Scientific Journal Warsaw University of Life Sciences – SGGW
Problems of World Agriculture volume 19 (XXXIV), number 1, 2019: 153–161
DOI: 10.22630/PRS.2019.19.1.14
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Financial Sustainability and Value of Joint-Stock Companies from Food Industry in Central and Eastern Europe

Abstract. The research presents the analysis of relations between financial sustainability and value of joint-stock companies from food industry in Central and Eastern Europe. Increase of volume of assets, shareholders' equity and revenues demonstrated an improvement of financial sustainability and resulted in growing valuations of companies in the study period. Sample business entities achieved relatively high liquidity and profitability that proved their financial sustainability in terms of risk and return. At the same time rising operating profit margins and liquidity ratios determined higher enterprise value of joint-stock companies. This emphasized a positive relation between enterprise value and financial sustainability. Joint-stock companies demonstrated a robust capital structure with a minor decrease of corporate debt in 2011-2015. However changes in sources of financing could provoke a trade-off between financial sustainability and enterprise value. According to a regression model factors positively influencing enterprise value included revenue, cash and cash equivalents, operating profit, current liabilities and shareholder's equity. Stimulating revenue and increasing operating profit as well as maintaining higher cash balances improves financial sustainability while debt extension can significantly deteriorate continuity of business.

Key words: financial sustainability, value, food industry, Central and Eastern Europe

JEL Classification: G32

Introduction

Financial sustainability of an enterprise is commonly understood as an ability to maintain its business operations by using an optimal combination of internal and external sources of financing (León, 2001). According to a broader view ensuring financial sustainability means achieving a compromise between long-term continuity of business and short-term value maximization for shareholders. In behavioral context financial sustainability defines the goal of a firm as providing acceptable return for owners and securing solvency with regard to principles of responsibility and morality in business decision-making (Palomino et al., 2011). Hence financial sustainability covers all aspects of business performance with particular reference to profitability, capital structure and operating efficiency. However striving for financial sustainability contradicts the principle of value maximization in many facets due to multidimensional perspectives of these concepts (Zabolotnyy et al., 2016). From one hand to strengthen financial sustainability and

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reduce risk a company would strive for maintaining liquidity and limiting leverage that in some circumstances would decrease the firm's cash flow and constrain return on equity (Whited, 1992). In a long term such a situation would lead to a rise of cost of capital and a downfall of net present value of investment projects. As a result value of a firm for shareholders would be affected. From another hand aiming at value and return maximization by all means managers of a company could face a number of unfavorable effects for financial sustainability including debt spiral, illiquidity, fall of credit ratings or even bankruptcy (Boratyńska, 2016). Considering this some companies maximizing value could become financially unsustainable and under some circumstances would have to exit the market (Karakaya, 2000). In a broader macroeconomic view this leads to a waste of valuable resources and initiates numerous spillover effects (Kim and Kim, 2015). Regarding this case a clear trade-off between risk associated with financial sustainability and return expressed by corporate value for owners occurs. Thus the dependence between these categories is not straightforward and requires further research.

Goal and methodology of research

The goal of the research is to present relations between financial sustainability and value of joint-stock companies from food industry in Central and Eastern Europe. This is a second paper devoted to determinants of financial sustainability and corporate value. First paper depicted an impact of profitability and capital structure on firm's value basing on the example of joint-stock companies from the Polish capital market (Zabolotnyy and Wasilewski, 2018). This paper extends the previous research by including to the sample companies from other countries of the region and covering liquidity category in the analysis.

Enterprise value of companies was expressed according to the formula:

$$\textit{Enterprise Value} = \textit{Market Capitalization} - \textit{Cash and Equivalents} + \textit{Preferred Equity} + \textit{Minority Interest} + \textit{Total Debt}$$

Financial sustainability of companies was characterized by a number of financial ratios referring to profitability, capital structure and liquidity.

Additionally to study the nature of complex relations between enterprise value and financial sustainability in context of risk and return a linear regression model was built (Stanisz, 2007). In the model enterprise value parameter was explained by variables from balance sheets and income statements of sample entities. Basing on empirical results of the research some practical recommendations on value management in context of financial sustainability were formulated.

The research sample included 83 companies from such countries as Poland (20), Croatia (18), Latvia (3), Estonia (1), Bulgaria (2), Macedonia (1), Serbia (1), Slovenia (2), Russia (6), Turkey (20) and Ukraine (9). All these countries are traditionally affiliated with European emerging markets. Financial data was obtained from local stock exchanges of particular countries. The research period covered 2011-2015.

Research results and discussion

According to a broad view presented in modern financial literature investing in emerging markets implies a greater risk associated with a higher required rate of return (Bruner et al 2008). This often brings fluctuations in capital flows and deteriorates availability of financing for companies. As a result business entities can experience a significant negative effect in terms of financial sustainability.

In 2011-2015 financial situation of joint-stock companies from Central and Eastern Europe demonstrated no clear signs of improvement (figure 1). An average value of total assets was 21613,0 mln USD while total shareholders' equity came to 10531,4 mln USD or 48,7% of assets during the study period. An initial increase in assets and shareholders' equity by 21,6% and 27,7% in 2013 comparing to 2011 was followed by a drop in these values by 25,8% and 29,4% in 2015 in relation to 2013. The compound annual growth rate (CAGR) of total assets and total shareholders' equity was (-2,5%) and (-2,6%) accordingly in 2011-2015. Total revenue grew by 9,5% in 2013 comparing to 2011 and then decreased by 20,5% in 2015 in relation to 2011. Contrary to this trend operating profit rose from 1825,8 mln USD in 2011 to 1952,8 mln USD or by 6,9% in 2015. The CAGR was (-3,4%) for revenue and 1,7% for operating profit. Net profit of sample companies demonstrated the most significant contraction (by 57,0%) in 2015 in comparison to 2011. This could be provoked by one-off extraordinary non-operating costs and rising interest payments. Hence the CAGR for net profit presented a negative value (-19,0%).

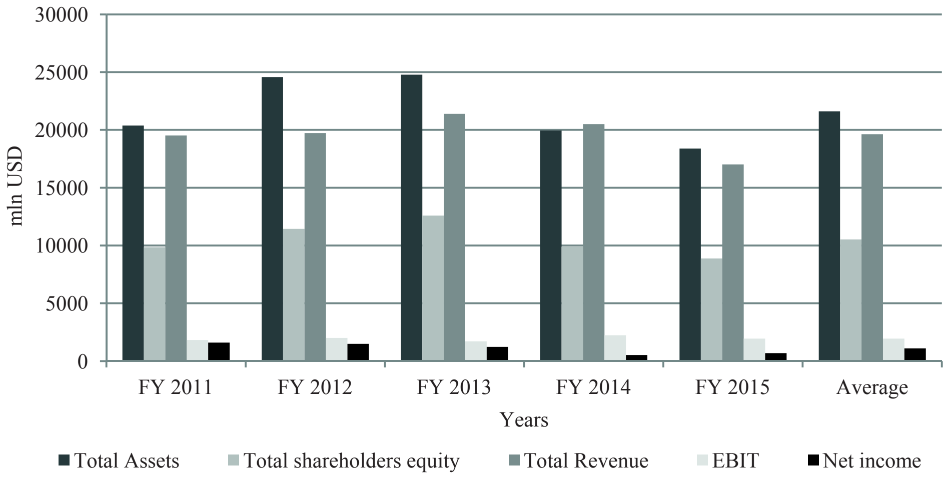

Fig. 1 Financial situation of companies from food industry in Central and Eastern Europe

Source: Authors' own research.

Unfavorable growth rates of joint-stock companies in 2011-2015 could be largely explained by structural factors such as diminishing capital accumulation and productivity gains and waning global trade processes. Moreover a slower recovery of advanced economies led to sharp declines in commodity prices due to a sluggish demand which additionally affected commodity exporting countries (ECB Economic Bulletin, 2016).

Some other force majeure factors including a military conflict in Ukraine heavily damaged assets and revenues of companies in some emerging markets (Zabolotnyy and Wasilewski, 2018). However under these circumstances managers of joint-stock companies from food sector were capable to conduct business in more efficient manner. For example an increase of operating profit by 30,4% in 2014 comparing to 2013 was partly achieved by reduction of input prices and more rational cost management.

Enterprise value of sample joint-stock companies rose from 18083,0 mln USD in 2011 to 20701,8 mln USD in 2013 (by 14,5%) and then decreased to 18068,8 mln USD in 2015 (by 12,7%) giving an average of 18907,0 mln USD (figure 2). Market capitalization accounted for 70,4% and total debt for 39,9% of enterprise value on average in 2011-2015. The CAGR of market capitalization and total debt was 1,86% and (-2,66%) accordingly in the study period. Fluctuations of enterprise value were also associated with some structural changes. Total debt share in enterprise value rose from 39,6% to 40,8% in 2011-2014 and then went down to 35,6% in 2015. Moreover the average relation between market capitalization and total debt increased from 1,74 in 2011 to 2,08 in 2015. This demonstrated the waning impact of debt on enterprise value. Cash and equivalents of joint-stock companies grew from 1780,0 mln USD in 2011 to 2654,1 mln USD in 2013 and then dropped to 1922,2 mln USD in 2015. At the same time share of cash and equivalents in enterprise value gradually rose from 9,8% in 2011 to 14,5% in 2014 coming to an average of 11,9%. The CAGR of this value came to 1,9% and pointed to increasing assets' liquidity of sample business entities in study period. This gave an evidence of improving financial sustainability of joint-stock companies.

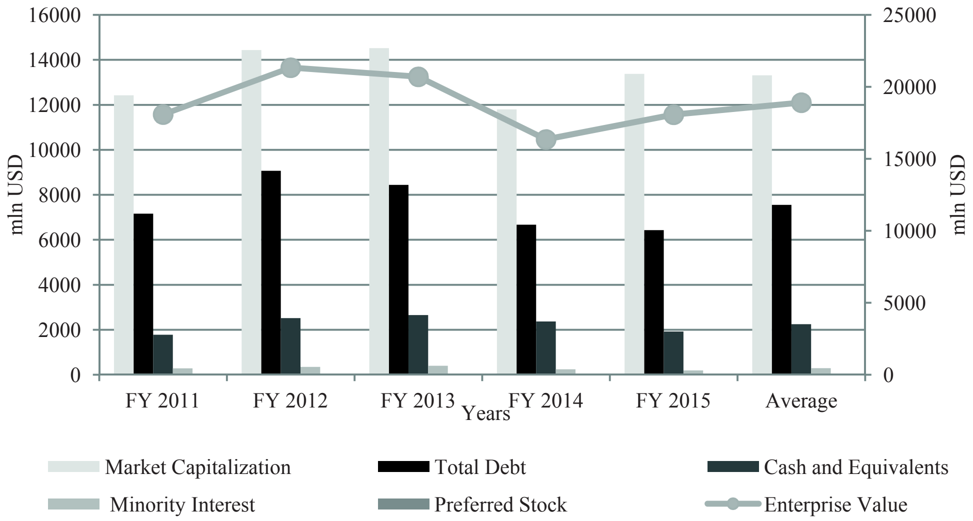

Fig. 2 Enterprise value of companies from food industry in Central and Eastern Europe4

Source: Authors' own research.

[4] Minority Interest and Preferred Stock are not visible in the chart due to insignificant values.

Table 1 presents multiples based on enterprise value (EV) of joint-stock companies from food industry in Central and Eastern Europe. Fluctuations of multiples were dependent both on changes in enterprise value and financial performance of sample entities. Generally all multiples except of enterprise value to net income grew in 2011-2013 and then dropped in 2014. This was followed by improvement of these ratios in 2015. The reason for a significant hike of multiples in 2011-2013 was a faster growth of enterprise value in relation to financial results of companies. A slump of enterprise value along with a moderate change in profits led to a sharp downfall of multiples in 2014 and 2015. In fact CAGR of enterprise value to revenue multiple demonstrated a positive value (3,5%) while CAGR of enterprise value to EBITDA and EBIT turned negative (-1,1% and -1,7% accordingly). At the same time gradual decrease of net profit led to a significant rise of enterprise value to net income multiple. The CAGR of enterprise value to net income multiple amounted to 23,4%. This pointed to a growing disproportion and weak correlation between enterprise value and net financial results of joint-stock companies.

Table 1. Enterprise value multiples of companies from food industry in Central and Eastern Europe

Financial year	Ratio			
	EV/Revenue	EV/EBITDA	EV/EBIT	EV/Net income
FY 2011	0,93	7,2	9,9	11,3
FY 2012	1,08	7,8	10,6	14,3
FY 2013	0,97	8,0	12,1	16,8
FY 2014	0,80	5,3	7,3	31,4
FY 2015	1,06	6,9	9,3	26,2
Average	0,96	7,0	9,7	17,1
CAGR (%)	3,5	-1,1	-1,7	23,4

Source: Authors' own research.

Profitability is an essential component of financial sustainability because only ability to generate profit can ensure continuity of business in a long term. Moreover according to a broad evidence higher profitability boosts firm's value. Thus sufficient income adds both to firm's sustainability and value. Sample joint-stock companies could be characterized as financially sustainable in terms of profitability (table 2). Operating margin of firms grew from 9,4% in 2011 to 11,5% in 2015 with CAGR reaching 5,3% that demonstrated increasing operating efficiency of sample entities. Such an improvement was achieved by maintaining operating profit in conditions of decreasing revenue. At the same time net profitability of joint-stock companies significantly diminished. Net income margin dropped from 8,2% in 2011 to 4,1% in 2015 with CAGR (-16,2%) while return on assets decreased from 7,9% to 3,8% (CAGR -16,9%). In 2011-2013 net income margin came to 5,8-8,2% and return on equity equaled to 9,8-16,3% while in 2014-2015 these ratios decreased to 2,6-3,8% and 5,3-7,8% accordingly. This gave an evidence of a strong relation between profitability and enterprise value: sample companies gained value in periods of higher financial efficiency and lost it when profitability ratios went down. In other words increasing financial sustainability in terms of return led to a positive effect for a firm's value.

Table 2. Profitability of companies from food industry in Central and Eastern Europe

Financial year	Ratio (%)				
	Operating Margin	Net income margin	Return on Assets	Return on Equity	Return on Investment
FY 2011	9,4	8,2	7,9	16,3	8,9
FY 2012	10,2	7,6	6,1	13,1	7,0
FY 2013	8,0	5,8	5,0	9,8	6,0
FY 2014	10,9	2,5	2,6	5,3	3,2
FY 2015	11,5	4,1	3,8	7,8	3,8
Average	9,9	5,6	5,1	10,5	5,9
CAGR (%)	5,3	-16,2	-16,9	-16,9	-19,0

Source: Authors' own research.

Capital structure is an important factor that influences both financial sustainability and enterprise value of a company. Increasing leverage negatively influences financial sustainability. At the same time an impact of debt on firm's value is more complex. From one hand an increase in debt leads to a rise of enterprise value according to mathematical equation. From another hand financially distressed companies might be less attractive for potential investors that can negatively affect their valuations. Hence finding equilibrium between equity and debt becomes one of most crucial issues in modern financial science. There were only minor changes in capital structure of joint-stock companies from food industry in Central and Eastern Europe in 2011-2015 (table 3). The average debt to equity ratio equaled to 71,7% while an average debt to enterprise value ratio came to 39,9%. In 2012 maximum debt to equity ratio (79,3%) was accompanied by the highest market capitalization and enterprise value. However this ratio demonstrated no significant changes in 2013-2014 (67,1%-67,4%) when enterprise value considerably fluctuated. This gave no clear explanation on the relation between enterprise value and debt capacity of sample companies. However debt to market capitalization ratio signaled a positive effect of debt on firm's value. In 2011-2013, when market capitalization demonstrated higher values, this ratio came to 57,6%-62,8% while in 2014-2015, under conditions of a slump in capitalization, it fell to 48,1%-56,6%. In other words this showed a trade-off between financial sustainability and firm's value: in certain cases more leveraged companies should achieve higher market capitalization. Besides in 2011-2015 the debt to enterprise value ratio decreased by 2,6% on average that pointed to fading role of leverage and more conservative strategies of financing.

Table 3. Capital structure of companies from food industry in Central and Eastern Europe

Financial year	Ratio (%)			
	Debt/Equity	Debt/Assets	Debt/EV	Debt/MC*
FY 2011	72,7	35,1	39,6	57,6
FY 2012	79,3	36,9	42,5	62,8
FY 2013	67,1	34,0	40,8	58,1
FY 2014	67,4	33,4	40,8	56,6
FY 2015	72,3	35,0	35,6	48,1
Average	71,7	34,9	39,9	56,7
CAGR	-0,1	-0,1	-2,6	-4,4

* Market capitalization

Source: Authors' own research.

Liquidity of a company directly determines its financial sustainability while an impact of this category on market capitalization and enterprise value is more complex. First of all in a short term increase in idle cash and shortage of current liabilities including debt can lead to a drop of enterprise value. Moreover in a long term the lack of liquidity threatens continuity of operations and causes additional costs that also hits enterprise value. Joint-stock companies from food industry in Central and Eastern Europe demonstrated sufficient liquidity in study period (table 4). An average current liquidity ratio of sample joint-stock companies was 1,54 while quick ratio amounted to 1,03. At the same time an average cash ratio came to 0,20 and average share of net working capital in assets equaled to 16,4% in 2011-2015. It should be mentioned that fluctuations of liquidity ratios were consistent with changes of enterprise value. Joint-stock companies demonstrated higher liquidity ratios during periods of business expansion and increasing market capitalization and enterprise value. For example current liquidity ratio came to 1,54-1,61 in 2011-2013 and fell down to 1,45-1,53 in 2014-2015. Moreover in 2011-2015 CAGR of current ratio and quick ratio was (-1,4%) and (-1,8%) accordingly that pointed to gradual loss of liquidity of sample companies. Besides in 2014 when market capitalization significantly dropped there was a relatively big decrease of current ratio by 0,09 comparing to 2013.

Table 4 Liquidity of companies from food industry in Central and Eastern Europe

Financial year	Ratio			
	Current Ratio	Quick Ratio	Cash ratio	Net working capital/Assets (%)
FY 2011	1,61	1,10	0,19	18,3
FY 2012	1,58	1,06	0,20	17,4
FY 2013	1,54	1,04	0,20	16,2
FY 2014	1,45	0,93	0,22	13,7
FY 2015	1,53	1,03	0,22	15,9
Average	1,54	1,03	0,20	16,4
CAGR	-1,4%	-1,8%	4,7%	-3,5%

Source: Authors' own research.

Quick ratio was also highly dependent on business cycle fluctuations mainly due to changes in volume of accounts payable. A slump in revenue led to a decrease of quick ratio from 1,04 in 2013 to 0,93 in 2014 that negatively influenced financial sustainability. Opposite to this cash ratio demonstrated an increase in years of lower capitalization of sample companies. This could arise both from collecting receivables from previous periods as well as decreasing capital and interest payments in times of business contraction. Besides the reason for higher cash balances could be the eagerness of managers to ensure financial sustainability in periods of limited cash inflow and weaker financial results. To sum up the research gave an evidence of a positive relation between enterprise value and liquidity. This means an increase of financial sustainability in terms of risk could give a stimulus for a rise in firm's value.

To get the better view of relations between enterprise value and financial sustainability in terms of risk and return a regression model was constructed:

$$Y = \underset{(0,066)}{0,237X_1} + \underset{(0,215)}{1,539X_2} + \underset{(0,312)}{1,908X_3} + \underset{(0,173)}{0,701X_4} + \underset{(0,096)}{0,279X_5} - \underset{(13,943)}{6,264} \quad (R^2=0,83),$$

where:
Y – enterprise value,
X_1 – revenue,
X_2 – cash and cash equivalents,
X_3 – operating profit,
X_4 –current liabilities,
X_5 – shareholders' equity.

According to the model factors positively influencing enterprise value of joint-stock companies from food sector in Central and Eastern Europe included revenue, cash and cash equivalents, operating profit, current liabilities and shareholders' equity. According to a classic valuation model this parameters are the main determinants of firm's cash flow. Hence to increase value of business managers should stimulate sales, improve operating efficiency and keep sufficient cash balance. Achieving this goals would also lead to maintaining financial sustainability. At the same time capital structure should be also taken into consideration in value management. However additional debt can negatively influence financial sustainability.

Summary

The article presents relations between financial sustainability and enterprise value of joint-stock companies from food industry in Central and Eastern Europe. Considering the results of research, the following conclusions have been made:

1. Fluctuations of enterprise value were consistent with changes in balance sheets and revenues of companies in all years of the research except of 2015 that gave an evidence of a strong relation between financial condition and value of joint-stock companies. In particular increasing volume of assets, equity and revenues demonstrated an improvement of financial sustainability and resulted in growing valuations of business entities at the same time.
2. Joint-stock companies achieved relatively high profitability and liquidity ratios that proved their financial sustainability both in terms of risk and return. Moreover growing operating profit margins and liquidity determined higher enterprise value of business entities. This emphasized a positive relation between enterprise value and financial sustainability of sample companies.
3. Joint stock companies demonstrated a robust capital structure with a minor decrease of corporate debt in the study period. However changes in sources of financing could provoke a trade-off between financial sustainability and enterprise value. In other words leveraged companies could achieve higher market capitalization under some circumstances but this could also result in a drop of financial sustainability. Hence a proper strategy of financing should be selected to ensure balance between financial sustainability and value of a company.
4. According to a regression model factors positively influencing enterprise value included revenue, cash and cash equivalents, operating profit, current liabilities and shareholder's equity. Considering principles of financial sustainability and value maximization managers should maintain revenue, operating efficiency and cash balance of a company. One should

also remember that increasing liabilities beyond selected financial strategy can rapidly deteriorate financial sustainability and lead to negative financial spillover effects.

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For citation:

Zabolotnyy S., Wasilewski M., Wasilewska N. (2019). Financial Sustainability and Value of Joint-Stock Companies from Food Industry in Central and Eastern Europe. *Problems of World Agriculture*, 19(1), 153–161; DOI: 10.22630/PRS.2019.19.1.14