

## **The Impact of Capital Structure on the Performance Efficiency of Baltic Listed Companies**

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*The capital structure can influence the behavior of the company as well as its performance results and its value. However, the effect can be quite different.*

*The financial indicators of Lithuanian, Latvian and Estonian listed companies published in their annual reports have been used in order to investigate the impact of capital structure on performance efficiency of the companies. The research included data of only non-financial companies, because the capital structure of financial institutions is specific and the performance efficiency of these companies is affected in completely different way. The research covers the period of 2002 – 2011. Data of 70 companies were used in this research: 28 Lithuanian companies, 14 Estonian companies, and 28 Latvian companies.*

*In order to examine the interaction of capital structure with the companies' performance efficiency, the correlation analysis between the indicators of indebtedness level (long-term financial debt ratio, short-term financial debt ratio, financial debt ratio, non-financial debt ratio) and the following performance indicators: operating profit margin, net profit margin, return on equity, return on assets, liquidity ratio, capital asset turnover and total asset turnover was performed. The p-value was used to verify the reliability of observed correlation. In order to estimate the strength of the influence of indebtedness on performance efficiency of the companies, the multivariate regression analysis was performed. During the regression analysis, the indicators describing performance efficiency of the companies were used as dependent variables and financial and non-financial debt ratios were used as independent variables.*

*The research evidenced that the higher financial indebtedness level affects negatively the profitability ratios of companies in the Baltic countries; also both financial and non-financial debts reduce the liquidity of the companies. It was also found that influence of the debts on the efficiency of asset management is ambivalent: financial debt has a negative impact on capital asset turnover and total asset turnover, but higher level of non-financial debts leads to higher level of the turnover indicators.*

**Keywords:** *capital structure, financial leverage, corporate finances, financial decisions, efficiency of corporate performance.*

### **Introduction**

The capital structure optimization is extremely important and complex field in corporate financial management, since the performance success, viability and future survivability and business prospect of a company depend on financing decisions. In order to optimize the capital structure of a company, it is necessary to take into account very wide range of external and internal factors, and to evaluate benefits and problems arising from the use of different financing sources. Inadequate selection of financing sources, their proportions, misjudgments about abilities to pay, may cause solvency problems and decline in effectiveness of capital usage, profitability and value of a company. The implementation of one of the main company's goals (maximization of return earned by shareholders) can be stimulated when increasing part of the debt capital in the structure of companies' financing sources; however this decision leads to a greater financial risk.

The decisions on capital structure are important not only because of the need to maximize returns, but also

because they affect the company's ability to readjust in the competitive and rapidly changing economic environment.

Inadequate capital structure results in high capital costs, which in its turn leads to a more stringent selection of investment projects, because not all of the investment alternatives meet increased requirements on investment return. Restrictions on investment activities affect the company's growth potential and its competitiveness in the negative way. Not optimal capital structure leads also to more intense conflict between owners and managers of a company which evidences as the transformation of managers' motivation, which in turn leads to ineffective and even high-risky investment decisions. On the other hand, the usage of debt capital allows faster growth of a company and increase in its competitiveness. Thus, the capital structure certainly affects company's financial results and its future. For these reasons, there is a need to investigate the impact of capital structure decisions on performance results of companies.

Capital structure and factors influencing it in different countries and different business sectors are analyzed in

most of the empirical studies up to now. A fair amount of such studies is done in developed countries, and recently it is becoming a very popular area of research in developing countries as well.

Many researchers explored the impact of debt capital on growth opportunities of companies. Such studies were carried out by (Bradley *et al.*, 1984; Long & Malitz, 1985; Smith & Watts, 1992; Gaver & Gaver, 1993 and Barclay *et al.*, 1995; Rajan & Zingales, 1995; McConnell & Servaes, 1995; Jung *et al.*, 1996; Barclay *et al.*, 2003; Harvey *et al.*, 2004; Alonso *et al.*, 2005; Barclay *et al.*, 2006). Some researchers studied the impact of capital structure decisions on investments and value of a company. The studies in this field were carried out by (Cantor, 1990; Whited, 1992; Kopcke & Howrey, 1994; McConnell & Servaes, 1995; Lang *et al.*, 1996; Lyandres & Zhdanov, 2005; Singh & Faircloth, 2005; Aggarwal, 2006; David & Olorunfemi, 2010; Franklin & Muthusamy, 2011).

Investigation of the impact of financing decisions on performance efficiency of companies is limited to their impact on profitability indicators. The impact of capital structure on profitability indicators was studied by (Gleason *et al.*, 2000; Deesomsak, 2004; Abor, 2005; Huang & Song, 2004; Berger & Bonaccorsi, 2006; Tian & Zeitun, 2007; Rao *et al.*, 2007; Akintoye, 2008; Nimalathan & Valeriu, 2010; Onalapo & Kajola, 2010; San & Heng, 2011). Only few studies in this research area were carried out in Baltic countries. Norvaisiene *et al.*, (2008) analyzed the impact of debt capital on investment and growth in the companies of Baltic countries. *Bistrova et al.*, (2011) analyzed the impact of capital structure on return on equity and return on assets in the Baltic countries; however the results of this research are incorrect, because interrelated and interdependent variables were used as the regressors during the regression analysis. Norvaisiene & Stankeviciene (2012) investigated the impact of funding decisions on profitability indicators of Lithuanian food and beverage companies.

However, funding decisions inevitably impact not only on profitability, but also other indicators that describe performance efficiency of the companies. The impact of capital structure on companies' performance and their financial indicators may occur differently in different countries and under different economic conditions. However, a review of researches accomplished up to now raises a question whether capital structure affects only profitability ratios of the company or other indicators reflecting efficiency of corporate performance are affected as well? Research findings of other scientists also do not answer the question whether this effect is different in different countries and whether it fluctuates when a stage of economic cycle changes. *Novelty of this study* is that the impact of capital structure on profitability, solvency and turnover ratios under changing phase of economic development is analyzed.

*The purpose of this article* is to evaluate the impact of capital structure on the performance efficiency of companies in the Baltic countries under changing economic situation.

*The object of the research* is the capital structure of Baltic listed companies and its impact on financial indicators that describe performance efficiency.

*Research methods:* analysis of scientific literature, statistical analysis, comparative analysis, correlation analysis, multivariate regression analysis.

### **The interaction of capital structure and performance efficiency of the company**

Many researchers accept that capital structure can influence behavior of the company as well as its performance results and its value. However, this effect can be quite different.

The impact of company's financing decisions on its performance results occurs primarily through the effect of financial leverage. The effect of financial leverage is conditioned by equity to debt ratio, and by the difference between return on assets and cost of debt capital. The more of debt capital is used by the company and the more return on assets exceeds the cost of debt capital, the faster is increasing in return on equity during the growth of return on assets. Thus, borrowing may lead to growth of return earned by shareholders if the company is able to use borrowed funds effectively and is able to earn considerably higher returns as compared to the cost of debt. Also due to the effect of financial leverage, net profit increases significantly faster as compared to operating profit. Moreover, the higher the difference between the operating profit and net profit growth is the bigger part of debt is in company's capital structure. Thus, under favorable economic conditions, increasing operating profit may result in higher net profit as well as in higher earnings per share in case of increased use of debt capital. However, under unfavorable situation, the decline in operating profit leads to considerably higher decline in net profit due to higher financial leverage. So, more intensive use of debt capital may lead to decline in the profitability indicators under unfavorable conditions.

The company which uses more own funding sources to finance its activity, is distinguished by high financial stability but it does not exploit opportunities to increase return on invested capital together restraining its growth rates. On the other hand, the use of borrowed funds provides the company with a higher potential and extent of development, thus leading to higher profitability; however this leads to higher financial risk.

Traditional theory of capital structure suggests that changes in capital structure affect costs of separate financing sources and hence weighted average cost of capital. According to this theory, there is a certain marginal capital structure where the weighted average cost of capital is minimized and value of the company is maximized.

Fundamentally, according to the traditional approach, borrowing is the right step which increases wealth of company's shareholders, at least to the level beyond which debt will have a negative effect on weighted average cost of capital and, accordingly, on shareholders' wealth.

Referring to the authors of trade off theory (Jensen & Meckling, 1976; Meyers, 1977; Jensen, 1986) it can be concluded that companies when making financing decisions, look for a compromise between tax benefits provided by the use of debt capital and additional costs (financial difficulties and agency costs) that grow with increase of liabilities. The company, that uses debt capital,

benefits because interest is tax-exempt. Thus, the increase in financial leverage leads to decrease of weighted average cost of capital due to lower cost of debt capital, so value of the company is increasing (David & Olorunfemi, 2010).

However, the rising debt leads to additional costs, which include costs of financial difficulties and agency costs. Megginson (2006) marks direct and indirect costs of financial difficulties. Direct costs include the judicial and administrative costs. Indirect costs are associated with the actions of customers and suppliers (including suppliers of capital) they undertake after learning about financial problems of the company, also inadequate management decisions that help to keep company operating in the short-term period, but reduces its value in the long run.

If company has limited resources, there is always the issue of choice between financing by equity or debt capital: indraft of more equity capital reduces possible owner's share of profit (Jensen & Meckling, 1976). On the other hand, increase of the debt level prevents company's managers from the extremely risky decisions that could adversely affect performance results of the company; therefore it is assumed that companies with higher financial leverage may have higher performance efficiency.

This is related to the agency problem which arises when minor owners cannot manage the company themselves and are constrained to hire managers. Separation of ownership rights from the company's management conditions agency costs, which may significantly reduce efficiency of company's performance. Due to the different interests of owners and managers in the company, there is a risk that available resources will be used absolutely not on purpose to increase of shareholders' benefit. In this case, there is a need for shareholders to monitor actions of management. Owners of larger blocks of shares have more options to control managers as compared to minor owners.

Companies that use financial leverage are more favorable to shareholders, as the debt level can be used as a control tool for management (Boodhoo, 2009). Therefore, it is expected that higher financial leverage should reduce agency costs, increase efficiency and lead to better results of company's performance (Aghion *et al.*, 1999; Akintoye, 2008).

There is also another approach, under which it could be stated that the use of debt capital can lead to decline of company's financial indicators. According to Smith and Warner's (1979) point of view, the high financial leverage may condition decline of efficiency in the long run: generally, lenders are less willing to take risks, so company's managers are often encouraged to reject risky projects and reduce research and development expenses.

Authors of signaling theory (Myers & Majluf, 1984; Ross, 1977) relate the decisions on capital structure with signals transmitted to investors. These signals must notify about company's performance prospects. Companies that undertake additional financial obligations believe in their performance prospects and in ability to pay creditors, thus leading to investors' confidence. On the other hand, shareholders being aware about future profitable project will attempt to prevent an emission of new stock, because the profit increased due to project implementation would have to be shared with new owners in that case. If a project is funded by a loan, the company will have to pay fixed

interest rate regardless of increased profit. Meanwhile, if company's outlook is not very good, the company will be willing to issue new shares in order to share possible losses with new shareholders (Klein *et al.*, 2002). Thus, according to this theory, it can be stated that companies which have higher level of financial debts, pursue promising projects, resulting in increase of performance efficiency of these companies in case of favorable conditions.

Thus, researches of various scientists do not give unambiguous answer whether more extensive use of debt capital increases or reduces performance efficiency of the company.

The results of recent empirical research are quite diverse and ambiguous. It should be noted that only the relationship of capital structure and profitability is analyzed in many studies without examining the impact of debt on other financial indicators of the company.

Gleason *et al.*, (2000) in the study of European countries found a significant negative relationship between the level of financial debt, and ROA and profit margin. Deesomsak, (2004) also found a negative relationship between the financial leverage and net profit margin in Malaysia.

Abora, (2005) investigated how capital structure influenced the profitability of the companies listed in Ghana's stock exchange during a five-year period. The research results indicate that there is a significant positive correlation between short-term debt to assets ratio and return on equity, as well as a significant positive correlation between total liabilities to assets ratio and return on equity.

Huang & Song, (2004) carried out a study in China and found a negative relationship between a long-term debt and ROA, as well as between all the liabilities and ROA.

The research of Berger & Bonaccorsi, (2006) evidenced that neither high level of financial leverage nor small-scale capital is associated with higher performance efficiency of the company.

The study of Akintoye, (2008) in Nigeria evidenced that the results of company's performance (profit before interest and taxes, earnings per share, dividend per share) and leverage indicators (operating leverage and financial leverage) are significantly related.

The results of survey of Ebaid, (2009) in Egypt revealed that long-term debt to assets ratio and total liabilities to assets ratio has a significant negative impact on return on equity.

Nimalathasan & Valeriu, (2010) in their study in Sri Lanka disclosed that financial leverage is positively related to profitability indicators.

Onalapo & Kajola, (2010) analyzed Nigerian listed non-financial companies and found that financial leverage affects performance results of companies in Nigeria.

San & Heng (2011) conducted a study in Malaysia and disclosed that a significant relationship between ROC, EPS indicators and capital structure exists in big companies. A significant positive correlation was established between the operating profitability and long-term debt to equity ratio in medium-sized companies. In small companies, debt to capital ratio had a significant negative impact on EPS indicator.

## Research data

In order to investigate the impact of liabilities on performance efficiency of Baltic companies, there were used financial indicators of Lithuanian, Latvian and Estonian listed non-financial companies picked from published annual reports of these companies. The research covers the period of 2002-2011. In order to evaluate the influence of capital structure decisions on the performance efficiency of companies under different economic conditions, the research period was divided into three sub-periods: moderate growth of economy (period of 2002-2004), rapid growth of economy (period of 2005-2007) and recession and recovery of economy (period of 2008-2011). Data of 70 companies were used in this research: 28 Lithuanian companies, 14 Estonian companies, 28 Latvian companies.

The performance efficiency of companies can be characterized by a number of financial ratios that allow evaluating of performance efficiency in various aspects.

The main groups of financial ratios are following: profitability ratios, solvency ratios and ratios of asset management efficiency; therefore indicators from all of these groups were used in this research. Following indicators describing the performance efficiency of companies were employed in this research:

- Operating profit margin **OPM** (*operating profit/sales*);
- Net profit margin **NPM** (*net profit/sales*);
- Return on equity **ROE** (*net profit/equity*);
- Return on assets **ROA** (*net profit/total assets*);
- Current solvency ratio **CSR** (*current assets/current liabilities*);
- Fixed asset turnover **FAT** (*sales / fixed assets*);
- Total asset turnover **TAT** (*sales / total assets*).

The average values of above mentioned ratios for Baltic listed companies are presented in Table 1 in accordance with sub-periods used in the research.

Table 1

**The ratios of performance efficiency for Baltic listed companies for the period of 2002-2011**

Ratios	Lithuanian companies			Latvian companies			Estonian companies		
	2002-2004	2005-2007	2008-2011	2002-2004	2005-2007	2008-2011	2002-2004	2005-2007	2008-2011
OPM, %	5,59	7,82	4,22	7,21	6,69	5,57	9,46	16,45	8,31
NPM, %	4,40	5,65	1,74	4,53	5,02	2,02	9,00	14,05	2,78
ROE, %	7,86	7,55	3,68	7,13	7,30	3,23	8,62	18,43	1,69
ROA, %	4,26	4,96	2,17	4,71	4,36	2,19	7,21	10,95	2,11
CSR	2,03	1,65	2,92	3,00	2,74	3,87	2,01	2,45	2,99
FAT	1,82	2,94	2,39	2,31	2,83	2,26	3,75	2,78	2,40
TAT	0,99	1,08	1,1	1,02	1,06	0,92	1,31	1,06	0,99

Summarizing the data collected, it is evident that the indicators of performance efficiency in Baltic listed companies have been very different. Estonian companies were distinguished by the largest operating profit margin and net profit margin during the entire period of the research. During the period of 2002-2004, one euro of sales revenue in Estonian companies earned 0,09 euro of net profit on the average. During the period of economic growth (i.e. the period of 2005-2007), net profit margin increased even up to 14 percent. The crisis has significantly transformed financial situation and performance indicators of the companies, so the average net profit margin of Estonian companies was just 2,78 percent during the period of 2008-2011, but remained the highest as compared to net profit margin of other Baltic companies. During the period of 2002-2004, Lithuanian and Latvian companies have earned nearly twice less net profit from one euro of sales revenue as compared to Estonian enterprises: the net profit margin of companies in these countries was 4,4 percent and 4,53 percent, respectively. During the period of 2005-2007, this indicator slightly increased, but the lag from the Estonian companies became even more significant, as in Latvia the average net profit margin was only 5,02 percent, and in Lithuania it was 5,65 percent. During the period of 2008-2011, both Lithuanian and Latvian companies earned only 0,02 euro of net profit from one euro of sales revenue.

Equity management was quite similar and rather efficient in Lithuania and Latvia during the periods of 2002-2004 and 2005-2007 because return on equity ranged from 7,13 percent to 7,86 percent. Meanwhile, equity in Estonia was managed very effectively during the period of 2005-2007, as shareholders earned 0,18 euro of net profit from one euro of equity on the average. By the reason of financial crisis during the period of 2008-2011, return on equity in Lithuanian and Latvian companies decreased by more than two times; the average return on equity in Estonian companies dropped even to 1,69 percent.

Analysis of asset profitability evidenced that efficiency of asset management is unsatisfactory both in Lithuanian and Latvian companies because during the periods of 2002-2004 and 2005-2007 return on assets ranged from 4,26 to 4,96 percent. Meanwhile Estonian companies managed to earn a net profit of 0,07 euro from one euro of assets during the period of 2002-2004 and 0,11 during the period of 2005-2007; this points to high efficiency of asset management. During the period of 2008-2011, return on assets decreased significantly and was alike in all three Baltic countries: ranged from 2,11 to 2,19 percent.

Analysis of the current solvency ratio evidenced that companies of the Baltic countries did not have any short-term solvency problems during the entire research period, and could easily cover their current liabilities by current assets.

The calculated fixed asset turnover evidenced that companies of all three Baltic countries, quite effectively manage their fixed assets. During the period of 2002-2004, the least successful in managing fixed assets were Lithuanian companies where one euro of fixed assets earned 1,82 euro of sales revenue on the average. Meanwhile, the Estonian companies managed their fixed assets almost twice more effectively: fixed assets turnover was as high as 3,75 in the same period. During the period of 2005-2007, this ratio was alike in all three Baltic countries and ranged from 2,78 to 2,94. The crisis has resulted in decrease of sales revenue in many companies, so fixed asset turnover decreased during the period of 2008-2011, but through the companies' effort to sell unnecessary fixed assets and through the decrease of amount of investments in fixed assets, this indicator decreased less as compared to the decrease of sales revenue, and ranged from 2,26 to 2,4.

Total assets turnover increased from 0,99 to 1,1 in Lithuanian companies during the research period; this evidences about increasing efficiency of asset management, but still the ratio is quite low. Asset turnover in Latvian companies decreased from 1,02 to 0,99, and in Estonian companies – from 1,31 to 0,99. Such ratio points to the fact that Baltic companies are unable to manage their assets effectively in terms of income earning.

Quite different ratios are used to evaluate capital structure in various empirical studies, but the author of this article considers that the largest impact on performance efficiency of companies and its financial indicators has a financial debt for which interest is paid, therefore level of financial debt was used in this research as one of the key indicators. To assess whether the maturity of financial debt has an impact on performance efficiency of companies, the ratios describing structure of financial debt were used in the research, i.e. the levels of long-term financial debt and short-term financial debt. It is likely that performance indicators of companies may be affected also by non-financial debt, so the ratio describing the level of non-financial debt is also included in the research. Thus, following indicators describing the level of liabilities were employed in this research:

- Long-term financial debt ratio *LFD* (*long-term financial debt / total assets*);
- Short-term financial debt ratio *SFD* (*short-term financial debt / total assets*);
- Financial debt ratio *FD* (*total financial debt / total assets*);
- Non-financial debt ratio *NFD* (*long-term and short term non-financial debt / total assets*).

The average values of debt ratios for Baltic listed companies during the period of 2002-2011 are presented in Table 2.

Table 2

**The debt ratios for Baltic listed companies for the period of 2002-2011**

Ratios	Lithuanian companies			Latvian companies			Estonian companies		
	2002-2004	2005-2007	2008-2011	2002-2004	2005-2007	2008-2011	2002-2004	2005-2007	2008-2011
LFD	0,14	0,14	0,10	0,07	0,09	0,14	0,14	0,16	0,21
SFD	0,07	0,10	0,13	0,05	0,07	0,07	0,11	0,08	0,08
FD	0,21	0,25	0,24	0,13	0,16	0,21	0,24	0,24	0,29
NFD	0,17	0,27	0,21	0,20	0,21	0,21	0,20	0,16	0,15

The analysis of the ratios presented in Table 2 evidenced that companies in the Baltic countries are unwilling to use a lot of debt capital. Very small part of financial debt is in the capital structure of Latvian companies: during the period of 2002-2004, financial debt amounted only to 13 percent of all financing sources on the average; during the period of 2008-2011 this part increased up to 21 percent, but remained relatively low as compared to the part of financial debt of companies in many developed countries. In different periods, the average financial debt in the capital structure of Lithuanian companies ranged from 21 to 25 percent and of Estonian companies – from 24 to 29 percent, but it was also relatively low.

Companies in the Baltic countries are more likely to use long-term financial debt to finance their performance as compared to short-term, because long-term financial debt ratio is higher than short-term financial debt ratio almost in all periods. The lowest long-term financial debt ratio during the periods of 2002-2004 and 2005-2007 was in Latvian companies, where it was only 0,07-0,09. Meanwhile, long-term financial debt in the capital structure of Lithuanian and Estonian companies during

those periods was 14-16 percent on the average. During the period of 2008-2011 long-term financial debt ratio in Lithuanian companies decreased to 0,1 mainly due to difficulties of obtaining credit. Long-term financial debt ratio in Estonian companies during this period rose up to 0,21 and was highest during all the research period.

Even smaller source of financing in companies of all Baltic countries was short-term financial debt. During the period of 2002-2004, this debt amounted only to 5 percent on the average in the capital structure of Latvian companies; and during other periods it amounted to 7 percent on the average. Lithuanian companies tended to increase short-term financial debt: during the period of 2002-2004, this debt amounted only to 7 percent of all financing sources and during the period of 2008-2011, short-term financial debt ratio was 0,13. The highest short-term financial debt ratio during the period of 2002-2004 was in Estonian companies: 0,11, but during the later periods, Estonian companies were more likely to make certain of loans for a longer period, thus reducing short-term financial debt. During the period of 2008-2011, short-term financial debt amounted only to 8 percent in the capital structure of Estonian companies.

Level of non-financial debt in the capital structure of Latvian companies during all the research period remained relatively stable and was 0,2-0,21. Lithuanian companies used non-financial debt as financing source at the lower level than the companies in other Baltic countries, as non-financial debt amounted to 17 percent of all funding sources during the period of 2002-2004. During the period of 2005-2007, Lithuanian companies significantly increased the part of non-financial debt in the capital structure. However during the period of 2008-2011, the changed economic situation in the country enforced to change the financing policy: non-financial debt ratio decreased to 0,21. Estonian companies tended to reduce non-financial debt during the research period: non-financial debt ratio decreased from 0,2 to 0,15.

### Results of the research

In order to investigate the relationship of capital structure with the indicators of performance efficiency of companies, correlation analysis was performed. The *p-value* was used to verify the reliability of observed correlation. Only statistically significant correlation coefficients at the significance level of 0,01 are presented here (i.e., the relationship between the ratios is considered to be reliable and significant when the *p-value* < 0,01). Other correlation coefficients (not presented in the table), were statistically insignificant, because the derived *p-values* exceeded established significance level. The results are presented in Table 3.

Table 3

**Correlation of debt level and performance efficiency indicators in Baltic companies during the period of 2002-2004**

Ratios	LFD	SFD	FD	NFD
OPM	Lithuanian companies	-	-	-
	Latvian companies	-	-	-
	Estonian companies	-	-0,679	-
NPM	Lithuanian companies	-	-	-
	Latvian companies	-	-	-
	Estonian companies	-	-0,738	-0,489
ROE	Lithuanian companies	-	-	0,373
	Latvian companies	-	-	-
	Estonian companies	-	-0,854	-0,727
ROA	Lithuanian companies	-	-	-
	Latvian companies	-	-	-
	Estonian companies	-0,498	-0,809	-0,806
CSR	Lithuanian companies	-	-	-
	Latvian companies	-	-0,374	-0,594
	Estonian companies	-0,528	-	-0,620
FAT	Lithuanian companies	-	-	0,548
	Latvian companies	-	0,306	0,414
	Estonian companies	-	-	0,666
TAT	Lithuanian companies	-	-	0,527
	Latvian companies	-	0,366	0,641
	Estonian companies	-	-	0,488

The results of analysis are quite different in each of the Baltic countries. Weak positive correlation between return on equity and non-financial debt ratio was established in Lithuanian companies during the period of 2002-2004. Any correlation did not evidence between other profitability indicators and capital structure ratios. A medium positive dependence of non-financial debt level and fixed asset turnover, also total asset turnover, shows the fact that higher level of non-financial debt resulted in a higher level of asset management efficiency in Lithuanian

companies during the period of 2002-2004. During the period of 2002 – 2004, debt capital did not have any big impact on profitability indicators in Latvian companies. During the research period, a weak negative correlation between short-term financial debt and current solvency ratio was established, as well as a medium negative correlation between non-financial debt and current solvency ratio. Both short-term financial debt and non-financial debt had a positive impact on efficiency of asset management in Latvian companies; this is confirmed by established weak correlation between short-term financial debt and fixed asset turnover, also total asset turnover, and also by a medium correlation between non-financial debt and total asset turnover.

During the period of 2002-2004, a medium negative correlation between short-term financial debt and operating profit margin was established in Estonian companies, as well as a strong negative correlation between this debt and net profit margin, return on equity, return on assets; this indicates that companies with higher level of short-term financial debt had lower rates of return. Higher level of long-term financial debt also had a significant negative effect on return on assets. A medium positive relationship between non-financial debt and fixed assets turnover, and a weak positive relationship between this debt and total asset turnover established in Estonia, like in the other Baltic countries, indicate the fact that companies may achieve higher efficiency of asset management when using more non-financial debt.

Table 4

**Correlation of debt level and performance efficiency indicators in Baltic companies during the period of 2005-2007**

Ratios	LFD	SFD	FD	NFD	
OPM	Lithuanian companies	-0,274	-0,331	-0,392	-
	Latvian companies	0,407	-	0,317	-
	Estonian companies	0,407	-	-	-0,441
NPM	Lithuanian companies	-0,339	-0,320	-0,435	-
	Latvian companies	-	-	-	-
	Estonian companies	-	-	-	-0,479
ROE	Lithuanian companies	-	-0,255	-0,325	-
	Latvian companies	-	-	-	-
	Estonian companies	-	-	-	-
ROA	Lithuanian companies	-0,305	-0,299	-0,398	-
	Latvian companies	-	-	-	-
	Estonian companies	-	-0,416	-0,430	-
CSR	Lithuanian companies	-0,326	-0,374	-0,455	0,386
	Latvian companies	-	-0,393	-0,350	-0,404
	Estonian companies	-0,422	-0,464	-0,560	-
FAT	Lithuanian companies	-	-	-	0,294
	Latvian companies	-	-	-	0,550
	Estonian companies	-0,406	-	-	0,745
TAT	Lithuanian companies	-	-	-	0,249
	Latvian companies	-0,360	0,368	-	0,466
	Estonian companies	-0,493	-	-	0,785

Analysis of the data from the period of 2005-2007 evidenced that financial debt during these years had a negative impact on profitability indicators of Lithuanian companies, but established correlation was quite weak. During this period, current solvency ratio was negatively affected by financial debt, but the opposite impact on this ratio had a non-financial debt, i.e. Lithuanian companies with higher level of non-financial debt were distinguished by higher solvency. As in previous period, non-financial debt had a positive impact on efficiency of both fixed

assets and total asset management during the period of 2005-2007, but the established correlation is pretty weak.

Over a period of the country's rapid economic growth, Latvian companies with higher level of financial debt earned more operating profit. However, during the period of 2005-2007, neither financial, nor non-financial debt had any significant impact on other profitability indicators of Latvian companies. Financial and non-financial debt had a negative impact on solvency indicators of Latvian companies; however a positive medium correlation between non-financial debt and turnover ratios indicates that this debt has a positive impact both on fixed asset turnover and total asset turnover.

The analysis of indicators of Estonian companies during the period of 2005-2007 gave rather contradictory results: companies with higher level of long-term financial debt were distinguished by higher operating profit margin, but the non-financial debt had a negative effect on the operating profit margin as well as on net profit margin of Estonian companies. Higher short-term debt during the research period resulted in lower return on assets. Estonian companies with higher level of long-term financial debt during the period of 2005-2007 were distinguished by lower solvency ratios, as well as by lower turnover ratios. A strong positive correlation between non-financial debt and turnover ratios evidences the fact that higher level of non-financial debt in capital structure results in a higher turnover of both fixed assets and total assets.

Higher level of short-term financial debt had a negative effect on return on equity in Latvian companies during the period of 2008-2011. A correlation between other profitability indicators and ratios of debt level did not evidence. Higher level of short-term financial debt and non-financial debt resulted in a weaker ability of Latvian companies to pay their current liabilities. Long-term financial debt had a negative impact on fixed asset turnover, while higher level of non-financial debt had a positive impact on management efficiency of both fixed and total assets.

Short-term financial debt resulted in lower profitability indicators in Estonian companies during the period of 2008-2011. Lower operating net margin during this period was a result of higher non-financial debt level as well. Estonian companies with higher level of long-term financial debt had a lower turnover of both fixed assets and total assets. A medium positive correlation between non-financial debt and turnover ratios indicates that higher level of non-financial debt allows more efficient management of assets.

Correlation analysis allows determining the strength of the relationship between the investigated variables but it does not establish causality in this relationship. Using only correlation analysis, it is not possible to determine whether the performance efficiency indicators make an influence on the debt level in companies, or just the opposite – debt affects performance efficiency of companies.

A number of authors, who investigated capital structure and its impact on indicators of companies, propose that size of the company has a significant impact on the correlation of financial indicators. Therefore, the multivariate regression analysis included a variable *S* which characterizes the size of the company and is determined as the natural logarithm of sales revenue.

To assess the impact of debt on performance efficiency of companies in the Baltic countries, the multivariate regression analysis has been carried out. For this analysis, the independent variables were indicators of debt level, and the dependent variables – indicators of performance efficiency of companies. The main results of this analysis for different sub-periods are presented in Tables 6-8. Following tables provide beta coefficients of statistically significant variables and values of the constant only in regression equations with the coefficient of determination higher than 0,2. Values of standardized beta coefficient are presented in brackets to help evaluate which of the independent variables made a stronger impact on dependent variable.

The analysis of dependence of performance efficiency indicators on financial and non-financial debt level evidenced that level of non-financial debt had only a little impact on profitability of companies in the Baltic countries during the period of 2002-2004 (see Table 6).

Debt level in Lithuanian and Latvian companies did not impact profitability indicators. Meanwhile in Estonian companies, level of financial debt negatively affected net profit margin, return on equity, and return on assets.

Higher level of both financial and non-financial debt conditioned lower level of current solvency ratio in Latvian and Estonian companies, but had no significant

Table 5

**Correlation of debt level and performance efficiency indicators in Baltic companies during the period of 2008-2011**

		LFD	SFD	FD	NFD
OPM	Lithuanian companies	-0,301	-0,394	-0,477	-
	Latvian companies	-	-	-	-
	Estonian companies	-	-0,470	-	-0,484
NPM	Lithuanian companies	-0,338	-0,426	-0,523	-
	Latvian companies	-	-	-	-
	Estonian companies	-	-0,578	-	-
ROE	Lithuanian companies	-	-0,371	-0,330	-
	Latvian companies	-	-0,402	-	-
	Estonian companies	-	-0,486	-	-
ROA	Lithuanian companies	-	-0,370	-0,400	-
	Latvian companies	-	-	-	-
	Estonian companies	-	-	-	-
CSR	Lithuanian companies	-	-0,405	-0,403	-0,467
	Latvian companies	-	-0,306	-0,309	-0,385
	Estonian companies	-	-	-	-
FAT	Lithuanian companies	-	-	-	-
	Latvian companies	-	-	-	0,291
	Estonian companies	-0,579	-	-0,597	,605
TAT	Lithuanian companies	-	-	-	0,302
	Latvian companies	-	-	-	0,395
	Estonian companies	-0,440	-	-0,481	0,624

The results of analysis for the period of 2008-2011 confirmed the relations established between the debt level of companies and performance efficiency indicators in the previous periods. Financial debt negatively affected all profitability indicators of Lithuanian companies during the period of 2008-2011. Both financial and non-financial debt negatively affected solvency of Lithuanian companies during crisis and post-crisis' period; and higher level of non-financial debt reasoned higher efficiency of asset management, although the impact of this debt on asset turnover ratios was weak.

effect on ability of Lithuanian companies to pay quickly their current liabilities.

Higher level of non-financial debt in capital structure of companies in all three investigated countries had a significant positive impact on asset turnover, but this

impact was quite minor because change in non-financial debt level explained from 23,9 to 41,1 percent of change in assets turnover. In Lithuanian companies, assets turnover was positively affected also by financial debt level, but this impact was lower than that of non-financial debt.

Table 6

**The results of multivariate regression analysis for the period of 2002-2004**

Indicator		Significant variables			Constant	Coefficient of determination
		FD	NFD	S		
OPM	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-	-	0,099 (0,742)	-0,995	0,550
NPM	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-0,274 (-0,367)	-	0,058 (0,428)	-0,484	0,407
ROE	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-1,038 (-0,604)	-	0,135 (0,433)	-1,226	0,701
ROA	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-0,574 (-0,818)	-0,247 (-0,227)	0,030 (0,237)	-0,068	0,768
CSR	Lithuanian companies	-	-	-	-	-
	Latvian companies	-6,353 (-0,253)	-16,265 (-0,579)	-	6,974	0,416
	Estonian companies	-5,394 (-0,790)	-5,138 (-0,487)	-	4,444	0,592
FAT	Lithuanian companies	-	6,682 (0,538)	-	0,644	0,289
	Latvian companies	-	-	-	-	-
	Estonian companies	-	19,215 (0,666)	-	-0,437	0,443
TAT	Lithuanian companies	0,911 (0,227)	2,324 (0,545)	-	0,390	0,329
	Latvian companies	-	2,764 (0,641)	-	0,483	0,411
	Estonian companies	-	2,080 (0,488)	-	0,858	0,239

Regression analysis of data from the period of 2005-2007 evidenced that, as in the previous period, neither financial nor non-financial debt had a significant impact on profitability indicators of Lithuanian and Latvian

companies. Non-financial debt had a negative impact on operating profit margin and higher financial debt resulted in lower return on assets only in case of Estonian companies (see Table 7).

Table 7

**The results of multivariate regression analysis for the period of 2005-2007**

Indicator		Significant variables			Constant	Coefficient of determination
		FD	NFD	S		
NPM	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-	-0,626 (-0,479)	-	0,249	0,230
ROE	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-	-	0,044 (0,492)	-0,304	0,242
ROA	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-0,164 (-0,426)	-	0,029 (0,528)	-0,178	0,464
CSR	Lithuanian companies	-3,123 (-0,371)	1,974 (0,270)	-	1,883	0,273
	Latvian companies	-7,051 (-0,379)	-8,96 (-0,429)	-	5,818	0,306
	Estonian companies	-7,909 (-0,611)	-9,046 (-0,319)	-0,57 (-0,305)	12,207	0,509
FAT	Lithuanian companies	-	15,114 (0,649)	0,516 (0,502)	-6,322	0,211
	Latvian companies	-	11,252 (0,550)	-	0,389	0,302
	Estonian companies	-3,228 (-0,217)	23,172 (0,711)	-	-0,465	0,601
TAT	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	1,83 (0,466)	-	0,661	0,217
	Estonian companies	-0,785 (-0,27)	4,736 (0,744)	-	0,429	0,688

In all three Baltic countries, financial debt reduced current solvency ratio. Non-financial debt also had a significant negative impact on solvency of Latvian and Estonian companies. Meanwhile, higher non-financial debt resulted in higher current solvency ratio in Lithuanian companies, although the effect was minor.

As in the previous analyzed period, during the period of 2005-2007, non-financial debt positively influenced both fixed assets and total assets turnover in companies of

investigated Baltic countries. However, financial debt significantly reduced the indicators describing efficiency of asset management in Estonian companies.

Financial debt in Lithuanian companies had a negative impact on operating profit margin, net profit margin and return on assets during the period of 2008-2011. Meanwhile, non-financial debt had a significant impact on operating profit margin only. Both financial and other debt in Latvian companies did not have any significant impact



on their profitability indicators. Higher level of non-financial debt in Estonian companies led to lower operating

profit margin, lower return on equity and lower return on assets during the period of 2008-2011 (see Table 8).

Table 8

**The results of multivariate regression analysis for the period of 2008-2011**

Indicator		Significant variables			Constant	Coefficient of determination
		FD	NFD	S		
OPM	Lithuanian companies	-0,25 (-0,383)	-0,231 (-0,185)	0,025 (0,232)	-0,15	0,308
	Latvian companies	-	-	-	-	-
	Estonian companies	-	-1,372 (-0,484)	-	0,309	0,234
NPM	Lithuanian companies	-0,306 (-0,434)	-	0,027 (0,238)	-0,242	0,322
	Latvian companies	-	-	-	-	-
	Estonian companies	-	-	-	-	-
ROE	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-0,638 (-0,459)	-1,620 (-0,374)	-	0,446	0,263
ROA	Lithuanian companies	-0,183 (-0,295)	-	0,057 (0,78)	-0,276	0,226
	Latvian companies	-	-	-	-	-
	Estonian companies	-0,311 (-0,497)	-0,622 (-0,319)	-	0,213	0,268
CSR	Lithuanian companies	-7,458 (-0,387)	-16,721 (-0,454)	-	8,230	0,368
	Latvian companies	-10,764 (-0,397)	-15,785 (-0,460)	-	9,670	0,300
	Estonian companies	-5,571 (-0,401)	-19,761 (-0,456)	-	7,864	0,276
FAT	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-4,807 (-0,473)	15,329 (0,484)	-	1,255	0,575
TAT	Lithuanian companies	-	-	-	-	-
	Latvian companies	-	-	-	-	-
	Estonian companies	-0,773 (-0,345)	3,757 (0,537)	-	0,593	0,501

As in previous investigated periods, higher debt level in capital structure conditioned lower current solvency of companies in Baltic countries.

Unlike other periods, both financial and non-financial debt in Lithuanian and Latvian companies did not make any statistically significant impact on efficiency of asset management during the period of 2008-2011. Meanwhile, higher level of financial debt in Estonian companies had a significant negative impact on both fixed assets and total assets turnover and non-financial debt had a positive impact on turnover ratios.

### Conclusions

1. The impact of company's financing decisions on its performance results evidences through the effect of financial leverage at first. If the company is able to use borrowed funds effectively and earn much higher return as compared to the cost of debt, higher level of debt can lead to increase of return earned by shareholders. If under favorable economic conditions operating profit increases, higher level of debt may result in higher net profits. However, higher level of debt may lead to decline of profitability indicators in case of adverse economic conditions.

2. On the one hand, the use of borrowed funds provides the company with higher potential for development, the scale of business expansion, and thus leads to higher profitability. Increase of debt level prevents managers of the company from extremely risky decisions that could affect unfavorably company's performance results; therefore it is supposed that companies with higher financial leverage may maintain higher performance efficiency. On the other hand, high financial leverage may condition a long-term decline in performance efficiency: generally, lenders are less willing to take risks, so company's managers are often encouraged to reject risky projects and to reduce research and development expenses.

3. According to the signaling theory, it can be stated that companies with higher level of financial debt implement promising projects; as a result of that, performance efficiency of such companies should grow under favorable conditions.

4. Analysis of capital structure during the period of 2002-2011 evidenced that companies in the Baltic countries are not willing to use a lot of debt: financial debt ranged from 13 to 29 % in the capital structure during the analyzed period. Companies in the Baltic countries tended to use long-term financial debt but not short-term, because long-term financial debt ratio was higher than short-term financial debt ratio over almost all sub-periods. Level of non-financial debt was also rather low and ranged from 15 to 21 % of all financing sources.

5. Correlation analysis of debt level and indicators of performance efficiency evidenced quite different results during different research sub-periods. Neither financial nor non-financial debt significantly affected profitability of Latvian listed companies during the research period. In Lithuanian companies, financial debt had a negative impact on operating profit margin, net profit margin and return on assets during the period of 2008-2011. Meanwhile, non-financial debt had a significant impact on operating profit margin only. Higher non-financial debt level in Estonian companies resulted in lower operating profit margin, lower return on equity and lower return on assets; high level of financial debt negatively impacted on almost all profitability indicators.

6. Financial debt reduced current solvency in companies of all three Baltic countries.

7. Non-financial debt positively influenced both fixed and total assets turnover in the investigated companies of Baltic countries during all sub-periods. However, financial debt significantly reduced the indicators describing efficiency of assets management in Estonian companies during the periods of 2005-2007 and 2008-2011.

8. Summarizing the research results, it can be stated that capital structure has a significant impact on the performance efficiency of companies in Baltic countries: higher level of financial debt leads to lower profitability indicators and lower current solvency, while higher level of non-financial debt positively impacts fixed asset turnover and total assets turnover.

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Rasa Norvaišienė

#### **Kapitalo struktūros įtaka Baltijos šalių listinguojamų įmonių veiklos efektyvumui**

Santrauka

Kapitalo struktūros optimizavimas yra itin svarbi ir sudėtinga įmonės finansų valdymo sritis. Nuo finansavimo sprendimų priklauso įmonės veiklos sėkmingumas, gyvybingumas ir tolesnės išlikimo bei veiklos perspektyvos. Optimizuojant įmonės kapitalo struktūrą būtina atsižvelgti į itin didelį spektrą išorės ir vidaus veiksnių, įvertinti atskirų finansavimo šaltinių naudą ir problemas, kylančias dėl jų panaudojimo. Netinkamai parinkus įmonės finansavimo šaltinius, jų proporcijas, neįvertinus įmonės mokumo galimybių, galimas įmonės mokumo sutrikimas, kapitalo panaudojimo efektyvumo, įmonės pelningumo, vertės sumažėjimas. Vieno iš pagrindinių įmonės siekių – akcininkų uždirbamos grąžos maksimizavimo įgyvendinimas, gali būti paspartintas, didinant skolinto kapitalo dalį įmonės finansinių šaltinių struktūroje. Tačiau toks sprendimas sąlygoja didesnę finansinę riziką.

Kapitalo struktūros sprendimai yra svarbūs ne tik dėl poreikio maksimizuoti grąžas, bet ir dėl pačių sprendimų įtakos bendrovės gebėjimui prisitaikyti prie konkurencingos ir greitai kintančios ekonominės aplinkos.

Netinkama kapitalo struktūra sąlygoja didelius kapitalo kaštus, o tai lemia griežtesnę investicinių projektų atranką, nes ne visos investicinės alternatyvos tenkina didesnius reikalavimus investicijų grąžai. Investicinės veiklos apribojimai neigiamai veikia įmonės augimo galimybes, jos konkurencingumą. Neoptimali kapitalo struktūra sąlygoja ir gilėjančius konfliktus tarp įmonės savininkų ir vadovų, kurie pasireiškia vadovų motyvacijos transformacija, dėl kurios priimami neefektyvūs, o dažnai ir didelės rizikos investiciniai sprendimai. Kita vertus, skolinto kapitalo panaudojimas sudaro sąlygas greitesniam įmonės augimui, jos konkurencingumo didinimui. Taigi, kapitalo struktūra neabejotinai sąlygoja įmonių finansinius rezultatus ir veiklos perspektyvas. Dėl šių priežasčių išskyla būtinumas iširti, kokią įtaką kapitalo struktūros sprendimai turi įmonių veiklos efektyvumui. Kapitalo struktūros poveikis įmonių veiklai, jų finansiniams rodikliams gali skirtingai pasireikšti šalyse, kuriose kitokios ekonominės sąlygos.

*Straipsnio tikslas* – įvertinti kapitalo struktūros poveikį Baltijos šalių įmonių veiklos efektyvumui, keičiantis šalies ekonominei situacijai.

*Tyrimo objektas* – Baltijos šalių listinguojamų įmonių kapitalo struktūra ir jos poveikis veiklos efektyvumą apibūdinantiems finansiniams rodikliams.

*Tyrimo metodai*: mokslinės literatūros analizė, statistinių duomenų analizė, palyginamoji analizė, koreliacinė analizė, daugiamatė regresinė analizė.

Daugelis tyrėjų pripažįsta, jog kapitalo struktūra gali daryti įtaką tiek įmonės elgsenai, tiek jos veiklos rezultatams, tiek jos vertei. Tačiau ši įtaka gali būti gana skirtinga.

Įmonės finansavimo sprendimų įtaka jos veiklos rezultatams, pirmiausia pasireiškia per *finansinio svorto* poveikį. Jeigu įmonė sugeba pasiskolintais lėšas efektyviai panaudoti, uždirbti gerokai didesnę grąžą, lyginant su skolinto kapitalo kaštais, didesnis skolinimasis gali sąlygoti grąžos akcininkams didėjimą. Esant palankiai ekonominei situacijai, didėjant veiklos pelnui, didesnis skolinto kapitalo panaudojimas gali sąlygoti didesnę grynąją pelną. Tačiau didesnis skolinto kapitalo panaudojimas nepalankiomis ekonominėmis sąlygomis, gali sąlygoti pelningumo rodiklių mažėjimą.

Įmonė, veiklos finansavimui naudodama daugiau nuosavų finansavimo šaltinių, pasižymi dideliu finansiniu stabilumu, tačiau ji neišnaudoja investuoto kapitalo pelningumo didinimo galimybių, taip ribodama savo augimo tempus. Kita vertus, skolintų lėšų panaudojimas užtikrina didesnę įmonės plėtros potencialą, jos veiklos plėtojimo mastus, taip pat leidžia pasiekti didesnę pelningumą. Kartu tai sąlygoja ir aukštesnę finansinę riziką.

Iš vienos pusės, skolintų lėšų panaudojimas užtikrina didesnę įmonės plėtros potencialą, jos veiklos plėtojimo mastus, tai pat leidžia pasiekti didesnę pelningumą. Skolos lygio didinimas apsaugo kompanijos vadovus nuo itin rizikingų sprendimų, galinčių neigiamai veikti kompanijos veiklos rezultatus, todėl manoma, kad didesnio finansinio svorto įmonės gali pasižymėti aukštesniu veiklos efektyvumu. Kita vertus, aukštas finansinis svortas gali turėti įtaką ilgo laikotarpio efektyvumo mažėjimui: paprastai, skolintojai būna mažiau linkę rizikuoti, todėl ir kompanijos vadovai neretai skatinami atsakyti rizikingų projektų ir sumažinti išlaidas tyrimų ir plėtros atžvilgiu.

Remiantis signalizavimo teorijos teiginiais, galima teigti, kad įmonės, turinčios daugiau finansinių skolų, vykdo perspektyvius projektus, todėl šių įmonių veiklos rezultatyvumas, esant palankioms sąlygoms, turėtų augti.

Įvairių mokslininkų teoriniai tyrimai neleidžia vienareikšmiškai atsakyti, ar didesnis skolinto kapitalo panaudojimas didina ar mažina įmonės veiklos efektyvumą.

Pastaraisiais metais atliktų empirinių tyrimų rezultatai gana skirtingi ir nevienareikšmiški. Reiktų paminėti, kad daugelyje atliktų tyrimų analizuojamas tik kapitalo struktūros ir pelningumo ryšys, visiškai netiriant skolų poveikio kitiems įmonės finansiniams rodikliams.

Baltijos šalių listinguojamų įmonių skolų įtakos veiklos efektyvumo tyrimui atlikti, buvo naudojami Lietuvos, Latvijos ir Estijos listinguojamų nefinansinių įmonių finansiniai rodikliai, iš šių įmonių skelbiamų metinių ataskaitų – *prospektų*. Tyrimo laikotarpis apima 2002 – 2011 m. Siekiant įvertinti kapitalo struktūros sprendimų įtaką įmonių veiklos efektyvumui, esant kitokioms ekonominėmis sąlygoms, tyrimo laikotarpis išskaidytas į tris sublaikotarpius: nuosaikaus ekonominio augimo laikotarpį, apimantį 2002-2004 m, spartaus ekonominio augimo laikotarpį, apimantį 2005-2007 m., ir recesijos bei ekonominio atsigavimo laikotarpį, apimantį 2008-2011 m. Tyrimo panaudoti 70 įmonių duomenys: 28 Lietuvos įmonių, 14 Estijos įmonių, 28 Latvijos įmonių.

Įmonių veiklos efektyvumą apibūdina daugybė santykinų finansinių rodiklių, kurie leidžia įvertinti veiklos efektyvumą įvairiais aspektais. Pagrindinės finansinių rodiklių grupės yra: pelningumo rodikliai, likvidumo rodikliai ir turto valdymo efektyvumo rodikliai, todėl atliekant tyrimą panaudoti rodikliai iš visų minėtų rodiklių grupių. Tyrimo naudoti šie rodikliai, apibūdinantys įmonių veiklos efektyvumą: veiklos pelningumas, grynas pelningumas, nuosavo kapitalo pelningumas, turto pelningumas, bendrasis likvidumas, ilgalaikio turto apyvartumas, viso turto apyvartumas. Didžiausią įtaką įmonių veiklos efektyvumui ir jį apibūdinantiems finansiniams rodikliams turi finansinės skolos, už kurias mokamos palūkanos. Todėl atliekant tyrimą, kaip vienas pagrindinių rodiklių, naudotas finansinių skolų lygis. Taip tyrimo panaudoti rodikliai: ilgalaikio finansinio išsiskolinimo koeficientas, trumpalaikio finansinio išsiskolinimo koeficientas, nefinansinio išsiskolinimo koeficientas.

Siekiant iširti kapitalo struktūros ryšį su įmonių veiklos efektyvumu rodikliais, atlikta koreliacinė analizė. Gauta koreliacinio ryšio patikimumo patikrinimui naudota  $p$  – reikšmė. Statistiškai reikšmingais laikyti koreliacijos koeficientai, kai reikšmingumo lygmuo 0,01 (t. y. ryšys tarp rodiklių laikytas patikimu ir reikšmingu, kai  $p$  – reikšmė  $< 0,01$ ).

Siekiant įvertinti skolinto kapitalo įtaką Baltijos šalių įmonių veiklos efektyvumui, buvo atlikta daugialypė regresinė analizė. Atliekant šią analizę nepriklausomi kintamieji buvo skolų lygį apibūdinantys rodikliai, o priklausomais kintamaisiais – įmonių veiklos efektyvumą apibūdinantys rodikliai.

Atlikus regresinę analizę nustatyta, kad nei finansinės, nei nefinansinės skolos tyrimo laikotarpiu neturėjo reikšmingos įtakos Latvijos listinguojamų įmonių pelningumui. Lietuvos įmonėse finansinės skolos tik 2008-2011 m., turėjo neigiamą įtaką veiklos pelningumui, grynajam pelningumui ir turto pelningumui. Nefinansinės skolos turėjo reikšmingą įtaką tik veiklos pelningumui. Estijos įmonėse aukštesnės nefinansinės skolos sąlygojo mažesnę veiklos pelningumą, mažesnę nuosavo kapitalo pelningumą ir mažesnę iš vieno turto lito uždirbamą pelną. Didesnės finansinės skolos neigiamai sąlygojo beveik visus pelningumo rodiklius.

Visose trijose Baltijos šalyse finansinės skolos mažino įmonių bendrąjį likvidumą.

Visais laikotarpiais nefinansinės skolos teigiamai veikė tirtų Baltijos šalių įmonių tiek ilgalaikio turto, tiek viso turto apyvartumą. Tačiau finansinės skolos tiek 2005-2007 m., tiek 2008-2011 m., reikšmingai mažino Estijos įmonių turto valdymo efektyvumą apibūdinančius rodiklius.

Raktažodžiai: *kapitalo struktūra, įmonės finansai, finansiniai sprendimai, finansinis svortas, įmonių veiklos efektyvumas.*

The article has been reviewed.

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**Correction for R. Norvaisiene article published in *Inzinerine Ekonomika-Engineering Economics* 2012, 23(5), 505-516. The published statement “Bistrova et al., (2011) analyzed the impact of capital structure on return on equity and return on assets in the Baltic countries; however the results of this research are incorrect, because interrelated and interdependent variables were used as the regressors during the regression analysis.” (p. 506) must be corrected as follows: “Bistrova et al., (2011) analyzed the impact of capital structure on return on equity, return on assets and market performance of the listed companies in the Baltic countries.”**

*The Editorial Board apologizes authors J. Bistrova, N. Lace and V. Peleckiene for mistakes.*