

RESEARCH ON THE TRENDS IN MILK PRODUCTION AND CONSUMPTION IN ROMANIA

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Abstract

The purpose of the paper was to analyze the main trends in the milk and dairy products market in Romania in the period 2007-2012 and to set up the forecast for the 2013-2015 horizon, based on the empirical data provided by the National Institute of Statistics and Eurostat and using the fixed basis index, average change method, and comparison method. Milk production for consumption reached 210 thou tons in 2012 registering a descending trend. Despite that milk production decreased in the period 2007-2012, the production diversification applied by dairies supported the growth of dairy products output as follows: by 13.54 % for milk, by 3.45 % for sour cream, and by 13 % for butter. The forecast for the year 2015 provides that the production of dairy products will account for: 223,936.6 tons milk for consumption, 48,709.4 tons sour cream, 166,674.2 tons acidulated milk, 9,937.6 tons butter and 66,584.4 tons cheese. The development of milk processing imposes the improvement of production technologies, products quality, efficiency and competitiveness. Due to the unbalanced demand/offer ratio, after the elimination of milk quota, the Romanian milk and dairy products market will be invaded by foreign products.

Key words: dairy products, market, milk, Romania, trends

INTRODUCTION

Milk is a strategic product in any country as it is a basic food for children and adults. The demand for milk and dairy products has continuously increased, but the offer is not sufficient to cover the needs of the world population.

Milk supply is in a continuous decline due to small number of specialized farms market oriented, the low production performance, and milk quality which does not compile with the EU requirements. So, the imports of milk and dairy products were required to cover the population and industry needs.

The areas with the highest contribution to Romania's milk production are the Central region and North East region, fresh dairy products are mainly carried out in the Central and South Muntenia and Bucharest and Ilfov County and cheese production is especially achieved in the North-West, Central and North Eastern Romania.

In this context, the paper aimed to analyze Romania's milk and dairy products market in order to identify the main trends in the period

2007-2012 and establish a forecast for the 2013-2015 horizon.

MATERIALS AND METHODS

The empirical data were collected from the National Institute of Statistics Data Base, EuroStat data base, journals, food industry communications.

The main indicators taken into consideration to analyze the milk and dairy products market were the following ones: milk processing, milk and dairy products production for consumption, milk consumption for industrial purposes, consumer price index for milk and dairy products. The period of reference was 2007-2012.

The main methods used to process the data have been: the fixed basis index method and the comparison method. and also the average change method used to set up the forecast for the period 2013-2015. In this purpose, the chronological series needed the adjustment, based on the average change index, according to the formula: $Y_{t_i} = y_{t_0} - n \bar{\Delta}$, Y_{t_i} = the adjusted value of the variable in the year i ,

y_{t0} = the real value of the variable in the year zero, $n = 1, 2, 3, \dots, i, \bar{\Delta}$, was calculated with the formula $\bar{\Delta} = (\sum \Delta) / (n-1)$, where $\Delta =$ annual change, $y_1 - y_0; y_2 - y_1; \dots, y_n - y_{n-1}$, where $i = 1, 2, \dots, n$ years of the chronological series. [6]

RESULTS AND DISCUSSIONS

Milk processing. About 22 % of marketed milk is directly delivered to milk processors, while about 78 % is consumed on farm (38% for family consumption and 8% for calves' feeding) and commercialized in the market by producers (32%). This aspect places Romania on the last position in the EU. In the EU over 91 % milk is delivered to milk processing industry, directly or by means of a milk collection centre. Romania and Bulgaria are on the last position from this point of view, because most of the produced milk is used on the farm. [7]

In 2012, a number of 1,464 specialized farms (1.30 %) was accepted to deliver milk directly to dairies. The amount of raw milk sold to milk processors declined in the period 2007-2012 by 21.5%, and in order to cover the dairies' need, the raw milk import increased by 35 %.

In the same year, the number of collecting centers totaled 1,613 and the number of dairies accounted for 512, by 38% less than in the year 2000, because they could not assure they milk input or had financial problems or did not meet to the EU requirements regarding quality management. [3]

The lack of raw milk in the market for milk processors is due to the orientation of small producers to direct selling in the market looking for a better price as the price offered by milk processors is small and sometimes do not cover production cost or assure just a very small profit. [5]

The top milk processors in Romania are SC Danone PDPA, Albalact SA, SC Friesland Campina Romania SA Cluj and SC Napolact SA Cluj-Napoca, clearly dominating the market of drinking milk products and having an excellent distribution.

At present, a number of only 168 dairies is approved by N.A.S.V.F.S. to produce and export milk and dairy products which comply with hygiene and sanitary standards. [8]

Production of dairy products. The most important dairy products there are milk for consumption, powdered milk, fresh sour cream, acidulated milk, butter, cheese, process cheese.

A large variety of dairy products are achieved with different hygiene requirements and challenges from UHT liquid milk, yoghurt, cheese, ice cream to desserts.

In 2011, the share of various dairy products in the production was the following one: 15.6 % milk, 25.6 % yoghurt, 39.5 % cheese and 19.3 % others. [12]

In 2012, milk production for consumption accounted for 208,109 tons, while the raw milk production collected by dairies was 870,286 tons. [2]

In the period 2002-2012, Romania produced: 393,036 tons milk for consumption, 282,628 tons sour cream, 793,307 tons acidulated milk, 55,692 tons butter, and 398,843 tons cheese.

The production of milk for consumption increased by 13.54 % from 184,055 tons in 2007 to 208,981 tons in 2012. The production of sour cream increased by 3.45 % from 46,159 tons in 2007 to 47,753 tons in 2012. The acidulated milk production increased by 17.66 % reaching 151,903 tons in 2012 compared to 129,951 tons in 2007.

The butter production increased by 13.09 % accounting for 9,292 tons in 2012 in comparison with 8,216 tons in 2007.

Cheese production declined by 0.68 % from 67,314 tons in 2007 to 66,858 tons in 2012. (Fig.1.)

In 2007, Romania's production of milk and dairy products totaled over Euro million 129. Production of milk and dairy products is higher than in other EU states. [11]

In 2015, it is expected as the production of dairy products to reach: 223,936.6 tons milk for consumption, 48,709.4 tons of sour cream, 166,674.2 tons acidulated milk, 9,937.6 tons butter and 66,584.4 tons cheese.(Fig.1.)

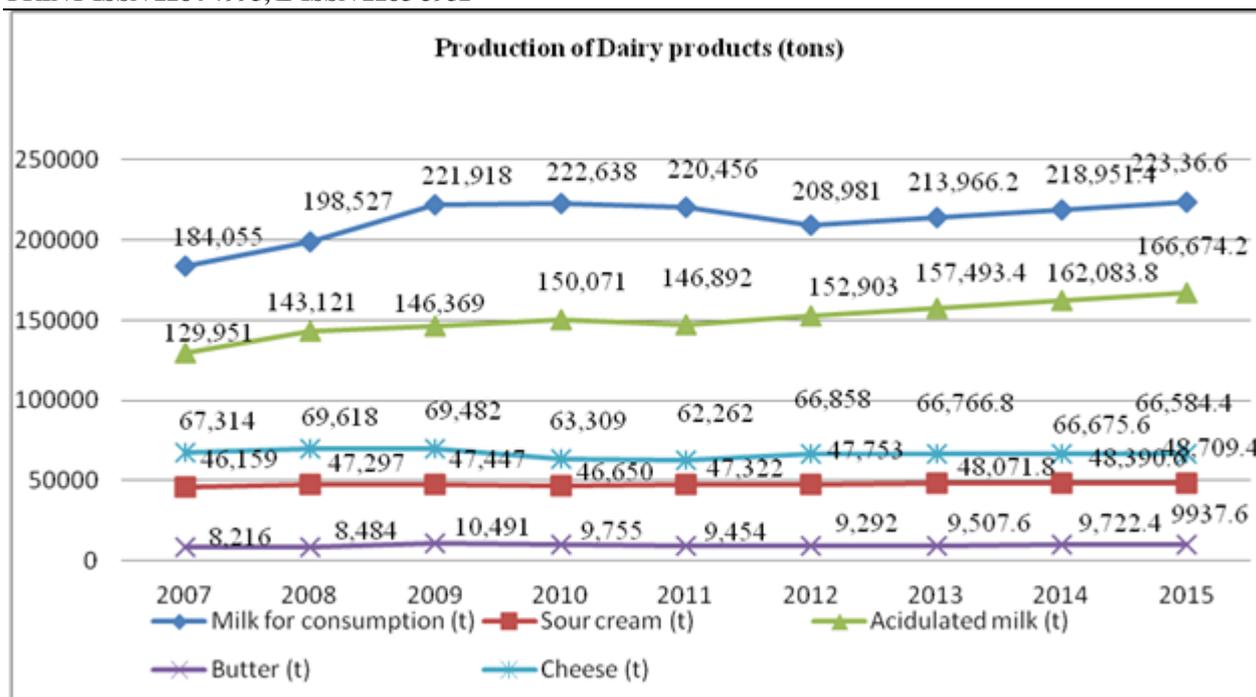


Fig.1. The evolution of the production of dairy products: milk for consumption, sour cream, acidulated milk, butter and cheese in the period 2007-2012 and the forecast for the 2013-2015 horizon. Own design based on NIS, 2008, 2010, 2012, Collected milk and dairy products. [4]

Milk consumption declined by 13.74 % from 67,563 thou hl in 2007 to 58,241 thou hl in 2012. Human milk consumption represented about 80 % of total milk consumption and

also registered a decrease by about 13.77 % from 54,445 thou hl in 2007 to 46,952 thou hl in 2012. (Table 1)

Table 1. Milk consumption, 2007-2012 (Thousand hl)

	2007	2008	2009	2010	2011	2012	2012/2007 (%)
Milk consumption, total, of which:	67,563	67,883	65,988	58,875	60,340	58,241	86.26
Human milk consumption	54,445	54,761	50,063	47,998	48,616	46,952	86.23
Share (%)	80.58	80.66	75.86	81.52	80.57	80.61	-

Source: NIS, 2013, Food Balance. [10] Own calculations.

The evolution of human milk consumption is illustrated in Fig.2. where also it could be seen the forecast for the period 2013-2015. So, in 2015, it is expected as human consumption of milk to account for 53,246.12 thousand hl.(Fig.2.)

Milk consumption per inhabitant decreased by 12.87 % from 260.4 liters/capita in 2007 to 226.9 liters/capita in 2012. (Fig.3.).

Liquid fresh milk consumption per inhabitant decreased by 11.51 % from 113 kg/capita 2007 to 100 liters/capita in 2011. (Table 2).

Liquid fresh milk consumption in Romania is higher than the EU-27 average (64 kg/capita), and also higher compared to other EU countries such as: Bulgaria (8 kg/capita),

Lithuania (31 kg), Luxembourg (35 kg), Greece (37 kg), Poland (42 kg), the Netherlands (49 kg), Hungary (51 kg), Germany (54 kg), Italy (57 kg), Czech Rep. (58 kg), but lower compared to milk consumption in Estonia (140 kg), Finland (126 kg), Ireland (128 kg), Latvia (83 kg). [1] Milk consumption of industrialized milk is very low in Romania, accounting for 12.6 kg/capita/year, representing 37.61 % of the average consumption in Europe (33.5 kg/capita/year) and 18.66 % of the milk consumption in the Western European countries (67.5 kg/capita/year). This quantity placed Romania on the last but one position in Europe. [3, 4]

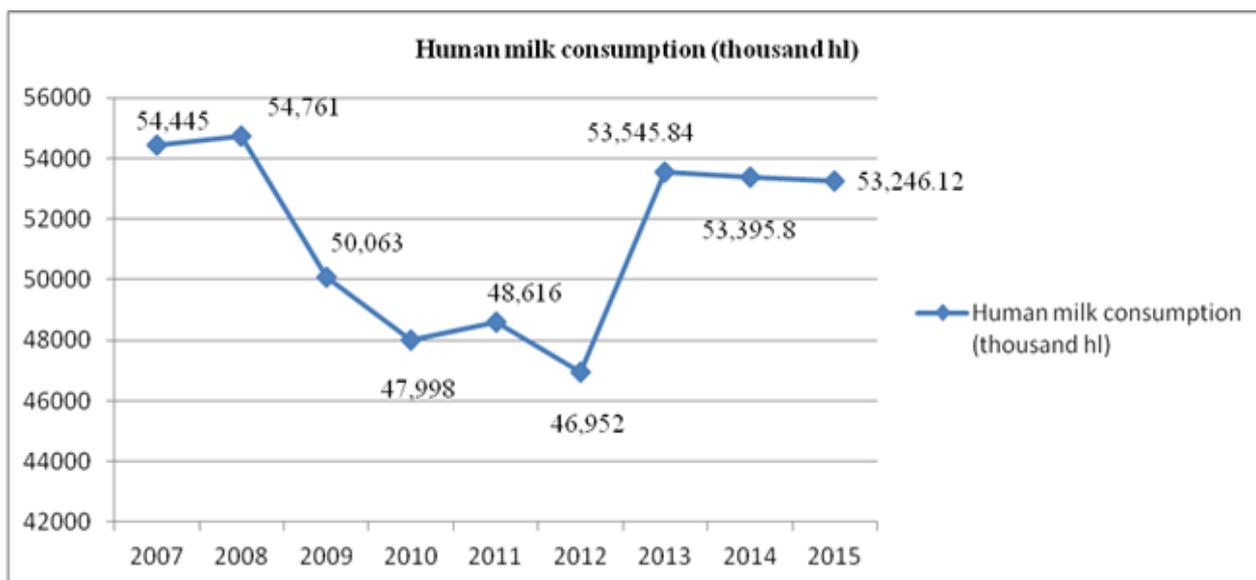


Fig.2. Evolution of human milk consumption in the period 2007-2012 and the forecast for the 2013-2015 horizon. Own design based on NIS, 2013, Food Balance. [10]

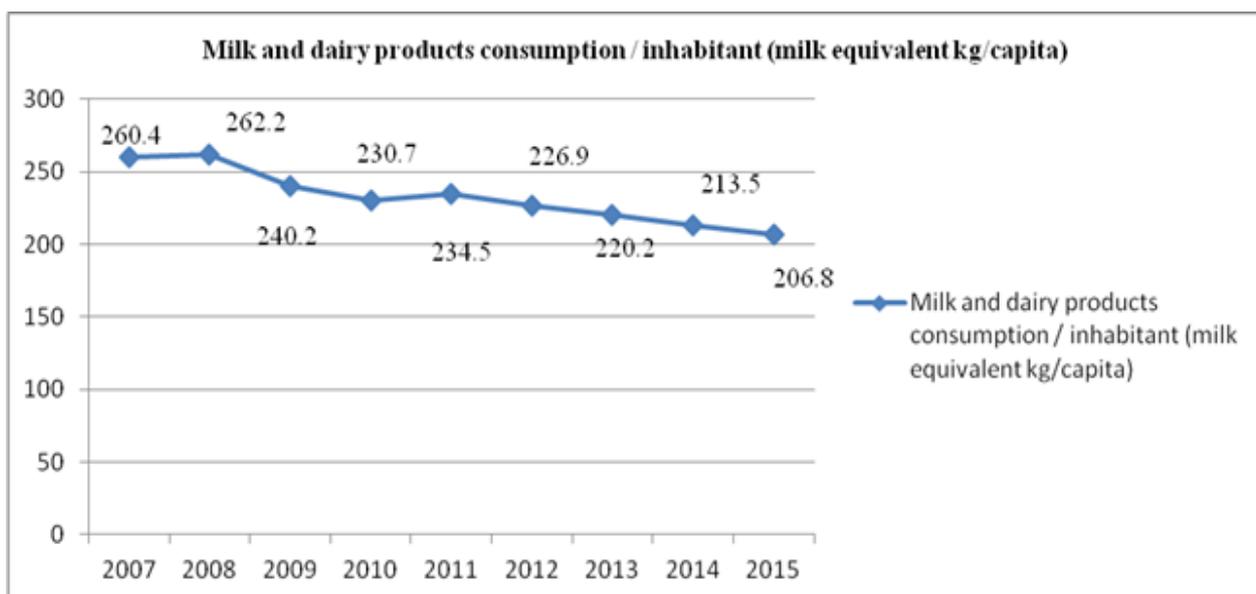


Fig.3. Evolution of milk and dairy products consumption per inhabitant (milk equivalent, kg/capita) in the period 2007-2012 and the forecast for the 2013-2015 horizon. Own design based on NIS, 2013, Food Balance. [10]

Table 2. Liquid fresh milk consumption per inhabitant (kg/capita)

	2007	2008	2009	2010	2011	2011/2007
Liquid fresh milk consumption per inhabitant	113	105	100	100	100	88.49

Source: AGRI-2012-c4-04 Analysis on future developments in the milk sector, EU Commission, Final Report, 2014[1]

Table 3. Milk consumption for industrial processing purposes, 2007-2012 (Thousand hl)

	2007	2008	2009	2010	2011	2012	2012/2007 (%)
Milk consumption, industrial purposes	1,561	1,385	1,750	1,774	1,984	1,883	120.62

Source: NIS, 2013, Food Balance. [10] Own calculations.

Milk consumption for industrial processing purposes increased by 20.62 % from 1,561 thou hl in 2007 to 1,883 thou hl in 2012. (Table 3)

Consumer price index for milk and dairy products. In Romania, in general, the price for milk and dairy products varied from a year to another, but the highest increase was recorded in 2008 (+11%) and the lowest one in 2010 (+1.49 %).

Milk price recorded lower growths compared to the price of the group of milk and dairy

products. The highest increase of milk price (+10.49 %) was registered in 2008 and the lowest growth (+1.32 %) in 2010.

Cow milk price recorded the highest growth (+18.99 %) in 2008 and the lowest one (-0.77 %) in 2010.

Therefore, the year 2008, at the beginning of the economic crisis, consumer price index registered the highest increase, while in 2010, the gains were more relaxed.(Table 4)

Table 4.Consumer price index for milk and dairy products (%)

Previous year=100

	2007	2008	2009	2010	2011	2012
Milk and dairy products	104.62	111.00	105.83	101.49	104.56	102.74
Milk total, of which:	104.38	110.49	103.95	101.32	104.05	102.23
Cow milk	107.75	118.99	108.79	100.77	106.62	103.10

Source: NIS, 2013, Romania's Statistical Yearbook. [10]

In 2007, the price of dairy products varied depending on product as follows: USD 1.5-3.5 per milk liter, USD 0.45-0.75 per 150 g yoghurts, USD 1.5-4.0 per kefir liter, USD 5.0-8.0 per sour cream liter, USD 10–20 per cheese kg, USD10-20 per butter kg. [11]

CONCLUSIONS

Milk supply is assured both from the domestic production but also from import in order to cover the processors capacity of processing.

The origin of the consumed fresh milk is either a farm or the shelves of supermarkets or small shops. The packaged milk is mainly bought and consumed in the cities.

The most popular dairy products among consumers are fresh/pasteurized milk and fresh dairy products (yoghurts).

Diversification of the production of dairy products is an alternative for extending the market and maintain the profitability of the dairies.

The invasion of dairy products expected to come after the abolition of milk quota starting from April 2015 will deeply affect both the Romanian farmers producing raw milk and also the milk processors which could not compete with the products coming from countries where milk and dairy products are produced at a lower cost.

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