

# On some potential competitive advantages of the Slovak agricultural enterprises in the EU

## *K niektorým potenciálnym konkurenčným výhodám slovenských poľnohospodárskych podnikov v EÚ*

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**Abstract:** The paper deals with identification of some forms of potential competitive advantage that can be applied by the Slovak agrarian enterprises after the accession to the EU. The capacity of the economies of scale is being analyzed, as well as the potential of the labor productivity growth, and input management in controlling of intensification process. The paper is targeted at verifying the extent of application of competitive advantages by agrarian enterprises, and identifying the reasons of obstacles that hinder their full utilization.

**Key words:** competitive advantage, economies of scale, labor productivity, input management

**Abstrakt:** Príspevok sa venuje identifikácii niektorých foriem potenciálnej konkurenčnej výhody, ktoré môžu uplatniť slovenské agrárne podniky po vstupe do EÚ. Analyzované sú možnosti využitia úspor z rozsahu, potenciál rastu produktivity práce a manažment vstupov pri riadení intenzifikačného procesu. Cieľom príspevku je overiť do akej miery sa slovenským agrárnym podnikom darí využívať tieto konkurenčné výhody a čo je bariérou ich plňšieho využitia.

**Kľúčové slová:** konkurenčná výhoda, úspory z rozsahu, produktivita práce, manažment vstupov

The accession to the EU poses for the Slovak agricultural enterprises a significant change in entrepreneurial environment. The EU countries market has become a unified market without restrictions and available to all our enterprises; on the other hand, this availability was offered to all agrarian enterprises of further 24 European countries. Obviously, this caused enhancement and sharpening of competition on the Slovak market, too. The acceptance of the Common Agrarian Policy (CAP) represents another significant change; it brings about producers' expectations of higher subsidies in comparison with the former conditions.

The aim of the paper is to identify some potential competitive advantages of our agrarian enterprises and to confront them with the competitive position of the agrarian enterprises in the old member countries of the EU.

### MATERIALS AND METHODS

The accession of the Slovak agrarian enterprises to the EU poses a great challenge for managers in their search for capacities how to be successful at

domestic as well as foreign markets; there is a strong competition and many obstacles that hamper productivity growth by decelerating the mechanism of the Common Agrarian Policy, such as production quotas, weakening support of market prices, negotiated fixed areas of land and conditions (number) of animals, etc. Due to the mentioned reasons and further causes, the search for available competitive advantage is more limited than in other economic areas.

In our paper, we will try to indicate the opportunities of our enterprises to be successful in the international competition due to the application of some potential competitive advantages in the area of the economies of scale, of labor productivity and input management.

While handling this issue, we apply the methods of economic analysis and comparison in the area of international comparison and comparison between enterprises, as well as the methods of analogy and deduction. We obtained analytical material from the central database of the Ministry of Industry of the SR and from the database of the European Commission FADN Public Database.

## RESULTS AND DISCUSSION

Many authors in our country and in other candidate countries dealt with the preparation of agricultural enterprises of the SR for the accession to the EU; they also dealt with the first evaluation of results after the accession. Many authors contributed to the issue; we can mention at least several of them: Blaas (2004), Grznár, Szabo (2004), Bielik et al. (1995), Chrastinová (2004), Fendeková, Strieška (2005). During the period of preparation to the accession, a significant attention was devoted to the problems connected with low performance of our enterprises, with old-fashioned technical equipment, with malfunctioning of the market with land, and with only half-solved property ownership, etc.

After the accession to the EU, the evaluation of agro-sector performance acquired new dimensions. After the accession to the EU, each accessing country acquires new opportunities on the vast market with 454 million consumers. However, there is strong international competition. The former EU commissioner

for agriculture pointed out that "The utilized production area will be raised by 30%, the EU production will rise by 10–20% and gross added value will grow by 6%. This difference is caused by lower productivity in new member states" (Fischler 2004).

The benchmark of performance in various industries of national economy is represented by creation and growth of added value. The same coefficient is valid also in agriculture; its level and formation belong to performance indices within the agrarian sector of the country. The following Table 1 shows the position of Slovak agriculture in the international comparison with the EU countries.

The table shows a considerable lagging of the new member countries behind the average of the EU-15; there is certain distortion of data due to the different price level and exchange rates, due to the different production structure, and due to further factors. On the other hand, however, due to certain limitations of the final production growth of new member states after the accession to the EU, it might be difficult to achieve the level of performance of the old member

Table 1. Agricultural performance in the year 2002 in EUR per hectare

Country	Final production	Input	Gross added value	PH/input
Czech Republic	781	551	230	0.417
Hungary	953	620	333	0.538
Poland	728	468	260	0.557
Slovakia	695	536	159	0.296
EU-15	2 189	1 057	1 132	1.071

Sources: Czech, Hungarian, Latvian, Polish, and Slovak Agriculture in Comparison with the EU Countries. VÚZE, Praha 2004

Table 2. Number and size of farms in the international comparison

Country	No. of farms in thousands		Average size of farm in hectares	
	2000	2003	2000	2003
Belgium	61.7	54.9	22.6	25.4
Germany	472.2	412.3	36.3	41.2
France	663.8	614.0	42.0	45.3
EU-15	6 770.7	6 238.7	18,7	20.2
SR – farms total	7.51	8.21	301	272
SR – legal entities	1.163*	1.278	1 241*	1 181
SR – physical persons	5.47*	6.12	39*	42

\*year 2001

Source: EC, Eurostat, Report on Agriculture and Food Industry, Bratislava, the Ministry of Agriculture of the SR, 2005, own calculations

states. Therefore, it will be inevitable to utilize such, competitive advantages as, for example, production concentration, enterprise specialization, input management with evaluation, production quality, bio-products, etc.

## ECONOMIES OF SCALE

In enterprise management, an economy of scale is considered to be a significant source of the growth of economic strength and concentration of enterprises; it is also considered to be a strategic and competitive advantage which goes hand in hand with the induced synergy. The nominal coefficient of the potential economies of scale is derived from the size of enterprises in a country. In Table 2 we show the position of the SR within this coefficient in comparison with several member states of the EU.

The number of farms in the EU has a declining tendency; it is in compliance with the objectives of the Common Agricultural Policy that supports enlargement of farms. Simultaneously, the average area of farms is growing, too. On the contrary, in the SR the number of farms is growing as with legal so with physical persons. However, measurement of farms of legal persons is going down, while that of physical persons is growing. As we have a certain prevalence in the area dimension, we thus have a competitive advantage that should be reflected both in performance and in labor productivity.

In the EU member states, the effect of dimension is reflected rather significantly. We illustrate it on the example of several countries via comparison of the results of medium-small farms and medium-large

farms; their size is denominated by the ESU standard (European Size unit, while ESU represents 1 200 EUR). ESU is based on the calculations of Standard Gross Margin that reflects the difference between production value and variable costs. In our country, this coefficient represents allowance profit, settlement allowance or margin.

The economic results of farms in the EU classified according to the ESU coefficient correspond fully (with several exceptions) with the growth of farm size and with the total achieved production on the unit of area in the individual countries (Table 3).

How do our enterprises utilize this potential advantage? This question can be answered on the basis of data of legal entities enterprises from the year 2004, i.e. immediately after our accession to the EU (Table 4).

The growth of land size of enterprises in the year 2004 shows only low correlation between the production value per land unit and labor productivity. With the exception of the first group of enterprises the values in further enterprises are very similar. We find a more significant correlation between production consumption on one land unit that falls with the growth of enterprise due to the economies of scale and the growth of efficiency of production consumption while production valued per one crown of production costs grows, with the exception of the last group. The amount of financial support per land unit stays quite stable with all groups due to the adopted tools of the Common Agrarian Policy of the EU. The economic result itself does not show any dependence on the measurement of an enterprise.

The economies of scale do not seem to be a source of competitive advantage in our enterprises; they

Table 3. The influence of farm size on economic results in the EU, 2003

Country	Farms 8–16 ESU		Farms 16–40 ESU	
	area (hectare)	production* EUR/1 hectare	area (hectare)	production* EUR/1 hectare
Denmark	17.3	1 612	28.2	2 332
Greece	7.5	2 714	12.2	3 275
Spain	19.8	1 192	45.7	1 032
France	25.1	1 080	38.7	1 303
Italy	10.3	2 313	19.3	2 537
Great Britain	44.7	479	72.6	722
EU-15	15.8	1 439	35.8	1 404

\*total output

Source: FADN, Public Database, 2006, personal calculations

Table 4. Size of farms and economic results, legal entities in the SR, 2004

	Size of farm (ha)					
	up to 500	501–1 000	1 001–1 500	1 501–2 000	2 001–3 000	above 3 000
No. of enterprises	352	288	229	131	136	48
Production (SKK/ha)	48 673	21 713	22 847	24 860	22 957	23 702
Production costs (SKK/ha)	38 133	16 949	17 017	18 234	16 686	17 515
Production per 1 worker (1 000 SKK/ha)*	973.86	678.53	737.00	710.29	740.55	790.07
Economic results (SKK/ha)	841	373	672	504	891	415
Total support (SKK/ha)	5 281	5 345	5 324	5 151	5 160	5 306
Production/production costs	1.277	1.281	1.343	1.363	1.376	1.353

Source: CD Ministry of Industry of the SR, VÚEPP in Bratislava, own calculations

represent only a latent opportunity that will have to be utilized more effectively, particularly in the area of production portfolio and in the area of performance in managerial positions.

## LABOR PRODUCTIVITY

The size of enterprises is closely connected with the further potential competitive advantage due to the growth of labor productivity. Our situation regarding this coefficient within the EU is not very flattering. This fact is illustrated on Table 5.

The low value of final production per 1 worker in the SR is not representative enough; earnings per one worker amounting to 790 thousand SKK in the year 2004 (Table 1) at the exchange rate of 40 SKK per 1 EUR represent 19 750 EUR. High labor productivity in the mentioned countries of the EU is determined by the growth of technical, especially machine-equipped

labor; their growth indices per the period from 1999 to 2003 are very similar. The growth of technical equipment of agrarian enterprises in the SR is evidently lagging behind that in the EU. The high growth of labor productivity in agriculture in the SR during the evaluated period is determined more by making workers redundant in the enterprises owned by legal entities. Our competitive advantage in this area is still not fully utilized; it is, first of all, due to the slow recovery and development of fixed capital.

Monitoring of the number of machines in agriculture in the SR showed only during 2003–2004 declines in the majority of types. Renovation of production machinery continues to be insufficient and the average age of machines tends to increase. In 2004 up to 89.8% of machines in vegetal production have been older than 8 years; in animal production the percentage of such machines was 58.8%. In 2004, the obsolescence of long-term tangible and non-tangible property amounted to 53.6%. In 2004, for instance,

Table 5. Labor productivity and growth index of fixed capital in machines and equipment

Country	Final production per 1 worker in EUR, year 2002*	Growth index of machine capital per 1 farm in 03/1995**	Growth index of labor productivity in the period of 03/1999**
Belgium	36 603	140.1	129.3
Germany	18 305	116.9	136.8
France	32 022	137.1	128.4
The Netherlands	41 651	165.1	138.6
EU-15	22 659	141.4	168.1
SR	3 791	117.0***	275.2***

Source: \*Eurostat 2004; \*\*Database EK, FADN-public database 2005, CD MP SR; \*\*\*legal entities, yield per worker, own calculations

only 1.95% of tractors, 2.26% of combine-harvesters, and 1.6% of ploughs were replaced, etc. The value of the acquired machinery in 2004 calculated per 1 hectare of land amounted to only 1 300 SKK, while in compliance with the standardized calculations for replacement of machines of simple reproduction, the required investments per 1 year are 5 000 SKK per 1 hectare of agricultural land.

### Input management

Input management represents further area of acquiring competitive advantage; it plays an important role in the intensification process. The radical decline in intensification indices in the SR within the period of transition (e.g. with industrial fertilizers there was a decline from 350 kg to current 62 kg per 1 hectare of land) naturally led to the decline of production parameters. But producers evaluate the applied inputs in different ways.

Firstly we want to illustrate the indices of changes monitored by several EU countries in the area of inputs, outputs, and number of workers on farms; it is shown in the period between 1995 and 2003 (Table 6).

The development in number of workers on farms is not definite. In some countries the number went down, while in some it went up. During the monitored 8 years, the EU as one unit maintained the average number of farm workers. In the SR, during the transition period, the number of workers in enterprises of legal entities has dramatically dropped.

We will now characterize to what extent the intensification process can be considered our competitive advantage. We analyze enterprises in the productive area of South Slovakia in 2004 with the objective to verify the reflection of intensification in several parameters of economic efficiency. For the sake of this analysis, we classified the group of all enterprises – legal entities in this area, according to the amount of the invested production costs

Table 6. Change indices of input, output, and number of workers on farms in the selected EU countries and in the SR

Country	Growth index of final production of farms 2003/1995	Growth index of inputs on farms 2003/1995	Change index in number of workers on farms 2003/1995
Belgium	124.9	126.8	108.2
Germany	136.7	143.7	70.5
France	125.2	141.4	87.2
The Netherlands	144.4	151.5	117.9
EU-15	143.8	151.2	100.6
SR*	63.8	127.8	41.1

Source: Database EK, FADN-public database, 2005, CD MP SR, \*legal entities – production and production costs, own calculations

Table 7. Intensification process in the SR, 2004

	Size of farm (ha)				
	up to 10 000	10 001–17 000	17 001–24 000	24 001–31 000	above 31 001
Number of enterprises	106	119	103	120	136
Current support (SKK/ha)	4 570	5 154	4 975	4 734	5 298
Production (SKK/ha)	10 899	19 722	28 356	38 547	69 788
Production costs (SKK/ha)	9 653	15 506	19 882	27 080	51 591
Added value (SKK/ha)	1 299	4 298	8 557	11 619	21 087
Economic result (SKK/ha)	1 227	2 049	1 159	746	1 509
Production/production costs	1.129	1.271	1.426	1.423	1.352
Added value/production costs	0.134	0.217	0.430	0.429	0.408

Source: CD PM SR, VÚEPP, Bratislava, 2005, own calculations

on one unit of area. We thus obtained the picture shown in Table 7.

The intensification process in this area is real in our country. The enterprises classified according to the amount of production costs that can be conditionally identified with the intensification costs, are in separate groups divided quite proportionally. With the exception of economic result that fluctuates or stagnates and does not react to growing inputs, all applied indices go up in correlation with the growth of inputs into production consumption. By escalation of inputs, added value grows faster than production.

Valuation of production costs starts to decline in the highest input groups, whether it concerns production or added value. Almost one half of the enterprises remain in the groups with low inputs into production costs, where we find our reserves for the growth of efficiency.

## CONCLUSION

After the accession to the EU, the Slovak agrarian enterprises must strengthen their strategic planning and search for such areas where they could find and apply their competitive advantages.

To such potential advantages, there belong potential economies of scale, capacity for the growth of labor productivity, and input management with managing intensification process. The analysis of utilization of these potential opportunities for the growth of agricultural production performance showed that the opportunities are not fully utilized. The reasons are of subjective as well as of objective character. The possibilities of change in perception of the competitive advantages can be, undoubtedly, found in the tools of

common agrarian policy that have been introduced into the policy of the SR.

Any measure that can help an enterprise to sell an offered production, to increase its quality, to economize its production, or to offer higher added value, can be considered as a potential competitive advantage. In our paper we highlighted only several opportunities in this area.

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