Food industry in the Czech Republic – with regard to labour force development

Potravinářský průmysl v České republice s ohledem na vývoj pracovních sil

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Abstracts: The submitted paper analyses the development of food industry in the Czech Republic in 2000–2006, its position (in 2006) and development trends of main economic indicators compared to the development of manufacturing industry. In comparison with the dynamic development of Czech manufacturing industry, key position of food industry has decreased. The monitored food sector has heterogeneous structure with regard to branches. In connection with these differences, development trends of separate branches are fluctuating but labour productivity of the food sector as a total has markedly accelerated.

Key words: food industry, main economic indicators, receipts from sales of own products and services, number of employees, value added, labour productivity from value added, labour costs

Abstrakt: V článku se analyzuje vývoj potravinářského průmyslu v České republice v letech 2000–2006, jeho pozice (v roce 2006) a vývojové trendy hlavních ekonomických ukazatelů ve srovnání s celým zpracovatelským průmyslem. Ve srovnání s dynamickým rozvojem zpracovatelského průmyslu jako celku význam potravinářského průmyslu klesá. Potravinářský průmysl v ČR má heterogenní strukturu. Při diferencovaných a kolísavých vývojových tendencích v jednotlivých oborech produktivita práce potravinářského průmyslu celkem výrazně rostla.

Klíčová slova: potravinářský průmysl, hlavní ekonomické ukazatele, tržby za prodej výrobků a služeb, počet zaměstnaných osob, přidaná hodnota, produktivita práce z přidané hodnoty, osobní náklady

The characteristic feature of the manufacture of food products and beverages (NACE 15) is its close linking to agriculture, the production of which is further processed and delivered to the distributors or directly to the consumer market. Ensuring of the nutrition needs of the population makes the manufacture of food products and beverages a strategic branch. For the time being as well as in the future, it is necessary to consider food safety as the main priority. The importance of the NACE 15 branch is also underlined by the fact that it is by its production performance one of the important branches of the manufacturing industry.

MATERIAL AND METHODS

The submitted paper is aimed on the analysis of the Czech food sector and especially on the trends of labour productivity development. In the article, there are used the results of the comparative analysis of data, collected for the surveys: Panorama of the manufacturing industry in the Czech Republic and Panorama of food industry 2006 (2007). The paper the continues precedent analyses elaborated by the Research Institute of Agricultural Economics connected with the Research Plan MZE0002725101 "Analysis and Evaluation of Possibilities of the Sustainable Agriculture and Rural

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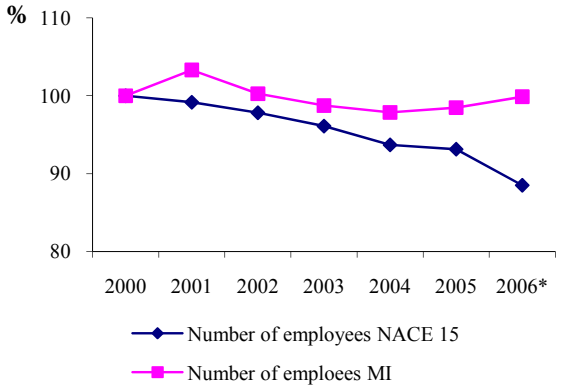
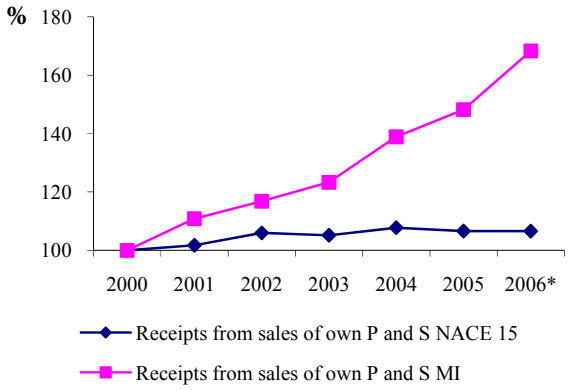
areas in the Czech Republic in conditions of the EU and European Model of Agriculture"(Foltýn and coll. 2007). Regional structure of food sector is one of the characteristics which are described in the paper too. The prediction of labour force and personal expenditures development in the Czech food industry branches in the Czech Republic till 2013 (Putićová et al. 2007; Mezera et al. 2006) was the base for the simulation of the possible future development of labour productivity. Conclusions are based on the findings of human resources in the rural areas research (Svatošová 2008) and the influence of social factors (Majerová 2007; Střeleček et al. 2007) etc.

(a) Number of employees



(b) Receipts from own sales of products and services



(c) Value added

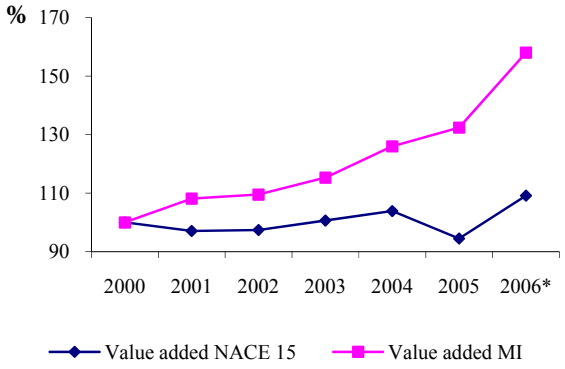


Figure 1. Development in main production indicators in 2000–2006

*preliminary data
data in figure (b) and (c) in current prices
Source: CSO, MIT own estimation

RESULTS AND DISCUSSION

Position of manufacture of food products and beverages within manufacturing industry

Unlike the manufacturing industry, the branch under review (NACE 15), measured by production indicators, was developing in the period from 2000 to 2006 at a substantially lower pace. However, the dynamics of the decline of the number of employees was quicker in the monitored branch than in the manufacturing industry. In the short-term horizon, the number of employees in the manufacturing industry slightly grew up, thanks to the quickly developing branches, whereas in the branch under review it continued its decline and this concerned all its decisive production groups.

The share of the NACE 15 branch in receipts from sales of own products and services (receipts from sales of own P and S) in current prices (c. p.) of the manufacturing industry in 2006 decreased from 10.1% in the year 2005 to 8.9% in 2006.The share in value added in current prices decreased to 8.9%, the share of the number of employees is also decreasing and it represents 9.3% of the total number of employees of manufacturing industry. It follows from the analysis of the production indicators that the share of the branch under review in the manufacturing industry in 2006, according to the individual indicators else rather differentially but in total slightly dropped compared with 2005.

In the period 2000–2006, the manufacture of food products and beverages was not attaining such a high growth rate as the entire manufacturing industry. The indicator of value added of the NACE 15 reported a relatively fluctuating level and, as a whole, stagnation in the course of this period. Only the number of employees in the monitored branch, which is still under restructuring, was declining more quickly than within the entire manufacturing industry.

The development of the main production indicators in the period from 2000 to 2006 in NACE 15 and in the manufacturing industry is illustrated in Figure 1, from which there is obvious a different develop-

ment in both compared industrial segments in the last years and in 2006, in particular.

There are important forms of support to increase the performance and competitiveness of the NACE 15 branch. Supports are mainly aimed at small and medium-sized enterprises with respect to the company structure, the structure of the branch according to the size groups of enterprises and the regional structure.

Structure of the branch according to the size groups of enterprises and their regional structure

Production indicators in 2005 according to the size of enterprises in the NACE 15 branch are shown in Table 1.

The category of medium-sized enterprises (with 50 to 249 employees) was maintaining in 2005, similarly as in 2004, the highest share in the volume of receipts from sales of own products and services in current prices (34.1%), value added in current prices (30.2%) and in the number of employees (32.4%) in the branch under review. A relatively high level of value added in current prices was recorded also in the category of the large and very large enterprises. Value added represents 28.7% in size category with more than 250 employees and in the category with more than 1 000 employees, the share was 25.5%. The mounting level of value added results from the high level of labour productivity in these enterprises within the NACE 15 branch.

The smallest share of production indicators within the NACE 15 was recorded by the category of micro-enterprises (0–9 employees). However, employment in these small entrepreneurial entities is higher in comparison with receipts and value added than in the other categories of the companies. Just these small entrepreneurs are maintaining jobs in the rural regions and are therefore contributing to the creation of jobs in the areas often affected by unemployment.

The prominent position in this regional structure (2005) is always maintained by the Central Bohemian region (with the share of 13% in receipt, 14% in value added and 12% in the number of employees). This region is situated around the capital of Prague (Table 2).

Table 1. Production indicators, according to the size of enterprises in 2005 – NACE 15 (employees, mill. CZK current prices)

	0–9	10–49	50–249	250–999	More then 1000
Receipts from sales of own P and S in c. p.	11 188.5	31 892.8	92 484.3	83 463.1	51 809.5
Value added in c. p	2 518.6	7 672.2	19 655.6	18 641.4	16 568.4
Number of employees	14 091	26 143	43 612	32 968	17 618

*data of 2006 were not at disposal

Source: CSO, MIT estimate

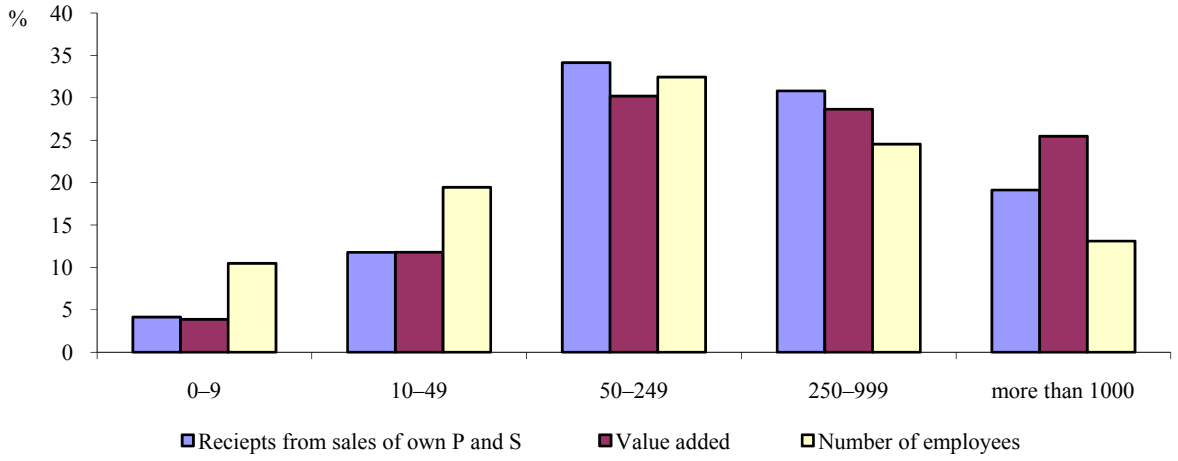


Figure 2. Main production indicators NACE 15 (2006)

Source: CSO, MIT estimate

Table 2. Regional chatracteristics of the branch (mill. CZK, employees)

NACE 15	Receipts from own P and S	Value added	Number of employees
Capital City of Prague	29 605 611.0	6 777 507.4	12 610
Středočeský Region	33 780 369.6	8 389 357.9	16 075
Jihočeský Region	24 323 208.8	4 882 083.9	10 998
Plzeňský Region	25 324 604.5	8 023 202.0	9 339
Karlovarský Region	5 917 283.0	1 859 554.5	2 872
Ústecký Region	15 414 645.9	3 475 715.2	8 135
Liberecký Region	5 157 076.4	1 455 456.0	3 586
Královéhradecký Region	11 963 355.3	2 749 359.7	6 820
Pardubický Region	15 149 817.5	2 962 926.6	7 268
Vysočina Region	16 916 505.9	3 341 809.4	8 072
Jihomoravský Region	30 805 279.0	7 990 102.7	18 102
Olomoucký Region	24 071 045.7	5 267 504.7	10 193
Moravskoslezský Region	16 833 427.9	4 443 378.6	11 412
Zlínský Region	15 576 026.9	3 438 218.0	8 949
Czech Republic	270 838 257.6	65 056 176.6	134 432

Source: CSO, MIT estimate

Next places are occupied by the South Moravian region and the Region Olomouc with a relatively high production of agrarian raw materials and the Capital of Prague, which is the large consumers centre and the place of business of many foodstuff enterprises.

The lowest shares in the regional structure are reported by the regions of Liberec and Karlovy Vary, where the presence of the manufacture of food products and beverages is the smallest. Nevertheless, we cannot expect that the manufacture of food products and beverages would not find its representation in any of the regions in the nearest future and that it would completely disappear under the enhancing production concentration (Table 2).

Development trends of main economic indicators

From the development of the main production indicators of the manufacture of food products and beverages presented in Tables 3, 4 and 5, it follows that a more considerable decline of employment took place in 2006, whereas, on the contrary, within the entire manufacturing industry the number of employees, thanks to the quickly developing branches, increased.

A successive reduction of the number of employees in the manufacture of food products and beverages in the period under review contributed to the overall trend of increased labour productivity from value added, with the exception of 2001 and 2006, when the indicator of labour productivity declined as a consequence of the reduction of value added.

Within the group structure of the assessed production, the NACE 15 is reporting a quite favourable development trend in the indicator of value added of the manufacture of beverages in current prices.

The main production indicators of the NACE 15 in the period from 2000 to 2006 are shown in Tables 3, 4 and 5. As to the receipts from sales of own products and services in current prices, the branch under review was not achieving such a pace of the growth as the entire manufacturing industry, some branches of which were in the last years dynamically developing. This progressive trend holds true for the manufacturing industry for the short-term period of the last monitored year 2006, whereas for the NACE 15 branch only a slight pace of the production growth is characteristic, which is the ever higher due to the saturation of the domestic market. It can be assumed that this difference in the development pace between the NACE 15 and the entire manufacturing industry will continue in the next period as well.

The level of value added in current prices of the branch NACE 15 has grown slower in 2005 when compared with the entire manufacturing industry. The development of the branch evaluated from the

Table 3. Receipts from sales of own products and services in current prices 2000–2006 (mill. CZK c. p.)

	2000	2001	2002	2003	2004	2005	2006*
NACE 15	239 549.6	258 242.8	262 480.7	257 113.1	276 222.1	270 838.1	268 686.3
Year-on-year index (c. p.)	x	107.8	101.6	98.0	107.4	98.1	99.2
Cumulative index (c. p.)	100.0	107.8	109.6	107.3	115.3	113.1	112.2

*preliminary data
Source: CSO, MIT, own estimation

Table 4. Value added in current prices 2000–2006 (mill. CZK c. p.)

	2000	2001	2002	2003	2004	2005	2006*
NACE 15	51 345.5	55 406.8	58 899.7	59 332.6	64 117.1	65 056.3	66 248.2
Year-on-year index (c. p.)	x	107.9	106.3	100.7	108.1	101.5	101.8
Cumulative index (c. p.)	100.0	107.9	114.7	115.6	124.9	126.7	129.0

*preliminary data
Source: CSO, MIT, own estimation

Table 5. Number of employees 2000–2006 (employees)

	2000	2001	2002	2003	2004	2005	2006*
NACE 15	144 350	143 142	141 199	138 716	135 238	134 433	127 745
Year-on-year index (c. p.)	x	99.2	98.6	98.2	97.5	99.4	95.0
Cumulative index (c. p.)	100.0	99.2	97.8	96.1	93.7	93.1	88.5

*preliminary data
Source: CSO, MIT, own estimation

point of view of this indicator during the period from 2000 to 2006 can be characterized as a stagnation, basically.

For the development in the number of employees in the manufacture of food products and beverages and in the entire manufacturing industry in the period 2000 – 2006, rather different characteristics are valid, which concerns mainly 2006. Within the branch under review, the number of employees in 2006, similarly as in the foregoing years, furthermore declined as a consequence of the reduction of the number of employees in all its production groups (NACE 15.1–15.9), except the manufacture of other food products (NACE 15.8), in which as the sole branch new jobs were created.

Development of labour productivity, labour costs

Labour productivity from value added in current prices in the NACE 15 was recording due to a permanent decline of the workers, a significant increase during the monitored period from 2000–2006, basically. This indicator reached the absolute value 518 thousand CZK/employment in year 2006. It represents the year-on-year index 107.2 in comparison with year 2005. The data of the development in labour productivity from value added in current prices during the monitored period in the branch under review is presented in Table 5. We expect also a further growth of labour productivity from value added in the future.

The detailed data listed in Table 6 document the fluctuating development of labour productivity from value added in the food industry branches but the prevailing trend was the increasing level of this indicator. The highest level of this indicator was reached in 2006 in the branches: manufacture of beverages – NACE 5.9 (1 110.6 thousand CZK/employment), in NACE 15.4 – manufacture of oils and fats (768.5 housand CZK/employment). The high level of foreign investments and their concentration is one of the reasons for increasing the labour productivity there. New implemented technologies require also the highest degree of qualification and

Table 6. Labour productivity from production value added in current prices in 2000–2006[1] (thousand CZK/employee) c. p.

	2000	2001	2002	2003	2004	2005	2006*
NACE 15.1	237.2	285.8	312.8	311.4	322.8	324.5	292.1
NACE 15.2	315.4	324.9	328.9	343.9	401.6	391.0	294.7
NACE 15.3	297.2	316.7	360.0	372.1	391.9	421.6	423.6
NACE 15.4	695.6	574.8	613.4	558.1	515.3	753.0	768.5
NACE 15.5	358.2	371.6	295.3	266.8	395.6	417.1	435.4
NACE 15.6	286.0	350.8	380.4	345.2	451.1	525.2	510.3
NACE 15.7	491.6	552.5	552.3	544.6	598.8	614.5	613.6
NACE 15.8	279.8	308.6	327.2	329.1	386.7	362.6	441.8
NACE 15.9	660.6	697.6	864.6	994.4	1 003.0	1 101.0	1 110.6
NACE 15	355.7	387.1	417.1	427.7	474.1	483.9	518.6
Year-on-year index (c. p.)	x	108.8	107.8	102.5	110.8	102.1	107.2
Cumulative index (c. p.)	100.0	108.8	117.3	120.2	133.3	136.0	145.8

*preliminary data
Source: CSO, MIT, own estimation

Table 7. Share of labour costs in value added in current prices in 2000–2006[1]

	2000	2001	2002	2003	2004	2005	2006*
NACE 15.1	0.682	0.596	0.612	0.634	0.663	0.660	0.775
NACE 15.2	0.608	0.620	0.634	0.573	0.542	0.595	0.733
NACE 15.3	0.534	0.579	0.555	0.554	0.586	0.547	0.589
NACE 15.4	0.410	0.523	0.526	0.576	0.666	0.532	0.503
NACE 15.5	0.529	0.558	0.753	0.866	0.641	0.629	0.636
NACE 15.6	0.669	0.591	0.598	0.650	0.546	0.521	0.546
NACE 15.7	0.462	0.454	0.489	0.509	0.492	0.501	0.537
NACE 15.8	0.595	0.564	0.583	0.592	0.559	0.581	0.489
NACE 15.9	0.387	0.394	0.342	0.324	0.346	0.324	0.345
NACE 15	0.527	0.515	0.521	0.525	0.517	0.508	0.497

*preliminary data

[1]Following production segments, or more precisely their groups according to the system of branch classification of economic activities – NACE

15.1 – production, processing and preserving of meat and meat products
15.2 – processing and preserving of fish and fish products
15.3 – processing and preserving of fruit, vegetables and potatoes
15.4 – manufacture of vegetable and animal oils and fats
15.5 – processing of milk, manufacture of dairy products and ice-cream
15.6 – manufacture of grain mill and starch products
15.7 – production of feeds
15.8 – manufacture of other food industry products
15.9 – manufacture of beverages
Source: CSO, MIT, own estimation

specialization of labour force. The continuing lifelong learning is essential.

The share of labour costs in value added in current prices during the monitored period is presented in Table 7. Its share within the NACE 15 dropped in 2006 at 0.497 from 0.527, which was recorded in 2000. Within the entire manufacturing industry, this share remained at the level of 0.515 in 2006.

Figure 3 documents the increasing trend of labour productivity from value added in current prices in 2000–2006 in manufacturing industry and in food industry too. A quicker increase is evident in manufacturing industry as a whole.

Figure 4 documents the development of labour costs in value added in current prices in the monitored period 2000–2006.

The development of labour productivity from value added accelerated in year 2006 not only in the manufacturing sector as a whole but in food industry too (Figure 3). This positive feature is a consequence of the increasing technical and technological level of production. Figure 4 documents the situation of the dropping share of labour costs in value added in 2006, compared to 2005 in the manufacturing sector but also in food industry. The mentioned trend of costs development is very positive from the point of view of the branches competitiveness.

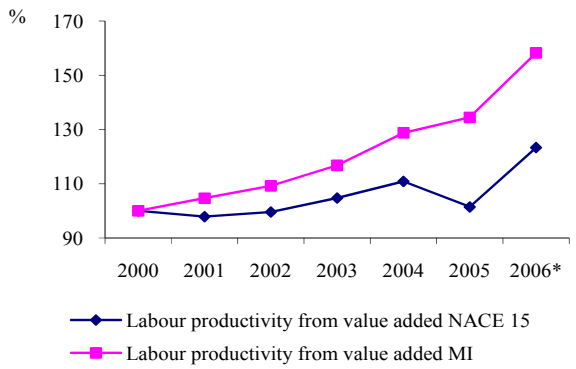


Figure 3. Labour productivity from value added in current prices in 2000–2006

*preliminary data
Source: CSO, MIT, own estimation

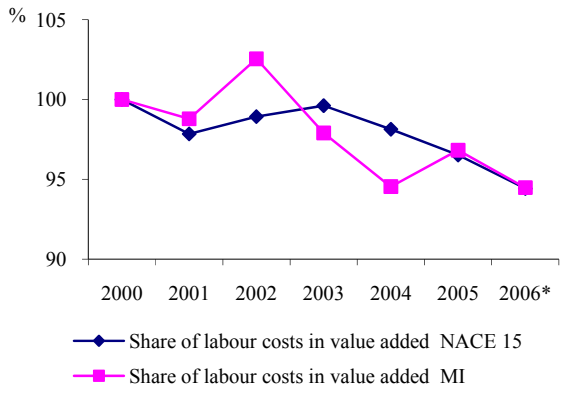


Figure 4. Share of labour costs in value added in current prices in 2000–2006

*preliminary data
Source: CSO, MIT, own estimation

CONCLUSIONS

The analysis of the Czech food sector presents strong as well as weak sides. The position of food industry seams to be weak in comparison with other sectors of manufacturing industry. The consumption of food products is limited. Buyers would begin to prefer in future the specialized food products aimed at different consumers groups. Any marked fluctuations in the development of main economic indicators are documented.

The future development of Czech food industry will depend also on the efficiency of utilization of various support forms as are the structural funds and other financial resources. The progressive tendency of labour productivity form value added in the monitored sector accelerated and simultaneously the share of labour costs in value added dropped. This development trend could be regarded as a positive feature from the point of view of the competitiveness of Czech food industry.

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