The impact of capital investments on dairy processing industry features: evidence from Slovenia, Croatia and Serbia

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Summary

Dairy farming and dairy processing industry have rapidly changed in recent decades in "old" European Union members, "new" members, as well as in other East European transitional countries. In East European transitional countries, a specific pattern of changes could be noticed. Those changes have usually begun with foreign direct investments, whereupon acquisitions, concentration and consolidation are followed. The process finished with capital investments to meet competition challenges. Thus, the main aim of our paper is to investigate the impact of capital investments on different quantitative and qualitative features of dairy processing companies in Slovenia, Croatia and Serbia. Capital investments per employee significantly increase productivity measured by EBITDA and personnel costs. Also, statistically significant association of capital investments and foreign ownership is identified. On the other hand, capital investments per employee do not significantly affect the profitability of those companies, if they are not accompanied by changes in owners' structure and know-how that foreign owners bring; regardless the country in which company operates. Amount of capital investment per employee are found statistically significant for country in which company operates of Slovenia and Croatia, but not Serbia.

Key words: dairy processing industry, capital investments, profitability, productivity

Introduction

Literature survey indicate that both dairy processing industry and dairy farming have rapidly changed in recent decades in old European Union members, new members and also in other East European transitional countries. Those changes can be seen "as restructurings of the dairy supply chains" (Swinnen et al., 2006). In many EU countries, the dairy processing industry is characterized by a few large companies with a big market share accompanied by many small processors that often produce for niche markets (Gardebroek et al., 2010). The same situation is in other (South) East European transitional countries, including Slovenia, Croatia and Serbia that are in the focus of this research. Namely, a specific pattern of changes in dairy processing in-dustry in East European transitional countries can be identified. The chain started by foreign investments and acquisition on local market. On the already relatively concentrated market, concentration increased as a result of the acquisitions. Concentration was followed by consolidation. It finished with investments to meet competition challenges. Thus, the main aim of our paper is to investigate the impact of capital investments on different quantitative and qualitative indicators of dairy processing companies in Slovenia, Croatia and Serbia as cases of EU member country, EU candidate country and potential EU candidate country, respectively. Therefore, in this paper impact of the capital investments per employee on the productivity and financial performance of companies in diary processing industry will be examined,

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as well as difference in the level of capital investments per employee with regard to size, (foreign) ownership and country in which company operates. According to our best knowledge similar research on specificities and similarities of dairy processing firms from countries in different stage of EU membership has not been done yet. Therefore, this paper can play an important part in recognizing the described phenomenon and providing certain contribution in the aforementioned economic fields.

The foreign investments have greatly influenced the development of the milk processing industry in all Eastern European countries. Dries et al. (2009) see the crucial role of foreign direct investment (FDI) in the restructuring process in the dairy sector in Eastern Europe. FDI in the dairy sector has resulted from several company strategies: to serve the local market when trade constraints limit imports, to use the domestic economy advantages for exporting to the home market of the foreign company or to third markets, etc. The EU accession process further stimulated FDI because it reinforced the institutional and economic stability, the prospect of a large single market, growth in incomes and food demand, and - in some cases - expectations of EU subsidies. The FDI resulted also in concentration on local markets.

The concentration of dairy processing industry, as its very important characteristic, is present at both global and national level. The concentration of dairy processing industry 2012 shows that the top 20 milk processing companies process 24 % of world cow and buffalo milk production. Measured by milk deliveries, they account for 39 % of the world-wide production. The largest milk processor Fonterra from New Zealand processes 3.0 % of world milk production or 4.8 % of world milk deliveries (cow and buffalo milk). Except Fonterra the global top five dairy processors are Dairy Farmers of America (USA), Lactalis (FR), Nestlé (CH) and Dean Foods (USA). 50 % of all companies included in the IFCN Dairy Report 2012 list are originally from Europe, 30 % from the USA/CA and 20 % from other world regions including Fonterra, which is originally from Oceania.

The comparative analysis of dairy processing industry in Slovenia, Croatia and Serbia (Muminović and Pavlović, 2012) has proven that market leaders in all three countries have dominant position and mar-

ket share, i.e. the markets are highly concentrated. The last takeover of "independent" market leader, owned previously by co-operatives, was in Slovenia in 2012. The concentration of dairy industry have been identified also in some other countries, for example in Lithuania by Kedaitiene and Hockmann (2002), (where 70 % of the purchased milk was processed by only three major companies in 2001) and in Slovakia (Mura et al., 2012). According to the AgriPolicy Report (Van Berkun, 2009) the dairy processing industry appears most concentrated in the Baltic countries: Latvia (top 4 : 61 %), Lithuania (top 4 : 90 %) and Estonia (top 4 : 68 %), then Cyprus (top 6 : 76 %), Malta (1 : 100 %), Slovenia (top 3 : 90 %), Croatia (top 5 : 81 %), Serbia (top 5 : 67 %), Montenegro (top 5 : 63 %) and FYROM (top 4 : 90 %) where the top 5 dairies process over 60 % of the milk. Those countres are followed by Hungary (top 10 : 81 %), Czech Republic (top 3 : 35 %), Bulgaria (top 5 : 20 %), Poland (top 5 : 26 %) and Bosnia & Herzegovina (top 5 : 42 %).

With the EU accession, relations between dairy farming industry and the dairy processing industry are changing. The dairy processing industry is faced with the competition from dairies from old EU members in milk collection (buy-out) after joining EU. The intensity of that competition will depend on the level of the milk production. The lower level means that lower or less negative effects on dairy industry in the short term. More favourable conditions for development of the farms (and this also depends on the active state policies such as subsidies and soft loans) will quickly find dairy industry at a disadvantage (Muminović and Pavlović, 2012).

According to Gorton and Guba (2002) the Hungarian dairy processing sector and dairy farm business have undergone dramatic restructuring, through acquisition of larger processing dairy plants by foreign investors, rationalizing production and employment reduction. The new owners, i.e. foreign investors, instituted more formal contracting agreements, promoting the growth of a select number of medium-sized dairy farms and excluded micro-producers who cannot meet quality control requirements and produce largely for informal marketing channels. There have been radical changes also in Slovakian dairy processing sector. The ownership structure of dairy companies changed in favour of foreign multi-nationals, associated with specialization in dairy pro-

duction (Mura et al., 2012). Those changes were not characteristic only for Hungarian dairy processing industry. To a greater or lesser degree, it was the case in all (South) East European transitional countries, including Croatia and Serbia. After privatisation, or transition period and consolidation, the new owners continued with investments to increase profitability. The only exception regarding foreign investments and privatisation was in Slovenia. According to Damijan and Knell (2005) Slovenia discouraged sales of state enterprises to multinational firms and inclined domestic firms to use trade flows to gain access to these markets. As a result, Slovenia has implemented the least friendly FDI policy comparing some other transition countries: Hungary, the Czech Republic, Poland and Slovakia (Rugraffa, 2008). However, empirical findings of Douma et al. (2006) show the possitive effects of foreign ownership on financial performance of companies in emerging countries.

During the time the differences between dairies with foreign owners and domestic owners disappeared as domestic companies started copying the management practices of foreign affiliates. A good example is Polish dairy sector. In the mid-1990s there was a significant difference between foreign owned processors and local processors. However by 2001 this gap had disappeared (Dries et al., 2009).

In Croatia, Serbia and Slovenia the largest companies use modern technology, comply with EU quality and hygiene standards and have strong domestic market positions (Van Berkun, 2009). Looking at the selected countries research (Muminović and Pavlović, 2012) showed that despite comparatively worse macroeconomic conditions in Serbia (with higher inflation rate, relatively small GDP growth and low level of economic freedom) than in Croatia and Slovenia, the dairy industry in Serbia is more profitable. Even more, dairy processing industry is among the most profitable industries in Serbia (Muminović et al., 2012). This profitability of the dairy processing industry is a consequence of natural monopoly arising from the fact that the most dairy products are consumed in the region where they are produced. Only around 8 % of global dairy production is traded on the world market (The Opinion of the European Economic and Social Committee, 2010). According to the common sense logic, other dairies should be "strangled" by the monopoly of the

market leader and not profitable. However, other dairies in Serbia are more profitable than the market leader. The reason for their profitability is the high prices of dairy products (in some cases very close to the EU level), lower production costs (i.e. high margins) and lack of EU legislative legislation regulating competition and free market (Muminović and Pavlović, 2012). The statistical data indicates that productivity in the dairy industry in Serbia increased faster than productivity in other sectors of the food industry. In Slovenian dairy industry productivity increased as employment reduced, yet the labour productivity is still low from an EU perspective. For Croatia data was not provided (Van Berkun, 2009).

The competition will force dairy companies, both those part of some multinational companies and independent ones to diversify their product range, to try to place its brands where possible and produce more products with higher added value, especially regarding future strategy (Mura et al., 2012). To achieve that goal, investments are the crucial factor.

The company investments were studied in relations with the financial factors (Cleary, 1999) and with leverage and company growth (Lang et al., 1996). Investment decisions of companies with high creditworthiness are extremely sensitive to the availability of internal funds; less creditworthy firms are much less sensitive to internal fund availability (Cleary, 1999). Leverage does not reduce growth for firms to have good investment opportunities, but it is negatively related to growth for companies whose growth opportunities are not recognized by capital markets (Lang et al., 1996).

In summary, this research can bring some contribution to the existing literature because it provides insights into level of capital investments in Slovenian, Serbian and Croatian dairy processing industry companies by itself, and especially with regard to companies' productivity, profitability and foreign ownership.

Materials and methods

The working hypothesis is that companies which invest more in fixed assets per employee will have better productivity and consequently will obtain better financial performance measured by different fi-

nancial ratios. Also, we assume that level of capital investments significantly differ with regard to institutional environment (i.e. country) as well as with ownership structure. In order to test the above assumptions, the following statistical hypotheses have been developed (alternative form):

H_1 ...Capital investments per employee have statistically significant impact on productivity and financial performance of companies in dairy processing industry.

This hypothesis is based on assumption that companies which invest more in fixed assets per employee will be more productive and consequently more profitable, because higher investment leads to modern technology or/and automation, which subsequently lowers the number of employees and increases productivity and profitability.

H_2 ...Capital investments per employee in dairy processing industry do statistically significant differ with regard to size, (foreign) ownership and country in which company operates.

This hypothesis assumes that foreign owners are more willing to invest in companies in dairy processing industry than domestic owners in order to expand their business and increase profitability. Additionally, it is assumed that level of capital investments differ with regard to institutional and even more economic environment in which company operates.

Materials

This research is conducted on the sample of Croatian, Slovenian and Serbian companies in the dairy processing industry. Their annual financial reports in succession from 2007 to 2011 were reviewed and companies are selected in sample according to the following criteria:

1. A company's main activity should be designated in division C10.5 - Manufacture of dairy products of National Classification of Economic Activities.

2. Companies that are in the bankruptcy/liquidation process were excluded from the sample.

In addition, companies with missing or incomplete data were also excluded. Accordingly, a relatively

homogenous sample of total 82 companies and 373 company-year observations is provided.

Main activity is an activity established according to the largest share in the total value added in the case of business entities which make profit through production, trade or offering of services on the market, or by the largest share in the number of employees according to the payroll and gross paid-off salaries in case of business entities which do not make profit through production, trade and offering of services on the market. The data set necessary for the research has been extracted from the annual financial reports databases of Croatian Financial Services Supervisory Agency available on www.hanfa.hr, Serbian Business Registers Agency available on www.apr.gov.rs and Agency of the Republic of Slovenia for Public Legal Records and Related Services available on www.ajpes.si. For comparison purposes, all data were converted into a common currency - EUR, using the average annual exchange rate provided by National banks. The data were not been deflated, because inflation rates between countries studied were not significantly different. Detail description of average annual inflation rate measured by Harmonised Indices of Consumer Prices - HICPs which was designed for an international comparison is presented in Table 1.

A detailed sample size and structure is presented in the Table 2. As it can be seen from the table, the most companies (between 33 and 39 per year) are from Serbia and the smallest numbers of companies (between 4 and 7 per year) are from Slovenia. However, despite the huge difference in absolute number of the companies their relevance to national dairy processing industry is similar. For example, in year 2010 companies selected in the sample cover 99.55 %, 98.41 % and 87.81 % of total assets of companies in division C10.5 - Manufacture of dairy products in Slovenia, Croatia and Serbia, respectively. Also, companies from the sample form the similar percentage of total assets in dairy processing

Table 1. HICP - inflation rate / Annual average rate of change (%)

	2007	2008	2009	2010	2011
Croatia	2,70 %	5,80 %	2,20 %	1,10 %	2,20 %
Serbia	11,0 %	8,60 %	6,60 %	10,30 %	7,00 %
Slovenia	3,80 %	5,50 %	0,90 %	2,10 %	2,10 %

Source: Eurostat, National Bank of Serbia

Table 2. Sample size and structure

Year	Country				Total
	Slovenia	Croatia	Serbia	Multi-national company	
2007	4	20	33	1	58
2008	7	29	37	1	74
2009	7	33	38	1	79
2010	7	34	38	1	80
2011	7	35	39	1	82
Total	32	151	185	5	373

Source: estimated according to data from authors' data base (2012)

industry in year 2011 - in Serbia 88.65 %, in Croatia 98.61 % and in Slovenia 99.56 %. Separately, multi-national company Nestle as one of the biggest dairy producers in the world has been included in the research. According to all mentioned facts, selected sample can be consider as representative and obtained results and derived conclusion could be taken as reliable and relevant.

Variables and methodology

Based on theoretical background, several factors that could affect amount of capital investments are considered: size; return on assets (ROA); return on equity (ROE); earnings before interests, taxes, depreciation and amortization (EBITDA) and personnel costs (salaries, wages and employee compensations). Also, the country in which company operates and ownership of the company are considered. Numbers of these variables (e.g. ROA, ROE) are in the form of financial ratios so their values should be interpreted with regard to the economic plausibility, experiential values and relations to other financial statements items. Contrary, some of them like EBITDA and personnel costs are absolute numbers, so the transformation in the form of ratio was required in order to obtain comparable values. Thus, all the amounts are divided by the average number of employees to set up a form of ratio. However, according to O'Regan (2006) the limiting factors of methodology that should be kept in mind are some conceptual problems in the ratios calculations with regard to statistical issues: (1) small numbers - the potential for distortion where small numbers are involved, particularly when dividing by small number; (2) relationship between numerator and denomina-

tor - for ease of comparison it is assumed that the relationship is linear which may not sometimes be the case.

Capital investments (INVEST) is calculated as change in net fixed assets in current year to previous year adjusted for amortization amount and divided by the average number of employees. This variable is set as dependent in analysis.

Variable size (LSIZE) is calculated as natural logarithm of total assets. Expected association of this variable with amount of investments in long term assets per employee cannot be uniquely determined. Namely, according to Gupta (1969) and Kedaitiene and Hockmann (2002) it can be expected that larger companies will invest more in long term assets, as they have more complex activities and as they have easier access to large sources of capital necessary for the investment financing. Contrary, the expected relation can be negative if it is assumed that smaller companies should invest more in long term assets in order to get track with the big ones.

Return on assets (ROA) and return on equity (ROE) ratios are proxy variables for company's profitability (O'Regan, 2006; Chapman, 2012) and expected association with capital investments is positive. Namely, companies invest in fixed assets and anticipate future economic benefits (usually in the form of revenue) associated with that investments. ROA is calculated as operating income divided by total assets and ROE is calculated as net income divided by owner's equity.

Similar to Engelhardt (2006) and Kale et al. (2007) research, EBITDA and personnel costs are proxy variables for company's productivity. EBITDA can also be used as indication of the operational

profitability, i.e. it shows how much profit company makes with its present assets and its operations, taking into account possible provisions that need to be paid. In order to obtain comparable number, EBITDA is divided by the average number of employees. Considering the fact that negative EBITDA indicates company with financial problems, expected correlation of this variable with capital investments is positive. Personnel costs include salaries, wages and employee compensations and it is divided by the average number of employees. As alternative measure of company's productivity, expected association with capital investments is positive.

Variable ownership (OWN FOREIGN) is set equal to one if the firm has foreign owners (i.e. nonresident individuals or entities that own more than 50 % of equity in cumulative) and zero otherwise. Expected association with profitability is positive, based on assumption that the foreign owners continue to invest in dairy processing industry companies to improve their productivity and to increase profitability. Variable country indicates the country in which company operates and this variable covariates categorical in regression model.

In order to test set hypotheses, univariate statistics tests (Pearson coefficients, Spearman coefficients and Chi-square test) are calculated and OLS regression data analysis as multivariate analysis is used as the most appropriate method of modelling an impact of dependent variable on multiple explanatory variables.

Research results and discussion

General findings

Descriptive statistics highlight the main characteristics of capital investments in diary processing industry as a whole, as well as in each country (Table 3.).

Table 3 shows that the highest average capital investment per employee was in Slovenia (25,032 EUR per employee), followed by Croatia with average capital investment per employee of 17,966 EUR. Nestle as a case of multinational company has average value of capital investment per employee (12,337 EUR) similar to total average, while Serbia has the lowest average capital investment per employee of 7,003 EUR. The lowest absolute investment (-202,202 EUR) is also recorded in Serbia, and the highest absolute amount of capital investment per employee (565,556 EUR) has been noted in Croatian dairy processing company. It is interesting to point out that dairy processing companies in Slovenia did not have negative capital investment per employee in observed period. Higher standard deviation in Slovenia and Croatia comparing Serbia and Nestle indicates that the data points are spread out over a large range of values. Minimum and maximum values indicate that also divestment process was conducted in all countries included in the research, but in contrary Nestle had stable level of capital investments per employee in observed period.

Univariate analysis

In the first part of the empirical research, univariate analysis was conducted and correlation coefficients and the correlation matrix is presented in Table 4.

Pearson's coefficients of linear correlation of scale variables are shown above the diagonal, Spearman's coefficients of ordinal variables and Chi-square of nominal variables are shown below the diagonal. As it can be seen from the presented results,

Table 3. Capital investments in EUR per employee - descriptive statistics

Country	N	Minimum	Maximum	Mean	Std. Deviation
Slovenia	32	1,320	286,218	25,032.06	52,700.407
Croatia	151	-15,976	565,556	17,966.18	52,104.791
Serbia	185	-202,202	241,596	7,002.89	27,425.492
Multinational company	5	12,009	12,853	12,337.20	326.029
Total sample	373	-202,202	565,556	13,059.36	41,695.979

Source: Estimated according to the data from authors' database (2012)

Table 4. Correlation matrix

	INVEST	ROA	ROE	EBITDA	PERSONNEL	LSIZE	COUNTRY	OWNER
INVEST	1	-,042	,019	**,332****	**,136****	-,065		
ROA		1	**,166****	**,431****	-,023	,043		
ROE			1	**,125***	-,056	-,053		
EBITDA				1	,387**	,247**		
PERSONNEL					1	,722**		
LSIZE						1		
COUNTRY	**-,210****	**,184****	-,029	**-,276****	**-,514****	,083	1	
OWNERSHIP	**,125***	**,160****	,016	**,268****	**,420****	,492**	43.805**	1

Notes: Pearson coefficients are above the diagonal
       Spearman coefficients and Chi-square are below the diagonal
**Correlation (2-tailed) is significant at the 0.01 level, *at the 0.05 level respectively
Source: estimated according to data from authors' data base (2012)

Pearson's coefficient values indicate statistically significant weak positive association between profitability measures ROA and ROE and productivity measures EBITDA and personnel costs. Thus, it can be expected that dairy processing companies that are more productive will obtain better financial results, which is in accordance with our expectations. Variable country has weak statistically significant negative association with profitability and productivity measures and size, while ownership is weakly statistically significant negatively correlated with those measures. Foreign ownership and country in which company operates are statistically significant correlated. It can be concluded that foreign owners do not make difference with regard the fact that Slovenia is EU country, Croatia is EU candidate country and Serbia is potential EU candidate.

Multivariate analysis

The general form of empirical model is:

$$INVEST_{it} = \beta_0 + \beta_1 * ROA_{it} + \beta_2 * ROE_{it}$$
$$+ \beta_3 * EBITDA_{it} + \beta_4 * PERSONNEL_{it}$$
$$+ \beta_5 * LSIZE_{it} + \beta_6 * COUNTRY\_SLO_{it} +$$
$$\beta_7 * COUNTRY\_CRO_{it}$$
$$+ \beta_8 * COUNTRY\_SER_{it}$$
$$+ \beta_9 * OWN\_FOREIGN_{it} + e_{it} \qquad (1)$$

Where:

$INVEST_{it}$ = capital investments per employee of the company i in year t

ROA_{it} = return on assets of the company i in year t

ROE_{it} = return on equity of the company i in year t

$EBITDA_{it}$ = earnings before interest, taxes, depreciation and amortization per employee of the company i in year t

$PERSONNEL_{it}$ = personel costs per employee of the company i in year t

$LSIZE_{it}$ = natural logarithm of total assets of the company i in year t

$COUNTRY\_SLO_{it}$ = location of the company i in year t, 1 = Slovenia, 0 = otherwise

$COUNTRY\_CRO_{it}$ = location of the company i in year t, 1 = Croatia, 0 = otherwise

$COUNTRY\_SER_{it}$ = location of the company i in year t, 1 = Serbia, 0 = otherwise

$OWN\_FOREIGN_{it}$ = foreign ownership of the company i in year t, 1 = yes, 0 = no

The overall test of the model indicates that the overall model is statistically significant (F=10.241; sig≈000). R Square value of 0,451 indicate relatively good model fit and confirm overall model significance. Also, in order to detect potential multicollinearity problem among independents, Variance Inflation Factor (VIF) are calculated. VIF values range from 1,060 to 3,611 and suggests that collinearity is not serious issue. Table 5 shows the results for OLS regression analysis on 373 company-year observations.

Return on assets (ROA of the company i in year t), earnings before interest, taxes, amortization and depreciation per employee (EBITDA of the company i in year t), salaries, wages and employee compensations per employee (PERSONNEL of the company i in year t), and size of the company (LSIZE of the company i in year t) are statistically significant at 1 % level, and Croatian institutional environment (COUNTRY_CRO of the company i in year t) is statistically significant at 5 % level. Slovenia as country

Table 5. OLS regression analysis results

VARIABLE	Beta	t
ROA	-0.217***	-3.899
ROE	0.005	0.114
EBITDA	0.437***	7.146
PERSONNEL	0.389***	2.957
LSIZE	0.350***	-3.921
COUNTRY_SLO	-0.195*	-1.839
COUNTRY_CRO	-0.171**	-2.086
COUNTRY_SER	-0.052	-0.708
OWN_FOREIGN	0.131*	1.956

Notes: ***statistically significant at the 0.01 level; **at 0.05 level; *at 0.1 level respectively
Source: estimated according to data from authors' data base (2012)

in which company operates (COUNTRY_SLO of the company i in year t) and foreign ownership of the company (FOREIGN_OWN of the company i in year t) are statistically significant at 10 % level while Serbia as country in which company operates (COUNTRY_SER of the company i in year t) and return on equity (ROE of the company i in year t) are not found statistically significantly correlated with the capital investments per employee of companies in dairy processing industry.

EBITDA and personnel costs as measure of company's productivity have expected sign of association with capital investments. As they are statistically significant, it can be concluded that companies which invest more in fixed assets per employee will be more productive. In other words, higher investment leads to modern technology or/and automation, which subsequently lowers the number of employees, which increases productivity.

Variable ROA as measure of company's profitability does not have predicted sign of association. Results show that companies with higher level of capital investments per employee obtain lower financial performance measured by return on assets, which is in contrary with the results of previous researches. Possible explanation can be found in time lag between the moment of investment and the moment in the future when investment will generate the profit. Also, it is possible that companies use upward revaluation accounting policy in recognition and measurement of fixed assets, which negatively impact the value of return on assets because the amounts of equity and asset are increasing (Aljinovic Barac and Sodan, 2011). Also, profits are lower because of the increased future depreciation

cost caused by boosted (revalued) amount of fixed asset.

Size of the company in dairy processing industry measured by natural logarithm of asset is negatively associated with the capital investments indicating that smaller companies should invest more in fixed assets, measured by investment per capita of employees, in order to develop necessary production structures to get the economies of scale enjoyed by large dairy processing companies.

Finally, amount of capital investment per employee are statistically significant for country in which company operates of Slovenia and Croatia, but not Serbia. Also, statistically significant association with foreign ownership is identified. Considering the fact that Slovenia is EU member country and accession of Croatia to the EU is expected to take place on 1 July 2013 (Croatia is currently in the ratification process by the Parliaments of all 27 EU member states which is expected to be concluded by the end of June 2013) obtained results are consistent with pattern of changes in dairy processing industry described in second part of the paper: the foreign owners continue to invest in dairy processing industry companies to improve their productivity and to increase profitability. However, it is important to note that Slovenia is quite closed to foreign direct investments and privatization.

Conclusion

This paper provided insights into capital investments in dairy processing companies in Slovenia, Croatia and Serbia as cases of EU member countries, EU candidate country and potential EU candidate

country, respectively. Namely, a specific pattern of changes in dairy processing industry in those countries, as well as in all East European transition economies can be identified. The first link in the chain is foreign investments and the last one is the investments in order to meet competition challenges and to improve productivity and to increase profitability. Although the capital investments are *condicio sine qua non* of successful business, this research showed that they are necessary, but not the sufficient condition for success. Independently of the size of the national dairy companies in countries observed, all these companies are considered as small players in the dairy sector at the common EU market. It cannot be ruled out that they will have difficulties in competing with the big dairy processing multinational companies.

Summarizing theoretical and empirical results of the research, the following recommendations can be derived: (1) The foreign owners should aim to acquire local (national) dairy processing companies, or make long term partnership with them in order to obtain the most efficient penetration on the national markets and consequently increase their profitability. (2) Parallel, regulation bodies should encourage capital investments by different tax reliefs, exemptions and incentives in order to increase competitiveness and profitability of national dairy processing companies on the global market, regardless of ownership; (3) Future researchers should investigate relation between the structure of investment and profitability in more details, as with regard to more qualitative institutional and personal characteristics.

Utjecaj kapitalnih investicija na obilježja poduzeća u industriji prerade mlijeka: iskustva Slovenije, Hrvatske i Srbije

Sažetak

Predmet ovog rada su investicije u industriju prerade mlijeka i njihov utjecaja na iskazanu proizvodnost i profitabilnost. Pregled dosadašnje literature pokazuje kako su oba segmenta mljekarske industrije, industrija proizvodnje mlijeka i industrija prerade mlijeka pretrpjele značajne promjene u "starim" EU članicama, "novim" članicama EU te u ostalim istočnoeuropskim tranzicijskim zemljama. Kod promjena koje su se događale u istočnoeuropskim tranzicijskim zemljama, može se uočiti određeni obrazac koji je započinjao izravnim stranim ulaganjima. Nakon toga su obično slijedila preuzimanja, koncentracija i konsolidacija, a završavao je investicijama, odnosno kapitalnim ulaganjima u cilju odgovora na izazove konkurencije. Glavni cilj rada je istražiti utjecaj kapitalnih ulaganja na različita kvantitativna i kvalitativna obilježja poduzeća u industriji prerade mlijeka. Rezultati su pokazali kako kapitalna ulaganja po radniku značajno povećavaju proizvodnost mjerenu pokazateljima EBITDA i troškovima rada. Također, utvrđena je statistički značajna povezanost kapitalnih ulaganja sa stranim vlasništvom. S druge strane, utvrđeno je kako kapitalna ulaganja po radniku ne utječu značajno na profitabilnost promatranih poduzeća, ako nisu popraćena promjenama u vlasničkoj strukturi i s njima povezanim know-how-om koji dolazi sa stranim vlasništvom, bez obzira na zemlju u kojoj poduzeće posluje. Iznos kapitalnih ulaganja po zaposleniku je statistički značajan za poduzeća koja posluju u Sloveniji i Hrvatskoj, ali ne i u Srbiji.

Ključne riječi: industrija prerade mlijeka, investicije, profitabilnost, produktivnost

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