A Study of Milk Support Policies in the European Union and in Turkey

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Abstract
This paper is an analysis of milk support policy in the European Union and in Turkey. Turkey's adaptation of its milk policy to the Common Agricultural Policy of European Union is on the agenda since Turkey has been a candidate country in 1999. Regarding that the Common Agricultural Policy has been reformed many times, Turkey has to adapt its milk sector to a changing policy. Turkey, on the other hand, pursues different support policy in the milk sector. The producers, who are registered in the Farming Registration System, receive milk incentive premiums. There are no similarities between Turkish milk support policy and European Union's milk support policy. According to the last progress reports, Turkey has to improve Farming Registration System. Turkey has to adjust milk production process to the European Union standards. Furthermore, in the accession process, Turkey plans to increase consumption and also needs to promote milk and milk products producers' organizations.

Keywords: Common Agricultural Policy; milk; agricultural policy; support policy;

JEL Codes: F15, Q18

1. Introduction

Milk is one of the most important food stuffs in human's nourishment. Income growth and population growth affect dairy consumption positively. As the population grows, per capita consumption of milk increases. Generally consumption of milk and meat preparations indicates the wealth of a country. Dairy milk per capita consumption increases in the countries where per capita income is high.

Milk is a crucial agricultural product for the European Union (EU) too. Ensuring the stability of agricultural production has the greatest importance since the foundation of European Community. Regarding the food-shortages and damage in agriculture in the Europe after the World War II, Common Agricultural Policy (CAP) established as the first common policy of the Community. Self-sufficiency in agricultural products was one of the major objectives of the CAP. The Community supported the farmers and agricultural products, by setting high prices and high support levels. In time, as agricultural production started to increase, other problems occurred. The high support levels in agriculture were hurting the Community budget, comprising of almost 90% of the total budget. Food shortages turned into food surpluses in most of the agricultural products. Support policies in the dairy sector also encouraged production leading to oversupply as expressed butter mountains and milk lakes.

In 1984, milk quotas were introduced to prevent oversupply. Milk quotas were effective to balance the demand and supply in the dairy sector. In 2015, European Commission decided to phase out the milk quotas. The dairy sector has been reforming since the 1980s. But besides the quota phase-out, the Russian import ban in dairy sectors was another problem of the European Union, since European Union exports most of its

production. European Union introduced new measures to limit the negative effects of the quota elimination and Russian import restrictions.

Turkey, as a candidate country, is pursuing a different agricultural policy in the milk sector. On the other hand, Turkey is trying to take measures to harmonize its policy to EU's agricultural policy.

In this article, it is aimed to analyse the production, consumption and the price levels of the milk in the European Union. The milk support policies in the European Union are summarized.

Production, consumption and price of the milk in Turkey are also analysed by the comparison with the European Union. Turkish support policy in milk is examined, and differences and similarities of agricultural support policies in milk in the European Union and Turkey are summarised. Also Turkey's harmonisation to the European Union's milk policy is examined in this article.

2. Milk in the European Union

Milk is an important agricultural product in the European Union. The EU is the second biggest exporter of the milk products after New Zealand. New Zealand and the EU are the two main exporters and accounting for 50% of world trade (European Parliament, 2015, p. 9).

Milk contributes to 14.1 % of the agricultural output in the European Union, taking the second place in agricultural output value, while fruits and vegetables constitute 24% of total agricultural value (European Commission, 2017a). Some of the collected milk is consumed domestically, while most of the production is exported. Domestically, the milk is consumed as drinking milk, and also used as cheese, butter and milk powder.

2.1. Milk production and consumption in the European Union

The European Union produced over 151 million tonnes milk in 2015 (Table 1). Milk production takes place in all EU Member States. The biggest producers are Germany, France, Netherlands, Poland and Italy contributing about 90% of the cows' milk collected in the EU. Germany is the biggest producer accounting for almost 20% of the total production.

The production level in the whole EU has an increasing trend. In 2009, a decline was seen in the collection of milk in 2009 after drought but than a recovery is recorded in 2010. After 2012, the milk production rose and reached 151.6 million tonnes in 2015. The increase in the production level mainly came from the milk production rise in Germany.

Table 1. Collection of Cow's Milk (million tonnes)

EU	2007	2008	2009	2010	2011	2012	2013	2014	2015
EU (28 countries)	133.8	135.2	c	c	c	c	141.2	147.8	151.6ᵖ
Germany	27.3	27.5	27.5	29.1	29.8	29.7	30.3	31.4	31.9
France	23.0	23.8	22.9	23.6	24.7	24.2	24.0	25.3	25.3
Italy	10.3	10.5	10.5	10.5	10.5	10.5	10.4	10.5	10.5
Netherlands	10.8	11.3	11.5	11.6	11.6	11.7	12.2	12.5	13.3
Poland	8.7	8.9	9.1	9.0	9.3	9.9	9.9	10.6	10.9

p: provisional, c: confidential
Source: Eurostat, Collection of Cow's Milk, 11.08.2016.

The collected milk is utilized as cream, milk powder, butter and cheese. Most of the milk was used as drinking milk in 2015.

Some 54.1 million tonnes of whole milk (36 % of whole milk) and 14.4 million tonnes of skimmed milk were used to produce 9.5 million tonnes of cheese (Table 2). Producing 2.3 million tonnes of butter products required 45.6 million tonnes of whole milk (30% of whole milk). Finally, 25.8 million tonnes of raw milk were dried into 2.9 million tonnes of milk powder. (Table 2)

Table 2. Dairy products obtained from Milk (1.000 tonnes)

	Drinking Milk	Cream for direct Consumption	Milk Powder	Butter	Cheese
2014	30,433	2,670	2,516	1,787	9,160
2015	31,348	2,720	2,900	2,300	9,530

Sources: Eurostat (2014): Statistics Explained; Eurostat (2015): Statistics Explained.

20% of the collected milk is consumed as drinking milk. School Milk distribution is a type of consumer subsidy which is given to encourage domestic milk consumption among children. In many countries, school milk subsidies are applied to encourage milk consumption. FAO also cooperates with national organisations to develop school milk projects in world-wide. Distribution of milk to the students in the schools started in 1999 in European Union (*Council Regulation No 1255/1999 of 17 May 1999*). The dairy regulation states the specific value of the school milk subsidy as:

- 23.24€ /100 kg for 2003/04;
- 21.69€ /100 kg for 2004/05;
- 20.16€ /100 kg for 2005/06;
- 18.61€ /100 kg for 2006/07;
- 18.15€ /100 kg from 1 July 2007.

In Denmark, after application of school milk subsidies, the milk consumption has increased by 40% (Griffin, 2005, p. 4)

The European Commission adopted in 2008 a new version of the EU School Milk Scheme that provides a larger range of healthy dairy products to more children. With the new scheme some other products have become eligible for the EU-subsidy such as yoghurt, buttermilk, kephir and a wide range of cheeses. Five categories of products were determined and the aid rates are given according to these categories (*Commission Regulation No 657/2008 of 10 July 2008*):

Aid rates:

(a) 18.15€ /100 kg for category I products (heat-treated milk, fermented milk products);
(b) 16.34€ /100 kg for category II products (Flavoured and non-flavoured milk products with fruit);
(c) 54.45€ /100 kg for category III products (Fresh and processed cheeses);
(d)163.14€ /100 kg for category IV products (Grana Padano cheese and Parmigiano Reggiano cheese;
(e) 138,85€ /100 kg for category V products (Cheeses, containing maximum 10% of non-lactic ingredients).

The final figures for the 2013/14 school year (the most recent available) shows that just over 19 million children in 26 Member States benefited from the scheme (European Commission, 2017b). This kind of subsidies can be a great solution for the overproduction problem by creating demand for milk products in the European Union.

2.2. Milk prices in the European Union

The milk price has been unstable in the European Union in the last years due to the weather conditions. The drought in 2007-2008 followed by a decline in milk supplies brought about high prices. After recovering of the milk supplies and milk prices, later in 2009, the overproduction caused low milk prices leading to the protests. Average EU farm gate milk prices stayed at almost 35€ /100 kg in 2008, but in 2009 decreased to 28€ /100 kg (Table 3). The sharpest decline in milk price occurred in 2009 due to the recovering of milk supplies after drought. In May 2009, the dairy farmers protested the low producer prices. They demanded a stable milk price and the maintenance of the milk quota system. Finally, this protest resulted in a small increase in milk prices.

Table 3. Raw Milk Prices in the European Union, in Euro/100 kg

Year	Germany	France	Italy	Netherlands	Poland	Weighted average EU
2007	40.80	35.40	38.00	42.73	36.70	**39.03**
2008	27.80	32.32	35.78	32.95	24.02	**30.92**
2009	26.00	27.74	30.36	33.61	25.73	**28.31**
2010	34.42	32.68	34.80	35.65	29.79	**33.25**
2011	35.71	32.89	39.05	37.50	28.74	**34.69**
2012	35.02	31.09	38.04	36.90	30.10	**34.19**
2013	42.24	37.86	40.09	44.00	37.17	**40.21**
2014	32.48	34.58	35.97	30.75	29.98	**33.26**
2015	29.75	31.74	34.75	30.00	27.39	**30.49**
2016	33.67	32.72	34.34	37.50	30.67	**33.05**

Source: European Commission (2017): Historical EU Price Series of Cow's Raw Milk, Regulation (EC) No:479/2010 Article 2.

On 22 July 2009, Commission set measures to help farmers in this difficult situation and denoted that Commission would use instruments such as intervention, private storage aid and export refunds, and allow direct payments to farmers to be paid early. A High Level Expert Group on Milk (HLG) was set up in October 2009 to discuss the milk problems. The HLG pointed out the supply and the price problems between farmers and the dairies like; farmers do not know what they will receive from the dairies (Regulation (EU) No 261/2012 of European Parliament and of the Council of 14 March 2012). HLG also noted that there was an imbalance in bargaining power in the supply chain between farmers and

dairies. While the quantity of milk which was delivered to the diaries was not always good planned, there might be an imbalance between supply and demand. Some conditions were laid down to solve these problems like (Regulation No 261/2012 of European Parliament and of the Council of 14 March 2012):

-Member States should be allowed to set minimum contract duration to be included in such contracts and/or offers.

-The price payable for the delivery can be set in the contract, at the choice of the contracting parties, as a static price or a price varying depending on defined factors.

In 2010, the rise in milk production was driven by favourable weather conditions. The recovery in dairy commodity prices in 2010 was due to the increased demand, notably from emerging economies, and limited supplies from the Southern Hemisphere (European Commission, 2012a).

The milk price fell from 34.69 € (in 2011) to 34.19 € in 2012. In November 2012, many dairy farmers protested the low milk prices in Brussels. The European Milk Board coordinated the protests, arguing that the milk prices were under their productions costs. The overproduction in milk was leading to a fall in milk prices. The protest was also about the new milk package which had been applicable as from 3 October 2012. According to this new package, milk quota system would expire in 2015. Drafted on the basis of the conclusions of a special High Level group set up after the 2009 milk market crisis, a new milk package was designed in 2012. The package offered producers tools for adjusting their supply to market demand after quota phase out. According to the package (European Commission, 2013) milk producers and processors can make written contracts between each other, and the package gives the possibility for farmers to negotiate contract terms (including price) collectively via **producer organizations.** The contracts shall include the information of price, volume, duration, details about payment, collection… All these details shall be negotiated between the parties. Farmers can join together in producer organizations that can negotiate contracts terms collectively, including the price of raw milk.

Although in the protests, farmers requested for the continuation of the current quota system, the European Commission defended the quota phase out, indicating that the quotas are no more relevant for limiting the production.

The highest milk prices were recorded in 2013; as though the average EU farm gate milk price stayed at 40.21 €/100 kg. Also seen in Table 3 the milk prices were at their highest levels in the last three years.

In 2013, the milk price increased to 40.21 €. The rise in the EU milk price in 2013 was because of the decline in the milk production in 2013. From 2013 onwards, the lower prices in the milk (compared to the prices in 2013), were driven by the rise in the milk collection level. In 2016, the milk price was recorded as 33.05 €.

2.3. Milk support policy in the European Union

The milk sector was integrated into the Common Organisation of the Markets in the agricultural products in 2013.[1] However the policy instruments in milk date back to 1960s.

[1] A common market organisation is a set of measures that enables the European Union to monitor and manage, either directly or indirectly (via producer organisations supported by operational programmes), the markets of agricultural products. (European Commission, 2015). The European Union operated 21 common

High support levels, high prices and intervention buying were the main measures to encourage production. In time, the goals of the CAP, mainly; self-sufficiency, high prices and decent standard of living for farmers were reached and support policies in the dairy sector led to a substantial rise in production.

The problem was that demand in the dairy sector was stagnant, while supply was liable to increase (Grant, 1997, p. 111). High support prices were encouraging a level of production above domestic consumption leading to oversupply as expressed butter mountains and milk lakes. Increasing EAGGF (European Agricultural Guidance and Guarantee Fund) expenditures due to the support system was another problem of the milk regime.

The main change in the sector was made in 1984. In 1984 milk quotas were introduced to balance supply and demand of the product and to bring spending on dairy sector under control.

The milk quota system was effective that, the surpluses disappeared by the mid-1990s and the sector's share of EAGGF expenditure fell from 43% in 1980 to 10.3% in 1995 (Grant, 1997, p. 108). Milk quotas being implemented since 1984 had been extended through reforms until 2015: Firstly, 1992 CAP Reform extended the milk quota regime until March 2000. Agenda 2000 reform also extended the milk quotas until 2003 and also increased the milk quotas. Finally, in 2003 CAP mid-term review, the milk quotas were decided to be extended again until 31 March 2015.

With the Council Regulation No 1788/2003 a levy system was established. For each Member State, the Regulation set reference quantities for the production of cow's milk. Each Member State has two quotas, one for deliveries to dairies (97.7% of EU total), and the other for direct sales to consumers (2.3%). These quantities were broken down among producers (individual quotas) in each Member State. The national quotas are set according to the production quantity and fat content of milk because, quality and quantity of milk products obtained from milk are higher when the fat content is high. Under the quota system, if a farmer delivers more milk than his quota in any one year he can be penalised financially. This means, the farmer has to pay a 'superlevy' (€ 27.83 per 100kg) on the over-quota amount (European Commission Press Release, 21.10.2015). This surplus levy has to be paid by producers of cow's milk on all quantities of milk or milk equivalent in excess of the quota marketed during a 12-month period, which runs from 1 April to 31 March. The Member States transfer these levies to the European Agricultural Guarantee Fund (EAGF).

On 20 November 2008 the EU agriculture ministers reached a political agreement on the Health Check of the Common Agricultural Policy (European Commission, 2009a): According to the agreement, milk quotas would be gradually phased out by 2015. An increase of quota by 1% per year was decided to prepare for the abolition in 2015.

According to the production and quota figures in Table 4, the milk production generally seemed to remain below the quota level. Commission adopted a report for phasing out the milk quota system, indicating that only three member states (Denmark, Netherlands, South Cyprus) having produced more than their quota in the period 2009/2010. For example, European Union milk production was over 140 million tonnes in 2009 and the annual milk quota was set at around 130 million tonnes. In 2009/10 milk production was 6.9% below quota volume.

market organisations. In 2007, these 21 common market organisations were combined under single common market organisation.

In the 2010/2011 and 2011/2012 quota years, milk deliveries were 5.5% and 4.7% below the quota level, respectively. Some countries exceeded their quota volumes every year. Especially, Austria, South Cyprus and Netherlands were the main leading countries in the last years exceeding their national quotas (European Commission, 2012b).

Table 4. Milk quotas and deliveries in the European Union

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Dairy deliveries							
Available quota for deliveries, mn t	142.99	144.78	146.08	147.40	148.80	150.90	151,10
. Total deliveries, mn tonnes	137.61	134.77	137.99	140.50	140.00	144.10	147.90
Overrun, mn tonnes	0.35	-10.01	-8.09	-6.90	-8.8	-1.4	-2.9
Levy, mn €	0.10	0.02	0.06	0.08	0.46	0.41	0.82
% Overrun	0.20%	-6.9%	-5.5%	-4.70%	-6.00%	-10.60%	-2.10%
Direct sales	2.6	2.46	2.36	2.34	2.20	2.30	2.04
Available quota for direct sales, mn t	3.43	3.54	3.61	3.58	3.60	3.67	3.55
Overrun, mn tonnes	7.50	2.90	2.10	1.50	1.08	3.63	2.52
Levy, mn €	2.10	0.80	0.50	0.40	0.30	1.01	0.70

Sources: European Commission, 2009b; European Commission, 2011; European Commission, 2012b; European Commission, Milk Quotas 2012/13; European Commission, Milk quotas 2014/15.

Eight Member States - **Germany, the Netherlands, Poland, Denmark, Austria, Ireland, Cyprus and Luxembourg** - exceeded their milk quotas for deliveries in 2013/2014, and therefore paid penalties ('superlevy') totalling € 409 million. Despite the overrun of the quotas in these Member States, total EU deliveries remained 4.6% below the total quota volumes (European Commission Press Release, 03.10.2014)

In 2014/2015, twelve Member States – **Belgium, Denmark, Germany, Estonia, Ireland, Spain, Italy, Cyprus, Luxembourg, the Netherlands, Austria and Poland** - exceeded their national milk quotas for deliveries by a total of 2,938,000 tonnes. (European Commission Press Release, 21.10.2015).

In fact, according to the milk system established in 1980s, the quota would seem to limit milk production, so the countries producing over the quota would be penalised by paying a levy. Finally, milk production would remain at stable levels which would not lead to price volatility.

The medium-term market prospects indicated that removal of quotas is projected to have a limited impact on milk deliveries at the aggregate EU level (European Commission, 2012a). It is expected that the farmers will respond better to the market conditions in time after the abolition of milk quotas.

> *The primary reasons for deciding to end milk quotas was that there has been a considerable increase in consumption of dairy products in recent years, especially on the world market – projected to continue in future – while the quota regime is preventing EU producers from responding to this growing demand.* (European Commission - Fact Sheet, 2015)

According to the EU Agriculture Commissioner Mariann Fischler "The quotas are not the reason for the low prices". Generally, the milk deliveries are below the quota level. The reason of the low prices was lower demand from consumers. Mariann Fischler noted that the farmers had better produce less because of the lower demand. Also there may be other ways to stimulate milk demand like giving consumer subsidies. School milk scheme is

applied to promote consumption. A Union aid of € 18.15 / 100 kg –limited to a maximum of 0.25 litre of milk equivalent per pupil and per day - can be supplemented with national resources.

Finally, the milk quota regime expired on 1 April 2015. Earlier on, the European Commission prepared the milk sector for the quota phase-out. The European Commission introduced safety net measures in case of crisis. One of these measures is public intervention. Public intervention comprises intervention buying and also public storage of butter and skimmed milk powder. Besides public storage, private storage is possible for butter, SMP and cheeses with a Protected Designation of Origin (PDO)/Protected Geographical Indication (PGI). But these products remain under private ownership.

Besides quota phase-out, European Union has another issue in the milk sector like import restrictions of the Russian Federation. Russian Federation is the second biggest importer of milk products in the world (after China). Also it is the biggest trade partner of the European Union for certain cheeses and butter. Russia represents one third of EU exports of cheeses and 30% of EU exports of butter (European Parliament, 2015, p. 17, 19).

Russian Federation prohibited import dairy products from the European Union in 2014 and in 2016 Russian Federation prolonged the import restrictions until the end of 2017.

> *The European Commission has announced in 28.08.2014 that it will open Private Storage Aid for butter, Skimmed Milk Powder (SMP) and certain cheeses in order to alleviate the impact of Russian restrictions on imports of EU dairy products and to limit the negative effects on the internal market. The Commission has also confirmed that the period for public intervention of butter & SMP will be extended until the end of the year.* (European Commission Press Release, 2015)

As explained above, European Commission took some steps to support the European dairy market. Also, European Commission reinstated the export subsidies.

The increasing dairy demand from the growing countries like China, India and South Korea seems to be an opportunity for the European dairy market. China, Russian Federation, Mexico, Indonesia and Algeria are the world's biggest milk importers (European Parliament, 2015, p.9). As the incomes rise, demand for dairy products rise too. So, these countries especially China can be the main markets of EU exports. Since 2000, the Chinese government has implemented policies to promote dairy production (European Parliament, 2015, p. 17, 19). The dairy sector grew rapidly but ignoring the safety dairy chain. This unhealthy rise led to dairy crisis in China. So, China prefers especially foreign dairy products for babies.

OECD and FAO Outlook for the period 2014-2023 forecasts an expansion in dairy trade over the coming decade (butter: +0.7% per year; WMP 1.7%; cheese 2.4% and SMP 2.5%). Most of the new exports will come from the United States, the EU, New Zealand and Australia. Consumption of milk products in the world has been rising, which means more potential market opportunities for EU dairy producers. This growth has been due to the increasing demand in emerging countries.

To sum up, the European dairy market can benefit from the export market in the future and had better consider its export potential to the world's biggest milk importers.

3. Turkish Milk Sector

Turkey is among the 10 largest milk producers in the world. Milk is important in Turkey for the development process of regions with priority (as a household consumption and income generating activity) and milk production is a crucial activity to create employment opportunities in rural and less developed areas (European Commission, 2006, p.4).

3.1. Milk production and consumption in Turkey

Turkey's total milk production was 18.49 million tonnes in 2016. As seen in Table 5, milk production increased by almost 30% in ten years. In Turkey, milk producing enterprises are smallholder dairy farming – characterized by subsistence farming.

Table 5. Milk Production in Turkey, in million tonnes

Year	Milk production
2007	12.33
2008	12.24
2009	12.54
2010	13.54
2011	15.06
2012	17.40
2013	18.22
2014	18.63
2015	18.65
2016	18.49

Source: Turkish Statistical Institute, 2017.

Milk is consumed as drinking milk and also is used as producing cheese, milk powder, cream and butter. 1.3 million tonnes of collected milk (7% of the total milk) were used as drinking milk. In the European Union, 20% of the collected milk was used as drinking milk. 660,000 tonnes of cheese, 112,000 tonnes of milk powder, 52,000 tonnes of butter and 32,000 tonnes of cream were obtained from milk in 2015 (Table 6).

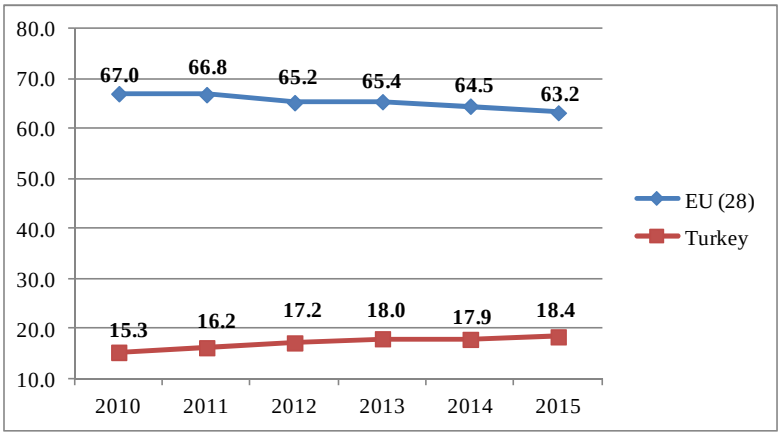
Table 6. Dairy products obtained from Milk (1000 tonnes)

Year	Drinking Milk	Cream for direct Consumption	Milk Powder	Butter	Cheese
2014	1,326	31	129	46	631
2015	1,379	32	112	52	666

Source: Eurostat, 2014; Eurostat, 2015.

Milk consumption in Turkey is generally low when compared with the European countries. In Turkey, annual per capita milk consumption is about 18 lt, while the average of European Union is 63-64 lt (Graph 1). In Turkey, school milk subsidies were applied between the years 2001-2003 to promote consumption. After 2003, no more school milk subsidies were given. School milk application started again on 8 February 2010 by National Milk Council in Turkey.

Graph 1. Milk Consumption (Litres per Capita)



Source: Canadian dairy Information Centre, Global Milk Consumption (Litres per Capita), 2015.

3.2. Milk prices in Turkey

The milk prices in Turkey had an increasing trend as seen in Table 7. The milk price remained stable in the last three years and was recorded as 115 TL.

The price of the milk is a problem in Turkey. Feed price can be said as the most important reason for the rise in the milk price. Feed is an important input for milk producers. The increase in feed prices has been higher than the milk price increase. As seen in Table 7, milk price was 102% of the feed price in 2011 and 2012 but this ratio increased and reached 112% in 2016. The milk producer pays most of his milk earnings for the feed.

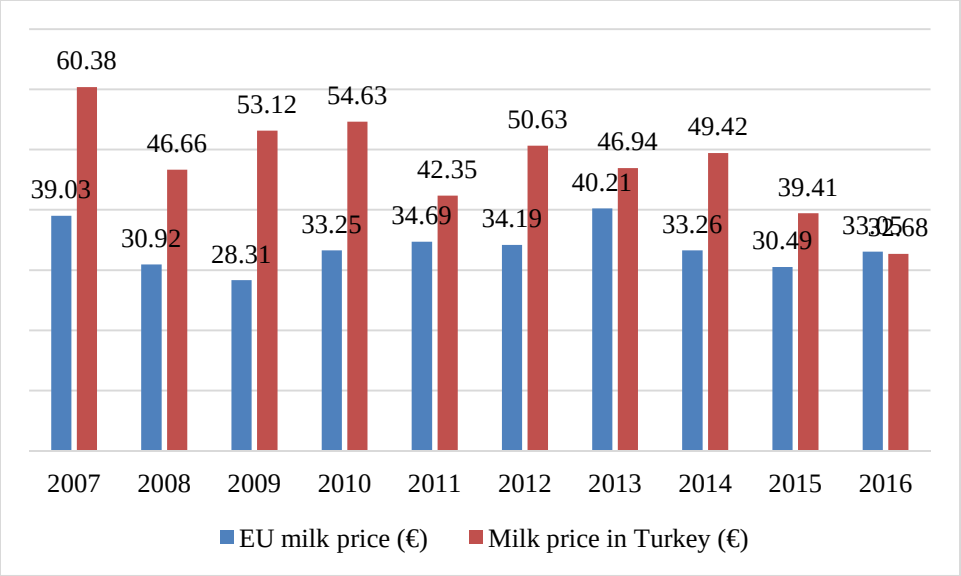
Table 7. Raw Milk Prices in TL/100 Lt and Milk price/Feed parity in Turkey

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
in TL	70	71	79	84	80	90	100	115	115	115
€/TL Buying rate	1.1593	1.5218	1.4873	1.5376	1.8889	1.7776	2.1304	2.3269	2.9181	3.5192
in €	60.38	46.66	53.12	54.63	42.35	50.63	46.94	49.42	39.41	32.68
Milk price/ Feed parity	1.23	1.12	1.45	1.19	1.02	1.02	1.16	1.21	1.21	1.12

Source: National Milk Council (2017); Republic of Turkey Ministry of Food, Agriculture and Livestock, Milk and Milk Products (2014); National Milk Council (2016).
*Central Bank of the Republic of Turkey (2017): €/TL Buying Rates are year-end rates of the related years (http://www.tcmb.gov.tr)

Graph 2 shows the raw milk prices in the European Union and in Turkey. The milk prices in Turkey were above EU levels until 2010. After then, the milk prices in Turkey remained below EU levels.

Graph 2. The Milk Prices in the European Union and in Turkey between 2007-2016 (in €)



Source: Data from Table 3 and Table 7.

3.3. Milk support policy in Turkey

In Turkey, milk incentive premiums are given to the milk producers. There is no public intervention in the milk sector. The milk is supported under livestock premium payments. Milk premium payments were first given in 1987. These payments are given under the support scheme of "livestock premium payments". Milk incentive premium payments were determined as 9 kuruş/liter in 2015. In 2013 and 2014, the premium payments were determined as 6 kuruş per litre, which was lower than the premium in the earlier year 2012. The premium payment declined from 8 kuruş/liter in 2012 to 6 kuruş/lt in 2013 (Tarımdan Haber, 08.12.2015). The main reasons were the milk price increase (to 1 TL) and high production level in milk in that year (Köy-Koop Haber, 2013).

In Turkey, school milk subsidies were applied between the years 2001-2003. After 2003, no more school milk subsidies were given. School milk application started again on 8 February 2010 by National Milk Council in Turkey. İstanbul, İzmir, Ankara and Diyarbakır were selected as the pioneer cities and the Milk Council distributed milk in the schools in these cities. Daily milk subsidy was 200 ml per student. On 16 January 2012, the government decided to distribute milk free to the students from the kindergarten to the fifth grade in the public schools. The aim was to promote drinking milk among the children and to stimulate milk consumption in order the decrease milk oversupply in the sector. The project would contribute to the milk consumption among the students and to a healthy way of living (National Milk Council, 2010). The first days of the project brought about problems in the schools that many students were sent to the hospitals for milk poisoning. After the analysis of the school milk in the laboratories, it was understood that the students were not poisoned. Some of the students were lactose intolerant (the inability to digest lactose, a sugar found in milk). The results also showed that the students do not have the habit of drinking milk every day.

School milk project is criticized after these stomach problems of the students. However, this kind of project is carried out in many developed countries with the aim of the aid to the nutrition of children and with the aim to increase milk consumption in the country.

Problems may occur in the first days of implementing this kind of project. 30% of the school children in Turkey have not drunk milk since they were weaned (Üzüm, 2012). It is hard to make students gain the habit of drinking milk every day. So this project must be supported by the families, schools and the public.

4. Milk Support Policies: Comparison between Turkey and the European Union

When the support policies of the European Union and Turkey in milk are compared, differences between the applications can be recognised.

The milk support policies in Turkey and the European Union are totally different (Table 8). Compared to EU, in Turkish milk sector, there is no public intervention and no public storage mechanism in milk production. Milk is supported by premium payments since 1987 in Turkey. EU applies intervention buying and storage mechanism in the milk products. School milk application started on 08.02.2010 in Turkey similar to the European Union.

Regarding the external trade, export of the milk products had been supported by export refunds since the establishment of the common market organization of milk in the European Union. The European Union began to reduce the export subsidies in milk and milk products in 2003. In 2007 export subsidies were totally abolished. Export refunds for certain dairy products were introduced again in 2009. The decision was taken in response to the serious situation on the EU dairy market, caused by fall in producer prices. Export refunds were started again after the abolition of the milk quotas in 2015 to support the milk market.

Table 8. Comparison of milk support policies between Turkey and the European Union

Turkey	European Union
Domestic support	
No public intervention No public storage mechanism Milk incentive premium School milk application (200 ml per pupil/day)	Public intervention Public storage mechanism Private storage School milk application (18,15€ /100 kg per pupil/year)
External trade	
Import tariffs	
180%	TRQs for SMP, butter, cheese Out of quota: milk: 13.8 €/100 kg butter:189.6 €/100 kg cheese:185.2 €/100 kg
Use of export subsidies	
Yes (Turkey has right to use subsidies)	Yes

Source: author

In general, in the trade with non-EU member countries, milk and milk products are subject to **the rates of duty in the common customs tariff.** Many of the EU's trading partners benefit from Tariff Rate Quotas (European Commission, 2008): Tariff Rate Quotas (TRQs) are 68,537 tonnes of skimmed milk powder and the rate of duty is 475€ /1000 kg. The butter TRQ is 74,693 tonnes and the rate of duty is 70€ /100 kg. **Tariff quotas** may be awarded using the first come/first served principle.

In Turkey, no import (except for tariff quotas arising from bilateral agreements) and export licenses for milk and milk products are required. Turkey's Bound Rate of Duties is 180% for milk, creams, butter, and cheese. For other cheese like gruyere, cheddar, and parmesan, the duties are 45% (Turkish custom tariff rates). Turkey has right to use export subsidy in the milk sector (creams, milk, butter, yogurt, cheese). Annual outlays commitments for milk are 1,171.2 $ and 19.8 million tonnes (Table 9). For cheese, annual outlay commitment is 351,510 $. Turkey has the right to give export refunds to cheese up to 2,634.2 tonnes.

Table 9. Turkey's WTO Milk and Milk Product Commitments

Milk and Milk Products	Annual Outlay Commitment (US $)	Annual Quantity Commitment(Tonnes)
Creams	9,904.3	155.7
Milk	1171.2	19.8
Yogurt. Yogurt processed with water	6,042.0	227.9
Butter	42,137.4	143.6
Cheese	351,509.9	2,634.2

Source: European Commission, 2006, p. 24.

According to the Decision no 1/98 of Association Council, European Union grants special import arrangements to Turkey in some agricultural products like tariff reductions and tariff rate quotas with duty-free access or reduced tariffs. In milk products, Turkey has 0% duty for the cheese made exclusively from sheep's milk or buffalo milk in the import into the EU within quota limits (1,500 tonnes). Over quota duty is 67.19€ /100 kg (State Planning Organisation, 2001). Arrangements applicable to the importation into Turkey of milk products originating in the Community are as follows: EU benefits from Turkey's tariff rate reductions in milk and cream of a fat content by weight, not exceeding 1.5% (1,500 tonnes with 100% tariff rate reduction) and in milk and cream of a fat content by weight, exceeding 1.5% (2,500 tonnes with 100% tariff rate reduction) (State Planning Organisation, 2001).

Problems of the Turkish milk sector, screening process and afterward

In 2005, European Union started the accession negotiations with Turkey. The Screening process for the agriculture chapter was completed in 2006. In the screening report of Turkey, the degree of alignment and implementing capacity of Turkey in the milk sector is assessed and it has been noted that the legal framework and institutional requirements in the milk are not aligned with the acquis (European Commission, 2006): Turkey has neither production quotas nor intervention systems. In Turkey, there is no public storage mechanism. Turkey has to establish a market intervention and milk production registration system in the milk sector.

As milk quotas are abolished from 2015 onwards, there will be no need for introducing production quotas in Turkey. Farmer registration system was introduced in 2005 and published in the Official Gazette, dated 16.04.2005, reiterated no.25788.

In the accession process of European Union, there is the problem that some milk enterprises in Turkey which do not work in hygienic conditions may be closed or may be given transition period to adjust to the EU standards. The milk producing enterprises and the dairies shall consider the hygienic conditions and animal welfare, and adjust their production process to the European Union standards.

Another problem in the Turkish milk sector is the cyclical changes in the production volume which affect producers in that they are confronted with the unstable prices. In periods of overproduction demand of milk can be increased by giving consumers subsidies. Regarding the collection of milk, there remains the problem of unregistered production quantity. Milk premium payments have been given as an incentive for registration of the milk production. Registration of milk collection is important in order to analyse the supply and demand and to solve the problems of overproduction or supply shortages in the sector.

Small and dispersed structure of milk holdings and lack of efficient farmer organizations are the main problems of the milk sector. Efficient working cooperatives are important in agriculture; thus, cooperatives and association of cooperatives can provide the significant part of production inputs and then distribute them to the producers. While the production costs (like feed) are the main factor of the high milk prices, the milk producers can benefit from the cooperatives. Furthermore, cooperatives can provide information on production techniques to their members, and help to prepare the milk holdings to the EU Accession process.

National Milk Council was established in 2008 to contribute to the development of the milk sector and to support the production and consumption of milk in Turkey. But still, there is lack of producer organisations in the milk sector in Turkey. New Zealand, as the biggest milk exporter in the world, has its success from organising producers under one producer organisation. Fonterra is the largest cooperation of New Zealand in milk, comprising 10.500 producers. The milk producers in the country do not receive any support payment, but the Cooperation supports producers in collecting and marketing of the milk. So, this kind of cooperation model can be taken into consideration in Turkey, too.

According to the Progress Report in 2016, Turkey has to improve Farming Registration System. Furthermore, Turkey plans to increase high-quality milk production, to increase consumer awareness and to promote milk and milk products producers' organization.

5. Conclusion

European Union is the biggest producer milk producer in the world after New Zealand. The milk sector was supported by production quota. Overproduction and the price of the milk had been a great problem for the dairy farmers. Support of the milk sector through production quotas had a limited effect in adapting supply to demand. Limiting the production through quotas for adjusting supply to desirable levels worked to some extent. However, the weather conditions and some other natural events that may affect agricultural production cannot be ignorable in planning the supply quantity. As experienced in the European Union, the recovering of supply in 2009 after drought caused low milk prices leading to the farmers' protests. Also in 2012, dairy farmers protested against the low prices arguing that the milk prices were not covering production costs,

and they demanded the continuation of the quota system. From the standpoint of the European Commission, a quota was not effective to control the production, and from their side the problem was the stagnant demand. European Commission also pointed out the reinstatement of export subsidies in milk products. European Union can dispose its oversupply or have better find ways to encourage demand like giving consumer subsidies such as school milk.

In Turkey, milk prices have been also a problem for the dairy farmers. Generally, production costs in the dairy sector are high, and feed costs make up the main production costs. The percentage increase in milk feed prices have been higher than milk price increase. Milk incentive premiums do not cover the main production cost: "feed cost". The producers can also be supported via producer organisations. Turkey is one of the biggest milk producers in the world but is not in the list of leading exporters. The producers may organise under producer organisations to bring the sector having an export potential and making the milk producers having a decent living standard. So, there is a need of efficient working producer organisation.

Another problem is that milk consumption is low. Consumer subsidy such as school milk was put into place to make children gain the habit of drinking milk. Although the project brought about problems in the first days of its application, it shall contribute to an increase in milk demand and to a balance between demand and supply.
This study also showed the harmonisation of Turkey's milk policy the European Union's milk policy. High milk prices, low number of milking animals per holding, subsistence animal-husbandry are the main problems in Turkey which shall make Turkey uncompetitive in the European market. In the near future, the milk sector may go on a reform process to overcome the problem of quota elimination and price uncertainty in the European Union. When we consider that the common agricultural policy is still on a reform process, it will be hard for Turkey to adapt its milk policy to a changing policy. For instance, Turkey has better to overcome the problems in the milk sector while converging to the EU's milk policy.

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