THE INFLUENCE OF CAPITAL STRUCTURE ON BALTIC CORPORATE PERFORMANCE

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Abstract. Seeking for the optimal capital structure lasts for more than 50 years and still is very topical, especially during the market turmoil as it happened in 2008. No perfect answer is yet provided to the question of how large debt amount should be kept on the accounts. The main objective of the present paper is to analyze the impact of capital structure decisions on the equity performance and on the profitability of the companies located in Baltics. The study covered the time period of 4 years (from 2007 till 2010) and the sample data of 36 "blue-chip" companies listed on the Baltic Stock exchanges. The results of the study discover positive relationship between stock performance and sufficiency of equital. Besides, there was found an inverse relationship between

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the level of debt and capital profitability confirming the pecking order theory that in the

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best case the company should use self-generated funds.

1. Introduction

The decision of target capital structure is one of the most difficult in enterprise management as there is always a dilemma between corporate profitability, which is offered by fiscal benefit, and the risk, which is faced when the share of debt in total assets starts to prevail over equity. This becomes especially sensitive in the uncertain market conditions, e.g. during downcycles of the economy. Contractions or expansions in bank lending may affect firms' balance sheet liquidity (or solidity) position. Banks are likely to be more reluctant to lend to firms in difficulty. This is reinforced when the banks are in lack of liquidity themselves. Thus, the companies in need for external financing face increased risk.

Though there have been multiple studies on how the role model of capital structure should look like, still there is no consensus regarding that yet. One observes different capital structures from country to country, sector to sector, company to company. Researchers generally point to the differences in capital structure between developed and emerging markets as well as across developed markets. For instance, companies in France, Italy, Japan are more highly levered than the companies in the United States and United Kingdom. At the moment average equity ratio of US companies (S&P 500) is 41%, while Western European companies (Stoxx 600) have it over 37%. Not only are certain patterns seen in capital structure but also in debt maturity. It is interesting that companies in the developed markets typically have more long-term debt and tend to have higher long-term debt to total debt ratios compared to the peers located in emerging the markets (Booth et al. 2001). Companies in higher inflation environment usually exhibit lower levels of financial leverage, rely more on equity financing, and have shorter debt maturity structure compared to their peers in lower inflation countries – as high inflation has a negative impact on both the level of debt financing and desired debt maturity.

Public companies domiciled in the emerging markets (China, India, Russia, Brazil, Eastern Europe) are under scrutinized attention regarding the quality of their balance sheets as in the conditions of tight liquidity equity markets of developing countries are the first to suffer. This was clearly seen during the recent liquidity crunch on the financial markets – there was a major money outflow seen in the emerging countries. Management of the companies needed to make significant efforts to persuade investors to stay loyal, to demonstrate that companies are able to generate enough cash flows to self-finance and that balance sheet is strong enough to overcome the downturn in the global economy. This is also closely connected with the corporate sustainability question, which has been extensively researched within the Baltic market (Adekola *et al.* 2008; Balkytė, Tvaronavičienė 2010; Tvaronavičienė *et al.* 2009).

Thorough investigation of corporate financing structure becomes more topical as institutional investors make their investment decisions more sophisticated and understand that the abnormal growth, which was experienced on the emerging markets in early years of 21st century, has expired and now one needs to make well thought through decisions. More careful approach to balance sheets assessments is also encouraged by the recent bankrupts: Lehman Brothers, General Motors, MGM, Cello Energy etc.

As a consequence of these corporate actions and recent liquidity crisis, one sees major deleveraging going on nowadays, but where the limits are. According to the FT journalist John Plender (2011) deleveraging is going on not only in the private but also in the public sector. However, as he points out the deleveraging has slowed down too soon and the current debt reduction definitely is not sufficient.

The authors of the present research conducted a study on the influence of capital structure and quality of balance sheet of the Baltic and Central and Eastern European (CEE) companies on the share return in 2007–2009, which proved that the investors praise high quality of the balance sheet in the condition of market crisis. The authors of the study are expanding the previous research to check the hypothesis also in the expansion phase, which was seen on stock markets in 2009 and 2010. Moreover, the research is also expanded to check how the capital structure influences the profitability of the Baltic companies. Thus, two hypotheses were advanced:

- **H1:** Companies with sufficient level of capital and, thus, high quality of balance sheet, are more valued by the investors.
- **H2:** Companies with high quality of balance sheet are able to show better profitability in the long-term.

The aim of the present research is to understand the dual influence of the capital structure: on the corporate profitability as well as on stock returns of the Baltic listed companies.

The methods chosen for conducting a research are mainly quantitative, which include benchmarking, running correlation and regression, assessing statistical significance.

2. Optimal capital structure and its influence

The topical issue about balance sheet leverage and optimal financing structure is being discussed by the leading economists and financiers for several decades already. The choice of financing reflects the trade-off between the tax benefits of debt and associated bankruptcy and agency costs. Company's capital structure largely depends on company-specific factors such as the probability of bankruptcy, profitability, quality and structure of assets. Beyond these factors, company's industry affiliation and characteristics of country the company operates also influence financing structure. Thus, choice of the capital structure is an individual decision of each company.

Leverage increases the potential volatility of company's earnings and cash flows and increases the risk of lending to or owning a company. Choice of the capital structure has a strong influence on the company's market value, and it becomes crucial during the period of monetary tightening, which occurred during the liquidity crisis. Highly leveraged companies usually have a discount in valuations as they pose a greater chance of incurring significant losses during downturns.

There have been a number of studies and academic researches to find out what is the best policy of capital management corporate executives should stick to in order to win investors' respect, praise and loyalty.

Modigliani and Miller (1958, 1963) state that in the tax-free world there should not be any dependence of market value of the company on its capital structure, but when the taxes are deducted there is a positive relation between value of the company and level of debt.

Masulis (1983) argues further that when firms which issue debt are moving toward the industry average from below, the market will react more positively than when the firm is moving away from the industry average.

Hatfield *et al.* (1994) examined the capital structure dependence on the industry the firm operates in. They also tested the relationship between firm's debt level and its shareholder returns and were not able to find any significant relationship.

Professor of Columbia Business School, Gur Huberman (1984), explains the empirical evidence showing negative relation between firm's external financing and its market value. Income from operations is an important source of liquidity and, therefore, low earnings lead to low liquidity. The company anticipating decreasing earnings favours external financing. Thus, high level of external financing is associated with the low earnings that tend to decrease the value of a company.

The study on 70 Brazilian companies covering the period of 7 years (1995–2001) shows positive relations between corporate profitability and short-term debt and with equity, while an inverse relationship with company's long-term debt (Mesquita, Lara 2003). It is worth mentioning also Chou and Lee (2010) research, which considered 37 Taiwanese companies during the period of 20 years (1987–2007) and discovered that the relationship between level of debt and corporate performance is consistent with the trade-off theory: as the debt level increases the profitability increases until it reached the maximum and then it starts to decrease.

Static trade-off theory suggested by Modigliani and Miller proves that the higher company's leverage the higher is also the profitability. Other academics added the basics of M&M theorem with personal taxes (Miller 1977) showing that optimal debt level can be obtained just on macro level not on company's level. Stiglitz (1972) added bankruptcy costs, while Jensen and Meckling (1976) and Kim (1978) added agency costs, gains from leverage-induced tax shields were added by DeAngelo and Masulis (1980). Empirical works by Bradley *et al.* (1984) and Long and Malitz (1985) strongly support that the agency and bankruptcy costs are partial determinants of the capital structure.

There were further researches and empirical evidences, which showed that more profitable firms employ lower leverage and, thus, the results contradicted with static trade-off theory. The possible explanation is found in the pecking order theory (Donaldson 1961; Myers, Majluf 1984; Myers 1984; Fama, French 2002): to avoid the costs associated with the attraction of new funds, the companies are likely to use more internal funding, which can only be provided if the company is able to generate sufficient cash flows and is profitable. However, if the firm sees huge growth opportunities and the debt is available at reasonable cost, then the firm increases its leverage to capture future return and shows good performance, but there is the risk of overinvestment, which might lead to an inverse relationship.

There have been several studies, which proved that to explain company's capital structure with the pecking order theory is not enough (Fama, French 2004; Leary, Roberts 2005).

Baker and Wurgler (2002) proposed another theory – market timing theory. It states that the capital structure depends on the equity value of the company as the companies exploit equity issuance when the stock prices are high. This lowers the cost of equity of the company and benefits new shareholders at the expense of the old. The companies issue new equity while not making any effort to understand the market mispricing (Schultz 2003; Dittmar, Thakor 2007).

Several researchers tried to explain capital structure choice with the stock returns for US companies (Welch 2004) and European companies (Drobetz, Pensa 2007). However,

the authors suppose that this assumption is not relevant for emerging market companies yet as so common share buybacks on the developed markets, which are major determinants of capital structures, are not popular with emerging entities, perhaps due to heavy investing in development there.

3. Research methodology

The cornerstone of the present research is testing the influence of company's capital structure on its profitability and stock returns. The relationship between the profitability and capital structure was tested by employing the following function:

$$ROE = f(DE, NDE, SE), \tag{1}$$

where: ROE is equity capital profitability, which is measured as net profit divided by equity; DE is total debt divided by equity; NDE is net debt, which is total debt minus cash, divided by equity; SE is sufficiency of equity capital index which is measured as equity divided by sufficient equity and multiplied by 100.

In the present research the authors are also testing asset profitability with the following function:

$$ROA = f(DA, NDA, SE),$$
 (2)

where: ROA is asset profitability, which is measured as net profit divided by total assets; DA is total debt divided by total assets; NDA is net debt, which total debt minus cash, divided by total assets; SE is sufficiency of equity capital index.

Though ROE appears to be one of the most important ratios investors take into account, the authors believe that ROA also needs to be tested as it measures the profitability of total assets regardless of whether they are pure equity or a mixture of debt and internal capital. It is important to find out which capital structure helps to achieve highest asset profitability.

Sufficiency of equity needs to be explained more thoroughly as is relatively new concept of the financial theory. Capital sufficiency helps to understand if the business entity is financed in the way that ensures its sustainable development. The methodology of sufficient equity calculation was developed by Riga Technical University professors Natalja Lace and Zoja Sundukova (2008), taking into account asset financing rules: long-term capital should take responsibility for less liquid assets. Sufficient equity for the present research purposes was calculated according to the following formula (Lace, Sundukova 2010):

Having calculated sufficient equity, one needs to consider relative ratio: equity ratio divided by necessary level of sufficiency equity: sufficient capital index. If it is significantly above 100 points, it should be considered that the company has too low debt, which needs to be increased to raise shareholder's value. In opposite, if the index tends to be below 100, then the balance sheet is highly levered, and the management should think about decreasing its total debt in the capital structure. However, it should be taken

in the account, that one never gets 100. So, certain deviations from 100 points are acceptable (20 points within the present research).

The relationship between the stock returns and capital structures was tested with the help of the following function:

$$A_t - A_{ave} = f(DA, NDE, SE),$$
(4)

where: $A_t - A_{ave}$ is the performance of the company per annum compared to the equally weighted market performance; DA is total debt divided by total assets; NDE is net debt, which total debt minus cash, divided by equity; SE is sufficiency of equity capital index. The above discussed functions are tested with the help of regression, t-tests and F-tests to understand how significant the regressions and the independent variables to explain the relationship are.

The research primarily covered the companies listed in the Baltic States (Lithuania, Latvia and Estonia), which are included in the Baltic blue-chip index, OMXBBGI, consisting of 36 components.

It should be noted, however, that the representatives of financial industry (*Šiauliu Bankas, Ukio Bankas, Snoras*) were systematically excluded from the research corpus, when analyzing equity capital sufficiency, due to the balance sheet structure that significantly deviates from the classical balance sheet structure.

The period selected for the present research was January 2007 through January 2011, which covered the financial crisis on the world's stock exchange and as well as pre and post crisis period. Thus, total observation number totalled 144.

Fundamental data necessary to carry out a study (for ROE, ROA etc. calculation) were extracted from the annual reports of the companies published on the corporate web-sites. The price development for each company was provided by NASDAQ OMX Riga (http://www.nasdaqomxbaltic.com/). The authors used the following set of data for the research needs: monthly stock prices, total assets, shareholder's equity, long-term assets, inventories, provisions, long-term liabilities, total liabilities, cash and equivalents.

4. Results of the research

4.1. General overview

Before checking the hypotheses stated in the introduction, it is worth having a general look at the quality of balance sheet of Baltic stock exchange listed companies.

The results confirm previous research that emerging markets companies tend to have more conservative balance sheets than their peers in developed countries. Median equity ratio of Baltic companies is 54%, which is obviously significantly higher than the ratio of European and US companies.

Average net debt to equity is rather low as well. When splitting the data into the regions, one sees great difference of Latvian companies' balance sheet compared to their peers in the neighbouring countries: equity ratio is 70% and net debt is just 8% compared to 46% and 45%, respectively, in Lithuania. It may seem that the balance sheets of Latvia based companies are rather overcapitalized and they lack investment opportunities.

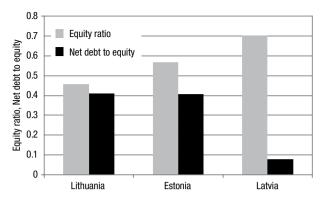


Fig. 1. Debt level of Baltic companies (FY 2010)

The Table 1 offers the insight into main characteristics of the variables used in the regression to explain the relationship of the capital structure and corporate performance (measured as profitability) as well as stock returns.

Average debt level of the Baltic companies is rather on a low level: debt to assets is 48%, while net debt to assets is 19%. Average debt to equity is 158% and net debt to equity is 79% pointing to the substantial cash reserves on the balance sheets. It should be noted that here the median is obviously much lower than the average levels: 100% and 47% respectively. Also the standard deviation of these data is rather on a high level compared to debt to assets ratios.

The mean ratio of sufficiency of capital is 58, which means insufficient equity capital. However, the median ratio (94), which is less subjective than mean, shows that Baltic companies have sufficient equity capital.

Profitability of the Baltic companies is on a low level which is demonstrated by both return on assets and return on equity, which can be explained by the time period covered in the research as it also included financial crisis. The latter definitely had a negative impact on the majority of Baltic companies.

	Variable	Mean	Median	Standard Deviation
Net Debtto Assets	NDA	19%	20%	25%
Debt to Assets	DA	48%	52%	23%
Net Debtto Equity	NDE	79%	47%	168%
Debt to Equity	DE	158%	100%	234%
Sufficiency of Equity	SE	58	94	267
Return on Assets	ROA	3%	4%	12%
Return on Equity	ROE	4%	8%	28%
Out/Underperformance	$A_t - A_{ave}$	5%	-4%	77%

Table 1. Statistical Description of the Variables

It should be also noted that the values of average ROE and ROA are very close to each other, which can be explained by the high equity share in total asset structure and by the low level of the numerator, i.e. net income.

Annual stock return picture is rather ambiguous: over the period covered Baltic companies in average could beat the market by 5% according to the mean ratio, while the median ratio shows an underperformance of 4% a year.

4.2. Capital structure and profitability interaction

First, the equity capital profitability dependence on capital was tested. According to the regression run, there is a strong negative relation of net debt to equity and debt to equity ratios with return on equity as suggested by the regression output:

$$ROE = 14.76 - 4.96DE - 3.85NDE - 0.02SE.$$
 (5)

Sufficiency of equity capital as it seems does not have a major impact on the result.

Table 2 shows the statistical significance of the model. According to the F-test, the regression overall is good as F-test value is high. Coefficient of determination (R square) is rather on the high level, showing that 32% of the variations of the return rate (ROE) were explained in conjunct by the independent variables.

Two of three independent variables, which are net debt to equity and debt to equity, are statistically significant at 95% confidence level. As it was also stated before, sufficiency of equity does not have major influence on the final output as well as it is not significant at 95% level, it is significant only at 90% level.

The result indicates that the return rates are inversely proportional to the debt, in other words: the larger the debt, the lower is the profitability. Obtained results confirm the findings of Booth *et al.* (2001), Fama & French (2002), Graham (2000), and Miller (1977), but no arguments are found to support Modigliani and Miller theorem (1958).

The chart on Fig. 2 provides an overview of the Baltic companies' financing structure for the financial year 2010. The chart shows that there is a sharp difference in the debt levels for the companies of various profitability levels: higher levered companies have negative ROE, while companies with positive ROE have a debt level which approximately is equal to the equity capital.

	Parameters	t Stat
Intercept	-14.755016	5.272405
NDE	-4.9594519	-2.63427
DE	-3.8499904	-2.81512
SE	-0.0166654	-1.9266
F test	17.4049717	
Correlation	0.56910798	
R Square	0.3238839	

 Table 2. Statistical Description of ROE Regression

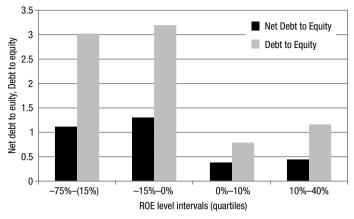


Fig. 2. Debt level according to ROE quartiles (FY 2010)

Second, financing structure influence on asset profitability was tested. This was done in order to test profitability of the whole asset base, not just equity part. The regression output was the following:

$$ROA = 0.05 - 0.153NDA + 0.014DA - 0.00SE.$$
 (6)

As the regression data shows there is a negative relation of asset profitability and net debt to assets, while positive with the amount of debt to assets.

However, when checking the statistical significance (see Table 3), one finds out that only net debt to assets as independent variable contributes to the regression result being significant at 95% level. Neither debt to assets nor sufficiency of equity capital significantly influence return on assets of the Baltic companies.

The F-test of the ROA regression is not as high as in ROE regression but still is high enough for the regression to be significant. According to R square, only 9.74% of the profitability can be explained by the selected independent variables, which is quite low level. Overall the profitability explaining power of this regression is lower than that of ROE regression. But it also shows that the lower is net debt of the company the higher is the asset profitability.

	Parameters	t Stat	
Intercept	0.05300	1.751895	
NDA	-0.15284	-2.38677	
DE	0.01357	0.187668	
SE	-0.00002	-0.50914	
F test	3.61177		
Correlation	0.30453		
R Square	0.09274		

Table 3. Statistical Description of ROA Regression

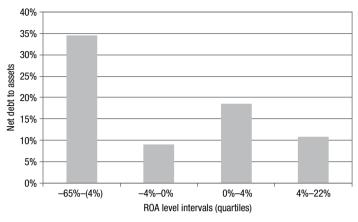


Fig. 3. Net debt level according to ROA quartiles (FY 2010)

Net debt to asset ratio due to being significant in the ROA regression was selected to reflect the current situation with the Baltic companies (see Fig. 3).

The companies with ROA being deep in the negative zone have highest net debt to asset ratio. These companies have net debt to assets ratio 3 times higher than the debt level of the companies being in asset profitability top quartile.

4.3. Capital structure and stock returns interaction

Third, the authors tested also the relationship of capital structure and corporate performance on the equity markets. For the reasons explained below it was decided to run two regressions, which would explain the annual performance relative to the benchmark of the Baltic stock exchange quoted companies.

$$A_t - A_{ave} = 0.15 - 0.05$$
NDE $- 0.19$ DA $+ 0.0005$ SE; (7)

$$A_t - A_{ave} = 0.14 + 0.00055SE.$$
(8)

The regression (7) shows that there is a negative relationship between the level of debt and stock outperformance, while positive relationship of sufficiency of capital and stock returns, which is also seen in the regression (8).

The data in the panel A (see Table 4) provides statistical data on the regression (7).

The results of the t-test of net debt to equity and debt to equity ratios show that these independent variables are not statistically significant in the regression. This corresponds to the study made previously by the authors (Lace, Bistrova 2009), when it was found out that the companies with the highest equity ratios (over 80%) are not the best performers even during the shortage of liquidity on the markets. This fact can be explained by their inability to expand the business due to saturation on the market, thus, this type of companies (e.g. telecoms) has limited growth potential, which is being negatively evaluated by the market players.

Panel A	Parameters	t Stat	Panel B	Parameters	t Stat
Intercept	0.150581917	0.748601182	Intercept	0.01442977	0.185745087
NDE	-0.047283236	-0.887291395	SE	0.000553368	1.967453382
DA	-0.194350806	-0.462089903	F test	3.870872812	
SE	0.000509164	1.738908306	Correlation	0.193980573	
F test	2.050346044		R Square	0.037628463	
Correlation	0.24419536				
R Square	0.059631374				

 Table 4. Statistical Description of Stock Return Regression

It is also interesting that the t-test of the net debt to equity ratio exceeds the value of debt to equity ratio, which confirms previous results: the best performers were the companies with negative net debt – companies of the first quartile, thus, the cash on the accounts is favoured by the investment professionals in the conditions of tight liquidity. Reasoning on the regression results, one can conclude that the amount of debt is not the best proxy for the company performance on the Baltic equity market. Debt ratios turned to be significant in the relation to the profitability while they are not in relation with the stock returns. The findings of the previous study (Bistrova, Lace 2010) carried out within the Baltic equity market showed that for the investor in Baltic equities the future perspective of the business model is the key criterion to consider.

Continuing on the stock returns regression (7), one should mention that sufficiency of equity capital has the highest t-test value, which makes this independent variable important at 90% confidence level. That is why the authors decided to run another regression, which would include solely sufficiency of capital to explain stock outperformance. Panel B of table shows the results of the regression (8). F-test value of 3.87 makes the regression statistically significant in contrast to the regression, where F-test was 2.05 (7). T-test value of equity sufficiency has also increased and much better contributes to the regression result. However, the explanation power of the regression (8), according to R square (3.76%) is still low.

The relevance of equity capital sufficiency is also shown on chart (Fig. 4). The whole analysed universe of the Baltic listed companies was divided into three parts according to the level of equity capital. For each part share price index was calculated for the period from January 1, 2007 to January 31, 2011. As seen on the chart, in the long run the companies with insufficient equity capital (less than 80 points) are lagging behind those, which have enough equity financing and those who have too high equity financing.

Previous research on the Baltic listed companies (Lace, Grigorjeva 2008) showed that during the FY 2007, when the liquidity on the market was not such an obvious problem, the best investment strategy was to favour the companies, which have equity financing in range of 80–120, while the significant setback in performances was seen in the group of the business entities, which either had too conservative (sufficient equity capi-

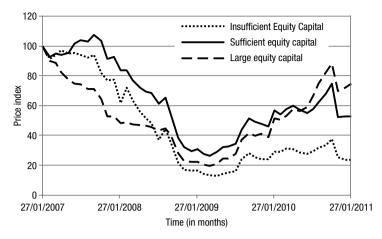


Fig. 4. Baltic stocks performance according to equity capital sufficiency

tal exceeding 120) or too aggressive (sufficient equity capital being below 80) capital management policy. However, obviously the situation changed during the crisis and in the recovery phase as the companies with very high equity capital outperformed their peers with adequate and with insufficient equity capital.

5. Conclusions and recommendations

The main objective of the present research was to evaluate the quality of the balance sheet and the capital structure of the Baltic listed companies. Besides, the key task was to find out the effect of their influence on the share performance and on the profitability. The two hypotheses stated in the introduction were proved.

The results of the study demonstrate that the companies operating in Baltic countries pursue conservative capital management policy and the balance sheets possess low leverage characteristics, which is typical for the emerging markets.

The first hypothesis that investors favour companies with stronger balance sheets was proved. The choice of financing the entity evidently influences equity performance as positive relationship between sufficiency of equity capital and share performance was found. The inverse interaction of the debt level and stock outperformance has been also found but the results in this case were not statistically significant.

The second hypothesis that companies having lower debt levels on their accounts are able to demonstrate higher profitability was proved, too. The results are supported by the two regressions, which explain the influence of debt level on the return on equity and return on assets. The lower the debt level (net debt to equity, net debt to assets, debt to equity, debt to assets), the higher is the profitability of the company. These results confirm the pecking order theory, which states that companies prioritize their sources of financing according to the *Principle of least effort*. Internal funds are the first to be used, then debt is issued and the last way to raise financing is the public offering (equity issue) (Myers, Majluf 1984). Thus, the more profitable is the company, the more internal capital the company uses for development.

As it was found out in the previous research (Bistrova, Lace 2010), the profitability of the capital is not the best proxy for the Baltic market investors, which is possibly explained by the market immaturity and inefficiency. Though there is a strong relationship between capital structure and entity's profitability, it cannot add a lot of value in creating superior performance. However, as the sufficiency of equity ratio was able to add value to generating above average returns, the recommendations to the investors in Baltic equities would be to consider the sufficiency of equity financing and put more emphasis on those companies that ensure sufficient and even more than sufficient level of capital. Undoubtedly, growth perspectives and the attractiveness of the business model should also be checked as it is a prerequisite for the company's high performance on the equity market.

The conducted research can be repeated covering larger equity universe (e.g. Central and Eastern European countries) as well as longer time period, including different market phases. The suggestions for further research would be deeper analysis of equity capital sufficiency. This ratio can be views from two dimensions: company's (internal) and investor's (external) perspectives. Future study should be focused on determining and harmonizing strategy of sufficient and over-sufficient equity capital management for internal and external purpose taking into account the return and risk trade-off.

References

Adekola, A.; Korsakienė, R.; Tvaronavičienė, M. 2008. Approach to innovative activities by Lithuanian companies in the current conditions of development, *Technological and Economic Development of Economy* 14(4): 595–612. doi:10.3846/1392-8619.2008.14.595-611

Baker, M.; Wurgler, J. 2002. Market timing and capital structure, *Journal of Finance* 57: 1–32. doi:10.1111/1540-6261.00414

Balkytė, A.; Tvaronavičienė, M. 2010. Perception of competitiveness in the context of sustainable development: facets of "Sustainable competitiveness", *Journal of Business Economics and Management* 11(2): 341–365. doi:10.3846/jbem.2010.17

Bistrova, J.; Lace, N. 2010. Created Value of Fundamental Analysis During Pre and Post Crisis Period on the Baltic Equity Market, *The Scientific Journal of Riga Technical University, Economics and Management* 3(20): 26–32.

Booth, L.; Aivazian, A.; Demirguc-Kunt, A.; Maksimovic, V. 2001. Capital Structures in Developing Countries, *Journal of Finance* 56: 87–130. doi:10.1111/0022-1082.00320

Bradley, M.; Jarrell, G.; Kim, E. H. 1984. On the Existence of an Optimal Capital Structure: theory and Evidence, *Journal of Finance* 39: 857–878. doi:10.2307/2327950

Chou, S. R.; Lee, C. H. 2010. The Research on the Effects of capital Structure on Firm Performance and Evidence from the Non-financial Industry of Taiwan 50 and Taiwan Mid-cap 100 from 1987 to 2007, *Journal of Statistics and Management Systems* 13(5): 1069–1078.

DeAngelo, H.; Masulis, R. W. 1980. Optimal Capital Structure under Corporate and Personal Taxation, *Journal of Financial Economics* 8: 3–29. doi:10.1016/0304-405X(80)90019-7

Dittmar, A.; Thakor, A. 2007. Why Do Firms Issue Equity?, *Journal of Finance, American Finance Association* 62(1): 1–54.

Donaldson, G. 1961. Corporate Debt Capacity. Harvard University, Boston, Mass.

Drobetz, W.; Pensa, P. 2007. *Capital Structure and Stock Returns: the European Evidence* [on-line]. Available from Internet: < http://ssrn.com/abstract=957302>.

Fama, E. F.; French, K. R. 2002. Testing tradeoff and pecking order predictions about dividends and debt, *Review of Financial Studies* 15: 1–33. doi:10.1093/rfs/15.1.1

Fama, E. F.; French, K. R. 2004. New lists: fundamentals and survival rates, *Journal of Financial Economics, Elsevier* 73(2): 229–269. doi:10.1016/j.jfineco.2003.04.001

Graham, J. 2000. How big are the Tax Benefits of Debt, *The Journal of Finance* 55(5): 1904–1941. doi:10.1111/0022-1082.00277

Jensen, M. C.; Meckling, W. H. 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure, *Journal of Financial Economics* 3: 305–360. doi:10.1016/0304-405X(76)90026-X

Hatfield, G. B.; Cheng, L. T. W.; Davidson, W. N. 1994. The Determination of Optimal Capital Structure: the Effect of Firm and Industry Debt Ratios on Market Value, *Journal of Financial and Strategic Decisions* 7(3).

Huberman, G. 1984. External Financing and Liquidity, *Journal of Finance* 3: 895–908. doi:10.2307/2327954

Kim, E. H. 1978. A Mean-Variance Theory of Optimal Capital Structure and Corporate Debt Capacity, *Journal of Finance* 33: 45–63. doi:10.2307/2326349

Lace, N.; Grigorjeva, J. 2008. The Liquidity Crunch Impact on Stock Selection: Case from Baltic Equity Market, in *The 12th World Multi-Conference on Systemics, Cybernetics and Informatics, Orlando,* Vol. 4: 50–54.

Lace, N.; Bistrova, J. 2009. Capital management during liquidity crunch: Baltic States in the context of CEE equity markets, in *"Challenges of Europe: Financial Crisis and Climate Change" Eighth International Conference Challenges of Europe Proceedings, Split*, 145–156.

Lace, N.; Sundukova, Z. 2008. Financial stability of enterprises: case from Latvia, in VI International Scientific Conference 'Management and Engineering'08', Proceedings, The Scientific-Technical Union of Mechanical Engineering, Sofia, 212–216.

Lace, N.; Sundukova, Z. 2010. Company's standards for financial soundness indicators, in *The 6th International Scientific Conference "Business and Management 2010"*, *Vilnius*, 112–117.

Leary, M. T.; Roberts, M. R. 2005. Do Firms Rebalance Their Capital Structures?, *Journal of Finance, American Finance Association* 60(6): 2575–2619.

Long, M. S.; Malitz, E. B. 1985. Investment Patterns and Financial Leverage, in Friedman, B. (Ed.). *Corporate Capital Structures in the United States*.

Masulis, R. W. 1983. The Impact of Capital Structure Change on Firm Value: Some Estimates, *Journal of Finance* 38: 107–126. doi:10.2307/2327641

Mesquita, J. M. C.; Lara, J. E. 2003. Capital structure and profitability: the Brazilian case, in *Academy of Business and Administration Sciences Conference, Vancouver, Canada*.

Miller, M. H. 1977. Debt and Taxes, Journal of Finance 32(2): 261-275. doi:10.2307/2326758

Modigliani, F.; Miller, M. H. 1958. The Cost of Capital, Corporate Finance and the Theory of Investment, *American Economic Review* 48: 261–296.

Modigliani, F.; Miller, M. H. 1963. Taxes and the Cost of Capital: a Correction, *American Economic Review* 53: 433–443.

Myers, S. C. 1984. The Capital Structure Puzzle, *Journal of Finance* 34: 575–592. doi:10.2307/2327916

Myers, S.; Majluf, N. S. 1984. Corporate Financing and Investment Decisions when Firms have Information that Investors Do Not Have, *Journal of Financial Economics* 13(2): 187–221. doi:10.1016/0304-405X(84)90023-0

Plender, J. 2011. Deleveraging efforts have stalled too soon, *Financial Times* [online]. Available from Internet: http://www.ft.com/cms/s/0/b0b5aba8-338f-11e0-a388-00144feabdc0. html#axz1Fhlv2u50>.

Schultz, P. 2003. Pseudo Market Timing and the Long-Run Underperformance of IPOs, *Journal of Finance* 58: 483–517. doi:10.1111/1540-6261.00535

Stiglitz, J. E. 1972. A Re-Examination of the Modigliani-Miller Theorem, *American Economic Review* 59: 784–793.

Tvaronavičienė, M.; Grybaitė, V.; Tvaronavičienė, A. 2009. If Institutional Performance Matters: Development Comparisons of Lithuania, Latvia and Estonia, *Journal of Business Economics and Management* 10(3): 271–278. doi:10.3846/1611-1699.2009.10.271-278

Welch, I. 2004. Capital structure and stock returns, *Journal of Political Economy* 112: 106–131. doi:10.1086/379933

KAPITALO STRUKTŪRA BALTIJOS ĮMONĖSE

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Santrauka

Optimalios kapitalo struktūros siekiama daugiau nei 50 metų ir tai vis dar yra labai aktualu, ypač per finansų krizę, įvykusią 2008 m. Kol kas nėra gauta galutinio atsakymo į klausimą – kokio dydžio skola turi būti laikoma sąskaitose. Pagrindinis šio straipsnio tikslas – išnagrinėti kapitalo struktūros sprendimų įtaką akcijų rinkai ir Baltijos šalių įmonių pelningumui. Tyrimas apėmė ketverių metų laikotarpį (nuo 2007 m. iki 2010 m.) ir 36 patikimiausių akcijų "blue chips" duomenų, įtrauktų į Baltijos vertybinių popierių biržų sąrašus, pavyzdžius. Atlikus tyrimą nustatytas teigiamas ryšys tarp akcijų ir akcinio kapitalo pakankamumo. Be to, buvo nustatytas atvirkštinis ryšys tarp skolos lygio ir kapitalo pelningumo, patvirtinančio kapojimo kvotos teoriją, kad geriausiu atveju kompanija panaudos savo sukuriamus išteklius.

Reikšminiai žodžiai: kapitalas, struktūra, atsipirkimas, rinka, lygis.

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