Disparities in the utilisation of production factors in the agriculture of Slovakia and of the European Union

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Abstract: The paper deals with the place of Slovak agriculture in the European Union and with the implementation of the strategy of the competitiveness growth of Slovak agrarian producers. The paper compares the disparities in the utilisation of production factors with the selected EU countries, identifies the causes of unfavourable position of Slovakia's agriculture and also describes some impacts of crisis and disparities in utilising production factors in businesses operating under production conditions.

Key words: competitiveness, production factors, cost management, benchmarking

The admission to the European Union (EU) has increased the interest on the part of the academic community as well as that of the business practice regarding the positions of Slovak agriculture within the Union agriculture and in the search for competitive advantages, on the basis of which it is possible to develop restructuring and look for developmental impulses. Comparisons with the advanced EU countries enable the agrarian sector to use the benchmarking for disclosing the disparities and defining the trajectories of further development.

The aim of our paper is to assess the position of Slovak agriculture in the national economy of the EU in the recent period in the terms of applying the selected production factors and at the same time, to evaluate the fulfilment of the producers' strategic orientation to the growth of competitiveness.

Several authors have been involved in the evaluation of the development of Slovak agriculture after the country's admission into the EU. Let us mention at least Blaas (2008), Božík (2008), Chrastinová (2008) and Varoščák (2008), or our preceding paper by Szabo and Grznár (2008). These authors, as well as many others, have evaluated the development of Slovak agriculture in the course of the recent years from various aspects; however, they jointly state a lower performance and effectiveness of the Slovak agrarian sector within the EU countries, a lower utilisation of production factors used, a low production intensity and losing competitiveness not only in the EU market, but also in the domestic market. Many find the main cause in a lower level of subsidies, gained by the SR from the EU.

Among other authors who have recently studied the related issues, we can mention Střeleček et al. (2009), who analysed the influence of subsidies on the production orientation of producers in the Czech Republic and pointed out the disparities in subsidies among the EU countries. Dos Santos et al. (2010) investigated the opinions of Portugal farmers regarding the EU subsidies and indicated their considerable expectations related to the EU Common Agricultural Policy (CAP).

During the pre-crisis period, Slovak economy has been dynamically raising, mainly owing to the country's consolidated industry, a recovered inflow of direct foreign investments, a developed banking sector, and a developing sector of services. However, the agri-food sector has not been affected by this trend. The financial and economic crisis, which has recently slowed down the development of growth of the national economy, has also influenced the Slovak agri-food business.

The development of agriculture does not correspond to the high year-on-year growth of the gross domestic product in recent years; the share of agriculture in the GDP creation stagnated and the outputs expressed in the value of gross agricultural products in current prices fluctuated, while the animal production in recent years has been declining. This development is illustrated in Table 1.

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Table 1. Development of the role of agriculture in the SR national economy

Indicator	Measure unit	2005	2006	2007	2008	2009
GDP growth in current prices	% changes	8.6	11.2	11.7	9.5	–5.8
GAP in current prices	mil. €	1 888	1 927	1 969	1 868	1 865
of that: – crop	mil. €	890	946	1 037	890	925
– animal	mil. €	998	981	965	978	938
Share of agriculture: – GDP	fixed prices, %	3.4	3.6	3.6	3.3	4.5
– gross value added	fixed prices, %	3.9	4.0	4.0	3.5	5.0
– employment	%	4.5	4.3	4.1	3.9	4.5
– average wages	%	73.3	72.9	74.9	75.9	78.6

Currency exchange rate € = 30.26 SKK, GDP = Gross Domestic Product, GAP = Gross Agricultural Production

Source: Statistical Office of the Slovak Republic (2009)

The decline in the share of agriculture in the GDP creation is the result of a faster growth of secondary and tertiary spheres on one hand; on the other hand, however, it is also the consequence of certain stagnation of agriculture. Despite the low share of agriculture in the national economy, its importance in view of its irreplaceable role in the course of securing nourishment of population and employment, and its links to the foodstuff industry, services and the supplier sectors have not declined.

After the Slovakia accession to the EU, the country's performance of agriculture was expected to raise – Slovakia considerable lags behind in this field compared to the original EU countries – however, the development of gross crop and animal production does not correspond to these expectations. Animal production stagnates and the development of crop production is marked by a considerable year-on-year volatility.

Since its admission to the EU, Slovak agriculture has not recorded any distinct change in the orientation towards an effective utilisation of domestic production factors and the growth of competitiveness, which is a prerequisite to succeeding in the liberalised European market. This is indicated namely by the rising negative balance of foreign trade in agricultural and food commodities.

The balance of foreign trade of the agri-food industry has been recording a negative balance for several successive years, while the amount of balance has sometimes exceeded that of the total foreign trade of the SR. The balance deficit is made up first of all by processed food products, the trade with agricultural raw products has usually a positive balance. This is important for the assessment of competitiveness of the primary and processed products. In the year 2009, the balance was formed by competitive products from at much as 64.7%, which is a clear sign that the foreign competition asserted itself in our market. The Czech Republic remains our most significant partner in the agri-food foreign trade.

Table 2. Agri-food foreign trade of the Slovak Republic in mill EUR

Indicator	Part	2007	2008	2009
FT of the SR agri-food products SR total	export	1 849	2 037	1 762
	import	2 667	2 908	2 711
	balance	–817	–872	–950
FT of agri-food products with the Czech Republic	export	578	603	521
	import	717	750	774
	balance	–139	–147	–254

FT = Foreign Trade

Source: Report on Agriculture and Food Industry of the SR (2009), Ministry of Soil Management and Rural Development, SR (2010)

MATERIAL AND METHODS

The analysis of competitiveness of the SR agrarian sector is carried out on the basis of the data of the Statistical Office of the Slovak Republic and the data of the Farm Survey of the Ministry of Agriculture and Rural Development for the years 2008 and 2009 gained from the database of the Ministry of Agriculture and Rural Development SR (MPaRV SR), which is operated by the Research Institute of Agricultural and Food Economics (VÚEPP) in Bratislava. The subject of the analysis was a sample of agricultural businesses – legal entities, operating under the homogeneous production conditions, which have provided data for the database. The primary data fail to enable us to assess regional disparities of the agrarian sector; for this reason we focus on the disparities only within the businesses that operate in the production conditions in the SR. In the year 2009, the total of 577 businesses operated under these conditions, and in the year 2008, the figure was 539 businesses. The database of the EU Farm Accountancy Data Network (FADN-ISPU) for the year 2007 is used for the purposes of the international comparison.

The data acquired from the business entities are classified in the terms of prosperity of businesses, in order to gain a better picture of the rate of differences in utilising production factors and their causes in the production conditions described. Methods of analysis and synthesis, comparison and some statistical procedures are used in processing the background information and formulating proposals.

RESULTS AND DISCUSSION

The performance of agriculture in the international comparison of countries is most frequently expressed in the terms of the value of the total output per 1 ha of the utilised agricultural area (UAA) in EUR. The comparison of the SR with the selected countries and EU-27 average is illustrated in Figure 1.

The position of the SR in the mentioned international comparison is not very flattering and the dispersion values are considerably high. The highest value of agricultural production (total output) per 1 ha of agricultural area utilised in the year 2007 was recorded by the Netherlands on the level of 12 423 EUR. It should be the ambition of Slovakia to at least approximate the EU average, behind which the SR lags almost by a half.

While the original EU countries record an output per unit of area higher than the total costs, in the new EU countries costs exceed outputs, and this difference is the highest in the SR. The only new country, where the value of production exceeds that of costs, is Poland, where the difference amounts to over 7 thousand EUR per 1 ha of the utilised area.

The performance of Slovak Agriculture in the European Union

The performance of agriculture in the international comparison is most frequently expressed in the value of the total agricultural output, measured by the value added and the share of total output and costs. This

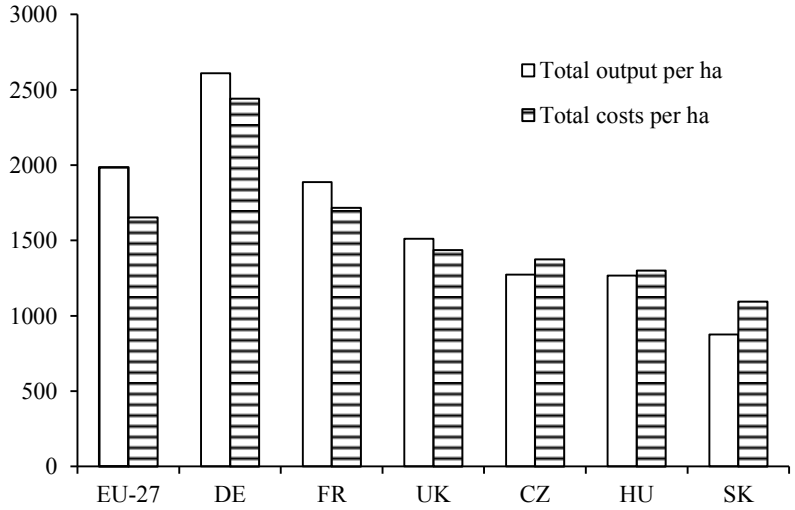

Figure 1. Total output and costs in the EU-27 and in the selected countries, 2007

Source: ISPU and the Research Institute of Agricultural and Food Economics (VÚEPP) Databases, Bratislava, 2010, own adjustment

Table 3. Output and costs in the selected EU countries

Country	Total output (€/ha UAA)			Share of costs in production (%)		
	2006	2007	2008	2006	2007	2008
EU-27	1 827	1 984	1 999	87.5	83.3	88.1
Germany	2 252	2 610	2 431	98.7	93.5	101.8
France	1 692	1 887	1 911	97.7	91.0	97.4
Slovak Republic	677	875	922	156.2	125.5	128.0
Czech Republic	1 121	1 273	1 325	113.5	108.0	115.3
Poland	1 343	1 583	1 554	79.7	76.1	89.9

UAA = total utilised agricultural area

Source: Databases of ISPU, the Research Institute of Agricultural and Food Economics (VÚEPP), Bratislava (2010), selected countries, own calculations

is the method of measuring the performance of agriculture in the EU countries used also by the Eurostat. The position of Slovakia, in comparison with the selected countries of the Union, is characterised by the selected indicators in recent years in Table 3.

The average of the total EU-27 production in the evaluated period has a moderately rising trend, the rate of costs is variable, but the figures are positive. Likewise rising was the performance of the agriculture in the leading EU countries – Germany and France – at a higher cost-intensity as compared with the average.

However, the position of the SR, as well as of other Central and Eastern European countries, is worse. The Slovak Republic records the lowest value of production per unit of agricultural area and the highest rate of costs in the absolute figures throughout the period evaluated.

A low level of intensity expressed by the volume of production per one unit of agricultural area (UAA) and higher costs of production are the main cause of the low utilisation of the production potential and the sources allocated in agriculture not only in the SR, but also in other transition countries, and they determine a low competitiveness of these countries.

Further indicators which are used to evaluate the effectiveness of agriculture in the international comparison are the Gross Farm Income and the Farm Net Value Added. The Gross Farm Income is the total agricultural production after the subtraction of inputs (of the intermediate consumption), and the Farm Net Value Added is obtained after subtracting the fixed capital consumed. Figure 2 illustrates the disparity of these indicators among some old and new EU countries.

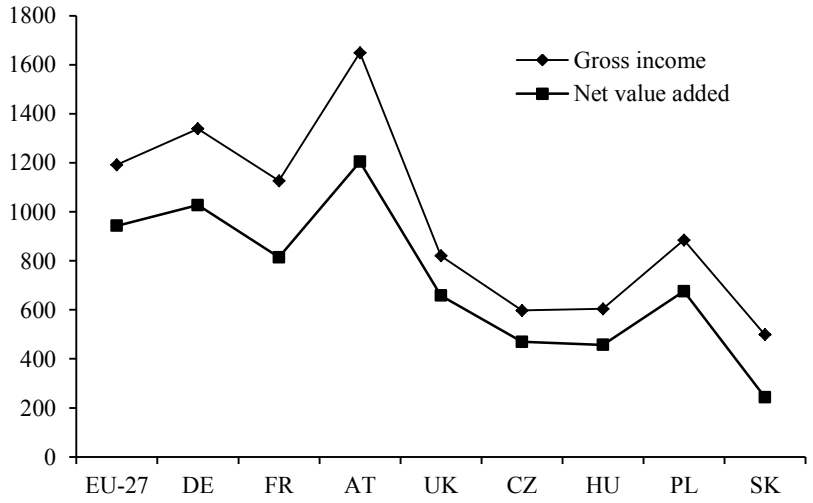

Figure 2. Gross Farm Income and Farm Net Value Added (in € per 1 ha UAA, 2007)

Source: Database ISPU, the Research Institute of Agricultural and Food Economics (VÚEPP), Bratislava, 2010, own adjustment

In both indicators, the SR lags behind considerably; there can be seen a large difference compared to the EU-27 average, but it stands for a benchmarking value, which the country should be gradually approaching after its resources have been mobilised.

Position of Slovak agrarian businesses in the European Union

If the Slovak agrarian businesses wish to be competitive in the EU markets, but also in the domestic market, they have to compare their results with the agrarian sector of other member countries and carefully assess their plans also by using the benchmarking method. The purpose of this comparison should be an effort to identify the rate of lagging behind the leading representatives of the effective and efficient agriculture, to analyse the causes of worse results and to take an inspiration from the managerial solutions of the best ones, since the EU outlines the same contours of the agrarian policy. The fact is, however, that Slovak producers have yet to wait for the level of the subsidies granted to the EU-15 countries by the year 2013.

Utilising the currently accessible FADN database (Farm Accountancy Data Network, ISPU), we shall try to compare the position of Slovak agriculture with the selected EU countries in the terms of selected data.

In the international comparison of businesses, we have used only some selected indicators, which however indicate also some causes of the disparities detected. The total output per unit of area in the SR results from a lower value of assets, a lower share of the value of machinery in assets, low number of animals as expressed in animal units per total utilised agricultural area (UAA) as well as a low cost efficiency of the purchased seeds and fertilisers in crop products. Some disparities of the value indicators are, however, affected by the differences in the prices of inputs and outputs in the EU countries.

These factors also cause a low productivity of labour expressed by the net added value per 1 worker (UAA). Although in the terms of size, Slovak businesses are in the leading position in the EU, this competitive advantage and the potential of the economies of scale have not been utilised up, to date.

Another factor is a lower, mere 75%, subsidy level of our businesses compared with the EU average. Undoubtedly, a lower performance and effectiveness of utilising resources prevails in Slovak businesses.

Disparity of Slovak agribusinesses prosperity

The increase in competitiveness of the Slovak agricultural businesses lies in the growth of their performance in indicators of utilising production factors as well as in the key indicator – profit.

Utilisation of production factors and creation of profit by the businesses, however, considerably varies, on one hand, according to the objective conditions under which these businesses operate, and on the other hand, according to the capabilities and competence of their managers. For this reason, we analyse the results of a set of legal entities operating during 2008 and 2009 in the most favourable production conditions in the SR. We have selected this set from the set of all agricultural businesses,

Table 4. Slovak agribusinesses in the EU in 2007 (in € per ha UAA, per 1 AWU)

Indicator	EU-27	DE	FR	AT	CZ	PL	HU	SK
Total output	1 984	2 610	1 887	2 179	1 273	1 582	1 267	875
Net Value Added per 1 AWU	16 782	37 694	32 958	25 359	13 523	6 706	13 220	8 395
Animal unit per 1 ha	0.8	1.04	0.83	0.83	0.50	0.72	0.39	0.33
Crop products per purchased seeds and fertilizers	11.8	8.17	9.85	13.5	15.18	8.25	10.28	9.78
Assets total per 1 UAA	8 912	9 075	4 510	12 664	3 190	5 025	2 726	2 154
Machinery/assets	0.098	0.112	0.179	0.142	0.239	0.21	0.185	0.109
UAA in per farm	30.5	84.43	77.34	33.59	236.86	17.28	54.11	582.28
Subsidies per 1 UAA in €	323	406	355	589	273	221	244	241

AWU = Annual Work Unit, UAA = total Utilised Agricultural Area

Source: EU FADN (2007), Standard results in 25 EU member states (2010), own processing

which have recently provided information for the database. Comparing the results in the given time horizon will also indicate the impact of the crisis on the businesses analysed.

Sets of agribusinesses in Table 5 were classified by their prosperity into two groups. All businesses in this set are market-oriented, and they should aim at a high performance. The data indicate a considerable dispersion of values, which may be partly caused by objective reasons, but for the most part, these are obvious differences issuing from the managers' decisions.

The competitiveness of businesses depends in the first place on the efforts regarding cost savings and the orientation of production structures in accordance with the market signals, since such strategic choices as production differentiation, or market segmentation are little accessible to agricultural prime producers. The cost saving may be achieved only by the means of a careful cost management and a rational intensification of production on each farmed hectare.

The comparison of results of the profit-making and loss-making businesses (farms) in Table 5 indicates that the profit-making ones try to achieve higher production intensity and a high productivity of labour measured by the yields per 1 worker. Their results in the efficiency of production consumption are much better: they renovate their fixed capital faster even in the year of crisis, in particular regarding machinery.

The crisis has influenced also the profit-making businesses. The share of the profit-making businesses in the year 2009 against the previous year declined from 73% to 51%; likewise there was recorded an absolute amount of profit and the increase of loss. Neither did the rise in subsidies save the level of economic result recorded in the year 2008. According to the preliminary estimates published, Slovak agriculture as a whole recorded a loss also in the year 2010 in the amount of 40–50 mill EUR.

CONCLUSION

After its accession into the EU, Slovak agriculture should keep up its competitiveness mainly in the domestic market and also avoid being lost in the large European market. The development so far indicates, however, that Slovak agriculture has succeeded in this area only to some extent. This is due to the global business environment, the development of which is not always favourable for agribusiness, but to some extent also due to an inadequately low flexibility of the Slovak agribusiness practice.

Agribusinesses in production regions do not compare regarding their results with the businesses in the advanced countries and they do not utilise benchmarking in building of their competitive advantage. Not only they do not use to their advantage the economies of scale, which is offered to them by the size of the businesses, they also underutilise the reserves of the production intensity growth.

The producers most frequently justify their results by the argument of lower subsidies than those received by the EU-15 member countries. However, the analyses carried out indicate that the main cause of disparities compared to the EU advanced countries is a low level of the cost management and wrong strategic decisions on the production intensity.

Table 5. Selected indicators of economic management of businesses operating under production conditions in the years 2008, 2009 (in €/ha, coefficient, current prices)

Indicator	2008			2009		
	profit-making	loss-making	total	profit-making	loss-making	total
Number of businesses	392	147	539	295	282	577
Total output per 1 ha	2 658	2 357	2 582	2 795	1 567	2 082
Total output per 1 AWU	80 584	54 998	72 813	79 302	52 074	64 555
Production/external factors	1.33	1.169	1.286	1.255	1.027	1.154
Renovation farm capital in %	55.5	31.5	46.7	53	41	48
Profit (loss) per 1 ha UAA	116	–175	43	91.6	–268.2	–117.2
Subsidies per 1 ha UAA	265	268	266	312	254	278
% of farms with profit	73%	27%	100	51%	49%	100

Source: CD MP SR, Research Institute of Agricultural and Food Economics (VÚEPP), Bratislava, 2010, own processing

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