The profit and added value creation and development analysis of agricultural companies in selected regions in Slovakia

Analýza tvorby a vývoja výsledku hospodárenia a pridanej hodnoty v poľnohospodárskych podnikoch vo vybraných krajoch SR

J. Miklovičová, Ľ. Gurčík

Faculty of Economics and Management, Slovak University of Agriculture, Nitra, Slovak Republic

Abstract: In the paper, we deal with the profit or loss creation analysis and with the added value analysis, which is an important factor by profit creation in the companies. We calculate the profit or loss and added value with the pyramidal decomposition, determining the factors with positive or negative influence on their creation and development. We execute the quantification in agricultural companies of the Bratislava and Žilina region in the Slovakia. The companies farm in different natural conditions. The added value is in companies of the Bratislava region more than four times higher than in the companies of the Žilina region. The profit after taxes was negatively influenced by the loss from financial activities in the companies of both regions during the analyzed period.

Key words: agricultural subjects, added value, profit, loss, pyramidal decomposition

Abstrakt: V príspevku sa zaoberáme analýzou tvorby výsledku hospodárenia a analýzou pridanej hodnoty, ktorá predstavuje dôležitý faktor pri tvorbe výsledku hospodárenia podnikov. Kvantifikujeme výsledok hospodárenia a pridanú hodnotu prostredníctvom pyramídového rozkladu, odhalíme faktory, ktoré pozitívne alebo negatívne vplývajú na ich tvorbu a vývoj. Kvantifikáciu uskutočníme v poľnohospodárskych podnikoch Bratislavského a Žilinského kraja SR, ktoré hospodária v rôznych prírodných podmienkach. Pridaná hodnota je v podnikoch Bratislavského kraja viac ako 4násobne vyššia ako v podnikoch Žilinského kraja. Výsledok hospodárenia po zdanení negatívne ovplyvnila strata z finančnej činnosti dosiahnutá v podnikoch oboch krajov v sledovanom období.

Kľúčové slová: poľnohospodárske podniky, pridaná hodnota, zisk, strata, pyramídový rozklad

The agricultural subjects in Slovakia farm in much differentiated natural conditions. On achieving the profit, many factors exert influence, as for example: size of companies, legal form of companies, natural and climate conditions, quality of land, structure of agricultural land, the managerial works and the competences of the owners or managers (Chrastinová 2008; Szabo, Grznár 2008).

MATERIALS AND METHODS

The information sources for the profit or loss and the added value analysis are the data from the CD MA SR, kept by the RIAE, which were obtained from the Information Sheets of agricultural companies. The analysed periods in our paper are the years 2005, 2006 and 2007. From the agricultural companies data, we had chosen for the analysis two regions of the Slovak Republic – Bratislava and Žilina. The Bratislava region is in the South of Slovakia and the Žilina region is more to the North. The chosen companies use the double – entry bookkeeping. To the quantification of factors influencing the added value, we use the pyramidal decomposition of added value. In the pyramidal decomposition, there is on the top of the pyramid the indicator, which has the synthetic character, and it is decomposited by the mathematic-statistical bonds to analytical indicators (Gurčík 2004). Between the

indicators, there can be the additive or multiplicative bonds. According to the bond type between the indicators, we shall calculate the influence of the indicators change on the synthetic indicator – added value (Bielik et al. 2003). The calculation we execute according to the Figure 1.

In the first decomposition level of added value (x), there is between the indicators added value/operating revenues (a) and operating revenues (b) the multiplicative bond. When the indicator index (share) is positive, we use for the calculation the logarithmic method. When the index is negative, we use another method, for example the method of gradual substitution (Zalai 2008).

The logarithmic method:

$$xa = \frac{\ln Ia}{\ln Ix} \times \Delta x \qquad xa = \frac{\ln Ia}{\ln Ix} \times \Delta x$$

The method of gradual substitution:

$$Xa = a1b0 - a0b0 \qquad xb = a1b1 - a1b0$$

In the second and third decomposition level, there is the additive bond. To calculate the indicators influence on the synthetic indicator change, we use the changes of indicators. We calculate the indicators influence on the added value in the absolute measure (SKK) and in the percentage (%) measure, then we determine the factors, which in the chosen regions influenced the added value development the most or the least (Gurčík 2000).

In the profit or loss pyramidal decomposition, there is considered an apex indicator – earnings after taxes (EAT), which is decomposed on two legs: earning or loss from extraordinary activities and earning or loss from ordinary activities. Earning or loss from extraordinary activities is created with the difference between the extraordinary revenues and extraordinary costs and from this, the income tax from extraordinary activities is deducted. Earning or loss from ordinary activities is created by the difference between the earning or loss from operating activities before taxes and the income tax from operating activities. Operating activities are created by the financial activities and operating activities, there are particular costs and revenues. The model of the earning or loss decomposition is in the Figure 2.

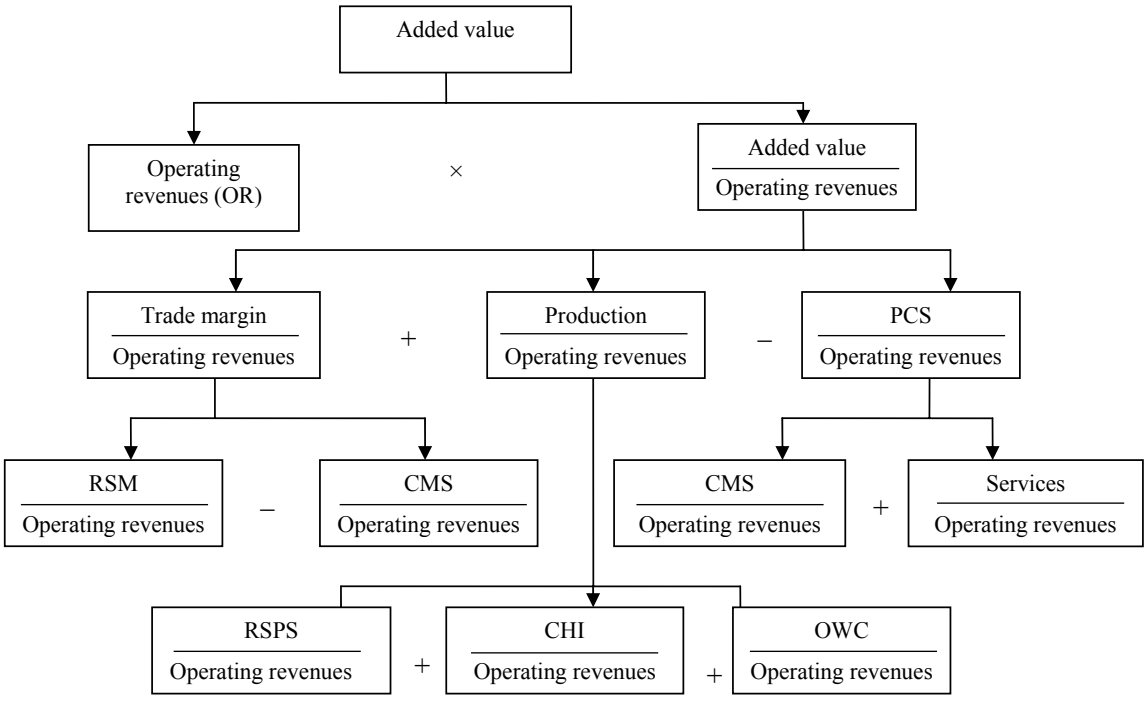

Figure 1. Pyramidal decomposition of added value

PCS – Purchased consumption and services, RSM – Revenues from the sale of goods, CMS – Costs of the goods sold, CME – Consumed raw materials, energy consumption and consumption of other non-inventory supplies, RSPS – Revenues from the sale of own products and services, CHI – Change in inventory, OWC – own work capitalized

Source: Bielik et al. (2003)

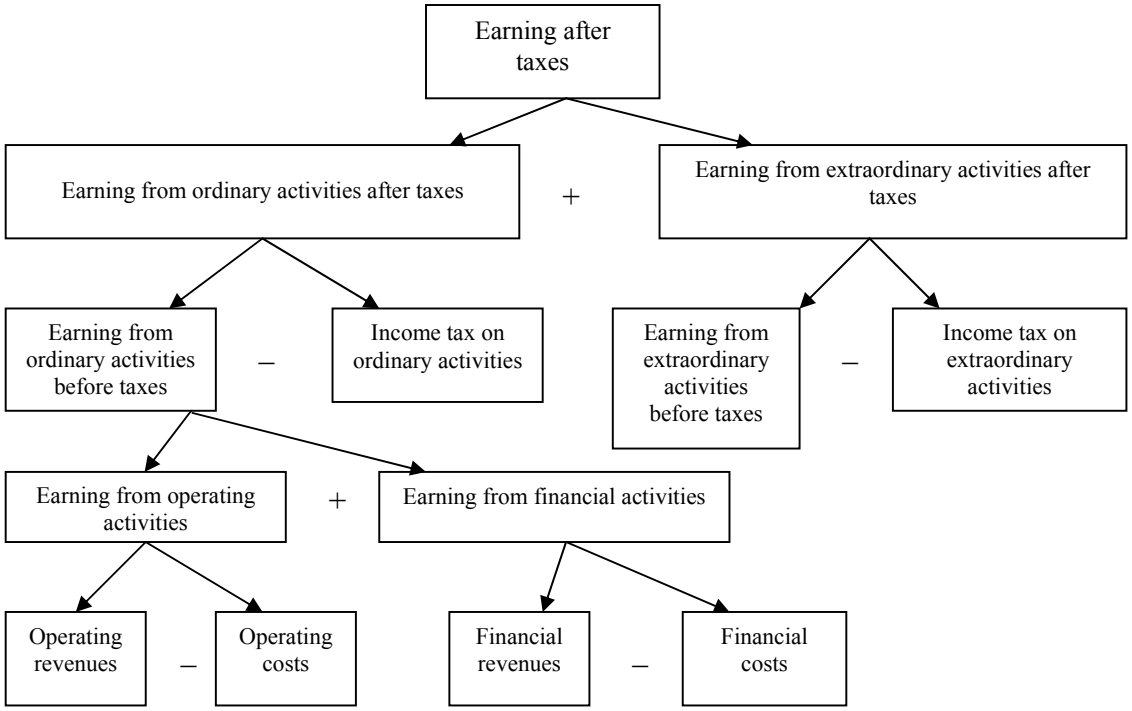

Figure 2. The model of profit and loss decomposition

Source: Bielik (2003)

RESULTS

In the Table 1, there are calculated the chosen indicators development which created the added value and earnings after taxes in the Bratislava region. The trade margin increased during the followed period from 131 SKK per 1 ha of agricultural land to 236 SKK per 1 ha of agricultural land. This increase was influenced mostly by increase of revenues from sale of goods. The production had a variable development, which was influenced by revenues from the sale of own products and services. The production achieved the highest value in the year 2006 48 604 SKK per ha of agricultural land. The purchased material and

Table 1. Development of the selected indicators in the Bratislava region in SKK per 1 ha of agricultural land

Indicator	2005	2006	2007	06/05	07/06	06 – 05	07 – 06
Trade margin	131	166	236	1.2672	1.4217	35	70
Production	47 215	48 604	48 020	1.0294	0.9880	1 389	–584
Purchased consumption and services	31 877	31 363	31 705	0.9839	1.0109	–514	342
Added value	15 469	17 408	16 551	1.1253	0.9508	1 939	–857
Operating revenues	63 075	64 519	67 048	1.0229	1.0392	1 444	2 529
Operating costs	61 731	61 857	67 711	1.0020	1.0946	126	5 854
Profit or loss from operating activities	1 343	2 662	–662	1.9821	–0.2487	1 319	–3 324
Profit or loss from financial activities	–1 556	–1178	–1 123	0.7571	0.9533	378	55
Profit or loss from ordinary acitivites	–212	1 484	–1 785	–7	–1.2028	1 696	–3 269
Income tax on ordinary activities	523	591	221	1.1300	0.3739	68	–370
Profit from extraordinary activities	267	31	467	0.1161	15.0645	–236	436
Income tax on extraordinary activitites	1	25	63	25	2.52	24	38
Profit or loss after taxes	–469	898	–1 602	–1.9147	–1.7840	1 367	–2 500

Source: own calculation, Information Sheets on CD MA SR

Table 2. Development of the selected indicators in the Žilina region in SKK per 1 ha of agricultural land

Indicator	2005	2006	2007	06/05	07/06	06 – 05	07 – 06
Trade margin	116	68	251	0.5862	3.6912	–48	183
Production	15 604	17 545	19 255	1.1244	1.0975	1 941	1 710
Purchased consumption and services	12 404	13 811	16 202	1.1134	1.1731	1 407	2 391
Added value	3 316	3 802	3 304	1.1446	0.8690	486	–498
Operating revenues	23 802	26 827	32 077	1.1271	1.1957	3 025	5 250
Operating costs	24 448	26 118	31 949	1.0683	1.2233	1 670	5 831
Profit or loss from operating activities	–646	709	38	–1.0975	0.0536	1 355	–671
Profit or loss from financial activities	–394	–369	–467	0.9365	1.2656	25	–98
Profit or loss from ordinary acitivites	–1 040	340	–88	–0.3269	–0.2588	1 380	–428
Income tax on ordinary activities	53	91	160	1.7170	1.7582	38	69
Profit from extraordinary activities	105	–2	124	–0.0190	–62	–107	126
Income tax on extraordinary activitites	–1	0.4	4	–0.4	10	1.4	3.6
Profit or loss after taxes	–987	247	–127	–0.2503	–0.5142	1 234	–374

Source: own calculation, Information Sheets on CD MA SR

services consumption was decreasing till the year 2006 and in the year 2007 it increased, its value was influenced mainly by the consumed raw materials, energy consumption and consumption of other non-inventory supplies. The added value increased till the year 2006 by 125.3%. On this increase, there participated the increase and decrease of the consumption of the purchased material and services. In the year 2007, the added value decreased, compared to the previous yea, by 857 SKK per 1 ha of agricultural land. Operating revenues exceed in the first two years operating costs. The agricultural subjects in the Bratislava region reached in the year 2005 the profit from operating activities of 1 343 SKK per 1 ha of agricultural land and in the year 2007, 2 662 SKK per 1 ha of agricultural land. In the year 2007, operating costs were higher than operating revenues and the companies have reached a loss from the operating activities of 662 SKK per 1 ha of agricultural land. From the financial activities, a loss was reached in all three years. Extraordinary revenues exceeded the extraordinary costs in all years; the companies reached the profit from the extraordinary activities. The profit in the Bratislava region companies influenced negatively mainly the loss reached from financial activities and in the third year, the loss from operating activities, too. The companies reached in the third year the loss of 1 602 SKK per 1 ha of agricultural land.

In the Table 2, there are the selected indicators, which create the profit and loss account of agricultural companies in the Žilina region. The trade margin increased during the following period by 183 SKK per 1 ha of agricultural land. This increase was influenced by the increase of revenues from the sale of products. Production increased year to year. It

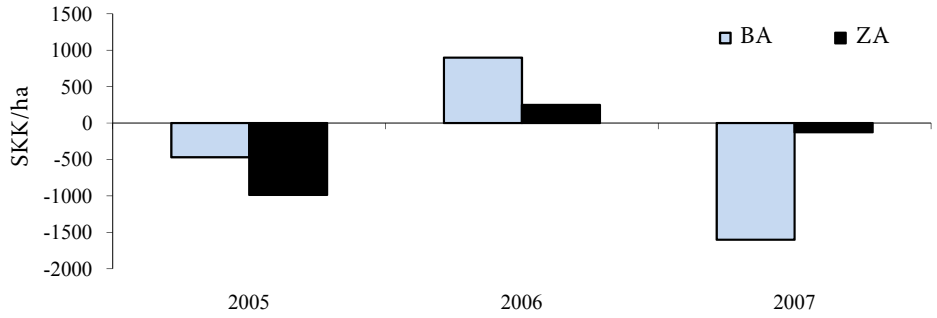

Figure 3. Development of profit and loss in the Bratislava and Žilina region in the years 2005–2007 in SKK per 1 ha of agricultural land

BA = Bratislava, ZA = Žilina
Source: Table 1, 2 and the Information Sheets on CD MA SR

was caused by the increase of revenues from the sale of own products and services. Alike the production increase, the purchased consumption increased too during all years by 3 798 SKK per 1 ha of agricultural land. The added value reached the highest level in the year 2006. The increase regarding the year 2005 was influenced by increased production (by 12.44%). Operating revenues exceeded the operating costs in the years 2006 and 2007. The companies of the Žilina region reached the profit from operating activities in the amount of 709 SKK per 1 ha of agricultural land, which in the year 2007 decreased to 38 SKK per 1 ha of agricultural land. In the year 2005, the companies of the Žilina region reached the loss from operating activities amounting to 646 SKK per 1 ha of agricultural land. A negative trend was seen in the financial activities, too. The companies reached the loss. In the year 2006, there was reached the loss from extraordinary activities of 2 SKK per 1 ha of agricultural land. The extraordinary revenues exceeded the extraordinary costs in the following years. In the years 2005 and 2007, there was reached the loss. In the year 2006, the companies reached profit after taxes of 247 SKK per 1 ha of agricultural land, which was influenced mainly by the profit from ordinary activities.

The profit and loss development in two compared regions is seen in the Figure 3. As positive, we can evaluate the year 2006, when there was achieved profit in the regions.

The added value in the year 2006 increased compared to the previous year by 1 939 SKK per 1 ha of agricultural land and compared to the following year, it increased by 2 796 SKK per 1 ha of agricultural land. In the period 2006 and 2005 comparison, we can say that the added value increase positively influenced operating revenues (the added value increased by 1 318 SKK per 1 ha of agricultural land) and the added value share in the operating revenues (added value increased by 621 SKK per 1 ha agricultural land, in percent by 67.9732%). The trade margin share in operating revenues influenced positively the added value in both years, during the first years by the value 23 SKK per 1 ha of agricultural land and in the second years by the value 59 SKK per 1 ha of agricultural land. The dominating negative influence on the added value development exerted in the years 2006–2005 the production share in operating revenues, the added value decreased by 1 074 SKK per 1 ha of agricultural land and this tendency was identical in the next period, when the added value decreased by 1 541 SKK per 1 ha of agricultural land.

Table 3. The results of the added value quantifications in the Bratislava region in SKK per 1 ha of agricultural land

Indicators	Influence in			
	2006–2005		2007–2006	
	SKK per ha	%	SKK per ha	%
Added value	1 939	100	–857	–100
Operating revenues	1 318	67.9732	1 659	193.5823
Added value/operating revenues	621	32.0268	–2 516	–293.5823
Trade margin/operating revenues	23	1.1861	59	6.8845
Revenues from the sale of goods/operating revenues	427	22.0202	–414	–48.3082
Costs on goods sold/operating revenues	–404	–20.8341	473	55.1927
Production/operating revenues	–1 074	–55.3893	–1 541	–179.8133
Revenues from the sale of own products and services/operating revenues	–7 880	–406.3945	824	96.1494
Change in inventory/operating revenues	7 516	387.622	–2 785	–324.9708
Own work capitalized/operating revenues	–710	–36.6168	420	49.0082
Purchased goods and services/operating revenues	1 672	86.23	–1034	–120.6535
Consumed raw material, energy consumption and consumption of other non-inventory supplies/operating revenues	1 874	96.6477	–325	–37.9230
Services/operating revenues	–202	–10.4177	–709	–82.7305

Source: own calculation, Information Sheets on CD MA SR

The consumption of purchased goods and services share in operating revenues influenced in the first period the added value in the amount 1 672 SKK per 1 ha of agricultural land, and in the next period it influenced the decrease of the added value by 1 034 SKK per 1 ha of agricultural land. The change of the added value/operating revenues indicator influenced negatively the added value change in comparison of the years 2007 and 2006 (the added value decreased by 2 516 SKK per 1 ha of agricultural land) (Table 4).

In the year 2006, the added value increased by 486 SKK per 1 ha of agricultural land and consequently in the year 2007, it decreased by – 498 SKK per 1 ha of agricultural land. In the first period, the added value was influenced positively by the added value share in operating revenues. In a high measure, the operating revenues influenced its increase by 481 SKK per 1 ha of agricultural land. In the next period, the added value share in operating revenues participated on the added value decrease by 1 079 SKK per 1 ha of agricultural land. In the following years, the added value change was influenced negatively by the trade margin share in operating revenues (added value decreased by 44 SKK per1 ha of agricultural land respectively by 9.0534%). The production share in operating revenues influenced the added value decrease by 941 SKK per 1 ha of agricultural land. The purchased consumption and services share on operating revenues caused the added value increased by 990 SKK per ha of agricultural land. In the next two years negative added value change influenced the production share in operating revenues, the added value decreased by 634 SKK per 1 ha of agricultural land as the revenues intensity on the purchased material and services consumption, the added value decreased by 463 SKK per 1 ha of agricultural land (Table 5).

In the years 2006–2005, the profit after taxes change was influenced positively by the profit from the ordinary activities change, it caused the profit after taxes increase by 1 630 SKK per 1 ha of agricultural land, respectively by 119.239%. The profit from extraordinary activities change influenced negatively the profit after taxes, it decreased by 263 SKK per 1 ha of agricultural land respectively by 19.239%.

Profit from ordinary activities before taxes influenced the profit after taxes change in the amount 1 697 SKK per 1 ha of agricultural land, respectively by 124.1402%. This profit was created by the profit from operating activities and profit from financial activities. Both indicators influenced positively the profit after taxes change. In the second following period, the change of profit after taxes reached negative value – 2 500 SKK per 1 ha of agricultural land. On this negative change, there participated particularly

Table 4. The results of the added value quantification in the Žilina region in SKK per 1 ha of agricultural land

Indicators	Influence in			
	2006–2005		2007–2006	
	SKK per ha	%	SKK per ha	%
Added value	486	100	–498	–100
Operating revenues	481	98.9712	581	116.6667
Added value/operating revenues	5	1.0288	–1 079	–216.6667
Trade margin/operating revenues	–44	–9.0534	18	3.6145
Revenues from the sale of goods/operating revenues	–215	–44.2382	–40	–8.0322
Costs on goods sold/operating revenues	171	35.1848	58	11.6467
Production/operating revenues	–941	–193.6202	–634	–127.3093
Revenues from the sale of own products and services/operating revenues	–1 270	–261.3153	–80	–16.0643
Change in inventory/operating revenues	791	162.7562	–454	–91.1647
Own work capitalized/operating revenues	–462	–95.0611	–100	–20.0803
Purchased goods and services/operating revenues	990	203.7024	–463	–92.9719
Consumed raw material, energy consumption and consumption of other non-inventory supplies/operating revenues	870	179.0112	–353	–70.8835
Services/operating revenues	120	24.6912	–110	–22.0884

Source: own calculation, Information Sheets on CD MA SR

the change of the profit from ordinary activities in the amount –2 899 SKK per 1 ha of agricultural land, respectively –115.96%. The change of profit after taxes negatively influenced the operating costs (EAT decreased by –5 584 SKK per 1 ha of agricultural land). The positive change of profit from financial activities increased the profit after taxes by 55 SKK per 1 ha of agricultural land (Table 6).

Table 5. Model of the profit and loss dessagregation in the Bratislava region in SKK per 1 ha of agricultural land

Inciators	Influence in			
	2006–2005		2007–2006	
	SKK per ha	%	SKK per ha	%
Profit and loss after taxes	1 367	100	–2 500	–100
Profit and loss from ordinary activities	1 630	119.239	–2 899	–115.96
Profit and loss from extraordinary activities	–263	–19.239	399	15.96
Profit and loss from extraordinary activities before taxes	–239	–17.4834	436	17.44
Income tax on extraordinary activities	–24	–1.7557	–37	–1.48
Profit and loss from ordinary activities before taxes	1 697	124.1402	–3 269	–130.76
Income tax on ordinary activities	–67	–4.9012	370	14.8
Profit and loss from operation activities	1 319	96.4885	–3 324	–132.96
Profit from financial activities	378	27.6517	55	2.2
Operation revenues	1 444	105.6326	2 530	101.2
Operation costs	–125	–9.1441	–5 854	–234.16
Financial revenues	–271	–19.8244	62	2.48
Financial costs	649	47.4761	–7	–0.28

Source: own calculation, Information Sheets on CD MA SR

Table 6. Model of the profit or loss dessagregation in the Žilina region in SKK per 1 ha of agricultural land

Indicators	Influence in			
	2006–2005		2007–2006	
	SKK per ha	%	SKK per ha	%
Profit and loss after taxes	1 234	100	–374	–100
Profit and loss from ordinary activities	1 342	108.7520	–497	–132.8877
Profit and loss from extraordinary activities	–108	–8.7520	123	32.8877
Profit and loss from extraordinary activities before taxes	–107	–8.67096	126	33.6898
Income tax on extraordinary activities	–1	–0.0810	–3	–0.8021
Profit and loss from ordinary activities before taxes	1 380	111.8314	–427	–114.1711
Income tax on ordinary activities	–38	–3.0794	–70	–18.7166
Profit and loss from operation activities	1 355	109.8055	–329	–87.9679
Profit from financial activities	25	2.0259	–98	–26.2032
Operation revenues	3 024	245.0567	5 502	1 471.1228
Operation costs	–1 669	–135.2512	–5 831	–1 559.0907
Financial revenues	–15	–1.2155	48	12.8342
Financial costs	40	3.2414	–146	–39.0374

Source: own calculation, Information Sheets on CD MA SR

The profit after taxes increased up to the year 2006 by 1 234 SKK per 1 ha of agricultural land and in the next year, it decreased by –374 SKK per 1 ha of agricultural land. In the first period, the profit from ordinary activities influenced positively the change of profit after taxes, which caused the increase of profit after taxes by 1 342 SKK per 1 ha of agricultural land, respectively by 108.7520%. Profit after taxes declined by –108 SKK per 1 ha of agricultural land, respectively by –8.7520%, which was impacted by the change of profit from extraordinary activities. The value of operation revenues influenced mainly positively the profit after taxes (increased by 3 204 SKK per 1 ha of agricultural land) and the operation costs influenced negatively mainly the profit after taxes (decrease by –1 669 SKK per 1 ha of agricultural land). The profit from ordinary activities negatively influenced in the second following period the change of profit after taxes, EAT decreased by –497 SKK per ha of agricultural land, respectively by –132.8877%. The profit from extraordinary activities positively influenced profit after taxes, which increased by 123 SKK per 1 ha of agricultural land, respectively by 32.8877%. The operation costs had a negative development, which influenced the profit after taxes by –5 831 SKK per 1 ha of agricultural land. The operation revenues positively influenced mainly the change of profit after taxes (by 5 502 SKK per 1 ha of agricultural land).

CONCLUSION

Regarding the comparison of the selected indicators from two regions in the Slovakia, we can state that the trade margin was higher in the first two years of the analyzed period in the Bratislava region and in the third year, it was higher in the Žilina region. The production and the purchased goods and services consumption in the Bratislava region exceeded more than twice the production in the Žilina region companies. The added value increase influenced mainly the higher production in the Bratislava region companies. The profit from the ordinary activities in both regions negatively influenced the loss from financial activities, otherwise besides this negative tendency, in the year 2006, there was reached profit in both regions. Extraordinary costs exceeded extraordinary revenues only in the Žilina region companies in the year 2006. By the profit or loss after taxes dessagregation, the companies in both regions reached the positive profit after taxes changes, which influenced positively the changes of profit from ordinary activities. In the following years, the companies of both regions reached negative changes of profit after taxes, influenced by the negative change of profit from the ordinary activities.

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Contact address:

Jana Miklovičová, Ľubomír Gurčík, Slovak University of Agriculture, Tr. A. Hlinku č. 2, 949 76 Nitra, Slovak Republic
e-mail: jana.miklovicova@fem.uniag.sk; lubomir.gurcik@fem.uniag.sk