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Summary: Food price monitoring in Denmark

In 2007/08 the whole world was experiencing a global food crisis. During this period in particular prices of grain increased but also of dairy products rose. In the first half of 2008, prices fell again, and for many products, the prices returned to the level before the food crisis began. In July 2010 - mainly because of drought and poor harvests in Russia, Ukraine and Kazakhstan - grain prices rose sharply again.

There were several different explanations for the food crisis and rising grain prices. Some causes were temporary or casual, and their effect is relatively short, while other causes were more prolonged and structural, and they will probably be effective for a long time to come - and will thereby help to raise grain prices in the long term.

The long-term price trends in agricultural and food is relatively predictable, as there is an almost permanent decrease of real prices and terms of trade. However it is assumed that nominal prices for agricultural products will continue to increase

Farmers’ share of retail food prices tend to fall over time as a result of the increased processing and marketing. This makes retail prices (consumer prices) less and less dependent on changes in prices of agricultural products. Increasing level of processing of food and increasing productivity in agriculture are two main factors behind this development.

When it comes to prices of grain/bread and milk/dairy products during and after the food crisis, it was characteristic that the consumer prices of bread rose sharply. Bread prices increased 3-4 times as much as the more expensive raw materials could explain, and bread prices continued to rise or be very high, even if commodity prices fell back to levels before the food crisis. Retail prices of milk increased again, with some months delay, when the farmer’s price increased. The retail price of milk remained at high levels from mid-2008 until early 2009, although the farmer price fell.

It is a general phenomenon in Europe that price transmission along the food chain is delayed. The process can be divided into several phases. In the first phase farmer prices increase. In the second phase farmer prices fall, while food industry prices continue to rise. In the third phase food industry prices decrease, while retail prices continue to rise. The last phase is a stabilisation.
Based on detailed manufacturer, industrial and consumer price analysis in the agricultural and food sector in Denmark it can be seen that in several cases there are time lags in the price changes: First farmer prices, then industry prices and ultimately retail prices. Price transmission is relatively fast - a few months’ delay - when prices are increasing - while the price decreases in the industrial chain and retail happen at a much slower speed and only partially. There are also examples of retail advantage coming before the industrial advantage, which is different from the European pattern.

Price trends in the food chain may be very different from sector to sector and there are examples of decreasing industrial prices compared to both farmer and retail prices.

Figure 1. Development of grain, flour and bread prices in Denmark
Food price monitoring in Denmark

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Background for increased focus on food price development
World market price of wheat

$ per ton


Extreme prices of grain means more expensive bread
Danish farmer prices of grain and consumer prices of bread
Share of grain in consumer price of bread

Bread price and estimated bread price adjusted for impact of grain price changes

Index Jan 2007 = 100

Bread price

Estimated bread price adjusted for impact of grain price changes
Increased grain prices can only explain a minor part of bread price increases.
Contribution to changing consumer bread prices from August 2007 to March 2009

White bread
- Supermarkets: 12.8\% increase
- Bakeries: 13.5\%
- Mills: 
- Grain companies: 
- Farmers: -0.7\%

Bread from rye
- Supermarkets: 9.4\% increase
- Bakeries: 10.2\%
- Mills: 
- Grain companies: 
- Farmers: -0.8\%

Food price monitoring
- From Institute of Food and Resource Economics, Faculty of Life Science, Copenhagen

- Yearly report, from 2010
- Products
  - Milk
  - Butter
  - Cheese
  - Pork
  - Beef
  - Poultry
  - Grain
  - Flour
  - Bread
  - Eggs
  - Potatoes
Measuring Prices in the food chain

Prices in grain-flour-chain

Index 1993 = 100

- Farmer price
- Flour (industry price)
- Flour (consumer price)
Grain: Farmer and industry price

Milk – butter (industry) – butter (consumer)
Milk (farmer) – milk (consumer)

Index 1993 = 100

- Consumer price
- Farmer’s price

Pork chain

Index 1993 = 100

- Farmers’ price
- Industry price
- Consumer price
Our task

- Explain and predict price movements
- Analyze margins
- Find trends

Grain prices and stocks
Price volatility on wheat auga, 1980-2011 (%)

Farmers’ share of food costs is declining (≈ 20 %)

Farmers’ selling prices have a declining impact on consumer food prices . . .
Farmers’ share of retail prices

Terms of trade in agriculture
Possible plans for the future

- Monthly data on price spreads
- Annual reports on food price monitoring
- Cost analyses of food chain
  - Farmer share
  - Industry share
  - Retail share
- Long term trends
- Factors behind food price movements