Factors influencing intensity of competition in the Czech dairy industry

Faktory ovlivňující intenzitu konkurence v odvětví mlékárenství ČR

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Abstract: The paper is a part of solution of the research plan of the FBE MUAF in Brno, No. GAMSM 431100007, and it is focused on analysis of factors influencing intensity of competition fight among the existing firms in the Czech dairy industry – describing their actual situation and their possible development in the future relating to the expected integration of the Czech Republic into the European Union. All analysed factors are important and significantly intensify competition fight among the existing firms in the industry. The level of concentration is low – 16% of businesses in the industry control 60% of market, but almost 30% of businesses in the industry have only 3% share in the market, growth of the industry is slow – about 5% annually, and barriers of exit from the industry are significant. Situation of the next four factors (level of fixed and storage costs, product differentiation and switching costs, size of capacity augmentation, diversity of competitors) is similar.

Key words: dairy industry, branch, competition, competitive force, concentration, growth rate, exit barriers

Abstrakt: Příspěvek, který je součástí řešení výzkumného záměru PEF MZLU v Brně GAMSM 431100007, je zaměřen na analýzu faktorů ovlivňující intenzitu konkurenčního boje mezi stávajícími firmami v odvětví mlékárenského průmyslu v České republice. A to z hlediska jejich současného stavu i jejich možného budoucího vývoje v souvislosti s očekávaným vstupem ČR do EU. Všechny zkoumané faktory jsou významné a výrazně posilují intenzitu konkurenčního boje uvnitř odvětví. Koncentrace odvětví je nízká – 16 % podniků v odvětví ovládá 60 % trhu, ale téměř třetina firem v odvětví má pouze 3 % podíl na trhu, dynamika růstu trhu je malá – do 5 % ročně, bariéry výstupu z odvětví značné. Podobná situace existuje i u dalších čtyř zkoumaných faktorů (výše fixních a skladovacích nákladů, diferenciace produkce a přechodové náklady, rozšiřování kapacity ve velkých přírůstcích, různorodost konkurence).

Klíčová slova: mlékárenský průmysl, odvětví, konkurence, konkurenční síla, koncentrace, dynamika růstu, bariéry výstupu

INTRODUCTION

The purpose of the research plan of the FBE MUAF in Brno is to analyse position and adaptation of businesses in the food sector and development trends of competitive environment.

Dairy industry represents a very important part of the food sector. Milk and milk products cannot be substituted in human nutrition. This industry is important from the point of view of agricultural policy and also of foreign agricultural trade.

The Czech Republic prepares intensively for the integration into the European Union now. The integration brings important changes for all industries in the national economy. With opening of the Czech market, the competition pressure from the EU countries will rise. The ability of Czech businesses to stand this pressure will depend not only on their competitive ability but also on the structure of the whole industry. For the evaluation of position of Czech businesses in the dairy industry at the time of integration into the EU, it is necessary to know the situation and competitive environment in this industry.

SURVEY OF LITERATURE AND METHOD

The analysis comes from the Porter's diagram of five competitive forces in an industry. According to Porter, five competitive forces exist in each industry and they together determine the intensity of industry competition and industry profitability. Competing sellers are the first force and they affect environment of every industry.

In the formation of industry competition, different influences are important. Different competitive forces have

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the key influence in each industry and different economic and technical characteristics of an industry are decisive for the intensity of each competitive pressure. There are two reasons of rivalry among competing sellers: One or more competitors feel pressure, or they see an opportunity of improvement of their position. Seven factors influence the intensity of rivalry among competing sellers – industry concentration rate, industry growth rate, exit barriers, level of fixed and storage costs, product differentiation and switching costs, size of capacity augmentation, and diversity of competitors.

If an industry is highly concentrated or controlled by one or a few businesses, they rarely make mistakes in the evaluation of their own power and leading businesses are able to establish discipline. The intensity of rivalry is going down with the high industry concentration rate (Porter 1994).

If an industry growth rate is low, competition is concentrated into the market share rivalry for businesses, which make efforts for expansion (Porter 1994).

Exit barriers are economic, strategic, and emotional factors, which force competing businesses into competition in the industry even though the invested capital yield can be very low or even negative (Porter 1994).

High fixed costs push on all businesses to maximize production capacity utilization. It often leads to rapid reduction of prices if a capacity surplus exists in an industry (Porter 1994).

Product differentiation creates an isolation from competitors. Customers prefer specific sellers and keep loyal (Porter 1994).

If economies of scale depend on building new capacities in jumps, it can have destructive influence on the equilibrium between supply and demand mainly in the situation, when the threat exists, that the expansion of capacity accumulates (Porter 1994).

Competitors can come across each other, if they differ in strategies, origin, economic force, and relation to their mother companies. Proper strategic choice for one business could be unacceptable for another (Porter 1994).

All factors are characterized and specified for the dairy industry in the Czech Republic and analyzed from the point of view of their present and future development and their influence on the intensity of competition fight among competing sellers in the industry and also their influence on industry profitability. The analysis of factors development in the future is done with respect to the expected integration of the Czech Republic into the European Union.

RESULTS AND DISCUSSION

Industry concentration

Dairy industry in the Czech Republic went through big changes during the 90ies of the 20th century. These changes influenced concentration rate of this industry. The development went from a totally concentrated industry in 1989, through an almost fragmented industry in 1995, to a partly concentrated industry in 2000.

In 1989, seven regional concerns controlled the industry. After their disintegration in the first half of the 90ies, 90 independent businesses came to existence. Only Jihočeské mlékárny inc., České Budějovice, continued in the original undivided form and with six factories they are the biggest business in the current market. Other businesses decomposed to minor units, often to particular factories with a very small market share. This trend has proceeded till 1995. In the second half of the 90, the opposite trend started. Decomposition of businesses

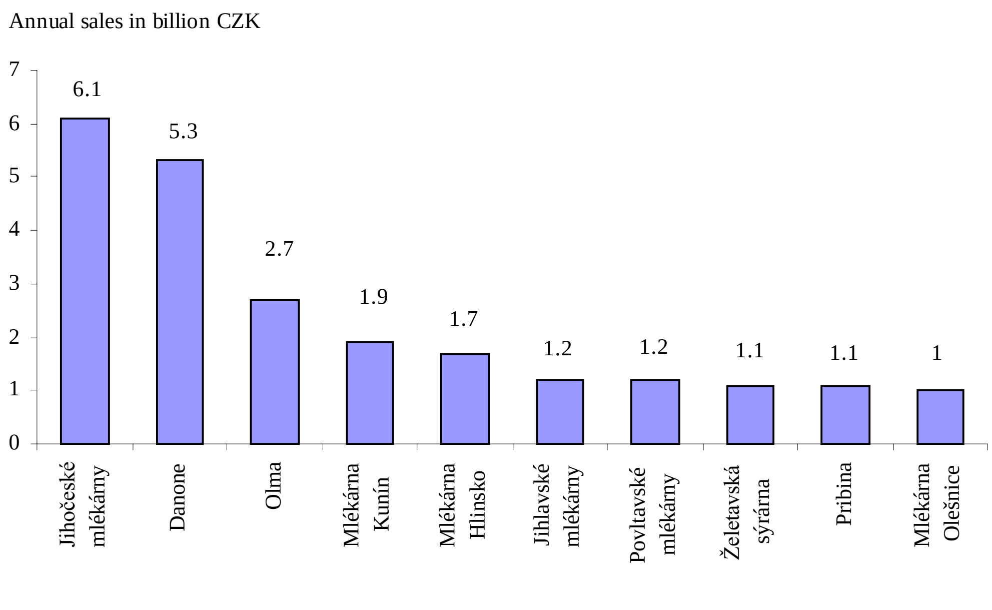

Figure 1: The biggest dairies by annual sales (in billion CZK, year 2000)

Source: Albertina; own calculations

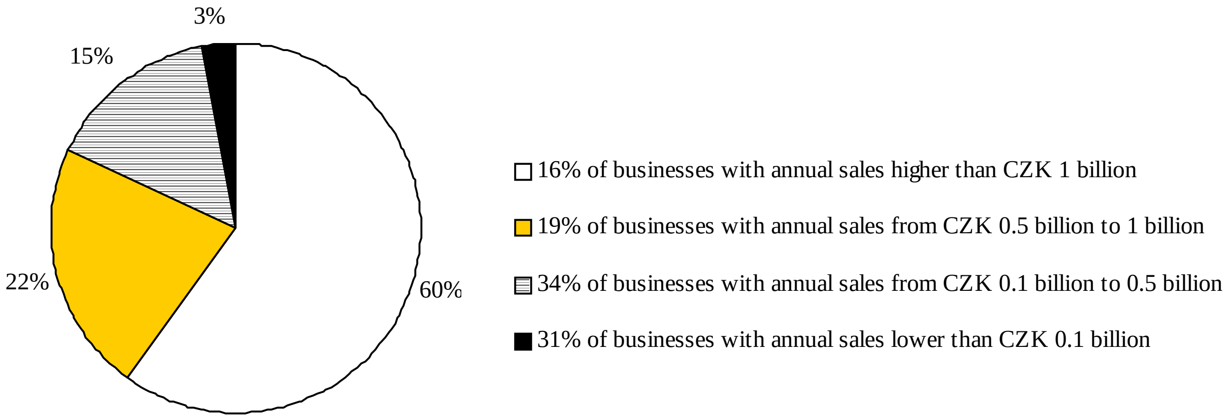

Figure 2: Division of the market share in the Czech Dairy industry (year 2000)

Source: Albertina; own calculations

stopped, and concentration process started again. This period is characteristic by foreign capital entries into Czech dairies and high decrease of number of businesses in the industry. (Till the year 2000, the number of businesses decreased almost by 30%.) It happened not only as a result of the repeated integration of businesses into bigger units, but also as a result of a demise of many businesses, which got into critical situation and did not successfully manage this situation.

As an example, we can consider the situation in South Moravia. From the only state enterprise LACRUM Brno, 27 independent businesses arose within five years after 1989. Only 19 businesses existed in 2000, 3 of which cooperated with foreign strategic partners.

The dairy industry in the Czech Republic is currently a partly concentrated industry. Group of big businesses with major market share (Figure 1) but also very numerous group of small businesses with minor market share exist in the industry.

In the year 2000, ten biggest businesses – 16% of firms in the industry, each firm with annual sales over 1billion CZK – had the total annual sales of CZK 23 billion, which is almost 60% of the market. Twelve businesses (19% of firms in the industry) with annual sales from CZK 500 million to 1billion controlled about 22% of the market. Next 34% of businesses, each business with annual sales from CZK 100 million to 500 million, had 15% in the market. The remaining 31% of businesses (annual sales of each business lower than CZK 100 million) controlled only about 3% of the market. This situation is described in Figure 2.

The present level of industry concentration intensifies the rivalry among competing sellers in the Czech milk-processing industry and cuts down the industry profitability.

But the process of concentration and bankruptcy of unprofitable businesses continues permanently. An example can be the development between the years 1999 and 2000. The market share of ten biggest businesses in the industry increased from 55% in 1999 to 60% in 2000 – at the expense of smaller businesses. Three dairies became bankrupt during the year 2000.

It is possible to expect further continuation of concentration in the future. More bankruptcies of smaller and less profitable dairies will happen with the integration of the Czech Republic into the European Union. These will be dairies, which will not be able to survive in the competition of increased imports after market opening and of entrance of new foreign subjects in the Czech market. We can expect further integration into larger units and entrance of foreign capital into the Czech dairies. This development will lead to growth of the industry concentration level, which will contribute to decrease of rivalry intensity and from this point of view to improvement of position of businesses, which will be able to survive in the industry after the integration of the Czech Republic into the EU.

Industry growth rate

Liberalization of prices and decrease of purchasing power of inhabitants accompanied by a change of consumer preferences and nutrition habits projected into a rapid decrease of milk products consumption at the beginning of the 90. As a consequence of this fact, the market with milk products began to go down. From 1990 till 1995, annual decline was from 5 to 11%. (In 1995 the total consumption of milk products was only 71.5% of the consumption in 1989.) The negative development trend turned over in 1996. From this year, there is a slow annual growth of about 5% (except 1997, when a slight decline occurred again).

The excessive supply also intensifies the influence of this factor on the rivalry among competing sellers. In spite of the rapid decrease of production in the first half of the 90, the production of milk and milk products was 255.1 kg per inhabitant in the year 2000. It was still about

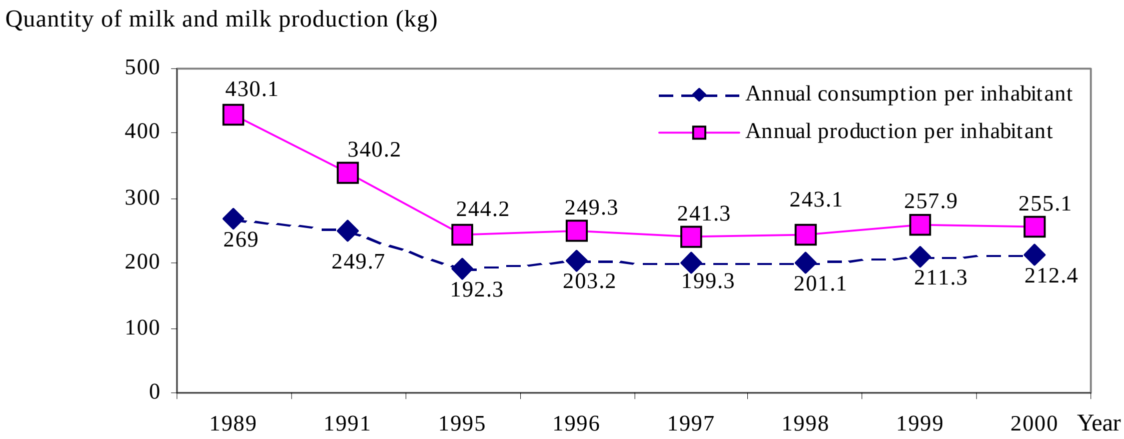

Figure 3. Development of annual average Production and Consumption per inhabitant in 1989–2000

Source: Statistical Year book of the Czech Republic 2001

22% more than the consumption per inhabitant in this year (Figure 3).

Foreign trade partly reduces the high difference between domestic consumption and production. Milk and milk products have active balance as one of few commodities of foreign agrarian trade. In 2000, this balance was CZK 4.6 billion, which is about 20% of the domestic consumption.

We can say, that the dairy industry in the Czech Republic is the industry in mature stage. The industry growths slowly, excess of production over consumption exists and it of course intensifies rivalry among competing sellers. This factor considerably increases competitive fight in the industry at present and it decreases industry profitability.

It is not possible to expect any improvement in development of industry growth rate of the Czech milk-processing industry after the integration of the Czech Republic into the European Union. Excessive production also exists in the EU countries and this excess is also placed with the help of export subsidies in markets out of the European Union. The domestic consumption should go slowly up according to the forecasts of the Czech Ministry of Agriculture, though. The effort is to increase annual consumption of milk and milk products to 230 kg per inhabitant with the help of application of actions for increasing the domestic consumption.

Exit barriers

Exit barriers in the dairy industry of the Czech Republic are mostly based on the specialized equipment, which cannot be used for anything else. Relatively high capital demands strengthen exit barriers too. Capital demands in the dairy industry are about 40% (measured by the share of annual sales in liabilities). This fact forces businesses to stay in the industry at all costs and to continue in competition fight. It is the reason for existence of many businesses of a different size in the Czech dairy industry, in spite of a relatively low average return of invested capital – about 5% (measured by the share of liabilities on operational profit) and unused capacity in the industry.

Exit barriers also intensify rivalry among competing sellers.

The influence of this factor will not change with the integration of the Czech Republic into the European Union. Highly specialized milk-processing technologies, which are not useful in any other industry, will work as an important exit barrier in the future too.

Level of fixed and storage costs

The decisive characteristic for the determination of the level of fixed costs (from the point of view of their influence on intensity of competition fight in the industry) is the share of fixed costs (depreciations, part of staff costs, and financial costs) in value added. This share is about 70% in the dairy industry, which is very high. The reason of this situation does not lay in too high total fixed costs but in a very low value added (it is only 10% of the total output). Businesses in the Czech dairy industry have high level of costs of external inputs – the price of inputs is almost 80% of total costs. It means, that gross margin is low. Businesses feel a strong pressure to maximize capacity utilization so that they are not in loss.

Figure 4 represents in a simplified form the share of value added, fixed and variable costs in outputs in the dairy industry in the Czech Republic.

Storage costs in the milk-processing industry are not too high. However, milk and milk products cannot be stored for a long time, a great emphasis is put on their freshness. It is necessary to sell these products soon, and therefore businesses pursue to promote sales also with the help of temporary reduction of prices.

The effect of this factor significantly intensifies rivalry among competing sellers again and pushes down the industry profitability.

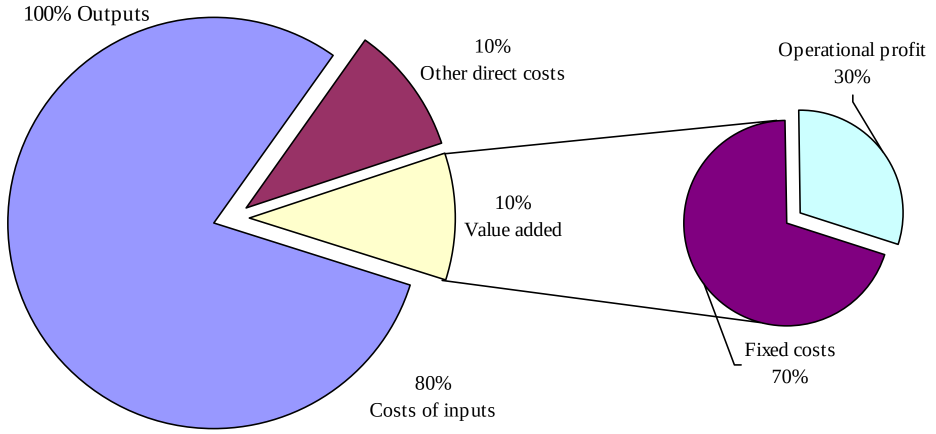

Figure 4: Distribution of outputs in the Milk-processing industry in the Czech Republic

Source: Albertina; own calculation

It is possible to expect growth of value added after the integration of the Czech Republic into the EU (prices of milk and milk products will be going up). But whether this growth will lead to a decrease of the fixed costs level and to reduction of intensity of competition in the industry will depend on the dynamics of fixed costs level in the industry (if and how fast fixed costs will be going up together with the value added).

The situation should not change in storage costs.

Product differentiation and switching costs

Product differentiation is low and different according to the type of product in the industry. In specific products there appears loyalty of consumers to brand name - for example in yoghurts or some kinds of cheeses. It is promoted by massive advertising campaigns. But only foreign firms or firms with foreign capital participation can afford these campaigns (Želetavské sýrárny, Danone, Pribina, Zott etc.). In other kinds of products, consumers follow mainly the price – for example in butter or milk.

There are no switching costs in this industry.

The situation of this factor intensifies competitive fight in the industry at present. Growth of the pressure of advertising campaigns, further growth of differences in packaging, and preferences of brand names are expected in the future. But no significant changes of this factor's influence on the intensity of competitive fight in this industry can be expected.

Size of capacity augmentation

Economies of scale are achievable only by building new capacities in jumps in the Czech dairy industry. It coheres mainly with specialized equipment, which is used for production of milk and milk products. Owing to the excessive capacity in the industry at present, this factor applies as an important element intensifying the rivalry among competing sellers.

The influence of this factor will not change after the integration of the Czech Republic into the European Union. Excessive supply over demand is expected in the following period too and the possibility to reach of economies of scale will not change with development of new technologies, as well.

Diversity of competitors

The source of competitors' difference in the Czech dairy industry lies in the competitive range. Only the large businesses operate on the state-wide level, small firms serve mainly their regional markets. The competition fight is therefore necessary to be distinguished on two levels – national and regional.

The firms are different in their production too. Only Jihočeské mlékárny and Olma Olomouc produce the complete assortment of milk products, medium size and small dairies specialize in production of a few kinds of products or of one product (for example Zamilk Choceň focuses on production of spread butter, Mlékárna Varnsdorf on production of Swiss cheeses, etc.).

Other element is foreign capital, which is also the reason of the competitors' difference. Businesses with foreign capital participation have more funds for competition fight. They can afford to spend more money on advertising; they have better possibilities for renovation and for buying technologies.

All three aspects lead to different goals, different methods of competition, and different strategies of businesses in the monitored industry. It can be difficult for them to estimate each other's plans and come to certain rules of competition within the industry. The intensity of competition in the industry is increased from this point of view.

It is possible to expect, that the influence of this factor will grow in the future. We can expect higher diversity of competitors within the industry after the opening of the Czech market with the integration of the Czech Republic into the European Union.

CONCLUSION

All examined factors intensify rivalry among competing sellers in the dairy industry of the Czech Republic. Competition fight is high and profitability is low in the industry. The main reason, why businesses are very intensive in competition in the Czech dairy industry, is mainly the pressure that businesses feel as a result of unfavourable character of each factor.

The industry concentration level is low in spite of existence of a few big national firms. High rivalry exists also in the group of the biggest businesses, which have strong position in the market. Intensive competitive fight goes on between two nationwide operating dairies, which produce the complete assortment of milk products – between Jihočeské mlékárny inc., České Budějovice, and Olma inc., Olomouc (Danone specializes in production of yoghurts). Competitive fight among smaller businesses takes place on the regional level.

The industry growth rate is also low in the Czech dairy industry. The effect of this factor is influenced by the stage of the life cycle of this industry – dairy industry in the Czech Republic is an industry in the mature stage, with an excess of supply over demand. Businesses focus on sales of all their production in the market. Owing to the permanent excess of production over consumption, there proceeds an intensive fight for a market share.

Exit barriers are high. High capital requirements and specialized production play important part in this case too.

The level of fixed costs forces businesses to utilise their production capacity so as not to get into a loss. Product differentiation is low. Further capacity augmentation is possible only in jumps. Diversity of competitors based mainly on the competition range, supply assortment, and foreign capital also intensifies competition fight in the industry.

All factors can change and develop in the future. With these changes the situation and rivalry in the industry will change too.

But also development of the monitored factors is not positive with the expected integration of the Czech Republic into the European Union from the point of view of intensity of rivalry among competing sellers in the Czech dairy industry. Only the situation in the industry concentration level should improve in the future, the influence of other factors, on the other hand, will intensify the competitive fight among the existing firms in the industry.

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