REVENUES AND COSTS OF METALURGICAL COMPANIES IN 2004 - 2012

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Abstract

Metallurgical companies are specific with huge initial investment and high demand for energies and raw materials. This paper presents an analysis of profit and loss statements of Czech metallurgical companies in the period 2004 - 2012. The analysis identifies the main sources of profit or loss of these companies. The analyzed companies are divided into groups on the basis of the criterion of company size (small, middle-sized and large ones) and the primary focus of their activity (production, selling or mixed companies). The first part focuses on the structure of revenues and expenses taking into consideration the specifics of Czech Accounting principles. The analysis shows the importance of gross margin for selling companies and of added value for production companies; however there are also significant differences between the companies of different size. The analysis also reveals the roots of some losses of the companies. The second part analyses the revenues from goods and from production as the main factors of the results of the company. As the analyzed period covers the period of a financial crisis, the results are analyzed in this context to enable to find out an influence of the financial crisis.

Keywords: revenues, costs, profit and loss statement, Czech Republic

1. INTRODUCTION - NATURE OF METALLURGICAL INDUSTRY

Metallurgical companies are an important part of the economy of many countries. The European economy is primarily based on services, however, the industry is a base for every current activity because it provides necessary equipment for the services. The metallurgical industry could be described as an industry which demands huge initial investment of a long-term horizon. The aim of the investment cannot be changed during the life of the investment (Hutnictví železa, [1]). The metallurgical industry grew by 81% in the world during the period of 2001 - 2012 (World Steel Association, [2]), however, most of the growth is realized in Asia. The position of European metallurgical industry has been weakened according to the Ecorys [3] (p. iii), with the production of the European metallurgical industry representing 24.3% of the world production in 1997 whilst only 16% in 2007. For a more detailed description of the metallurgical industry see Bobek [4].

The analyses of metallurgical industry focus on the main business indicators such as profitability and liquidity comparing the whole industry with macroeconomics data and data from other industries (the latest analysis for the Middle Europe was prepared by Hájek and Čamská [5]) or on benchmarking of companies using the main financial analysis indexes (see Pomykalski et al. [6]). This article deals with detailed analysis of profit and loss statements of metallurgical companies in the Czech Republic. The aim of the article is to present the development of the industry during the period of the last 10 years with a focus on a kind of activity of companies and their position on the market.

The analysis uses data from the Albertina Database [7], which contains all publicly available data on Czech companies, most of them from the business register. The research uses only the database of the companies which are listed under the CZ NACE 24 - Production of basic metal; metal processing; casting (Czech Statistical Office, [8]). The final database contains 1976 records, because 12.7% of records under the CZ NACE 24 were excluded for different reasons (the IAS/IFRS statements, consolidated statements, records with qualified auditor's opinion, with mistakes in records using the principle of materiality of 0.5% of total balance or revenues, statements with negative revenues and financial statements with period longer than 18 months or shorter than 6 months). The databases covers years 2004 - 2012 and the companies are sorted into groups using the criteria of Recommendation of European Commission [9].

2. ANALYSES OF THE PROFIT AND LOSS STATEMENTS

According to the database [7], the most companies operating in the Czech metallurgical industry are small companies (67.91% of all the companies). The middle-sized companies represent 20.24% and the large ones only 11.84%. This composition of metallurgical industry differs from the common structure of industry in the Czech Republic where small and middle-sized companies account for 99.86% of all companies (Ministry of Industry and Trade of the Czech Republic, [10]). As Dobrotă and Căruntu [11] (p. 426) state, the small and middle-sized companies in metallurgy are oriented especially on iron production and steel foundries. The steel production is controlled by multinational companies. The revealed structure of the Czech metallurgical industry does not correspond with the statement of Antošová et al. [12], according to whom the metallurgical industry is dominated by middle-sized companies.

The Czech metallurgical companies are production-oriented. The production companies make up 81.88% of all companies. Both selling companies and mixed companies represent about 6.5%. The rest of the companies are not active which means that they have not any regular revenues in the analyzed period. The share of revenues of the production companies on the total revenues of the industry is even higher - 97,24 %. There is no mixed company to be found in the category of large companies. Even the small and middle-sized companies are oriented especially on the production which indicates that the Czech metallurgical industry is, as it used to be in the history of the country, production-oriented. As the Czech metallurgical industry operates on international market significantly (the import was 75% and the export made up two thirds of consumption of steel in the Czech Republic according to the Hutnictví železa, [13]) it indicates that there are not any intermediators concerning sales of metallurgical products in the Czech Republic.

3. GENERATING OF PROFIT

The point of every company is making a profit; the same is valid for companies operating in the metallurgical industry. The generation of profit or loss depends on the company size and on the focus of its operational activity. The calculation is done as a multiple of profit which could be used by shareholders. The results are shown separately for companies with profit and companies with loss in order to make it possible to determine the reason of losses. The mixed companies do not represent a large number of companies, therefore the analysis is focused on the production and selling companies.

3.1 Production companies

The production companies generate the most of their income through the production activity, as everybody would assume. The added value is the main generator of the profit for these companies. Nevertheless, the results differ substantially if we take into consideration the company size. The results of large companies are worse than those of the small ones. The size of added value can be shown as function of the company size because it grows and sinks according to this indicator. Yet, the positive figures of added value of smaller companies are compensated by other production costs (i.e. especially personal costs and depreciation and amortization). These costs develop in the opposite direction than the added value, however, again as a function of the company size.

As it is visible from the **Table 1**, the smaller companies are effective in added value and very ineffective in production costs. The possible interpretation of this trend is the influence of the company size - the large companies are not so effective in added value, however they are very effective as regards costs such as depreciation and amortization. This assumption can be backed up by an analysis of ROA and personal costs as a share of other production costs. Both ratios are stable and very similar from the point of view of the companies' size. The difference can be only in amount of material used for production or external services sold. If the large companies used more external services, they could decrease the amount of both added value and production costs. This issue will be analyzed in detail in chapter 4.2. There can be no doubts, however, that the costs of material are higher for large companies than for the small ones. Taking into consideration all these factors, we can draw a conclusion that the large companies are ineffective in the main activity but very effective as it comes to their ability to manage other costs.

Table 1 Generation of profit of the production companies (Author‘s computations, [7])

	Large	Middle-sized	Small
Gross margin	0.54	0.37	0.82
Added value	12.47	22.9	37.62
Production costs	-11.36	-22.06	-38.97
Other operation result	0.36	0.99	3.86
Financial result	-0.62	-1	-2.04
Income taxes	-0.32	-0.24	-0.36

The other indexes are marginal, nevertheless they show us, that the smaller companies are more effective in other operational activities and the larger ones in financial activities. The detailed analysis indicates influence of financial crisis on the decrease of added value of large companies in 2008 and 2009.

The analysis of the companies with the loss presents very similar numbers for added value, gross margin, other operation result etc. There is only one difference - in the case of the companies in loss, the production costs exceed the added value. We assume that this is the main reason which leads companies into “red numbers”.

3.2 Selling companies

The results of the selling companies differ from the production companies in the main indexes - the profit is generated in the selling activity (see **Table 2**). Nevertheless, the effectiveness is not proportional to the company size because only the large companies are more effective in gross margin than the small ones. The selling companies generate negative added value, because this is influenced by costs of materials, energies and services which are related to their everyday activity, and all of which are disclosed in the added value in CZ GAAP. The added value of large companies shows again that they are ineffective in its regard. The other indicators are small and similar to the production companies, only the financial result of small companies is influenced by an extraordinary record by one company. We consider positive that the gross margin exceeds negative added value and production costs - the selling companies are not so jeopardized by losses as the small production companies. The companies in red numbers account just for a small share represented primarily by the small companies.

Table 2 The generating of profit of the selling companies (Author‘s computations, [7])

	Large	Middle-sized	Small
Gross margin	31.4	5.98	15.8
Added value	-19.58	-2.37	-6.91
Production costs	-9.46	-2.6	-8.02
Other operation result	0.23	0.59	0.27
Financial result	-1.51	-0.39	0.19
Income taxes	-0.08	-0.22	-0.31

4. ANALYSIS OF THE MAIN REVENUES AS THE GENERATORS OF PROFIT

This part focuses more on the main generator of the profit of the companies - revenues from goods and revenues from production and related costs. The sample of records used for this analysis differs because both profitable and loss-making companies are included in these calculations. Therefore, not all numbers correspond to the numbers presented in the Chapter 3.

4.1 Revenues from goods

The revenues from goods should be generated primarily by the selling companies. However, the results of the analysis show different results. The revenues from goods, using the total amounts, are made chiefly by the production companies. The proportion of the production companies on the total revenues from goods was 61.46% in the whole period (see **Table 3**). However, the **Table 3** clearly points out that the selling companies are gaining a higher proportion. The selling companies obtained the highest proportion in 2012 for the first time. The selling companies take over the position of the production companies in this category during the analyzed period, because the amounts of trade have not changed rapidly - the total amount of revenues shows that most of trades were realized in 2004 and 2005. The revenues oscillated between CZK 7 - 11 billions every year.

Table 3 The proportion of companies' type on the revenues from goods (Author's computations, [7])

Type of company	2004	2012	Period 2003 - 2012
production	88.04%	44.35%	61.46%
selling	10.51%	45.74%	28.70%
mix	1.46%	9.91%	9.84%

The company's size influences the ratio significantly. The large companies are especially production ones. (The proportion of the large production companies in this sub-category is 77.08%. As this sub-category does not include any mixed company, the rest are only the selling ones). The subcategory of middle-sized is dominated by the selling companies (43.81%) and the subcategory of small companies by the mixed companies (40.38%) followed by the selling companies (37.39%). The trend of an increasing share of selling companies is visible in the large companies' subcategory. The selling companies occurred in this subcategory in 2007 first. On the other hand, the selling companies are losing their position in the subcategory of small companies where they are increasingly replaced by the mixed companies. The analysis shows that the category of selling companies is only being created in the Czech Republic and we can expect they will be first as for the revenues from goods in the future.

The highest gross margin was achieved by the mixed companies (their mean for the whole period achieving 24.59%). The gross margin of the production (14.84%) and selling companies (15.9%) was similar. The mixed companies were achieving high gross margin during the whole period (the lowest having been in 2006 - 20.02%). There is not any visible influence of financial crisis on the mixed companies. Analyzing the data in depth, the gross margin is produced rather by the small companies than by the middle-sized ones. The selling companies were affected by the financial crisis; the gross margin fell the lowest in 2008 (12.66%) and was quite similar in 2009 (13.65%). The production companies were successful until the financial crisis; after it, their gross margin went down.

4.2 Revenues from production

As the analysis shows, the metallurgical companies are mostly production companies, hence the revenues from production are an important item in the context of the analysis. The revenues from production are generated almost exclusively by the production companies (99.28 %), thus another company's category is analyzed only briefly.

The achieved added value was positive in case of the production (25.56%) and mixed companies (22.13%). The selling companies generated negative ratio (-194.06%) because the expenses counted into added value also contain the services linked to everyday activity of the company as it was described in Chapter 3.2. We assume that this circumstance explains the differences between the ratios achieved by the production and mixed companies. The global results do not show any influence of the financial crisis which would be otherwise directly reflected in the added value. To avoid any extremes, the 10% of the highest and 10% of the smallest values were excluded from this analysis.

Production companies

The added value is stable for the production companies. In the period of 2004 - 2012, the added value was in interval of 24.62 - 26.55% with small standard deviation. The influence of the financial crisis is visible only in case of the large production companies (the decrease of value in 2008 and 2009), the small and middle-sized companies do not show any impact of financial crisis. The ratio of materials and energy to all revenues from own production can reveal differences in the added value between the companies of different size. The ratio shows that the large companies use more material and energy compared to their revenues from production (see **Table 4**). The item of material and energy does not involve any external services. This analysis confirms that the large companies are ineffective in their main activity, i.e. the production. They produce with higher expenses and these expenses are made up especially by material and energy costs. There is not a logical reason for this situation. Albeit the large companies may produce highly specialized products which cannot be produced by the small companies, they should realize more revenues from them. The ratios can lead us to the assumption that the large companies produce especially mass production with high material demand and low margin. However, this does not correspond with the statement of Dobrotă and Căruntu [11] and with the report of Ecorys [3] (p. 8) which describes the local large companies as the niche specialists focusing on highly margin products (p. 29). Therefore, we can repeat the statement from the chapter 3.1 that the results are influenced by the above-consumption of large companies.

Table 4 The analysis of material, energy and services expenses Source Author's computations, [7]

Ratio	Material/energy and external services to revenues from production	Material and energy expenses to total material and external services sold
Large	72.59%	87.93%
Middle-sized	60.94%	79.34%
small	51.19%	70.94%

Mixed and selling companies

The mixed companies copy the trend of the production companies in the effectiveness of their added value, which decreases in case of larger companies. However, the proportion of material and energy to external services is almost the same for both categories of companies (around 72 - 75%). The ratio material and energy to external services shows that the selling companies use more external services than material and energy (the material is only about 30 - 40%).

CONCLUSION

The Czech metallurgical companies are oriented on the production and they are often small. Although the Czech economy intensively trades with metallurgical products, there are not many intermediators in this trade and all the production is sold directly. The production companies generate their profit from added value, however, the amount of added value differs according to the company size. The large production companies generate smaller added value and are ineffective in their main activity. On the other hand, they are able to manage the personal costs effectively and they are therefore able to achieve profit which is comparable to smaller companies. The reason of the ineffectiveness of the large companies lies in the costs of material and energy, the shares of which are higher than in case of smaller companies. The companies, which made a loss, had higher production costs than the added value. In this context, the small production companies are influenced by the loss because their production costs exceed their added value. The selling companies are in different position - their profit comes from gross margin which increases proportionally with the company size. The larger selling companies are not able to manage their production costs as effectively as the large production companies.

The revenues from sales are generated by the production companies, which is caused by the structure of the Czech economy before 1989, when all the sector activities were merged in large multifunctional companies as Zelenka et al. [14] (p. 69) states, however the trend shows that the selling companies are gaining dominance in this category. The strong expansion of the selling companies started only in the 2000's.The influence of the financial crisis was reflected in the added value of the large production companies (which saw its decrease in 2008 and 2009). The selling companies were affected as the whole category in the context of revenues from sale, but their numbers returned to their original heights after 2009. The revenues from sale of the production companies were not influenced immediately, nevertheless, they experienced some stagnation after the financial crisis.

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