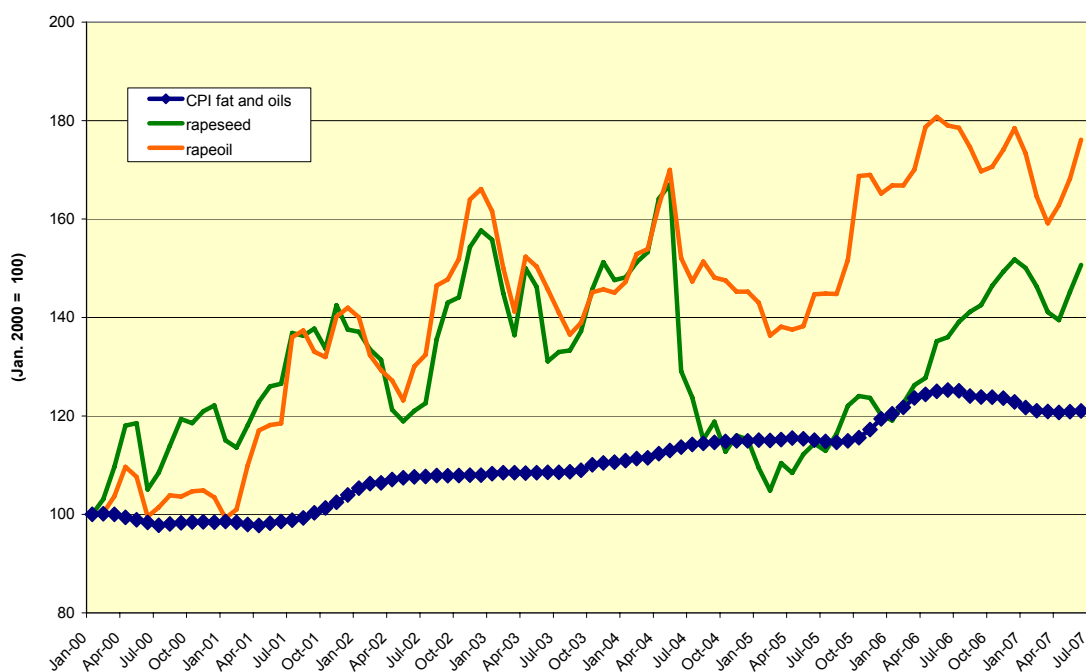
3.1.5. Fats and oils

The consumer prices for fats and oils in the EU displayed an increase relative to those of all foods and progressed slightly above average over the recent months. The consumer price index reflects the increase of vegetable oil prices only to a limited extent. Prices of rapeseed oil increased dramatically by 75% as compared to early 2000. Consumer prices of fats and oils on the other hand showed an increase of 20% over the same period. This development suggests that the food industry used other, less expensive, oils as substitution.

Producer prices for rapeseed developed until June 2004 in a similar way as rapeseed oil prices. Since then prices decoupled but then increased again from July 2006 onwards, however at a lower level. This development is due to lowering rapeseed meal prices during that period. Recently, prices for rapemeal picked up again. Prices for rapeseed and rapeseed oil should remain high, mainly driven by biodiesel demand. Prices of rapeseed meal should develop moderately.

Between the first semester 2006 and 2007, rapeseed producer prices showed an increase of 14%, while rapeseed oil dropped by 4% and rapeseed meal recovered from a very low level in the first semester 2006 with an increase of 29%. Consumer prices for fats and oils should be relatively unaffected by the decline of rapeseed oil prices.

Graph 10: Development of consumer prices for oils and fats, producer prices for rapeseed oil and rapeseed, EU-27 (Jan. 2000).



3.2. Main determinants of price transmission

3.2.1. Key determinants of producer prices

The long-term development of agricultural producer prices is determined by market forces and agricultural market and price policies. The latter are embedded in the common market organisations, resulting in a varying influence of market forces on price formation among products. However, within the scope of agricultural policy reform process towards more market-orientation, the intensity of common market and price policy intervention has drastically diminished.

As a result of different trends in demand³ combined with cost savings through productivity progress (cereals, pig and poultry meat, eggs) respectively cost increases in case of higher labour intensities (potatoes, fruit, vegetables), market forces have induced different price tendencies over the longer term.

However, these longer term price tendencies are regularly overlaid by short and medium term price fluctuations which have their determinants both on the demand (cyclical income fluctuations, changes in population, seasonal consumer behaviour etc) and, overridingly, on the supply side (annually changing harvests in plant production and price induced supply cycles in animal production (slaughter pigs and cattle, eggs), varying stock and import availability etc).

3.2.2. Comparative developments in food producer and consumer prices and other consumer prices

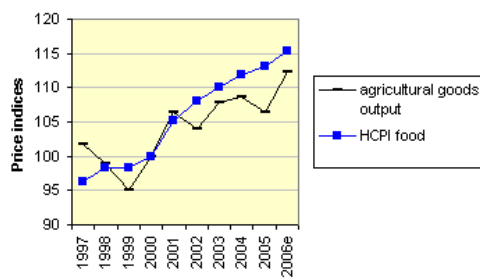
As a result of the interplay of the different influencing factors mentioned above, the nominal EU-27 price index for agricultural output showed a moderately increasing trend during the last ten years. However, this moderate increase was less pronounced than that of the harmonized consumer price index (HCPI) for food.

But the picture changes if one looks at deflated or real price indices. Real prices of agricultural output decreased during the last ten years, contributing to a successive fall in overall agricultural real entrepreneurial income respectively to a continuation in labour income discrepancy between agriculture and non-agricultural sectors and reflecting the transmission of cost reductions and productivity gains into the downstream supply chain.

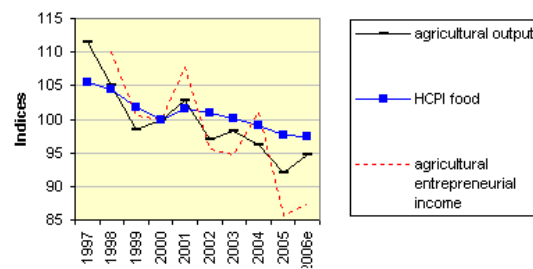
The same downward trend in real prices (but less pronounced than for agricultural output) holds true for food products. Thus food prices appear to have contributed to limit the development in consumer price index as they tended to increase (in nominal terms) less than prices for other product or services groups like 'housing, water, electricity, gas and other fuels', 'health', 'transport' and 'education'.

³ According to varying income elasticities of quantitative demand: For example, real income increases over time resulted in higher demand for animal proteins (ie meat) and cheese compared to plant proteins (pulses) and butter.

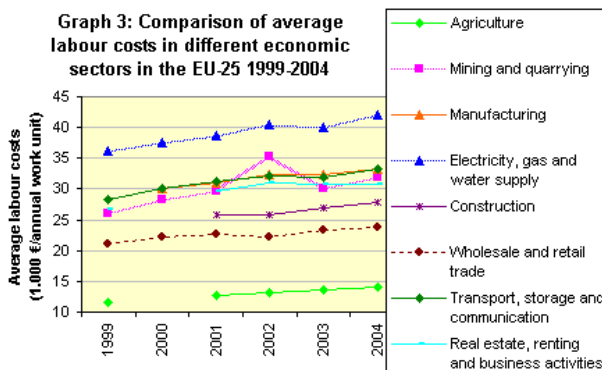
Graph 1: Comparison of annual EU-27 agricultural output and food price indices 1997-2006 (nominal, 2000=100)



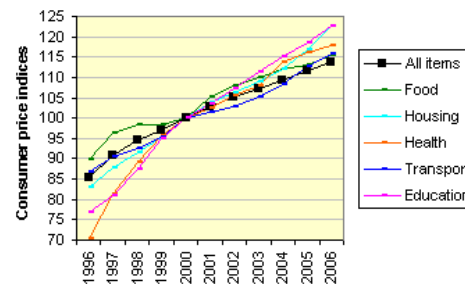
Graph 2: Comparison of annual EU-27 agricultural output value, entrepreneurial income and food price indices 1997-2006 (real, 2000=100)



Graph 3: Comparison of average labour costs in different economic sectors in the EU-25 1999-2004



Graph 4: Comparison of EU-27 consumer price indices 1996-2006 (nominal, 2005=100)



In the following, the development of price indices for major agricultural and food products shall be compared in order to get a first impression of price fluctuations at and margins between both supply stages.

3.2.3. Key factors of price transmission

Price fluctuations systematically show by far greater amplitudes at the agricultural producer than at the retail level, with the consequence that fluctuations of agricultural producer prices are not always fully felt/observed in consumer prices.

There are several explanations for this phenomenon:

- Consumer prices include, beside agricultural raw product purchase costs, the values of complementary goods and services added within the processing, refinement and distribution process. These additional cost components, which have been increasing continuously (such as labour, capital and energy costs), make up the largest part of the retail price and do not underlie such pronounced short and medium term fluctuations as prevalent for agricultural goods;
- Price fluctuations can be smoothed thanks to the storability of some agricultural products (either natural and/or achieved through processing);
- Marketing strategies at processing and retailing levels can help reducing the short-term fluctuations coming from the producer stage;
- Changes in trade and processing margins could limit the transmission of producer price changes, though in an asymmetric way. These margins naturally increase with the extent to which complementary goods and services are added to the raw product (in response to respective consumer preferences which have evolved with social changes and in the course of the overall economic and income growth). In this context, different

developments in producer and consumer prices can be explained by differing cost and productivity developments along the supply chain.

Whilst the previous factors have a direct impact on the transmission of price changes along the supply-chain, it is clear that price formation and transmission processes are first and foremost determined by the specific competitive structure and the functioning of the food-supply chain, including the concentration in retailing and processing (for example: in case of decreasing agricultural producer prices, processors and retailers could tend to transmit these price decreases only if they are "forced" by sufficient competition).

The supply-chain concern several branches up- (plant protection, seed, fertilizer, agricultural machinery) and downstream (manufacturing, retail) to the agricultural sector which may show different characteristics of concentration and competition. It may be further argued that market power particularly pays off in the agri-food sector given the price-inelasticity of agricultural supply on the one hand and consumer demand on the other hand. Hence, well-functioning and competitive markets along the supply-chain can be regarded as an essential precondition with regard to fair and successful market-orientation of the agricultural sector⁴.

3.2.4. *Recent empirical evidence on the competitive structure of the agri-food sector*

DG Agri carried out two studies to look into price transmission and concentration/competition issues: AgraCeas, "*Study on price transmission in the Agro-Food Sector*" 2003, and University of Bologna "*Concurrence et concentration dans le secteur agro-alimentaire*", 2003.

The main conclusions of the AgraCeas study were:

Dairy: In a number of countries no evidence of transmission was found at the first level of the chain. This was considered to be due to methodological constraints or due to the fact that where a sector is dominated by large co-operatives price transmission may be masked by the dividend payments producers receive. Where evidence of transmission was found it was noted that in the majority of countries/specific products analysed, the direction of transmission tended to be from processors to producers. This would also be in line with a priori expectations since for the most part the supply chains analysed in these countries relate to intervention products where a change in intervention price would be expected to feed back from processors to producers. But in some cases during the period under review (e.g. in the UK under the Milk Marketing Board and successor organisations) the direction of transmission worked from producers to processors.

At the second level of the chain in the majority of cases analysed transmission was found to take place from processors to retailers reflecting the relatively less concentrated retailing structures in the countries. By contrast for a number of series (e.g. butter/liquid milk) and countries transmission worked from retailers to processors reflecting the specificities of the product but also the higher level of retailer concentration.

⁴ In order to provide further basis for argumentation with regard to the different developments of agricultural producer and consumer prices (and the margins between them), the impact of changing trade and processing margins on price formation processes at these two supply chain levels is discussed in a short theoretical discourse (cf. annex 1).

Pigmeat: This sector showed the strongest evidence of price transmission amongst the sectors analysed. At the first stage of the chain evidence of transmission varied largely in accordance with the pigmeat trade position of the countries concerned. Thus in net importing countries the direction of transmission tends to run from producer to the first processing stage while in net exporting countries (where prices will in part be determined by factors outside the domestic market) transmission tended to run from first stage processor to producer. In Denmark an additional factor explaining the direction of transmission was the presence of a single pricing system managed by a co-operatively owned, market dominant first stage processing sector. At the second stage of the chain (from first stage processor/wholesaler to retailer) strong evidence of transmission was found but the direction of this transmission varies according to country in line with the degree of trade with neighbouring/third country markets, the relative strength of retailers and the first stage processors/wholesalers.

Wheat: The evidence from the wheat to bread analysis suggests that prices are transmitted predominantly upstream from retailer to wholesale/grain mill manufacturer. This was the case for Belgium, France, Ireland and the UK. The only exception to this direction of transmission was Germany where prices are transmitted downstream from wholesale/grain mill manufacturer to retailer. Market and industry characteristics of the bakery sector vis-à-vis the retail sector provide the explanations as to why this direction of transmission was found. The evidence from the wheat to flour analysis suggests that prices are transmitted predominantly downstream from wholesale/miller to retailer. This was the case for Belgium, Italy and the UK. Only Austria showed any evidence of upstream price transmission from retailer to wholesale/miller. The relative concentration of the manufacturing sector vis-à-vis the retail sector in each of these countries is likely to explain this direction of transmission.

In their analysis of the concentration and competition in the agri-food sector in the EU, the University of Bologna did not find strong evidence of imperfections in the functioning of the agri-food markets.

3.2.5. *Share of agricultural commodity in the final food product*

In line with the previously discussed trends in agricultural producer prices, consumer prices and trade and processing margins, the share of agricultural revenues in consumer expenditure for food could be expected to have been continuously decreasing. This development is confirmed in the case of the German old 'Bundesländer' (representative for other mature economies), for which respective data was available for the period 1970/71 until 2002/03⁵. These figures are comparable to the figures available for the US.

Obviously, the share of agricultural products in consumer expenditure for food in Germany decreased from 49% in 1970/71 to 24% in 2002/03 (with the decrease having been most pronounced in the 80ties, rather 'consolidation tendencies' in the 90ies and later). However, the 2002/03 figure for plant products (9%) is considerably lower than that for animal products (29%), which is explainable by interpreting animal production as 'value-adding on-farm processing' of parts of plant production. The share of agricultural raw materials in food production costs tends to decrease with the degree of manufacturing (for which the most decisive costs are labour, capital and energy).

⁵ Erratically published in the annual editions of the 'Agrarbericht der Bundesregierung'. The data for the whole EU was requested from Eurostat, however, such information is not available (since respective input/output tables are currently not done).

Fluctuations in agricultural producer prices are all the more reflected in consumer prices the higher the share of agricultural product value in final product value is.

Table 1: Share of agricultural products in food consumer expenditure 1970/71-2002/03 (German old 'Bundesländer')

Financial year	Bread cereals and respective products	Table potatoes	Sugar beet and sugar	Plant products altogether	Slaughter animals, meat and meat products	Milk and dairy products	Eggs	Animal products altogether	Total
1970/71	19	63	42	33	48	57	84	52	49
1979/80	15	46	44	25	46	60	80	51	46
1980/81	15	45	42	23	44	57	80	50	45
1985/86	11	36	40	19	42	56	73	48	42
1988/89	8	33	38	14	36	56	70	44	36
1991/92	7	33	38	14	32	45	69	38	31
1992/93	7	24	37	12	29	45	66	36	29
1993/94	5	31	38	11	27	44	70	35	28
1994/95	5	45	38	13	29	44	67	35	29
1995/96	4	37	37	11	29	45	74	36	29
1996/97	5	20	40	10	30	43	75	36	28
1997/98	5	29	40	10	26	40	61	32	26
1998/99	4	37	39	11	20	40	55	29	24
1999/00	4	28	40	10	23	40	59	31	25
2000/01	4	26	39	10	26	45	69	34	28
2001/02	4	33	38	9	22	42	68	31	25
2002/03	4	24	38	9	21	39	68	29	24

3.3. Conclusions

The high agricultural prices can be expected to be reflected in consumer prices to a much lower extent given the low and declining share of agricultural raw materials in food production costs and the competitive structure of the food supply-chain (over the medium- to long-term there is no significant evidence of partial transmission of price changes between the farm and consumer levels, although this may happen in the short run in some sector/country specific situation).

- Higher cereal prices should lead to a limited increase in the prices of **bread and cereal-based products** (unless the current peaks in prices persist over several

months). The main reason for this being the fact that the share of cereals in production costs is around 5%⁶. Yet, the consumer price of pasta should show a much greater increase as the cost of durum wheat should make up for a greater share of the consumer price of **pasta**. The 45% increase in wheat prices between the first semesters of 2006 and of 2007 can be expected to lead to an increase of bread prices of around 2.2%. As a result the price of a standard role, say 0.6 EUR, should only increase by less than 1.2 cent as compared to 2006 due to the increase in cereal prices (the impact of higher energy and wage increases influences bread prices more significantly). Should cereal prices stay at their exceptional August levels (i.e. 225 EUR/t for wheat), consumer prices of **bread and cereal-based products** would increase by 4.2%;

- Given the high share of cereal feed in the production costs of livestock, producer (and consumer) prices for **animals (meat)** should be affected by the rise in cereal prices. The cost share of feeds is about 50% to 70% in pork and poultry in production costs. Cereals make up around 70% of a standard feed ration, with about 30% as protein. While cereal prices reached high levels, those of protein feeds developed within normal parameters and even declined. However, animal prices tend to react with a certain delay. Recently, poultry prices reflected the increase in cereal prices, while pork prices picked up but remained below the anticipated effect on producer costs.

The 45% increase in feed cereal prices between the first semesters of 2006 and of 2007 could have been expected to lead to an increase in the producer prices of **pig and poultry** prices of around 22 %. These developments at producer levels should then have led to an increase in the consumer prices of pork and poultry meat products of 4.4%. In particular, the consumer prices of fresh raw meat should have increased by 9% (the share of agricultural raw materials in raw meat consumer prices is about 40%, versus 20% for the overall group of meat products) (i.e. labour, capital and energy costs are less influential than in the cereal sector).

Owing to the production constraints of the poultry and pig markets (notably the production cycle in the pig sector), observed changes at producer levels showed that poultry and pig producer prices changed by 21% and -8 % over the corresponding semester of 2006 and 2007. This would correspond for consumer prices to an increase for poultry meat products by 4% and a fall for pork products by -1.5%. However, price developments recorded in July and August 2007 (i.e. an increase of 10% and 12 % respectively over the first semester of 2007) suggest that the consumer prices for **poultry meat products** and **pork products** could increase by a further 2.2% and 2.3 % in the second semester of 2007, should producer prices remain on the levels of August. Consumer prices for raw meat would increase by 4% and 4.6% respectively.

- Over the last few years, the consumer prices of **dairy products** and eggs have steadily increased, largely unaffected by the development of butter, cheese, SMP producer prices as well as by the development of the producer prices for milk, all of which showed a declining trend until the beginning of 2007. The increasing prices since the beginning of 2007 reflect the steadily increasing demand for cheese and fresh dairy products in the EU over the last years resulting in a declining exportable surplus and

⁶ The main cost factors again are labour, energy and capital. This is why, bread prices even increased in times of extremely low cereal prices like in 2002, 2003 and 2005. Nominal cereal producer prices benefited only to a limited extent from the increasing consumer prices for bread. In real terms however, producer prices of cereals have declined over the last seven years.

tighter domestic markets. Producer prices of milk should follow these developments but to a lesser extent than the recent increase of butter and cheese prices, and with a certain delay given the specificities of milk price formation (under contractual arrangements). However, recent evidence shows that farmers and dairies in some countries currently discuss increases between 8 and 10%, i.e. 2 to 3 cents per litre. Since the transmission of prices originates from the wholesale level (i.e. butter and SMP), it appears that farmers are starting to benefit from the higher dairy prices.

- Given the increase in the producer prices of **butter** and **SMP** (5% and 32% respectively between the first semester of 2006 and 2007), the consumer prices of these two dairy products can be expected to have increased by 3.5% and 22%. The consumer prices of butter and SMP could increase much further (since about 70% of the consumer price consists of the producer price): the 34% and 35% increase in August 2007 respectively should lead to an increase of 24% and 25% at the consumer level. This is by far much lower than recent increases of consumer prices of butter of 50% in some Member States. However, the low supply of butter in the EU might push consumer prices further up, though not related to increases in production cost of butter.
- The producer prices of bulk cheese (e.g. gouda, cheddar) remained relatively stable between the first semester 2006 and 2007. Prices however increased in July and August by 15% as compared to the first semester 2007. Given a share of the cost of the raw material of around 50% in the final consumer prices, these price developments would induce stable consumer prices for bulk cheeses in the first semesters of 2006 and 2007. However, should the recent increases in August persist over the next few months, then consumer prices should increase by some 7%. Cheeses are a very heterogeneous group of products. Prices for higher value added cheeses could increase even more, in case supply remains scarce.

4. IMPACT OF CHANGES IN FOOD CONSUMER PRICES ON FOOD CONSUMPTION AND THE PURCHASING POWER OF CONSUMERS

4.1. Main determinants of food consumption

There are several factors influencing food consumption, with the most important ones being the population number and structure, income level and distribution, price level and price relations and, finally, consumption habits (and social behaviour). All these factors have been and are continuously changing, as already outlined in parts (i.e. for consumer price trends) under the previous section of this note.

4.1.1. EU population

From 1986 until 2006 and thanks to a positive migration balance which has been overcompensating the domestic birth deficit, EU-27 population showed a (moderate) increase (+6%) from 465 mio to 493 mio people.

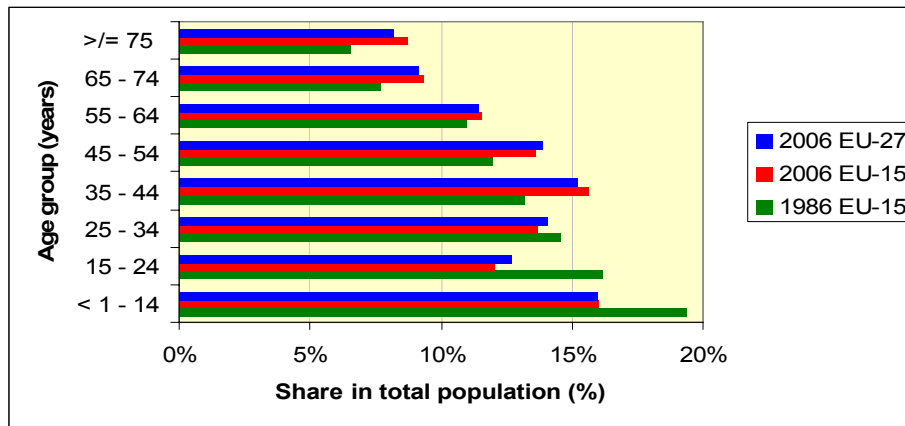
- *A growing population leads to higher quantities of food consumption, usually at the population growth rate.*

Regarding population structure, there was a clear 'ageing trend'. In 2006 compared to 1986, there were around 18 mio people (around 5% of total EU-15 population in 2006) less in the three youngest age groups, while higher population shares were found in the

older age groups. The latest eastern enlargements let total EU population number increase by 27%, but the age structure effects were negligible.

- *Consumption patters change with ageing, i.e. with generally lower quantities, particularly less meat and more vegetables consumed. The aging of the population in the EU contributes to lowering the increase of per capita meat consumption.*

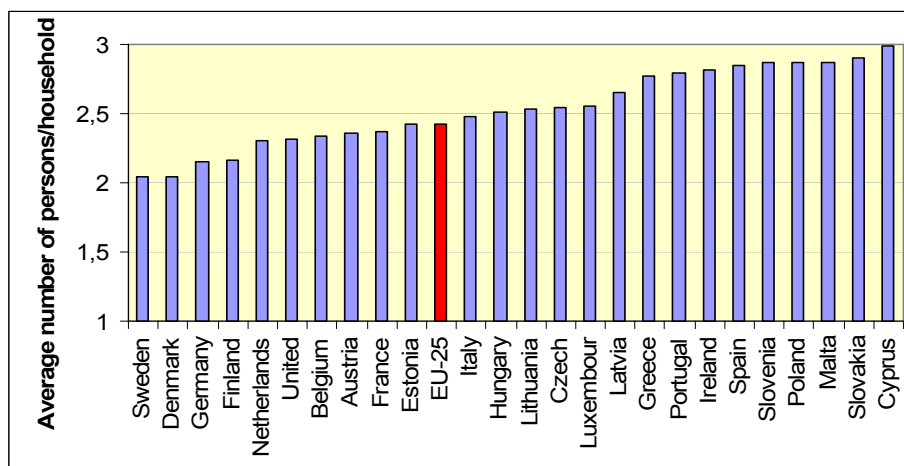
Graph 11: Change in age structure of EU population between 1986 and 2006



The trend of an 'ageing population' was combined with an increase in the overall number of households (more 'single households', less households of the type 'two adults with dependent children'), reflecting a decrease in the average household size. The average household size was 2.4 persons per household in the EU-25 in 2005. Households in the new eastern Member States and in southern old Member States generally tend to be 'bigger' than the EU-25 average household.

- *The growing importance of single and urban households increases the demand for ready made foods and away from home consumption. The raw material costs are falling the higher the degree of processing, thus these households should feel less and less eventual increases of agricultural prices.*

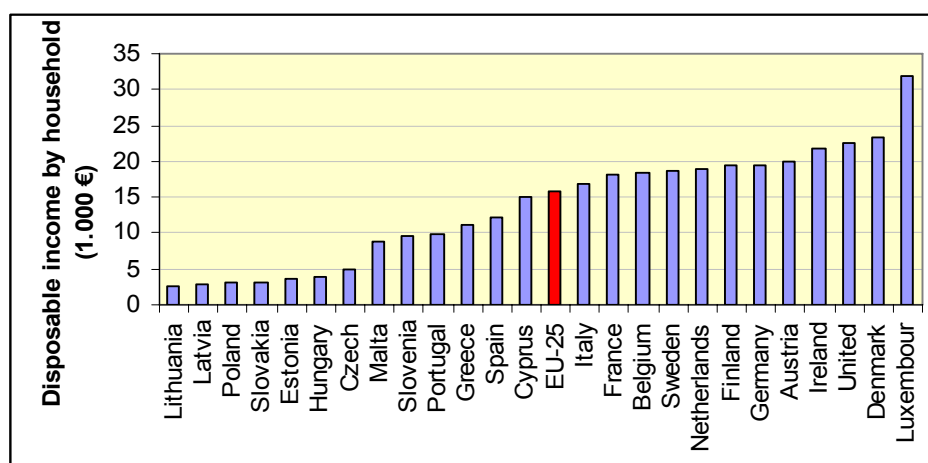
Graph 12: Average size of private households in the EU-25 in 2005



4.1.2. Income level, distribution and price level

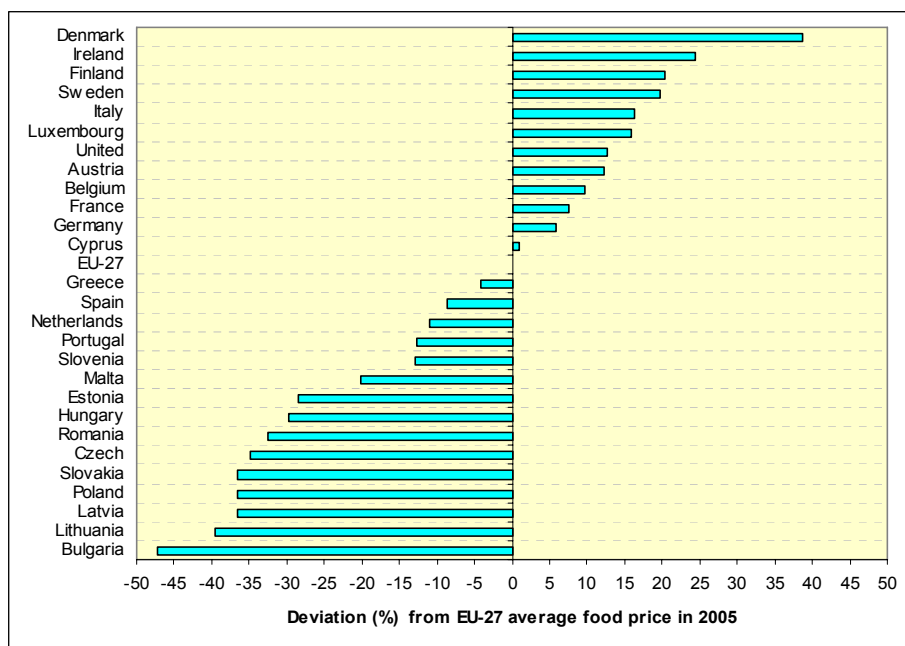
Overall real income, measured in real gross value added, in the EU-27 economy has been continuously increasing during the last 10 years (+25% between 2005 and 1995). The (indirectly) corresponding spatial distribution pattern of disposable income among EU-25 Member States in 2005 is shown in Graph 13. Accordingly, disposable income per inhabitant is systematically lower in the new Member States than in the old ones. However, price levels - including food prices - are also considerably lower, which may reflect, among other factors, lower labour and other production costs.

Graph 13: Distribution of disposable income⁷ per inhabitant by Member State in the EU-25 in 2005

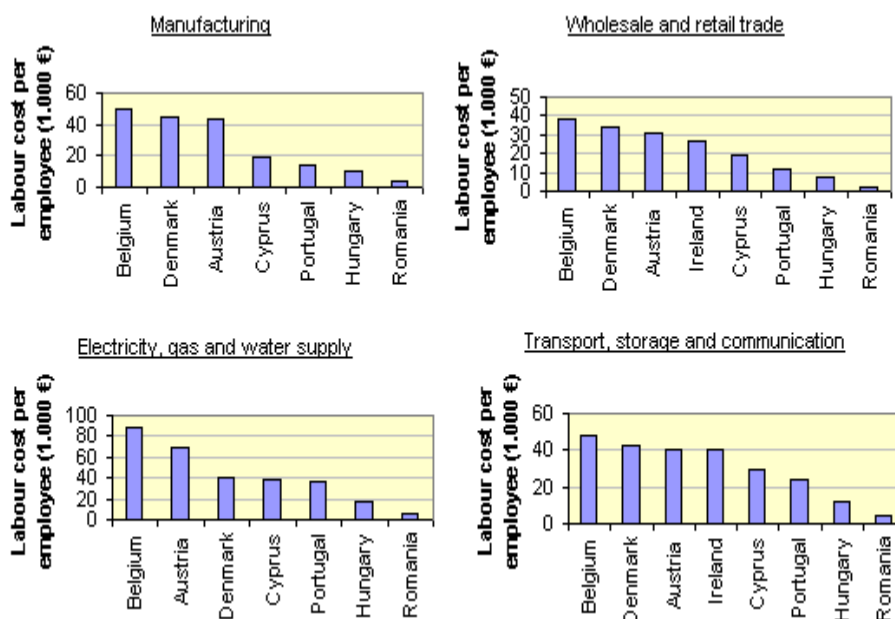


⁷ Disposable household income = Mean equivalised net income.

Graph 14: Spatial food price comparison across EU-27 Member States in 2005



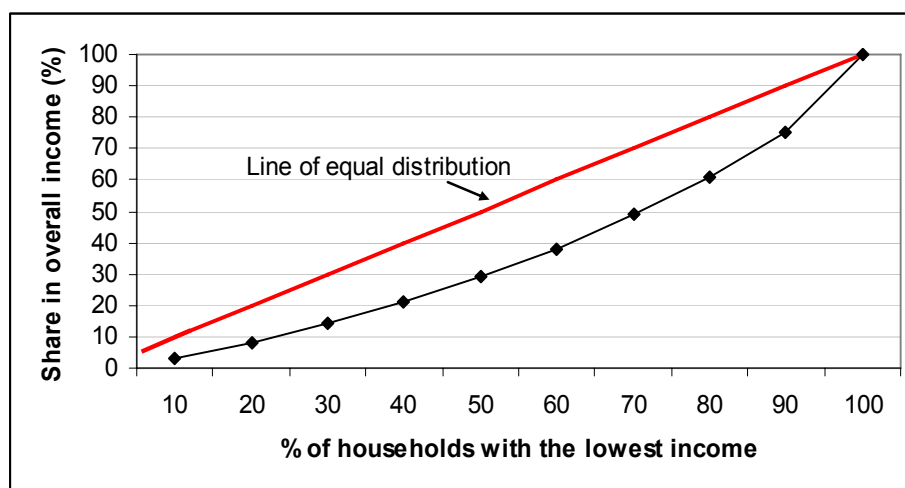
Graph 15: Spatial labour cost comparison in the EU in 2005⁸



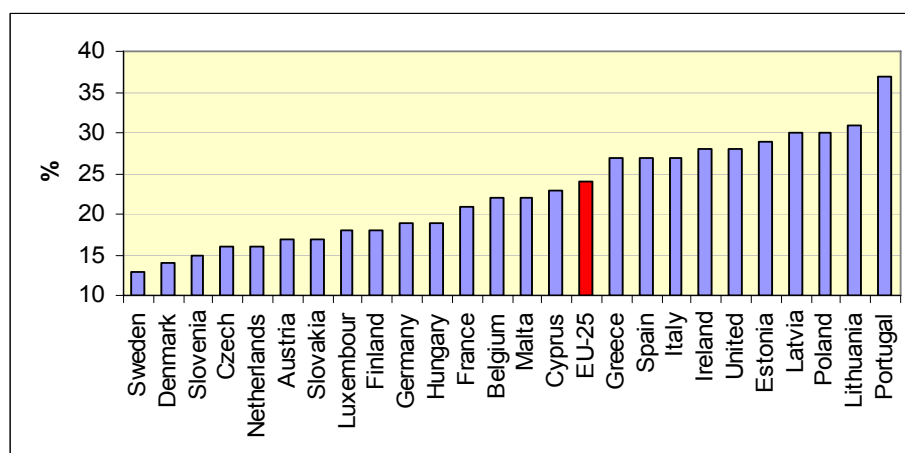
Regarding income distribution among households, Graph 16 shows that income is distributed unequally. The richest 30% of all households earned around 50% of total EU-25 income in 2005. As latest figures from Eurostat demonstrate, 24% of EU-25 population (i.e. 111 mio people) could be qualified as 'at risk of monetary poverty' in 2005, meaning that they had less than 60% of EU-25 average household income at their disposal. The share of population 'at risk of monetary poverty' varies among Member States, with Sweden (13%) and Portugal (37%) showing the lowest and highest shares in the EU-25 in 2005 respectively.

⁸ Member States are listed according to data availability.

Graph 16: Income distribution by income class of households in the EU-15 in 1999



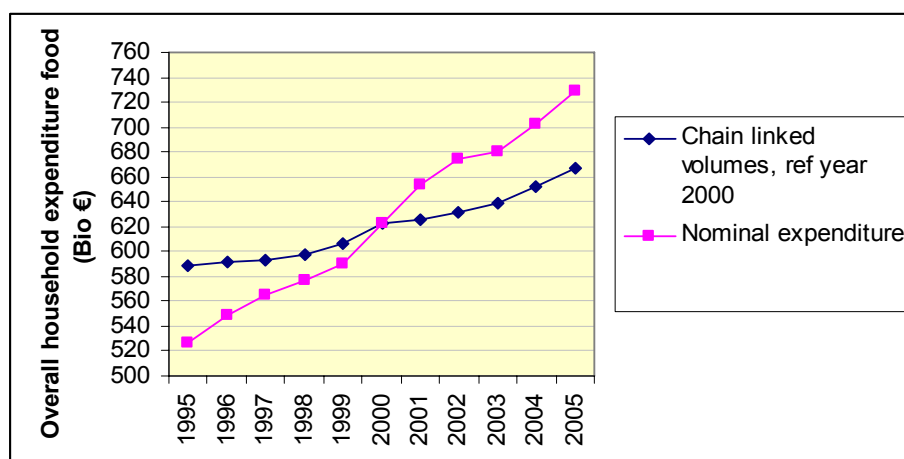
Graph 17: Share of population at risk of monetary poverty by Member State in 2005



Households with the lowest disposable incomes are those with the highest poverty risks. Accordingly, single parents with dependent children, single person households and families with three and more children are the households most vulnerable to monetary poverty (46%, 35% and 34%, respectively, of households belonging to these types can be classified as 'at risk of poverty' according to the above mentioned definition. Furthermore, figures show that disposable income of households with dependent children is on average by 13% lower than disposable income of households without dependent children. And, finally, income of households in rural areas (where the average number of household members is traditionally higher) tends to be lower than that of households in urban regions.

Regarding the effects of changing population characteristics and the other influencing factors on food consumption, it can be observed that in terms of volume, food consumption has only been slightly increasing during the last ten years (reflecting the moderate population increase). However, due to the increase in (nominal) consumer price levels, household expenditure for food rose much more pronounced than its volume component. Absolute expenditure levels differ among Member States, mainly reflecting different disposable income and consumer price levels.

Graph 18: Development of EU-27 household expenditure for food in volume and value terms

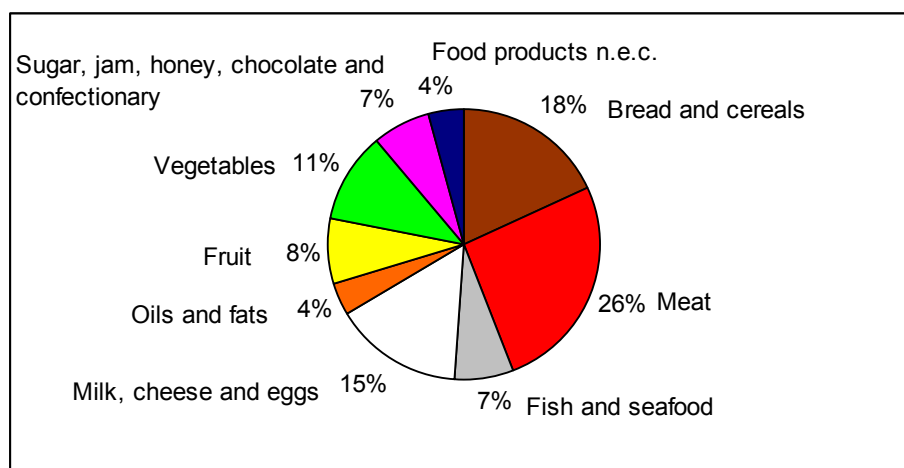


4.1.3. Composition of food expenditure

Data on further split up of food expenditure with regard to major product groups is available for the year 1999 for all old Member States with the exception of Germany and Sweden (ie an aggregate 'EU-13' can be build). Obviously, the basic product groups 'meat' (26%), 'bread and cereals' (18%) and 'milk, cheese and eggs' (15%) showed the highest shares in total food expenditure of the average EU-13 household in 1999.

It should be noted that the quantity of agricultural raw materials consumed should increase less than the expenditure on food, owing to the increasing consumer preferences for higher value-added food.

Graph 19: Share of major product groups in overall EU-13 household expenditure for food in 1999

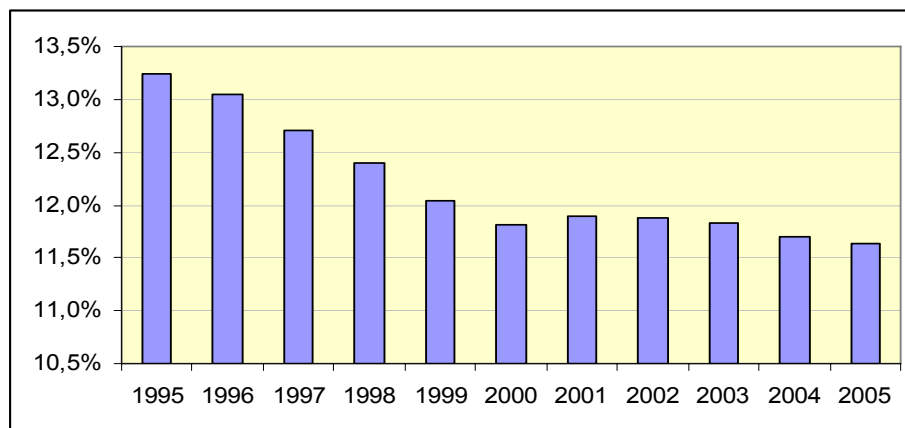


4.1.4. Share of food expenditure in total household expenditure

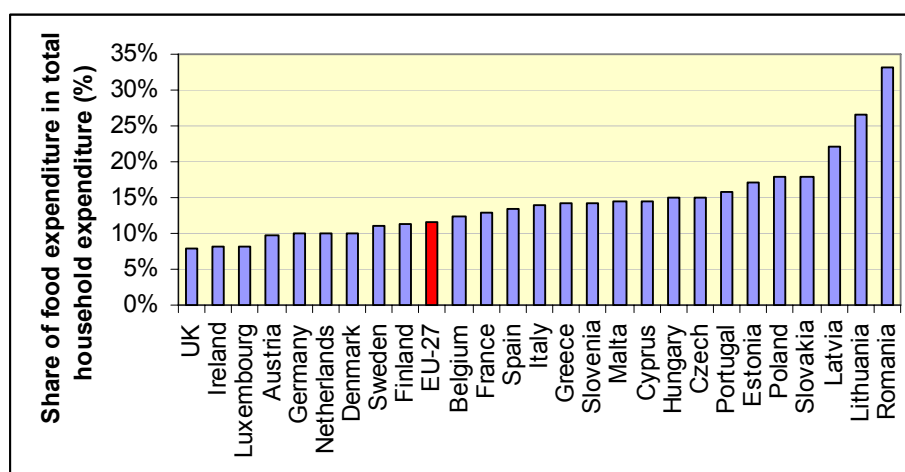
Despite the successive increase in EU-27 household expenditure at current prices for food (+39% to 729 bio euros in 2005 compared to 1995), the share of food expenditure in total EU-27 household expenditure at current prices (the latter increased by 58% to 6.26

quadrillion € in 2005 compared to 1995) decreased continuously and stood at 12% in 2005 (Graph 20). However, the share of food expenditure in total household expenditure varies among Member States (figures are spread between 8 and 33%), largely reflecting different welfare levels.

Graph 20: Share of EU-25 food expenditure in total household expenditure over the last decade (in %)



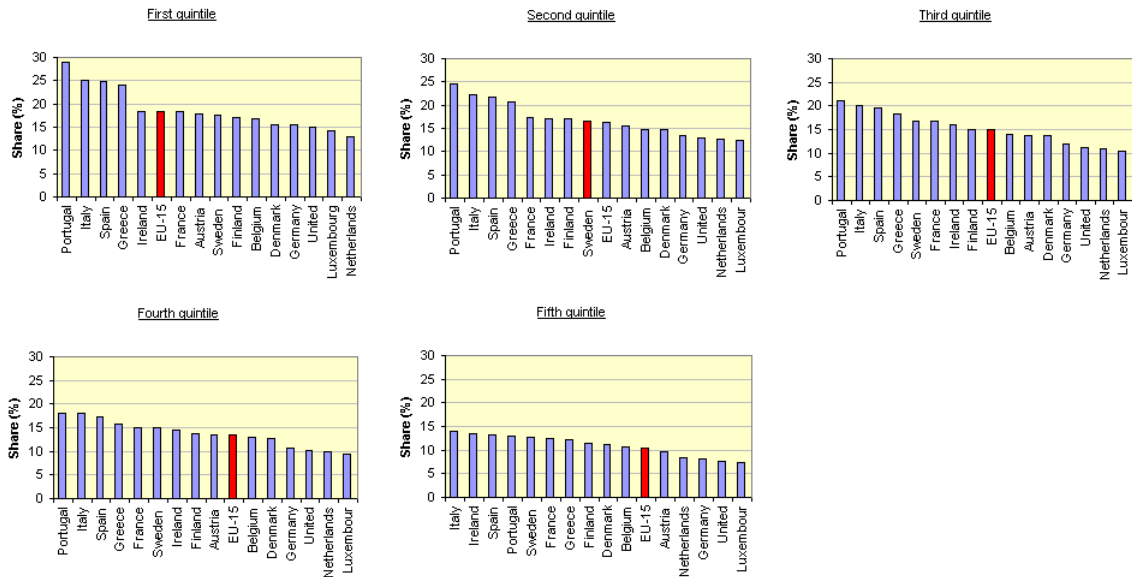
Graph 21: Share of food expenditure in total household expenditure by Member State in the EU-27 in 2004



The share of food expenditure in total expenditure also varies between households, mainly depending on household characteristics (which are again among each other significantly correlated) as household type/size, income level and location (urban/rural). Household types with higher income generally spent a lower share of their overall expenditure for food products and are therefore less vulnerable to food price increases. As Graph 22 shows, the 20% of all EU-15 households with the lowest income spent in 1999 on average 18% of their total expenditure on food and non-alcoholic beverages (highest share in this group with 29% in Portugal, lowest share with 13% in the Netherlands), while the 20% of households with the highest income only spent on average 10% of their overall expenditure on food (highest share of this group with 14% in Italy, lowest share with 7% in Luxembourg and the UK). Regarding the share of food expenditure in total household expenditure by household type/size, again the former was lower in household types with higher income (i.e. as explained above, mainly in households without dependent children, two adult households etc) than in those with lower income (i.e. mainly single parent with dependent children, two adults with three or

more children etc). Furthermore, households located in densely populated areas showed lower shares, households in sparsely populated/rural areas showed higher shares of food expenditure in total household expenditure.

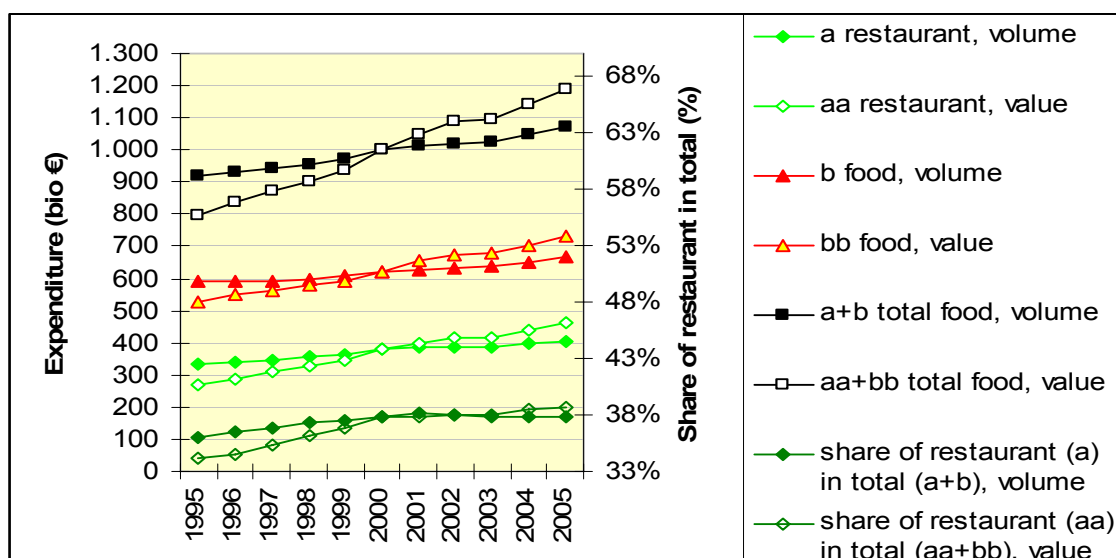
Graph 22: Share of food expenditure in total household expenditure by income class of households (i.e. by income quintiles⁹) in the EU-15 in 2001



Finally, it should be noted that food expenditure is more and more shifted into the restaurant/gastronomy/catering sector, i.e. food is less and less prepared and consumed at home, reflecting an outsourcing of this classical household function. This trend entails a further extension of the margin between agricultural producer and consumer prices for food and may further reduce the extent to which changes in producer prices are felt by final consumers.

⁹ All households are sorted by their income level and grouped into five income classes: The first income quintile includes the 20% of all households with the lowest income, the second quintile is defined by the 20% of all households with the next higher income etc.

Graph 23: Development of household expenditure for restaurant, gastronomy and catering services in the EU-27 in the period 1996-2006



Increasing agricultural prices should affect the population differently:

- *The steady income growths as well as the increasing number of single households led to a steady increase consumer spending on outside home food consumption, i.e. on additional services. This increasing share in food expenditure will further reduce the impact of high agricultural prices on consumer food prices. The additional services offered become even more important than already the case in highly processed foods. A producer price increase of meat, of say, 30% will translate to a 12% increase of meat prices in supermarket shelves and to 6% in restaurants.*
- *Low income households spend a higher share of their disposable income on food. Any increase of food prices will be earlier felt by this group than other groups of the population. Particularly affected are households in danger of poverty.*
- *Regional differences in income lead to different consumption patterns (e.g. more processed foods in Luxembourg and less processed foods in Romania). Consuming predominantly less processed foods leads to lower absolute consumer spending on foods. However, price increases of agricultural commodities are then more directly transmitted and earlier felt (also in overall consumer price levels) than in regions with different consumer patterns.*

4.2. Concluding remarks

A) The changes in producer prices during the first semester of 2007 compared to the same period in 2006 should lead to an increase in consumer prices of bread, meat, butter and cheese of 2 %, 0%, 4 % and 0% on average respectively.

This increase in consumer prices can be expected to generate:

- **An overall increase in consumer food expenditure of 1.1 %;**

- Final consumers should be affected to an even more limited extent since the latter only spend 12% on average of their overall expenditure on food. Therefore the **purchasing power of EU households** should only be affected by **0.1 % on aggregate**.

B) However, should the most recent exceptional price developments which took place in August 2007 continue in the next future, the impact would be much more pronounced:

- **Overall consumer food expenditure would increase by 4.5 %;**
- **The purchasing power of an average EU-27 household would decrease by around 0.5%.**

C) Furthermore, in the extreme case where the August price developments were to persist towards the end of the year and were fully transmitted to meat products, the overall **consumer food expenditure would increase by 8%** and the **purchasing power of an average EU-27 household would decrease by around 0.9%**.

However, it should be taken into account that the degree of recent price developments and transmissions along the supply chain varies across Member States, so that the impact considerations elaborated in this note for theoretical EU-27 average consumer prices and households do not hold true for the diversity of implications actually felt in single Member States.

Increasing agricultural prices should affect the population differently:

- Low income households spend a higher share of their disposable income on food and they have less flexibility to adjust expenditure to other budget items. Any increase of food prices will be earlier felt by this group than other groups of the population. Particularly affected are households in danger of poverty.
- Regional differences in income lead to different consumption patterns (e.g. more processed foods in Luxembourg and less processed foods in Romania). Consuming predominantly less processed foods leads to lower absolute consumer spending on foods. However, price increases of agricultural commodities are then more directly transmitted and earlier felt (also in price levels) than in regions with different consumer patterns.

Therefore, for example, low-income households which shelter around 37% of the overall population in Portugal may face a drop in their standard of living of around 1.2 %. Taking account of (the probably) higher shares of agricultural raw product value in end product value in the calculations for this country would aggravate further the impact.

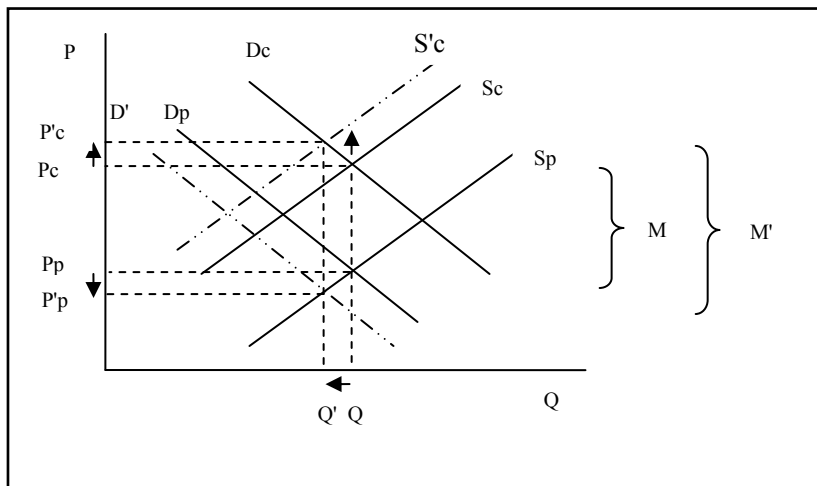
Annex 1: Theoretical considerations regarding price transmission and trade/processing margins

The general effect of changes in trade and processing margins on equilibrium prices and quantities both at agricultural producer and consumer level can be demonstrated in a simplified but clear (polypolistic) price formation model (Graph 1A). There are two possible cases which can be examined:

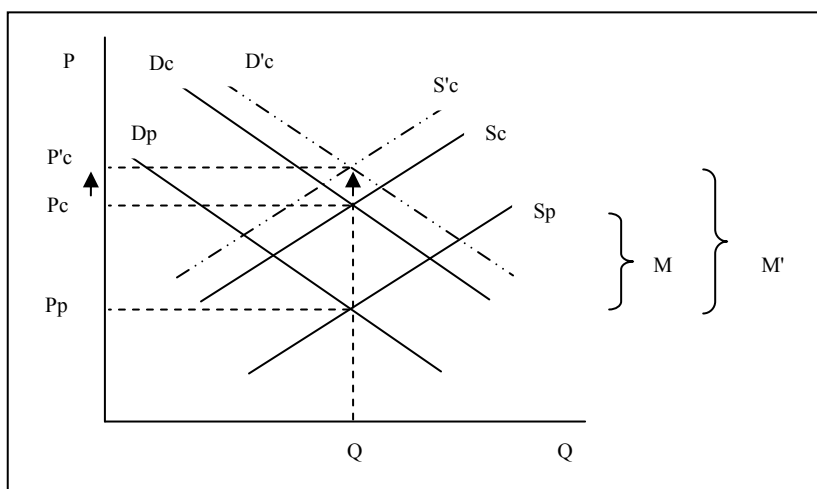
- 1) The margin change is 'supply-induced'. It appears due to cost changes with regard to the compilation of unchanged quantities of complementary goods and services per unit agricultural raw product.
- 2) The margin change is 'demand-induced'. In the course of general economic and income growth or due to increased division of labour a different quantity of complementary goods and services is added to one unit of agricultural raw material.

Graph 1A: Impact of changes in trade and processing margins on equilibrium prices and quantities at producer and consumer level

Case 1: Margin extension through price increase in complementary goods and services



Case 2: Margin extension through quantity increase in complementary goods and services



Regarding case 1): The respective change in margin can be shown as supply curve adjustment at consumer level from S_c to S'_c , leading to a higher consumer price (change from P_c to P'_c) and a reduction in quantity (of the combination agricultural raw product plus complementary goods and services) demanded (change from Q to Q'). Due to the demand decrease at consumer level also at the producer level only the reduced quantity Q' can be marketed. This again leads to a producer price decrease from P_p to P'_p .

Regarding case 2): Here the case of a demand-induced increase in product refinement, leading to a demand curve shift from D_c to D'_c , shall be examined. The supply curve at consumer level reacts to the demand shift with its adjustment from S_c to S'_c (ie a higher amount of complementary goods and services per unit of agricultural raw product is added). With unchanged quantity of agricultural raw product demanded, the price of the combination agricultural raw product plus complementary goods and services at consumer level rises from P_c to P'_c . The trade and processing margin increases by the amount P'_c minus P_c , without any quantity repercussions at producer level. Margin increases due to additional demand for complementary goods and services hence do not benefit the agricultural producer as raw material supplier (in terms of higher raw product prices), however and contrary to supply-induced margin increases, nor do they result in lowering his marketable quantities.

For both cases 1) and 2), the extent of quantity and price changes at consumer and producer level depends on the course of demand and supply curves (ie on price elasticities of demand and supply). Flat demand and supply curves (ie curves with higher price elasticities at fixed coordinates) lead to stronger changes in quantities, while steeper demand and supply curves (ie curves with lower price elasticities at fixed coordinates) lead to stronger price effects. Since price elasticities of supply and demand for agricultural products are comparably low, the reaction of agricultural producer and consumer prices on changes in trade and processing margins (and therefore their vulnerability to be impacted in case of market power) are relatively pronounced.

Annex 2 Comparison of real agricultural producer and consumer price indices 1997-2006 (2000=100)

