THE INFLUENCE OF SUBSIDIES ON THE ECONOMIC PERFORMANCE OF CZECH FARMS IN THE REGIONS

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Abstract

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The main goal is analysis of the influence of subsidies on the economic performance of farms in individual regions since the Czech Republic joined the EU. The basis for verification of the hypotheses was data from the Farm Accountancy Data Network of the Czech Republic (FADN CR) broken down by regions. The economic performance of farms is determined here on the basis of six selected proportional indicators of financial analysis and their statistical processing using the WSA and TOPSIS methods. By both the WSA and the TOPSIS methods, in 2004–2010 the farms in the Karlovy Vary Region and in the last monitored year (2011) the farms in the Southern Moravia Region were identically evaluated as having the best economic performance. In 2004 the WSA method identified the farms with the worst economic performance as being in Vysočina, while the TOPSIS method rated the Ústí nad Labem Region as having the farms with the worst performance. In 2005–2006, both methods identically put the Pilsen Region in last place for economic performance of farms, while in 2007 the farms in Liberec Region and again in 2008 the farms in Pilsen Region were in last place. In 2009 the WSA and TOPSIS methods identically identified the farms with the worst economic performance as being in the South Bohemia Region. During 2010–2011 the two methods agreed that the farms with the worst economic performance were in Pilsen Region. Economic performance of farms in the regions Ústí nad Labem, Pardubice, Vysočina, Central Bohemia, Hradec Králové, South Moravia, Ostrava, and Olomouc, and also vertical economic performance of farms is dependent on the amount of subsidies received. On the other hand, for economic performance of farms in the Liberec, Pilsen, and Karlovy Vary regions, this dependence must be refuted. The assumption that the Common Agricultural Policy contributes towards the reducing of economic disparities between farms in the individual regions of the Czech Republic, has been confirmed only by the TOPSIS method in absolute expression. Nonetheless, by the WSA method in absolute and relative expression and by the TOPSIS method in relative expression, it must be refuted.

Common agricultural policy, subsidies, Czech farms, economic performance, regions, WSA and TOPSIS methods

For Czech farms, the entry of the Czech Republic into the EU has meant a change connected on the one hand with new opportunities in the form of the opening up of a larger market and on the other hand with facing keener competition. The need to adapt to the regulations of the Common Agricultural Policy has begun to be compensated for by subsidies for farmers. In the course of discussion in the professional literature, there is frequent debate of the impact of the CAP on the new member states. According to Vošta (2012), in agriculture, EU countries are watching the new member states more carefully, especially with regard to changes connected with the expansion of the EU agricultural area. According to Střeleček (2009), in anticipation of joining the EU, many countries of

Central and Eastern Europe immediately adopted European law as well as the Common Agricultural Policy, and following the implementation of EU legislation, economic success did not follow for the agriculture of the new member states. It would seem then that this policy does not work there as well as in Western Europe. According to Viaggi (2013), the CAP is one of the main controllers of change in European agriculture and in rural areas. Many scholarly studies deal in particular with the influence of subsidies on the economic performance of agriculture businesses. According to Bašek (2011), the assertion that if subsidies from CAP will no longer be paid, there will be no threat to Czech agriculture is false. In his opinion, for most of the countries, ending the subsidies could lead to worsening economic performance, i.e. to losses. According to Sedláček (2012), the production of a positive relationship between profits and losses or economic added value are expected from the subsidies. According to Trnková (2012) businesses that do not receive subsidies on average generate greater added value than businesses that do receive subsidies.

Another discussed topic is multifunctionality in agriculture. Hrabánková (2009) regards agriculture as an indispensible factor for the social and economic development of rural areas, and this is in agreement with the CAP document Agenda 2000, in which the so-called "European Model of Agriculture" was defined, within the framework of which agriculture should be multifunctional, competitive, and stabilizing. One of the main pillars of this document is a reduction of the difference between richer and poorer regions. Ucak (2012) states that the CAP has supported resources for low-income farmers and regions.

On the basis of the aforementioned studies, the main goal has been established. The main goal is analysis of the influence of subsidies on the economic performance of farms in individual regions since the Czech Republic joined the EU. This goal will be verified with the use of two hypotheses:

a) H1: The economic performance of farms in the individual regions of the Czech Republic is dependent on the volume of subsidies, and farms with a higher/lower volume of subsidies in individual years achieve better/worse economic performance.

b) H2: The Common Agricultural Policy Common Agricultural Policy is contributing towards the reduction of economic disparities between the farms in the individual regions of the Czech Republic.

This paper is based on materials in support of a dissertation (Chovancová, 2013), and it is structured as follows: the data and methodologies used are described in the next section. Next come the results and discussion of the results, then finally the conclusion and a recommendation for further research.

MATERIALS AND METHODS

The basis for verification of the hypotheses was data from the Farm Accountancy Data Network of the Czech Republic (FADN CR) broken down by regions. Each year, the Institute of Agricultural Economics and Information in Prague gathers FADN data from Czech farmers. The collection of data is done on the basis of a questionnaire investigation of individual farms. For the purposes of research of the FADN, a farm is defined as a market oriented agricultural business, for which the chief source of revenue is agriculture. The data used apply to corporate entities in the agricultural business during the timeframe of 2004–2011. The total number of farms included in the analyses conducted in 2004 was: 503, in 2005: 554, in 2006: 529, in 2007: 548, in 2008: 576, in 2009: 584, in 2010: 624, and in 2011: 615. Subsidies are understood as operating subsidies (direct payments from SAPS and TOP-UP, state support, payments from the Rural Development Programme, the Horizontal Rural Development Plan, and PRLGF subsidies), and data about them likewise came from the FADN CR. All available data were based on the average farm by region.

The economic performance of farms is determined here on the basis of six selected proportional indicators of financial analysis and their statistical processing using the WSA and TOPSIS methods. For the purposes of the actual analysis, six proportional indicators of financial analysis were chosen according to their significance for the economic performance of farms and they were assigned ordered weighting, determining the importance of these indicators. The following indicators were involved:

a) Total Capital Profitability = profits before interest and taxes / total liabilities

b) Operating Profitability of Receipts = operating profit or loss / (receipts for the sale of goods + receipts for the sale of one's own products and services)

c) Term of Payment of Obligations = short-term obligations / (receipts for the sale of goods + receipts for the sale of one's own products and services)

d) Acid Test Ratio = (short-term financial assets + short-term receivables) / (short-term obligations + short-term bank loans)

e) Interest Coverage = (interest expenses + operating profit or loss) / interest expenses

f) Self-Financing Coefficient = equity capital / total liabilities.

The individual economic indicators were selected, and their significance was determined on the basis of analysis of scholarly technical literature. Indicators of profitability are regarded by the individual authors as the supreme indicators of the performance of a business. As one of the indicators of financial health, in their scholarly works Kopta (2009) and Thomas Ng (2008) are

using total capital profitability. Likewise Altman (2006) in his Z-Score and Neumaierová (2002) in IN 95 for Agriculture assign the greatest weighting to the indicator of total capital profitability. As it is clearly the most used indicator of total profitability and as the greatest weighting is often given to it by the individual authors, it has been selected as the main indicator, and it has been assigned the greatest weighting. For taking into consideration of results from operating activity of businesses, chosen from among other selected indicators was operating profitability of receipts. In his scholarly work, Feng (2000) uses profitability of receipts as one of the significant financial indicators of profitability of receipts. Niemann (2008) also regards profitability of receipts as one of the basic economic quantities. In view of the great significance of operating profitability of receipts, this indicator was assigned the second highest weighting. Liquidity indicators were chosen as the second most important group of indicators, and indicators of stability were the third most important group. In his system of indicators, Thomas Ng (2011) uses current liquidity and the acid test ratio. In agriculture, however, inventory can be a distorting factor to a certain extent in view of its quality depending on the type of production, and for this reason the acid test ratio was assigned as the third most important of the economic indicators. In his scholarly study, Feng (2000) uses the self-financing coefficient. Altman (2006) likewise regards the ratio of undistributed profits to total assets as an important stability indicator, which can be understood as the self-financing coefficient. In his study, Jardin (2011) rated Altman's Z-Score as a very successful bankruptcy model for all branches of industry, and this also confirmed the unquestionable importance of the self-financing coefficient, which was chosen to be one of the economic indicators and was assigned the fourth place. From among this groups of indicators, Niemann (2008), Střeleček (2012), and Thomas Ng. (2011) use interest coverage. In view of the frequent use of interest coverage in technical literature, this indicator was also chosen for the group of indicators, but it was given a lower weighting because it is regarded as a less significant indicator than the self-financing coefficient, and the intention in the empirical portion was to take into consideration activity indicators as well. Activity indicators were viewed as the least important group of indicators. According to Tamari (1984), the amount of use of supplier credit is clearly connected with a higher level of risk. As there will be discussion of the dependence of the performance of agriculture businesses on the amount of subsidies, it was presumed that the term of payment of obligations would depend on the subsidies, so this criterion was chosen as a substitute for indicators of activity with the second lowest weighting.

Next, in each year during the period of 2004–2011 the Weighted Sum Model (WSA) and the TOPSIS method were applied to the aforementioned proportional indicators of financial analysis (including the weightings assigned to them). The TOPSIS and WSA methods were chosen because according to research by Zanakis (1998), the results from their use should be similar, and at the same time, both of them were identified as being among the three most reliable multi-criteria methods in the group of methods studied. According to Behzadian (2012), the TOPSIS method works satisfactorily throughout various areas of application, and according to Zanakis (1998), WSA is the very best multi-criteria method. The WSA method is a simplified multi-criteria function of maximization of utility. The TOPSIS analysis method is based on the selection of a variant that is closest to the ideal variant and farthest from the basal variant.

On the basis of results obtained by the application of the WSA and TOPSIS methods to the six selected proportional indicators of financial analysis and the weightings assigned to them, the economic performance of farms was determined for the individual regions. Next, for each year, Czech farms were put in order by individual regions from the best to the worst economic performance, and differences were calculated in the given year between the farms in the regions with the best and worst performance. A coefficient of correlation was also calculated, showing the linear degree of dependence of economic performance of farms in individual regions on the amount of subsidies received (determined by the WSA and TOPSIS methods). For determining the strength of linear dependence, the following scale was used (Chrásek, 2000): $r_{yx} = 1.00$ – absolute dependence, $1.00 > r_{yx} \geq 0.90$ – very high dependence, $0.90 > r_{yx} \geq 0.70$ – high dependence, $0.70 > r_{yx} \geq 0.40$ – moderate dependence, $0.40 > r_{yx} \geq 0.20$ – low dependence, $0.20 > r_{yx} \geq 0.00$ – weak dependence, $r_{yx} = 0.00$ – absolute independence.

At the conclusion, there was an evaluation of whether the increase or decrease of the volume of subsidies has a direct influence on the economic performance of farms by individual regions. There was also evaluation of whether the CAP is contributing towards the reduction of economic disparities between farms with the best and the worst performance in the individual regions.

RESULTS AND DISCUSSION

By both the WSA and the TOPSIS methods, in 2004–2010 the farms in the Karlovy Vary Region and in the last monitored year (2011) the farms in the Southern Moravia Region were identically evaluated as having the best economic performance. Over all, both methods identically rated the farms in the Karlovy Vary Region seven times, the Southern Moravia Region three times, in the Zlín and Ústí nad Labem regions twice, and in the Olomouc and Central Bohemia regions once in the first three places for economic performance during the same years. In 2004 the WSA method identified the farms with the worst economic performance as being in

Vysočina, while the TOPSIS method rated the Ústí nad Labem Region as having the farms with the worst performance. In 2005–2006, both methods identically put the Pilsen Region in last place for economic performance of farms, while in 2007 the farms in Liberec Region and again in 2008 the farms in Pilsen Region were in last place. In 2009 the WSA and TOPSIS methods identically identified the farms with the worst economic performance as being in the South Bohemia Region. During 2010–2011 the two methods agreed that the farms with the worst economic performance were in Pilsen Region. Overall, during the same years, the two methods both identically assigned the last three places for economic performance of farms to the Pilsen Region six times, five times to Liberec Region, three times to Ústí nad Labem Region, twice to Vysočina, and once to the Southern Bohemia, Ostrava, Hradec Králové, and Pardubice regions (see Tab. I, II).

During 2004–2006 WSA and TOPSIS methods both identically detected increasing differences in absolute and relative economic performance between farms in regions with the best and worst economic performance. Between 2006 and 2007 the results for the two methods differ – the WSA method indicates a further increase of absolute and relative differences between farms in the regions, while to the contrary, the TOPSIS method indicates a reduction of these differences. Thereafter, in the period of 2007–2008, the results of the two methods agree on a further increase to the absolute and relative differences between farms in the regions with the worst and best economic performance, while to the contrary, they indicate a reduction of those differences between 2008–2009. In 2009–2011 according to the WSA method, absolute differences continued to increase, but this is contradictory to the results of the TOPSIS method, which indicate a reduction of absolute differences in the economic

I: *The economic performance of farms in the individual regions – WSA method (2004–2011)*

Region	2004	2005	2006	2007	2008	2009	2010	2011
Central Bohemia	0.3693	0.3712	0.5625	0.3907	0.4657	0.5816	0.5279	0.5451
South Bohemia	0.4693	0.3011	0.4310	0.4467	0.3863	**0.1712**	0.2984	0.5149
Pilsen	0.3017	**0.1049**	**0.0800**	0.1468	**0.0631**	0.2583	**0.0625**	**0.0904**
Karlovy Vary	**0.8830**	**0.8274**	**0.8627**	**0.9009**	**0.9306**	**0.8041**	**0.8446**	0.4012
Ústí nad Labem	0.2979	0.3609	0.2173	0.2446	0.6742	0.7280	0.4100	0.6695
Liberec	0.3537	0.1967	0.3200	**0.0764**	0.1352	0.1830	0.4762	0.2539
Hradec Králové	0.3741	0.3101	0.4443	0.2752	0.4669	0.5121	0.2905	0.6552
Pardubice	0.3510	0.2237	0.3001	0.3806	0.3434	0.3532	0.3268	0.4155
Vysočina	**0.2596**	0.3653	0.3316	0.3788	0.3192	0.3459	0.4541	0.5814
Southern Moravia	0.5377	0.2483	0.4008	0.4184	0.6573	0.6099	0.5822	**0.8974**
Olomouc	0.6889	0.4601	0.3604	0.4593	0.6527	0.6266	0.4315	0.7072
Zlín	0.6275	0.4405	0.3736	0.5121	0.4653	0.4897	0.3893	0.6954
Ostrava	0.5007	0.2330	0.3304	0.2558	0.4851	0.2817	0.1712	0.6599

Source: Data FADN of corporate entities, 2004–2011, own calculations

II: *The economic performance of farms in the individual regions – TOPSIS method (2004–2011)*

Region	2004	2005	2006	2007	2008	2009	2010	2011
Central Bohemia	0.2885	0.2933	0.4806	0.3137	0.3306	0.4541	0.4625	0.5467
South Bohemia	0.4372	0.1902	0.2951	0.4307	0.2730	**0.0688**	0.3176	0.6008
Pilsen	0.3087	**0.0587**	**0.0494**	0.1320	**0.0355**	0.1959	**0.0526**	**0.1748**
Karlovy Vary	**0.9142**	**0.9171**	**0.9124**	**0.9238**	**0.9588**	**0.9268**	**0.8709**	0.4645
Ústí nad Labem	**0.2052**	0.2554	0.1149	0.1987	0.5629	0.6391	0.3193	0.6354
Liberec	0.3472	0.1077	0.3319	**0.1098**	0.1253	0.1177	0.4118	0.3085
Hradec Králové	0.3151	0.2095	0.2938	0.2173	0.3813	0.3908	0.2205	0.6818
Pardubice	0.2419	0.1041	0.2163	0.3161	0.2566	0.3710	0.2636	0.4549
Vysočina	0.2549	0.2544	0.2376	0.3510	0.2437	0.1489	0.4626	0.6578
Southern Moravia	0.3754	0.1108	0.2252	0.3196	0.5531	0.3911	0.4768	**0.8729**
Olomouc	0.5798	0.2287	0.2058	0.3918	0.5230	0.3809	0.3260	0.6514
Zlín	0.5101	0.2139	0.1914	0.4054	0.3266	0.3577	0.2683	0.6479
Ostrava	0.4622	0.1850	0.2861	0.2698	0.4054	0.2014	0.1633	0.7053

Source: Data FADN of corporate entities, 2004–2011, own calculations

III: *Farms in regions with the best and worst economic performance – WSA method (2004–2011)*

Year	Region with the best economic performance		Region with the worst economic performance		Absolute difference in economic performance	Relative difference in economic performance
2004	Karlovy Vary	0.8830	Vysočina	0.2596	0.6234	340%
2005	Karlovy Vary	0.8274	Pilsen	0.1049	0.7225	789%
2006	Karlovy Vary	0.8627	Pilsen	0.0800	0.7827	1 078%
2007	Karlovy Vary	0.9009	Liberec	0.0764	0.8245	1 179%
2008	Karlovy Vary	0.9306	Pilsen	0.0631	0.8675	1 475%
2009	Karlovy Vary	0.8041	South Bohemia	0.1712	0.6328	470%
2010	Karlovy Vary	0.8446	Pilsen	0.0625	0.7821	1 351%
2011	Southern Moravia	0.8974	Pilsen	0.0904	0.8069	993%

Source: Data FADN of corporate entities, 2004–2011, own calculations

IV: *Farms in regions with the best and worst economic performance – TOPSIS method (2004–2011)*

Year	Region with the best economic performance		Region with the worst economic performance		Absolute difference in economic performance	Relative difference in economic performance
2004	Karlovy Vary	0.9142	Ústí nad Labem	0.2052	0.7091	446%
2005	Karlovy Vary	0.9171	Pilsen	0.0587	0.8585	1 562%
2006	Karlovy Vary	0.9124	Pilsen	0.0494	0.8629	1 847%
2007	Karlovy Vary	0.9238	Liberec	0.1098	0.8140	841%
2008	Karlovy Vary	0.9588	Pilsen	0.0355	0.9233	2 701%
2009	Karlovy Vary	0.9268	South Bohemia	0.0688	0.8580	1 347%
2010	Karlovy Vary	0.8709	Pilsen	0.0526	0.8184	1 656%
2011	Southern Moravia	0.8729	Pilsen	0.1748	0.6981	499%

Source: Data FADN of corporate entities, 2004–2011, own calculations

performance of farms during that period. In relative development, the two methods agree in 2009/2010 on an increasing difference, while to the contrary, in 2010/2011 they agree on a reduction. When comparing differences in economic performance of farms in regions with the best and worst performance between the years 2004–2011, the two methods arrived at different conclusions in absolute expression – according to the WSA method, differences in economic performance increased, but according to the TOPSIS method, they decreased slightly. This discrepancy between the individual methods is given mainly by the differing results during the last monitored period of 2009–2011. In relative expression, the two methods agree on increasing differences in a comparison of the economic performance of farms in the region with the best and worst performance between 2004 and 2011 (see Tab. III, IV).

A high linear dependence of economic performance on the volume of subsidies with the use of the TOPSIS method together with a coefficient of correlation was confirmed during the monitored period of 2004–2011 for farms of the Ústí nad Labem Region, while to the contrary, with the use of the WSA method together with a coefficient of correlation, the strength of this dependence was evaluated as moderate. Moderate dependence of economic performance on the amount of subsidies was identically proven with the use of both methods for farms in the Pardubice Region and in Vysočina. Moderate dependence was also determined on the basis of analysis by the WSA method together with a coefficient of correlation for farms in the Southern Bohemia Region, but with the use of the results of the TOPSIS method, the dependence came out as low. Low dependence of economic performance on the volume of subsidies was identically determined with the use of the results of economic performance from both methods together with a coefficient of correlation for farms in the Hradec Králové and Southern Moravia regions. The results determined by the TOPSIS method together with a coefficient of correlation also showed a low direct dependence between economic performance and the volume of subsidies for farms in the Zlín Region, but on the basils of economic performance calculated by the WSA method, the dependence was evaluated as weak and indirect. Weak dependence with the use of the WSA and Topsis methods together with a coefficient of correlation between economic performance of businesses and subsidies were found for the Ostrava and Olomouc regions. The TOPSIS method also identified a weak direct dependence for farms of the Southern Bohemia Region, and this is contradictory with the results of the WSA method, where this dependence came out as weak and indirect. Indirect dependence of

V: *Dependence of economic performance of farms in the individual regions on the volume of subsidies – WSA and TOPSIS methods together with a coefficient of correlation comparison (2004–2011)*

Region	Coefficient of correlation	
	WSA method	**TOPSIS method**
Central Bohemia	0.6115	0.3927
South Bohemia	–0.0748	0.0244
Pilsen	–0.3342	–0.4959
Karlovy Vary	–0.3873	–0.4670
Ústí nad Labem	0.6621	0.7232
Liberec	–0.3977	–0.4906
Hradec Králové	0.3842	0.3754
Pardubice	0.4005	0.5457
Vysočina	0.6037	0.4195
Southern Moravia	0.3448	0.3221
Olomouc	0.1061	0.1983
Zlín	–0.0030	0.2009
Ostrava	0.0958	0.1091

Source: Data FADN of corporate entities, 2004–2011, own calculations

the development of economic performance on the amount of subsidies was proven with the use of both the TOPSIS and WSA methods together with a coefficient of correlation for farms in the Liberec, Pilsen, and Karlovy Vary regions, but the TOPSIS method rated the dependence of the farms in those regions as moderately strong, while the WSA method showed it as weak. When monitoring the vertical dependence of performance of farms in the individual regions on the amount of subsidies in individual years, i.e. studying whether during individual years businesses performed better economically that received the most subsidies and, vice versa, whether businesses that received the least subsidies performed worst economically, a moderate dependence was found in with the use of the WSA and TOPSIS methods together with a coefficient of correlation in 2007–2008. The TOPSIS method confirmed this moderately intensive dependence again in 2004. The two methods identically determined a low vertical dependence of economic performance of farms on the amount of subsidies in 2006, as did the WSA method in 2004 and 2009 and the TOPSIS method in 2005 and 2010. Weak vertical dependence of economic performance of farms on subsidies was confirmed by both methods in 2011, and the WSA method also determined it in 2005 and 2010, as did the TOPSIS method in 2009 (see Tab. V).

CONCLUSION

First, the hypothesis H1 was verified, showing that the economic performance of farms in the individual regions of the Czech Republic is dependent on the volume of subsidies, and farms with a higher/lower volume of subsidies during individual years achieve better/worse economic performance. Economic performance of farms in the regions Ústí nad Labem, Pardubice, Vysočina, Central Bohemia, Hradec Králové, South Moravia, Ostrava, and Olomouc, and also vertical economic performance of farms is dependent on the amount of subsidies received. On the other hand, for economic performance of farms in the Liberec, Pilsen, and Karlovy Vary regions, this dependence must be refuted. In view of the divergence of results using the WSA and TOPSIS methods together with the coefficient of correlation, hypothesis H1 can neither be confirmed nor refuted for farms in the Zlín and Southern Bohemia regions. The majority of farms in the regions showed to a certain extent a dependence on the amount of subsidies provided, and this is in agreement with most of the previous studies (Viaggi, 2013, Bašek, 2011; Sedláček, 2012). An appropriately chosen subsidy policy at the European and national level for the coming period may therefore significantly contribute towards the better performance of the majority of Czech farms, but on the other hand an inappropriately chosen subsidy policy may negatively influence the economic performance of Czech agriculture. Without subsidies coming from European and national sources, the economic results of Czech farms would be showing negative figures, so subsidies definitely are contributing towards the increased stability of farmers' income. The results stated above are influenced by the fact that subsidies are used here as the sole external factor directly influencing the economic performance of businesses. It is, however, necessary to take into consideration the fact that the economic performance of farms is also influenced by such external factors as climatic conditions, purchase prices, and the price of entry into agriculture.

Hypothesis H2, based on the assumption that the Common Agricultural Policy contributes towards the reducing of economic disparities between farms in the individual regions of the Czech Republic, has been confirmed in a comparison of absolute differences in the economic performance of farms in the region with the best and worst performance between the years 2004 and 2011 by the TOPSIS method, while to the contrary, this assumption was refuted by the WSA method. This discrepancy between the individual methods is given by the differing results in the last monitored period of 2009 through 2011. In relative expression, this hypothesis was also refuted by the WSA and TOPSIS method. According to Agenda 2000, Ucaka (2012), the CAP should contribute towards reducing differences between richer and poorer regions. The assumption that the Common Agricultural Policy contributes towards the reducing of economic disparities between farms in the individual regions of the Czech Republic, has been confirmed only by the TOPSIS method in absolute expression. Nonetheless, by the WSA method in absolute and relative expression and by the TOPSIS method in relative expression, it must be refuted.

For determination of the economic performance of farms, one may recommend for further research the use of alternative weightings of financial indicators, in which stability indicators would be put in second place and liquidity indicators in third place. Other indicators of financial analysis that have been identified in scholarly studies could also be used – using ROE, ROI, instead of the ROA indicator, the current liquidity indicator or net working capital instead of the Acid Test Ratio, total debt to total assets instead of the indicator of the Coefficient of Self-Financing, the indicator of turnover of total assets, the long-term assets turnover ratio, or turnover of receivables instead of the indicator of the term of payment of obligations. It was also confirmed that for the evaluation of economic performance of farms, one may definitely recommend the use of the WSA and TOPSIS statistical methods, because the results in the application portion achieved a high degree of agreement.

SUMMARY

The main goal of the study is analysis of the influence of subsidies on the economic performance of farms in individual regions since the Czech Republic joined the European Union. The basis for verification of the hypotheses was data from the Farm Accountancy Data Network of the Czech Republic broken down by regions for the years 2004–2011. The economic performance of farms is determined on the basis of six selected proportional indicators of financial analysis (Total Capital Profitability, Operating Profitability of Receipts, Term of Payment of Obligations, Acid Test Ratio, Interest Coverage, and the Self-Financing Coefficient) and their statistical processing with the use of the WSA and TOPSIS methods. By both the WSA and the TOPSIS methods, in 2004–2010 the farms in the Karlovy Vary Region and in the last monitored year (2011) the farms in the Southern Moravia Region were identically evaluated as having the best economic performance. In 2004 the WSA method identified the farms with the worst economic performance as being in Vysočina, while the TOPSIS method rated the Ústí nad Labem Region as having the farms with the worst performance. In 2005–2006, both methods identically put the Pilsen Region in last place for economic performance of farms, while in 2007 the farms in Liberec Region and again in 2008 the farms in Pilsen Region were in last place. In 2009 the WSA and TOPSIS methods identically identified the farms with the worst economic performance as being in the South Bohemia Region. During 2010–2011 the two methods agreed that the farms with the worst economic performance were in Pilsen Region. Economic performance of farms in the regions Ústí nad Labem, Pardubice, Vysočina, Central Bohemia, Hradec Králové, South Moravia, Ostrava, and Olomouc, and also vertical economic performance of farms is dependent on the amount of subsidies received. On the other hand, for economic performance of farms in the Liberec, Pilsen, and Karlovy Vary regions, this dependance must be refuted. The assumption that the Common Agricultural Policy contributes towards the reducing of economic disparities between farms in the individual regions of the Czech Republic, has been confirmed only by the TOPSIS method in absolute expression. Nonetheless, by the WSA method in absolute and relative expression and by the TOPSIS method in relative expression, it must be refuted.

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