COMPANY BANKRUPTCIES: THE OVERALL DEVELOPMENT IN THE CZECH REPUBLIC, INCLUDING COMPARISON OF ITS DEVELOPMENT BY THE REGIONS

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Abstract

From January 1st, 2008 the law no. 182/2006 Coll., On Bankruptcy and Its Resolution (Insolvency Act), which was published in 2006, came into effect. This law regulates not only bankruptcies of companies, but also personal bankruptcies. The article aims are to fulfil the following objectives: to describe the overall development of corporate bankruptcies in the Czech Republic in years 2008–2016 (using total data and with the use of monthly data), to describe also their development within individual regions, and specially to evaluate development of the number of corporate bankruptcies in the individual regions.

The number of corporate insolvencies by region the ratio of corporate insolvencies in the individual regions on the 1,000 registered companies in the region will be calculated for objective development description. It is a question in which of the regions in the Czech Republic the number of corporate bankruptcies per 1,000 registered businesses is the highest.

Key words: financial health, bankruptcies, region

JEL Code: G32, G33, K22

Introduction

From January 1st, 2008 the law no. 182/2006 Coll., On Bankruptcy and Its Resolution (Insolvency Act), which was published in 2006. came into effect. This law regulates not only bankruptcies of companies, but also personal bankruptcies. In the Czech Republic Boková and Randáková (2015), Bokšová et al (2014), Hospodka et al (2015) and Maixner et al (2014) published analysis results of personal bankruptcies in recent years. In this view bankruptcy models (Čámská, 2012) and basic characteristics of enterprises, which are in insolvency (Čámská, 2013), are very important. Detailed analysis of corporate insolvency during the crisis years (with data analysis from 2008 to 2013) were published by Kislingerová and Schoenfeld (2014) and forecasts of corporate insolvencies for the period 2013-2017 were published in 2013

by Kislingerová. However, no one has engaged in research of corporate bankruptcies within individual regions in the Czech Republic and their effects on their development (or economic performance).

Corporate bankruptcies and the effects of the recent financial crisis also influenced worldwide development. An interesting question is whether there is a correlation between the number of corporate bankruptcies in various regions of the Czech Republic and the development of these regions in the GDP.

1   Methodology and Data

In the research, scientific methods were particular used: induction, comparative analysis, synthesis of partial knowledge, elementary statistical analysis and dependence analysis.

For elementary statistical analysis were used the following selected three indicators (Hindls, et al, 2000):

•   the first difference (absolute gain, $_1\Delta_{t\ IN}$ − for corporate insolvencies and $_1\Delta_{t\ AU}$ − for corporate auditions) (1)

$$_1\Delta_t = \Delta_t - \Delta_{t-1} \ .$$ (1)

•   the average absolute gain (2) and

$$_1\overline{\Delta} = \frac{\sum_{t=2}^{n} {_1\Delta_t}}{n-1} = \frac{y_n - y_1}{n-1},$$ (2)

•   the average growth coefficient (3)

$$\overline{k} = \sqrt[n-1]{\frac{y_n}{y_1}}$$ (3)

where n is the number of values (in this paper $n = 108$).

For the dependence analysis, the software STATGRAPHICS Centurion XVI was used. For the analysis were used secondary data from Creditreform (2017).

2   Results and Discussion

The results of elementary statistical analysis, by selected three characteristics, of development of number of corporate insolvency proposals and corporate auditions are given below. The basic development of number of corporate insolvency proposals and corporate auditions with development of its first difference illustrates Fig. 1.

Fig. 1 Development of Number of Corporate Insolvency Proposals and Corporate Auditions with Development of its First Difference
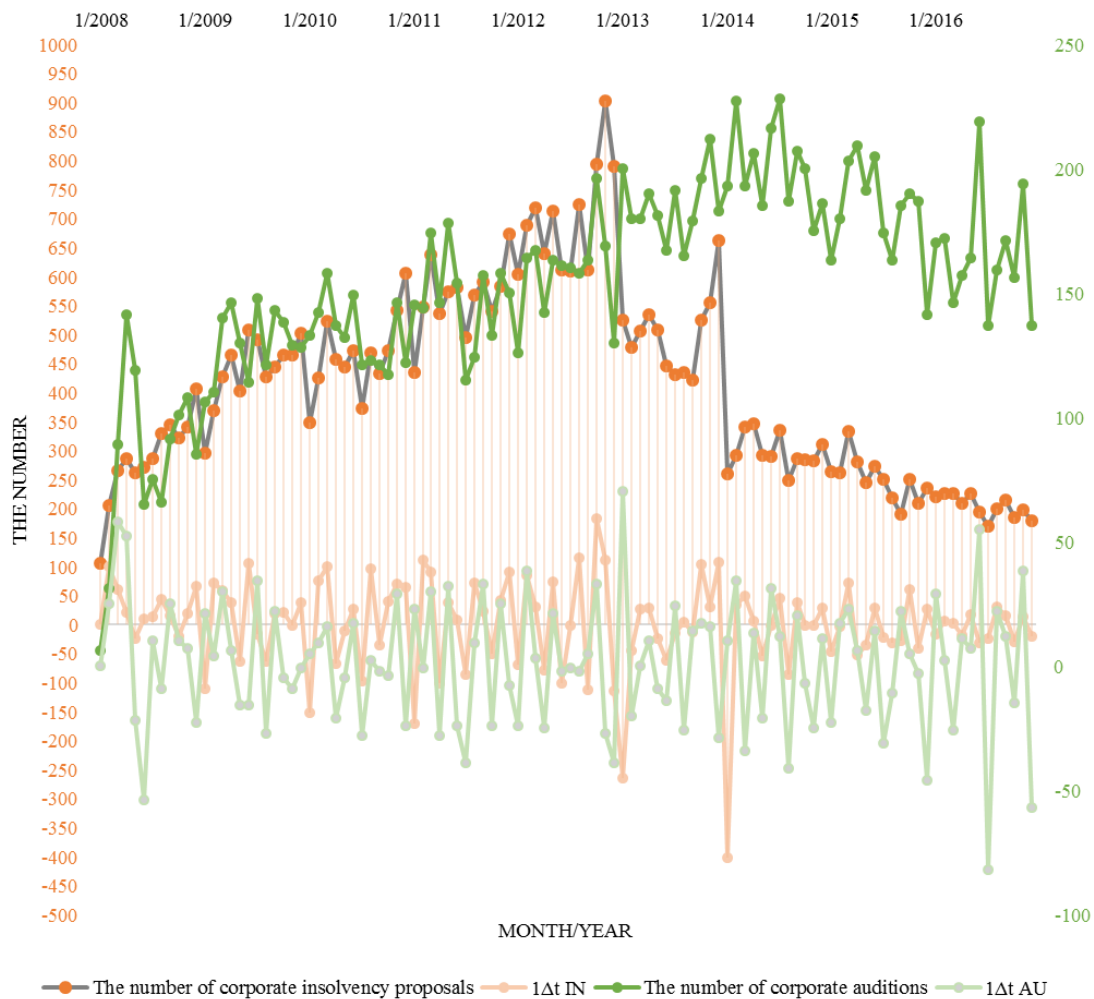
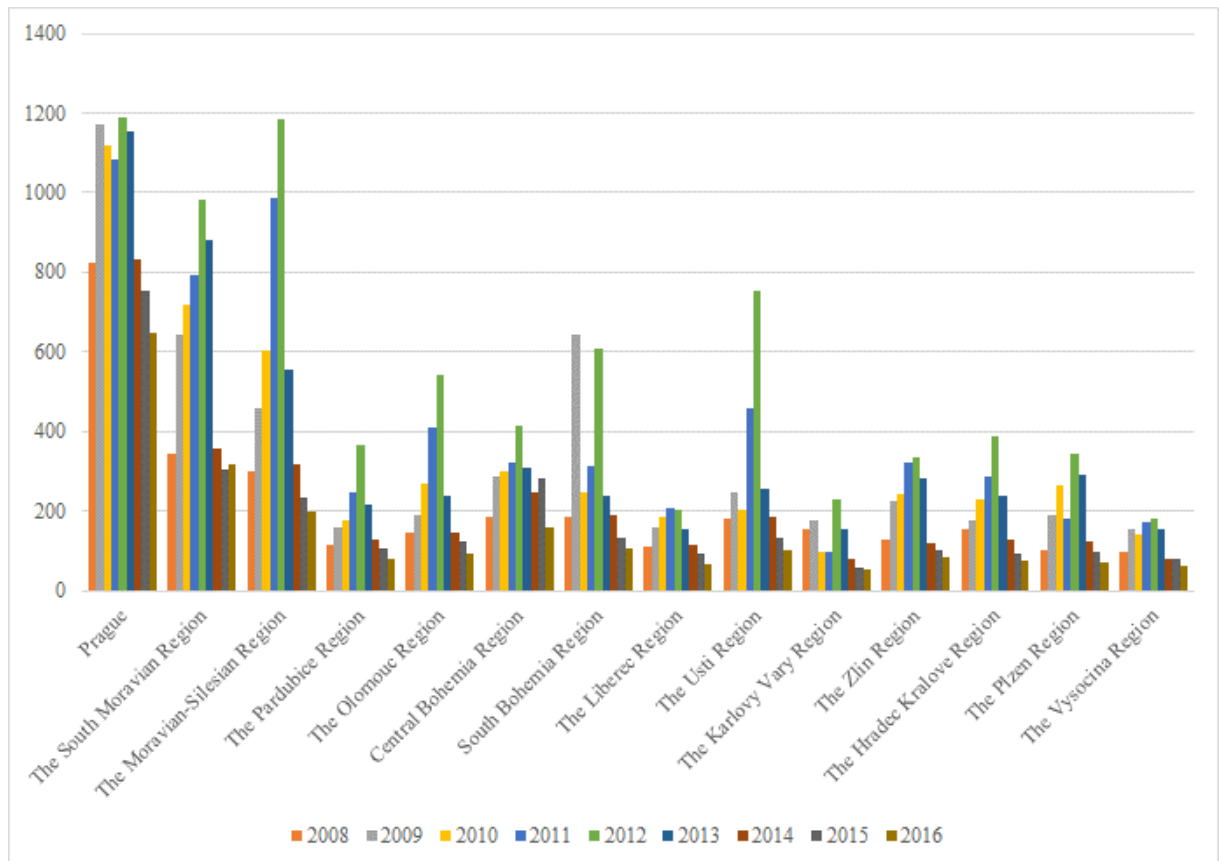Source: author from Creditreform (2017)

According to the development of the values specified in Fig. 1 can be deduced that the observed characteristics were examined over a period of very fluctuating development. For this reason, does not make sense to describe the examined values other statistical characteristics (such as e.g. coefficient growth, growth rate and increase rate). For a basic overview of the development of the examined values sufficient to indicate the results of absolute average gain and average growth coefficient.

The result of average absolute gain is for corporate insolvencies proposals 0,86 and for corporate auditions 1.76.

The results of average growth coefficient are for corporate insolvencies proposals 1.005857 (which corresponds to 0.5857 %). and for corporate auditions 1.03302 (which corresponds to 3.302 %).

The development of number of corporate insolvencies by region from 2008 to 2016 shows the Fig. 2. The picture shows that the highest number of corporate insolvencies was reported in Prague during the monitored period.

**Fig. 2 The Development of Number of Corporate Insolvencies by Region**

Source: author from Creditreform (2017)

Other important indicators that can be used for the interregional comparison of the number of corporate insolvencies are the ratio of the number of company insolvencies per 1000 registered companies. For 2016, the results are as follows (from the highest to the lowest): Prague 1.11, the South Moravian Region 1.03, the Moravian-Silesian Region 0.79, the Karlovy Vary Region 0.69, the Olomouc Region 0.67, the Pardubice Region 0.66, the South Bohemia Region 0.66, the Zlin Region 0.60, the Usti Region 0.59, the Liberec Region 0.58, the Vysocina Region 0.54, the Hradec Kralove Region 0.53, the Plzen Region 0.50 and the Central Bohemia Region 0.66.

Fig. 3 shows results of development of corporate insolvencies and GDP by years 2008 and 2015 (year 2016 is not include because are not available data of GDP by region).

Fig. 3 The Development of Number of Corporate Insolvencies and GDP by Region
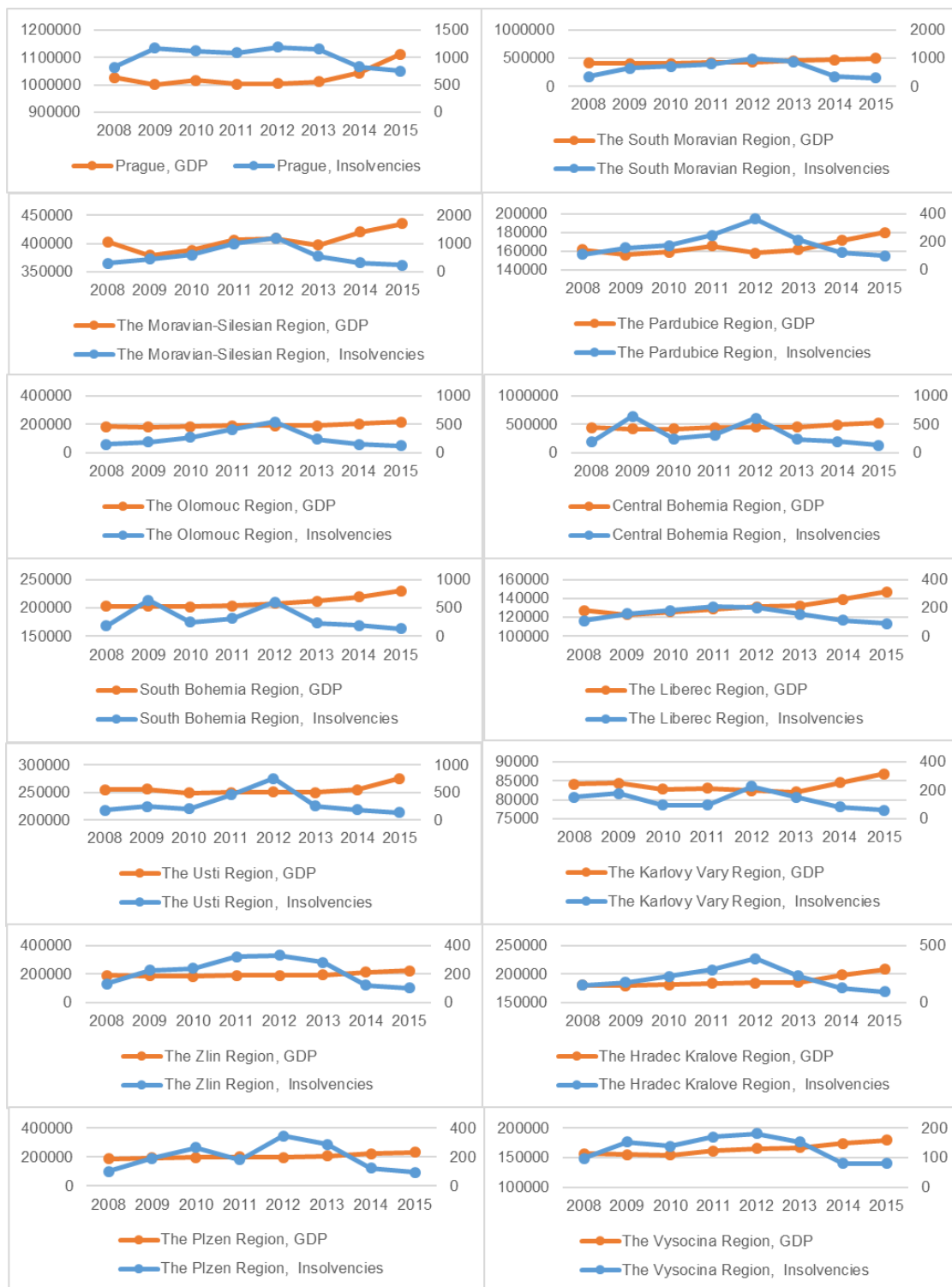
Source: author from Creditreform (2017), CZSO (2017)

The research question is: is there any dependence between development of corporate insolvencies and GDP by regions of Czech Republic? For analysis of dependence were used

Coefficient of variation, Pearson product moment correlations and Spearman rank correlations between each pair of variables. The results are shown in the Tab. 1.

Pearson product moment correlation coefficients range between -1 and +1 and measure the strength of the linear relationship between the variables. P-value tests the statistical significance of the estimated correlations. P-values below 0.05 indicate statistically significant non-zero correlations at the 95.0% confidence level. Only one form the analysed pairs of variables has P-values below 0.05 (region Prague). This is the reason, why for this case the Pearson product moment correlations indicator is not correct, we must use for example Spearman correlation coefficient.

Spearman rank correlations between each pair of variables range between -1 and +1 and measure the strength of the association between the variables. In contrast to the more common Pearson correlations, the Spearman coefficients are computed from the ranks of the data values rather than from the values themselves. Consequently, they are less sensitive to outliers than the Pearson coefficients. P-value which tests the statistical significance of the estimated correlations (as in the case of Pearson correlations) P-values below 0.05 indicate statistically significant non-zero correlations at the 95.0% confidence level. Only one form the analysed pairs of variables has P-values below 0.05 (region Prague)

Tab. 1 Results of Analysis of Dependence

	Coef. of variation (%)		Pearson product moment correlations	P-Value	Spearman rank correlations	P-Value
	Insolvencies	GDP				
Prague	17.7559	3.71153	-0.8125	0.0142	-0.8333	0.0275
The South Moravian Region	41.9366	7.61763	0.4048	0.3199	-0.1667	0.6592
The Moravian-Silesian Region	58.873	4.17763	-0.185	0.6609	-0.2619	0.4883
The Pardubice Region	46.3117	4.72028	-0.5022	0.2048	-0.5238	0.1658
The Olomouc Region	57.4249	6.07603	-0.2554	0.5415	-0.2381	0.5287
Central Bohemia Region	22.4286	7.96945	-0.1035	0.8073	-0.0952	0.8011
South Bohemia Region	61.4169	4.76287	-0.4642	0.2466	-0.4524	0.2313
The Liberec Region	29.1879	5.84049	-0.6159	0.104	-0.4524	0.2313
The Usti Region	68.6352	3.44263	-0.4716	0.2381	-0.7143	0.0588
The Karlovy Vary Region	44.1492	2.05509	-0.4584	0.2533	-0.3856	0.3077

The Zlin Region	41.9621	6.76589	-0.6804	0.0633	-0.5714	0.1306
The Hradec Kralove Region	45.1532	5.41926	-0.5565	0.152	-0.2619	0.4883
The Plzen Region	46.7161	7.18663	-0.384	0.3476	-0.2619	0.4883
The Vysocina Region	30.4214	5.27964	-0.4731	0.2364	-0.2994	0.4283

Source: author

From the above analysis results, it is clear, that dependence between the number of corporate insolvencies and the development of GDP within individual regions in the Czech Republic has not been proved. The only exception is the Prague region.

Conclusions

This paper had as objectives: firstly, to describe the development of the number of corporate insolvencies proposals and the number of corporate auditions in the Czech Republic since 2008 until the present. Secondly, analyse the dependence between development of the number of corporate insolvencies proposals by the regions of the Czech Republic and development of GDP by these regions. From the results of the analysis, it is clear, that the development of the examined variables during the monitored period was highly variable (fluctuating). Dependence between examined variables could not be proved.

For further research, detailed analysis of corporate insolvencies proposals and corporate auditions by the business sectors is recommended.

Acknowledgments

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