



Privatization in agro-food sector: the case of Turkish dairy industry

Privatization in
agro-food sector

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Abstract

Purpose – This article aims to focus on the issue of privatization movement in the agro-food sector, in the light of the Turkish Dairy Industry Enterprises (TSEK) case, and the effects on the sector following privatization. In order to make an appropriate evaluation, the background of the privatization movement and the general structure of the dairy sector in Turkey are examined first.

Design/methodology/approach – After a brief evaluation, the privatization process of TSEK and its effects on the sector are discussed in the light of the results of empirical data that obtain from the ANOVA model.

Findings – It has been concluded that the liberalization process has been adopted without the setting up of market regulatory policies, thus, the price balance in the dairy sector has changed to the disadvantage of both producers and consumers, while market concentration has increased and regional differentials have become more apparent.

Originality/value – This article may be relevant for other countries where privatization or liberalization movement in the agro-food sector is in process.

Keywords Privatization, Public sector organizations, Dairy products, Market driven production, Regional marketing, Turkey

Paper type Research paper

Introduction

Privatization is defined as the transfer of ownership rights of a State Owned Enterprise (SOE) to the private sector; or in a strict sense, privatization is the sale of an SOE to the private sector (Bortolotti *et al.*, 2003; Villalonga, 2000). Privatization, a leading feature of globalization, has been one of the major economic transformations witnessed in the last 20 years. The trend began in Britain and has spread throughout the world, where the overwhelming majority of privatized company shares are now in the hands of financial institutions and very large investors (Bös, 1991; George, 1999; Rehber, 2004). Privatization is accepted as a useful tool for increasing efficiency in an economy and reducing government interventions. Privatization aims to provide a legal and structural environment for private enterprises to operate, and thus increase productivity and value added in the economy by ensuring more efficient organization and management (Cook and Kirkpatrick, 1988). The main philosophy behind privatization is to confine the role of the state in the economy in areas like health, basic education, social security, national defence, and large-scale infrastructure investments.

There are remarkable differences between the policies adopted and the way privatization has been implemented in developed and developing countries. (Hutchinsan, 1993; Utt, 1993; Boratav and Turkcan, 1994). The agricultural sectors in many countries have been liberalized through privatization and deregulation, often as a result of structural adjustment policies, donor conditionality and compliance with



trade agreements rather than economic necessities (Vorley, 2001; Edo, 2002). In most of the countries with the highest debts there is an erosion of the public sector in the sense of radical privatization strategies as propagated by the International Monetary Fund (IMF) and other prominent institutions. The governments of countries with high debts accept privatization as a debt payment mechanism. (Akgüç, 1989; Brett, 1988; Ebert and Noll, 1999).

Most previous studies have claimed that private firms operate more efficiently than public enterprises in terms of competition. Privatization may increase effectiveness in an economy only if conditions are created to attract competition. However, reducing the size of the public sector may not be compatible with the goal of efficiency if it involves transferring monopoly power from the public to the private sector without having competition or rivalry (Hartley and Parker, 1993; Li *et al.*, 2003). Therefore, competition policies and privatization programs should be considered simultaneously. It is a fact that SOEs can play a countervailing role against what would otherwise be oligopolistic market control by a smaller number of multinational and domestic holding companies (Murphy, 1999; Duman, 2003).

This article aims to argue that rapid privatization implementations, such as those backed by the IMF, have some adverse effects, especially in the agro-food sector in developing countries, taking the privatization of Turkish Dairy Industry Enterprises (TSEK) as an example.

Privatization movement in Turkey

The Turkish Republic, from its very beginning, was faced with a choice between state and private economic activity as the main road to economic development and, in particular, towards industrialization. Internal capital resources were extremely limited; and low levels of income prevented private capital accumulation in greater proportions. Under these conditions the only way to create and maintain modern industries was to establish state-owned enterprises, which could rely on the broader shoulders of public financing (Hershlag, 1958).

State owned enterprises (SOEs) provided the initial impetus for industrialization in Turkey, which involved import substitution in basic consumer-goods industries. While private business became increasingly important in the post-1950 period, the SOEs established in the 1930s continued to perform a central role in industrialization. Between 1963 and 1978, when the import-substitution strategy was implemented under successive five-year plans, the SOEs were still dominant in the intermediate and capital-goods industries (Seven, 2000).

In Turkey, the concept of privatization of SOEs was included in the Government Program in 1950 (TOBB, 1994). In that period privatization could not be realized due to unstable economic conditions and the lack of a legal basis. The first legal arrangement concerning privatization was made by Law No: 2983 in 1984, after which a new Privatization Law (No: 4046) was enacted in 1994 (SPO, 1995). Since the beginning of privatization in 1985, 219 companies have been put into the privatization portfolio (Arıkan, 2002) and 159 companies have been completely privatized. The total sales between 1985 and 2003 brought US\$ 8.7 billion to the treasury (PA, 2004).

Privatization was a key part of a package of reforms developed in close consultation with the IMF. It has also been a key source of revenue, necessary for Turkey to tackle its serious debt problem (Loewendahl and Loewendahl, 2001). In the Letter of Intent

given by Turkey to the IMF it was declared that the privatization of some key SOEs would be completed by the end of 2004, including the Tobacco and Alcohol Monopoly (TEKEL) and Sugar Industry (Türk Şeker) (IMF, 2003).

Many agricultural SOEs have been privatized in the past decade. These include the Turkish Dairy Industry (TSEK) in 1995; the Feed Industry (YEMSAN) between 1993-1995; the Meat and Meat Products Industry (EBK) in 1995; Forest Products (ORUS) between 1996-1998, the Turkish Agricultural Supply Foundation (TZDK) between 1999-2002; and the Turkish Fertilizer Industry (TUGSAS) in 1999.

The privatization of Türk Şeker TEKEL and the General Directory of Agricultural Enterprises (TIGEM) are still underway (OIB, 1999).

Dairy sector in Turkey

In order to make a reasonable analysis and to draw meaningful conclusions, it is necessary to have some basic information about the Turkish dairy sector.

- Turkey's annual milk production was approximately 9.5 million metric tonnes, of which about 90 percent was cows' milk (8.3 million tonnes) in 2001. The sector is characterized by a very small scale of production: there are 3 million farms with approximately 10 million cows, an average of three cows per farm (SIS, 2001).
- The milk processing industry is very fragmented. There are around 3,231 dairies, of which only 40 percent have a capacity of 1,000 tonnes/year or more. Only 48 percent of milk production is delivered for processing. Farm usage (family consumption and animal feed) and direct sales at street markets are still important outlets (Duman, 2003).
- There is no specific long-term dairy sector policy or price regulatory system. Only in the Marmara Region is the price of raw milk determined by the auction system.
- A milk premium system has been implemented by the government in Turkey since 1987, in order to increase the ratio of milk sent for processing. A premium is paid per kg of raw milk supplied to processing plants with a capacity equal to or more than 1,000 tonnes/year.

The first modern dairy plant was established in 1925 under initiatives of President Atatürk. After this initiative, specialists of UNICEF and the FAO prepared a long-term plan in order to develop the Turkish dairy sector. In spite of concerted efforts, the private sector couldn't make sufficient investments in the dairy sector, and thus the government decided to intervene in this important sector with the establishment of TSEK in 1963 (SPO, 1963; Erdal, 1993). The first modern large-capacity dairy plants that were established belonged to TSEK (Duman, 2003). TSEK played important roles in the modernization of the dairy sector, the organization of producers, and regulation of milk and the milk products market until the beginning of privatization (Tanrıvermiş *et al.*, 2000).

TSEK owned 34 dairy plants with a capacity of 310,000 tonnes per year, processing 25 percent of the total marketed cow's milk. TSEK had a monopoly on the import of milk powder until 1984, when the monopoly was abolished, giving the private sector the opportunity to enter the market (Yavuz, 2000).

The Turkish dairy industry has a dual structure. Besides a few high capacity and well-organized dairy companies, there are many small and medium-sized dairy processing units. The dairy sector in Turkey not only has a dual structure in size but also has regional differences. Milk production, processing, and consumption widely differ among the regions. Turkey is separated into nine agricultural regions according to common agricultural characteristics. These regions can be considered in two groups; less-favored and favored regions. Less-favored regions are poorer and less urbanized areas that can be characterized by low production potential (low yield per cow, small-scale dairy farms, poor veterinary services, feeding possibilities etc.), poor infrastructure (lack of transport and marketing facilities, unqualified personnel etc.), poor socio-economic indicators (low population density per square kilometer, low income per capita, lack of demand), and weak access to markets. In particular, the eastern part of Turkey can be defined as the less-favored region for the private sector to invest, where there are few and primitive dairy processing units, except for the TSEK plants, most of which are loss-making. In the less-favored areas, 50 percent of TSEK plants were shut down after privatization and other privatized plants have been working at very low capacities (PA, 2002, 2004).

On the other hand, the favored regions – especially in the western part of Turkey – can be characterized with higher production potential, better infrastructure, better socio-economic indicators and better access to markets, which encourages private companies to invest in the dairy sector. Although there are many structural problems that still remain in the favored areas, marketing and profit opportunities keep the private sector in these areas.

Privatization of Turkish Dairy Industry Enterprises (TSEK)

The Privatization High Council evaluated SOEs according to several criteria (i.e. economic viability, profitability, capacity utilization ratio etc.) and classified them according to their privatization priority (Kilci, 1994). In the light of these evaluations, SOEs were separated into three groups; “viable”, “viable in current competition conditions,” and “non-viable in current competition conditions”. Most agricultural SOEs were included in the third group (Özmen, 1987). In the same evaluation, TSEK enterprises were also classified as “some parts are alienable and some parts are rehabilitate” (Kilci, 1994).

TSEK was included in the Government Privatization Program in 1992 and the privatization process of TSEK was completed in 1995. Asset sales, block sales and a combination of public offering methods have been used during the privatization period of TSEK (PA, 2002). The total amount of sales was US\$ 69.6 million (OİB, 1999).

The distribution of private and TSEK dairy plants according to region was different. While private dairy plants are concentrated in the favored regions, the TSEK dairy plants were located in all regions, including the less-favored ones, and their distribution was more homogenous than the private sector. The main aims of TSEK were to stabilize producer prices, reduce regional differences, increase consumption of processed dairy products and serve the farmers, especially in less developed regions. TSEK played a price-balancing role for both producers and consumers until it was privatized. The role of TSEK in the dairy sector can be explained with the help of Figure 1.

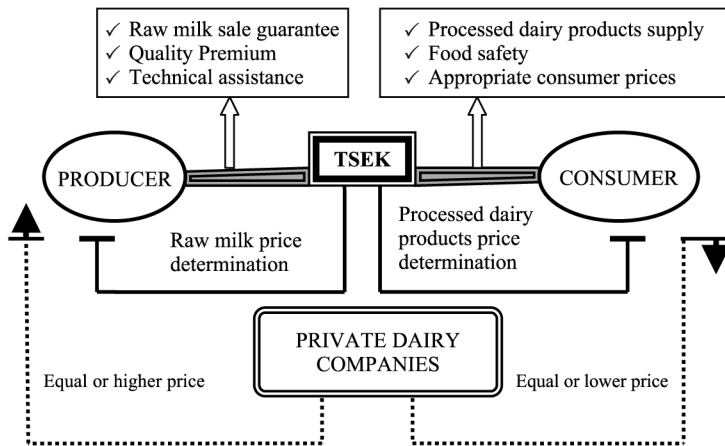


Figure 1.
Price-balancing role of TSEK

The raw milk price declared by TSEK prior to privatization was accepted as a basic price for enterprises across the sector. Due to the existence of a powerful SOE in the sector, private sector companies had to adjust their milk procurement price according to the TSEK procurement price. Private companies had to pay prices that were equal to or higher than the basic price to producers in order to provide sufficient raw milk. Similarly, TSEK was also protecting consumers by keeping consumer prices of dairy products at a certain level with a low profit margin, and providing effective distribution possibilities all over the country. Private sector companies had to adjust their consumer price according to TSEK too, having to set a price equal to or lower than those set by TSEK in order to compete with it.

Model

A panel data set was assembled from an empirical analysis of figures from the nine agricultural regions of Turkey in the 1990-2001 period[1].

Milk production, producer and consumer prices vary among the regions and by time. There are many variables that may be state invariant or time invariant that may affect milk production and prices. Panel data is able to take these state and time invariant variables into account, while a time series study or a cross-section study cannot (Baltagi, 1996). The data used in this study has been gathered from official published sources for different periods. In the data set prepared for the nine agricultural regions, only cow's milk has been taken into consideration. The cow's milk production (measured in tonnes) of each region is included the model.

The raw milk prices received by farmers were added to the model as "Mp". Producer prices were deflated by Producer Price Index for rural areas (1987 = 100). Consumer prices for fluid milk, white cheese, cheddar, yoghurt and butter products, which account for a high quantity of dairy consumption in Turkey, have been chosen as dependent variables. The consumer prices of these products were also deflated by Consumer Price Index (1987 = 100) for each region.

The ANOVA model (Gujarati, 1992) has been used to evaluate the effect of privatization on cow's milk production quantity, producer prices and consumer prices of some dairy products for different regions. Privatization and regional differences

were included in the model as dummy variables (D_i). The difference between the pre- and post-privatization periods has been tested using the following equation:

$$Y_{it} = \beta_0 + \sum_{i=1}^{n=9} \beta_{it} D_{it} + u_i$$

where: Y_{it} are the dependent variables (milk quantity and consumer prices of dairy products); $i = 1, \dots, 9$ (regions); and $t = 1, \dots, 12$ (time). Time series data for 12 years and nine agricultural regions has been pooled and the panel data set prepared with 108 observations.

In the equations, the β_{it} coefficients denote the mean of the post-privatization period. The ratio of (β_1/β_0) gives the change as a percentage on a regional basis.

This model allows a comparison of average milk production quantity, and producer and consumer prices in the pre- and post-privatization periods.

Results

Results of the model have been given in Table I. According to the model results, privatization has affected the quantity of cow's milk produced, and the producer and consumer prices of dairy products. There are statistically significant differences between the pre- and post-privatization periods. The differences among means of each variable have been tested at the 1 percent, 5 percent and 10 percent significance levels.

The effects of privatization on cow's milk production differ across the regions. While production increases in the Aegean, Marmara and Black Sea (west and north) regions, by 63.93 percent, 16.35 percent, and 19.43 percent respectively, there were decreases in the North East, South East and Middle South (east and south) regions of 13.09 percent, 35.92 percent and 14.63 percent respectively after privatization. In particular, the differences in the Aegean and South East are important, where the ratios of change were high and have opposite signs. The reasons behind these different effects are the composition of private/state owned enterprises in the pre-privatization period, milk production potential and the general dairy product consumption characteristics of the regions, as explained before. It can be said that the privatization of TSEK enterprises did not affect cow milk production negatively in well-developed regions. Singh *et al.* (2001) and Farina (2002) indicated that market liberalization policies affected the regional distribution of milk production in India and in Brazil, where they observed a concentration of milk production in developed regions where major processing plants and retailers dominated.

According to the results of the model, producer prices received by farmers for raw milk decreased in all regions after privatization and prices have decreased by between 11.51 percent and 18.45 percent. One possible reason for this is both increased market concentration and unorganized farmers. Although many processing companies compete for an almost fixed quantity of raw milk, unorganized producers cannot capitalize on this competitive atmosphere. Especially, milk auctions affect the general price level in Aegean region and other close regions as well. However, in auctions, unorganized farmers are dealing with large holding companies and cannot take the prices offered. In 1999, the six largest dairy processing companies were accused of forcing the price of fluid milk down, and the practice was taken to the Turkish Competition Committee (Official Gazette of Turkish Republic, 2000).

Variables	Milk quantity	Producer price	Fluid milk	White cheese	Consumer prices		Yoghurt	Butter price
					Cheddar	Butter		
1. Region: Middle North	76609,251 (72828,256)	-110,852** (46,995)	386,019* (135,959)	-820,308** (362,580)	562,105 (508,506)	537,549** (211,087)	4511,673* (638,989)	
2. Region: Aegean	607863,68* (72828,256)	-133,652* (46,995)	166,733 (135,959)	-175,594 (362,580)	1459,248* (508,506)	547,406** (211,087)	4214,102* (638,989)	
3. Region: Marmara	155413,25** (72828,256)	-134,652* (46,995)	165,132 (135,959)	1258,549* (362,580)	2064,248* (508,506)	1149,835* (211,087)	5733,816* (638,989)	
4. Region: Mediterranean	80948,46 (72828,256)	-126,252* (46,995)	-126,252* (135,959)	-795,879 (362,580)	1824,248* (508,506)	682,835* (211,087)	5670,816* (638,989)	
5. Region: North East	-124519,7*** (72828,256)	-137,452* (46,995)	104,019 (135,959)	-1202,879* (362,580)	2769,752* (508,506)	195,121 (211,087)	-992,184 (638,989)	
6. Region: South East	-341499,9* (72828,256)	-22,052 (46,995)	14,019 (135,959)	-1348,022* (362,580)	-965,324 (508,506)	807,263* (211,087)	3094,623* (638,989)	
7. Region: Black Sea	184696,82** (72828,256)	-51,402 (46,995)	368,590* (135,959)	-944,879** (362,580)	-398,038 (508,506)	602,121* (211,087)	2455,244* (638,989)	
8. Region: Middle East	-77281,75 (72828,256)	-44,652 (46,995)	189,733 (135,959)	-1174,165* (362,580)	771,676 (508,506)	617,549* (211,087)	5043,387* (638,989)	
9. Region: Middle South	-139123,9*** (72828,256)	-177,652* (46,995)	151,019 (135,959)	-1768,594* (362,580)	-862,610* (508,506)	385,549*** (211,087)	1073,530*** (638,989)	
Constant	950752,18* (26720,665)	962,652* (14,715)	2016,267* (49,883)	7992,022* (133,030)	13486,467* (186,571)	2255,022* (77,448)	11995,756* (234,445)	
N	107	89	107	107	107	107	107	
Adj. R ²	0,529	0,309	0,056	0,378	0,428	0,284	0,683	

Notes: *Significant at 1 percent; **Significant at 5 percent; ***Significant at 10 percent

Table I.
ANOVA model results

Consumer prices for fluid milk have, in general, increased after the privatization period. On a regional basis, the difference is significant (1 percent) only in the Middle North and Aegean. Privatization has had a different effect on consumer prices for white cheese according to region, decreasing by between 10 percent and 17 percent in six regions, except for the Marmara region where the large dairy companies are located. Cheese prices increased by 16 percent in the Marmara region after privatization, while prices decreased in all the other regions. Cheddar prices increased in all regions except for the Middle South region. The price increase ratio varied by between 11 percent and 20 percent. The largest increase in the consumer price of dairy products has occurred in yoghurt and butter, with 51 percent and 48 percent respectively in the Marmara region, where the market concentration is higher.

During the privatization period, most of the profitable TSEK plants, which were located generally in the favored regions, were bought by large holdings. After privatization, two multinational giant companies co-operated with Turkish holding companies in different kinds of mergers (i.e. Nestlé and Danone) and entered the sector. Currently, there are six holding companies controlling almost all of the dairy sector. There was a significant increase in market concentration at the beginning of privatization. The entry of foreign owned companies into the sector and increased market concentration after market liberalization are also stated by Filous (1996) for the Czech Republic, by Reardon and Farina (2002) for Brazil and by Van Berkum (2004) for Romania. Most economic reforms, including privatization, cause such an increase in market concentration, non-competitive practices and abuse of dominant market positions (Cernat and Holmes, 2004). Cotterill *et al.* (2002) stated that increasing concentration in the retail and dairy-processing sectors may account for the price differential. The concentration ratio of the Turkish dairy market was calculated with four firm concentration ratios (CR4) as; 74.7 in 1996, 71 in 1999 and 58 (CR3) in 2003 (Gilligan, 2001; Duman, 2003; AC Nielsen, 2004). After rapid concentration, there was a slight de-concentration observed up to 2003. A similar finding is also stated by Farina (2002) for the Brazilian dairy sector.

The retail sector developed at around the same time as the privatization of TSEK. Consolidation and multi-nationalization in the retail sector began in the mid-1990s, especially in the western part of Turkey (Ankın, 2004). This situation led to an increase in raw milk supply around these areas, since the major supermarkets dominate in milk and dairy product sales. The reputation of large private retailers and processing firms depends on quality and safe products in the sector. However, the quality requirements of private processing plants and the competitive environment result in too many plants competing for a nearly fixed supply of fresh milk, and hence lead to under utilization of capacity. The dominant character of small-scale dairy farms and unorganized producers cause many procurement problems for processing companies. As a matter of fact, Nestlé withdrew from the sector in 2004 and its dairy plant was transferred to Danone. Increased competition, low milk quality, high milk collection and transaction cost forced big companies to support farmers (i.e. training program, quality premium, detergents etc.) in their procurement area, as is also observed in transitioning economies. Although farmers in favored areas have some privileges in assistance programs, farmers in less-favored areas cannot benefit from these kinds of supports, which are provided by big private companies (Reardon and Farina, 2002; Van Berkum, 2004). Schreiber (2002) implied that in high potential areas, the private sector is already

serving farmers, the public institutes are more important especially in less-favored regions.

On the other hand, large processing companies provide more varied and better quality products. In Brazil, India, Argentina, the Czech Republic and Romania a similar situation has been observed in the dairy sector after the liberalization process (Singh *et al.*, 2001; Farina, 2002; Gutman, 2002; Reardon and Farina, 2002; Karanja *et al.*, 2003; Van Berkum, 2004).

In contrast to the situation above, small- and medium-sized domestic processing plants became dominant in less-favored regions after privatization. These companies generally process white cheese, cheddar and yoghurt on a small scale, and their main outlets are small retailers and some specialist shops that sell only dairy products. In less-favored areas, currently, there are neither private nor public sector forces to promote an increase in the quantity and quality of raw milk. The situation in the dairy sector in the post-privatisation period can be summarized with the help of Figure 2.

When TSEK enterprises withdrew from the sector without the preparation or application of market regulatory dairy sector policies, the market balance became distorted to the disadvantage of producers and consumers. While prices received by farmers have decreased in all regions, consumer prices have increased in general. Karanja *et al.* (2003) analyzed the effects of market reforms on the evaluation and volatility of producer prices in Kenya over a 15-year period. They found that real producer prices for coffee, tea and maize significantly declined during the reform period, while milk prices increased. They also found that market reforms have been associated with increased price volatility, and may have contributed to low and unstable producer prices. On the other hand, Reardon and Farina (2002) stated that there was a decrease in producer prices several years after market liberalization. Cotterill *et al.* (2002) found that an increased concentration of retailers and processors in the dairy sector led to a decrease in producer prices and an increase in consumer prices. According to Filous (1996), privatization in the food sector affected livestock and dairy sectors negatively in the Czech Republic.

With a general evaluation, after privatization, 31.25 percent of the TSEK dairy plants were shut down in spite of a legal “continuance provision”. The number of employees in the sector has decreased by 62.17 percent and processed milk in these privatized enterprises has diminished by 22 percent (PA, 2004).

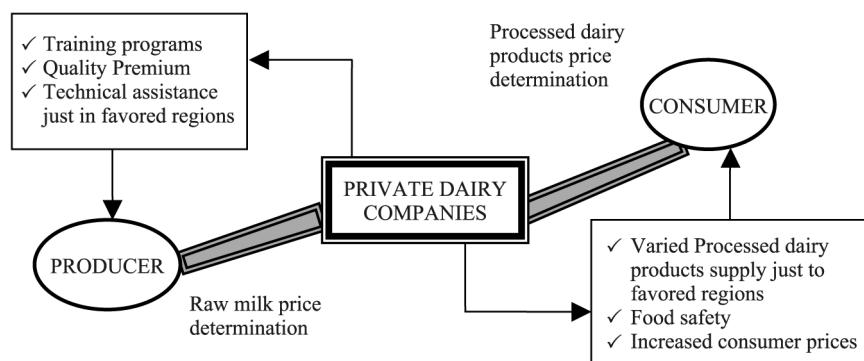


Figure 2.
Dairy sector after privatisation

Conclusion

When an SOE has a dominant character and regulates the price mechanism of its sector, it is necessary to take some measures before it is privatised. It should be noted that, beside those of economy, SOEs also have social roles especially in the less developed or less-favored regions that are not so attractive for private sector investment. If an SOE is privatised completely without setting up price and production regulation policies, the privatisation process will cause some adverse effects, as is being witnessed in the Turkish dairy sector. The empirical study has shown that after privatisation consumer prices have increased in general, producer prices have decreased and regional differences have become more apparent.

Although the state is not directly engaged in the processing of dairy products in many developed countries, such as those of the EU and the USA, they have already developed various systems in order to regulate the raw and processed milk markets, and provide market stability for the whole dairy sector. Unfortunately, in Turkey all public enterprises were privatized at the same time without setting up market regulation systems and developing an appropriate dairy sector policy. The uncontrolled market was very attractive for both domestic and foreign holding companies, and after privatisation many holding companies entered the sector directly or via various kinds of mergers. These companies hold a major share of the market and cause an increase in market concentration and abuse competition. While concentration occurred in favored regions, in less the favored regions there were only a few small- and medium-sized dairy processing plants operating. This situation has led to problems such as a lack of quality, production decreases, undeveloped dairy markets etc. in less developed regions.

It can be concluded that if there are dual structures and development differences between regions, entire and rapid privatization is not a correct approach. For developed regions, it is necessary to create a market regulation system before privatization in order to prevent market concentration, income loss by dairy farmers, and an increase in consumer prices. For less developed regions, it may be a right approach to keep some public enterprises, and provide continuity in milk processing until that region can become attractive for private investment.

Note

1. The only producer prices available are a data set for the 1990-1999 time frame, due to lack of statistical data. In order to provide homogeneity in the data set, 1990 has been chosen as the initial year as some of official statistics were prepared in a different format before 1990.

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