PROSPERITY AND STABILITY OF SME SEGMENT BY INDUSTRY IN THE CZECH REPUBLIC[1]

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Abstract

This paper is focused on prosperity and stability of the segment of small and medium enterprises (SME) in the Czech Republic. In the analysis of detailed data from the Czech Statistical Office, we used mainly Labour Productivity calculation and we introduced "Importance factor" that allowed us to determine how significant share to all businesses creates individual types of SME with differentiation on examining industry. Through the Labour productivity, we investigated which industry sectors and which categories within SME segment are the most effective (from this perspective). The intention was to outline the tendency and trends, which industry sectors and size category within the SME segment appear to be stable especially in economic downturns and tend to recover successfully, and to contribute further to the prosperity of our country, although it is clear that it is significantly wider range of the factors having an influence on the latter in the day to day business reality. The article offers a data base for example for options in structural state policy or employment policy in the case of economic decline in the performance of businesses.

Key words:SME (small and medium-sized enterprises), Stability, Employment

JEL Code:M21, M10, O11

Introduction

SMEs are considered to be a true back-bone of the European economy, being primarily responsible for wealth, economic growth and especially social cohesion, of which relevance is on rise. Another important feature is stability of SMEs in national economies. They only rarely leave the home country in terms of moving manufacturing sites, and only rarely transfer the capital out of country (Břečková and Havlíček, 2013).

In the European Union today, SMEs (i.e. with fewer than 250 persons employed) are economically important with 98% of an estimated 19.3 million enterprises defined as SMEs, providing around 65 million jobs. Almost all of these are small enterprises, with 18 million enterprises (93.2%) employing less than ten people and only 35,000 enterprises employing

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more than 250 people. The average European business (average EU-27) provided employment for four people, including the owner/manager (in 2005) (Lukacs, 2005, in Břečková and Havlíček, 2013).

Given certain disadvantages, which the small and medium-sized enterprises may generally face in comparison with big enterprises (e.g. in terms of market share, economies of scale – which are typical for global players and MSP operating on the Czech market only cannot achieve them, restriction on investment in the research and their efficient gain), under certain circumstances we may expect their higher instability which may affect the employment in the respective branch or region. Moreover, as Černý (2011) says "the competitivenessattheregionallevelis not sophisticatedenough".These disadvantages could even be enhanced by the consequences of the big economic crisis around 2009, which could reflect on the stability and employment. The role might also play that the Czech Republic belongs among countries with the lowest mobility (1%) (Břečková and Vlačihová, 2011).
This paper focuses on issues which include the aforementioned stability and employment, whereas this particular analysis concentrates on the level of enterprise and branch. Based on the data analysis from crisis (up to post-crisis) years 2008-2011, we intent to test a sample of 1.1 Mio. firms from the segment of small and medium-sized enterprises (SME) operating in the Czech Republic to verify whether this situation really reflected on the stability and employment. The analysed sample roughly corresponds to the total number of all SME in the Czech Republic, which in such an extensive level was allowed thanks to documentation provided by the Czech Statistical Office, which collects data of all entrepreneurial entities.
The micro, small and medium-sized enterprise is defined by the standard Commission Regulation (ES) No. 800/2008 dated 6 August 2008. The basic criteria for the evaluation of the enterprise size include the number of employees, annual turnover and the balance figure of the annual balance sheet (of the size of assets/property). In general, a small or medium-size enterprise (SME) is considered a firm that employs fewer than 250 employees and its annual turnover/income does not exceed EUR 50 Mio. and its assets/property do not exceed EUR 43 Mio. As part of the category of (SME), small enterprises are defined as those employing fewer than 50 people and the micro enterprises are defined as those employing fewer than 10 people.

According to Řežábek (2009), in the summer of 2007 financial markets in the USA experienced a chain crisis. The first phase of the crisis transfer to the Czech Republic

occurred in August 2007 - September 2008, however, with minimum impact on the Czech economy. The second phase of the crisis occurred in September - November 2008 and affected the financial system of the Czech Republic with the „regional decrease in trust". The impact of the crisis on the economic outputs we can trace also for example in the papers by Langhamrová and Bílková (2011) or in Bílková (2012).

1 Labour productivity and Importance factor

Our first goal was to analyse the SME prosperity, i.e. we will determine which SME branches are the most efficient in terms of labour productivity. Through labour productivity we can express how employees contribute to the value added of the firm (efficiency indicator) in the respective branches. Branches with a high level of labour productivity can be described as branches, where due to the decrease in efficiency, firms tend to lay off their employees, thus trying to maintain their efficiency (at the cost of dismissal, i.e. decreasing labour cost), unlike firms with low labour productivity. Another examined factor as part of the prosperity analysis is which of these branches present an important SME share in comparison with all enterprises (Importance factor). We also focus on a more detailed SME classification based on the size (types). The obtained results shall allow us to deduce potential economically more stable fields and a more resistant size segment of firms which should be able to recover faster in the post-crisis period and contribute to the country prosperity, even though it is clear that there is a noticeably wider scale of factors having an influence on the latter in the day to day business reality.

1.1 Methods used

We have been provided with data from the Czech Statistical Office(ČSÚ) containing information about enterprises in the Czech Republic. Enterprises are classified into sections based on the classification of economic activities CZ-NACE[2] (2014), business branch, which generally includes 21 sections.

The data utilized for our research, however, do not include 4 sections A – Agriculture, Forestry and Fishing, K – Finance and Insurance, T – Household Activities and U – Activities of Extraterritorial Organizations. These sections were left out by ČSÚ due to principal divergence of these sections from the remaining sections (excessive particularities). Sections

[2]NACE – is a standard classification of economic activities of the European Union. CZ-NACE thus classifies economic activities (areas of economic activities); each statistical unit, which performs any economic activity, can be assigned code CZ-NACE. CZ-NACE is the national version of NACE.

O - S were merged by ČSÚ into one section because of their striking similarities. These are non-profit branches and services focusing on the public sector, whereas their inclusion in our research would imply substantial distortion of results). Out of the original 21 sections of the general CZ-NACE, we thus work with the total of 13 sections in our research.

For the purpose of our research, we carried out the segmentation of enterprises based on their size (in line with the European Commission definition[3]), focusing on the criterion of the number of employees, i.e. each CZ-NACE section distinguishes 5 categories of enterprises: *Micro*, *Small*, *Middle*, *SME, Total*. Enterprises in *SME* category have 0 -249 employees; this category will be created by merging categories *Micro*, *Small* and *Middle*, as indicated by the relationship (1). Category *Total* includes all enterprises operating in the Czech Republic without the restricted number of employees. Category *SME* is the subset of category *Total*.

$$SME = Micro \cup Small \cup Middle \qquad (1)$$

The examined data file from 2008-2011 contained a slightly different number of enterprises in each year but the differences were in units or less than units, i.e. statistically insignificant. We work with figures for 2011, where the numbers of enterprises from the whole analysed period were the highest. The complete data file contained 1,112,295 entrepreneurial entities, of which 1,110,789 enterprises belong to category SME. This generally corresponds to the total number of enterprises in the Czech Republic. The number of Micro enterprises is the highest – 1,069,385 (of which most people are self-employed);the number of Small enterprises is 34,464 and of Middle enterprises is 6,940. In terms of branches, most enterprises are in sections G – Wholesale and Retail; Repair and Maintenance of Motor Vehicles (246,280), F – Civil Engineering (176,251) and C – Manufacturing Industry (173,519). On the other hand, the lowest number of enterprises in the examined sample is section B – Mining and Extraction (348), D – Energy Production and Distribution (5,192) and E – Water Supply, Sewage, Waste (6,383). Following data are available for individual categories of enterprises: the number of enterprises in the respective category, total sales of the enterprises and the total number of employees (recalculated to whole workloads) of the enterprises in the respective category. All these data show values of relevant crisis to post-crisis years (2008-2011).

[3]Definition of micro, small and middle enterprise used in the EU follows Annex No. 1 Commission Regulation (ES) No. 800/2008 dated 6th August 2008

2 Research

For the purpose of our research, we follow Czech accounting standards, i.e. in terms of generic – not purpose-related - classification of costs and incomes, like with IFRS. Value added *VA(Y)* in respective year *Y* corresponds with its particularity (in line with Czech accounting standards) to the following relationship (1), whereas the figure is obtained from one of the main financial statements, see Černohorský and Řízek (2014).

$$VA(Y) = obchodní \quad marže\,(Y) + výkony\,(Y) - výkonová \quad spotreba\,(Y) \tag{2}$$

Thanks to the value added, we thus get an idea about the rough efficiency of the respective firm or the whole branch. The value added is then used to calculate Labour productivity. Labour productivity (*LP)*in the period of 2008 - 2011 is defined by relationship (2) (Tállová, 2008), where *VA(Y)* indicates the sum of values added of enterprises in the respective category in *Y* and *Employee(Y)* indicates the total number of employees (recalculated to whole workloads) of enterprises in the respective category in *Y*.

$$LP = \frac{\sum_{Y=2008}^{2011} VA(Y)}{\sum_{Y=2008}^{2011} \text{Employee}\,(Y)} \tag{3}$$

In order to measure the significance of the set of enterprises A compared with the set of enterprises B, we have introduced quantity Importance *Imp(A,B) which expresses certain* „significance“ of SME towards all enterprises in the respective category *Imp(SME, all),* as well as the significance of relevant SME types by the size (micro, small, middle) towards all enterprises in the respective category – e. g. *Imp(micro, all).*

Importance *Imp(A,B)*in the period of 2008 - 2011 is defined by relationship (4), where *Sales(A,Y)* indicates the total sales of enterprise in category *A* in *Y*; likewise *Sales(B,Y)* indicates the total sales of enterprises in category *B* in *Y*. Condition: $A \subseteq B$.

$$\text{Imp(A, B)} = \frac{\sum_{Y=2008}^{2011} Sales(A,Y)}{\sum_{Y=2008}^{2011} Sales(B,Y)} \tag{4}$$

In those respective branches, the Importance indicator indicates the market share of relevant types of enterprises in the total SME. This market share may reflect the stability of the

respective segment of enterprises on the branch as a whole in terms of competition towards others types of enterprises, e. g. micro enterprises towards middle enterprises. This indicator is a suitable indicator of stability of a certain type of enterprise in the relevant branch. For example, Table 2 implies that the micro form of enterprise is fully sufficient for the area of real estate business. This suggests that a dominant type or the size of an enterprise (segment micro, small or middle) in the relevant branch are derived from the particularities of every branch.

2.1 Results reached

Analysis results of indicator Labour productivity (LP)demonstrate that the highest labour productivity in SME segment is represented by energy production and distribution, (however, showing the lowest numbers in the economy). On the other hand, the lowest LP in the service sector (such as accommodation, board and hospitality, which may be distorted by a distinct grey zone and the lack of reliable sales records, i.e. the lack of real data). In terms of the company size through branches, the highest labour productivity prevails with micro enterprises. This suggests that the value added primarily falls on employees of micro enterprises, without the branches being distinguished.

Tab. 1: Labour productivity (in thousands of CZK) acc. to relation (3) for SME types

CZ-NACE sections	Labour productivity			
	micro	small	middle	SME
D –Energy Production and Distribution	8298	2682	2702	3178
L –Real Estate Activities	2938	727	667	1785
M –Profession-related, Research and Technical Activities	1354	748	894	1034
J – Information and Communication Activities	1321	835	1057	1033
B –Mining and Extraction	1148	806	1051	978
O - S –Public Administration, Education, Health Service, Culture and Recreation	1233	458	586	809
G –Wholesale and Retail; Repair and Maintenance of Motor Vehicles	722	568	709	656
E –Water Supply, Sewage and Waste	948	592	614	653
F –Civil Engineering	1033	428	591	642
H - Transportation and Warehousing	878	500	559	616

C –Manufacturing Industry	911	438	549	556
N – Administrative and support service activities	986	419	415	502
I –Accommodation, Board and Hospitality	400	194	370	314

Source: individual research of authors (using data from the Czech Statistical Office)

As for the Importance factor based on sales, the research produced interesting results. The branch of Real Estate Activities shows that the SME segment is represented here most frequently (98.3%). It means that this branch is practically fully made up of enterprises of up to 250 employees, i.e. SME. This also implies that this branch is suitable for setting up SME, with low access barriers. This branch also shows an extremely high share of micro enterprises (77.3% of all enterprises in the branch), forming the backbone of the respective branch as well as accomplishing the second highest labour productivity in SME segment. The branch may therefore be regarded as interesting in terms of investment and development of entrepreneurial activities.

Tab. 2: Importance of SME and its types towards all enterprises in the respective section (Total) (relation 4, i.e. the share of sales of individual types of companies in the sales of all firms)

CZ-NACE Section	Importance			
	micro	small	middle	SME
L –Real Estate Activities	77.3%	13.9%	7.1%	98.3%
M – Profession-related, Research and Technical Activities	46.2%	23.5%	19.9%	89.6%
I –Accommodation, Board and Hospitality	50.5%	23.5%	15.1%	89.0%
N – Administrative and support service activities	25.6%	26.5%	25.3%	77.4%
G –Wholesale and Retail; Repair and Maintenance of Motor Vehicles	28.0%	26.1%	23.1%	77.2%
O - S –Public Administration, Education, Health Service, Culture and Recreation	43.0%	15.7%	16.2%	74.9%
F –Civil Engineering	30.5%	23.6%	20.6%	74.8%
E –Water Supply, Sewage and Waste	15.7%	18.2%	28.7%	62.6%
H –Transportation and Warehousing	17.4%	18.7%	18.5%	54.6%
D –Energy Production and Distribution	9.2%	12.5%	23.4%	45.1%
J – Information and Communication Activities	15.5%	13.5%	15.3%	44.3%

C –Manufacturing Industry	6.5%	9.3%	22.2%	37.9%
B – Mining and Extraction	1.1%	4.1%	10.3%	15.5%
B - S TOTAL	20.6%	17.9%	21.5%	59.9%

Source: individual research of authors (using data from the Czech Statistical Office)

As part of SME segment (Importance factor 89%, or 77.2%), another important branch appears to be „Accommodation, Board and Hospitality" (CZ-NACE[4]group 55 and 56),whereas there may be a number of reasons. In any case, it is this branch along with „Wholesale and Retail" (CZ-NACE group 45, 46 and 47) that is criticised due to the seeming wide grey zone of business, and it may be burdened with an electronic sales register (from 2016).

3 Conclusion

This paper contributes to the perception of efficiency and stability of Czech firms, or rather their prosperity, especially focusing on SME (small and medium-sized enterprises) segment. It also presents data for the structural policy of the state in the respective branches. Our research focused on the issue of efficiency measured by hard facts and reflected on the level of employment by the branch type. Considering the abovementioned facts, it is important to classify the size types of businesses[5]as part of SME segment which are divided into three groups - micro, small a middle.

For the purpose of our research, we mainly used the calculation of Labour productivity and introduced a factor called „Importance factor" that allowed us to determine how a significant share to all businesses creates individual segments of SME with differentiation on examining industry. Through Labour productivity, we investigated which industry sectors and which categories within SME segment are the most effective (from this perspective). With labour productivity we can express how employees contribute to the value added of the company (performance indicator) in various sectors. Sectors with a high degree of Labour productivity can then be characterized as sectors, where due to drop in performance the companies tend to lay off more employees and thus maintain performance (at the cost of redundancies, i.e. reducing labour costs in particular), unlike companies where there is a low Labour

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[5]Definition of micro, small and middle enterprise follows standard Commission Regulation (ES) No. 800/2008 dated 6th August 2008

productivity. The indicator of Labour productivity can thus be considered a suitable indicator for comprehensible overview of the productivity of relevant branches and of individual types of enterprises which combines employment with rough efficiency of enterprises through the value added). In terms of Labour productivity, SME was classified by the significance depending on Labour productivity – a significant factor for branch-related productivity in terms of the value added. A distinct feature of the research refers to the significance of micro enterprises as leaders in the area of labour productivity. It also demonstrates possibilities or barriers for entering the respective branch in a suitable form (micro, small, middle). On the other hand, a weak point was represented by the branch distinction since the poles of the highest and lowest productivity oscillate too far from one another and this surely calls for another research focusing only on this issue and causes of this condition.

The „Importance factor" research performed an analysis focusing on the representation of individual types of SME enterprises within the whole branch. The results showed again that with a few exceptions the driving force was represented by micro enterprises (i.e. 0-9 employees). As for the branch classification, it mainly applies to the Real Estate Business, Research and Technical Activities, and the discussed branch of accommodation and hospitality services.

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