

Dairy Sector in the Crises: The Case of Turkey

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Abstract: Agriculture especially animal product markets are vulnerable in the crises times. The 2006-2008 period has passed within different crises in entire world. Each crisis has an effect on agricultural sector. Extreme meteorological events due to climate change, food crises and finally Global Financial Crises in 2006-2008 affect the number of actors. In this study, it was studied that the outlook of the agricultural sector and dairy sub sector in Turkey in this period. Therefore, general structure of crises, economic and sectoral developments were given. And dairy sub sector expected to be mostly affected was examined as a case.

Key words: Agricultural sector, food crisis, dairy sector, economics, sectoral

INTRODUCTION

Global financial crisis: The 2006-2008 period is known to be crises years in entire world. Climate change was the important issue in 2006 that the extreme events such as droughts and flows were seen in many countries. Agricultural production was mostly effected by these changes. The period of excessive increase in food prices, called Food Crisis started in 2007 and continued until the summer months of 2008 was replaced by the Global Financial Crisis in autumn 2008. The global financial crisis was considered one of the most dangerous shocks in the financial markets since 1930s by IMF.

The financial crisis that started with the developments in the US Mortgage market in August 2007 has showed its impact on Global Financial Markets and organizations in September 2008 (IMF, 2008). On the other hand, the world economy is expected to significantly weaken and enter into a period of recession (OECD, 2008a, b). The magnitude and possible duration of the crisis remain uncertain; however, it created huge costs for many countries even in the 2 month period between September and November 2008. It is such that many banks and companies went bankrupt, unemployment increased, a downturn has started and governments have approved huge aid programs to mitigate the impacts of the crisis in the Americas, Europe, Asia and even island states.

The extraordinary characteristics of the Global Financial Crisis prevents the estimation of its scale, duration and negative impacts on the real sector (EC, 2008); still with the general picture that emerged globally, it will definitely have an immense effect on not only financial markets but also all the sectors and actors within economy.

With its socioeconomic and nutrition aspects, the agriculture sector is both significant and strategic for any country. The strategic significance of agriculture has been perceived once more for all concerned with the evolvement of the food crisis. With its this dimension, all the actors of the agriculture sector, led by producers of agricultural products, food consumers, those obtain their raw materials from agriculture, those export and import agricultural products, those produce inputs for agriculture and those sell agriculture products will be affected by the crisis. Dairy sector with its special features amongst the other sub sectors of agriculture is vulnerable in the crises times.

This study examines the crises period that threatens the markets of the world with regards to the dairy sub sector.

The materials utilized in the study included reports of international organizations, studies and compilations on the topic and data from the World Bank, IMF, OECD, FAO and TURKSTAT (2008) (Turkish Statistics Institute). In the study, a general outline of the food and global financial crisis is depicted, economic developments are analyzed and evaluations on sectoral developments product-based evaluations have been made.

MATERIALS AND METHODS

Economic developments: Concerning economics, the dawn of the 21st century has witnessed one of the periods of the history, in which the world economic growth peaked. The high growth rates observed particularly in the developing countries has marked the period of 2000-2007 (Fig. 1). Within this period, China had an average annual growth rate of 10%, India 7% and

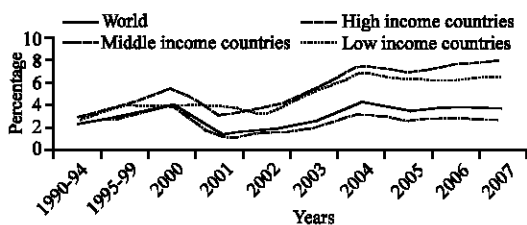


Fig. 1: Growth rate (%)

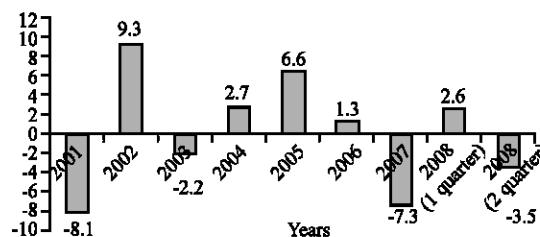


Fig. 3: Growth rate in agriculture in Turkey (%) (TURKSTAT, 2008)

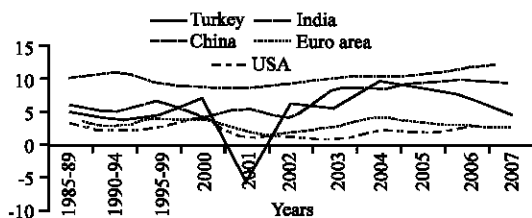


Fig. 2: Growth rate by countries (%)

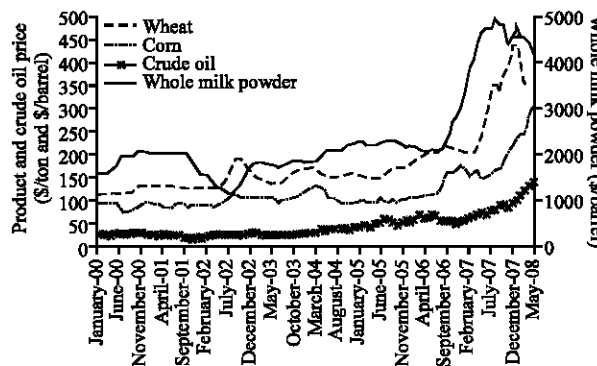


Fig. 4: World food and crude oil prices (FAO, 2008)

Turkey 5%, all of which are developing countries, whereas the growth rates remained around 2% in the Euro Zone and the USA (Fig. 2).

Particularly 2004 has been one of the years that the global growth rate was at its highest (4.2%). Following this high growth, the world economy had a slow-down (3.5%) tendency in 2005 (AERI, 2006). While global climate change, the Middle East problem and the fluctuations in the US financial markets stressed the world economy in 2006 and 2007, it continued to grow particularly due to the contribution of developing countries (3.9% in 2006 and 3.8% in 2007) (AERI, 2008a, b). The global growth rate is expected to fall to 3.7% in 2008 and 2.3% in 2009 due to the impacts of the crisis (EC, 2008).

While the economy of Turkey shrank by 5.7% in 2001 because of the economic crisis it suffered that year, it achieved positive growths in the years that followed. The growth rate increased to 9.4% in 2004 and it slowed down in the later years. The growth rate dropped to 4.6% in 2007 and to 1.9% in the second quarter of 2008 (TURKSTAT 2008).

Within the same period, agricultural growth was highest in 2002 with 9.3%. Due to the exacerbating impact of the drought, the agriculture sector scaled down by 7.3% in 2007 whereas it showed signs of slight recovery in 2008 (Fig. 3).

Sectoral developments: The agriculture sector has embarked upon a new phase since the start of the 21st century. Known to be the foundation and driving factor of developing of nations, agriculture is becoming the

activity area of not only the food sector but also the energy sector. Crude oil prices peaked to its all time level in history of 145\$ a barrel in 2008 amid the turmoil caused by the Iraq war as well. Along with efforts to reduce emission of greenhouse gases, the record high prices of in the world's oil markets have increased the interest in biofuels. The European Union (EU) has decided to increase the utilization level of biodiesel in transportation from 2-10% by 2020 whereas the USA has decided to substitute 10% of the gasoline consumed up in the USA with bioethanol by 2010. Due to these developments, the agricultural products and food prices have entered a period of rapid increase all over the world. As portrayed in Fig. 4, agricultural product prices that were steady for long years have started to increase as of the second half of 2007 and reached peak levels in May 2008. The prices of wheat and corn and whole milk powder rose up to more than 400, 200 and 5000\$, respectively. Within the same period, oil prices had a course that was parallel to that of agricultural products (Fig. 4). The rises in food prices lead to demonstrations and protests in many countries from the Fareast to Latin America. Governments have taken certain measures such as export bans, increases in exportation taxes, reducing exportation incentives, or reducing importation taxes (Dellal, 2008).

The most significant characteristic in terms of demand is the high growth rates along with rapid population

increase in developing countries. With increasing prosperity and populations in these countries, not only their total food consumption but also per capita milk and meat consumption have increased. Increase of animal products consumption and the related increase in the demand for feed raw materials coupled with the drops in stocks as well as the increases in biofuel production have all been demand-originated factors leading to price increases.

On the other hand, factors like the slow-down in agricultural growth, fluctuations in oil prices, increases in production costs and unfavorable weather conditions have triggered price increases in the supply side.

Price increases of food products in some EU countries and Turkey within the period between April 2007 and April 2008 are shown in Fig. 5. Within this period, average price increase in food products in the EU-27 is 7.1%.

The prices increases were highest in Bulgaria with 24.4% and lowest in Portugal with 3.2%. The price increase in Turkey was 13.5% (Fig. 6).

The price increases in cereals which are the inputs of animal production are depicted in Fig. 7. While the EU-27 average in this group is 10.7%, the highest price increase was experienced in Bulgaria with 38.4% and the lowest in the Netherlands with 6.3%. The price increase was higher than the EU average in Turkey with 29.3% due to the drought suffered throughout in this period (Fig. 5).

When the EU countries are examined with regards to animal products, the highest price increase took place in Estonia with 35.4% and lowest in the Southern Cyprus Greek Side with 3.4%, whereas the EU-27 average was 14.9%. The price increase in Turkey, however, was lower than other countries with 7% (Fig. 7).

Demand and supply elasticities are the economic indicators to show not only the consumer's and producer's future decision but also vulnerable products of the country in the crises times. Elasticity characteristics of certain agricultural products in Turkey are summarized in Fig. 8. In the light of these data, it can be asserted that the subsectors that will be influenced most will be dairy and least affected will be the cereals.

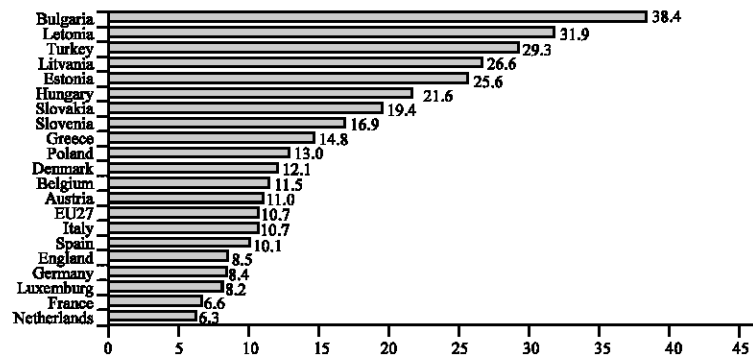


Fig. 5: Price increase in cereals (%). Calculated from Eurostat and TURKSTAT (2008)

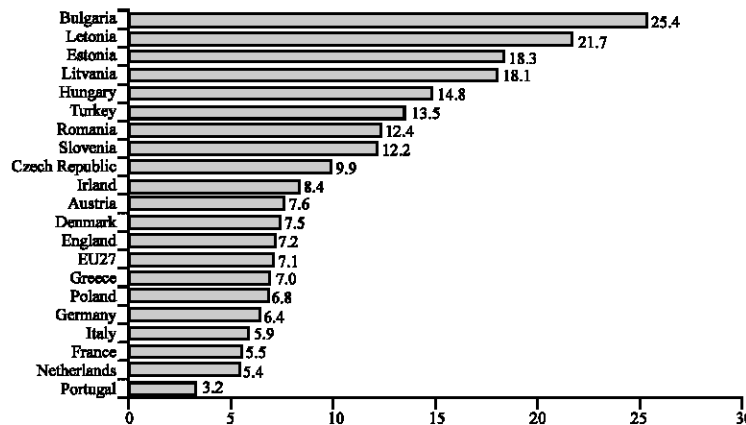


Fig. 6: Food prices (%). Calculated from Eurostat and TURKSTAT (2008)

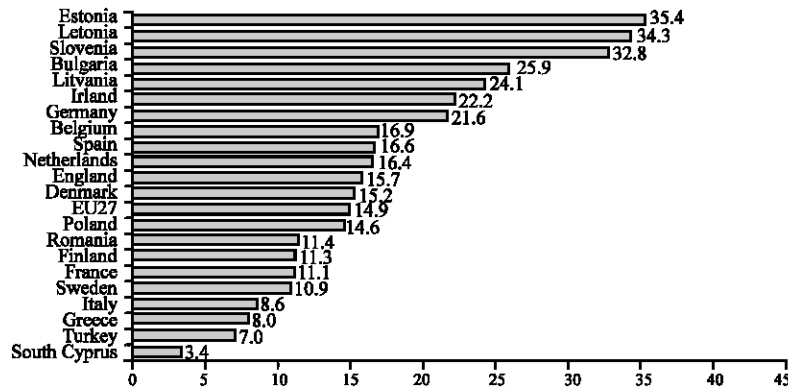


Fig. 7: Price increase in milk and beef (%). Calculated from Eurostat and TURKSTAT (2008)

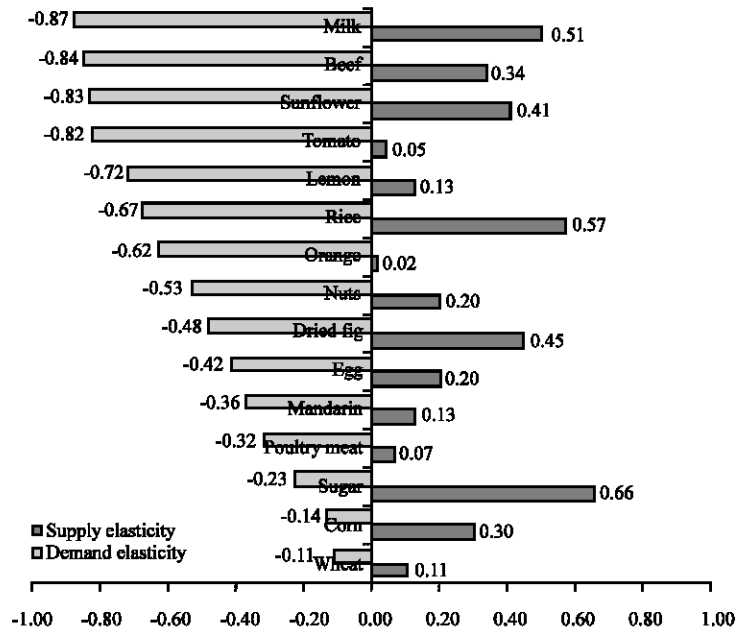


Fig. 8: Supply and demand elasticities (AERI, 2006)

As depicted in Fig. 8, the supply-demand elasticity in wheat is 0.11. In other words, it is nearly zero. One unit of change in wheat prices change the supply-demand amount for only about 0.11 unit. The fact that production decisions are made 9 months in advance on the supply side and that it is a necessity on the demand side is effective here. In milk production, on the other hand, supply and demand are much more elastic as compared with wheat.

Dairy sector outlook: Milk from among the animal products is evaluated in this section, taking certain important parameters for the World and Turkey into consideration.

About 677 million tons of milk in terms of Milk Equivalent (ME) was produced in the World in 2007 whereas FAO estimated a world production of 693 million tons in 2008. Exports are anticipated to be 40.4 million tons with an increase of about 1 million tons in the same period. More than 50% of world exports are made from the EU and New Zealand. Important importers are the Russian Federation, Albania and Mexico (FAO, 2008).

The EU produces approximately 1/5 of the world milk production in about 1 million enterprises. The number of dairy enterprises in the Union has increased greatly following the accession of Romania (242,300) and Bulgaria (206,600). Milk is produced in 98,300 enterprises in Germany and in 93,400 enterprises in France, the two

leading countries of the EU. Average reference amount per enterprise was 133,000 kg in 2007/2008 whereas this value was 285,600 kg in old member states. These amounts are 61,000 kg for the countries in the EU-10 group that have become full members in the last two expansions of the Union whereas 6,800 kg for Romania and Bulgaria (ZMP, 2008a, b).

With a milk production of 12 million tons, Turkey creates <2% of the world production and approximately 8% of the EU production (TURKSTAT, 2008; FAO, 2008). Figure 9 shows that milk prices in Turkey are higher than those in the EU and the USA and that the difference gradually increased after September 2007 and peaked in the period between December 2007 and March 2008. In terms of domestic prices, it is observed that real producer prices change only slightly whereas the change in consumer prices becomes more significant in November and April. The fact that there is >2 times difference between the prices earned by the producer and the prices paid by the consumer also shows that the cost of industrial milk is quite high.

According to a study conducted by Rabobank, despite the currently weak conditions in the world milk market, milk product prices are expected to increase in the middle and long term. It is stated in the study that mid-2009 will be a turning point for the sector and that milk producers and industry will have to prepare themselves to face strong price fluctuations and smaller margins. It is anticipated that the price pressure will be overcome for a short period at the end of 2008 and that however, the negative impacts of the melamine milk scandal in China, the financial crisis and the slow growth of the USA milk production will lead to high consumer prices. According to the global conjuncture, the demand will still be under the long term trend curve in September 2009 as well. The demand supported by a strong world

economy and price drops is hoped to bring about a positive trend within the remaining period of the year. Therefore, world prices of milk products will fluctuate at a level higher than the previous year for a long time (Agrarheute, 2008).

Figure 10 show that the real price of dairy feed, one of the important inputs within the cost of milk, has increased in the August 2007 to April 2008 period and the increase in input prices were reflected on product prices within 1-3 months.

A negative development is observed within the last 2 years when the parity between dairy feed, a significant factor in milk cost and product prices is examined. When the product input parity dropped 1 in 2007 and 2008, less dairy feed could have been bought in exchange of 1 L of milk. Accordingly, it can be asserted that the real increase in milk prices has remained lower than that in the real increase in input prices.

Food consumption in Turkey has been predominantly plant-based for long years and animal-product based consumption has been lower than that in the EU and developed countries. Milk consumption in Turkey has

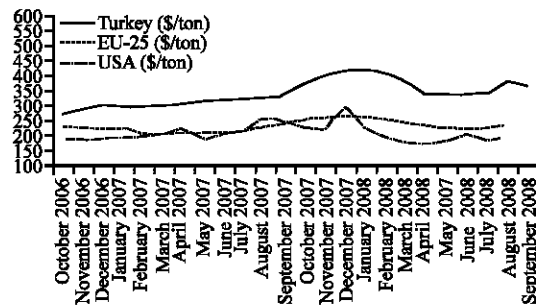


Fig. 9: Price changes in milk. Kaynak: TURSTAT (2008) and <http://www.mdcdatum.org.uk/backdata/EUMilkPrices.xls>

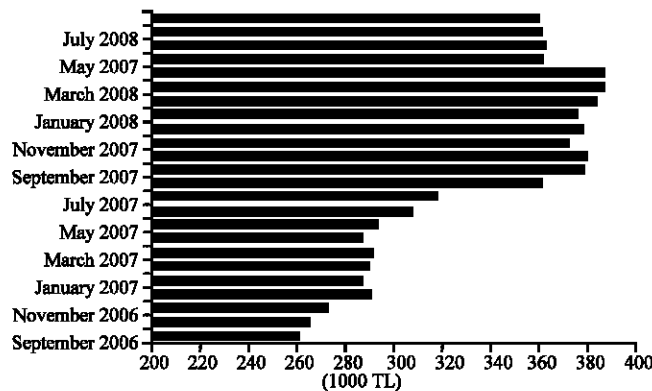


Fig. 10: Changes in input prices of dairy feed (2003 = 100) (TURKSTAT, 2008)

double folded as compared with 40 years ago, on the other hand, it is still far from the level in the developed countries.

Turkey meets her milk and milk product consumption through domestic production and the related international trade takes place at ignorable levels. Therefore, in order to build stability, establishing balances in the domestic markets is of more importance rather than the developments in the world markets. Although per capita milk consumption levels are low in Turkey, in extraordinary conditions such as the global financial crisis, we are currently experiencing, being able to meet self-consumption amounts becomes a significant advantage. The reason is that how the markets will react to the crisis still remains unclear and the anticipation that price and demand fluctuations will be higher than the previous years is gaining ground. Despite the progressive pace of globalization and excessive liberalization, the crisis has reminded the importance of domestic production and stability once more. The crisis has shown that while the global markets can provide cheaper food, they involve very high risks at the same time. When the crisis is considered for the dairy sector with regards to Turkey, a possible drop in the imported dairy feed prices can lead to a positive impact on production costs. Thus, the global crisis may not have a negative impact on the sector; however, an increase in feed prices will not only negatively impact production, but it will also bring about a narrowing in demand due to price increases. Because of this, foreign dependence on important inputs creates a negative impact as well. In order to increase milk consumption to the level in the developed countries requires reduction of costs and increase in consumer income.

No severe drought and leaving behind a good year in agricultural production in 2008 as well as the crops particularly in maize and wheat prices can also be considered an advantage.

Milk demand elasticity is quite higher than other foods. One unit of increase in prices leads to 0.87 unit of drop on demand. Reaction to prices is high in both the supply and demand sides and supply elasticity is high with a value of 0.51. This shows that prices are highly influential in the formation of a supply-demand balance in the market and proves that the demand will narrow significantly in case of an increase in product prices.

RESULTS AND DISCUSSION

Agriculture sector is both significant and strategic for any country in terms of socioeconomic and nutrition

aspects. The strategic significance of agriculture has been perceived once more for all concerned with the involvement of the food crisis. With its this dimension, all the actors of the agriculture sector, led by producers of agricultural products, food consumers, those obtain their raw materials from agriculture, those export and import agricultural products, those produce inputs for agriculture and those sell agriculture products will be affected by the crisis.

Demand elasticity in animal products is higher than other food products. Therefore actors in the dairy supply chain and whole population who is consumer of milk would be affected.

On the other hand there are some structural problems in dairy farms of Turkey such as unorganized small dairy farms, ineffective support policies, no market mechanism in dairy sector.

Several small dairy farms are weak against the powerful dairy industry. A successful cooperation of those small farms could not be achieved yet.

CONCLUSION

There is no market mechanism regulating market conditions. Supply and demand has been balanced in this conditions. Although the amount of support aimed at dairy sector has been risen up recent years, the development of dairy sector could not be achieved in parallel with this rises.

Therefore the dairy sector mainly the farmers have under risk in the crises times. Those problems get rise the weaknesses against the crises.

During food and global financial crises the price fluctuations were seen and have effect on production decisions and consumption patterns. Since, milk is an essential element in food diet and a main income source of farms in some regions of Turkey, the precautions must be taken to solve problems and reach a strength dairy sector.

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