

EVOLUTION OF SUPPLY AND DEMAND OF WHEAT IN ROMANIA

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Abstract

The paper aimed to present the evolution of supply demand and of wheat in Romanian market. It is based on the statistical data provided by National Institute of Statistics and European Statistics (Eurostat). The data have been processed into the following indicators: cultivated surfaces, obtained production, consumption per capita. Wheat production is correlated with seeding surface, but, sometimes paradoxes appear, where even if the cultivated surface is large the production is low. During the analyzed period, cultivated surfaces remained constantly; the production has continuously increased, so that in the year 2013 there are 7,383 million tonnes of wheat in Romania. As a conclusion, Romania is able to support domestic demand for wheat and can also export a significant amount of this grain.

Keywords: evolution, Romania, wheat demand, wheat offer

INTRODUCTION

Wheat is unique. Of all the seeds in the plant kingdom, the wheat grain alone has the gluten proteins capable of forming the fully elastic dough required to bake leavened bread. These gluten proteins are also needed to make the great variety of foods that are associated with wheat around the world [1]. This unique property is the reason why over 2 million hectares of wheat plants are cultivated in Romania, producing well over 7 million tonnes of grain. This level of wheat production is equivalent to an average of nearly 165 kg of grain per person per year. However, in practice, this theoretical estimate is meaningless, since the regions of wheat production differ from the populations in need of the grain. Furthermore, wheat is one of the most important food plants cultivated in many countries, feeding 35-40% of the world population and is an important source of trade [2]. The main use is for the manufacture of bread and various products that are made from flour, and stems (straw) remaining after harvesting have multiple uses: raw material for manufacturing of pulp, bedding, feed, organic fertilizer, incorporated into the soil

itself, immediately after harvest or after being subjected to a composting process [5]. Also, wheat is used as raw material for various other industrial products (starch, gluten, alcohol, bioethanol used as fuel).

MATERIALS AND METHODS

In order to characterize the offer evolution (wheat production) and the demand, the following indicators were used: cultivated surfaces, obtained production, consumption per capita, the coverage of consumption needs. The period analysed in this study is 2007-2013. The data, collected from National Institute of Statistics and Eurostat, have been statistically processed and interpreted, building the trend.

RESULTS AND DISCUSSIONS

National *wheat supply* is required both by the need to ensure food security and the desire to trade in cereals. Seen through the prism of supply of wheat, regardless of historical period analyzed, the share of the arable crop yields per unit area emphasizes its socio-economic position. This, especially for the

fact that it is a cereal considered noble, requested for export. The offer is composed of factors that condition it and are directly correlated with the yields achieved, the cultivated areas and yields per hectare. Wheat production holds a priority place in Romania's agriculture; so that the wheat is cultivated on an area of 2.2 million ha (18 to 25% of arable land). Wheat production, last year, was about 5.2 million tonnes. The cultivated area was about 2 million hectares, resulting in a yield of the crop of 2.6 tonnes per hectare. In the long term, area planted with wheat will decrease as a result of improving the qualitative structure of household consumption on account of animal products. An amount of about 1.5-2.0 million tonnes can be exported annually.

Table 1. The cultivated area with wheat and wheat production in Romania during the period 2008-2013

Specification	2008	2009	2010	2011	2012	2013
Cultivated area(1000ha)	2.110 .3	2.148 .8	1.994 .4	1.979 .8	1.992 .2	2.128 .9
Total production (1000t)	7.181	5.202 .5	5.587 .5	7.192 .2	5.297 .7	7.383 .5
Yield (average yield per ha – 100kg/ha)	34	24,2	28	36,3	26,6	34,7

Wheat production has been an uneven evolution throughout the analyzed period, climatic conditions, the quality of seedlings and compliance with the technology culture having a decisive influence. The minimum was recorded in 2009 when production decreased by about 2 million tons from the previous year, and the maximum in 2013 (over 7.3 million tonnes). However, total production has fluctuated, ranging between 5-7 million tons annually. Compared with the European Union, in terms of production, we are far enough, because in the year 2012, for example, we had a yield of 25 times smaller. On the other hand, although it seems that we have the lowest yield of production in the EU, there have been years (2011, for example), in which the yield has been more than half of that of the EU.

The demand for wheat is expressed through household consumption of wheat, flour and bakery products.

Table 2. Annual average consumption of wheat in grains equivalent, per capita, in the period 2007-2011(kg)

2007	2008	2009	2010	2011
168	166,7	163,5	162	165,6

Annual average consumption of wheat and rye (the biggest share being wheat) per capita has a linear trend over the period, being situated around 160 kg, higher values explained by the fact that cereals are the basis for human food. In the last year analysed (2011), the consumption has increased by 1 percent from 2010. Average consumption of cereals has been increasing until 2005, after that date, consumption started to decrease; in 2011 it reached 165.6 kg (1.5% less than in 2007) [6]. This evolution has taken place on the fund to stimulate the consumption of seed and industrial use, but also to lower consumption of animal feed.

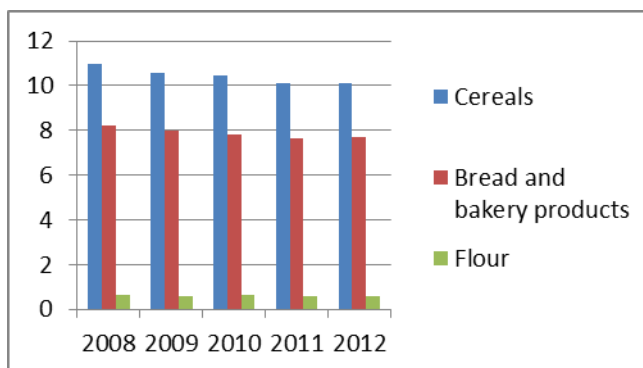


Fig.1. Dynamic of wheat products purchased by a household

A large quantity of bread and bakery products was purchased by a household throughout the period in question, on average, 8 kg – but which shows a gradual decrease also cereals per total. Instead, the quantity of flour purchased has a linear evolution. The concern for a healthier diet has led to this aspect.

Possibility in which domestic production would cover consumption needs is above average because, as is illustrated in the calculations from the following table, are

available, on average, 56 tonnes of wheat per person.

Therefore, the necessary consumption for the period analysed, is smaller than the total wheat production.

Table 3. Coverage of the consumption needs

1. Specifications	2. 2007	3. 2008	4. 2009	5. 2010	6. 2011
7. Consumption needs in Romania (tonnes)	3.622.939,9	3.588.822,121	3.515.023,7	3.476.874,132	3.546.127,7
8. Total wheat production (tonnes)	7.100.000	7.181.000	5.202.500	5.587.500	7.192.200
9. Coverage of the consumption needs (t/pers)	51,03	49,98	67,56	62,23	49,31

So, the internal production can sustain also the population consumption and exportation without deficits. The share of the consumption in total output was the highest in 2009, it was 67%, but this was because this year was a low production. Instead, in 2011, when production was the highest, consumptions needs accounted for only 49% of total internal production.

Wheat offer at regional level. At this level, the highest wheat production was obtained in the West region, in 2012, followed by the North-West region. It can be seen that these two regions are those where production is the most efficient, but during the period analyzed these values are varying. Thus, in 2008, the South East region presents the highest wheat production (3572 tons / ha) in the next year this region presents the lowest production per hectare compared to other regions (2,142 tons / ha to 2,806 tons / ha for the West region) [7].

South-West	3054	2607	2478	3219	2396
West	3437	2806	2993	4032	3878

Table 4. Wheat production in development regions

Regions	Years				
	2008	2009	2010	2011	2012
UM: Kg/ ha					
North-West	3445	2228	2920	3620	2968
Centre	3283	2789	2753	3656	2647
North-East	3205	2615	2696	3366	2317
South-East	3572	2142	2725	3732	2353
South-Muntenia	3535	2330	2621	3822	2669
Bucharest - ILFOV	3366	2218	3008	3791	2846

Cereals offer of our country is required both by the need to ensure food security and the desire to trade grain. Viewed through the supply of grain, regardless of the historical period analysed, the weight of crop cereals in arable land and yields per unit area emphasize the socio-economic function of these crops [3]. This, especially for a cereal that is considered noble, requested to export. The offer falling within factors that condition it and which are directly related to output, respectively of areas under cultivation and yields per hectare.

The average price of on the domestic market wheat increased overall, except for the years 2009 and 2010 when, due to the emergence of the economic crisis that has led to lower purchasing power, has decreased the price of wheat. In the next years, the average prices increase sharply, reaching 0.91 RON last year. The price of bread wheat reached in July 2013 - 700 USD/tonne (157 euros/tonne), the lowest level compared to the same period of last three preceding years.

Compared to two years ago, the quote wheat is 21% smaller and the decline in the past six months is 40 %.

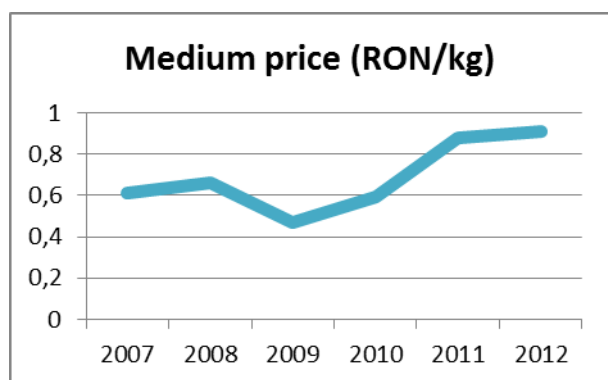


Fig.2 Price dynamics in local wheat market

Evolution has an impact mainly on the profit margins of farmers because wheat crop will bring to the economy, despite the lower price, one billion euros, a level similar to last year (2012). The decreasing in the price of wheat this year, was made in the context in which projections show a total harvest close to 7 million tons, with 40% above the level of 2012 when productivity has been pulled down from adverse weather conditions.

The effects of freight rates and exchange rates are considered to evaluate dynamic relationships among international wheat prices. The model results suggest significant dynamic relationships among prices in different international wheat markets and between the prices and exchange rates and transportation costs [1].

Local wheat price could remain relatively stable in the following period, but it is possible that 2014 to provide an increased up to 15%, because, statistically, is unlikely to repeat very good agricultural year, both in Romania and worldwide. Currently, the price of wheat is significantly lower than the same period last year, due to favorable conditions both domestic production this year and the significant decline in international prices. Wheat traded on the Chicago Board of Trade (CBOT) was cheapened by over 22% last year, and the RON is, in its turn, almost 5.4% stronger against the dollar than a year ago. The local market, the purchase price from the manufacturers is almost 20% lower than last year, independent of other factors; price erosion should be reflected in a cheapening of products based on wheat.

CONCLUSIONS

1. Wheat accounts for Romania one of the most important cereal crops and although the production level has fluctuated from 2008 to the present, this will not change in the future.
2. The national wheat offer was very high in the agricultural year 2013, reaching a level of 7.3 million tonnes.
3. Regarding wheat market demand, it follows closely the consumption evolution, being relatively stable during the agricultural year. Short-term fluctuations were noted for wheat demand, mainly due to demographic factors and the fact that this market works and carriers demand unrelated to consumption, but pursue other goals.
3. Wheat price is significantly lower than the same period last year, due to favorable conditions of domestic production this year and the significant decrease in international prices, which is influenced by the amount of wheat obtained.
5. Because wheat is the basic food consumption, especially in Romania, its cultivation remains a tradition of our country and it seems that the necessary consumption is satisfied without problem, with the possibility of export.
6. However, the seasonality of production and dependence on climatic factors are particularities for cereal products affecting both supply and demand nationwide.

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