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Positive and Negative Aspects of Financial Economic Development in Selected Branches of the Food Industry of the CR in 2007 – 2009 as Revealed by Spider Analysis

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Abstract

The food industry as an important part of the agriculture sector markedly influences through its financial economic results development both in agriculture and in related links of the food chain. The objective of the present paper is to identify negative and positive these aspects of results obtained in this sector in 2007-2009 and to reveal some risks that can retard the agriculture sector and/or to indicate positive trends that will lead to its development. Some segments – manufactures influencing the results of the food industry as a whole in a pronounced way were selected for analysis. The graphical model Spider Analysis was used for an expeditious and objective evaluation of results in the branches of manufacture and their position within the studied sector for the given period.

Key words

Spider Analysis – food industry – profitability – liquidity – financing – assets.

Anotace

Potravinářský průmysl jako významné odvětví agrárního sektoru výrazně ovlivňuje svými finančně-ekonomickými výsledky jak vývoj v zemědělství, tak v navazujících článcích potravinového řetězce. Záměrem článku je ukázat negativa a pozitiva těchto výsledků v tomto sektoru v období 2007–2009, a tím přispět k odhalení rizik, která mohou retardovat agrární sektor, resp. naznačit pozitivní směry, které povedou k jeho rozvoji. Pro analýzu byly vybrány jeho některé segmenty – výroby, které výrazně ovlivňují výsledky celého potravinářského průmyslu. K poměrně pohotovému a přehlednému hodnocení výsledků výrobních oborů a jejich pozice v rámci zkoumaného odvětví za uvedené období byl využit grafický model Spider analýza.

Klíčová slova

Spider analýza - potravinářský průmysl - rentabilita - likvidita – financování – majetek.

Introduction

The team of authors is permanently engaged in analyses of the structure of food industry and its financial economic development in the CR. Some members of this team of authors investigated the development of business structure in this sector from retrospective and perspective aspects in the middle of this decade (Putičová, M., Mezera J. and Mejstříková, L. 2005). At present the problems of the food sector are solved in the framework of Research Plan MZE0002725101 “Analysis and Evaluation of Possibilities of Sustainability of

Agriculture and Rural Areas of the CR in Conditions of the EU and European Model of Agriculture”, and also in thematic and other projects of Ministry of Agriculture of the CR (hereinafter MoA CR) aimed at output and financial economic performance of the food industry. Methodological approaches and economic analyses used in agriculture both in the Institute of Agricultural Economics and Information (hereinafter IA EI) and at universities are applied and, first of all, economic indicators suitable for the processing industry are employed. Relevant

database and quality-based knowledge from the business sphere are valuable sources. The crucial importance of economic analyses is based on the complicated economic situation and position of the agriculture sector when it is desirable to seek positive segments in this sector – branches and manufactures that would lead to an increase in effectiveness in the years to come.

Material and Methods

On the basis on the given statistical data was applied model Spider Analysis. Despite its clear advantages this analysis is used very seldom. Blažková (2010) used it for evaluation of economic differentiation of subjects on particular processing stages within the wheat commodity chain in the Czech Republic with regard to agro-food market development. The graphical model Spider Analysis (Kubíčková D., Soukup J., 2006) was used in this paper to evaluate financial economic results of selected branches of manufactures in 2007-2009 and to compare them with the sector by means of ratio indicators. This “spider” model presents ratio indicators in an objective way, allowing for an expeditious evaluation of effectiveness of the given branch in the framework of the food industry. Both used graphs are based on two curves: one curve of the first of these graphs shows the values of ratio indicators of the evaluated branch for a selected base year (2007 and/or 2008 = 100%) and the other curve shows these values for a current year (2008 and/or 2009) in order to make a year-on-year percentage comparison. In the other graph the values of ratio indicators of the given branch in 2008 (and/or 2009) (one curve) are compared with the values of the sector representing 100% (the other curve). A year-on-year comparison of the used indicators was made in the Manufacture of Food Products (NACE 10), Manufacture of Beverages (NACE 11). Either of the two graphs of Spider Analysis is divided into four basic parts that show profitability, liquidity, financing structure and asset structure. In this paper the authors also used their own knowledge from the analysis of financial economic performance and effectiveness of the Czech food industry (Mejstřířková, L. and Mezera, J. 2006).

The following table (Tab. 1) shows the selection of particular indicators and their construction.

Table 1 – Selected financial indicators and their construction:

Profitability ratios

- A1 – Return on equity (ROE) = net profit/equity capital*100
- A2 – Return on liabilities = net profit/total liabilities*100

Liquidity ratios

- B1 – Total liquidity = inventory + (financial assets + accounts receivable)/short-term liabilities + short-term credits
- B2 – Quick ratio = financial assets/(short-term liabilities + short-term credits)
- B3 – Current ratio = (financial assets + accounts receivable)/(short-term liabilities + short-term credits)

Financing structure

- C1 – Share of equity = equity /total liabilities*100
- C2 – Debt-to-equity ratio = (foreign capital + other liabilities)/equity*100

Asset structure

- D1 – Ratio of accounts receivable to assets = total accounts receivable/total assets*100
- D2 – Inventory turnover (days) = inventory/sales*365
- D3 – Accounts receivable turnover (days) = accounts receivable/sales*365

Statistical surveys carried out by the Czech Statistical Office (ČSÚ) are the basic database source for the analysis of food industry. Flow financial economic data are monitored by the quarterly statistical report ČSÚ-P3-04 for selected economic agents of sectors of manufacture (in industries, building industry, trade and selected services). Status and selected flow indicators are monitored by the quarterly report P6-04 on financial indicators. These are database files provided for analytical purposes on a contractual basis by the IAEL. To meet the requirement for the protection of personal data the year-on-year spider analysis of sector data of economically active enterprises in the Manufacture of Food Products and Manufacture of Beverages with 250 employees and more and selected enterprises with 50 employees and more for the periods 2007-2008 and 2008-2009 could be carried out only for 5 branches

of manufacture¹⁷, for the Manufacture of Food Products (CZ-NACE 10), Manufacture of Beverages (CZ-NACE 11). On 1st Jan. 2008, Czech Statistical Office (ČSÚ) introduced the international statistical classification of economic activities CZ-NACE, which replaced the Sector Classification of Economic Activities (OKEČ). Accordingly, the method of data processing was modified while the introduced classification allows for better international comparisons. In the present paper the food industry sector is classified according to the new structure, i.e. CZ-NACE, as mentioned above to Manufacture of Food Products (CZ-NACE 10) and Manufacture of Beverages (CZ-NACE 11). CZ-NACE 10 is classified into groups according to branches¹⁸.

Results and discussion

Processing and preserving of meat and production of meat products (CZ-NACE 10.1)

This branch is a crucial one in the food industry structure because a significant part of agricultural production from animal sources is processed there. Its economic performance influences this production, especially from the aspect of its volume. A higher volume of processed animals will bring about a need of increasing the numbers of livestock. It is possible to increase the processing of animals in quantitative terms as well as in qualitative terms only if the meat industry is in good economic “condition”. The increasing price

pressure and the consumers’ expectations for meet safety and quality are the challenges the processor will soon face. Vertically integrated companies are expected to meet these challenges more efficiently which helps them to achieve the competitive advantage (Bavorova, 2010). This situation is valid not only for Germany but also for other countries including CZ.

Table 2 documents that profitability ratios in the studied branch worsened markedly year-on-year in 2008, which was a negative trend. Return on equity and return on liabilities also decreased in 2008. However, total liquidity and current ratio increased while quick ratio dropped moderately. In the financing structure the share of equity and debt-to-equity ratio decreased pronouncedly in 2008. There were also year-on-year changes in the asset structure in 2008. The ratio of accounts receivable to assets decreased, inventory turnover lengthened but accounts receivable turnover was substantially shorter. In 2009 profitability ratios, ROE and return on liabilities exceeded the 2007 levels. In the former year liquidity ratios except the quick ratio increased markedly. In the financing structure the share of equity continued to increase while the debt-to-equity ratio decreased. In 2009 the ratio of accounts receivable to assets rose but inventory turnover was shorter pronouncedly and accounts receivable turnover was also somewhat shorter. In comparison with the sector Manufacture of Food Products (NACE 10) as illustrated in Fig. 1, the branch in question lagged behind in profitability and was disadvantaged by debt-to-equity ratio in the evaluated period. Measures aimed at the utilization of capacities should be taken. Technical efficiency in the agriculture sector was studied by Čechura (2009), who concluded that a downward trend of technical efficiency reflecting unused capacities due to a drop in production as a result of keen competition could be observed mainly in the production, processing and preserving of meat from large farm animals.

¹⁷ Processing and preserving of meat and production of meat products (CZ-NACE 10.1), Manufacture of dairy products (CZ-NACE 10.5), Manufacture of bakery, confectionery and other farinaceous products (CZ-NACE 10.7), Manufacture of other food products (CZ-NACE 10.8) and Manufacture of prepared animal feeds (CZ-NACE 10.9); these are mostly crucial food branches.

¹⁸ Taking into account the relatively diversified representation of the particular classes and to allow for better evaluation of some manufactures, in the new classification system the original OKEČ 15.8 – Manufacture of other food products was classified to two groups: CZ-NACE 10.7 Manufacture of bakery, confectionery and other farinaceous products and CZ-NACE 10.8 – Manufacture of other food products.

Financial economic indicator	2007	2008	2009	Year-on-year difference 2008/2007	Year-on-year difference 2009/2008
Profitability ratios					
FA1 – Return on equity (ROE)	8.02	2.29	9.70	-5.73	7.41
A2 – Return on liabilities	3.10	0.91	4.00	-2.19	3.08
Liquidity ratios					
B1 – Total liquidity	0.79	1.42	1.78	0.63	0.36
B2 – Quick ratio	0.06	0.04	0.21	-0.02	0.17
B3 – Current ratio	0.64	1.06	1.45	0.42	0.39
Financing structure					
C1 – Share of equity	38.68	39.95	41.19	1.27	1.24
C2 – Debt-to-equity ratio	158.53	150.31	142.77	-8.22	-7.54
Asset structure					
D1 – Ratio of accounts receivable to assets	33.81	32.50	34.64	-1.31	2.15
D2 – Inventory turnover (days)	18.72	22.69	16.77	3.97	-5.92
D3 – Accounts receivable turnover(days)	73.91	64.85	62.43	-9.06	-2.41

Source: Czech Statistical Office, own calculations

Table 2: Year-on-year development of financial economic indicators in the branch Processing and preserving of meat and production of meat products (CZ-NACE 10.1) in 2007-2009 (% , percentage points /p.p.)

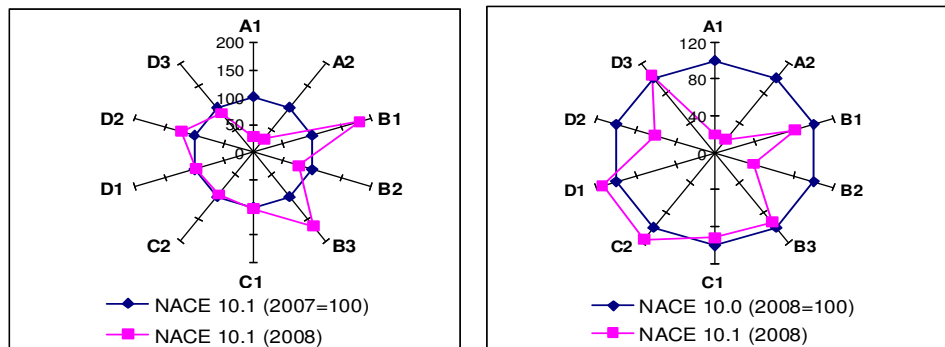


Figure 1: Year-on-year development of financial economic indicators in the branch Processing and preserving of meat and production of meat products (CZ-NACE 10.1) in the framework of CZ-NACE 10 in 2007-2008.

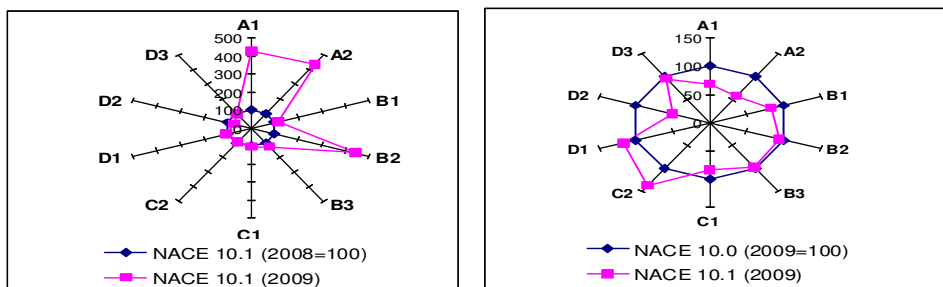


Figure 2: Year-on-year development of financial economic indicators in the branch Processing and preserving of meat and production of meat products (CZ-NACE 10.1) in the framework of CZ-NACE 10 in 2008-2009.

Manufacture of dairy products (CZ-NACE 10.5)

This manufacture is another processing branch closely related to agricultural produce of animal origin – cattle raising. The EU dairy industry is very dominant in the world market (Tacke, 2009). A quota system has been used in milk until now in the framework of the EU Common Agricultural Policy. However, the domestic dairy industry does not purchase total milk production when raw milk transported for its processing to another country accounts for 17.5% (Kopáček 2010). In the CR from the aspect of the ownership structure foreign companies participate in the dairy industry that achieve better economic results but the evaluated period fell into an economically difficult period that had impacts on the European dairy industry as a whole.

Year-on-year drop in profitability of this branch, as expressed by both ROE and return on liabilities, was pronounced in 2008 (Table 3), which was a negative trend. A more moderate year-on-year drop was recorded in all three ratios of liquidity. In the financing structure the share of equity of the branch decreased in the same year while the debt-to-equity

ratio increased. In the asset structure the ratio of accounts receivable to assets decreased year on year in 2008 but inventory turnover lengthened while accounts receivable turnover shortened.

In 2009 profitability rose year on year again, namely both ROE and return on liabilities, but they did not reach the 2007 level. An increase was recorded in all three liquidity ratios in 2009. In the financing structure the share of equity increased and debt-to-equity ratio decreased markedly in the evaluated year. In the asset structure the ratio of accounts receivable to assets dropped, inventory turnover shortened in a pronounced way but accounts receivable turnover was moderately longer. In comparison with the sector Manufacture of Food Products (NACE 10) the branch showed very low profitability in 2008 that however improved above the sector level in 2009. As illustrated in Fig. 3, the branch markedly differed from the sector in quick ratio showing a higher value for the branch, and in debt-to-equity ratio, where the value of the branch was relatively high. The measures of dairy companies should be aimed at higher utilization of equity and the trend of a reduction in debt-to-equity ratio should continue.

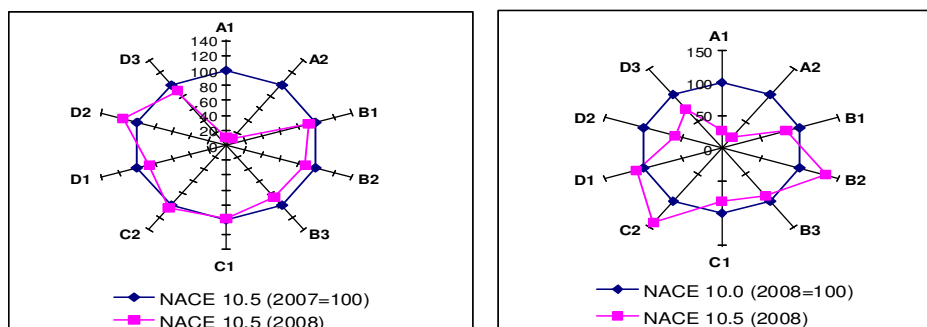


Figure 3: Year-on-year development of financial economic indicators in the branch Manufacture of dairy products (CZ-NACE 10.5) in the framework of CZ-NACE 10 in 2007- 2008.

Financial economic indicator	2007	2008	2009	Year-on-year difference 2008/2007	Year-on-year difference 2009/2008
Profitability ratios					
A1 – Return on equity (ROE)	28.23	2.99	16.51	-25.24	13.52
A2 – Return on liabilities	10.17	1.05	6.87	-9.12	5.82
Liquidity ratios					
B1 – Total liquidity	1.59	1.47	1.91	-0.12	0.44
B2 – Quick ratio	0.17	0.15	0.40	-0.02	0.25
B3 – Current ratio	1.20	1.04	1.50	-0.17	0.46
Financing structure					
C1 – Share of equity	36.03	35.24	41.62	-0.78	6.38
C2 – Debt-to-equity ratio	177.58	183.75	140.29	6.17	-43.47
Asset structure					
D1 – Ratio of accounts receivable to assets	36.27	31.28	30.95	-4.99	-0.33
D2 – Inventory turnover (days)	19.48	22.56	17.75	3.07	-4.81
D3 – Accounts receivable turnover(days)	52.18	46.51	47.82	-5.68	1.31

Source: Czech Statistical Office, own calculations

Table 3 : Year-on-year development of financial economic indicators in the branch Manufacture of dairy products (CZ-NACE 10.5) in 2007-2009 (% , p. b.).

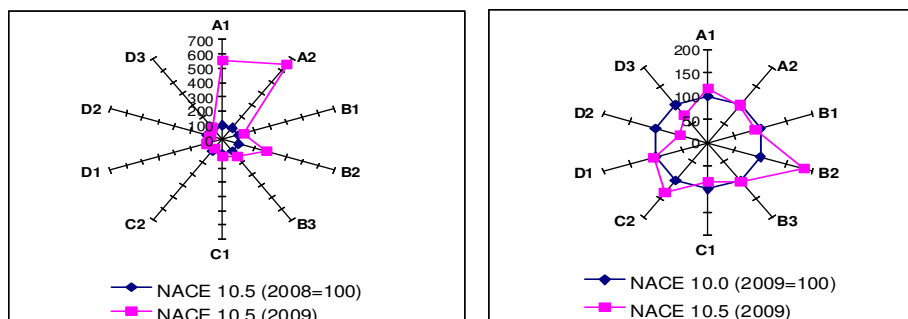


Figure 4: Year-on-year development of financial economic indicators in the branch Manufacture of dairy products (CZ-NACE 10.5) in the framework of CZ-NACE 10 in 2008-2009.

Manufacture of bakery, confectionery and other farinaceous products (CZ-NACE 10.7)

Bakery industry is an important sector of the food industry. Bakeries closely cooperate with milling and pasta industries, trade companies and specialized companies manufacturing currently essential bakery and confectionery mixtures (Tvrdoň 2010). Such cooperation takes place within one business in some cases. The economics of the evaluated manufacture is influenced to a large extent by flour prices that have shown a high volatility in recent years. With regard to the data set that is used in this analysis the economics of only a part of the enterprises engaged in this manufacture is interpreted. In addition, this manufacture also takes place in smaller firms with different economic results.

Table 4 documents that profitability ratios showed an upward year-on-year trend in 2008, similarly like liquidity ratios, which was a positive trend. Compared to the Manufacture of Food Products in total and Manufacture of Beverages in total, in 2009 ROE of the evaluated branch reached quite comparable values in the framework of the branch structure (NACE 10.7 12.49% and NACE 10 + NACE 11 14.17%).

While in 2000 and 2005 the ROE ratios for the bakery industry had low values in comparison with the food industry in total (4.5% compared to 15.1% in 2000 and 7.8% compared to 15.2% in 2005) and were influenced not only by realized profit but also by the range of equity financing, the lower indebtedness of the bakery industry could imply a decline of the ROE to some extent (Blažková 2010).

In the ratios of financing structure the share of equity increased year on year while the debt-to-equity ratio decreased. In the asset structure the ratio of accounts receivable to assets decreased moderately, and inventory turnover as well as accounts receivable turnover were also somewhat shorter in 2008. In 2009 profitability and liquidity ratios continued to increase with the exception of quick ratio. In that year in the financing structure the share of equity rose and debt-to-equity ratio decreased markedly. In the asset structure the ratio of accounts receivable to assets decreased, inventory turnover accelerated and accounts receivable turnover shortened. In comparison with the sector (NACE 10) the largest difference in the manufacture in question was determined in quick ratio when its value of this branch was pronouncedly higher in 2008 while it was contrariwise in 2009, which illustrated a negative fluctuation from the aspect of financial stability.

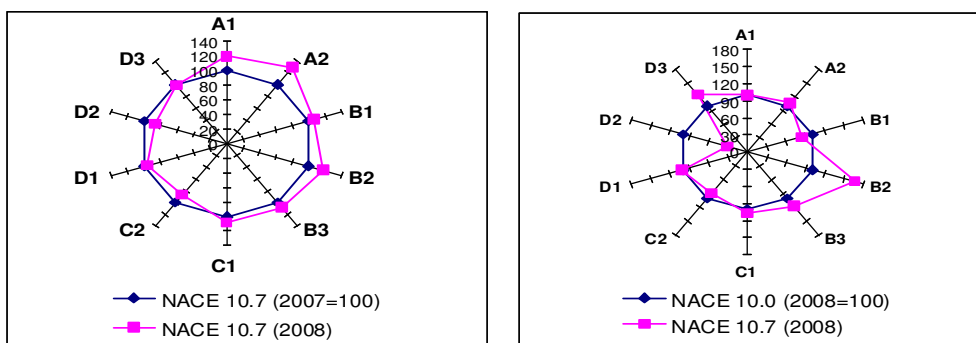


Figure 5: Year-on-year development of financial economic indicators in the branch Manufacture of bakery, confectionery and other farinaceous products (CZ-NACE 10.7) in the framework of the Manufacture of Food Products (CZ-NACE 10) in 2007- 2008.

Financial economic indicator	2007	2008	2009	Year-on-year difference 2008/2007	Year-on-year difference 2009/2008
Profitability ratios					
A1 – Return on equity (ROE)	9.71	11.59	12.49	1.88	0.90
A2 – Return on liabilities	4.17	5.38	7.87	1.21	2.49
Liquidity ratios					
B1 – Total liquidity	1.41	1.49	1.54	0.08	0.04
B2 – Quick ratio	0.16	0.19	0.07	0.03	-0.12
B3 – Current ratio	1.23	1.33	1.42	0.10	0.09
Financing structure					
C1 – Share of equity	42.94	46.43	63.04	3.50	16.61
C2 – Debt-to-equity ratio	132.89	115.36	58.62	-17.53	-56.74
Asset structure					
D1 – Ratio of accounts receivable to assets	30.05	29.08	26.00	-0.97	-3.09
D2 – Inventory turnover (days)	13.35	11.52	6.60	-1.83	-4.92
D3 – Accounts receivable turnover (days)	78.65	77.29	74.98	-1.37	1.31

Source: Czech Statistical Office, own calculations

Table 4: Year-on-year development of financial economic indicators in the branch Manufacture of bakery, confectionery and other farinaceous products (CZ-NACE 10.7) in 2007-2009 (% , p. b.).

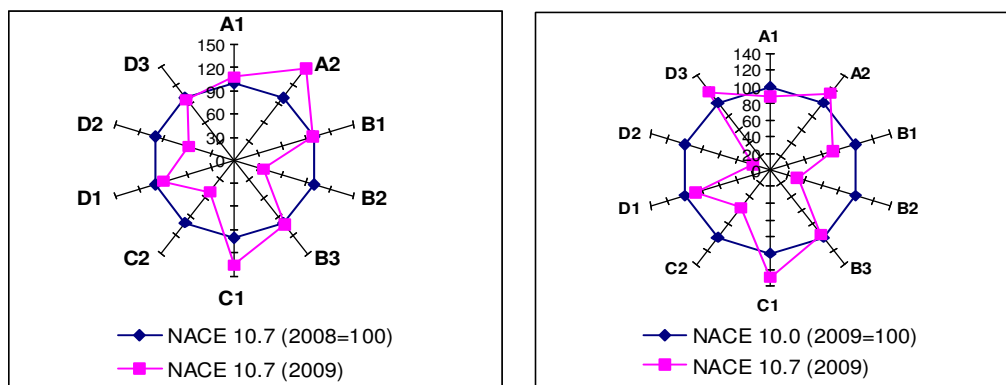


Figure 6: Year-on-year development of financial economic indicators in the branch Manufacture of bakery, confectionery and other farinaceous products (CZ-NACE 10.7) in the framework of the Manufacture of Food Products (CZ-NACE 10) in 2008- 2009.

Manufacture of other food products (CZ-NACE 10.8)

It is quite a large group of manufactures even though the Manufacture of bakery, confectionery and other farinaceous products was exempted from it when the CZ-NACE classification was adopted. First of all it includes manufactures connected with crop production such as manufacture of sugar, cocoa, chocolate and sugar confectioneries and manufacture of other food products not included elsewhere in statistical classification (e.g. soups, perishable prepared foods, sandwiches, food additives, etc.).

Table 5 illustrates that the profitability of this group of manufactures increased in 2008 but it dropped in 2009. Such development is connected with the overall economic situation when the impact of recession in 2009 was negatively reflected mainly in products of this group of manufactures because these are not mostly basic foods, so their manufacture decreased even though the producer prices did not vary very much.

In the evaluated years 2008 and 2009 liquidity ratios showed a moderate increase. In the financing structure the share of equity decreased in the evaluated years but the debt-to-equity ratio increased, which was a negative trend. On the contrary, in the asset structure the ratio of accounts receivable to assets fluctuated in the evaluated years but inventory turnover was shorter when this shortening was more pronounced in 2009, which was a positive feature. Accounts receivable turnover fluctuated in the evaluated period, and it shortened markedly. In spite of a decrease in profitability its level in the evaluated group of manufactures was higher compared to the sector

(CZ-NACE 10). Although shortened, inventory turnover was longer in this group compared to the sector, which was partly connected with the fact that this assortment does not mostly include any goods with short turnaround time.

Manufacture of prepared animal feeds (CZ-NACE 10.9)

Even though it is destined for farm and domestic animals, from the aspect of statistical classification the manufacture of animal feeds is included in the processing industry, and in its framework in the manufacture of food products due to its character because it is the processing of agricultural production of plant origin. To characterize this manufacture in general with regard to the evaluated years, 3 177 thousand tons of feed mixtures were produced in the CR in 2007 while it was 2 979 thousand tons in 2008 and only 2 841 thousand tons in 2009, when the highest drop was recorded in feed mixtures for pigs.

Table 6 shows a decrease in profitability in the evaluated manufacture in the years of evaluation. The values of liquidity ratios did not vary very much in 2008 while they somewhat increased in 2009. In the financing structure the values of the share of equity rather varied: they rose particularly in 2009 whereas the debt-to-equity ratio markedly decreased in the year concerned, which was a positive trend. In the asset structure the ratio of accounts receivable to assets increased at a higher rate, inventory turnover shortened in a pronounced way but the accounts receivable turnover was markedly longer in 2009, which was a negative trend documenting the situation when accounts receivable decreased more slowly than sales.

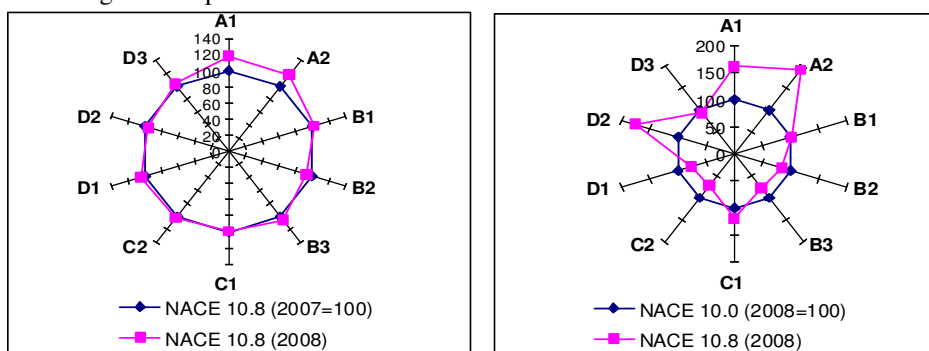


Figure 7: Year-on-year development of financial economic indicators in the branch Manufacture of other food products (CZ-NACE 10.8) in the framework of the Manufacture of Food Products (CZ-NACE 10) in 2007-2008.

Positive and Negative Aspects of Financial Economic Development in Selected Branches of the Food Industry of the CR in 2007 – 2009 as Revealed by Spider Analysis

Financial economic indicator	2007	2008	2009	Year-on-year difference 2008/2007	Year-on-year difference 2009/2008
Profitability ratios					
A1 – Return on equity (ROE)	15.85	18.73	18.14	2.88	-0.60
A2 – Return on liabilities	8.27	9.68	9.10	1.41	-0.58
Liquidity ratios					
B1 – Total liquidity	1.75	1.56	1.90	-0.19	0.34
B2 – Quick ratio	0.10	0.08	0.20	-0.02	0.12
B3 – Current ratio	0.84	0.78	0.98	-0.06	0.20
Financing structure					
C1 – Share of equity	52.18	51.67	50.16	-0.51	-1.51
C2 – Debt-to-equity ratio	91.66	93.55	99.38	1.89	5.83
Asset structure					
D1 – Ratio of accounts receivable to assets	20.78	21.72	20.86	0.94	-0.86
D2 – Inventory turnover (days)	68.83	66.12	62.07	-2.70	-4.06
D3 – Accounts receivable turnover (days)	56.15	58.04	52.02	1.89	-6.02

Source: Czech Statistical Office, own calculations

Table 5: Year-on-year development of financial economic indicators in the branch Manufacture of other food products (CZ-NACE 10.8) in 2007-2009 (% , p. b.).

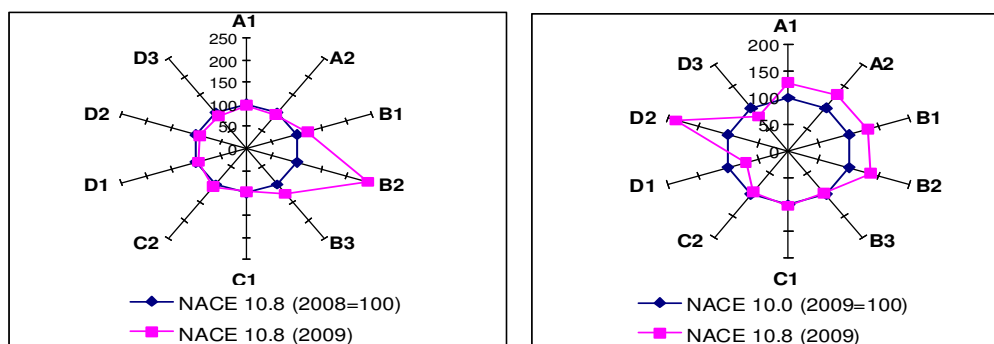


Figure 8: Year-on-year development of financial economic indicators in the branch Manufacture of other food products (CZ-NACE 10.8) in the framework of the Manufacture of Food Products (CZ-NACE 10) in 2008-2009.

Financial economic indicator	2007	2008	2009	Year-on-year difference 2008/2007	Year-on-year difference 2009/2008
Profitability ratios					
A1 – Return on equity (ROE)	5.41	3.51	1.80	-1.90	-1.71
A2 – Return on liabilities	2.58	1.62	0.94	-0.96	-0.68
Liquidity ratios					
B1 – Total liquidity	3.57	3.54	4.01	-0.02	0.47
B2 – Quick ratio	0.20	0.21	0.34	0.01	0.13
B3 – Current ratio	1.88	1.98	2.70	0.10	0.72
Financing structure					
C1 – Share of equity	47.78	46.17	52.19	-1.62	6.03
C2 – Debt-to-equity ratio	109.29	116.61	91.60	7.32	-25.01
Asset structure					
D1 – Ratio of accounts receivable to assets	29.45	30.78	35.96	1.33	5.18
D2 – Inventory turnover (days)	77.29	61.54	47.58	-15.74	-13.97
D3 – Accounts receivable turnover (days)	76.83	69.64	85.24	-7.19	15.60

Source: Czech Statistical Office, own calculations

Table 6: Year-on-year development of financial economic indicators in the branch Manufacture of prepared animal feeds (CZ-NACE 10.9) in 2007-2009 (% , p. b.).

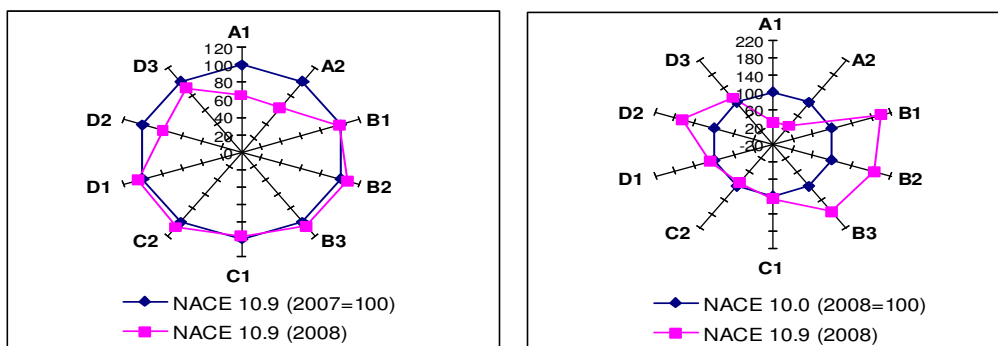


Figure 9: Year-on-year development of financial economic indicators in the branch Manufacture of prepared animal feeds (CZ-NACE 10.9) in the framework of the Manufacture of Food Products (CZ-NACE 10) in 2007-2008.

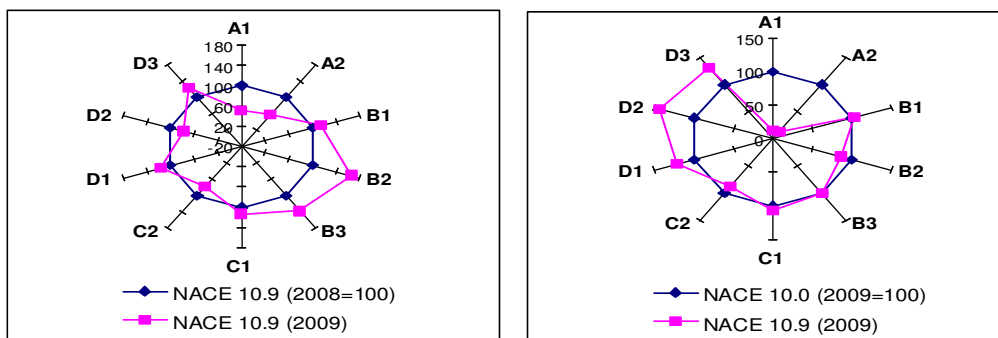


Figure 10: Year-on-year development of financial economic indicators in the branch Manufacture of prepared animal feeds (CZ-NACE 10.9) in the framework of the Manufacture of Food Products (CZ-NACE 10) in 2008-2009.

Manufacture of Food Products (CZ-NACE 10)

After the adoption of the CZ-NACE classification system this branch does not include the manufacture of beverages anymore; it will be analysed as a separate sector. The data shown in Table 7 document an overview of data on the set of enterprises included in financial analysis that was described in the preceding part of this paper. In relation to the selected food branches this manufacture represents a relevant comparative basis.

Table 7 illustrates that profitability of the evaluated manufacture showed an upward trend in the years of evaluation, which was a positive trend. The values of liquidity ratios also rose. In the financing structure the share of equity increased while the debt-to-equity ratio decreased, in a pronounced way in 2009. In the asset structure the ratio of accounts receivable to assets showed a fluctuating development, inventory turnover markedly shortened and accounts receivable turnover fluctuated. In general, taking into account difficult economic conditions such development cannot be evaluated in a negative way, particularly with respect to profitability growth.

Manufacture of Beverages (CZ-NACE 11)

The manufacture of beverages, which includes spirits, wine, beer and malt (beer being dominant in this manufacture), soft drinks and production of mineral waters and other bottled waters, is classified separately in the CZ-NACE system. If this manufacture were classified within the original food sector, it would take up an important position.

Table 8 documents that profitability of this manufacture worsened in 2008 and it did not change very much in 2009. The values of liquidity ratios decreased moderately in 2008 while they increased to some extent in 2009. In the financing structure the share of equity, and similarly the debt-to-equity ratio, fluctuated. In the asset structure the ratio of accounts receivable to assets rose, inventory turnover shortened and in 2008 accounts receivable turnover lengthened markedly, in 2009 it shortened but it did not return to the 2007 level.

Besides the evaluation of development in the studied years it is possible to make a comparison with the Manufacture of Food Products (CZ-NACE 10). The evaluated manufacture shows a higher level of profitability, higher values of liquidity ratios and lower debt-to-equity ratio and the asset structure is also different. Beer output will be a crucial indicator for this group of manufactures that does not show a progressive trend from the aspect of this manufacture, especially due to declining domestic consumption. A chance of maintaining the popularity of Czech beer is to maintain its distinctness. A permanent guarantee of the long-term popularity of Czech beer has been long-term customer satisfaction and that the product meets expectations, is interesting, different from ordinary beers (Tolar 2010). According to Daszynska-Żygadło, K., Słoński, T., 2010 a data analysis of four beer producers shows also that a general financial policy outline depends on a global financial policy of corporations that own local breweries, with certain adjustments to local market requirements and conditions.

Positive and Negative Aspects of Financial Economic Development in Selected Branches of the Food Industry of the CR in 2007 – 2009 as Revealed by Spider Analysis

Financial economic indicator	2007	2008	2009	Year-on-year difference 2008/2007	Year-on-year difference 2009/2008
Profitability ratios					
A1 – Return on equity (ROE)	6.91	11.61	14.15	4.70	2.54
A2 – Return on liabilities	2.93	5.05	6.92	2.12	1.87
Liquidity ratios					
B1 – Total liquidity	1.59	1.76	2.21	0.17	0.45
B2 – Quick ratio	0.11	0.11	0.23	0.00	0.12
B3 – Current ratio	1.02	1.14	1.54	0.12	0.40
Financing structure					
C1 – Share of equity	42.42	43.53	48.92	1.11	5.39
C2 – Debt-to-equity ratio	135.73	129.72	104.41	-6.02	-25.31
Asset structure					
D1 – Ratio of accounts receivable to assets	28.57	28.53	29.62	-0.04	1.09
D2 – Inventory turnover (days)	39.60	37.58	33.14	-2.02	-4.44
D3 – Accounts receivable turnover (days)	63.61	62.39	64.97	-1.22	2.58

Source: Czech Statistical Office, own calculations

Table 7: Year-on-year development of financial economic indicators in the branch Manufacture of Food Products (CZ-NACE 10) in 2007-2009 (% , p. b.).

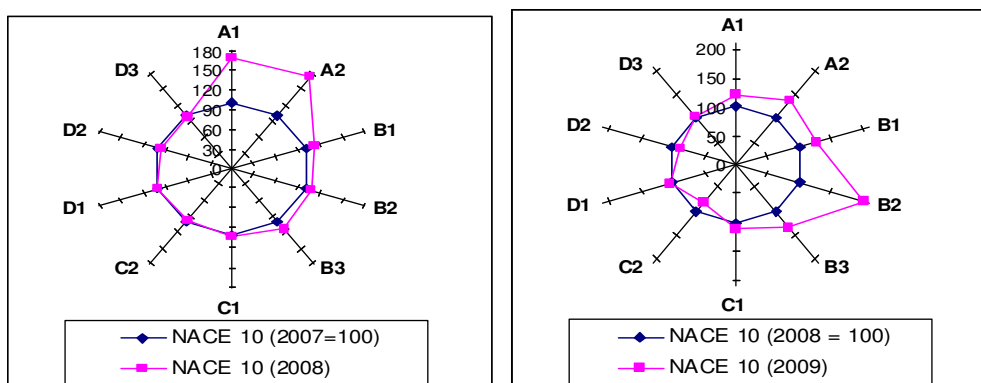


Figure 11: Year-on-year development of financial economic indicators of the Manufacture of Food Products (CZ-NACE 10) in 2007-2008 and 2008-2009.

Financial economic indicator	2007	2008	2009	Year-on-year difference 2008/2007	Year-on-year difference 2009/2008
Profitability ratios					
A1 – Return on equity (ROE)	16.37	14.00	14.18	-2.37	0.18
A2 – Return on liabilities	11.36	9.88	9.80	-1.47	-0.08
Liquidity ratios					
B1 – Total liquidity	2.07	1.98	2.65	-0.09	0.68
B2 – Quick ratio	0.43	0.39	0.87	-0.04	0.48
B3 – Current ratio	1.41	1.40	2.03	-0.01	0.64
Financing structure					
C1 – Share of equity	69.37	70.61	69.11	1.24	-1.50
C2 – Debt-to-equity ratio	44.15	41.61	44.70	-2.54	3.08
Asset structure					
D1 – Ratio of accounts receivable to assets	14.91	16.07	16.14	1.16	0.07
D2 – Inventory turnover (days)	39.70	38.95	35.17	-0.75	-3.78
D3 – Accounts receivable turnover (days)	58.74	68.19	66.28	9.45	-1.91

Source: Czech Statistical Office, own calculations

Table 8: Year-on-year development of financial economic indicators in the branch Manufacture of Beverages (CZ-NACE 11) in 2007-2009 (%., p. b.).

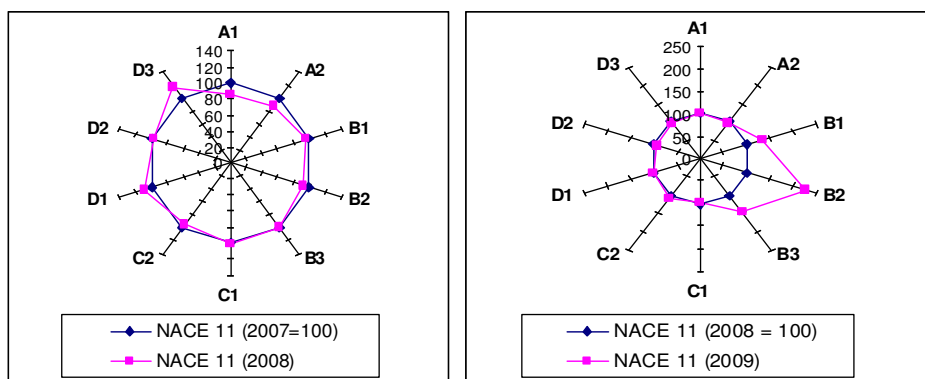


Figure 12 – Year-on-year development of financial economic indicators of the Manufacture of Beverages (CZ-NACE 11) in 2007-2008 and 2008-2009.

Conclusions

The synthesis of results for in view of enterprise collection of financial analysis shows that taking into account inter-branch heterogeneity the total profitability of both manufactures (CZ-NACE 10 and CZ-NACE 11) improved in spite of worsened economic conditions, which was a positive trend. It implies certain adaptability of a significant part of enterprises included in this financial economic analysis and their mutual inter-branch comparison.

Particularly the processing and preserving of meat and production of meat products showed less satisfactory development, mainly of profitability and debt-to-equity ratios; it was mostly caused by the insufficient utilization of processing capacities. A reduction in pig numbers leads to an every-year decrease in the volume of production of feed mixtures, which results in a drop of profitability in the manufacture of prepared animal feeds.

As for the manufacture of dairy products and beverages, the development of debt-to-equity ratio, which showed relatively high values, was less satisfactory in the given period.

In the manufacture of bakery, confectionery and other farinaceous products a negative year-on-year drop of quick ratio was reported in 2009 compared to the sector. But a great year-on-year decrease in debt-to-equity ratio was a very positive trend (56.7 p.p.).

The development of profitability ratios in the manufacture of other food products fluctuated in the given period, an increase in 2008 was followed by a decrease in 2009. In the manufacture of food products as whole positive features were the growth of profitability and liquidity in the studied period, an increase in the share of equity, drop of debt-to-equity ratio and shorter inventory turnover. The

manufacture of beverages showed a higher level of profitability, higher values of liquidity and lower debt-to-equity ratio in comparison with the manufacture of food products.

Positive economic development of the food sector based on fair relations among food chain suppliers, emphasis on the regional food trend, consumers' higher awareness of the quality of domestic products, appropriate innovation of products and a possibility of obtaining protected designations such as protected designation of origin (PDO), protected geographical indication (PGI) and traditional speciality guaranteed (TSG) may contribute to higher competitiveness of this chain. In the future the programme of regional foods should be introduced also in the area of gastronomy and in the promotion of tourism while regional foods should be presented on a larger scale e.g. in Austria and Germany, where regional foods are very popular and have a long tradition (Sládek 2010). Plášil, Mezera et al. reported that the most frequent answer to a question in a questionnaire survey of enterprises of the food industry "What do you consider as the main barriers to the competitiveness of your branch of manufacture?" was problems with output (53 % of respondents), macroeconomic environment (37 %) and 10 % of respondents indicated inputs as problematic.

Economic research plays a very important role in this area. It is particularly the monitoring of development by appropriate economic indicators and forecasting of future development and creation of relevant strategies for crucial branches of manufacture in relation to agricultural production and demand on domestic and foreign markets and efforts to reach the highest performance and effectiveness possible.

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References

- [1] Bavorova, M. Structural changes in the Germany agri food complex: The end of small and medium enterprises? *Agriculture Economics*. 2010, 56, No. 12: s 591-600. ISSN 0139-570X.

- [2] Blažková, I. Economic performance differentiation of the processing stage within the commodity chain. *Agriculture Economics*. 2010, 56, No. 31, s. 16 - 24. ISSN 0139-570X.
- [3] Čechura, L. Zdroje a limity růstu agrárního sektoru – Analýza efektivnosti a produktivity českého agrárního sektoru: Aplikace SFA (Stochastic Frontier Analysis) (Resources and Limits of the Agriculture Sector Growth: Application of SFA /Stochastic Frontier Analysis/), Praha, 2009, s. 221. ISBN 978-80-7357-493-2.
- [4] Daszyńska, Żygadlo, K., Sloński, T. Sustainable growth rate in the strategic analysis of brewery industry. *Journal AGRIS on-line Papers in Economics and Informatics*, 2010, II, No. 1, s. 20. ISSN 1804-1930
- [5] Kopáček, J. Byla krize v mlékárenství již překonána? Jaké jsou další výhledy mlékárenského sektoru. sborník z odborné konference se zahraniční účastí - Kroměřížské mlékařské dny 2010 (Has already the crisis in dairy industry been overcome? What are the outlooks of dairy sector like? Proceedings of a specialized conference with foreign participation Kroměříž Dairy Industry Days 2010), Kroměříž, 2010, s. 13
- [6] Kisligerová, E., Hnilica, J. Finanční analýza krok za krokem, 1. vydání, C. H. Beck, Praha, 2005, s. 31. ISBN 80-7179-321-3
- [7] Kubíčková, D., Soukup, J. Spider Analysis as a method of company comparison. *International Scientific Days 2006, SAU, Nitra 2006*, s. 217.
- [8] Mejstříková, L., Mezera, J. Finančně ekonomická výkonnost a efektivnost českého potravinářského průmyslu. *Potravinářská revue*, 1/2006, Praha, 2006, s. 46-51.
- [9] Plášil, M., Mezera, J. a kol. Konkurenceschopnost potravinářského sektoru v ČR (výzkumná studie) (Competitiveness of the food sector in the ČR (research study). Praha: Ústav zemědělské ekonomiky a informací, 2010, s. 43. ISBN 978-80-86671-76-5.
- [10] Putičková, M., Mezera, J., Mejstříková, L. Development of business structure of the Czech food industry sector: retrospective and perspective. *Agriculture Economics*. 2005, 51, No. 4, s.181-184. ISSN 0139-570X.
- [11] Putičková, M., Mezera, J. Food industry in the Czech Republic – with regard to labour force development. *Agriculture Economics*. 2008, 54, No. 6, s. 285-292. ISSN 0139-570X.
- [12] Sládek, F. Aktuální problematika potravinářského průmyslu. *Potravinářská Revue* 5/2010, Praha, 2010, s. 5. ISSN 1801-9102.
- [13] Synek, M. a kol. *Podniková ekonomika*, 3. přeprac. a dop. vydání, C. H. Beck, Praha, 2002, ISBN 80-7179-736-7, s. 134.
- [14] Tacken, G. M. L. at al. Competitiveness of the EU dairy industry, Report 2009-011 LEI Wageningen , VR, The Haag 2009.
- [15] Tvrdoň, O. Životní cykly pekařských výrobků. *Potravinářská Revue* 6/2010, Praha, 2010, s. 70. ISSN 1801-9102.
- [16] Tolar, J. *České pivo – zůstane fenoménem?* *Potravinářská Revue* 5/2010, Praha, 2010, s. 29. ISSN 1801-9102.