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## Small and Medium-Sized Enterprizes – Opportunities and Challenges

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**Abstract:**

*Small and medium-sized enterprises play a major role in national economy. However, their lifetime is limited by the micro-economic climate. This paper discusses whether credit exposure has a major impact on the rate of bankruptcy and this hypothesis is verified by means of statistical methods, based on official statistical data and selected published studies and researches. The hypothesis was not fully confirmed in our investigation. The output of the paper was an evaluation of the dependency of bankruptcy of SMEs on their credit exposure and the presentation of other factors that might have an impact of SMEs, making them either successful or going to bankruptcy.*

**Key words:** SME, credit, bankruptcy

**JEL Classification:** D21, A12, G30

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## 1. Introduction

The importance of SMEs in the Czech Republic is conveyed by the fact that in developed economies, SMEs represent nearly 90% of the total number of businesses. This size group contributes to overall employment by 50-70% and to gross national income by 30 – 70 % (Synek, 2006).

The current leading studies in the micro-economic climate sum up the preconditions for sustaining SMEs in several points: international dimension, growth expectation, access to finance, advisory services, and business obstacles. However, we cannot omit personal traits and talents of the entrepreneurs.

In order to understand the issue of SMEs better, it is necessary to define which businesses are classed as SMEs.

<b>Business category</b>	<b>Staff headcount</b>	<b>Turnover</b>	<b>Or</b>	<b>Balance sum</b>
Medium	< 250	≤ 50 mil. EUR		≤ 43 mil. EUR
Small	< 50	≤ 10 mil. EUR		≤ 10 mil. EUR
Micro	< 10	≤ 2 mil. EUR		≤ 2 mil. EUR

**Figure 1.** SMEs

*Source: What is an SME (2015)*

The authors of the paper discuss SMEs in a wider context, however, they focus on the stability of SMEs and credit exposure, with a hypothesis that credit exposure of SMEs holds the main influence on their bankruptcy and the total of all other factors mentioned in this paper do not have the main impact on the success of an SME; this hypothesis will be verified using statistical methods.

## 2. Literature Overview

Studies and subsequent papers by Břečková & Havlíček (2013a, 2013b and 2015) and Havlíček, Thalassinou and Berezkinova (2013) and Havlíček and Schlossberger (2013) are very illustrative with regards to issues such as the preference between running one's own business and being employed, and the issue of exports done by the SMEs. We must also not forget to mention major studies by the Association of Small and Medium-Sized Enterprises and Crafts discussing the issue of exports, proposals for speeding up the development of small and medium-sized enterprises, and major studies concerning accountancy (Dlasková & Havlíček), or studies (Horák, 2012) discussing the issue of SMEs and start-ups. In terms of efficiency of SMEs, we must not forget to mention the studies (Ministry of Industry and Trade) and other studies (OECD, 2015) used by the authors of this paper as a source of statistical data. The use of statistical apparatus is based on (Řezánková &

Löster, 2009) and (Škaloudová, 2015). Our hypothesis that credit exposure has a dominant impact on bankruptcy is based on research of the authors (Fidrmuc & Hainz, 2010), (Kolozsár & Szeverin, 2014), (Thalassinos, Liapis & Thalassinos, 2014), (Thalassinos *et al.*, 2010) – and on research of the respective issue in Slovakia 2000 – 2005 and (Chung & Huamin & Yu-Chun 2012) – research of the respective issue in Taiwan.

### **3. Methods Used**

When studying the initial studies and during their comparison (What is an SME, 2015) and (Synek, 2006), a basis for the analysis, description and explanation of small and medium-sized enterprises was laid. The importance and definition of small and medium-sized enterprises resulted from this analysis. For the analysis of bankruptcy in correlation to the credit exposure of SMEs, measured by Outstanding business loans, SMEs, a correct definition of SMEs was selected based on (What is an SME, 2015); a Pearson correlation coefficient was used since we can expect a correlation between provided loans and the bankruptcy of SMEs, this correlation can be linear and directly proportionate, therefore complying with the conditions for the application of the Pearson correlation coefficient to measure the intensity of the correlation. The authors use a comparison of the most current research and introduce their own methodology to evaluate the issue using statistical analysis and statistical data in order to verify their hypothesis.

#### **3.1 Opportunities for Business in SMEs**

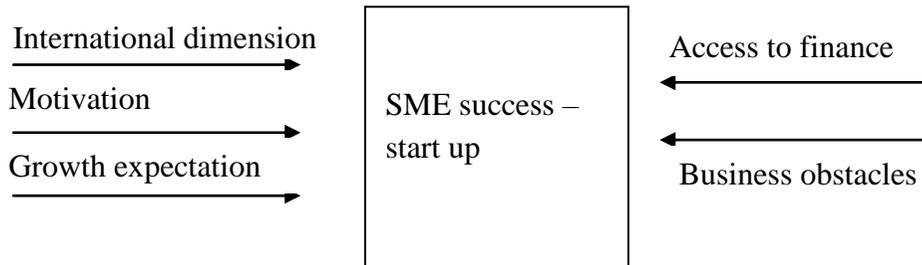
A report on the development of SME (2014) states: "7.3% of the adult population, aged 18-64, is involved in new business activities in the CR. New business activities include individuals who undertake specific steps to start their new business and those who manage companies younger than 42 months."

That is also confirmed by Breckova and Havlicek (2015) saying that "business activity in the Czech Republic has generally been declining slightly, and the younger generation would prefer to enter into employment relationships". These authors refer to their survey where one of the outcomes was a finding that a relatively significant characteristic in relation to dependent employment relationships among respondents was their emphasis on comfort and free time and on the fact that an employer takes care of all operational and administrative agendas (Breckova and Havlicek, 2015), and they continue: "Respondents also view the exactly defined work period as an advantage, which is evidenced overall by the tendency of the younger generation to settle for employment and their lower willingness to form and achieve their own objectives".

Horák (2012) states, referring to global research carried out by Delta Economics, "that there is amazing enterprising optimism, but also explores obstacles and difficulties SMEs have to deal with and warns the government, institutions, banks and consultants to pay careful attention to the needs of SMEs in the long term and

over long horizons." The report by Delta Economics states, apart from others, that internationally-oriented businesses grow faster than purely local businesses. The report is based on several major facts, see the below figure:

On the basis of the aforementioned study we can characterize the success of an SME.



**Figure 2.** Success of an SME

*Source: Author based on (Horák, 2012)*

In their paper, Breckova and Havlicek (2013a, 2013b) argue that small and medium-sized enterprises (SME) including entrepreneurs are 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", the authors continue (Breckova and Havlicek, 2013a and 2013b).

### 3.2 International Dimension of SMEs in CR

The Report on the development of small and medium-sized enterprises and their support in 2012 speaks about the importance of the globalisation and diversification of our foreign economic relationships; these major factors became a part of the new Export Strategy of the CR for 2012 – 2020.

The support of export is becoming institutionalised in the CR, via EGAP (Export Guarantee and Insurance Company) and ČEB (Czech Export Bank). Czech businesses are also encouraged to participate in fairs and exhibitions.

The analysis of export and impact of SMEs (2015) states: "that the overall number of exporters grew by 0.8 between 2013 and 2014, and the year on year growth of exports in the respective period grew by 13.1%. The total volume of imports grew by 12.2% and the impact of foreign trade on the total GDP grew by 6.8% in 2014." This indicates the positive current development of SMEs in the Czech Republic.

The following conclusions were made in the Report on the Development of SMEs, 2014) regarding export:

- "Most of the approached exporting entrepreneurs did not perceive any major problems associated with exports
- However, approximately half of them would welcome some type of public support of exports."

From the conclusions made above, it can be seen how important information is for doing business abroad, however, what many studies do not mention is how important the political and economic stability of foreign markets for the business abroad to succeed is. This is a feature which can significantly affect the exports and efficiency of SMEs.

### **3.3 Motivation**

Motivation is one of the factors which significantly affect the willingness to start a business (Global Entrepreneurship Monitor, 2013). However, according to (Dlasková, Havlíček, 2013) the lack of faith that one can succeed is, in a major way, supported by the unclear and complicated legislation and how difficult it is to find your way in this area.

With regards to entrepreneurship self-confidence (Global Entrepreneurship Monitor, 2013), it is stated that women and people with primary or unfinished secondary education believe in themselves less, on the other hand, people from a rich background and sole traders believe much more in their own entrepreneurial skills.

The above stated shows that it is possible to improve business services (legal and economic), for example, via state support, which could help to convince people interested in starting a business to go ahead. Similarly, we can expect that there will be more female entrepreneurs in the future.

### **3.4 Business Obstacles**

Business obstacles are mentioned by the (Global Entrepreneurship Monitor, 2013) study; the major business obstacles are as follows (ranked by the level of importance): insufficient number of orders, insufficient amount of work, bureaucracy and legislative problems (the list is not complete).

The following proposals to remove these obstacles were proposed by another study (Proposals to Speed Up the Development of SMEs, 2008):

1. "To remove red tape (economic obstacles, legislative and legal obstacles)
2. To replenish investment incentives
3. To simplify taxes
4. To ensure financial resources for SMEs (to arrange funding for guarantees and credits, etc.)"

Having studied the aforementioned studies, the authors of this paper arrived at the conclusion that business obstacles affect, in a major way, the efficiency of SMEs. These obstacles can be systematic - and concern all SMEs (e.g., red tape, taxes) - or selective (insufficient number of investment incentives for SMEs, insufficient

financial resources for SMEs). In order to improve the situation for SMEs, systematic obstacles should be resolved, and consequently selective obstacles concerning SMEs should be removed.

### 3.5 Stability of SMEs in Correlation to Credit Exposure

Considering the stability of SMEs' operations and their sustainability, we must take into account the high sensitivity of SMEs regarding the micro-economic climate. This climate can lead to higher vulnerability - bankruptcy of SMEs that are burdened with loans. We can expect dependency between the loans provided and the bankruptcy of SMEs, this dependency should be linear and directly proportional, therefore, in compliance with the conditions for using Pearson's correlation coefficient for measuring intensity of dependency.

Indicator	Unit	2007	2008	2009	2010	2011	2012
Outstanding business loans, SMEs (stock)	CZK million	360,119	421,107	395,360	395,917	416,494	419,025
Bankrupcies, total	Number	839	873	1 280	1 301	1 263	1 345

**Figure 3.** Credit Exposure and Bankruptcy of SMEs

*Source: OECD (2015)*

*Note: At the time of writing this paper, data for 2013, 2014 and 2015 were not available.*

We can expect linear dependency for the data stated above, in view of the economic base. In order to calculate linear dependency, we can carry out correlation analysis. Řezánková, H., Löster (2009) state that: "The objective of correlation analysis is to examine linear dependencies between variables whose values make it meaningful to determine the ranking order. Intensity of dependency is valued on the basis of a correlation coefficient which is a number from the <-1;1> interval. Value 0 represents linear independency, value 1 represents full direct dependency (one variable is a linear combination of another one) and value -1 represents indirect dependency. Positive values mean a positive correlation (with growing values or order of one variable, the values or order of the other variable grows). The correlation coefficient expresses intensity of mutual dependency. In case of quantitative variables, Pearson's' correlation coefficient applies."

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}}$$

Škaloudová (2015) states that: "Sums of squares in the denominator n-1 are multiplied by sampling variances. The correct interpretation of the correlation coefficient assumes that both variables are random variables and have a common two-dimensional normal distribution. Then, a zero correlation coefficient means that the variables are independent. If the assumption of two-dimensional normality cannot be met, the zero correlation coefficient is indicative of nothing more than that the quantities are uncorrelated."

$$r = \frac{\sum_{i=1}^n (\text{loan}_i - \overline{\text{loan}})(\text{bank}_i - \overline{\text{bank}})}{\sqrt{\sum_{i=1}^n (\text{loan}_i - \overline{\text{loan}})^2 \sum_{i=1}^n (\text{bank}_i - \overline{\text{bank}})^2}}$$

Where:

r – Pearson’s correlation coefficient

loan – sum of loans provided to an SME

bank – number of bankruptcies of an SME

After the application of variables into the formula, the result is a Pearson’s correlation coefficient of 0.4088 which, based on the above, can be interpreted as follows: there is a positive - direct correlation between credit exposure and bankruptcy of SMEs, however, in view of the result of 0.4088, this dependency is not dominant. The results expresses direct proportionality, which means that the higher the credit exposure, the higher the number of bankruptcies. Nevertheless, this is not the only dominant and decisive factor that has an impact on bankruptcy of SMEs.

#### **4. Results and Discussion**

It has been confirmed that small and medium-sized enterprises are very important for national economy. A comparative analysis of their efficiency and the rate of bankruptcy was carried out in correlation to credit exposure, and it was established that credit exposure is directly proportionate and has an impact on the bankruptcy - efficiency of SMEs, however, credit exposure is not the dominant or decisive factor which has an impact on the success of an SME. Other factors that have an impact on the success - bankruptcy are the micro-economic factors mentioned in this paper (i.e., motivation, growth expectancy, access to funds, consultancy, and business obstacles).

With regards to credit exposure and its impact on success - bankruptcy, the result of Pearson’s coefficient 0.4088 says that 40.88% of bankruptcies of SMEs can be affected by the higher number of loans which the SMEs take out. In this case, this is a positive correlation (with growing values or their order for one variable, the values

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or the order of the values grows for another variable, see (Řezánková & Löster, 2009). We can make a conclusion that a non-zero value of Pearson's coefficient, see (Škaloudová, 2015), shows that variables are dependent. Nevertheless, in view of the result we cannot speak about dominant dependency. The unexplained part of the variability, i.e. 59.12, can be caused by the other factors mentioned herein. Our hypothesis: that credit exposure of SMEs has a dominant influence on bankruptcy and the sum of other factors (motivation, growth expectancy, access to money, consultancy, business obstacles) will not have a dominant influence on the success of SMEs, can be deemed disproved. Also, the international scope of SMEs in the Czech Republic was clarified, and the motivation of SMEs and obstacles preventing efficiency and success of SMEs were discussed. A possible way of eliminating obstacles which prevent SMEs from being successful and efficient was presented, using systematic measures, for example, with regards to red tape, taxes, and subsequently by using selective solutions (investment incentives for SMEs, etc.)

## **Conclusion**

SMEs play a major role in market economies, not only in the CR but also abroad. As shown above, there is agreement about the issues associated with SMEs. The authors expect that further research will focus on personality traits of starting entrepreneurs, with a focus on different expectations for men and women. A business microclimate is a major factor and it is difficult to predict its development in the future, nevertheless, if there are changes in the business environment, it should be for the benefit of the entrepreneurs and the changes should be sustainable.

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