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## **Study on the Evolution of the Milk Market in Romania**

Lăcrămioara Alina DRACEA<sup>1</sup>

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### **Abstract**

*The last decade has been marked by a considerable increase in demand for dairy products on the Romanian market due to the modernization and development of the agricultural sector.*

*In the context of increasing the competitiveness of domestic producers towards foreign ones, it is necessary to analyse the evolution of the milk market and to perform an X-ray of the current situation in Romania, concretized by a SWOT analysis based on the indicators of performance of the milk chain.*

*This article aims to determine weaknesses, to identify ways and possibilities of expanding the Romanian milk market in terms of both production and income, using data provided by National Institute of Statistics and TRADE MAP and to offer a complete picture of the Romanian milk market potential.*

**Keywords:** milk market, consumption, dairy products, production, trade balance.

**JEL Classification:** Q11

### **1. Introduction**

Romania is the eighth largest country in the European Union in terms of the number of cows for milk, with about 1.16 million animals in 2018, according to Eurostat, but with the lowest yield in the Union, according to data published by the European Commission.

This is the consequence of the fact that the majority of dairy cows are on farms without legal personality, the most widespread being individual households.

The quantities of milk collected from agricultural holdings and collection centres by processing units in Romania increased by about 7% between January and April 2019 compared to the same period in the previous year. (Beciu, 2010)

In May 2019, the quantity of cow's milk delivered to processing units in Romania increased by 13.0% compared to April 2019 and by 0.3% compared to May 2018, informs the National Statistical Institute.

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<sup>1</sup> Bucharest University of Economic Studies, Bucharest, Romania, lacramioarav48@gmail.com.

The first five months of this year, the quantities of milk collected from agricultural holdings and collection centres increased by 5.3% compared to the first five months of the previous year, according to the same source. In the same period, January – May 2019, imports of raw milk by processors amounted to 44,533 tonnes, being almost 30% lower than in the same period last year.

The average price of milk in Romania is well below the European Union average (33.8 euro/100 kg) in May 2019, being among the lowest in the Union (28.7 euro/100 kg). Only Lithuania had a lower price, i.e., 28.1 euro/100 kg. (Redactia FIR, 2019).

The quantity of raw milk imported by processing units increased by 18.206 tonnes during the period 1 January - 31 May 2020 compared to the same period in 2019. One more reason for this increase was due to the development of the organic dairy market, caused by consumer awareness of the importance of choosing healthy foods.

On the dairy market, it is necessary to raise awareness of competition among farms both at national and European level. It is important to focus on adapting to constant market changes and price fluctuations. The increased level is determined by knowledge, training, current technical facilities, farm technology and management, milk quality, economic efficiency and competitiveness. (Fedorciucova, 2016)

## **2. Problem Statement**

The Common Market Organisation and the policy instruments for the milk and milk products sector have undergone a number of changes over the past 40 years, practically following the overall trend of the CAP, but compared to other sectors where reforms have been substantial, in this case the changes have been slower and have not targeted radical reforms.

The evolution of the global and European dairy market as well as the change in consumer preferences in the context of socio-economic development and diversification of production due to the introduction of new technologies, the influence of related sectors (beef and veal, arable crops and feed) that have undergone profound reforms of the political instrumentation in order to facilitate the connection of actors on those lines to real market signals will increasingly influence the milk production and processing sector, which are supported by policy instruments that no longer fit the current economic context. (Constantin, 2007)

Thus, the need for radical policy reform in this sector has become increasingly obvious and urgent.

At the end of 2007, the European Commission presented to the European Parliament and the Council the document entitled 'health control' of the Common Agricultural Policy. An important point in this document is the proposal to eliminate the milk quota from 2015.

The main concerns focused the possibility of concentration of milk production in areas where this activity entails lower costs and its disappearance from certain

areas (e.g. mountain areas). In order to avoid such a situation, it is necessary to create alternative policy instruments to maintain this activity in mountain areas.

Although Romania already has EU Member State status, it faces significant structural difficulties both in terms of the structure of farms in general (excessive shredding of agricultural holdings) and in terms of processing. Farmers, processors and traders must comply with EU milk quality standards and the rigours imposed by the Community *acquis* in the field. However, the situation of the milk production and processing sector in Romania is currently far from the model of the EU.

Milk production is one of the most important sub-branches of agriculture in Romania. Current milk consumption of about 0.7-0.8 litres per day does not meet the normal physiological requirement for the population's nutrition.

The literature presents food security scenarios for milk and milk products in the following models for the period 1989-2020:

- in the crisis scenario milk production increases but consumption is still unsatisfactory. It is noted that the consumption production model shows strong fluctuations and even decreases.
- in the pessimistic development scenario the production model has a more sustained growth, but the average consumption per capita does not increase satisfactorily and the consumption production model undergoes fluctuations, but there is an increase in 2020 compared to 1989.
- the moderate development scenario shows a sharper increase in both production and consumption. The production-consumption model for this scenario has an increased level in 2020, but there are the same fluctuations in 2010 and 2015; (Bercu, 2010)
- the ideal development scenario is that with the most pronounced increases in all parameters analysed as follows: in the production model in 2020 production will increase by 65%. Consumption as an annual average per capita will also increase by more than 65%, the consumption production model has a very high level of growth in 2020, but for the years 2010 and 2015 there are decreases.
- Romanian consumers are traditionalists when it comes to consumption of milk-based products, which are the categories that register the highest incidence in consumption. We want to identify the consumption of dairy products, starting from the idea "Consumption and production is not evenly distributed, so, in general, the large urban centres have high consumption" (Turek Rahoveanu et al., 2009).

### **3. Research Questions/Aims of the research**

Addressing a topical theme, the present paper mainly aims to analyse, at national level, the trends of the milk and milk products market in the European context and to highlight the need to adapt it to the standards.

The analysis is oriented towards clarifying the concept of the agri-food market, its peculiarities as well as the factors of influence. Aspects of supply and demand and the concepts underlying price and supply elasticity are also presented.

#### 4. Research Methods

This research is carried out based on the literature and activities in the agri-food sector of Romania. The research methods used are: observation, inference, analysis and synthesis.

This consists of comparing official data collected from the National Institute of Statistics, INTACEN and TRADMAP on the external milk supply, supply and trade in Romania and linking the results by analysing various case studies and articles addressing the same topic.

The analysis of statistical data is used to correctly and effectively assess the current situation in Romania regarding the dairy market, highlighting the need for awareness of competition among farms both at national and European level. It is important to focus on adapting to constant market changes and price fluctuations.

#### 5. Findings

The performance of the Romanian agricultural sector is low. The lack of competitiveness is reflected by the low level of labour productivity, low economic growth and a deficit in agri-food trade balances, as agriculture and the food industry fail to keep up with rising demand for food, being driven by rapid overall economic growth and unable to cope with foreign competition, especially in the EU.

##### 5.1. Supply

In terms of milk production, 90% of milk producers in Romania own 1-3 cows with an average yield per cow of 3,860 litres/year, while in milk-producing countries such as Germany or France, this figure increases to 7,000 litres/cow. Out of the 5 million tonnes of milk produced in Romania, only 1.3 million tonnes meet EU quality standards.

At national level the situation is presented as follows:

**Table 1. Livestock of cows, buffalo, sheep and goats at national level**

Categories of animals (number)	2013	2014	2015	2016	2017	2018
Cows and buffalo	1,168,859	1,188,203	1,190,758	1,192,543	1,175,163	1,158,008
Sheep	9,135,678	9,518,225	9,809,512	9,875,483	9,981,859	10,176,400
Goats	1,312,967	1,417,176	1,440,151	1,483,146	1,503,270	1,539,317

*Source:* National Institute of Statistics (www.insse.ro)

According to the data processed in the table 1, it can be noticed that in general farmers focus on the growth of sheep herds, which are the most widespread in households. Thus, sheep herds exceed almost nine times goat herds nationwide. Comparing cows and buffaloes with goats, we can say that the latter are more common in people's households, being easier to maintain.

The largest number of cows and buffaloes was 1,192,543 animals in 2016, with values keeping constant. Regarding goats, they register annual increases, from 1,312,967 animals in 2013 to 1,539,317 animals in 2018. The number of sheep in the household is also increasing from one year to the next, resulting in an increase from 9,135,678 animals in 2013 to 10,176,400 animals in 2018.

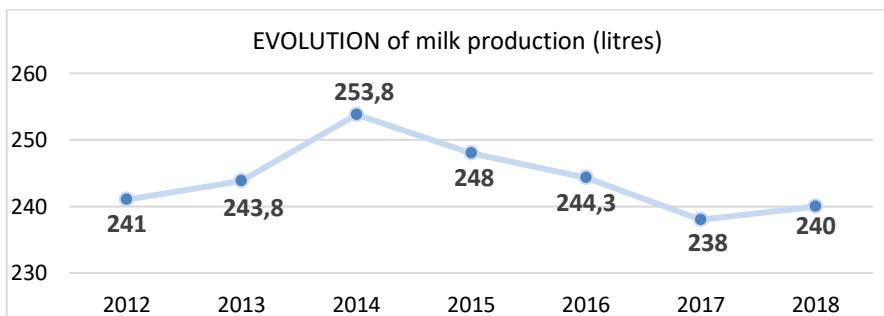
**Table 2. Milk production – thousand hectolitres**

Milk production	2013	2014	2015	2016	2017
Cow and buffalo	38,652	40,096	38,893	38,392	37,030
Sheep and goat	6,135	6,520	6,493	6,113	6,051

*Source:* National Institute of Statistics (www.insse.ro)

In terms of milk production, there is a very large difference between the production of cow's milk and the production of sheep's milk and goat's milk, the difference being 1 to 5. The production of sheep and goat milk varies between 6,113 and 6,520 thousand hectolitres, and the production of cow's milk and buffalo has values between 37,030 and 40,096 thousand hectolitres.

A herd of about 1,175,168 cows and buffaloes offer a production of 3,703,000 thousand litres of milk, respectively 3.15 thousand litres of milk/cow. For a herd of 11,485,129 sheep and goats, 6,051,000 thousand litres of milk and 19000 litres of milk/goats are obtained.



**Figure 1. Romania's milk production evolution per capita**

*Source:* adapted from National Institute of Statistics

Thus, up to 253.8 litres of milk are obtained per consumer, this maximum value being recorded in 2014, and the lowest milk production was obtained in 2012, as well as in 2018.

## 5.2. Demand

By definition, milk is a nutrient-rich liquid. The most commonly consumed types of milk come from cows, sheep and goats. Western countries most commonly consume cow's milk.

Milk is a rich source of protein, which is necessary for many vital functions in the body, including growth and development, cellular repair and regulation of the immune system.

Milk is considered a 'complete protein' because it contains all 9 essential amino acids needed for the body to function at an optimal level. There are two main types of protein found in milk - casein and whey protein. Both are considered high quality proteins.

**Table 3. Average monthly consumption of milk and dairy products**

Main consumer foods	2013	2014	2015	2016	2017	2018	2019
Milk (litres)	5.870	5.794	5.835	5.813	5.768	5.632	5.523
Cheese and sour cream (kg)	1.354	1.369	1.287	1.337	1.464	1.519	1.524
Other milk products (kg)	0.266	0.269	0.179	0.209	0.296	0.307	0.310

*Source:* National Institute of Statistics ([www.insse.ro](http://www.insse.ro))

According to table 3, of the total milk production, the Romanians prefer to consume especially milk as such, less products obtained from milk. Thus, it consumes on average 5.5-5.8 litres of milk per consumer, 1.28-1.52 kg of cheese and sour cream and less than 300 g of other products obtained from milk.

**Table 4. Expenses with the purchase of milk, by social categories**

Main social categories	2013	2014	2015	2016	2017	2018	2019
Employees (Ron)	16.55	16.71	16.64	17.03	17.41	19.16	19.93
Farmers (Ron)	5.49	5.15	6.89	7.34	7.91	8.12	8.57

*Source:* National Institute of Statistics ([www.insse.ro](http://www.insse.ro))

For the purchase of milk, the highest household expenses is for employed persons, as they purchase milk especially from supermarkets at quite high prices.

For people carrying out their activities in the agri-food field, expenditure is 3 times smaller because they do not spend money on the purchase of milk, but they produce it themselves in their own households.

Thus, if employees pay a price of about 16 lei/person/month for the purchase milk, farmers pay between 5 and 8 lei/person/month.

### **5.3. Foreign trade**

#### **5.3.1 Import**

The latest statistics of the National Institute of Statistics show that in the first five months of the year, the import of raw milk increased by almost 41%.

Thus, in January-May 2020, the production of consumer milk increased by 12% (16,677 tonnes) to 155,766 tonnes, while processing units collected 1.9% (9,147 tonnes) less cow's milk compared to the same period the previous year, respectively 468,901 tonnes.

According to the National Institute of Statistics, there have been increases in the production within the dairy area as follows: butter by 791 tonnes (+17.5%), milk consumption by 16,677 tonnes (+12%), acidified milk (yogurt, drinking yogurt, buttermilk and other similar dairy products) by 3,205 tonnes (+3.4%) and sour cream consumption by 235 tonnes (+0.8%).).

The quantity of raw milk imported by processing units increased by 18,206 tonnes (+40.9%) during the period 1 January - 31 May 2020 compared to the same period in 2019. On the other hand, cheese production decreased by 497 tonnes (-1.2%).

**Table 5. Imports of milk**

<b>Year</b>	<b>Imported quantity (tonnes)</b>	<b>Import value (euro)</b>	<b>Price (euro/tonne)</b>
2015	150,938	60,275	0.39
2016	190,709	74,672	0.39
2017	207,975	97,462	0.46
2018	191,517	86,594	0.45
2019	182,587	86,587	0.47

*Source:* TRADEMAP – INTERNATIONAL TRADE STATISTICS ([www.trademap.org](http://www.trademap.org))

The Romanian milk and dairy market has seen significant changes in recent years and is expected to increase in the coming period. The most important event that influences the market is Romania's integration into the European Union. In the structure of expenditure for food, milk and dairy products occupy the third position (18%) after meat and bread. With the exception of cheese, Romania is a net importer of dairy products.

The average price of milk in the European Union fell at the farm gate in January, by 0.7% compared to the previous month, to 35.34 euros/100 kg (35.34 c/kg), according to data published by the European Commission.

In Romania, the average consumer price, slightly increasing for milk and butter, remained relatively stable in February compared to January, but slightly increased compared to December 2019, by 0.56%. Cow's milk had the same development, with a stable average price in February compared to January and slightly increasing by 0.57% compared to December 2019. The price of butter increased in January, on average, by 0.94% compared to December 2019, while in February it increased by 1.4% compared to December 2019 and by 0.1% above the average level of the previous month.

### **5.3.2 Export**

Our country imports over 8,000 tonnes of butter and 70,000 tonnes of cheese, which is why exports are insignificant.

In the first five months of this year, Romania's exports of live food and animals to the European Union (EU) decreased by 1.5% compared to the same period in 2018, while imports had an advance of 13%. In the first four months of 2019, the decrease in exports in trade relations with the EU was 4.3% compared to the same period of the previous year, while imports increased by 13.3%, according to data released by the National Institute of Statistics.

**Table 6. Export of milk**

<b>Year</b>	<b>Exported Quantity (tonnes)</b>	<b>Export Value (euro)</b>	<b>Price (euro/tonne)</b>
2015	33,837	18,279	0.54
2016	47,152	22,622	0.48
2017	59,962	28,803	0.48
2018	70,969	35,494	0.50
2019	58,319	35,148	0.60

*Source:* TRADEMAP – INTERNATIONAL TRADE STATISTICS ([www.trademap.org](http://www.trademap.org))

Between January and April 2019, Romania exported to the European Union 20 tonnes of butter, which is an increase by 19% compared to the same period the previous year, 3,494 tonnes of cheese, which is an increase of 17% compared to the same period the previous year, 38 tonnes of milk powder, 54 tonnes of milk powder skimmed.

### **5.3.3 Trade Balance**

The deficit of international trade in food products, particularly in relation to the European Union, has continuously deepened in recent years. The increase in demand for food products, supported by revenue increases on the one hand, and reductions in food VAT on the other hand, is largely covered by imports. The National Bank also indicates some of the reasons that maintain this situation:



excessive fragmentation of farms, continuous reduction of livestock, insufficient collection, storage and transport spaces.

Trade between Romania and EU Member States for the main dairy products is relevant because it contributes a significant share to the total trade deficit.

**Table 7. Trade Balance**

Year	Imp/Expo	Quantity (tonnes)	Balance	Value (euro)	Balance
2015	Import	150,938	-116,801	60,275	-41,996
	Export	33,837	Unfavourable	18,279	Unfavourable
2016	Import	190,709	-145,557	74,672	-52,050
	Export	47,152	Unfavourable	22,622	Unfavourable
2017	Import	207,975	-148,013	97,462	-68,659
	Export	59,962	Unfavourable	28,803	Unfavourable
2018	Import	191,517	-120,548	86,594	-51,100
	Export	70,969	Unfavourable	35,494	Unfavourable
2019	Import	182,587	-124,268	86,587	-51,439
	Export	58,319	Unfavourable	35,148	Unfavourable

Source: International Trade Centre ([www.intracen.org](http://www.intracen.org))

According to table 7, trade balance was calculated as the difference between export and import, obtaining strictly negative values, respectively a passive (deficient) balance.

In the first half of 2019, Romania exported 20 tonnes of butter to the European Union, but during the same period it imported 3,450 tonnes from EU member countries, an increase by 19% compared to the same period the previous year, and in 2018 it exported 360 tonnes of butter to EU countries and imported 8,337 tonnes from the Community area, according to data centralised by the European Commission.

In May this year, Romania's butter production decreased by 232 tonnes (-22.8%), compared to the previous month, reaching 785 tonnes and it was by 107 tonnes lower (-12.0%) than in the same month of the previous year. Cumulatively, during the first five months of this year, Romania's butter production recorded a slight increase, by 1.4%, compared to the same period in 2018, reaching 4,510 tonnes, according to data communicated by the National Institute of Statistics (INS).

Romania exported 3,494 tonnes of cheese to the Community area in the first four months of this year, representing 24,040 tonnes, an increase by 3%, and in 2018, exported 12,592 tonnes and imported 69,980 tonnes.

Between January and April 2019, Romania exported 38 tonnes of milk powder to EU member countries, a drop by 62% compared to the same period of the previous year, and imported 386 tonnes, a decrease by 35%. In 2018, it exported 408 tonnes to the Community area and imported 1,830 tonnes.

As regards skimmed milk powder, 54 tonnes were exported, a decrease by 58% compared to the same period the previous year, and 2,102 tonnes were imported, a decrease by 22%. In 2018, 314 tonnes of skimmed milk powder were exported to the Community area and 6,745 tonnes were imported.

## **5.4 SWOT Analysis**

### **Strengths:**

- Introducing the milk quality assurance system.
- The preponderance of private capital motivates the development of profitable activities to obtain milk production.
- Increased production of processed milk and dairy products.
- The wide range of products offered to consumers, including organic and traditional dairy products.
- Low costs of obtaining milk production

### **Weaknesses:**

- Addiction to private milk producers.
- High level of self-consumption (40% of the total milk consumption).
- Lack of concentrated supply of milk.
- Major deficiencies in the quality of milk and milk products from certain categories of economic agents.
- The raw material, milk, which varies quantitatively from one season to another, prints this phenomenon of seasonality to the majority of companies within the line (with special reference to processing).

### **Opportunities:**

- High potential market of about 20,000,000 people.
- The milk quota negotiated by Romania with the European Union.
- Orientation of agricultural producers towards organization in cooperatives.
- The orientation of the population's consumption towards natural, healthy, mineral-rich products, favours the consumption of milk and dairy products.
- Entering new markets especially in the post-accession period.

### **Threats:**

- The rising cost of raw material.
- Lack of mechanisms to encourage cooperation among producers on the milk line, including facilitating market access.
- Lack of market information for milk producers.

- Massive penetration of imports of quality dairy products on the Romanian market.
- Acceptance of a poor level of quality in milk and dairy products can undermine the sector's efforts to raise milk production standards.

## **6. Conclusions**

The concept of competition has emerged as a new paradigm in economic development.

Competitors are aware of both the limitations and challenges of global competition at a time when effective government action is limited by budgetary constraints and the private sector faces significant obstacles to competition in domestic and international markets.

Competitiveness is a company's ability to provide products and/or services that can meet the quality of local and global standards, offering competitive prices and providing high revenues for the resources used in the production process. Competitiveness is the degree to which a nation, region or city can provide a high quality of life to its inhabitants.

In terms of milk production, 90% of milk producers in Romania hold 1-3 cows with an average cow production of 3860 litres/year, while in milk-producing countries such as Germany or France, this figure increases to 7000 litres/cow. Of the 5 million tonnes of milk produced in Romania, only 1.3 million tonnes meet EU quality standards.

A herd of approximately 1,175,168 cows and buffaloes offers a production of 3,703,000 thousand litres of milk, respectively 3.15 thousand litres of milk / cow. For a herd of 11,485,129 sheep and goats, the production is 6,051,000 thousand litres of milk, respectively 1.9 thousand litres of milk/goats.

Romania imported 182,587 tonnes of raw milk in the first 11 months of 2019, an increase by 5.13% compared to the same period of 2018 according to the National Institute of Statistics.

If a country exports a value greater than that imported, it has a commercial surplus or a positive trade balance and, conversely, if a country imports a value higher than that exported, has a trade deficit or a negative trade balance. Since 2016, about 60 of the 200 countries have a commercial surplus.

From the point of view of milk production, there are two types of farms: establishments producing for the delivery of milk for processing and farms producing for the direct sale of milk for consumption and for their own consumption.

In order to make this sector more efficient, specialized studies recommend the following:

- The association of producers may be a solution in the future to reduce costs;
- In the development of this segment, a decisive role will be played by the capacity to finance from sources in view of achieving rural development;

- For some manufacturers there can be a real in gain diversifying activities through specific products and adjacent concerns offered by the rural area, such as rural tourism, organic products.

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