

EVALUATION OF THE IMPACT OF AGRICULTURAL LAND LEASE RELATIONS IN AGRICULTURAL SUBJECTS IN SLOVAKIA

Lubica RUMANOVSKÁ

Slovak University of Agriculture in Nitra, Faculty of European Studies and Regional Development, Department of European policies, Mariánska 10, 949 01 Nitra, Slovak Republic, Phone: + 421 (37) 6415605, E-mail: lubica.rumanovska@uniag.sk

Corresponding author: lubica.rumanovska@uniag.sk

Abstract

The aim of the scientific paper was to find correlation between total utilized agricultural land and leased farmland by agricultural holdings in Slovakia. The evaluation was realized by using the method of regression analysis to verify the hypotheses and correlation. Based on the research we can conclude that was confirmed by 48% correlation between the total utilized land and acreage of leased land only by small individual farmers. Based on the research we came to the conclusion that, the correlation between the area of agricultural land leased from individuals and the amount of the rent for one hectare is quite strong, accounting for 60%. In Slovakia the agricultural holdings and farmers are farming on leased land and the fact is that the rent is relatively low. Amount of rent for agricultural land in Slovakia in 2012 ranged from 6.50 to 120.00 EUR.ha⁻¹. The low amount of rent for agricultural land in Slovakia compared to EU countries is directly related to a lower level of agricultural production and also revenues, up about 30 to 40% per hectare of agricultural land. By comparing the rent per 1 ha of agricultural land in Slovakia with selected EU countries shows that in Slovakia is the rent 14 to 55 times lower. We can assume that the interest in rent of agricultural land will have a growing trend due to revenue arising from the implementation of direct payments under the CAP of the EU.

Key words: agricultural land, agricultural holdings, farm, lease relations, rent

INTRODUCTION

Land is a specific basic factor of production in agriculture. Therefore the use of agricultural land influence the agricultural activity and for agricultural holdings the land use has impact on the structure of agricultural activity. Structure of land tenure mainly in the proportion of own and rented land in member states of EU is different and changes by time. In most member states is the share of rented land higher than owned land, therefore the rent enables more flexible and more efficient land use. Agricultural land is mainly used by tenants. This trend, which prevails in Slovakia is an European trend [6]. Vital importance for the development of rural areas and agriculture [8] does have the tenure relations to the agricultural land and properly functioning agricultural land markets. This knowledge is true in general, but is especially important for the new EU Member States, where land reform and restructuring of agriculture for the

last 20 years completely changed the existing structure of ownership and use of agricultural land. Therefore, much attention has been paid in the last decade to this process. Agricultural land use and related ownership titles are thus one of the important factors affecting rural development. The priority here extends not only to the issue of employment of the population in rural areas, but also the effective use of agricultural land. Why actually it is necessary to pay attention to ownership and lease relations to the agricultural land in the context of rural development? If they are not solved ownership relations to agricultural land, so the agricultural land market is not functioning because we can not determine the owner, so the land can not be a subject of selling or buying. If the agricultural land market is not properly functioning it is one of the indicators that agriculture stagnates and causes the stagnation of rural development. Agricultural land market plays an important role in rural development because it is an

indicator of investment in rural development, prevents structural changes in rural areas where agricultural production is reduced, there can be found alternative uses of land, such as agrotourism, and thus can create new jobs, affects the degree of infrastructure and last but not least, the markets for agricultural land will keep the population in rural areas and improve the demographic development. Legal regulations of various EU countries show significant differences. Slovakia regulated the issue of the agricultural land lease after the year 1990 several times and it is assumed that the current legislation will be amended again. It can be stated that the current regulation is more to protect the tenant as to protect the owner, which is obviously due to the fact that agricultural land is currently utilized in Slovakia, but also in the EU more by tenants than by the owners of agricultural land. Regulation is directed mainly to achieve the purpose of the lease and in several countries takes also into account the effects of structural changes on the land manager's farming sector (creating and preserving agricultural farms). The lease of agricultural land is regulated by the Act n.504/2003 on the lease of agricultural land, farm and forest land and amending certain acts as amended.

Through agriculture will continue to be one of the most important economic sectors in rural areas and will contribute to the innovation in the rural areas. We can assume that the interest in rent of agricultural land will have a growing trend due to revenue arising from the implementation of direct payments under the CAP of the EU. This statement is in accordance with several studies which have analysed the impact of direct payments on land sales and rental prices (Ciaian & Swinnen, 2009, Kirwan 2009; Latruffe & Mouël, 2009) [1,2,3].

MATERIALS AND METHODS

The research was realized as a part result of the VEGA project n. 1/1213/12 Variant approaches of measuring competitiveness of regions. As materials were used data of 72

observed agricultural holdings and small farmers in Slovak republic for the year 2012, FADN data from Ministry of Agriculture and rural development of Slovak republic (MPSR) as well as Eurostat data (share of leased agricultural land, land rent). The evaluation of the impact of agricultural land lease relations in agricultural subjects in Slovakia was realized by using the statistical method:

Method of regression analysis to verify the following hypotheses and correlation:

a) Correlation between the total area of utilized agricultural land of the agricultural holding and the share of leased land, particularly by agricultural holdings and by self-employed small farmers

Dependent variable in the application of the regression model was the share of agricultural land leased area to the total utilized agricultural area of the holding and the independent variables consisted of the total area of utilized agricultural land in the observed agricultural holdings and small farmers.

$$Y_i = \beta_0 + \beta_1 * X_i$$

Y_i - share of leased agricultural land area to the total utilized agricultural area of the holding

β_0, β_1 - parameter of regression model

X_i - total area of utilized agricultural land

i - observed agricultural holding/farmer

b) Correlation between the average area of agricultural land leased from one private person to the land rent per 1 ha.

$$Y_i = \beta_0 + \beta_1 * X_i$$

Y_i - land rent EUR.ha⁻¹

β_0, β_1 - parameter of regression model

X_i - average area of leased agricultural land from one private person

i - observed agricultural holding/farmer

We have verified the hypothesis by using regression analysis.

Hypotheses 1: With the growth of the total area of utilized agricultural land in the farm also grows acreage of leased land.

Hypotheses 2: With the growth of leased area of agricultural land from individuals' increases the land rent.

In paper were used also qualitative methods used for the fulfillment of the research were

mathematic-statistical data analysis, regional comparative analysis of selected economic indicators.

RESULTS AND DISCUSSIONS

The scientific paper focuses on the analyses and evaluation of the impact of agricultural land lease relations in agricultural subjects in Slovakia. In Slovak republic as well as in other member states of EU belongs the ownership to agricultural land to private owners, but large group of land owners is not farming on their land by themselves, but is renting the land to the agricultural subjects (farmers or agricultural holdings). So the agricultural land rent market is more developed comparing to the market with agricultural land.

In terms of economic theory [4] may raise the question, to what extent will the owners be willing to lease their land and when they would be motivated by land rental market to utilize the agricultural land by themselves. Supply of agricultural land is by the owners, who are mainly individuals in productive age respectively working in other sectors of the national economy. Demand for rent of agricultural land is mainly by agricultural holdings and farmers, for whom the land is one of the basic factors of production. In Slovakia the agricultural holdings and farmers are farming on leased land and the fact is that the rent is relatively low. A minimum amount of rent is 1 % of the value of agricultural land according the law edict n.38/2005 Coll. But in practice it is possible to meet with the rents with amount 2.5% -to 3 % of the value of agricultural land. Amount of rent for agricultural land in Slovakia in 2012 ranged from 6.50 to 120.00 EUR.ha⁻¹. But even this is not very high, since the price of agricultural land in Slovakia in comparison with other EU countries is low. Despite the low amount of rent in respect of the current situation in Slovakia is the vast majority of owners willing to lease their land even at this price. There are many reasons. For example, the cost of management of small acreage (the vast majority of owners owns land with an area of

less than 1 ha) are too high compared to income from land, so it is more profitable to lease land to take any additional income in addition to their main job, which primarily relates to other sectors of the national economy than agriculture.

It can be assumed that in the future more owners becomes interested in management on their own agricultural land, or it will increase the interest in the purchasing agricultural land. The main motivation could be the provided direct payments to farmers from the European Union. In the period 2000–08, a strong and persistent increase in land rental prices is observed in all new EU member states, which was especially strong around the period of EU accession. Studies [7] show that in new EU member states was a strong increase in land rental prices just after EU accession (mainly in Poland), which coincides with an increase in direct payments (DPs) in the same period. Hence, EU accession can be considered a quasi-natural experiment to estimate the impact of the increase in DPs on land rental prices. DPs have a positive and significant impact on land rents, indicating that there is rent extraction of government payments by landowners. This impact is not only statistically significant, but is also economically significant. An increase of one additional euro per hectare in DPs increases land rents by 13 to 25 EUR.ha⁻¹, corresponding to a capitalization rate of 13% to 25%. Since renting is widespread in several EU new member states and most landowners are absentee landowners who live in urban areas or who are no longer active in agriculture, the payments will flow out of the agricultural sector and are, to a large extent, missing their goal of improving the livelihoods of rural inhabitants[7].

Here, is important the question: When respectively under what conditions would a landowner be willing to start to manage the land and not to offer the land more to hire? Using microeconomic theory [5] it is possible to identify critical decision point. Critical point of deciding whether to rent or start own farming is when the profit from renting equals to profit that the owner would earn from

utilizing his own land. We need to consider with the added value from hectares of agricultural land, which is the difference between production and consumption, so the difference between revenues and costs related to agricultural production (taking into account the costs and benefits that would be concerned by owner who would be in case of farming own land forced to borrow respectively purchase the necessary resources or use the offer of agrarian services and not added value generally attained by farms). Next, we consider the value of direct payments and additional payments per hectare of land and the amount of property tax for this land. Calculation for Critical point: (added value + direct payments) – land tax = rent (1 ha). The critical point value means where the owner of the land begins to think about possibility to utilize the land by itself. If the left side of that relationship is greater than the rent of hectares of land, the landowner should be decided in accordance with the economic theory of self-management of their land. Otherwise, it will offer to rent. If the rent is higher than the contribution of its own management will the owner continue to rent the land. Conversely, if the rent is less than the benefit of its own management, this situation could motivate some owners to utilize own land. Then it might be expected that the current 90 % of the leased land will reduce and will increase the number of owners utilizing their land, especially those who own larger land area.

Correlation between total utilized area of the agricultural holding and the share of leased agricultural land.

The aim of the scientific paper was also to find correlation between total utilized agricultural land and leased farmland by agricultural holdings in Slovakia. The relation was evaluated by verifying the following hypotheses on a sample of selected entities working in agriculture, and especially for companies and small farmers.

Hypotheses: With the growth of the total area of utilized agricultural land in the farm also grows acreage of leased land.

The correlation was observed separately in selected agricultural holdings and particularly

by small farmers underlying data set consisted of data observed by agricultural holdings in Slovak republic and from the FADN MPSR for 2012. As independent variables we have identified a total area of utilized agricultural land in the company which was the dependent variable and the share of area of leased land to the total area of the holding. Verifying of hypotheses for agricultural holdings was realized through regression analysis and is shown in figure 1.

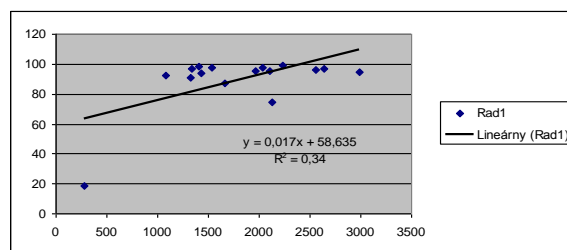


Fig.1. Correlation between total utilized agricultural area and share of rented land by agricultural holdings in Slovakia

Source: Author’s calculations based on Survey data and FADN MPSR 2012

Figure 1 shows that based on regression analysis performed by agricultural holdings, the dependency ratio between the total utilized agricultural land and acreage of leased land equals to only 0.34, which indicates a weak statistical relationship between these indicators. Based on the above, we can conclude that if a legal person would increase total utilized land area of about 1 ha would the acreage of leased land increase on 0.017 hectares.

Verification of hypotheses for small farmers in Slovakia through regression analysis is shown in figure 2.

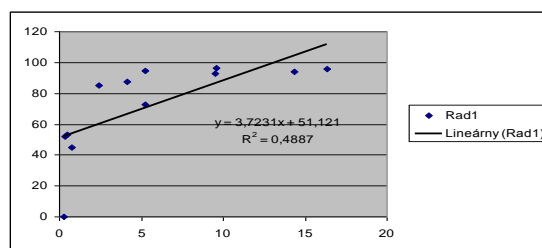


Fig.2. Correlation between total utilized agricultural area and share of rented land by small farmer in Slovakia

Source: Author’s calculations based on Survey data and FADN MPSR 2012

Based on the results of the regression analysis performed for small farmers is the dependency ratio between the total utilized agricultural land and acreage of leased land equal to 0.48, which is a moderate correlation between these indicators. If the small farmer would increase the total area of utilized land of 1 ha would the acreage of leased land also increase by 3.7231 hectares.

Based on the research we can conclude that most of the agricultural holdings are farming primarily on leased land a percentage of 90-95%, regardless of the total area of utilized agricultural land, therefore the interdependence between them is very low. Partially different situation was observed for small self-employed farmers who are farming an average of 70-80% of leased land. This situation is connected to the process of restitution where has been returned the ownership to agricultural land to original owners. This was for many of small farmers' motivation for starting a business in primary agricultural production. For this reason, it is seen higher share of owned land comparing to leased land in case of small farmers, which was confirmed by 48% correlation between the total utilized land and acreage of leased land.

Correlation between the rent for agricultural land area and amount of leased land.

The observed correlation between the acreage of the leased land and the rent was realized on the sample of agricultural holdings, due to a more than 90% of the total utilized agricultural land is leased and thus are major participants in the agricultural land rent market. Based on the research as shown in Figure 3, we came to the conclusion that, as the acreage of leased land is increasing the price of rent for land increases also.

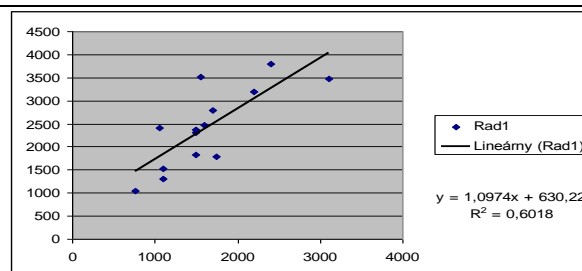


Fig.3. Correlation between the rent for agricultural land area and amount of leased land by agricultural holdings in Slovakia

Source: Author's calculations based on Survey data and FADN MPSR 2012

The figure 3 shows that the interdependence between the area of agricultural land leased from individuals and the amount of the rent for one hectare is quite strong, accounting for 60%. If the leased area in agricultural holdings will increase of 1 ha, thereby the rent is increasing of 1 EUR.ha⁻¹.

The comparison of rent for agricultural land in selected countries of the European Union

Holding structure, proportion of land farmed by the owner or rented land is different and varies from one EU Member State to another. In EU 11 757 000 000 all farms do manages nearly 171 603 000 hectares of agricultural land. In EU prevails the trend in increasing shares of leased land and decreasing share of land farmed by owners.

In the EU are the agricultural land prices and rent for agricultural land significantly different. The low amount of rent for agricultural land in Slovakia compared to EU countries is directly related to a lower level of agricultural production and also revenues, up about 30 to 40% per hectare of agricultural land. Regarding the relationship between leased and owned agricultural land, are among the EU Member States significant differences. Particularly high proportion of leased land was recorded in Germany, France and Belgium, where farmers farmed only about one-third of its own land and two-thirds of a lease. The smallest proportion of leased land was in Ireland, where such land was only a little over one tenth of the total agricultural land. In Austria, Finland and Italy farmers rented land about one -fifth and four-fifths

were their property. In other countries, the share of leased land ranged from less than one-third and more than a third. In Sweden approached the half and Luxembourg farmers lease more than half of the land on which farmed. Most agricultural land was rented in Belgium (67 %), France (64.9 %) and Germany (62.1 %). By comparing the rent per 1 ha of agricultural land in Slovakia with selected EU countries shows that in Slovakia is the rent 14 to 55 times lower. The rent of agricultural land in the selected EU countries in the year 2009 is shown in the figure 4.

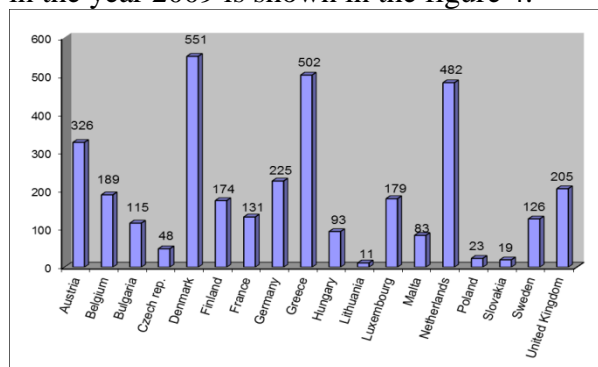


Fig. 4. Rents for agricultural land in selected EU member states in the year 2009 (EUR.ha⁻¹)

Source: Eurostat data, 2013

The rent for agricultural land in individual EU countries varies significantly. While in some countries of northern Europe is the rent less than 200 EUR.ha⁻¹, so for example in Denmark, the Netherlands and Greece is well above 450 EUR.ha⁻¹. Rent amount in most EU countries has grown slower than the market price. In some countries maintain a balanced amount of rent levels over the period 1999-2009 in some the rent had increasing trend (Denmark, the Netherlands, Austria, Hungary).

CONCLUSIONS

The aim of the scientific paper was to find correlation between total utilized agricultural land and leased farmland by agricultural holdings in Slovakia.

Based on the research we can conclude that most of the agricultural holdings are farming primarily on leased land a percentage of 90-95%, regardless of the total area of utilized agricultural land, therefore the

interdependence between them is very low. Partially different situation was observed for small self-employed farmers who are farming an average of 70-80% of leased land. This situation is connected to the process of restitution where has been returned the ownership to agricultural land to original owners.

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For this reason, it is seen higher share of owned land comparing to leased land in case of small farmers, which was confirmed by 48% correlation between the total utilized land and acreage of leased land. Based on the research we came to the conclusion that, as the acreage of leased land is increasing the price of land rent increases also. The correlation between the area of agricultural land leased from individuals and the amount of the rent for one hectare is quite strong, accounting for 60%.

In Slovakia the agricultural holdings and farmers are farming on leased land and the fact is that the rent is relatively low. Amount of rent for agricultural land in Slovakia in 2012 ranged from 6.50 to 120.00 EUR.ha⁻¹. The low amount of rent for agricultural land in Slovakia compared to EU countries is directly related to a lower level of agricultural production and also revenues, up about 30 to 40% per hectare of agricultural land. By comparing the rent per 1 ha of agricultural land in Slovakia with selected EU countries shows that in Slovakia is the rent 14 to 55 times lower. We can assume that the interest in rent of agricultural land will have a growing trend due to revenue arising from the implementation of direct payments under the CAP of the EU. In future it will be necessary to pay attention to the agricultural land market, which plays an important role also in the rural development.

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