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Abstract

Purpose – The purpose of this paper is to analyse time-series change of the competitiveness of leading companies of the sector based on their financial position regarding the period of financial crisis.

Design/methodology/approach – First, high level of revenue concentration was proved; consequently, strong competitive situation among few competitors was realised. Corporations having three common features (high amount of equity, high revenue and diversified product structure) were included in the sample. As the methodological background financial parameters were assigned to the definition of corporate competitiveness, and then comparative and comprehensive financial analysis of competitors was accomplished. Using relevant studies, liquidity based on balance sheets and cash flow statements, working capital processes, conventional and cash-flow based profitability were analysed.

Findings – It was proved that sample companies continuously improved the efficiency of working capital management indicated by the decrease of the average cash conversion cycle from 45 to 23 days. It was realised that there is a Hungarian-owned firm having outstanding financial performance; consequently, it has significant position among competitors. This company has further opportunity to increase its market share and competitiveness in the future. Finally, important characteristics of the sector were identified concerning the low level of technological improvements (the average ratio was below 3 per cent of the revenue), and unfavourable profitability processes.

Originality/value – In this paper, a separate analytic framework is established in view of the application of financial indicators to analyse competitiveness. This kind of analysis was not executed before in this sector.

Keywords Working capital management, Competitiveness, Dairy industry, Financial position, Long-term growth

Paper type Research paper

Background of analysis and general research aims

This study has been conducted to analyse the competitiveness of leading milk-processing companies operating in Hungary, based on their financial positions. The dairy industry has been selected for this investigation in view of its role in the national economy and, on the other hand, with respect to the sharp competition in the sector and the associated analytic potentials, points of interest.

The analysis has been designed to describe the macroeconomic background of the segment, reveal the key operating characteristics of the leading actors of the Hungarian dairy industry, while, after the comparative overview of the technical literature relating to competitiveness, certain parameters of financial measurement have been assigned to the turnover criteria of competitiveness. With the use of the methodology that we have developed with reliance on the application of financial indicators, we analyse relative

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changes in the market positions of competing companies in the time interval after the economic crisis.

The role of the dairy industry can be illustrated by presenting figures for production output, gross added-values and employment in relation to the entire agribusiness or the food-processing subsector.

According to the most recent report of the Ministry (Ministry of Rural Development, MRD, 2012) based on the data of the Central Statistical Office of Hungary and the Research Institute of Agricultural Economy, it can be claimed that, in the period under review, all the aforementioned indicators moderately increased (MRD, 2012, p. 4). The current percentage rate belonging to this sector in the national economy was the highest for output (16 per cent), yet it reflected significant weights in both gross added value and employment (12 and 15.5 per cent, respectively), as well. The report suggests that approximately 30 per cent of the total output of agribusiness originates from food-processing activities. In the light of the most recent figures, the ratio of investments implemented in food processing to the overall investment value in the national economy is 2.5 per cent. The role of food industry can be measured in view of household expenditure, too. In recent years, the average spending on food, beverages and tobacco products has been 24 per cent of the domestic consumption expenditure (MRD, 2012, p. 5). This dominant role of the industry is further underlined by its export share reaching up to 10 per cent.

The importance of processing in the national economy is also underlined by the associated researches and publications from time to time. Focusing on the sector, notable studies have been conducted for decades now, while the research results are outstanding and diverse (Ferto˝ and Mohácsi, 1997; Varga, 2006; Kapronczai, 2011). Similarly to Kapronczai's study, the impacts of the European integration have been examined in Csáki and Jámbor's (2012) publication. The analysis describes how the accession affected the agriculture of the 12 Member States that joined the European Union (EU) in 2004 and 2007. The authors discussed the measurement of varied agricultural performances, the analysis of changes in the producer prices and incomes, while examining the positive and negative outcomes of the accession in the light of the agricultural policy before and after joining the Union, in association with the special standing of food-processing companies. Ferto˝ and Tóth (2012) describe the particular characteristics of market relations and food industry innovation, their potential collections in their comprehensive volume of studies covering several professional fields. Ferto˝ and Forgács (2012) analyse the potentials of growth in sales for the companies of Hungarian food retail chains on the basis of the following independent variables:

- experience of managers;
- higher education qualification;
- corporate size;
- qualified workforce;
- own funding;
- age of the company; and
- export and information channels.

Within food processing, it is reasonable to study the significance of milk processing and the competitiveness of the companies operating in dairy industry as a subdivision. The report of the Ministry compiled with the use of data from Central Statistical Office of Hungary (MRD, 2012) reveals that the share of the dairy industry from the total production value of the food industry was 11, 9.5 and 9 per cent at current prices in 2008, 2011 and 2012, respectively. The average export rate of the dairy sector in 2012 was 15.7 per cent, which made up 40 per cent of the export rate of the entire food industry.

In the sales revenue list of leading Hungarian companies in 2011 and 2012, the number of companies with the manufacturing of dairy products being their core activity makes up approximately 10 per cent of the leading companies in food processing (HVG, 2013a, p. 45, 2013b). Another fact, however, is that, while in terms of sales revenues there were four to five dairy companies among the 500 top-ranking entities, only one of these companies could be found in the list based on profit after taxes (HVG, 2013, p. 46, 2013b). This initial point of interest also underscores the importance of the analysis of competitiveness for dairy companies on the basis of their financial standings. Another issue for studying is whether a company taking a leading role in the sector in terms of sales revenues and profitability is able to create value in the long term.

The studies of Popp *et al.* are remarkable examples of specialised scientific publications with a focus on the particular characteristics of the Hungarian dairy sector as a whole and milk processing, the micro- and macroeconomic environment of the companies of the sector, as well as the specific features of the business operations of the dairy industry companies. Among others, it is the 2011 work of Gorton and Guba (2001), as well as the 2004 publication of Popp *et al.* (2004) that Vágó (2005) references in his study published in 2005 for the analysis of foreseeable trends in the Hungary dairy market. This study quotes Kartali (2004) when shedding light on the concentration in the domestic milk-processing industry, illustrated by the company-level ratios of sales revenues.

Popp *et al.*'s (2009) study summarises the potentials to improve competitive chances in the Hungarian food industry. The authors dedicate a separate chapter to the discussion of problems in the dairy sector and its characteristics. In contrast with the earlier behaviour preferring the increase of market shares, this latter study pinpoints the goal of enhancing profitability as the current trend of corporate strategy that surfaces alongside aspirations to clean up the operating profile, achieve more efficient capacity utilisation, drive product development, packaging and packing objectives. When looking at product innovation and the technological background, the authors emphasise the lag behind European competitors (Popp *et al.*, 2009).

A study published by Popp *et al.* (2010) examined the weakening of the competitive position of the entire dairy sector and the causes of the associated processes. After a detailed overview of the Hungarian dairy market, the foreign trade structure of milk and dairy products, the analysis describes the potential effects of the gradual increase of the milk quota. In association with processing companies, the authors emphasise the high degree of concentration among the companies.

The extent of sales revenue concentration and the sharpness of market competition are also clearly demonstrated by the sample of business entities used for the purposes of the study.

With reliance on the Opten corporate information database, it can be suggested that since 2010, there have continuously been more than 100 companies with core activities

described as "manufacturing of dairy products" in Hungary, and approximately 30 of these entities have sales revenues consistently over HUF 100 million. On the other hand, the authorised (registered) capitals of just 15 companies exceed HUF 250 million When examining authorised capital and the level of sales revenues in a combined manner, a high level of market concentration can be found for the recent years as well (Table I).

It is apparent that the sales revenues realised by the 15 companies with the largest authorised capitals make up 80 per cent of the total sales revenues of the sector on the average in the examined years. The analysis of the five companies with the largest sales revenues shows that this group has approximately 70 per cent share from the sales revenues of the entire sample.

A further important point of the analysis has been that the companies in the examined sample can be considered to be each other's competitors, and therefore the respective product structures have also been taken into consideration. Companies with diversified product structures, high levels of authorised capitals and sales revenues have been selected. Seven companies fulfilled all the three criteria, but one of them did not submit its 2013 annual report due to its insolvency. The sales revenues of the remaining six companies have reflected an approximately 50 per cent share both from the entire sample and the leading 15 companies.

According to the presented data, the high-level concentration in the market can still be justified. Consequently, the analysis of the sharp competitive situation also needs to be assessed.

Selection of the sample and the questions of the research

The sectoral sales revenue concentration evidenced above can be confirmed by detailed figures. We intend to present the sales revenue figures of the companies having large amounts of authorised capitals and realising outstanding turnovers for the past three years and determine the composition of the analysed sample of companies. The research goals are defined in the light of the economic characteristics of the companies' business operations in association with the economic crisis.

Table II details the sales revenues, product structures and ownerships of the companies that have authorised capitals in excess of HUF 250 million, and defines the "manufacturing of dairy products", as their core activity (these companies are designated by the initials of their names and their ranking has been established on the basis of their average turnovers).

Criteria of analysis/sales revenues	2011	2012	2013
1. Entire sample	249	267	275
2. Companies with authorised capitals over HUF 250 million (15 companies)	209	218	220
Concentration II/I (%)	83.9	83.2	80.0
3. Top companies on the basis of sales revenues (5 companies)	146	150	154
Concentration III/II (%)	70.1	68.9	69.8
4. Top companies on the basis of sales revenues, featuring diversified product structures (6 companies)	113	119	129
Concentration IV/II (%)	54.0	54.5	58.5
Concentration IV/I (%)	45.4	44.6	46.8

Source: Own calculation on the basis of the data of the Opten corporate information system

Table I. Degree of concentration of sales revenues in the Hungarian dairy industry (Unit: HUF billion)

Table II.
Leading Hungarian milk processing companies: sales revenues, product structure and ownership (Unit: HUF million)

Sample	Companies	2010	2011	2012	2013	Average	Activities	Ownership
1	***SM***	***37,247***	***35,861***	***40,147***	***42,425***	***38,920***	***Diversified***	***Mixed***
	AT	33,630	31,876	32,667	35,336	35,336	Diversified	Producer
2	***FR***	***29,416***	***28,740***	***26,329***	***25,234***	***27,430***	***Diversified***	***Foreign***
	DN	28,976	28,934	27,654	24,022	27,397	Yogurts	Foreign
3	***TT***	***17,046***	***21,068***	***23,442***	***26,768***	***22,081***	***Diversified***	***Hungarian***
	KT	15,527	15,825	18,630	17,400	16,846	Cheeses	Mixed
4	***PT***	***12,727***	***15,558***	***16,634***	***18,901***	***15,955***	***Diversified***	***Foreign***
5	***NT***	***6,520***	***7,959***	***8,486***	***10,602***	***8,392***	***Diversified***	***Hungarian***
	MN	7,581	7,070	7,794	–	–	Diversified	Hungarian
	ÓT	5,985	6,143	5,728	4,861	5,679	Cheeses	Foreign
6	***NU***	***3,273***	***3,459***	***3,984***	***4,957***	***3,918***	***Diversified***	***Hungarian***
	DR	2,289	2,867	2,400	1,841	2,349	Diversified	Mixed
	BK	1,229	1,504	1,489	1,426	1,412	Diversified	Hungarian
	ER	2,028	1,522	1,333	1,301	1,546	Cheeses	Foreign
	HN	404	1,084	1,208	1,087	946	Diversified	Mixed
Total sales revenues		203,884	209,477	217,933	216,162			

Note: Bold and italic letters mark the companies analysed in the paper
Source: Own compilation on the basis of Opten system and e-beszamolo.kim.gov.hu data

The sample used for the analysis has involved those six companies with diversified product structures whose levels of sales revenues exceeded the annual level of HUF 3 billion on a permanent basis. It is to be pointed out that the sample consists of one company of mixed ownership, two entities with foreign owners and three fully Hungarian-owned companies; therefore, our research has also encompassed the examination of the self-sustenance of companies with Hungarian ownership in an international competitive environment and their ability to maintain their financial positions. On the other hand, the ignorance of the company with the second highest level of sales revenues calls for some explanation. The market position of this company has been regarded to be special: on the one hand, it is the only group that are owned by producers (120 members), and, on the other hand, its products are principally milk, milk drinks and sour creams, a diversified (though consistently broadening) product family that still covers a much smaller product range than those of the other selected companies.

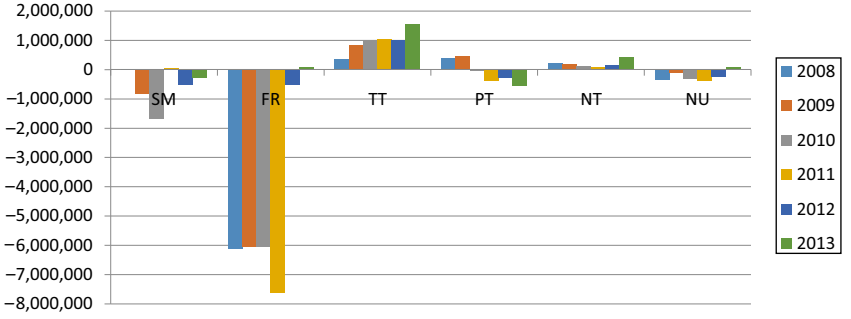
The additionally important aspects of the business operations of the companies belonging to the sample are further detailed in Figures 1 and 2. These figures summarise the companies' information for the profit after taxes and operating cash flow in 2008-2013.

The profitability of the analysed companies has been very poor. In the period under review, only one company (TT) was able to reach up to a positive level and, at the same time, realise a growing trend in terms of both the operating profit and the profit after taxes. This fact, however, raises doubts about an earlier finding of Popp *et al.* (2009), suggesting that milk-processing companies – in contrast with their past behaviour preferring the increase of their market shares – tend to follow profit-increasing goals as their current trend of corporate strategy. This statement is questionable, also because with the exception of one company the dominant market actors chosen for the sample were able to increase their sales revenues according to the figures presented in Table II.

Consequently, it is important to analyse the cash-generating capacities of these enterprises, for which purpose the operating cash flow (OCF) data have been reviewed (Figure 2). Non-profitable or sometimes loss-making operations do not cause too serious problems, in case, during the business year, the balance of cash (net operative cash amount of the year) realised on all the economic events that are associated with the operations (cash inflow) and the actually outflowing cash (cash outflow from operation) shows a sufficiently positive value or even grow during the studied time interval.

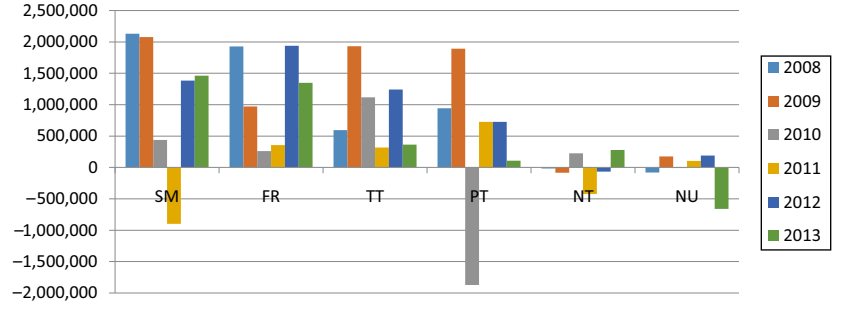
Figure 2 shows that operating cash flow data along the timeline highly fluctuate, but, in general, they tend to be more favourable than profit values. Permanently positive and outstanding values belong to the FR and TT companies, whereas SM and PT realise acceptable levels on the average. When these companies are analysed in more details – by comparing the operating cash flow with the values of liabilities – this rate can be regarded as appropriate solely for TT: this company has the highest average value with the lowest level of standard deviation (Table III).

In general, it can be claimed that with respect to their various levels of profits and cash-generating capabilities from operations the companies belonging to the sample cannot boast of any favourable situation. This finding can be further confirmed on the basis of Table III, with the acceptable values for FR and PT. In all the three cases, the values of the TT firm can be considered as more favourable in comparison with the data



Source: Own compilation on the basis of the annual reports (data in HUF thousand)

Figure 1.
Changes in the profits after taxes for the companies belonging to the sample in 2008-2013



Source: Own compilation on the basis of the annual reports (data in HUF thousand)

Figure 2.
Changes in the operating cash flow of the companies belonging to the sample in 2008-2013

of the competitors. Nevertheless, the overview of the key economic data over the timescale still does not reflect a perfect view of competitiveness.

In consequence, our further research has been arranged to answer the following main question:

RQ1. How can changes of corporate competitiveness be described in the period after the economic crisis in the studied industry, in the light of changes in the financial positions of leading companies?

The main research question is first examined on the basis of the financial parameters associated with the definition of corporate competitiveness. For this purpose, the first step is to prove that directly or indirectly corporate competitiveness studies involve a financial dimension and consequently the need for measuring. The second step has the goal to determine the parameters of analysis. Then, in the second phase of the research, the comparative situations of the companies belonging to the sample are analysed on the basis of the financial indicators as well. Liquidity, working capital management and profitability data are studied. On the basis of the indicator analysis, it is proved that the only company that is listed among the 500 top ranks with respect to sales revenues and profits (TT) performs outstandingly in comparison with the competitors on the basis of the comprehensive valuation of financial ratios.

Methodology and results of the analysis

In the first step, it is necessary to make a summary of the literary background relating to corporate competitiveness. Initially, the theoretical results are used to perform the comparison of a simpler set of financial data compiled with respect to the definition of corporate competitiveness, and then a separate analytic framework is established in view of the application of financial indicators. For the final evaluation, the common results of the two methods are utilised.

Competitiveness research

The majority of researches and studies relating to competitiveness do not focus on corporate competitiveness that we have intended to investigate in details, but rather take a macro-economic perspective (with general economic approach) and concentrate on the competitiveness of national economies or countries, regions or other territorial units. According to Somogyi (2009a), in this field, the works of Adam Smith, Ricardo, Heckscher and Ohlin need to be noted, as they interpreted competitiveness in relation to

Table III.
Changes in the OCF/Debt values for the companies belonging to the sample in 2008-2013

OCF/Debt	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)	Average (%)	SD (%)
SM	14	16	3	−7	9	9	7	8
FR	12	6	2	2	68	50	23	29
TT	**35**	**79**	**42**	**11**	**34**	**10**	**35**	**25**
PT	80	69	−103	48	28	3	21	67
NT	−4	−18	19	−38	−7	11	−6	21
NU	−10	18	−1	6	9	−45	−4	22

Note: Bold data are the data of the outstanding company based on the results
Source: Own compilation on the basis of the annual reports

and found correlations with national economies, with the use of concepts such as absolute advantage, then comparative advantage and, finally, factor endowments. Similarly, Aiginger defined competitiveness on the macro-economic level, and the associated definition of the World Economic Forum also relies on this dimension. The school established by Porter (1985, 1986, 1990a, 1998 in Czakó, 2000 and Porter, 1979; 1990b; 2001; 2008 in Márkus, 2011) emphasises the importance of sectoral and management-oriented competitiveness analyses – with a focus on productivity in the early works, and then exposing competitive advantages against competitors – and refines the related theoretical approaches.

The first to make an attempt to combine competitiveness on the corporate – sectoral – national economic level was Czakó (2000) along the four specific factors of competitiveness (conditions of efficient long-term operation, most important groups concerned, entities assuming the highest risks, in comparison to whom or what). The business management approach she applied forms the basis of the corporate, micro-level, theoretical and practical competitiveness studies used in the further parts of this investigation. According to the author (who has relied on the publications of Francis, 1989; Caves, 1982; Scott and Lodge, 1985 and Török, 1989, 1996 in addition to some other major pieces of the associated literature):

- profitable operation and the ability to change are the essential conditions of long-term efficient operation;
- the company, management and employees are the key stakeholders;
- the owners assume the largest risks; and
- all these aspects are worth being examined by comparing the competing domestic and international companies.

Therefore, it can be understood that the corporate profit, cash flow and return requirements as criteria closely correlated to corporate competitiveness have already been presented/embedded in this work.

Corporate profitability and the financial perspective, as well as the problem of measurability are key components of any further research. According to Pitti (2002), those companies are competitive that are able to contribute to boosting performances on the level of the national economy (in addition to positive and continuously increasing profit), perceive changes and can adapt themselves to the changes, thereby remaining operable in the long term; moreover, they are capable of becoming aligned with consumer demands and even shaping them.

Török (2005) suggests that a company manufacturing competitive products can preserve or improve its favourable competitive position in case its aggregated profit rate and market share are not inferior to the corresponding data of the competitors. To cite a statement made by Gór (2013): "Therefore, competitiveness involves long-term growth, development, the increase or maintenance of the given scale of operations".

To the earlier studies, Chikán and Czakó (2005) have added the criterion of observing the standards of corporate social responsibility, and phrases that:

> This competitiveness is conditioned on the company's ability to perceive changes in its environment and within the company, as well as to adapt itself to them by fulfilling the criteria of market competition more adequately than its competitors in the long term (cited in Somogyi, 2009a).

In its summary evaluation, Somogyi (2009b) highlights the following factors to determine the competitiveness of companies:

- manufacturing and sales of competitive products;
- permanently profitable operations;
- steady or increasing shares in the current markets, obtainment, preservation or extension of market positions in new market segments;
- detection of changes occurring in the external and internal environment, as well as proactive and follow-up responses to them;
- availability of sufficient resources in adequate quality for the fulfilment of participation and profitability requirements; and
- market expansion and market integration intents towards internationalisation.

In the light of the associated literature consulted, it can be evidenced that directly or indirectly all the corporate competitiveness definitions involve a financial dimension and consequently the need for measuring. Along the common, determining points of the collection definitions, the following financial criteria have been highlighted to support our own analysis:

- market share (sales revenues);
- profitability (operating, business profit and profit after taxes);
- permanent, long-term operability (operating cash flow); and
- ability to respond to changes, competitive products, consumer demands, market expansion and market position that is more favourable than those of the competitors (the combination of the above financial criteria with the addition of the extent of developments: investment and development loans, as well as investment cash flow [ICF] values).

Table IV show changes in the values for the companies belonging to the sample and the average values of the sample in connection with the above-described financial parameters, by comparing the average figures of the data sets for the six years of 2008-2013 with the values for 2013 alone. It is to be noted here that the annual changes in the sales revenues, various profit levels and operating cash flow have already been detailed in the above figures; thus, these various pieces of information serve as a combined basis for making the appropriate conclusions.

The sales revenues of the examined companies on the average and in 2013 have not largely differed from each other, a slight increase has been experienced. SM has preserved its market-leading position, FR has lost from its market share, while TT (as the only exception) has been able to achieve large growth in its turnover and market share. The other companies have produced sales revenue levels that belong to/are aligned with the earlier market shares with moderate increases. The average value of the sample reflects a minor rise in turnover (it is presumably the effect of the increase of base material prices that are to be passed over to the prices of products). With respect to profitability, the companies of the sample can be described by poor performance. With the exception of PT, operating profit and the profit after taxes have generally been improving, yet only TT has been able to yield consistently positive values and considerable growth. The average values of the sample are unfavourable, yet it is to be

Company	SM		FR		TT		PT		NT		NU		Sample average	
DATA	Average	2013	Average	2013	Average	201	Average	2013	Average	2013	Average	2013	Average	2013
Sales revenues	39,446	**42,425**	29,192	**25,234**	20,162	**26,768**	14,918	**18,901**	7,500	**10,602**	3,613	**4,957**	19,138	**21,481**
Operating profit	−1,931	**193**	−1,504	**−16**	292	**1,543**	−4	**−547**	−2	**483**	−383	**81**	−547	**289**
Profit after taxes	−542	**−283**	−4,378	**83**	967	**1,540**	−70	**−555**	199	**444**	−223	**80**	−674	**218**
OCF	1,099	**1,463**	1,134	**1,349**	928	**365**	420	**106**	−14	**279**	−46	**−660**	587	**484**
Investment loans	0	**0**	0	**0**	23	**0**	0	**0**	221	**833**	97	**17**	57	**142**
ICF	−883	**−2,561**	−567	**−790**	−756	**−709**	−535	**−683**	−206	**−832**	−108	**−47**	−509	**−937**

Note: Bold data are for highlighting the last examined year
Source: Own calculations on the basis of data from the annual reports

Table IV.
Changes in the values of financial criteria corresponding to the definition of corporate competitiveness in 2008-2013 (Unit: HUF million)

emphasised that the main underlying reason is the distorting effect that the huge losses of the FR company exercise on the average. The average values for OCF are clearly more favourable than the profit figures and consequently the average cash-generating ability of the segment; therefore, long-term operability can be regarded as acceptable. Outstanding OCF levels both on the average and in 2013 belong to the three competitors with the largest market shares (SM, FR and TT). With the exception of NT, the values of investment loans are nearly negligible, and even for that former company, the average value does not exceed 3 per cent of sales revenues or 8 per cent of the turnover in 2013. The average investment cash flow takes values around 2-3 per cent of the averages sales revenues, and, in addition, the 2013 growth of turnover is accompanied by increasing ICF both on the corporate and sectoral levels. However, the small ratio of ICF levels to the turnovers – counting only a few percentages – has remained.

On the whole, it can be ascertained that in view of the financial criteria corresponding to the definition of competitiveness, the sector showed very poor performance with just moderately increasing levels of sales revenues during the analysed time interval. The values of all the parameters relating to the segment improved, and, in addition, there were two companies (SM and NT) that were capable of producing values over the average for all the criteria. In comparison with the average values of the segment, the average figures for SM and TT proved to be outstanding.

Research based on the application of financial indicators

These partial research results direct attention to the detailed examination of the problems and issues associated with the measurement of competitiveness. Still another question relating to this research crops up, i.e. apart from the analysis of the fundamental data corresponding to the definition whether financial indicators can be used to arrive at a deeper and more comprehensive picture of trends in competitiveness and financial standing and if yes, then how and in what a system.

In the associated literature, there are plenty of examples evidencing how the examination of corporate competitiveness can be supported by financial indicators. Even in international literature, a significant, outstanding orientation comprises financial approaches to competitiveness, which is mostly associated with the works of Kaplan and Norton (Márkus, 2011). The associated domestic literature has proposed various methodological approaches:

> Concerning the creation of indicator systems, competitiveness indexes that are suitable for measuring corporate competitiveness, a pioneering work has been the corporate competitiveness index worked out by the Competitiveness Research Centre under the leadership of Attila Chikán (Némethné, 2010).

This Centre's research activities also involved a series of studies in 2004-2006 under the title of Competing with the World, wherein András and Juhász (2005), as well as Demeter and Matyusz, underlined the importance of financial performance analysis with the help of financial indicators for the assessment of competitiveness. The former study uses the various indicators of profit, equity, invested capital and turnover; examines the efficiency of working capital management; and stresses the effect of changes in the free cash flow of companies on value creation. This latter study has:

> […] demonstrated that from among their financial goals the companies prioritised the preservation of liquidity, followed by cost cutting, good solvency and the increase of sales

revenues. The research has unveiled that financially those companies are more successful where the owners' focus is on returns (Demeter and Matyusz, 2006).

Somogyi (2009c) has suggested the introduction of a multi-dimensional measuring system, principally for the assessment of the competitiveness of small- and medium-sized enterprises. The author's Corporate Competitiveness Model index further refines the competitiveness index offered by Márkus *et al.* (2008). These indexes are very well developed, and integrate the key elements of the approaches relating to turnover and financial measurements.

The use of financial indicators for competitiveness-related purposes can be supported by the results of further international publications. Hatzichronoglou (1996) and Depperu and Cerrato (2005) emphasise the measurement of sales revenues and profitability, while Herrmann (2008) has analysed competitive positions by examining liquidity, capital structure and return on equity (ROE). Nokkala *et al.* (2011) has implemented a comparative analysis of corporate valuations in Finnish technical networks with a focus on profitability and capital costs, whereas Droj (2012) has prepared a complex and comprehensive financial analysis in relation to the companies operating in the Hungarian and Romanian counties of the border region.

With reliance on the results of the above-referenced studies, our research has succeeded in setting up an independent framework of analysis. Basically, we relied on the indicator system in the study by Rózsa (2014a) based on the aforementioned studies. The aim of creating this framework was to gain more and more informative results with the help of the selected ratios; therefore, we chose indicators based on the balance sheets, income statements and cash-flow statements as well. From side of consumers, the economic crisis of 2008 primarily impacted sales revenues, profitability and corporate liquidity by deteriorating the association with suppliers was the constraints in business operation that were caused by the continuously rising base material prices, which similarly influenced changes in turnover, profitability and liquidity. From effective demand, on the other hand, the most important negative impact is from the perspective of producers and, on these grounds, we have performed analysis focusing on liquidity, the efficiency of working capital management and profitability.

For the measurement of liquidity based on the study by Rózsa (2014b), the quick ratio, the ratio of liabilities to total assets (i.e. indebtedness), OCF to short-term liabilities and OCF to liabilities have already been examined in Table III above. Changes in the value of the cash conversion cycle have also been studied throughout the time interval of the analysis. We have tried to select indicators that give the widest possible implications to changes in liquidity. Therefore, the listed indicators reflect the prevailing situation in relation to the balance sheet dates, and then with the use of the OCF values we have been able to reveal information that pertain to the periods concerned and, finally, cash conversion cycles have been used to draw conclusions in association with the trends of logistic processes that are connected with working capital management. Cash conversion cycles have been calculated on the basis of the standard definition given by the related literature: inventory turnover in days + accounts receivable turnover in days − accounts payable turnover in days (Fenyves and Tarnóczi, 2011). To investigate profitability, we have opted for the top indicator of the Du Pont correlation, the ROE indicator and its changes over time have been compared with the information on the cash flow return on equity (CROE). Our calculations have applied the internationally

acknowledged formulas of the indicators (Block and Hirt, 1997; Brealey and Myers, 2008; Gallinger and Healey, 1991; Gitman, 2002).

As a result, Table V presents the simple algebraic averages of the corresponding data sets for the companies examined in the framework of the sample (a series of values that have no economic implications, but serve just as points of reference). To minimise the distortions potentially originating from the large differences of corporate data, extreme values have been ignored in the calculation of averages.

In light of the figures presented in the table, liquidity and working capital management are typical of the entire segment of the companies involved in the sample, and with respect to changes in profitability, unambiguous processes emerge. The liquidity measured with the quick ratio has decreased, but has still remained on a normal level. Until 2011, the sectoral rate of indebtedness had been rising consistently, and then it stabilised. The dynamic liquidity data calculated for the given period with the involvement of the operating cash flow had been gradually deteriorating and massively dropping until 2011, and then started to fluctuate. Yet, the data sets for the cash cycle suggest that the above-described, unfavourable liquidity and capital structure tendency exercised a strong effect on the management of supplier–producer–customer relations, efficiently shaping logistic processes. The cash cycle dynamically decreased, which indicated the improvement of the efficiency of working capital management which was revealed for previous years by Tálas (2014) as well. Profitability trends came to have negative tendencies for both indicators, and these values appeared to normalise only in the past six years of the time interval. However, the very poor values found for 2013 still caused concerns in view of the future of the industry.

In the second phase of our research, we go on with the measurement of competitiveness with the use of financial indicators, by comparing the values relating to the individual companies with the above-average values. The graphs hereunder have been made to demonstrate changes in liquidity, working capital management and profitability over time at the individual companies belonging to the sample, and then evaluate the positions of the companies in relation to each other and the average of the sample.

Table V.
Changes in the average values of the selected financial indicators for the companies belonging to the sample in 2008-2013

Financial indicators	Averages for the data of the sample companies					
	2008	2009	2010	2011	2012	2013
Quick ratio	2.43	1.86	1.45	1.37	1.31	1.20
Liabilities/total assets	0.38	0.44	0.54	0.64	0.48	0.48
OCF/short-term liabilities	0.31	0.36	−0.04	0.03	0.24	0.08
OCF/liabilities	0.21	0.28	−0.06	0.04	0.24	0.07
Cash conversion cycle (day)		**45**	**37**	**31**	**27**	**23**
ROE (%)	1.8	−0.8	−33.8	−11.6	−20.7	7.8
CROE (%)	13.3	23.2	11.9	−5.5	29.5	3.1

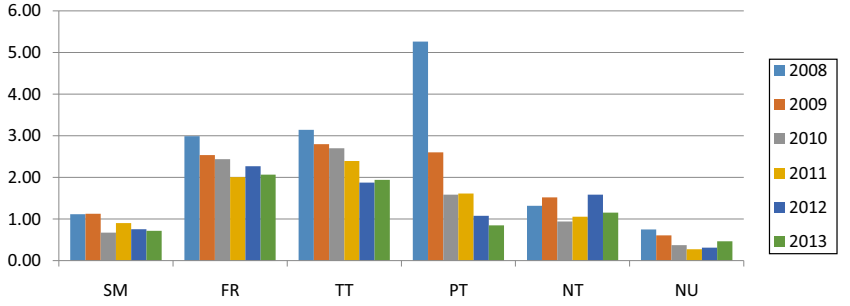
Note: Bold data are for highlighting the financial indicator that had common trends in all the examined companies, and it is the most important trend in the analysis

Source: Own calculations on the basis of the annual reports

The technical average figures for the quick ratio presented in Table V have been calculated on the basis of the data provided in Figure 3 for the entire sample. It is apparent that there are considerable differences among the companies, and the annual average levels have been permanently exceeded by only two companies: FR and TT.

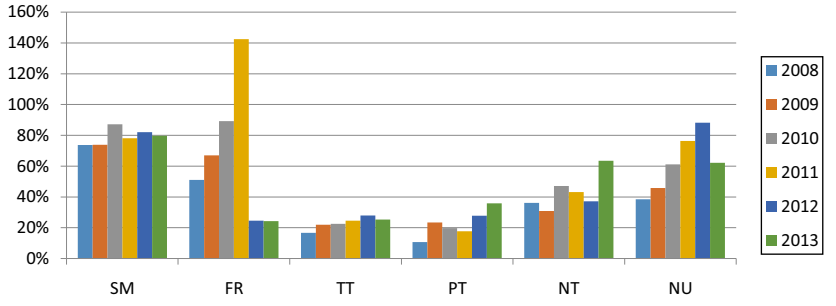
Similar to the above aspect, the liabilities to total assets illustration in the graph of Figure 4 reflect considerable differences among the individual companies. With respect to their capital structures, two companies seem to be stable in the long run: TT and PT. The favourable positions of the examined companies within the sample can be considered as justified also in comparison with the average values provided in Table V – calculated on the basis of the figures for the entire sample – as both companies have consistently featured levels under the technical average values. Consequently, it can be claimed that, by 2013, the FR company had normalised its capital structure that formerly reflected very high risks.

With two exceptions, the coverage of liabilities by operating cash flow is very poor at the individual companies. When their positions are compared with those of the competitors, TT has a favourable standing, whereas PT is in an acceptable standing, yet they can be characterised by a considerable extent of uncertainty. The technical average values in Table VI have also been calculated in view of the entire sample. When the resulting data are used for the performance of year-to-year comparisons, it can be claimed that TT's values have been over the average in every year, and TP's competitive



Source: Own calculation and compilation on the basis of the annual reports

Figure 3.
Changes in the quick ratio for the companies belonging to the sample in 2008-2013



Source: Own calculation and compilation on the basis of the annual reports

Figure 4.
Changes in the total indebtedness for the companies belonging to the sample in 2008-2013

position – in spite of the negative data for 2010 – is remarkable. On the other hand, the decreasing tendency is obvious for both companies.

The solvencies of the companies can be judged in the light of the results of Figures 3-5 and Table V.

It has been ascertained that for the companies of the sample, the liquidity tested on the basis of the financial indicators either stagnates or follows unfavourable trends. Still, actual liquidity problems are indicated by the data only for certain companies (SM and NU) where the financial positions are disadvantageous on the basis of all the three examined parameters and in comparison with the average. At the same time, associated companies have determining roles in funding the SM and NU entities; therefore, the disturbances of liquidity should be judged differently from similar problems with bank loans. Within the sample, the strongest liquidity position belongs to TT because for all the three parameters, it reflects steady positions, and for every year, it has had values exceeding the corresponding sample averages. It is important to note, however, that the FR company has adjusted its formerly unfavourable position, and for the past two years, it has created a positive liquidity standing.

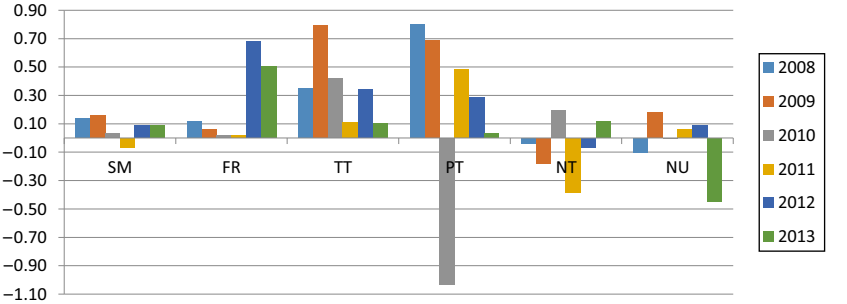
Figure 6 demonstrates changes in those cash conversion cycle data sets for the individual companies that are indicative of the process of working capital management.

Because of the use of average balance sheet figures, the data utilised in the analysis of the cash cycle encompass five years. Within the sample, all the companies have aspired to preserve or improve the efficiency of their logistic processes. With the exception of NT's steady values, the cash cycles of the companies have tended to drop,

ROE	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)	SD (%)
SM	0.6	−29.6	−151.7	1.5	−22.1	−9.6	58
FR	−41.3	−85.7	−593.4	115.5	−7.2	1.1	250
TT	***4.3***	***9.8***	***11.3***	***11.4***	***10.6***	***14.6***	3
PT	4.1	5.4	−0.6	−6.0	−4.4	−9.6	6
NT	***27.9***	***20.1***	***9.8***	***6.2***	***10.5***	***34.6***	11
NU	−27.8	−9.7	−37.8	−71.2	−98.4	9.3	40

Note: Bold and italic letters mark the companies that had positive values for ROE
Source: Own calculations on the basis of the annual reports

Table VI.
Changes in the ROE for the companies belonging to the sample in 2008-2013



Source: Own calculation and compilation on the basis of the annual reports

Figure 5.
Changes in the OCF/liabilities values for the companies belonging to the sample in 2008-2013

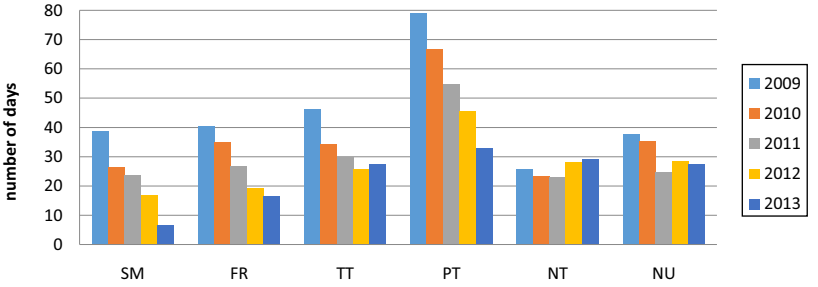
and, as a result, the cash management associated with the purchasing – production – sales processes becomes more effective.

It can be suggested that within the analysed time interval, the companies of the sample aspired to make the processes of working capital management more effective, and this endeavour also reflected in the continuous shrinking of the cash cycle. By rationalising short-term processes, companies strive for preserving their liquidity.

Tables VI and VII have been compiled to demonstrate the profitability of the individual companies involved in the sample.

It can be seen that the technical average data series of the earlier Table V above with respect to the ROE originates from a fundamental data series featuring broad standard deviation. Therefore, for the calculation of average values in the sample, the FR values with the broadest standard deviations have been eliminated. For the individual companies of the sample, changes in profitability are widely varied. Italics have been used to highlight companies that have had positive ROE (profit after taxes to equity) all through the examined time interval and favourable profitability indicators. It can be ascertained that both companies (TT and NT) have had values over the average. Furthermore, TT's data reflect a steady level of profitability ensuring a risk premium, while, in the case of NT, last year's data are a result of a company merger taking place in 2012.

For the companies of the sample, the cash flow-based profitability is similarly very varied. Italics have been used to highlight the company (TT) that has had positive CROE (operating cash flow to equity) all through the examined period and favourable cash flow-based profitability (TT). In the case of the other entities, an interesting fact is that,



Source: Own calculation and compilation on the basis of the annual reports

Figure 6.
Changes in the cash cycles for the companies belonging to the sample in 2009-2013

CROE	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)	SD (%)
SM	58.9	74.5	39.7	−30.9	58.2	49.7	37
FR	13.0	13.8	25.7	−5.4	26.7	18.3	12
TT	***7.0***	***22.4***	***12.6***	***3.5***	***13.2***	***3.5***	7
PT	9.8	22.2	−26.6	10.9	11.4	1.8	17
NT	−2.3	−9.0	21.5	−30.6	−4.2	21.8	20
NU	−6.4	15.4	−1.1	19.5	71.7	−76.5	48

Note: Bold and italic letters mark the only company in the sample that had positive value for CROE in all the examined years. In the past two cases, the outstanding companies were marked
Source: Own calculations on the basis of the annual reports

Table VII.
Changes in the operating cash flow-based earnings on equity for the companies belonging to the sample in 2008-2013

in contrast with the extremely negative ROE values – with the exception of the 2011 figures – SM and FR reflected high and favourable CROE data, while for the other companies, acceptably good and negative values vary in general. It means that the figures for the individual companies demonstrate much larger fluctuations than the annual technical averages of Table V.

In summary of the profitability processes, it can be claimed that TT is the company showing the smallest standard deviations and consequently boasting of the steadiest ROE and CROE figures. At the same time, the two market-leading companies, SM and FR, perform outstandingly well in terms of the CROE values.

In our studies so far, for all the partial results, we have specifically highlighted the corporate values that deviate from the average processes. When these highlights are summed up, the following characteristics of competitiveness in the sector become apparent. From among the companies listed among the Top 500 Hungarian entities in terms of sales revenues and profit after taxes TT is the only company from the dairy industry in the rankings for 2011-2012. The analysis of basic data (Figures 1 and 2) and the examination of financial parameters associated with the definition of competitiveness (Table IV) similarly confirm the outstandingly positive financial standing of TT in comparison with its domestic competitors. In light of the analysis of competitiveness based on financial indicators (Figures 3–6 and Tables VI and VII), it has been ascertained that TT's strong and stable position on comparison with the competitors belonging to the sample is demonstrable for every studied parameter. In consequence, it can be claimed that, in the domestic competitive environment, there is a Hungarian-owned entity whose financial position results in prominent competitiveness. When studied in view of the parameters of financial measurement suggested by the literature of competitiveness – and the associated financial indicators that have been broadly analysed – TT still occupies one of the top ranks among the companies of the sample established for this study. Owing to its special product structure, the company has been successfully selling in the Hungarian market for decades, and it possesses a very favourable financing structure, which can be explained by its early privatisation at the beginning of the 1990s and the restructuring loan taken out under advantageous conditions and then repaid within just a short while. It can also be claimed that the company strives for further bettering its position and develops continuously for long-term value creation. It has the goal to further add to its sales revenues and market share. In earlier years, with EU grants, it had implemented developments in an aggregate amount of HUF 1.6 billion, while last year saw the realisation of an HUF 2.5 billion investment. For the upcoming two years, it is planning an HUF 1.5 billion and HUF 1 billion investment for the maintenance of the current technological standards.

Summary and conclusions

This study has been conducted to analyse the competitiveness of leading milk-processing companies operating in Hungary, based on their financial positions. To this end, first, the most recent statistical data have been used to support the important role of the milk-processing industry in the national economy. Then – to confirm the results of the earlier associated literature – we have described the high level of sales revenue concentration that is typical of the sector (Table I), which induces strong market competition among a relatively small number of dominant market actors.

In the next step, the scope of the competing companies to be involved in the sample has been defined in detail. Our study has concentrated on companies that have high levels of authorised capitals and sales revenues, as well as diversified product structures. By comparing the fundamental figures of the annual reports belonging to the six companies that have been involved in the study, and considering the results of earlier publications associated with the segment, the research questions and goals have been drawn up. Our research has relied on the results of the related literature pertaining to corporate competitiveness, which has been completed with the establishment of our own methodology of analysis.

It has been found that the segment of the sample companies has in general faced less favourable liquidity and capital structures (Table IV), while, on the other hand, the study of the annual data of these companies have revealed individual differences (Tables IV-VI), entities with appropriate and steady financing structures have also been identified.

Another result of our research has been that the efficiency of the efforts made for the enhancement of the effectiveness of working capital management processes has become clearly demonstrable at the studied companies, both on the corporate and segment level (Tables V and VI).

The investigation of competitiveness in the sample as based on financial standing along the timeline has evidenced that beside the competitors of foreign ownership there exists such a Hungarian-owned company – with an outstanding level of sales revenues, steady market share – that is able to increase its market share and improve the level of profitability, while showing favourable financial indicators in comparison with the other companies of the sample. In the case of this TT company, further expansion in the market and technological development can be anticipated, and consequently, we think that this company is capable of realising long-term value-creation.

In our opinion, our study can be properly utilised for theoretical and practical purposes, has implications for applied economics, which can be instantly used by both researchers and the companies of the sector concerned – and has revealed interesting results. However, the evaluation of the research also involves the analysis of the methodological constraints. Thus, it can be suggested that the use of financial indicators cannot be regarded as sufficient to judge competitiveness, whereas the methodological background can be further refined with the application of companies evaluation models and bankruptcy prediction methods. Future research aim can be the investigation of strategic decision-making with qualitative methods and the accomplishment of an international comparison.

We trust that our research also directs attention to the complex corporate management approach, as well as the importance of the analysis of corporate competitiveness on financial grounds.

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