

FINANCIAL PERFORMANCE ANALYSIS AND BANKRUPTCY PREDICTION IN HUNGARIAN DAIRY SECTOR

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Abstract:

The main purpose of this study is to perform a comprehensive and comparing analysis of the most significant Hungarian-owned companies in the Hungarian dairy industry from financial point of view. It is demonstrated that the industry calls for strengthened focus because of the degree of concentration in the sector and the resulting sharp competition. The preliminary sample for the analysis is framed on the basis of three criteria: amount of the subscribed capital, sales revenues and product structure. Those companies are regarded as competitors that have subscribed capitals in excess of HUF 250 million, consistently high levels of sales revenues and diversified product structures. The preliminary sample consists of 7 companies. In 2012, their total sales revenues were as high as about 50% of the overall amount of sales revenues in the sector. Three of the 7 companies are possessed by foreign owners in full or part, whereas 4 of them belong to Hungarian owners. In 2012, Hungarian-owned companies covered more than one-third of the combined sales revenues of the 7 leading companies. Hence, the competitive positions of these 4 companies based on their financial positions are examined. These calculations have relied on the annual reports for the period of 2008–2012 (balance sheets, income statements, cash flow statements). The research has implemented a comprehensive and comparative financial analysis. The main question is what the key financial characteristics of the Hungarian-owned companies are. Financial indicators are calculated and their time-series analysis is accomplished to describe the sample companies' capital structures, liquidity and profitability. Using comparative analysis of the applied financial ratios the study determines (1) which company has the most advantageous financial conditions for the successful operation; (2) which companies have disadvantageous financial situation; and (3) which companies are in potential financial distress situation. Potential bankruptcy positions are examined by the applications of Altman and Springate models.

Keywords: financial analysis, liquidity, profitability, bankruptcy models, dairy industry, Hungary

JEL classification: G30; G33; M21; L66

1. Introduction

The dairy industry has been selected for this analysis because of the significance of the sector in the national economy, the high level of competition in this industry and the associated potential 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, and throughout the past 5 years assess the comparative market positions of the most significant Hungarian-owned competitors on the basis of selected financial indicators.

According to the most recent report of the Ministry of Rural Development (2012), which also considers the data of the Central Statistical Office of Hungary and the Research

Institute for Agricultural Economics, it can be claimed that the share of agribusiness within the national economy as a whole has grown for output, gross added value and employment, too. The percentage rate belonging to this sector in the national economy was the highest for output (16%), yet it had significant weights in both gross added value and employment (12% and 15.5%), as well. In the past few years, 30% of the total output of agribusiness has originated from food processing activities on the average. In view of household expenditure, food industry can be considered to be an important sector. In recent years, the average spending on food, beverages and tobacco products has been 24% of the domestic consumption expenditure (Ministry of Rural Development, 2012:5). This dominant role of the industry is further underlined by the increasing export share of the agricultural and food industry products, which today reaches up to 10%.

Within food processing, it is reasonable to study the significance of milk processing and the competitiveness of the companies operating in dairy industry. The report of the Ministry compiled with the use of information provided by the Central Statistical Office of Hungary reveals that the share of the dairy industry from the total production value of the food industry was 9.5% and 9% at current prices in 2011 and 2012, respectively. The average export rate of the dairy sector in 2012 was 15.7%, which made up 40% of the export rate of the entire food industry.

In the 2011 and 2012 sales revenue list of top Hungarian companies, approximately 10% of the leading food processing companies came from the dairy segment. Another fact, however, is that while in terms of sales revenues there were 4–5 milk processing companies among the 500 top-ranking corporations, only one of these companies could be found in the list based on profit after taxes. This initial point of interest clearly highlights the importance of this research.

2. Literature review and research sample

The particular characteristics of the Hungarian dairy sector, 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 have been studied by a number of researchers.

Vágó (2005) gives estimations in relation to the potential future tendencies of the Hungarian dairy market and the price of raw milk in the light of the EU legislation pertaining to the dairy market. Quoting Kartali (2004) this study describes concentration in the domestic milk processing industry through the company-level proportions of sales revenues. According to Kartali (2004) in 1998 and 2002 the top 10 companies had a combined 63.5% and 78.2% share of the sales revenues of all the companies in the sector, respectively. This outstanding concentration of sales in the industry and the resulting strong competition support the relevance and importance of this study again.

Popp et al. (2009) summarise the potentials to improve competitive chances in the Hungarian food industry, and analyses the major problems of the dairy sector. On the basis of this latter study, in 2009 the 50 dairy companies could still be described as showing high concentration alongside the low utilisation rate of capacities and poor cooperation among domestic milk processing companies in the field of the rational division of work. The dairy market largely lacks flexibility: neither producers, nor processing companies are able to respond to market changes at a proper pace. The bargaining position of the processing companies against producers is relatively strong. In these times, the key targets of corporate strategies are the more efficient utilisation of capacities and product development. According to the authors, the main reasons underlying low growth potentials are obsolete technologies and the low level of innovation.

A publication by Popp et al. (2010) examines 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 gradually increase of the milk quota. In association with the competitive position of processing companies, this paper also emphasises the high degree of concentration among the companies.

In the initial phase of my research, I relied on the Opten corporate information database to evidence that in recent years the sector had been characterised by sharp competition concentrating around just a handful of companies. 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 them have sales revenues consistently over HUF 100 million, while the subscribed capitals of 15 companies exceed HUF 250 million. When examining subscribed capital and sales revenues all together, the following figures can be presented for the dairy industry (Table 1).

Table 1: Degree of concentration of sales revenues in the Hungarian dairy industry

Criteria of analysis	Sales revenues in 2011(HUF)	Sales revenues in 2012(HUF)
I. Entire sample (2011: 104 companies, 2012: 115 companies)	249 milliard	262 milliard
II. Companies with subscribed capitals over HUF 250 million (15 companies)	209 milliard	218 milliard
<i>Concentration III/I (%)</i>	83.9%	83.2 %
III. Top companies on the basis of sales revenues (5 companies)	146 milliard	150 milliard
<i>Concentration III/II (%)</i>	70.1%	68.9%
IV. Top companies on the basis of sales revenues, featuring diversified product structures (7 companies)	119 milliard	126 milliard
<i>Concentration IV/II (%)</i>	56.9%	57.8%
<i>Concentration IV/I (%)</i>	47.8%	48.0%

Source: Own calculations on the basis of Opten data

A further important point of the analysis has been that the companies in the examined sample can be considered to be competitors, and therefore the respective product structures have also been taken into consideration. Companies with diversified product structures, high levels of subscribed capitals and sales revenues were selected. In both years, the 7 companies so identified had a nearly 50% combined revenue share in the entire sample, and represent more than 56% of the total sales of the 15 leading companies. According to my calculations, the high-level concentration in the market can still be justified; consequently, the analysis of the strong competitive situation also needs to be assessed.

The following table shows the sales revenue figures and ownership of the 7 companies in the past 3 years (Table 2). The company names have been replaced by the initials of the respective names.

Table 2: Sales revenues and ownership of leading dairy industry companies with diversified product structures

(Data in million HUF)

Companies	2010	2011	2012	Ownership
SM	37 248	35 861	40 147	mixed
FR	29 416	28 740	26 329	foreign
TT	17 046	21 069	23 443	Hungarian
PT	12 728	15 559	16 634	foreign
MN	6 520	7 959	8 487	Hungarian
NT	7 581	7 071	7 795	Hungarian
NU	3 273	3 459	3 985	Hungarian

Source: Own compilation on the basis of Opten and www.e-beszamolo.kim.gov.hu data

In terms of ownership, the 7 companies can be divided into two groups. Three firms are in foreign or mixed ownership, while 4 companies belong to Hungarian owners. Table 3 shows the profitability and operating cash flow figures of the companies for 2012.

Table 3: Profitability and operating cash flow figures of leading dairy industry companies with diversified product structures in 2012

(Data in million HUF)

	SM	FR	TT	PT	MN	NT	NU
Operating profit	-203	-1560	783	-321	122	185	-248
Net profit	-526	-521	998	-278	-250	162	-262
Operating cash flow	1384	1939	1243	727	-221	210	191

Source: Own compilation on the basis of www.e-beszamolo.kim.gov.hu figures

It is obvious that these corporations – with the exception of two Hungarian-owned companies – were loss-making in 2012, while their net cash flow values arising from their operations were generally positive. The Hungarian-owned firm designated as TT has shown outstanding performance, and therefore it is reasonable to conduct further studies. The second phase of the research has narrowed down the sample to the group of Hungarian-owned companies (TT, MN, NT, NU), and a comparative analysis based on the respective financial positions has been carried out for 2008–2012. The main question is whether the Hungarian-owned companies can be regarded as competitive with respect to their capital structures, liquidity and profitability, or alternatively, due to their unfavourable financial positions, they struggle for survival in the market.

3. Methodology

To measure liquidity and profitability, the internationally accepted and applied means of financial analysis are used (Brealey and Myers, 2003; Gitman, 2002:49-66; Ross et al., 2002:62-72). The starting point of the comparison of companies is the evaluation of historic performance. The analysis of liquidity first examines the capital structure, and the debt ratio is useful in assessing the proportion of total liabilities to total assets. Then, the values of the balance sheet-based quick ratio are compared, and the operative cash flow coverage of total liabilities is analysed. With the combined review of the three indicators, the main characteristics of the liquidities of the companies in the sample are presented,

and the individual situations of the companies are compared. For the analysis of profitability, the return on equity and cash return on equity indicators are calculated, and the outcomes are analysed as described in the foregoing. As a result of the analysis, the study determines (1) which company has the most advantageous financial conditions for the successful operation; (2) which companies have disadvantageous financial situation; and (3) which companies are in potential financial distress situation. Potential bankruptcy positions are analysed by the applications of Altman and Springate models (Altman et al., 1977); Springate, 1978). Formula of the applied Altman model is

$$Z = 0.717A + 0.847B + 3.107C + 0.420D + 0.988E,$$

where A is net working capital/total assets; B is profit after taxes/total assets; C is operating profit/total assets; D is equity capital/total liabilities; and E is sales revenues/total assets.

The model can be used for private (not subscribed at any stock exchange) production companies, and the $Z < 1.23$ value indicates bankruptcy threat.

On the basis of Springate's model

$$Z = 1.03A + 3.07B + 0.66C + 0.4D,$$

where A is working capital/total assets; B is operating profit/total assets; C is profit before taxes/short-term liabilities; and D is sales revenues/total assets.

In the Springate model, the $Z < 0.862$ value suggests bankruptcy threat. The accuracy of the prediction of models was reviewed by Kidane (2004), which determined a value over 80%.

4. Results

This chapter evaluates the relevant data for the liquidity and profitability of the leading, Hungarian-owned companies of the dairy industry in the period of 2008–2012.

4.1. Time series data of liquidity

The graphs below present time-series changes in the capital structures of the examined companies, their liquidities based on the respective balance sheets and cash flow statements.

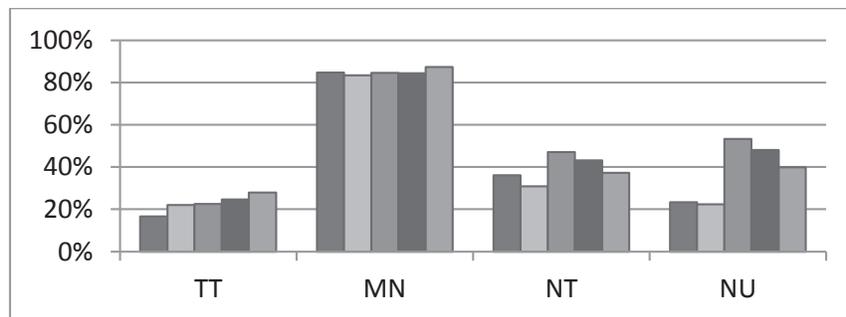


Figure 1: Debt ratios of the firms concerning 2008-2012 period

Source: own compilation

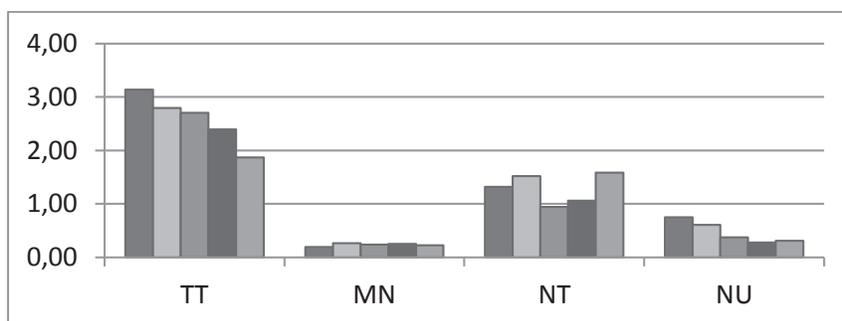


Figure 2: Quick ratios of the firms concerning 2008-2012 period
Source: own compilation

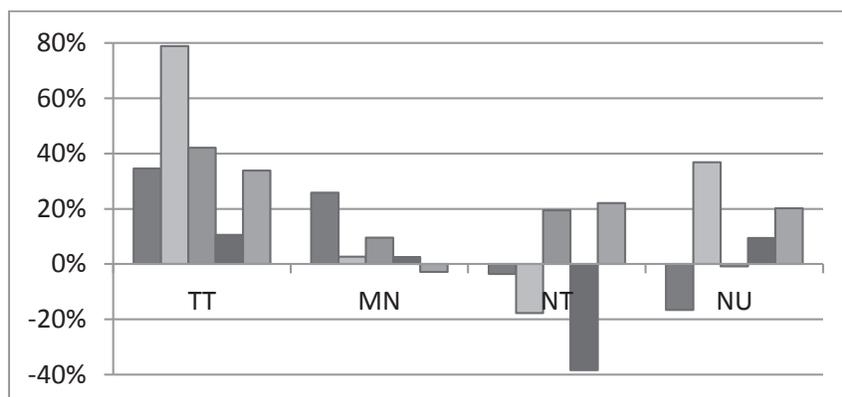


Figure 3: Operative cash flow/total liabilities of the firms concerning 2008–2012 period
Source: own compilation

In the light of the data of the graphs, it can be clearly ascertained that the TT company has the most favourable capital structure and short-term solvency, while the highest value of operative cash flow margins also belongs to this company. The debt ratio is low and steady, the quick rate has a slight downward trend, yet it does not jeopardise the stability of the current asset coverage ratio of short-term liabilities. It can be concluded that in spite of the major fluctuations the operative cash flow steadily secures all the liabilities. On the whole, the TT company features outstanding liquidity.

In terms of liquidity, the least favourable position is occupied by the MN company. The level of its liabilities is permanently over 80% of the aggregate value of assets. Further analysis unveil that short-term liabilities tend to be dominant, including the relatively large value of short-term bank loans. Short-term bank loans tend to exceed the value of current assets from year to year, and as a result the continuously negative value for net working capital also indicates the existence of problems. A closely associated phenomenon is that the value of the quick ratio is much smaller than the minimally expected 1 value. The operative cash flow margin further erodes the evaluation of liquidity, because it has a consistently sliding value, and in 2012 the company was unable to produce any positive operating cash flow balance. It means that the company will be forced to take out additional loans in case it is capable of surviving the given competitive situation at all.

NT's liquidity position can be regarded as averaging. In view of the value of the quick ratio under the acceptability threshold and its strongly fluctuating operative cash flow margin, the NU company should also be followed closely.

4.2. Time series data of profitability

The following graphs show the time-series changes in the return on equity and cash return on equity for the studied companies. In this respect, the study examines the returns on equity are strengthened by the operative cash flow rates, or this latter parameter leads to a more favourable evaluation of the companies in the sample.

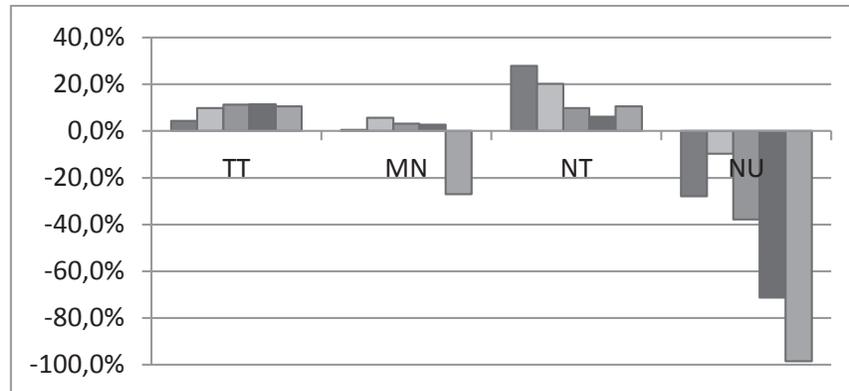


Figure 4: Net profit/equity of the firms concerning 2008–2012 period

Source: own compilation

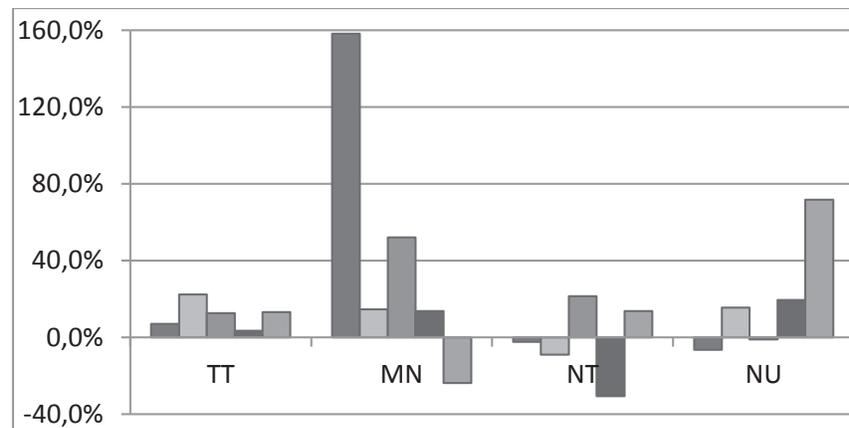


Figure 5: Operative cash flow/equity of the firms concerning 2008–2012 period

Source: own compilation

The calculations apparently reflect that even in terms of these profitability figures TT keeps its leading position, both indicators show favourable and steady values. In the case of MN, however, both indicators are affected by changes of unfavourable tendencies, meaning that in 2012 the values of both indicators turned negative, and it was especially the value of the operative cash flow/equity whose drastic drop suggested aggravating problems in business operations. It has been undoubtedly demonstrated that for the MN company it is reasonable to examine the given situation with reliance on bankruptcy prediction models.

NT's return on equity values is positive, whereas the cash return on equity rates are periodically fluctuating, and therefore its situation can be regarded as averaging on the basis of its profitability, as well. On the other hand, NU proves to be consistently and increasingly loss-making throughout the entire period under review. This undesirable tendency is mitigated only by the cash return on equity values, because as a result of the net operating cash balances the company is still able to arrive at an acceptable level.

At this point of my study, I am able to answer the main questions raised.

(1) It can be ascertained that on the basis of the examined parameters the TT company has the most favourable financial situation in the sample of leading, Hungarian-owned companies of the dairy industry. This finding can also be supported by the export rates within sales revenues (Table 4).

Table 4: Export proportions of total sales concerning 2008–2012 period

Export proportion	2008	2009	2010	2011	2012
TT	5.63%	1.83%	3.82%	4.65%	4.16%
MN	2.96%	2.46%	2.19%	1.24%	0.70%
NT	0.51%	0.25%	1.97%	1.42%	2.79%
NU	8.95%	5.34%	1.10%	1.72%	1.75%

Source: own compilation

(2) Within the samples, the most unfavourable financial position belongs to the MN company. Both its liquidity and profitability reflect serious problems in funding and business operations. A determining constituent in its capital structure is the volume of short-term bank loans that needs to be further increased due to the 2012 losses and the lack of operative cash flow. The financial position of the NU company has similarly been found to be unfavourable, yet the examination of the capital structure has revealed that the company has no bank loans, but its liabilities to the parent company offer a solution to funding problems, and therefore the survival of this firm in the market depends on the business management and decision of the parent company.

(3) Consequently, the Altman and Springate's bankruptcy prediction models have been calculated for the MN company.

4.3. Results of the bankruptcy prediction models

The tables hereunder was compiled to demonstrate the results of bankruptcy prediction performed in relation to the 2008–2012 figures of the MN company, and evaluate the obtained data.

Table 5: The results of the Altman model

	Parameters	2008	2009	2010	2011	2012
0.717	Net working capital/Assets	-0.40	-0.36	-0.40	-0.36	-0.41
0.847	Net profit/Assets	0.00	0.01	0.00	0.00	-0.03
3.107	Operating profit/Assets	0.04	0.06	0.05	0.07	0.01
0.420	Equity/Liabilities	0.16	0.18	0.18	0.18	0.12
0.998	Sales/Assets	1.91	1.23	1.03	0.93	0.88
	ALTMAN Z	1.80	1.24	0.97	0.95	0.66

Source: own calculations on the basis of the annual reports

Table 6: The results of the Springgate model

	Parameters	2008	2009	2010	2011	2012
1.03	Working capital/Assets	-0.40	-0.36	-0.40	-0.36	-0.41
3.07	Operating profits/Assets	0.04	0.06	0.05	0.07	0.01
0.66	Profit before tax/Short term liabilities	0.00	0.01	0.01	0.01	-0.04
0.40	Sales/Assets	1.91	1.23	1.03	0.93	0.88
	SPRINGATE Z	0.47	0.31	0.15	0.21	-0.06

Source: own calculations on the basis of the annual reports

For Altman Z, the threat of bankruptcy is indicated by values under 1.23, whereas for Springgate Z the corresponding indicator is 0.862. In the light of our calculation, the insolvent situation of the MN company can be regarded as proven. In the Altman model and the Springgate model, for this company bankruptcy has been pending since 2010 and 2008, respectively; moreover, it can be claimed that the Z values have deteriorated consistently from year to year, meaning that the occurrence of a state of actual insolvency is increasingly probable.

5. Conclusions

This study was conducted to reveal the particular characteristics of an economically very interesting branch of Hungarian food processing, dairy industry. The high degree of sales revenue concentration was demonstrated alongside the existence of very sharp competition in the sector. The research analysed Hungarian-owned companies that have high levels of sales revenues and subscribed capitals, as well as diversified product structures. The liquidity situation and profitability processes have been examined in the 2008–2012 period with the application of comprehensive and comparative financial analysis. The financially most competitive company (TT) and the company with the most unfavourable financial position (MN) were unambiguously identified. In the case of the MN company, the results of the bankruptcy prediction models served further, convincing evidence for serious problems in financing and business operations. The most important outcome of our research is that the conclusions of the comparative analysis performed with the use of financial indicators are confirmed with reliance on the bankruptcy prediction models. On the other hand, an additional orientation of the study can be the calculation of free cash flow to firm data for the TT company, and the estimation of the market value of equity. Finally, further valuable information can be obtained in relation to the sector and competitive situation in case the sample is broadened with the ignorance of ownership criteria.

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