

# **The impact of the financial crisis on business performance of manufacturing companies in the South Moravian Region**

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**Abstract: Purpose of the article** The objective of the article is to determine the impact of the financial crisis on the performance of South Moravian firms during the period 2006-2014. Of particular interest will be the effect on economic performance.

**Methodology/methods** The article is based on secondary research conducted among SMEs in the South Moravian Region. The secondary research consists of secondary data acquired from the database Amadeus and the relevant scientific literature. The sample contains 200 companies operating in the manufacturing industry. Three financial indicators were selected to obtain proper results. The findings are processed using statistical indicators, average and median.

**Findings** Firstly, debt ratio is applied and shows a positive result represented by the decrease of 27.49% in the studied period. Secondly, a return on assets demonstrates an increase of 25.09% in the same period. In spite of a sharp decrease in the revenue of companies during the crisis period, the last indicator, added value, rises slightly.

**Conclusions** As was shown by the literature, the impact of the financial crisis on firm performance is of great importance. Attention should be paid to increases in added value even when revenues are declining. Moreover, to find a balance between cost reduction, quality maintenance and employee satisfaction will be a key success factor for managers.

**Keywords:** manufacturing companies, financial crisis, business performance, added value, debt ratio, return on assets,

**JEL Classification:** G03, L60.

## **Introduction**

The impact of the financial crisis on business performance has been a topic of much discussion in recent years. Before the reader delves deeper into these issues, they should better understand the terms "financial crisis" and "business performance", addressed at the beginning of this paper.

Some authors are of the opinion that a crisis is any sequence of events that requires a quick response. Rongier et al. (2012), however, give a more comprehensive definition and see a crisis as a serious human-made threat which affects the basic structures, values and norms of a social system.

Skodakova (2009) brings, through her research, a different perspective to the notion of a crisis. Eight out of the twelve firms approached in a questionnaire survey identify the economic crisis as an opportunity. The basic areas for growth prompted by the crisis include: increasing market share, elimination of competition and taking over orders of "fallen companies".

Another important term regarding this issue is the aforementioned "business performance". As Wu (2009) noted, despite the fact that a significant number of studies have focused on the issue of measuring business performance, a clear definition is still a matter of debate. Probably the most frequently recurring idea, which deals with measuring performance, comes from Neely et al. (2002), in which they argue that a performance measurement system allows for the adoption of decisions and actions based on obtained information, which should result overall in quantifying efficiency and increasing effectiveness. Response to the rapidly evolving global trends and the changing role of society also requires the development of methods to measure business performance. Traditional approaches to identifying performance were established mainly on financial grounds, but at the end of the 1980s, studies showed that financial indicators alone provided insufficient means for understanding and managing a business in the new economy due to the organisation and structure of the markets in which the individual businesses compete.

Although many authors (Lynch, Cross, 1991; Neely et al., 2002, Kanji, 2002, Goldratt, 1990) address modern performance measuring systems, e.g., the Balanced Scorecard (BSC) or Business Excellence, in their work, the main focus in this paper will be, however, on financial metrics used by Czech companies in the South Moravian Region because the authors are convinced that they deliver a quick, unambiguous view of the financial performance of a company. In addition, research by Stříteská (2012) confirms that 66.7% of the surveyed Czech manufacturing companies still use traditional financial indicators.

## Literature Review

The chapter is divided into two parts where the first part focuses on the Czech Republic and the second part on the international environment.

### Impact of the financial crisis on the performance of companies in the Czech Republic

The question of how the financial crisis affects business performance has already been discussed by the authors. Bartoš et al. (2013), who focused on businesses in the South Moravian Region in the Czech Republic and concluded that the companies are able not only to react to turbulence, but even increase their added value. Karas et al. discuss the impact of the economic crisis on ROE indicators for companies in the manufacturing industry. The development of the ROE indicator shows a very positive development until the period of the global recession. While there was economic growth in the years 2004-2007, there was a significant decrease in 2008 (-6.02%). However, in the second half of 2009, the impact of the German economy caused a positive change for the Czech Republic where an increase in ROE (5.18%) is reported. A drop occurred again in the period 2010/2011, which is caused by a drop in domestic demand, but nevertheless the development in recent years can be evaluated positively because of the growing share of exports in total sales. On the other hand, the results of industrial businesses are increasingly dependent on the development of foreign economies. It clearly arose from the results of the authors' analyses that external factors such as trends in interest rates or tax burdens were reflected in a decrease in business performance. The more difficult access to capital during the crisis due to the interest burden together with the risk premium corresponds to the results of other authors mentioned below in this paper.

Despite the aforementioned positive approach adopted by Skodakova (2009) in her research, 66.7% of surveyed companies expect a decline in turnover, reduced profit margins on products or insolvency. All surveyed businesses stated that the economic crisis mentioned several times in this paper means a change in company management. The most common changes are: extension of maturities with suppliers, reduction of the number of employees including senior personnel, reduction of wages and suspension of all planned investments of companies, which is to some extent associated with the suspension of bank loans. The efforts to maintain positive cash flow also benefited from the suspension of payment of overtime or limitation of employee education. All the surveyed companies mentioned increased their attention paid to inventory and working capital turnover. The questionnaire survey results were also confirmed by a report from the Czech Statistical Office dated March 2009, which provides the exact numbers for the development of industrial production. The value of new contracts in selected sectors fell by 16.5% year-on-year, of which contracts from abroad amount to 15.2%. New contracts dropped the most in the following sectors: manufacture of basic metals, metallurgical processing of metals (foundry industry) (48.5%), manufacture of machinery and equipment (27.9%) and manufacture of metal structures and metalworking products (23.5%). The number of employees registered in industrial enterprises with 50 or more employees fell by 9.9%, while the year-on-year increase in their nominal monthly wages was 2.5%, i.e. CZK 23,370 over the same period (March 2009). However, the author Kislingerová (2010) emphasises further in her publication that it is ill-advisable to predict development in a crisis development only based on a short-term series and it is always necessary to monitor the overall development – even when new numbers may indicate an improvement of the situation.

### Impact of the economic crisis in Europe

In their publications, the aforementioned authors addressed the issue under the conditions of the Czech economy; however, the financial crisis was global in scope. Lacina and Vavrina (2014), for example, pointed out the impact of the financial crisis in Ireland and Greece. Based on company financial statements, they provide evidence that European corporations experienced an economic decline in the area of corporate finance. Both sides of the economy, supply and demand, were significantly affected. Other authors support their argument in surveys (EC, 2012; OECD, 2012; ECB, 2012) where they show that small and medium-sized enterprises have more difficulties facing supply and demand shocks due to lower sales and liquidity complications as well as their greater reliance on loans than very large companies. Coeur (2012) adds that the small and medium-sized enterprises tend to face higher costs from bank financing. Irish companies reported a decline in the added value by more than one-fifth where the authors indicate the reduction of wages and government cuts as the main cause. Meanwhile in Greece, small and medium-sized enterprises suffered disproportionately more than the large ones. The

crisis affected mainly two sectors – manufacturing and construction sectors. A significantly lower number of employees are typical for small and medium-sized enterprises as well as a decrease in added value in the period 2008–2012. The largest decline among financial indicators of Greek businesses was in ROCE, specifically in sectors such as scientific and technical activities, advertising agencies and engineering. Subsequently, the largest number of companies with declining profitability is from wholesale and retail trade and repairs of motor vehicles and motorcycles. In general, based on business surveys in the EU, 62% of businesses consider the negative impact on aggregate demand noticeable, and 50% of businesses indicated increased turnover time of receivables as the main impacts of the economic crisis in 2009–2010. Last but not least, difficulties with obtaining funding were mentioned by approximately 40% of the responding businesses.

## Methods

The paper uses the method of secondary research, which is based on scientific literature on the selected issues and on data received from the Amadeus database, from which 200 businesses located in the South Moravian Region and operating in the manufacturing industry, the size of which falls within the classification of the European Commission provided further in this paper, were used.

The following financial indicators were selected for the purposes of this paper:

- Total debt (liabilities/assets, expressed in %)
- Return on assets (EBIT/total assets, expressed in %)
- Dependence of added value on sales relevant from the perspective of the focus of the business on increasing added value

The results are processed and determined using statistical indicators, mean and median. The assessment will be based on the median as the values of some businesses are extreme and would affect the mean values.

## Analysis of the problem

This article aims to evaluate the impact of the financial crisis on the economic business performance in the South Moravian Region during the period of the financial crisis and the subsequent comparison with the period before the crisis. For this reason, the monitored period is divided into two parts: the pre-crisis period 2006–2009 and the crisis period 2009–2014.

Annual turnover and the value of assets of individual businesses were selected as the categories. The authors of the paper encountered limitations regarding the number of employees when obtaining information. Due to the large sample available for this research, 200 businesses from the manufacturing industry in the following categories were selected for the research:

- DJ Manufacture of basic metals, metallurgical and metalworking products
- DK Manufacture of machinery and equipment
- DL Manufacture of electrical and optical equipment and devices
- DH Manufacture of rubber and plastic products

These businesses operating in the South Moravian Region are classified based on the recommendation of the European Commission 2003/361EC as: small, medium-sized, and large enterprises. Micro-enterprises are not included in this research.

Tab. 1: Distribution of enterprises according to the EU Commission

Company category	Number of employees	Annual turnover	Value of assets
a) Micro-enterprise	< 10 employees	< EUR 2 million	< EUR 2 million
b) Small enterprise	< 50 employees	< EUR 10 million	< EUR 10 million
c) Medium-sized enterprise	< 250 employees	< EUR 50 million	< EUR 43 million
d) Large enterprise	Above the aforementioned limits		

Source: European Commission

## Discussion

The following tables and graphs show the development of selected financial indicators for the selected period.

### Total debt

It is apparent from the table below that the overall debt decreased by 27.4% in 2014 compared to 2006. In terms of the median, in 2006 the debt was 56.15% and in 2014 only 44.04%. In the first reference period from 2006 to 2009, the median debt of businesses fell more significantly than during the crisis. During the crisis, businesses with high debts experienced difficulties in repaying loans because their revenues greatly decreased. This resulted in the management of individual companies focusing on reducing their debt under 50%.

Tab. 2: Development of total debt in the monitored period 2006-2014

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Mean (in %)</b>	81.14	89.55	74.63	86.29	98.93	50.62	44.85	44.11	43.67
<b>Median (in %)</b>	56.15	55.73	54.00	48.22	47.35	48.65	45.25	44.16	44.04

Source: authors' own work

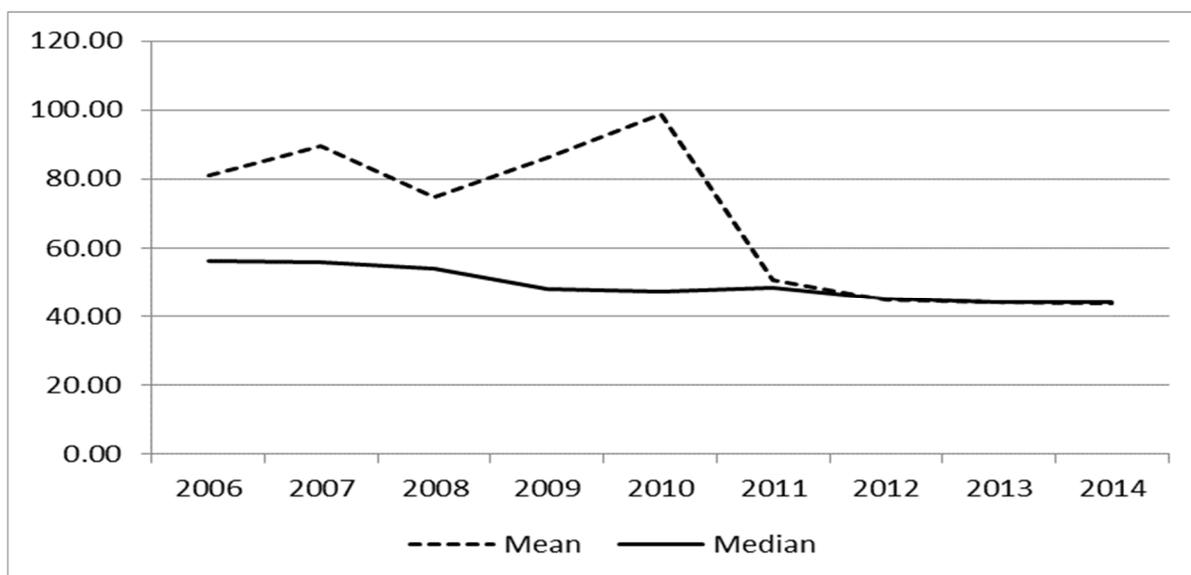


Fig. 1: Development of ROA in the monitored period, Source: authors' own data, 2016.

### Return on assets

In the second selected ROA indicator (return on assets), it can be seen on the basis of results obtained in the form of the median that the selected companies showed an increase by 25.02% in the last year of the monitored period compared with the first year. The impact of the financial crisis is evident in the year of its onset, where the values show lower results compared to the years which are considered pre-crisis. A slight decrease occurs only in two post-crisis years (2012 and 2013), but in 2014 there is an increase again.

Tab. 3 Development of ROA in the monitored period (2006-2014)

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Mean (in %)</b>	9.81	10.98	10.06	6.89	7.40	9.91	9.66	9.58	11.52
<b>Median (in %)</b>	7.30	8.26	7.43	5.85	7.07	8.28	7.68	6.96	9.73

Source: authors' own data

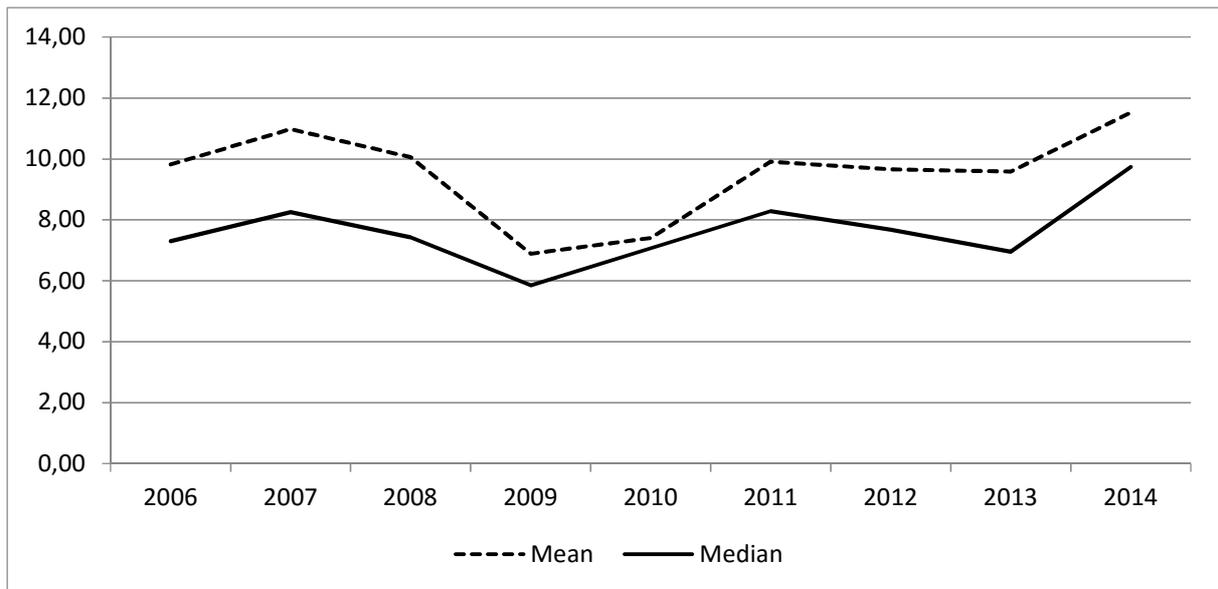


Fig. 2: Development of total debt in the monitored period . Source: authors' own data, 2016.

#### Dependence of added value on revenues

The last selected indicator for the purposes of this article is the development of added value on revenues. Similarly as in the previous two cases, there was an overall increase in added value in 2014 by 9.41% compared to 2006. Bartoš et al. (2013), whose research confirmed that businesses in the SMR were able to increase their added value during the financial crisis, previously addressed the indicator of added value in connection with the financial crisis. Our results clearly indicate that the share of added value in revenues increased in 2009 to up to 30.09%, while in 2006 the value was only 27.39%. In 2013 and 2014, the value has stabilised at 30.89% and 30.24%.

Tab. 4: Development of the dependence of added value on revenues in the monitored period (2006-2014)

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Mean (in %)</b>	29.00	28.51	28.93	30.88	30.65	30.49	31.11	31.82	31.83
<b>Median (in %)</b>	27.39	27.39	28.42	30.09	28.80	27.36	29.08	30.89	30.24

Source: authors' own data

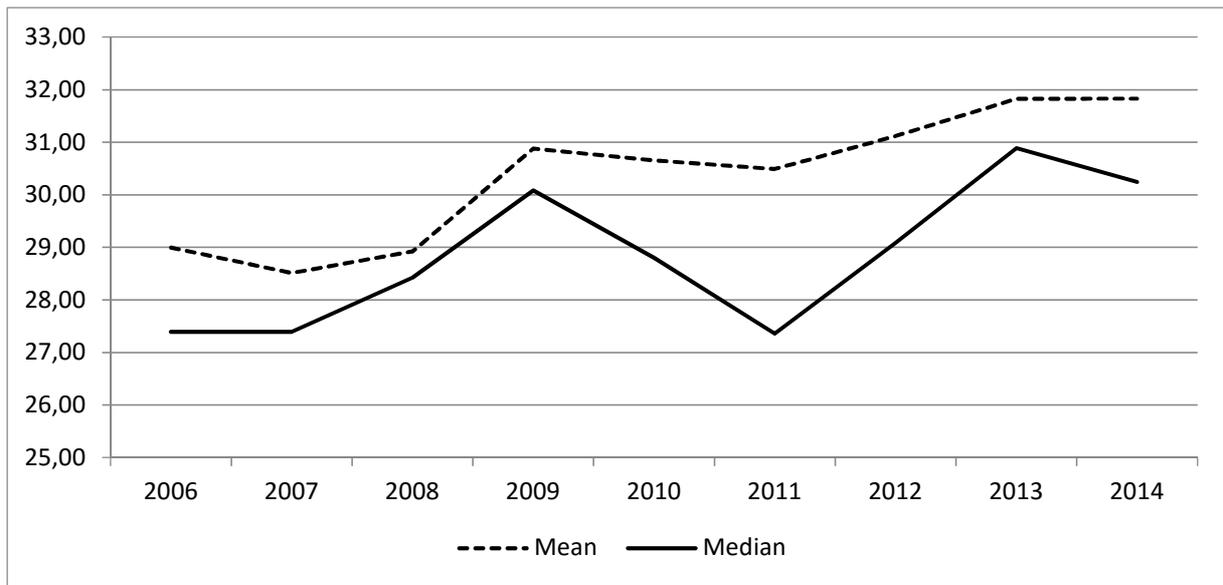


Fig. 3: Development of the dependence of value added on revenues in the monitored period Source: authors' own work, 2016.

### Conclusion

The fact that the financial crisis had an impact on various business areas has been already mentioned by multiple authors and demonstrated in their research. Due to the fact that Czech businesses tend to use indicators of financial analysis to assess their performance, three financial metrics were selected for the purposes of this paper. Total debt shows a downward trend in the monitored period, which results in the companies, which found themselves in a situation with falling revenues and problems with repayment of debt in the crisis period, choosing the strategy of reducing debt to under 50%. In the pre-crisis period, the return on assets had an upward trend. The impact of the crisis on the return on assets was showed during the year of its onset.

The literature and previous research have shown that it is not essential to focus on annual increases in sales, rather attention should be paid to increasing added value based on sales. The results of selected companies from the South Moravian Region showed that despite the turbulent crisis period, added value will be increasing based on sales. This results in the detailed monitoring of costs and the associated use of new technologies, materials and often product processing procedures. Company managers must address the conflict and find a balance between the three main influences: buyer pressure on reducing prices while maintaining quality, employee pressure on increasing wages and demands of owners on maintaining profitability. The future of business will be associated with the automation of production and a change in the ratio of individual costs. The number of production workers will continue to decrease and there will be increasingly high demands on them which have an impact on labour productivity (measured using the added value per employee indicator) which is reflected in increasing values. In addition, the crisis period also had an impact on senior personnel as they were undergoing a test of skills during that period. The financial crisis had many negative consequences and had an impact on various business sectors. Ranging from senior personnel, who were subjected to tests of skills, to production workers whose numbers were reduced. However, the crisis also brought positive effects that stimulated new methods of business management which resulted in innovation which is today considered one of the main factors for success.

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