

ANALYSIS OF THE FINANCIAL PERFORMANCE OF ENTERPRISES BASED IN THE VYSOČINA REGION

L. Šiška

Received: March 8, 2011

Abstract

ŠIŠKA, L.: *Analysis of the financial performance of enterprises based in the Vysočina Region*. Acta univ. agric. et silvic. Mendel. Brun., 2011, LIX, No. 4, pp. 355–362

The subject of this article lies in the analysis of the financial performance of 481 enterprises with more than 20 employees based in the Vysočina Region. The analysis was carried out on the basis of publicly available data for the period of 2006–2008. The comparison used adjusted average values of ROS and sales growth for the years specified above. The results indicate differences between industrial sectors, as well as between the districts of the Vysočina Region. Financially well-performing agricultural enterprises are mostly located in the Region of Pelhřimov, while successful industrial enterprises tend to be based in the Districts of Žďár nad Sázavou and Havlíčkův Brod. On the other hand, construction companies are most successful in the Districts of Pelhřimov and Jihlava.

financial analysis, performance measurement, profitability, growth

The aim of this paper is to present regional differences in financial performance of enterprises based in various districts of the Vysočina Region. Our interest is focused on enterprises with more than 20 employees. The performance of enterprises is assessed on the basis of their publicly available financial reports for the years 2006–2008, i.e. the period of the ending economic prosperity period, immediately before the outbreak of the global recession which affected the Czech Republic with a slight delay after its first symptoms were detected in the US.

This analysis of financial performance of enterprises precedes the empirical research scheduled to be carried out in the territory of the Region of Vysočina. It is intended to indicate what are the territorial differences in the financial performance of enterprises in the territory of the Vysočina Region and what industrial branches appear to show the best financial performance and vice versa. The scheduled empirical research in enterprises will aim at the identification of financial performance reasons in compliance with the objectives of grant project No. 402/09/2057, focusing

primarily on the identification of intangible factors of financial performance and their individual and their synergetic effects on the financial performance of enterprises.

Current theories in the field of enterprise performance

Various points of view may be taken with regard to the enterprise performance. This has been demonstrated by the conclusions of Hult's research team (2008). They examined 94 research studies published in the years 1995–2005, dealing with the assessment of performance of enterprises operating on an international market. The following tab. I summarizes the types of indicators used for the assessment of the performance of enterprises in the respective studies.

Tab I indicates that financial indicators (sales-based indicators and profitability indicators in particular) were applied most often for the assessment of performance. This conclusion became the inspiration for the below-presented manner of performance evaluation. For the sake of completeness, it should be noted that any indicators

I: Commonly used measures by performance type

Type of performance measure	Relative frequency of application
Sales based' (includes sales volume, foreign sales/total sales, sales growth, and growth in foreign sales)	52%
Perceived overall performance	47%
Market share	44%
Return on assets	29%
Profitability	26%
Productivity	20%
Performance relative to competitors	20%

Source: Hult *et al.* (2008, p. 1069)

based on respondent's self-evaluation were eliminated from the table purposefully, the reason being that such indicators are necessarily biased due to the subjective perception of the respondent, and that we wanted to proceed from publicly available resources which did not include any self-evaluation of enterprises.

Another supportive reason for the selection of financial indicators consisted in the experience of the authors of a very popular performance measurement method – Balanced Scorecard – Kaplan and Norton (2004). They also emphasize the financial perspective in their works. In their opinion, it is the top perspective of viewing the performance of an enterprise, displaying results whose achievement was enabled by the effect of moving forces from other perspectives of their performance model. With regard to the methods of achieving good financial results, they state:

“Financial objectives typically relate to profitability – measured, for example, by operating income and return on investment. Basically, financial strategies are simple; companies can make more money by (1) selling more, and (2) spending less. Everything else is background music. Any program – customer intimacy, six sigma quality, knowledge management, disruptive technology, just-in-time – creates more value for the company only if it leads to selling more or spending less. Thus, the company's financial performance gets improved through two basic approaches – revenue growth and productivity” [Kaplan, Norton, 2004, p. 36].

In more general terms, the two basic strategies described by Kaplan and Norton can be considered as a specific application of strategic management theories dealing with the efforts to achieve strategic goals either by exploitation – utilizing the existing assets of an enterprise, or by exploration – searching for new profit opportunities. The first method is connected with a relatively low, but relatively secure effect, while the method of exploration is much riskier, though more efficient in the event of success. One of the founders of this theory, J. G. March (1991, p. 72), calls attention to the mutual incompatibility of these two ways and the fact that it is necessary

for an enterprise to choose a certain compromise between them.

As for more recent works dealing with the clash of the exploitation strategy and the exploration strategy, the research of Uotily *et al.* (2009) is also interesting for further analysis. Besides others, it indicates that the application of the first or the latter strategy is primarily preconditioned by the sector in which the enterprise concerned operates, and that a reasonable openness of the enterprise towards searching for new opportunities (relative exploration) has a positive impact on the total value of the enterprise as seen by its owners.

Applied methodology and data

In compliance with our objective to explore the financial performance of enterprises based in the Vysočina Region, we focused on the following aspects when designing the concrete steps of the procedure:

- selection of appropriate financial performance indicators and adjustment for the risk of their fluctuation;
- adjustment for the mutual contradiction of the exploitation strategy and the new opportunities exploration strategy;
- collection of the largest possible sample of enterprises based in the Vysočina Region;
- categorization of enterprises according to the number of employees, sectors and financial profitability;
- analysis of the frequency of financially profitable enterprises in the respective categories.

Financial performance indicators

Given the fact that we assessed the success of entities whose principal interest lies in business activities (rather than public interest, social objectives, charity etc.) - i.e. activities performed for the purpose of obtaining profit - financial indicators were used as the principal criteria of enterprise performance, analogously to the above-cited foreign researches. Out of the wide range of possible indicators, the following were chosen:

- return on sales defined by the formula

$$ROS_i = \frac{\text{income from operations in year } i}{\text{sales in year } i}$$

and

- annual sales growth rate defined by the formula

$$Growth_i = \frac{\text{sales in year } i}{\text{sales in year } i-1} - 1.$$

The ROS indicator is intended to display the efficiency of the enterprise in exploiting business opportunities (exploitation). On the other hand, the sales growth rate indicator is intended to show how the company is able to extend its activities, anticipating that the growth of sales means primarily searching for new needs of customers, or penetrating new markets, i.e. that the company adventurously explores and searches for new opportunities (exploration) for attaining higher sales, often with higher expenses and lower profitability.

To calculate the indicators, we used data for the years 2006 to 2008 (the annual sales growth rate called for sales data for the year 2005 obviously).

Adjustment of financial performance indicators for the risk connected with their fluctuation

Besides the selection of the profitability and growth rate indicators, we also dealt with the problem of choosing a summary characteristics expressing the level of the given indicator for several years. First, we opted for plain arithmetic average for the years monitored. This, however, led to a paradoxical situation when an enterprise showing 4% profitability for three years was assessed as equally successful as another enterprise showing fluctuating profitability values, e.g. 4% in the first year, 1% in the second year and 7% in the third year. From the investor's viewpoint, the later fictitious enterprise is much more risky than the stable first fictitious enterprise even though the average revenue value remains the same in both the cases.

Considering the reasons indicated above, we decided to modify the aggregate financial performance indicators according to the risk connected with their fluctuation as follows (the formula for the sales growth was analogous to the below-presented ROS formula):

risk adjusted ROS indicator =

$$= \frac{\overline{ROS}}{1 + \sigma(ROS)} = \frac{\frac{1}{3} \sum_{i=2006}^{2008} ROS_i}{1 + \frac{1}{3} \sqrt{\sum_{i=2006}^{2008} (ROS_i - \overline{ROS})^2}},$$

where

$\overline{ROS}$ is the arithmetic average of the ROS indicator for the years monitored.

$\sigma(ROS)$ is the standard deviation of the ROS indicator for the years monitored.

The risk adjustment described above lied in decreasing the expected revenue in proportion to the risk incurred. As regards the above-mentioned fictitious example of absolutely 4% profitability, the profitability will remain 4%, however, the profitability of the other enterprise with fluctuating results will be 1.63 adjusted per cent.

Incompatibility of the growth strategy and the exploitation strategy

A review of more than thirty researches by Simsek *et al.* (2009, p. 866) confirms the conclusions of March (1991) and Uotila (2009) stating that there is a mutual trade-off between activities connected with the search for new opportunities (exploration) and activities utilizing the effects of existing resources as much as possible (exploitation).

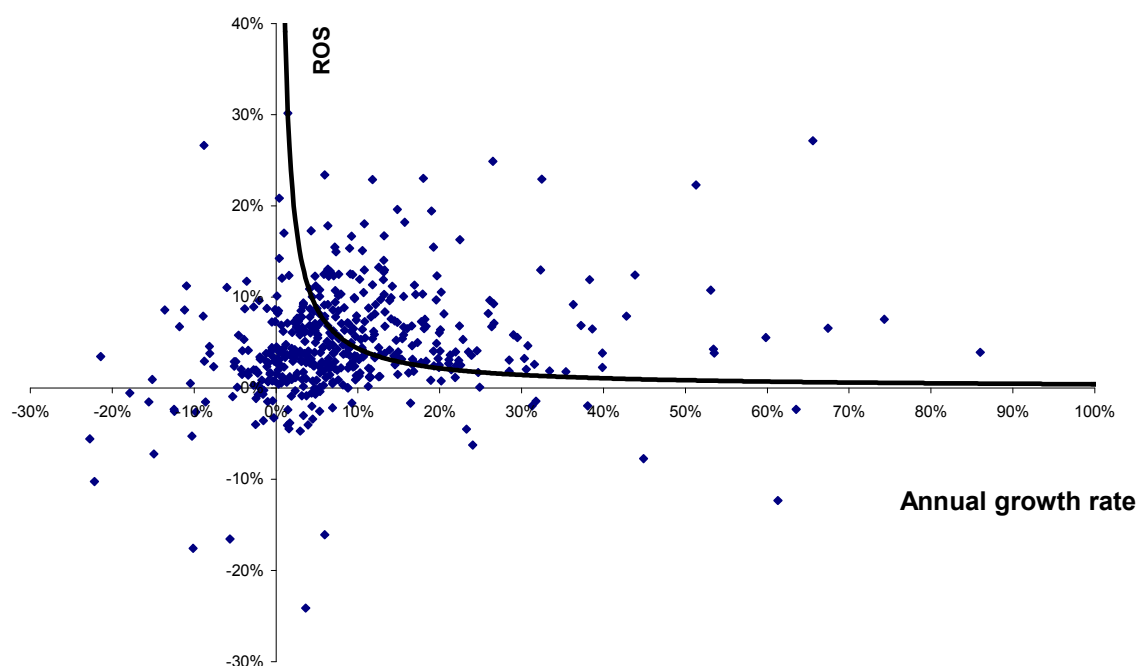
Our assessment of the financial performance of enterprises in the Vysočina Region proceeded from the incompatibility of these two strategies. We anticipated that there was a negative correlation between the growth ratio attained and the profitability attained. In other words, if an enterprise wishes to attain high sales profitability, it is forced to sacrifice a certain portion of its growth and vice versa.

In a two-dimensional space capturing the levels of two financial performance indicators, such a negative correlation is expressed with hyperboles. We marked the hyperbole entering through the average ROS point and the average sales growth ratio in Fig. 1 below. The respective points represent the enterprises analysed. Enterprises above the hyperbole are considered successful as they are able to combine their production factors in such a successful way that they show above-average values at least in some of the financial performance indicators. Enterprises below the hyperbole represent enterprises which are not financially profitable.

Data and sample size

The selected financial performance indicators were construed from publicly available data from financial statements of a total of 481 enterprises based in the Vysočina Region. Tab. II below shows the number of these entities broken down by district of the Vysočina Region, comparing them with the data of the Czech Statistical Office (CSO) regarding the size structure of entities in the Vysočina Region. The last column shows the ratio of entities recorded by the CSO in the basic set covering our sample of analyzed companies.

The entire selected sample included data covering slightly less than one third (29% to be exact) of all the entities based in the region. Nevertheless, different representation in the respective size groups shows that the analysed sample was neither a reduced-size picture of the the basic set, nor was it created by completely random selection; that is why the results presented in this article can be considered



1: Hyperbolic boundary dividing well-performing and ill-performing enterprises

Source: Author illustration processed with MS Excel

II: Number of enterprises in our sample and in the basic set

Size group selected according to the number of employees	District					All districts	According to the CSO In 2008	Coverage
	Havlíčkův Brod	Jihlava	Pelhřimov	Třebíč	Žďár n. Sázavou			
20–49	36	55	24	31	32	178	900	20%
50–99	30	35	19	21	31	136	429	32%
100–199	16	23	27	19	16	101	185	55%
200–499	10	9	5	10	11	45	82	55%
500–999	2	2	2	2	4	12	25	48%
1,000 and more	2	4	1	1	1	9	14	64%
Total	96	128	78	84	95	481	1635	29%

Source: Own calculations CSO based on http://www.czso.cz/xj/redakce.nsf/i/vyvoj_organizacni_struktury_podnikatelske_sfery_v_kraji_vysocina).

representative of the sample analyzed by us rather than of all the enterprises of the Vysočina Region.

Sector-related characteristics of the enterprises researched

In addition to the size-related structure, we also dealt with the sector-related composition of the sample of enterprises researched by us. Tab. III shows the representation of the respective sectors (broken down according to the sector-related classification of economic activities) in the respective districts of the Vysočina Region. Unfortunately, the CSO does not publish such an information.

RESULTS

The methodological procedure described above was used to calculate the risk-adjusted ROS and growth rate indicators for all the enterprises, calculated average values of these indicators for the entire sample of the enterprises researched, and construed a hyperbole entering through a point (average growth, average ROS). It divided the entire group of enterprises into enterprises which are not financially efficient (above the hyperbole) and those which are not profitable (below the hyperbole). Subsequently, we researched into the frequency of representation of financially efficient enterprises in the respective categories.

III: Number of enterprises in the respective sectors

Size group selected according to the number of employees	District					All districts
	Havlíčkův Brod	Jihlava	Pelhřimov	Třebíč	Žďár n. Sázavou	
A – agriculture, gamekeeping, forestry	23	17	19	14	28	101
D – manufacturing industry	46	63	43	38	45	235
E – production and distribution of electric power, gas and water	2		2	2	1	7
F – construction industry	8	16	5	7	6	42
G – trade, repairs of motor vehicles and products for personal and mostly household use	8	17	6	7	9	47
H – accommodation and boarding	1				1	2
I – transport, storage and communications	2	6	2	4	2	16
J – financial brokering	1					1
K – real estate activities, rentals and entrepreneurial activities	4	7	1	10	2	24
O – other public, social and personal services	1	2		2	1	6
Total	96	128	78	84	95	481

Source: Own calculations

IV: Ratio of financially efficient enterprises in the respective sectors and districts relating to the total number of enterprises of the given sector and district

Size group selected according to the number of employees	District					All districts
	Havlíčkův Brod	Jihlava	Pelhřimov	Třebíč	Žďár n. Sázavou	
A – agriculture, gamekeeping, forestry	30.4%	35.3%	47.4%	21.4%	21.4%	30.7%
D – manufacturing industry	43.5%	30.2%	37.2%	39.5%	51.1%	39.6%
E – production and distribution of electric power, gas and water	50.0%		50.0%	50.0%	0.0%	42.9%
F – construction industry	62.5%	68.8%	100.0%	42.9%	50.0%	64.3%
G – trade, repairs of motor vehicles and products for personal and mostly household use	37.5%	23.5%	33.3%	28.6%	33.3%	29.8%
H – accommodation and boarding	0.0%				0.0%	0.0%
I – transport, storage and communications	50.0%	0.0%	50.0%	25.0%	0.0%	18.8%
J – financial brokering	0.0%					0.0%
K – real estate activities, rentals and entrepreneurial activities	25.0%	42.9%	0.0%	30.0%	0.0%	29.2%
O – other public, social and personal services	100.0%	0.0%		0.0%	0.0%	16.7%
Total	40.6%	33.6%	43.6%	33.3%	36.8%	37.2%

Source: Own calculations

Tab. IV presents the relative frequencies of enterprises in sector-related categories. In this case, the differences among categories proved to be more interesting than in the case of the analysis of frequency according to size-related groups of the respective enterprises which was therefore omitted in this article. The data specified in Tab. IV indicate in which sectors and districts financially successful enterprises prevailed and vice versa. Combining these data with the information of the total number of enterprises in the category concerned (see Tab. III), we can further deduce the importance of the sector concerned for the prosperity of the entire district.

DISCUSSION

The values of relative frequency of successful enterprises presented in Tab. IV indicate that the average proportion of prosperous enterprises in the total analyzed sample was 37.2%, and in comparison with that, an above-average proportion of well-performing enterprises was concentrated in the Districts of Pelhřimov (43.6%) and Havlíčkův Brod (40.6 %), while the frequency of prosperous enterprises in the Districts of Žďár nad Sázavou, Jihlava and Třebíč was below average.

Differences among the respective sectors revealed in Tab. IV in relation to Tab. III indicate that:

- Almost 70% of the total number of analyzed enterprises based in the Vysočina Region pursued their activities in the fields of industry (48.9%) and agriculture (21%).
- Financially well-performing **industrial** enterprises were based primarily in the Districts of Žďár nad Sázavou (51.1% of successful enterprises), Havlíčkův Brod (43.5 %), while financially well-performing enterprises based in the District of Jihlava showed a below-average representation (mere 30.2%).
- Examples of successful **agricultural** enterprises can be found in the Pelhřimov region, with almost one half (47.7%) of enterprises ranking among the prosperous ones, which is 12 or more percentage points more compared to the success rates of agricultural enterprises located in other districts within the region.
- The largest proportion of successful enterprises (64.3%) was identified in the **construction industry**. As it seems, this was a consequence of growth opportunities connected with the period of prosperity coinciding with the analyzed years 2006–2008. Construction companies thrived most in the Districts of Pelhřimov and Jihlava, while the Districts of Třebíč and Žďár nad Sázavou showed a significantly lower proportion of successful construction companies.
- Out of the total number, some 10% of the entities analyzed dealt with **trade**. However, it did not rank among markedly prosperous sectors in any of the districts, and it was only the District of Havlíčkův Brod (37.5%) where the number of prosperous enterprises reached the average of the entire analyzed sample (37.2% as mentioned above). As for the remaining districts, the ratio of prosperous trading companies was significantly below the average of the analyzed sample, with the lowest ratio of prosperous enterprises being shown in the district of Jihlava (23.5 %) where this sector had a major impact on the overall prosperity of this district, taking into account its relatively important share in the total number of enterprises.

Limitations of the research and suggestions for further research

The conclusions specified above are limited with a range of restrictions arising out of data availability and methodology used. The following limitations rank among the most important ones:

- Only two equally important financial indicators were used for the assessment of financial prosperity, rather than a whole range of indicators with different weights. On the other hand, there are certain advantages of this model, namely: unequivocal transparency, interpretability, well-reasoned selection of indicators.
- Financial prosperity was investigated in a limited time span of three years, taking into account financial data for the years 2006–2008. Any mistakes possibly occurring in a single datum might have a relatively more significant impact on the evaluation of the given enterprise compared with a longer time series.
- The anticipated incompatibility of profitability and growth of sales may not apply under every circumstance. For instance, an enterprise playing the role of a technological leader may skim cream by means of charging a relatively high price for a newly developed product (which is unique to the market much demanded by customers thanks to its novelty), achieving both high profitability and significant sales growth figures. In the long term, however, we expect that competitors will be attracted by significant profit margins, entering the market, decreasing the price, and assuming a greater portion of the sales growth from the existing leader.
- The size of the entity played no role in our assessment. Nevertheless, from the all-society viewpoint, a single prosperous entity may contribute to the prosperity of the entire region several times more than a series of very small, though prosperous enterprises.
- The financial data do not reveal the reasons for differences between the respective enterprises. This question should be answered in a greater detail based on the further research into the factors of economic prosperity to be carried out within the scope of the above-mentioned research assignment.

SUMMARY

The differences in financial performance of the companies from the Vysočina Region are analysed in this article. The financial performance is assessed based on two indicators: risk-adjusted return on sales and risk-adjusted annual growth rate of company's sales. According to the literature from the field of exploration and exploitation strategies, the trade-off between both indicators is supposed. The sample of companies consisted of nearly five hundreds companies from all parts of the Vysočina region. The results indicate differences between industrial sectors, as well as between the districts of the Vysočina Region. Financially well-performing agricultural enterprises are mostly located in the Region of Pelhřimov, while successful industrial enterprises tend to be based in the Districts of Žďár nad Sázavou and Havlíčkův Brod. On the other hand, construction companies are most successful in the Districts of Pelhřimov and Jihlava.

Acknowledgements

This article is part of the solution of Project No. 402/09/2057 financed by the Czech Science Foundation of the Czech Republic.

REFERENCES

- HULT, G. T. M. et al., 2008: An assement of the measurement of performance in international business research. *Journal of International Business Studies*, Vol. 39, p. 1064–1080.
- KAPLAN, R. S., NORTON, D. P., 2004: *Strategy maps: converting intangible assets into tangible outcomes*. Boston (Mass.), Harvard Business School, 2004. ISBN 1591391342.
- MARCH, J. G., 1991: Exploration and Exploitation in Organizational Learning. *Organization Science*, Vol. 2, No. 1, Special Issue: *Organizational Learning*, p. 71–87.
- SIMSEK, Z., HEAVEY, C., VEIGA J. F., SOUDER, 2009: A Typology for Aligning Organizational Ambidexterity's Conceptualizations, Antecedents, and Outcomes. *Journal of Management Studies*, Vol. 46, No. 5, p. 864–894.
- UOTILA, J., MAULA, M., KEIL, T. and ZAHRA, S., 2009: Exploration, exploitation, and financial performance: analysis of S&P 500 corporations. *Strategic Management Journal*, Vol. 30, p. 221–231.

Address

Ing. Ladislav Šiška, Ph.D., Katedra ekonomických studií, Vysoká škola polytechnická Jihlava, Tolstého 16, 586 01 Jihlava, Česká republika, e-mail: siskal@vspj.cz

