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PAC SUBSTITUTIONS IMPACT ON THE TOBACCO MARKET IN ROMANIA

POP RUXANDRA-EUGENIA[1]

Abstract: *The tobacco market in Romania has seen a significant increase regarding the size of the areas covered by this industrial crop and production. One of the key factors underpinning this statement is the volume of forms of financial support under the PAC 2014-2020 for this crop. It is well known that among the National Transitional Aid for the Vegetable Sector, the tobacco subsidy (ANT 4) provides the highest amounts per hectare cultivated. In this paper we will evaluate the relationship between production variables, existing surfaces on the tobacco market and, on the other hand, the volume of subsidies granted to us in the country using statistical analysis methods using SPSS and Microsoft Excel.*

Key words: *tabacco market, PAC 2014-2020, linear regression, statistical analysis*

JEL Classification: *Q15, Q52, Q27*

INTRODUCTION

At European level, but also in its neighborhood in 2016, the largest tobacco producers were countries like Turkey, Greece, Macedonia, Italy, Poland, Bulgaria. In Europe, Romania ranks 11th in terms of tobacco-growing area but also recorded production. At national level, tobacco production in recent years is about 1700 tons, the most productive regions being the South Muntenia Region and the South West Oltenia Region. The processing part of the production is characterized by monopoly competition, with high demand but a single prime processor eligible to conclude contracts with tobacco producers and two other establishments authorized in other member states of the European Union. Due to this, the trade balance on the tobacco market registered a deficit of 8,594 tons, the equivalent of 69,565 thousand EUR. Regarding the situation of the imports on the tobacco market, we observe, analyzing the data provided by INSSE, that the largest share of tobacco imports and its substitutes come from the European Union (on average 60%), the rest of the imports coming from outside it.

At the tobacco market level we encounter a number of factors that influence the level of tobacco production and the size of the areas cultivated with this crop, such as climatic and pedological factors, socio-demographic factors of farmers, economic and financial factors, legislative factors. In this paper, we will mainly address the last category, legislative factors, and their impact on the level of tobacco production. More specifically, we will refer to European directives and policies that set the level of financial support for tobacco farmers. During the implementation of the 2014-2020 CAP policies, it has been pursued to achieve objectives such as: reliable food production, sustainable management of natural resources and climate policies, sustainable territorial development. We will analyze the level of financial support provided under the Common Agricultural Policy and whether the amount granted had a significant impact on the level of tobacco production or the area cultivated with it.

MATERIALS AND METHODS

In order to accomplish this paper, three main working methods will be used, such as:

- Dissemination of existing information in the specialized, local and international literature of interest;

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- Quantitative and comparative analysis of the statistical data provided by the National Institute of Statistics on: the size of the areas cultivated with tobacco, the production of tobacco produced on the territory of our country;
- Analyzing and interpreting data using the SPSS statistical program by producing the following outputs:

  - the value of the Chi-square test and the contingency coefficient: (Analyze - Descriptive Statistics - Crosstabs - Statistics - Chi-square / Contingency coefficient);

RESULTS AND DISCUSSIONS

At tobacco cultivation level as agricultural production, it is clear that there is a decrease in the level of its production, primarily due to the lack of processing plants. At this moment there is only one manufacture that makes purchases from farmers, representing a prime -process. However, tobacco culture remains profitable due to the undeniable market demand. In Table 1, we present the areas and production recorded on tobacco in the territory of our country:

Table 1 –Tabacco surfaces and productions 2007 – 2017

Surfaces and production tabacco 2007 - 2017											
Year	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Surfaces (ha)	1101	1235	850	1532	1681	1258	941	855	745	926	801
Production (to)	1128	2366	1566	2971	2562	1341	1357	1405	1079	1656	1219
Production/ ha (to)	1,02	1,92	1,84	1,94	1,52	1,07	1,44	1,64	1,45	1,79	1,52
Medium Production (kg/ha)	1025	1916	1842	1939	1524	1066	1442	1643	1448	1741	1522

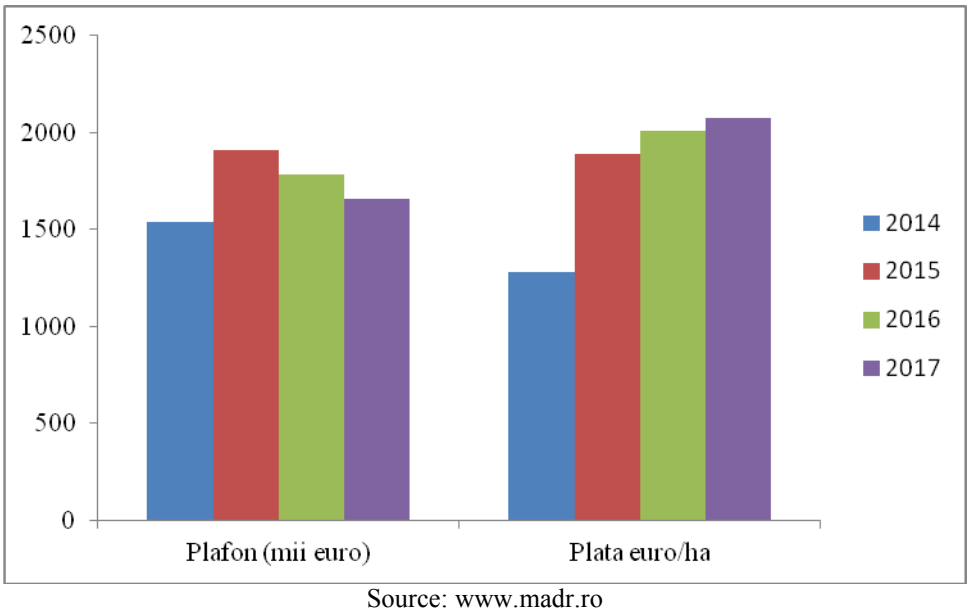
Source: Tempo-INSSE- Statistical databases

Thus, we notice that the maximum production of tobacco and the areas cultivated with it was achieved in the years 2010, 2008 and 2009 and the minimum in 2007, 2012 and 2015. In 2017 both the production and the tobacco growing areas were lower compared with the previous year and also lower than the average recorded during the analyzed period. From counties with the smallest and the largest recorded tobacco production the point of view, analyzing the statistical data, we mention the following:

- the main counties in the territory of which high tobacco production was obtained in 2016 are Dolj (681 tonnes) and Teleorman (614 tonnes);
- higher productions, but much smaller than these two counties, were recorded in counties such as: Mureş (174 tons), Argeş (67 tons), Olt (20 tons), Iaşi (16 tons) and Ialomiţa 13 tons).

We have mentioned previously that, according to the hypothesis of the present study, the level of support offered by the state to farmers dealing with tobacco cultivation influences the level of production and of the areas cultivated with tobacco. Thus, we present below the amounts granted as National Transitional Aid 4 (ANT 4) and the financial ceilings for 2014-2017:

Figure 1: amounts awarded ANT 4 - tobacco crop



Source: www.madr.ro

We note that although the amounts granted to the hectare have risen steadily, ranging between € 1280.19 per hectare to € 20178 per hectare, the ceilings for National Transitional Aid 4 are characterized by a predominantly downward trend. For example, the amount of the ceiling granted in 2018 is slightly above the amount granted in the 2014 application year. Thus, the value of the amounts granted per hectare cultivated with tobacco increased, the value of the financial ceilings decreased.

Once presented with these variables, two hypotheses that the present research may wish to confirm or refute:

1. Hypothesis 1: The level of caps granted under ANT 4 significantly influences the production of tobacco and the areas cultivated with it;

2. Hypothesis 2: The level of the amounts per hectare granted under ANT 4 significantly influences tobacco production and the areas cultivated with it.

To validate these assumptions, we will use the SPSS program to calculate the chi-square test and the contingency coefficient values.

For the first calculated correlation, the existing one between the existing ceiling and the size of the areas cultivated with tobacco, we present Figure 2:

Figure 2 – correlation between the ANT 4 ceiling level and the size of the cultivated areas

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Contingency Coefficient	.307	.032
N of Valid Cases		4	

Sursă: rezultate program SPSS
Source: SPSS results

The value of the chi-square test is 0.032 (<0.050), meaning that there is a significant link between the two variables. The value of the resulting contingency coefficient is 0.307, which means that the intensity of this link is poor.

Figure 3 – correlation between the level of ANT 4 ceiling and output level

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Contingency Coefficient	.745	.287
N of Valid Cases		4	

Source: SPSS results

The value of the chi-square test is 0.287 (> 0.050), meaning there is no significant link between the two variables (Figure 3).

Figure 4 – correlation between the level of the amounts granted under ANT 4 and the size of the cultivated areas

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Contingency Coefficient	.500	.043
N of Valid Cases		4	

Source: SPSS results

The value of the chi-square test is 0.043 (<0.050), meaning that there is a significant link between the two variables. The value of the resulting contingency coefficient is 0.500, which means that the intensity of this relationship is average.

Figure 5 shows the correlation between the level of tobacco production achieved and the amounts granted per hectare cultivated with tobacco:

Figure 5 – correlation between the level of the amounts granted under ANT 4 and the size of the cultivated areas

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Contingency Coefficient	.745	.287
N of Valid Cases		4	

Source: SPSS results

The value of the chi-square test is 0.287 (> 0.050), meaning that there is no significant link between the two variables.

CONCLUSIONS

In the present paper, we analyzed, in the first part, the areas and the tobacco production, as well as the level of the financial ceilings and the amounts granted per hectare to those who are involved in the cultivation of tobacco. We have noticed that the trend of the areas and the production recorded during the period 2007 - 2017 was oscillating, with a peak reached in the middle of the analyzed interval. Tobacco production has started to increase slightly lately, but has not reached its 2010 or 2011 levels, but rather halved by reappraising to these milestones.In the second part of the paper we analyzed the links between the variables presented in the first part, using the SPSS program, thus elaborating four hypotheses:

1. Hypothesis 1: The level of ceilings granted under ANT 4 significantly influences tobacco production; - validated hypothesis

2. Hypothesis 2: The level of ceilings granted under ANT 4 significantly influences areas under tobacco; - null hypothesis

3. Hypothesis 3: The level of the amounts per hectare granted under ANT 4 significantly influences tobacco production; - validated hypothesis

4. Hypothesis 4: The amount of the hectare amounts granted under ANT 4 significantly influences the areas under cultivation with tobacco. - null hypothesis

This shows that financial support under the PAC 2014-2020, in the form of ANT 4, has a greater impact on tobacco-growing areas than tobacco production. This is also explained by the fact that farmers can take the decision to cultivate tobacco under the influence of different economic, financial factors, but the level of production also depends heavily on climatic or pedological factors. We also notice that tobacco yields per hectare oscillate quite well over the period under review, starting from 1 tonne tobacco / ha and reaching about 2 to tobacco / hectare.

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