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# EFFECTS OF THE LIBERALIZATION OF EUROPEAN SUGAR MARKET IN ROMANIA

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***Abstract***

*In this paper, it was analysed the sugar market in the context of the liberalization of the European market, taking into account both the situation at national and at European level. Also, there were analysed the evolution of the areas under sugar beet and sugar cane, sugar production, prices and sugar consumption. It was also demonstrated the economic theory affirming that: by reducing the price level of a particular food, the quantity bought is higher than consumed, thus resulting in the stocks. Studying the evolution of all elements of the sugar market, there were identified the main effects of the quotas elimination on this market. The conlusion was that the liberalization of the sugar market and the abolition of quotas in fall 2017 will lead to the increase of sugar beet and sugar production, to a decline of sugar price and to higher stocks of sugar as consumption is not expected to raise.*

***Key words*: *sugar market, consumption, prices, supply, liberalization***

## INTRODUCTION

Agricultural markets have a growing interest lately, because the world population is increasing focus on issues such as food and nutrition security. Agricultural markets can also be highlighted by other concerns, namely global warming, but also the difficulties that these commodity markets have encountered. From these markets is also part the sugar one, this changing frequently, sugar being among the products with high volatility. [6]

Worldwide, at present, sugar is produced either from cane or from beet, in over 130 countries.

Continent that produces the largest quantity of sugar beet is Europe, which owns half of the world production of sugar beet. But most of the world's sugar is obtained from sugar cane, about 80% of total sugar production.

Worldwide, the largest sugar-producing countries are Brazil, Thailand, India and China, (Romania 64$^{th}$), and in Europe: France, Germany, Poland, and Romania ranked 15th with 232 tonnes (2014).

European sugar production in 2016 accounted for 9.17% (15.47 million tonnes of sugar from world sugar production of 168.587 million tonnes), this percentage being explained above, respectively Europe producing half of the production of sugar beet in the world, accounting for only 20% of world sugar production.[12]

At international level, sugar trade reaches almost 60 million tons / year, of which about 60% of international trade is represented by raw sugar.

According to ISO data, world sugar production has increased from one year to the next, managing to exceed demand, which means that sugar stocks have risen, reaching a record high of 78.89 million tonnes (2015).[1]

By liberalizing the sugar market in the autumn of 2017, there may be more long-term and medium-term effects. Thus, by this approach, the first socio-economic effect is the increase in sugar supply which will be analysed in the continuation of the paper.

By increasing supply on the sugar market, as economic theory says, the next easy-to-anticipate effect is that of lowering prices, a beneficial effect for sugar consumers. As a result of the increase in the supply and the price reduction, the third effect can also be expected, namely the increase in sugar consumption. [2][5]

These three major effects are the main analysis hypothesis of this paper. Thus, the abolition of sugar quotas can substantially alter the main elements of the sugar market in Romania (which is not stable) but also at the European level.

## MATERIALS AND METHODS

In order to identify the main effects of the liberalization of the sugar market in Romania, in the first part of the paper in order to create an overview will be analysed the market and the components. It will analyse the evolution of cane and beef production, total sugar production, prices and consumption evolution with the help of statistical data taken from national, European and international databases in quantitative and qualitative terms.

Following this analysis of the sugar market developments, one can observe the trends generated by market liberalization and the associations between this phenomenon and the dynamics of the main indicators. Thus, one or more effects could be established following the withdrawal of the quota system for sugar.

## RESULTS AND DISCUSSIONS

Europe occupies the first place in the world at sugar beet production, owning half of world production. It should be noted that beet sugar represent 20% of total sugar production and Europe owns about 10% of production in the sugar market.

Starting from this point, we will be analysed the surface and production of sugar beet of the national level and the European level.

Table 1. Evolution and productions areas of sugar beet areas in the European Union during 2014-2018

| EU 28 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Area (1000 ha) | 1,632.4 | 1,420.3 | 1,498.7 | 1,750.3 | 1,715.3 |
| Production (1000 t) | 131,021.8 | 101,872.1 | 112,404.0 | 142,787.3 | (P) 143,058.5 |
| Yield (t/ha) | 80.3 | 71.7 | 75.0 | 81.6 | 83.4 |

Source: ec.europa.eu, Eurostat

According to Eurostat data, there may be significant changes in the area planted with sugar beet in the 2014-2018 period, thus, a reduction in surface area may be noted in the first half of the period, but in the second half there is an increase in surface area. On average we can talk about an increase in sugar beet area in the EU, with an annual average rate of 1.24%.

As regards the total production obtained from these areas, the European Commission foresaw this production for 2018. It can be noticed that the total European Union sugar beet production maintains the trend of the cultivated surfaces, but in 2018 there can be seen an increase compared to 2017, which on the indicator the cultivated area is a decrease, here it can intervene the effect of withdrawing sugar quotas, thus increasing production. Total production recorded an average growth rate of 2.22% on average, being higher than that of the cultivated area, which shows, as can be seen from the third indicator, the average yield per hectare, an intensive increase of in the sector.

The average yield per ha was calculated by the production obtained on the cultivated area, so we can observe oscillations from one year to the next, given the dependence of this sector on external factors (climate, soil, etc.). Thus, in the weaker years, from the point of view of production, a lower yield (2015, 2015) can be observed, being 71.7 tons per ha, but in the last year it can record a yield of up to 83.4 tons per ha. The average annual growth rate for this indicator is lower than the other, at 0.96%.

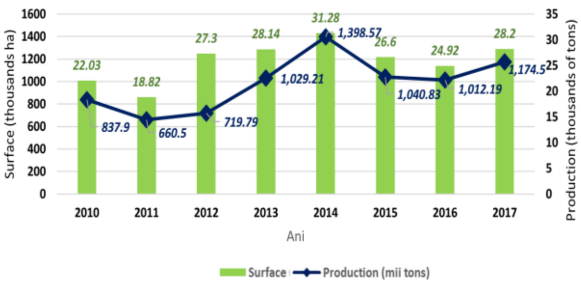


Fig. 1. The sugar beet areas and sugar production in Romania during 2010-2017

Source: own processing based on ec.europa.eu data, Eurostat [10]

The agricultural area used in agricultural holdings in Romania represents approximately 55.9% of the total area of the country (23.8 million ha), of which about 9.3

million hectares represent the arable land. The surface cultivated with sugar beet in 2017 is 28.7 thousand hectares, representing 0.303% of the arable land.

Analysing Figure 1, it can be noticed that the areas cultivated with sugar beet had a fluctuating evolution reaching a maximum of 31.28 thousand hectares in 2014, with a slight decrease of approximately 10% in the following years cultivated until 2017.

Sugar beet production fluctuated with cultivated areas, reaching a peak of 1398.57 thousand tons in 2014, being 40% higher than the first year of 2010 (837.9 thousand tons). The smallest production was registered in 2010 and 2011, which was 28.66% and 43.76% lower than in the last year analysed in 2017, due to the climatic conditions registered in that period, and in 2013, beet production to grow slightly. The growth rate of sugar beet production over the analysed period was 4.64%. The production yield per hectare ranged from 26.4 t / ha (2012) to 41.6 t / ha (2014), with an average of 37.83 tons / ha.

According to FAO data, there are two countries in Europe that grow sugar cane, namely Portugal and Spain, but according to these data the areas are very small, even negligible when referring to the European level.

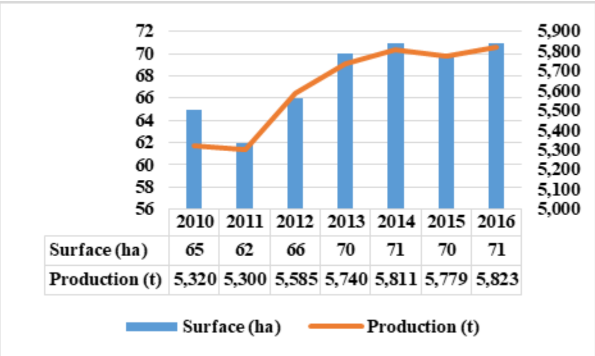


Fig. 2. Determination of surface and cane production
Source: own processing based on FAO data

In period 2010-2016, in Europe was grown an average of about 68 hectares of sugar cane. As can be seen in Figure 2, the areas recorded overall increases, with the largest area of 62 hectares in 2011, and in 2011 this was 71 hectares. If we spread these areas to the two reed rearing countries, we account for almost 90% for Portugal and 10% for Spain.[9]

Regarding the production obtained, on average it was about 5622 tonnes of sugar cane, and it can be observed that it follows the tendency of cultivated areas. The smallest production was recorded in the year with the smallest area (2011) of 5.3 thousand tons, and the highest in the last year of 5823 tons. Distributing the average production over the entire period to the producing countries in Europe, it will be noticed that Portugal obtained about 94.3% of production, 4.3 percentage points more than in the case of areas, and Spain has contributed to this total production of 5.7%. This shows that in Portugal the average yield per hectare may be higher given the pedo-climatic conditions in this country favourable to this crop.

Figure 3 shows the evolution of global sugar production, but also its forecast for the current year and for 2019.

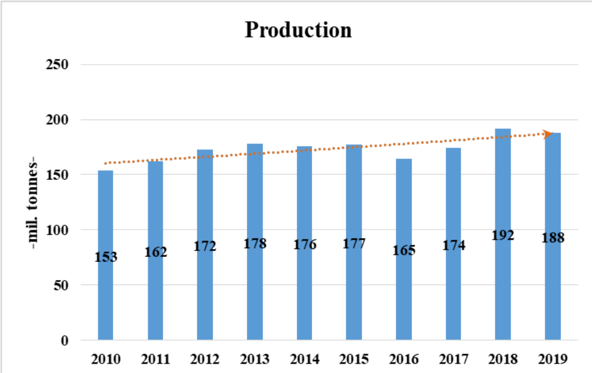


Fig. 3. Determination of the evolution of world sugar production
Source: own processing based on data available on Statistica.com

As we can see, sugar production over the analysed period followed an upward trend, with an annual growth rate of 2.30%. The forecasts for 2018 and 2019 for world sugar production show that production is growing steadily, 192 million tonnes and 188 million tonnes respectively, which are above the threshold of about 10.25% after the liberalization of the sugar market.[4]

National sugar production in Romania has been increasing over the period under review, reaching 472.9 million tonnes in 2016, 1.66 times higher than in 2011 (283.9 million tonnes). The annual growth rate of sugar production is 3.95%.[3]

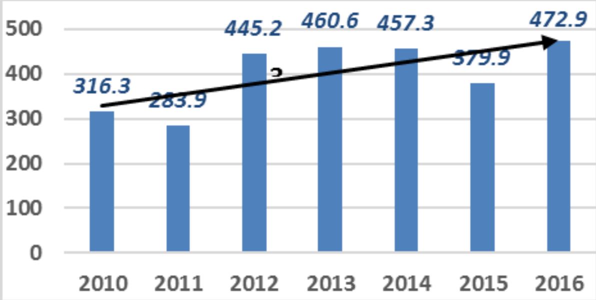


Fig. 4. Determining the evolution of national sugar production (Romania)
Source: own processing based on MADR data

If Romania had 33 sugar factories in the early 1990s, only the Agrana and Tereos groups are currently active, with Austrian and French majority capital. Local sugar production has gone through three decades through major changes by shutting down dozens of sugar factories, the main problems being based on the abolition of EU sugar production quotas which leads to overproduction by European countries holding the majority (such as Poland, France) on the sugar market, thus lowering the price.

By analysing only the supply components on this market, we can say that the average trend of these indicators is increasing, given that both sugar beet and raw sugar production increased in 2018 compared to 2017 market liberalization), the most significant difference being recorded in world sugar production.

Depending on the first results, the increase of the market supply, a "snowball" effect may be that of price (reduction) change. In order to assess this effect, we propose in the next part the analysis of the sugar price evolution.

As can be seen in Figure 5, the price of sugar recorded a downward trend in the market in 2012-2015, followed by a rise in 2016, when it exceeded 0.4 $ per kilogram, and will fall next year to 0,35$ per kilogram.

In Figure no. 6, it can be noticed that with the prices are getting lower because of the increase of the supply sugar. In 2017, in the first quarter, the sugar price was 0.434 $ per kg following a downward trend.

The average quarterly rate over the past two years is -9.5%, reaching in the penultimate quarter of 2018 a record low of $ 0.239 per kilogram.

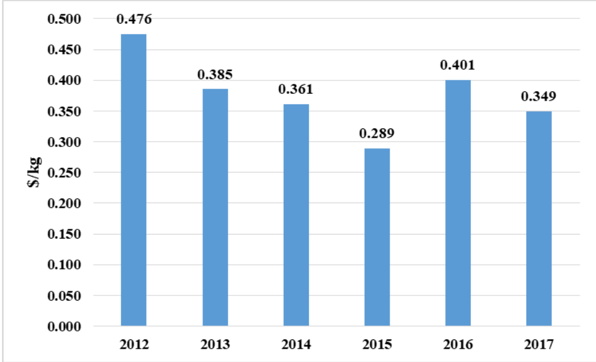


Fig. 5. Determination of sugar price evolution
Source: own processing based on http://macrotrends.net data

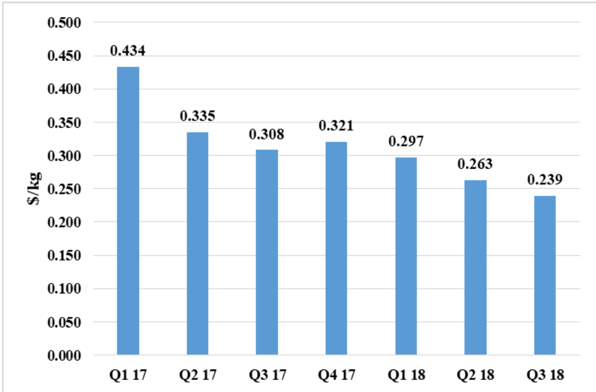


Fig. 6. Determination of price evolution per quarter 2017-2018
Source: own processing based on http://macrotrends.net data

Next, we propose to evaluate the possible effects of the withdrawal of sugar quotas in the sphere of demand, analysing the consumption of sugar.

As can be seen in Table 2, the average annual consumption of sugar per capita registered a slightly decreasing trend during the analysed period, averaging 0.2% each year, and extrapolating to the total population, which is and this decreasing, there is a more pronounced fall of up to 0.68% per year.

By comparing the first quarter of 2017 to 2018, we can see that the consumption fell by 5.86% per capita and the total by 6.18% per capita. [8]

But also by analysing the quantities of sugar purchased, there is still a decreasing trend in the period 2010-2017, with an average annual rate of -0.14%.

Table 2. The consumption of sugar in Romania

| Specifications | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Q1 2017 | Q1 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| Average annual consumption per person (kg / person) | 9.05 | 8.89 | 8.78 | 8.94 | 9.11 | 9.20 | 8.95 | 8.92 | 8.39 | 7.90 |
| Total annual consumption (tons) | 183,193 | 179,153 | 176,209 | 178,699 | 181,399 | 182,444 | 176,413 | 174,648 | 164,305 | 154,159 |
| Quantity bought per person per year (kg / person) | 9.46 | 9.08 | 8.90 | 9.31 | 9.74 | 9.78 | 9.37 | 9.36 | 8.06 | 8.08 |
| Total quantity purchased (tons) | 191,454 | 183,021 | 178,616 | 186,135 | 194,066 | 193,862 | 184,690 | 183,345 | 157,959 | 157,673 |
| Stocks (t) | 8,261 | 3,868 | 2,407 | 7,436 | 12,667 | 11,418 | 8,277 | 8,697 | -6,347 | 3,514 |

Source: own processing based on www.insse.ro data[13]

Comparing the first quarter of 2018 with the same period in the previous year, we can see that there has been an increase in the amount of sugar bought by one person. The quantity purchased annually in the first quarter of 2018 covers annual average consumption requirements exceeding 2.27%, a situation not seen in the same period of the previous year when consumption requirements exceeded the quantity purchased by one person.

Considering sugar a perishable product, the difference between the total amount of sugar bought and the total consumption considered as stocks was made.

## CONCLUSIONS

In the present study, we wanted to analyze the consequences of the phenomenon of liberalization of the sugar market, the main action being the abolition of quotas in autumn 2017.

During the analysed period 2010-2017, both at national and European level, has been observed an increase in sugar beet production, resulting in an increase in sugar production. It can be predicted that in 2018 there will be an increase in production by 10% more than in the previous year. (following the withdrawal of quotas).

Another possible effect, following the increase in supply, is the fall in sugar prices, making it an affordable food for every person; in the first three quarters of 2018, the lowest prices in the last years.

Even if sugar consumption didn't increase, even decreasing in some periods, a link could be made between the quantity of sugar purchased and the price drop, because in the 1st quarter of 2017 the quantity bought was over the consumed, and the next year during the same period, the quantity bought was higher than the one consumed by inventories, a fact known in economic theory when the price of basic foods is lower.

Concluding, we can say that, following the eliminations of quotas, short-term effects were: increased sugar production, a significant drop in prices and the creation of sugar stocks by the population.

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