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Changes in the agrarian structure in Poland in the years 1921-2002 based on the example of selected provinces from three annexed territories

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Abstract: The objective of the paper is to analyse the agrarian structure in Poland in the years 1921-2002 based on the example of the following selected provinces from the former three annexed territories: the wielkopolskie province from the Prussian partition, the małopolskie province from the Austrian partition, and the świętokrzyskie province from the Russian partition. The subject of the evaluation of the changes in the agrarian structure is based on the comparisons made for the years 1921 and 2002. The Gini coefficient and the arable coefficient were applied in the analysis of the agrarian structure. As shown in the paper, despite the flow of many years, the transformations determining it, the changes in the agrarian structure within the three annexed areas were much alike. That means that in the provinces examined the agrarian structure is strongly conditioned by history. The differences in the agrarian structure between the three annexed territories have been maintained to date, despite the common agricultural and economic policies conducted within the area of Poland for almost 100 years.

Introduction

The subject of the paper concerns the changes in the agrarian structure in Poland. The agrarian structure is most frequently referred to as a

participation of specific area groups in the total number (space) of farm households (Happe 2004, Happe, Balmann, Kellermann 2005).

Despite the common agricultural and economic policies conducted in Poland in the time period 1921-2002, the state of the agrarian structure in the selected areas was primarily impacted by a historical factor. There were numerous undertakings made with a view to changing the agrarian structure. In the inter-war period the land of Catholic church and of manors was being partitioned out. In the post-war period emphasis was laid on creating State Agricultural Farms by encouraging or even making individual farmers sell land to the state. After the system transition of 1989, due to the sale of the above-mentioned State Agricultural Farms and subsidizing preferential agricultural credits by the state, there was a dynamic growth of individual farms (Spaulding 2009, Grancelli 2011). Poland's joining the European Union prompted further changes in Polish agriculture. Despite the changes, the differences in the agrarian structure in the majority of Polish provinces have remained unchanged.

The objective of the paper is to present the changes in Poland's agrarian structure based on the examples of the following selected provinces: the wielkopolskie province, the małopolskie province, and the świętokrzyskie province . The analysis of the changes in the agrarian structure is to indicate the historical impact on the present differentiation of the Polish agriculture.

Data description and research methodology

The data used in the research concern the years 1921 and 2002 and are derived from the publication of Central Statistical Office (1921) and from the Local Data Bank of the Central Statistical Office (2002)1. The data compared included the information on arable land in private farm households and the number of farm households. The analysis covered selected provinces from the former three annexed territories, which belonged to the Polish territory in the time period under scrutiny. The selected provinces were the wielkopolskie province from the Prussian partition, the małopolskie province from the Austrian partition, and the świętokrzyskie province from the Russian partition. In order to provide an objective character of the analysis, the provinces that were taken for comparison had their borderlines contained within Poland's territory of

[1] The data from the the State Agricultural Census of 2012 are to aggregated to be compared with the data originating from 1921.

1921 and 2002. In the case of the małopolskie province, the miechowski poviat was excluded from the analysis since it belonged to a Russian province. In the wielkopolskie province, in turn, the kolski, koniński, turecki and kaliski poviats were not considered (the Russian partition). However, in the case of the świętokrzyskie province, all of the poviats were taken into account. Before the year 1918, they had belonged to the Russian partition.

The paper does not include any of the provinces located within the area that Poland lost after 1945 (at present this area belongs partially to Ukraine, partially to Belarus or Lithuania) and are not the territory of the Republic of Poland. The so-called 'Regained Territories' (in 1921 they belonged to the Weimar Republic) were also excluded from the analysis since comparing them over time was not be possible.

The Gini coefficient was applied for the purpose of the analysis of the agrarian structure. This coefficient determines the degree of unevenness in the deployment of arable land. It measures the deployment of the variable, i.e., arable land in farm households. The Gini coefficient assumes the values ranging from zero to one and its value grows together with an increase in the concentration of arable land. The value of the Gini coefficient may be calculated with the following formula (see: Ceriani, Verme 2011):

$$G = \left| 1 - \sum_{k=0}^{k=n-1} (X_{k+1} - X_k)(Y_{k+1} + Y_k) \right| \quad (1)$$

where: Xk+1, Xk – cumulated participations of the number of farm households, Yk+1, Yk – cumulated participation of the space of arable land, k - the number of categories applied for farm households.

In addition, we calculated the arable coefficient representing the participation of the space of arable land (Pietrzak, Walczak 2011) in the total space of private farm households. Analysing the value of the arable coefficient allows changes in the use of land over time to be evaluated. Lowering the value of the coefficient indicates a bigger need for non-arable land and pushing out agriculture from the economy. The arable coefficient is calculated as shown below:

$$U = \frac{Ur}{P}, \quad (2)$$

where: Ur- space of arable land, P- total space.

The agrarian structure in the selected provinces in 1921 and 2002

Table 1 presents the values of the Gini coefficient, the space of arable land, the number of farm households, the average size of farm households and the arable coefficient in the years 1921 and 2002 for the selected three provinces. The values of the Gini index were reduced in all of the three provinces during the considered time period. The average size of farm households and the arable coefficient were also reduced. However, the initial differences in the comparisons of the provinces from the three annexed territories were preserved, for instance, in all the provinces the average space of a farm household was decreasing at a similar rate which ranged from 13% to 17%. The relations held between the average space of farm households in the three provinces were not changed, either. Both in the year 1921 and 2002 farm households of the świętokrzyskie province were by 50% larger than those located in the małopolskie province. However, farm households in the wielkopolskie province were three times larger than farm households in the świętokrzyskie province. That means that for historical reasons the differences between the provinces examined in the aspect of the agrarian structure have remained unchanged.

Table 1. Basic characteristics for the agrarian structure in the selected provinces

Values of measurements	Years	Provinces		
		małopolskie	świętokrzyskie	wielkopolskie
The Gini coefficient	1921	0.34	0.40	0.66
The Gini coefficient *	2002	0.27	0.36	0.61
The arable coefficient	1921	0.495	0.572	0.762
The arable coefficient	2002	0.441	0.526	0.624
The average size of a farm household (in hectares)	1921	3.7	5.6	17.8
The average size of a farm household (in hectares)	2002	3.1	4.8	14.5
The space of arable land (in hectares)	1921	687025	690965	1606645
The space of arable land (in hectares)	2002	640170	616150	1254504
The number of farm households	1921	184891	123984	90075
The number of farm households	2002	209020	127749	86472

*calculated for the considered provinces with the exclusion of the aforementioned poviats
Source: Statystyka Polski, Tom XI, vol. 2, Warsaw 1928; Statystyka Polski, Tom XI, vol. 3, Warsaw 1928; Statystyka Polski, Tom XI, vol. 4, Warsaw 1928; Statystyka Polski, Tom XI, vol. 5, Warsaw 1928 and the Local Data Bank, http://www.stat.gov.pl

Conclusions

The paper analysed the agrarian structure in Poland based on the example of the three provinces selected from three various annexed territories. As shown in the paper, the present state of the agrarian structure within the area of the three provinces has been shaped by historical reasons. Despite numerous undertakings realised with a view to changing the agrarian structure, the historical reasons were the major impacting factor. The analysis of the provinces considered showed that the average space of farm households and the arable coefficient had been decreased. A similar situation can be observed in the case of the Gini coefficient. In spite of the reduction in the values of the characteristics surveyed, in 2002 similar relations were held between the provinces to those in 1921.

This fact proves that the agrarian structure has been preserved over years. It also means that the plans in the scope of the policy on the agrarian structure should consider the historical background. Formulating whatever plans as regards expected changes in the agrarian policy must incorporate impediments occurring at the implementation phase and resulting from the historical conditions of the agrarian structure.

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