

# SUBSIDIES AS FACTOR OF PERFORMANCE IN AGRICULTURAL ENTITIES

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## Abstract

*The subsidies represent part of the public finances, which are related to the existence and operation of the public sector and public administration, which falls within the tertiary sector. The common agricultural policy with its subsidy policy caused that to the agricultural subsidies flow significant and increasing proportion of the funds from the public finances. The aim of this paper is to evaluate the development of volume of subsidies provided to the agricultural enterprises in Slovakia in the context of improve their productivity. At the regional level, there was no statistically significant linear correlation between the monitored variables for the whole period under review.*

**Keywords:** *Common Agricultural Policy, productivity, performance, agricultural enterprises*

**JEL classification:** *H20, Q18, G30.*

## 1 Introduction

When analyzing the EU's Common Agricultural Policy, we can concentrate on more effects. The effects of domestic nature can include gains and losses to producers, consumers and taxpayers, employment effects, effects on other sectors and deadweight costs to the economy as whole. The effects of an international character include effects affecting world commodity prices or the volume and structure of international trade in the agricultural sector. Although the structure of the EU Common Agricultural Policy is quite difficult, for most of the production is an

essential way of its realization through financial support. This is achieved through instruments such as different types of subsidies, intervention purchases, export restitutions, minimum import prices and import charges.

The subsidy is a form of government support extended to an economic sector, generally with the aim of promoting an activity that the government considers beneficial to the economy overall and to society at large. There are other definitions, more technical. For example, the subsidies represent some public expenditures, by means of which the production of sources such as energy or water is cheaper than its full economic cost, or which create the products, especially food or education cheaper for consumers. The subsidy may be supplied in the form of monetary payments or other transfer or through relief of an opportunity cost (Meyers and Kent 2001). The subsidies can be defined in a broader as well as in a narrower sense. The conventional form is the definition of subsidies in the narrow sense. The definition of subsidies in the broad sense is applied when costs of the activity do not arise directly from the source of a specific activity but they are influenced by other agent that may have a direct and clearly benefit from such activity (Templet 1995).

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The agricultural subsidies are an essential aspect of agriculture and play an important role in international trade. They are considered the most effective mechanism for accelerating the growth of the agricultural sector. They are paid to farmers and agribusiness operators to supplement their income in order to management of offer of agricultural commodities or influence of the cost and supply of these commodities in the international markets (Swain 2009). The main argument for the granting of these subsidies is the fact that the domestic farmers were not able to compete with foreign import without mentioned financial support of state. The removal of subsidies would contribute to increase the income disparities between rural and urban areas, and that would lead to exit of domestic farmers from the industry. The loss of domestic agricultural sector is considered as undesirable fact for various reasons, including the increase in unemployment and the loss of traditional way of life. In addition, a country that is not self-sufficient in food production can be more vulnerable to commercial pressure and the global food crisis (Henningsen, Kumbhakar and Lien 2009).

Subsidies may have a positive as well as a negative impact on the behavior of agricultural subjects. On the one hand, they can positively influence agricultural

behavior through the effect of wealth. Farmers can more readily expand production through such activities, that in the case of absence of guaranteed income from direct payments are considered too risky (Matthews 2017).

On the other hand, the subsidies may adversely affect the agricultural productivity because they distort the production structures of beneficiary farms. An illustrative example is coupled subsidies that maintain the position of farmers dealing with the loss-making area of business only in order to draw the subsidies. Subsidies may lead to technical inefficiency or lack of effort to seek farmers' cost-cutting methods. They can also cause moderate budget constraints, which means that farmers may be inclined to invest excessively and thus to use resources inefficiently. More generally, subsidies help to maintain existing resources and direct resources for more productive use in response to new technologies or changing market conditions.

In 2005, in the first year after accession of SR to the EU and after the start of realization of the rules of the Common agricultural policy in Slovakia, the volume of subsidies per ha of agricultural land amounted € 191.34. The growing trend was recorded till 2010, when this value at an average amounted € 353.88. This was the highest number of subsidies granted per ha of agricultural land during the whole period, because the year 2010 was the year when the responses of the global financial crisis culminated and the agricultural sector reached the negative economic results. The reason for this, the downward trend of yields has become, caused by the lower production, which was replaced by the increasing imports. However, a significant share on the yields of the agricultural enterprises reached just supports from EU sources. Without these supports, the agriculture would be even more unprofitable. The support has become a motivating factor and financial stabilizer of the agricultural enterprises (MARD SR 2011).

Evaluation of the production performance and effectiveness of agriculture is quite complicated, not only due to the instability of climatic conditions but also due to the wide variety of households in view of their economic strength and production profile. The effect of these subsidies on the agricultural production is a major theme in agricultural economy for several decades (Nowak, Kijek and Domanska 2015). The impact of subsidies on agricultural production, input allocation and income distribution is well documented in the literature (Rizov, Pokrivcak and Ciaian 2013). On the other hand significantly less attention has been devoted to the impact of subsidies on the productivity of farms. Most previous studies analyzed either the effects of subsidies and other factors on productivity (Guan and Oude Lansink 2006; Bezlepkina and Oude Lansink 2006; Skuras et al. 2006; Kravcakova Vozarova and Kotulic 2015; Kravcakova Vozarova and Kotulic 2016) or the efficiency of agriculture (Piesse and Thirtle 2000; Giannakas

et al. 2001; Karagiannis and Sarris 2005; Hadley 2006, Kleinhanß et al. 2007; Faze-kasova et al. 2014; Adamisin and Vavrek 2015; Kotulic et al. 2015; Mura et al. 2015; Simo, Mura and Buleca 2016; Andrejovska, Buleca and Hudakova 2016).

## 2 Data and Methods

The aim of this paper is to evaluate the development of volume of subsidies provided to the agricultural enterprises in Slovakia in the context of improve their productivity.

The basis for the empirical part were secondary financial and additional data of agrarian enterprises provided by the Ministry of Agriculture and Rural Development of the Slovak Republic in the form of Information sheets that we received from the company Radela Ltd. In terms of time series analysis, the paper is focused on the period from 2005 to 2014.

The following table 1 shows the representation of the agricultural enterprises in the research sample.

**Table 1 Total representation of agricultural enterprises in the research sample, 2005-2014**

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Enterprises</b>	1410	1364	1364	1317	1383	1305	1412	1480	1483	1487

*Source:* Own processing.

Performance of the enterprises was evaluated by multicriterial analysis of variant, namely through TOPSIS technique. As a criterion of analysis were selected ratios of financial analysis: return on total assets, return on sales, quick ratio, payables turnover ratio, coefficient of self-financing and interest coverage. These indicators were given the same weight. The calculation of TOPSIS technique is realized by Vavrek, Kotulic and Adamisin (2015); Kravcakova Vozarova, Kotulic and Vavrek (2016); Vavrek, Adamisin and Kotulic (2017).

Performance of farms has been evaluated in the context of territorial division of the individual regions of the Slovak Republic (BA – Bratislava region, TT – Trnava region, TN – Trenčin region, NT – Nitra region, ZA – Zilina region, BB – Banská Bystrica region, PO – Prešov region, KE – Košice region). In our analysis, we were interested in whether there is a statistically significant correlation between the performance of enterprises in the agricultural sector and the subsidies they draw on.

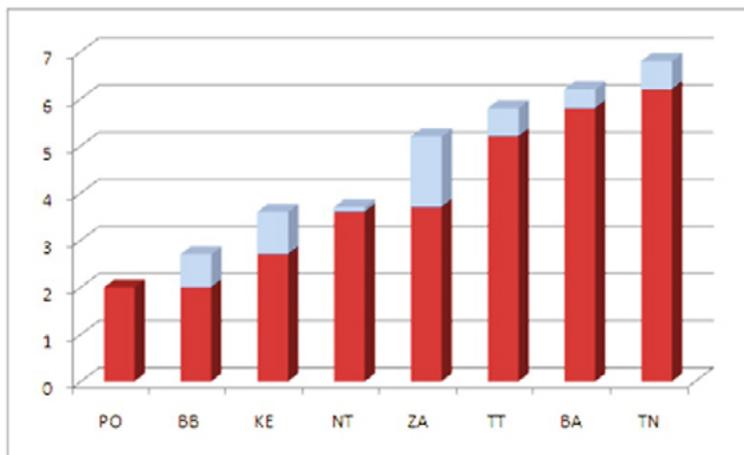
### 3 Results and Discussion

In order to the Common Agricultural Policy to respond to new challenges, it is necessary to carry out reliable measurements and assessments of the development of the European agricultural economy. The impact of agricultural subsidies on business performance is a matter of interest to policy makers, but on the other hand economic theory provides relatively little theoretical knowledge about this relationship. Due to the lack of sufficient attention in agrarian practice on the issue of agricultural performance according to territorial division, our economic analysis has focused on this area of research.

For the comprehensive assessment of performance of agricultural enterprises, we can consider that it important to evaluate the period as whole, including tracking development trends. When comparing the agricultural enterprises in individual regions, based on figure1, we can state that:

- the best average ranking over the 10 years was recorded by agricultural enterprises in the Presov region,
- the worst average ranking over the 10 years was recorded by agricultural enterprises in the Trencin region,
- the relative differences in the average ranking of the regions were from 2.7% (KE - NT) to 28.84% (NT - ZA).

Figure 1 Average ranking of regions based on TOPSIS techniques, 2005 - 2014



Source: Own processing.

The result of each annual evaluation is the relative distance to PIS alternative, whose distribution was tested by Shapiro-Wilk test for comparison purposes. As already was indicated in Figure 1, agricultural enterprises in the Presov region were 7 times (from 10 years) placed first. In the last 3 years, they have been replaced by companies of Nitra region, whose results were previously more heterogeneous.

Looking closer to the volume of subsidies granted per hectare of agricultural land in terms of territorial division, we can see in each region in Slovakia a trend that is copying development throughout the Slovak Republic. In 2010, there was reached the highest value of the volume of grants in all regions except the Zilina region. Since 2010 there was a gradual decline in funding, mainly due to the depletion of funds from the Rural Development Program 2007-2013 and slower initial use of payments from the new Rural Development Program 2014 -2020 as well as a slight decrease in support from the SR budget.

The analysis showed that the lowest volume of subsidies per hectare of agricultural land was achieved by companies of Nitra, Bratislava and Trnava regions, on the other hand, the most subsidies on ha of agricultural land were received by companies in Zilina, Presov and Trenčin region. It follows from that, agricultural enterprises in regions with worse natural-climatic conditions received more financial support than enterprises in regions where agricultural production has better conditions and long-term tradition.

A separate part of the analysis presents the results of dependencies of farms by volume of subsidies recalculated per hectare of agricultural land under LPIS (Land Parcel Identification System) in different regions in the monitored period. There were not confirmed any statistically significant linear correlation between monitored variables at the level of individual regions for the entire monitored period. These results are documented in Table 2. The analysis confirmed that there is no statistically significant dependence between the volume of subsidies and the performance of agricultural holdings in individual regions in Slovakia.

**Table 2 Correlations of subsidies with the results of TOPSIS technique according to territorial division, 2005 - 2014**

Regions	BA	TT	TN	NT	ZA	BB	PO	KE
<b>Correlation TOPSIS – SUBSIDIES</b>	0,505 (,1407)	-0,361 (,305)	0,107 (,767)	-0,266 (,457)	0,331 (,350)	0,447 (,195)	0,155* (,532)	-0,599 (,066)

Source: Own processing; \*Kendall coefficient.

## 4 Conclusion

On behalf of the increase of competitiveness of the agrarian production in Slovakia, there should be created a pressure on the economic rationality that would be displayed mainly in the economy and effectiveness of the recovery of resources. The system of subsidies, duties and intervention buying was established in the conviction of individual governments that the market of agricultural products would collapse and people would starve. The conviction against of the radical liberation is contributed by the fact that Slovakia could be affected by the loss of the food security, a greater burden on the environment and the change in the character of the current countryside (Adamisin, Kotulic and Kravcakova Vozarova 2017; Adamisin et al. 2015; Kotulic and Dubravska 2015). Thus, the support system (subsidies, duties, budget) will probably fulfill the necessary and basic role in the stabilizing of this industry in the future not only in Slovakia. Based on this, it is possible to assume that problems in the agrarian sector would be continually repeated contrary to the fact that the agriculture has excellent preconditions for an effective function without massive state interventions and without non-systematic market regulations.

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