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The Interaction of Internal Determinants and Decisions on Capital Structure at the Baltic Listed Companies

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The selection of the optimum structure of financing sources is one of the most widely analysed fields of corporate finance governance. Despite that, the existing theoretical models cannot fully explain the selection of capital structure of every company. So far researchers in this field have not reached an agreement on which determinants have the greatest influence of corporate behaviour and which of them predetermine financial solutions.

The majority of empirical researches carried out up to the present are based on the corporate data analysis of developed countries and the findings obtained are rather diverse, which shows that different internal determinants have different effects on financing decisions not only in different countries but in different periods as well.

To research the structure of the Baltic listed companies and determinants that influence it the financial indicators of the Lithuanian, Latvian and Estonian listed companies taken from the annual reports-prospectuses of these companies were used. Only the data of non-financial companies were included in this research because decisions taken by financial institutions are specific and predetermined by other determinants. The research covers the period of 2000-2005. In this research indicators of the capital structure based on the balance-sheet value of capital as well as those calculated according to the value of the capital market were applied.

To establish the strength of impact of the internal specific determinants the multidimensional analysis of correlation between the capital structure indicators and the main determinants, such as return on assets, operational profitability, tangibility, non-debt tax shields, a company's size and growth possibilities and free cash flow, was employed.

To check the reliability of the obtained correlation, the value p was used. The presented findings show statistically important values when the level of significance is 0.01 (i.e. correlation between indicators was considered reliable and significant, when $p < 0.01$) and 0.05 (i.e. correlation between indicators is significant and reliable when the value $p < 0.05$).

The conducted research disclosed significant differences in the capital structure of the Baltic listed companies and that of developed countries' companies: the listed companies of the Baltic states use much less loan capital and poorly utilize financial borrowing possibilities.

The empirical research in many cases proved the hypothesis of the pecking order that companies, first of all, use up their internal resources and only afterwards try to employ external financing sources by granting priority to financial debts.

Keywords: *capital structure, financing solutions, trade-off theory, signalling theory, pecking order theory.*

Introduction

The selection of the optimum structure of financing sources is one of the most widely analysed fields of corporate finance governance. Despite that, the existing theoretical models cannot fully explain the selection of capital structure of every company. So far researchers in this field have not reached an agreement on which determinants have the greatest influence of corporate behaviour and which of them predetermine financial solutions.

A corporate capital structure, depending on the company's financing solutions, may either be a random one or reflect the results of rational selection. The importance of the corporate capital structure is related to the fact that big capital expenses generating due to insufficient use of the loan capital as well as due to excessive use thereof establish additional obstacles to the growth of the company.

A rapid development of capital markets creates new possibilities of capital raising for companies. Rational financing solutions may be an especially important determinant to create value. Researches into the optimization of the capital structure in the Baltic states are rather scarce therefore when adopting financing decisions the recommendations of foreign authors are often followed.

The key aim of any business entity is the increase of its value. There are two main attitudes to the issue whether it is possible, through the rational harmonization of financial sources, help achieving this aim. According to the original idea of Modigliani and Miller (1958), in case of absence of taxes, the corporate market value does not depend on the structure of capital therefore financing solutions are not important in striving for the key aim – corporate value maximization. But in literary sources one can find many arguments against this theory. According to the authors of the trade-off theory (Jensen and Meckling, 1976; Meyers, 1977; Jensen,1986), companies can benefit from the advantages of the loan capital before the benefit received becomes

smaller than additional charges covering the costs financial distress and the costs of agency. As maintained by the authors of the signalling theory, managers could use capital structure solutions as the signal to inform the market about company's activities (Ross, 1977; Leland and Pyle, 1977). The originators of the pecking order theory (Meyers, 1984; Meyers and Majluf, 1984) relate capital structure solutions to the asymmetry of information.

The majority of empirical researches carried out till the present are based on corporate data analysis of developed countries. For instance, Bradley et al. (1984), Kim and Sorensen (1986), Friend and Lang (1988), Titman and Wessels (1988), Chaplinsky and Niehaus (1993), Frank and Goyal (2004) researched US companies, Kester (1986) – US and Japanese industrial enterprises, Rajan and Zingales (1995) – G7 states' companies, Wald (1999) used the date of G7 states except for those of Canada and Italy, Bevan and Danbolt (2002) researched the structure of the UK corporate capital, Drobetz and Fix (2005) analyzed data of Swiss companies, De Miguel and Pindado (2001), Alonso et al. (2005) – those of Spanish companies, and Panno (2003) – the corporate capital structure of the UK and Italy. A number of empirical researches were carried out in developing countries: Hamid and Singh (1992) analysed the corporate capital structure in South Korea, Pakistan, Jordan, Thailand, Mexico, India, Turkey, Malaysia and Zimbabwe; based on the corporate data of the mentioned states and Brazil researches were conducted by Both et. al. (2001); Wiwattanakantang (1999) used the data of Thai companies, Huang and Song (2002) analyzed capital structure solutions in China. However, very few researches in capital structure and related determinants were carried out in the developing countries of Europe. Bauer (2004) analyzed the corporate capital structure in Poland, Czech Republic, Hungary and Slovakia, Nivorozhkin (2003) – those of Czech Republic and Bulgaria. The findings of these empirical researches are rather diverse.

The question is whether the findings and conclusions of researches into capital structure carried out in other countries may have influence on the optimization of the Baltic companies' capital structure, whether the capital structure theories can be applied in parallel with the analysis of the dependence of financing solutions on many external and internal determinants in the companies of the Baltic states and the developed countries?

Aim of the article is to analyze the capital structure of the Lithuanian, Latvian and Estonian listed companies and its change in the period from 2000 to 2005, identify the key determinants influencing corporate financing solutions in the Baltic states and analyze the strength of their impact; and to test the display of the main provisions of the capital structure theories in the Baltic states.

The research object is the capital structure of the Baltic listed companies and specific internal determinants influencing it.

The research methods cover the analysis of scientific literature, the analysis of statistics, the comparative analysis, and the multidimensional correlative analysis.

Determinants of financing solutions

Based on various theoretical researches it can be stated that the corporate capital structure is influenced by three types of determinants: internal (specific) corporate determinants, national institutional determinants and macroeconomic determinants. Having researched the US companies, Frank and Goyal (2004) made the conclusion that roughly 30 percent of differences in the capital structure inside the country could be explained by the internal determinants.

In summary of the ***trade-off theory*** supporters' statements the conclusion can be drawn that when adopting financing decisions companies search a compromise between the taxing advantages of the borrowed capital use and additional costs (financial distress and agency costs), which are growing with the increase of liabilities. A company benefits from using the loan capital since interest is not subject to taxation.

Megginson (2006) singles out direct and indirect *costs of financial distress*. The direct costs include judicial and administrative expenses. The indirect costs are related to the actions of users and suppliers (including suppliers of capital) taken by them when they become aware of the company's financial problems, and non-optimal decisions adopted by the executives that would help maintaining company in operation for the short-term period but reduce its value in the long-term run. Impairment in asset value due to its premature sales is also attributed to the indirect costs.

Larger companies sustain smaller costs of financial distress since they have wider possibilities of investment diversification and their activities are less dependent on a local production line that might have a close relationship with the market fluctuations (Rajan and Zingales, 1995; Hovakimian et al., 2001). An additional determinant is a public opinion, as a rule, devoting more attention to bigger companies and shaping the stereotype that large companies have more possibilities to perform their liabilities to creditors (Jensen and Meckling, 1976).

On the other hand, companies with higher growth prospects evaluate the need of funds for the financing of their growth and do not hurry to focus on the borrowed sources of financing since they would condition bigger costs of financial distress in future periods. Consequently, the possibilities of growth have a negative correlation with the level of indebtedness.

Companies of higher business risks have bigger probability of financial distress and consequently might incur bigger additional expenses. Thus, the company of increased business risk should use less loan capital. This can lead us to the conclusion that the financing decisions are related to the *character of company's activities, and fluctuations of its income and profit*.

Decisions on the capital structure are also influenced by *tangibility* since bigger costs of financial distress can be sustained by the companies having more intangible assets because specialized intangible assets are subject to more rapid value impairment than the tangible ones, and apart from that, it is more difficult to sell intangible assets. Due to this reason, the company having more tangible assets will use more loan capital than the company

whose assets structure is dominated by intangible assets.

Companies earning higher profits should receive more benefit from the use of the borrowed capital since they experience a higher tax shield. Therefore, based on the statements of the trade-off theory it can be stated that a direct correlation should exist between the company's *profitability* and part of the loan capital, i.e. the higher profitability the bigger part of loan capital should be used by the company.

The costs of financial distress are closely related to *agency costs*. Jensen and Meckling (1976), Harris and Raviv (1991) relate agency costs to differences in interests between the company's owners and executives on the one part, and between the owners and creditors on the other part. When wishing that executives of the company adopt optimum decisions in respect of the owners, they are motivated and controlled. On the other part, creditors exercise control over financial solutions of company's executives and owners by including into agreements conditions protecting their interests and restricting owners' and executives' actions. Motivation and control are inevitably related to additional costs. According to the findings of research carried out by Jensen and Meckling (1976), it does not matter from which part the control is exercised since these are the shareholders who incur these costs as the ultimate result. Agency costs increase with the growth of company's liabilities, consequently capital costs rise and the benefit of the loan capital shrinks.

DeAngelo and Masulis (1980), Titman and Wessels (1988) made the conclusion that tax saving is possible not only due to the use of the loan capital but also because of depreciation expenses that reduce the taxable profit. Thus, companies having more non-current assets experience a higher tax shield effect and can use more loan capital.

According to Myers and Majluf (1984), decisions on the capital structure are related to the asymmetry of information. They relied on the following assumptions about corporate executives made by them:

- company's executives have more knowledge of the company's revenues and investment possibilities compared to external investors;
- executives behave so as to bring maximum benefit to the company's shareholders.

In the same year later Myers (1984) made a step forward in his research and formed the ***pecking order theory***. Based on the pecking order theory, there exists a certain hierarchy of selecting financing sources and when choosing the financing source executives, first of all, try to select the source taking the highest position in the hierarchy, i.e. the source whose attraction requires lowest costs and poses lowest risk. Due to this reason the internal resources have to be fully used first of all. If they are insufficient, the company tries to attract external funds. When selecting the external financial sources executives again try to choose the source ranked highest on the remaining hierarchy, i.e. loan issuance (it is less risky compared to cheap and easy-to-attract source) and only afterward consider the possibility of equity issuance.

The pecking order theory explains a negative correlation between profitability and debt level that became apparent in empirical researches. When wishing to maintain their competitiveness companies try to invest in the development of new products and preservation of their market share (Fama and French, 2002). To implement such investment, companies with lower profitability can accumulate smaller internal funds, therefore they have to borrow more.

Rapidly growing companies do not have sufficient internal funds, therefore they have to search for external financing sources. Thus, based on the pecking order theory, it can be stated that companies with high growth options use more borrowed capital than those having scarce growth chances.

The signalling theory, initiated by Ross (1977), is based on the problem of information asymmetry. As maintained by the supporters of this theory, executives and company's employees jointly dispose of private information on the company's cash flow and profit as well as investment possibilities, in the meantime persons not belonging to the company cannot have such information in their disposition.

Being aware of the future profitable profit company's management will be disinclined to issue new equity. If the project is a success, the generated additional cash flow will predetermine rise in the company's share price, therefore the increased profit had to be shared with the new shareholders. Should the project be financed with loan funds, despite the increased profit, the company will have to pay the fixed interest rate. Thus, being aware of positive prospects of the company, the shareholders will try to attract loan capital even though this would distort the optimum structure of its capital. If the company's prospects are not very good, the company will be willing to issue equity in order to share possible loss with the new shareholders (Klein et al., 2002). Consequently, the company adopts financing decisions depending on the circumstances that are predetermined by internal financial capacities and business prospects.

The findings of researches show that the change in prices of shares, related to response to information having reached the market, and the difference between sales and purchase prices of shares are bigger in large companies than in small ones. Rajan and Zingales (1995) argue that there exists relation between the company's size and debt capacity because bigger companies try to disclose more information to external investors.

In practice, the structure of capital is influenced by a number of determinants whose impact can be hardly quantifiable. Such determinants include different attractiveness of separate financing sources to the management, a phase of the company's life cycle, necessity to preserve financial flexibility, issues of the company's control, objectives of separate stakeholders etc.

Financing Sources' Structure of the Baltic Listed Companies

To research the structure of the Baltic listed companies and determinants that influence it the financial indicators of the Lithuanian, Latvian and Estonian listed companies taken from the annual reports-prospectuses of

these companies were used. The research covers the period from 2000 through 2005.

In this research indicators of the capital structure based on the balance-sheet value of capital as well as those calculated according to the value of the capital market were used. According to Welch (2004), the market-value-based indicators more properly reflect the equity of shareholders and creditors. Taking into consideration the fact that in the majority of researched companies the market value of the equity capital was much lower than its balance-sheet value in the period of 2000-2002, the indicators based on the market value were calculated only from the year 2003.

The use of part of the loan capital's sources (debts to suppliers deferred taxes, liabilities to the budget etc.) is not related to additional expenses if the company effects payments to its creditors in a timely manner. Companies endeavour to use the options of these financing sources to the maximum extent therefore it is suggested to eliminate these liabilities when analyzing decisions on the capital structure. This is the reason why the indicators disclosing only the level of financial liabilities are also included in this research.

The following indicators of the capital structure were used in this research:

- total liabilities ratio **TL** *(total liabilities/total asset);*
- long-term liabilities ratio **LTL** *(long-term liabilities/ total assets);*
- total debt ratio **TD** *(total debt/ total asset);*
- long-term debt ratio **LTD** *(long-term debt/asset);*
- the ratio of total debt and capital **TDC** *(total debt/ total debt + equity);*
- market total liabilities ratio **MTL** *(total liabilities/total liabilities + the market value of equity);*
- market total debt ratio **MTD** *(total debt/total debt + the market value of equity).*

Table 1 presents the averages of the above-mentioned indicators of the Baltic listed companies (in the sections marked with M) and their standard deviations (in the sections marked with σ), illustrating the spread of indicators of separate listed companies.

Table 1

Indicators of the capital structure at the Baltic listed companies

Indicators	Lithuania				Latvia				Estonia			
	2000-2002		2003-2005		2000-2002		2003-2005		2000-2002		2003-2005	
	M	σ	M	σ	M	σ	M	σ	M	σ	M	σ
TL	0.35	0.20	0.42	0.20	0.34	0.21	0.32	0.18	0.41	0.20	0.38	0.22
LTL	0.14	0.15	0.17	0.13	0.11	0.10	0.11	0.10	0.14	0.15	0.11	0.14
TD	0.20	0.17	0.22	0.15	0.15	0.15	0.14	0.12	0.19	0.16	0.19	0.20
LTD	0.12	0.14	0.15	0.13	0.09	0.10	0.09	0.10	0.11	0.12	0.11	0.14
TDC	0.24	0.20	0.28	0.19	0.19	0.20	0.18	0.15	0.23	0.20	0.24	0.24
MTL			0.46	0.28			0.39	0.30			0.33	0.27
MTD			0.24	0.18			0.20	0.22			0.17	0.21

The average total liabilities ratio in the three states was much lower than in the developed countries. In the period of 2000-2002 Estonia's listed companies financed, on average, 41 percent of the total asset with the borrowed funds, in the meantime in Latvia's and Lithuania's companies this indicator was lower and accounted for 34 percent and 35 percent, respectively. In the period of 2003-2005 the average of debt level in Estonian and Latvian listed companies decreased, while Lithuanian companies were inclined to have more loan capital – the total liabilities ratio was 0.42.

The structure of the borrowed capital in the companies of analyzed countries was different. In the period of 2000-2002, the level of long-term liabilities at the Lithuanian and Estonian listed companies was identical – the long-term liabilities ratio was 0.14. Latvian companies used less borrowed funds – within the analyzed period the long-term liabilities ratio was 0.11. In the period of 2003-2005 Lithuania's companies assumed more long-term liabilities, which accounted for 14 percent in the total structure of financing sources.

The performed analysis of the total debt ratio shows that financial debts accounted for more than 50 percent of Lithuanian companies' liabilities. In the meantime Latvia's listed companies scarcely use the options of financial borrowing: in the period of 2000-2002 the total debt ratio hardly reached 0.15 and in the period of 2003-2005 it still decreased to 0.14. A somewhat higher level of financial debts was at Estonia's companies – within the analyzed period financial debts, on average, accounted for 19 percent of the financial source structure.

The long-term debt ratio in the Baltic listed companies was much lower compared to that of the developed countries. Within the analyzed period the long-term debt ratio at Latvia's companies, on average, reached only 9 percent, at Estonia's companies – 11 percent and only at Lithuania's companies this indicators was higher in the period of 2003-2005 – 15 percent of

the total asset, on average, was financed with long-term financial debts.

A comparatively low level of debts is illustrated by the ratio of total debts and total capital. In the period of 2003-2005, debts accounted, on average, only for 18-19 percent of the total capital (here capital is interpreted as the sum of equity and total debts) of the Latvian listed companies. In the capital structure of Estonia's companies, financial debts, on average, accounted for 23 percent in the period of 2000-2002 and for 24 percent in the period of 2003-2005. In the period of 2003-2005 the financial liabilities of Lithuania's companies were somewhat higher: from 2003 to 2005 they accounted for 28 percent of the total capital. Thus, the Baltic listed companies are not inclined to assume financial debts and increase financial risk.

The capital structure indicators based on the market value did not differ much from the indicators based on the balance-sheet value, in all the three states they were somewhat lower than those based on the market value. This shows that the market value of equity of the majority of the Baltic listed companies is lower than the balance-sheet value.

Research into dependence between the capital structure indicators and internal determinants

Upon summarizing the theoretical researches of different authors the following indicators were chosen to analyse the dependence between the capital structure indicators and company's internal determinants:

- return of assets ***ROA*** *(EBIT/total asset);*
- ratio of earnings *(before interest and taxes)* to sales ***EBIT margin*** *(EBIT/ sales income);*
- tangibility ***TANG*** *(non-current tangible asset/ total asset);*
- non-debt tax shield ***NDTS*** *(depreciation expenses/ total asset);*
- company's size by asset ***LOG(A)*** *(natural logarithm of total asset);*
- company's size by sales income ***LOG(S)*** *(natural logarithm of sales income);*
- company growth possibilities ***TOBIN Q*** *((market value of equity + total liabilities)/total assets);*
- growth of sales income ***ΔS*** *(annual change in sales income/ sales income of the previous year);*
- asset growth ***ΔA*** *(annual change in assets/ assets of the previous year);*
- free cash flow ***FCF*** *((operating activity's cash flow + investing activity's cash flow)/total assets).*

Dependence between fluctuations in income or earnings and the capital structure's indicators was not researched in this paper since these fluctuations in the Baltic listed companies, in the authors' opinion, are more related to companies' growth and development of activity fields and do not reflect the level of business risk.

Table 2 presents the averages of the above-mentioned indicators (in the sections marked with M) as well as their standard deviations (in the sections marked with σ) at the Baltic listed companies illustrating the spread of separate companies' indicators.

Table 2

Independent variables for Lithuanian, Latvian and Estonian companies

Indicators	Lithuania				Latvia				Estonia			
	2000–2002		2003–2005		2000–2002		2003–2005		2000–2002		2003–2005	
	M	σ	M	σ	M	σ	M	σ	M	σ	M	σ
ROA	0.04	0.07	0.05	0.10	0.08	0.07	0.10	0.12	0.11	0.09	0.09	0.12
EBIT margin	0.05	0.08	0.05	0.10	0.11	0.12	0.11	0.14	0.11	0.11	0.10	0.14
TANG	0.64	0.18	0.65	0.22	0.52	0.17	0.54	0.19	0.54	0.20	0.53	0.20
NTDS	0.06	0.04	0.07	0.04	0.05	0.02	0.05	0.02	0.07	0.06	0.07	0.04
LOG(A)	11.89	1.36	12.13	1.27	12.14	1.50	12.30	1.32	11.57	1.06	11.76	0.53
LOG(S)	11.64	1.43	11.93	1.23	11.91	1.29	12.03	1.03	11.73	1.09	11.88	0.53
TOBIN Q	0.67	0.31	1.30	0.65	0.67	0.56	1.35	1.40	1.31	0.50	1.72	0.80
ΔS	0.11	0.54	0.22	0.95	0.10	0.26	0.26	0.46	0.06	0.20	0.10	0.25
ΔA	0.02	0.18	0.26	0.59	0.12	0.23	0.33	0.45	0.12	0.17	0.08	0.24
FCF	0.02	0.10	0.03	0.15	-0.01	0.13	-0.02	0.10	0.06	0.13	0.10	0.19

In the analysed period the indicators of profitability in separate Baltic state were very diverse. The average return on asset at Latvia's companies increased from 8 to 10 percent. At Lithuania's listed companies it was nearly twice lower. In the researched period the average return on assets at Estonia's companies fell from 11 to 9 percent. The asset structure of Latvian and Estonian companies is rather similar: non-current tangible asset accounts for 52 or 54 percent, on average, of the total asset. Lithuanian companies had much more tangible

asses: non-current tangible asset accounted for 64-65 percent of the total asset. The average company size in the three Baltic states was very similar. The TOBIN Q indicator illustrating growth prospects showed a big difference in different periods: in the period of 2000-2002 it reached, on average, 0.67 in both Latvia and Lithuania, while in Estonia it was nearly twice bigger and reached 1.31. In the period of 2003-2005 the prospects of Lithuanian and Latvian companies on the market received more favourable evaluation and the TOBIN Q indicators rose up to 1.3 and 1.35, respectively. Lithuanian and Latvian listed companies were especially rapidly growing in the period of 2003-2005 while the asset growth of Estonia's companies in this period was slower than in the period of 2000-2002.

In the analyzed period Lithuanian companies generated considerably low free cash flows, while Estonian companies earned nearly 3 times bigger free cash flows. In the meantime Latvian companies experienced a financial deficit since their average free cash flows were negative.

The multi-dimensional correlative analysis was performed with the software package SPSS. To check the reliability of the obtained correlation the *p value* was used. The presented findings show statistically important values when the level of significance is 0.01 (i.e. correlation between indicators was considered reliable and significant, when $p < 0.01$) and 0.05 (i.e. correlation between indicators is significant and reliable when the value $p < 0.05$). The correlation coefficients not marked with one or two asterisks are statistically insignificant since the obtained p – values exceeded the set levels of significance.

The findings of the multi-dimensional correlative analysis of the Lithuanian listed companies (the correlation coefficients) are given in Tables 3 and 4, those of Latvian listed companies – Tables 5 and 6, those of Estonian companies – Tables 7 and 8.

Table 3

Correlation of the capital structure indicators and internal determinants of Lithuanian companies in the period of 2000-2002

	TL	***LTL***	***TD***	***LTD***	***TDC***
ROA	-0.146	-0.034	-0.077	-0.011	-0.132
EBIT margin	-0.086	0.139	0.054	0.142	-0.023
TANG	0.238(*)	0.344(**)	0.316(**)	0.287(**)	0.324(**)
NTDS	0.042	0.069	0.033	-0.004	0.042
LOG(A)	0.373(**)	0.525(**)	0.462(**)	0.503(**)	0.464(**)
LOG(S)	0.496(**)	0.554(**)	0.471(**)	0.526(**)	0.500(**)
TOBIN Q	0.657(**)	0.520(**)	0.538(**)	0.498(**)	0.571(**)
ΔS	-0.170	-0.026	-0.188	-0.075	-0.187
ΔA	0.184	0.028	0.124	0.023	0.112
FCF	-0.214(*)	-0.111	-0.265(**)	-0.162	-0.251(*)

*** significant at the 0.01 level*

** significant at the 0.05 level*

The analysis of interaction of the capital structure indicators and internal determinants of Lithuanian listed companies in the period of 2000-2002 shows a weak positive correlation (see Table 3) between tangibility and the level of debts, which confirmed the hypothesis of the trade-off theory that companies having more tangible assets assume more liabilities. The statements of the trade-off theory were also confirmed by average positive correlation between the company's size and the level of long-term liabilities as well as the level of financial debts that was displayed in the period in question. The findings of the performed research show the possibilities of growth have a considerable influence on the capital structure of Lithuania's companies: an average positive correlation manifested itself between the growth-reflecting indicator Tobin Q and nearly all indicators of the capital structure. In this way, the statements of the supporters of the pecking order theory and information asymmetry that companies with good growth prospects use more loan capital for financing proved to be true. A weak negative statistically significant correlation was determined between free cash flows and the level of financial debts, i.e. companies earning bigger free cash flows use less financial debts compared to the companies with smaller free cash flows. This correlation confirmed the hypothesis of the pecking order theory that companies, in the first place, use up internal resources.

Somewhat different findings were obtained when analyzing Lithuanian companies' indicators in the period of 2003-2005. In this period a very weak negative correlation between the capital structure indicators based on the market value and return on assets was displayed, i.e. the statements of the pecking order theory that companies endeavour to use up their internal resources for investment financing in the first place therefore less profitable companies borrow more were partially confirmed. Such hypothesis is confirmed by a still stronger relationship between the EBIT margin and the capital structure indicators based on the market value.

Table 4

Correlation of the capital structure indicators and internal determinants of Lithuanian companies in the period of 2003-2005

	TL	LTL	TD	LTD	TDC	MTL	MTD
ROA	-0.068	0.110	0.083	0.147	0.038	-0.257(**)	-0.228(*)
EBIT margin	-0.184	0.003	-0.063	0.038	-0.109	-0.435(**)	-0.389(**)
TANG	-0.527(**)	0.161	-0.090	0.041	-0.350(**)	-0.126	-0.151
NTDS	-0.198(*)	0.110	0.042	0.074	-0.099	-0.227(*)	-0.094
LOG(A)	-0.154	0.145	-0.139	-0.004	-0.134	-0.169	-0.092
LOG(S)	0.109	0.199(*)	-0.021	0.100	0.046	-0.146	-0.088
TOBIN Q	0.289(**)	0.180	0.198(*)	0.217(*)	0.221(*)	-0.454(**)	-0.379(**)
ΔS	0.385(**)	-0.156	-0.039	-0.128	0.264(**)	0.231(*)	0.251(**)
ΔA	0.049	-0.105	-0.121	-0.146	0.008	0.113	-0.048
FCF	-0.154	-0.089	-0.204(*)	-0.107	-0.225(*)	-0.090	-0.118

*** significant at the 0.01 level*

** significant at the 0.05 level*

Differently from previous years, in the period of 2003-2005, an average negative correlation between tangibility and the total level of debts was noticed, which means that Lithuanian companies with bigger tangible assets had smaller liabilities than the companies having less tangible assets. In the mentioned period there was no dependence between the company's size and corporate capital structure. Compared to the previous years, a much weaker relationship was observed between the company's growth and the level of debts. On the other hand, in the period of 2003-2005, differently from the previous period, a weak negative correlation manifested itself between the corporate growth-reflecting indicator Tobin Q and the capital structure indicators based on the market value.

Table 5

Correlation of the capital structure indicators and internal determinants of Latvian companies in the period of 2000-2002

	TL	LTL	TD	LTD	TDC
ROA	0.384(*)	0.250	0.328	0.265	0.347
EBIT margin	0.042	0.159	0.090	0.169	0.077
TANG	-0.374(*)	0.256	-0.118	0.223	-0.221
NTDS	-0.061	0.018	-0.013	0.016	-0.014
LOG(A)	-0.470(**)	0.058	-0.237	0.018	-0.315
LOG(S)	-0.285	0.051	-0.172	0.005	-0.228
TOBIN Q	-0.037	-0.079	-0.034	-0.071	-0.022
ΔS	0.451(*)	0.094	0.192	0.062	0.273
ΔA	0.171	-0.142	-0.046	-0.131	0.018
FCF	-0.172	0.188	-0.092	0.160	-0.158

*** significant at the 0.01 level*

** significant at the 0.05 level*

No clear tendencies were determined when analyzing the dependence of capital structure indicators on the company's specific determinants in the Latvian listed companies in the period of 2000-2002. The majority of obtained findings are statistically unreliable. A weak negative correlation was noticed between the company's size and the total level of debts as well as between tangibility and the total level of debts. In the mentioned period a weak positive relationship between return on asset and the level of debts became apparent but this correlation most probably was more predetermined by other liabilities but not financial debts. A weak positive correlation was displayed between income growth and the total level of debts but it is related to the growth of long-term non-financial liabilities but not to rationally adopted financing decisions of the Latvian companies.

Table 6

Correlation of the capital structure indicators and internal determinants of Latvian companies in the period of 2003-2005

	TL	LTL	TD	LTD	TDC	MTL	MTD
ROA	0.148	-0.058	0.018	-0.035	0.040	-0.194	-0.124
EBIT margin	0.209	0.301	0.261	0.309	0.220	-0.002	0.161
TANG	-0.306	0.067	-0.182	-0.017	-0.252	-0.016	-0.085
NTDS	-0.138	0.149	0.160	0.165	0.116	-0.157	0.027
LOG(A)	-0.249	0.101	-0.167	0.029	-0.224	-0.037	-0.064
LOG(S)	-0.039	0.052	-0.146	-0.027	-0.168	0.098	-0.019
TOBIN Q	-0.203	-0.230	-0.273	-0.212	-0.251	-0.452(**)	-0.363(*)
ΔS	0.167	-0.212	0.019	-0.192	0.054	-0.209	-0.250
ΔA	0.041	-0.131	-0.072	-0.165	-0.043	-0.241	-0.231
FCF	-0.212	-0.013	-0.292	-0.059	-0.300	0.051	-0.170

*** significant at the 0.01 level*

** significant at the 0.05 level*

In the period of 2003-2005, the research into dependence between the capital structure indicators and internal specific determinants of the Latvian listed companies shows that these companies did not adopt financing decisions by rationally focusing on the specific determinants. Many of the obtained results are statistically unreliable and do not indicate any dependence between the capital structure indicators and internal determinants. In the period of 2003-2005 a statistically significant negative correlation was determined only between the market-value-based indicators of the capital structure and the company growth prospects reflecting indicator Tobin Q. This correlation might be related to an especially rapid growth of Latvian companies and confirms the hypothesis of the trade-off theory that with the aim to reduce future costs of financial distress rapidly growing companies, first of all, use their own sources of capital.

Table 7

Correlation of the capital structure indicators and internal determinants of Estonian companies in the period of 2000-2002

	TL	LTL	TD	LTD	TDC
ROA	-0.541(**)	-0.362(*)	-0.710(**)	-0.480(**)	-0.707(**)
EBIT margin	-0.393(*)	0.012	-0.320	-0.057	-0.349(*)
TANG	-0.228	0.198	0.264	0.387(*)	0.232
NTDS	-0.467(**)	-0.247	-0.253	-0.224	-0.262
LOG(A)	-0.471(**)	-0.331(*)	-0.284	-0.082	-0.332(*)
LOG(S)	-0.450(**)	-0.532(**)	-0.434(**)	-0.288	-0.462(**)
TOBIN Q	-0.506(**)	-0.435(*)	-0.474(**)	-0.404(*)	-0.490(**)
ΔS	-0.020	0.027	0.049	0.092	0.014
ΔA	-0.131	-0.400	-0.257	-0.329	-0.265
FCF	-0.432(**)	-0.314	-0.651(**)	-0.518(**)	-0.627(**)

*** significant at the 0.01 level*

** significant at the 0.05 level*

The analysis of the Estonian listed companies' indicators in the period of 2000-2002 shows an average negative correlation between return on assets and the total liabilities ratio as well as a strong negative correlation between return on assets and the level of financial debts. A weak negative correlation was established between the company's size and many indicators describing the capital structure, and an average negative correlation between the company's size and the long-term liabilities ratio. Such dependence can be explained by the fact that bigger companies are able to cumulate more internal resources therefore they use less loan capital. Differently from

Lithuanian listed companies in the same period, Estonia's companies witnessed a weak negative dependence between the corporate growth indicator Tobin Q and the level of liabilities. This shows that Estonia's prospective companies tried to finance their growth with their own capital but not with the borrowed funds. An average negative dependence was determined between free cash flows and many indicators describing the level of liabilities. Thus, the pecking order theory's hypothesis was proved to be true since in the majority of cases cash flows generated from the main corporate activities were sufficient to finance the growth of Estonia's companies in the period of 2000-2002 and, consequently, less borrowed funds were used.

Table 8

Correlation of the capital structure indicators and internal determinants of Estonian companies in the period of 2003-2005

	TL	LTL	TD	LTD	TDC	MTL	MTD
ROA	-0.558(**)	-0.272	-0.615(**)	-0.262	-0.648(**)	-0.513(**)	-0.600(**)
EBIT margin	-0.264	0.378(*)	-0.080	0.392(*)	-0.179	-0.268	-0.168
TANG	-0.026	0.514(**)	0.297	0.528(**)	0.213	0.081	0.217
NTDS	-0.237	-0.291	-0.180	-0.286	-0.149	-0.310	-0.166
LOG(A)	-0.242	0.126	-0.210	0.136	-0.270	-0.198	-0.230
LOG(S)	-0.201	-0.134	-0.329(*)	-0.128	-0.336(*)	-0.188	-0.297
TOBIN Q	-0.254	-0.329(*)	-0.359(*)	-0.333(*)	-0.335(*)	-0.542(**)	-0.500(**)
ΔS	-0.005	-0.119	-0.142	-0.120	-0.140	0.131	-0.055
ΔA	-0.261	-0.081	-0.330(*)	-0.080	-0.356(*)	-0.064	-0.253
FCF	0.002	-0.136	-0.067	-0.128	-0.006	-0.159	-0.109

*** significant at the 0.01 level*

** significant at the 0.05 level*

In the period of 2003-2005 a negative average correlation between return on assets and the level of financial debts was obvious in the Estonian listed companies, which confirms the pecking order theory's hypothesis that companies first of all use up internal resources. An average positive correlation displayed itself between tangibility and long-term liabilities in this way confirming the trade-off theory's assumptions that companies having more tangible assets can incur smaller costs of financial distress therefore they are inclined to use more borrowed capital. Like in the period of 2000-2002, a weak negative correlation displayed itself between the indicator illustrating growth options Tobin Q and all the indicators based on the balance-sheet value reflecting the level of liabilities. In the period of 2003-2005, a somewhat stronger relationship was between market-value-based indicators of the capital structure, which again confirmed the approaches of the trade-off theory. A weak negative correlation was between the growth of assets and financial debts. Differently from the previous years, the period of 2003-2005 did not see an obvious relationship between free cash flows and the level of liabilities.

Conclusions

In the period of 2000-2005, the average total liabilities ratio in all the three Baltic states was much smaller compared to that of the developed countries. In the period of 2000-2002, the Estonian listed companies financed, on average, 41 percent of the assets with the borrowed funds, in the meantime in the Latvian and Lithuanian companies this indicator was much lower and reached 34 percent and 35 percent, respectively. In the period of 2003-2005 the average level of liabilities in the Estonian and Latvian listed companies decreased while Lithuanian were inclined to use more borrowed capital – the total liabilities ratio was 0.42.

The performed analysis of the total debts ratio shows that financial debts accounted for more than a half of the Lithuanian companies' liabilities. In the meantime Latvia's listed companies scarcely use up the options of financial borrowing: in the period of 2000-2002, the total debts ratio hardly reached 0.15, and in the period of 2003-2005 it still decreased to 1.14. A somewhat higher level of financial debts was at Estonia's companies – within the entire analyzed period financial debts accounted for, on average, 19 percent in the structure of financing sources. The Baltic listed companies are not inclined to assume financial debts and increase their financial risk.

The research into the dependence of the capital structure indicators and internal determinants in the Lithuanian companies shows a weak positive correlation between tangibility and the level of debts, which confirms the trade-off theory's hypothesis that companies having more tangible assets assume more liabilities. The statements of the trade-off theory were also confirmed by an average positive correlation between the company's size and the level of long-term liabilities and the level of financial debt that manifested itself in the mentioned period. The research findings show that the prospects of growth have a considerable influence on the corporate

capital structure in Lithuania: there was an average positive correlation between the growth capacities reflecting indicator Tobin Q and nearly all indicators of the capital structure. In this was the statements of the supporters of the pecking order theory and information asymmetry that more loan capital is used for financing when companies have good prospects of growth proved to be true. A weak negative statistically significant correlation was determined between free cash flows and the level of financial debts, which means that companies earning bigger free cash flows use less financial debts compared to the companies with smaller free cash flows. This relationship confirmed the pecking order theory's hypothesis that companies use up their financial resources first of all.

No clear relationships were determined when analyzing the dependence of capital structure indicators on the company's specific determinants in the Latvian listed companies in the period of 2000-2005. The majority of obtained findings are statistically unreliable and do not identify any dependence on the capital structure indicators. When adopting financing decisions the Latvian listed companies did not rationally focus on the specific determinants.

The analysis of the Estonian listed companies' decisions on the capital structure shows that the companies first of all use up their internal financial resources. This was confirmed by the average negative correlation between return on assets and the total liabilities ratio, strong negative relationship between return on assets and the total debts ratio, average negative dependence between free cash flows and many indicators describing the level of liabilities having displayed in the period of 2000-2002. A negative correlation between the company's size and many indicators describing the capital structure and between the company's size and the long-term liabilities ratio also confirmed the pecking order theory's hypothesis that larger companies are able to accumulate more internal resources therefore they use less borrowed capital.

A negative dependence between the corporate growth possibilities describing indicator Tobin Q and the level of debts disclosed in the periods of 2000-2002 and 2003-2005, showed the fact that the Estonian companies tried to finance their growth with their own capital but not with borrowed funds. This proved the trade-off theory's hypothesis that seeking to reduce future costs of financial distress rapidly growing companies, first of all, employ own sources of capital.

The period of 2003-2005 witnessed an average positive correlation between tangibility and long-term liabilities in the Estonian listed companies in this way confirming the trade-off theory's assumption that companies having more tangible assets can incur lower costs of financial distress therefore they are inclined to use more loan capital.

Researches conducted in the Baltic states confirmed the dependence between the capital structure and such internal determinants as return on asset, tangibility, company's size, growth prospects and free cash flows.

Further research should focus on the dependence of the capital structure on institutional determinants and national macroeconomic determinants.

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Vidinių veiksnių ir kapitalo struktūros sprendimų sąveika Baltijos šalių listinguojamose įmonėse

Santrauka

Optimalios finansavimo šaltinių struktūros parinkimas yra viena plačiausiai nagrinėjamų įmonių finansų valdymo sričių. Nepaisant to, egzistuojantys teoriniai modeliai negali išsamiai paaiškinti kiekvienos įmonės kapitalo struktūros parinkimo. Ši sritį tiriantys mokslininkai iki šiol nesutaria, kokie veiksniai turi didžiausios įtakos įmonių elgsenai, o kurie jų lemia finansinius sprendimus.

Įmonės kapitalo struktūra, priklausanti nuo įmonės finansavimo sprendimų, gali būti visiškai atsitiktinė arba atspindėti tikslingo pasirinkimo rezultatus. Kapitalo struktūros sprendimų svarba susijusi su tuo, kad didelės kapitalo išlaidos, susidarančios tiek dėl nepakankamo skolintų lėšų panaudojimo, tiek dėl pernelyg didelio jų naudojimo yra papildomos įmonės augimo kliūtys.

Sparti kapitalo rinkų plėtra sukuria įmonėms naujų kapitalo pritraukimo galimybių. Pagrįsti finansavimo sprendimai gali būti itin svarbus įmonių vertės kūrimo veiksnys. Baltijos šalyse atlikti kapitalo struktūros optimizavimo tyrimai yra palyginti menki, todėl priimant finansavimo sprendimus dažnai tenka remtis užsienio autorių rekomendacijomis.

Daugelis iki šiol atliktų empirinių tyrimų remiasi išsivysčiusių šalių įmonių duomenų analize, o gauti rezultatai yra gana skirtingi, rodantys, kad įvairūs vidiniai veiksniai nevienodai veikia finansavimo sprendimus ne tik skirtingose šalyse, bet ir skirtingais laikotarpiais.

Straipsnio tikslas – išanalizuoti Lietuvos, Latvijos ir Estijos listinguojamų įmonių kapitalo struktūrą ir jos 2000-2005 m. pokyčius, identifikuoti pagrindinius veiksnius, sąlygojančius Baltijos šalių įmonių finansavimo sprendimus, bei ištirti jų poveikio stiprumą; atlikti pagrindinių kapitalo struktūros teorijų nuostatų reiškimosi Baltijos šalyse testą.

Tyrimo objektas – Baltijos šalių listinguojamų įmonių kapitalo struktūra ir jai įtaką darantys vidiniai specifiniai veiksniai.

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

Baltijos šalių listinguojamų įmonių kapitalo struktūros ir ją įtakojančių veiksnių tyrimui atlikti buvo naudojami Lietuvos, Latvijos ir Estijos listinguojamų įmonių finansiniai rodikliai iš šių įmonių publikuojamų metinių ataskaitų – prospektų. Į tyrimą įtraukti tik nefinansinių kompanijų duomenys, kadangi finansų institucijų priimami finansavimo sprendimai yra specifiniai ir sąlygojami kitų veiksnių. Tyrimo laikotarpis apima 2000 – 2005 m. Šiame tyrime naudojami tiek kapitalo struktūros rodikliai, grindžiami kapitalo balansine verte, tiek rodikliai, kuriems apskaičiuoti naudojama kapitalo rinkos vertė.

Vidinių specifinių veiksnių poveikio stiprumui nustatyti naudota daugiamatė koreliacinė analizė tarp kapitalo struktūros rodiklių ir šių pagrindinių veiksnių: turto pelningumo, veiklos pelningumo, turto materialumo, su skola nesusijusio mokesčių efekto, įmonės dydžio, jos augimo galimybių bei laisvojo pinigų srauto.

Gauto koreliacinio ryšio patikimumui patikrinti naudota p – reikšmė. Pateikiant rezultatus pažymėtos statistiškai reikšmingos reikšmės, kai reikšmingumo lygis 0,01 (t.y. rodiklių ryšys laikytas patikimu ir reikšmingu, kai p – reikšmė < 0,01) ir kai reikšmingumo lygis – 0,05 (t.y. rodiklių ryšys reikšmingas ir patikimas, kai p – reikšmė < 0,05).

Atlikti tyrimai parodė, kad Baltijos šalių listinguojamų bendrovių kapitalo struktūra gerokai skiriasi nuo išsivysčiusių valstybių bendrovių kapitalo struktūros: Baltijos šalių listinguojamos bendrovės naudoja žymiai mažiau skolinto kapitalo, menkai išnaudoja finansinio skolinimosi galimybes.

Empirinis tyrimas daugeliu atvejų patvirtino pasirinkimo eilės hipotezę, kad įmonės visų pirma išnaudoja vidinius išteklius ir tik tada bando pasitelkti išorinius finansavimo šaltinius, tarp kurių pirmumą teikia finansinėms skoloms. Tiriant Lietuvos bendrovių kapitalo struktūros rodiklių ir vidinių veiksnių priklausomybę nustatytas silpnas teigiamas koreliacinis turto materialumo ir skolų lygio ryšys, o tai patvirtino kompromisinės teorijos hipotezę, kad bendrovės, turinčios daugiau materialaus turto, prisiima daugiau įsipareigojimų. Kompromisinės teorijos teiginius pavirtino ir minėtu laikotarpiu pasireiškusi vidutinė teigiama įmonės dydžio ir ilgalaikio įsiskolinimo lygio bei finansinių skolų lygio koreliacija. Atlikto tyrimo rezultatai rodo, kad augimo galimybės turi nemažos įtakos Lietuvos įmonių kapitalo struktūrai: tarp augimo galimybes atspindinčio rodiklio Tobin Q ir beveik visų kapitalo struktūros rodiklių pasireiškė vidutinė teigiama koreliacija. Taigi pasitvirtino pasirinkimo eilės teorijos bei asimetrinės informacijos šalininkų teiginiai, kad esant geroms įmonės augimo perspektyvoms daugiau finansuojama skolintu kapitalu. Nustatytas silpnas neigiamas statistiškai reikšmingas laisvųjų pinigų srautų bei finansinių skolų lygio ryšys, t.y. bendrovės, uždirbančios daugiau laisvųjų pinigų srautų, naudoja mažiau finansinių skolų negu bendrovės, kuriose laisvieji pinigų srautai mažesni. Šis ryšys patvirtino pasirinkimo eilės teorijos hipotezę, kad įmonės visų pirma išnaudoja vidinius išteklius.

Analizuojant Latvijos listinguojamų įmonių 2000-2005 m. kapitalo struktūros rodiklių priklausomybę nuo specifinių įmonės veiksnių, aiškių ryšių nenustatyta. Daugelis gautų rezultatų yra statistiškai nepatikimi ir nerodantys kapitalo struktūros rodiklių bei vidinių veiksnių priklausomybės. Latvijos listinguojamų įmonių finansavimo sprendimai nebuvo priimami kryptingai orientuojantis į specifinius veiksnius.

Analizuojant Estijos listinguojamų įmonių kapitalo struktūros sprendimus nustatyta, kad šios šalies įmonės visų pirma išnaudoja vidinius finansinius išteklius. Tai patvirtino 2000-2002 m. pasireiškęs vidutinis neigiamas turto pelningumo ir bendro skolų lygio ryšys, stiprus neigiamas turto pelningumo ir finansinio įsiskolinimo lygio ryšys, vidutinė neigiama laisvųjų pinigų srautų ir daugelio įsiskolinimo lygį apibūdinančių rodiklių priklausimybė. Neigiamas įmonės dydžio ir daugelio kapitalo struktūrą apibūdinančių rodiklių bei įmonės dydžio ir ilgalaikio įsiskolinimo lygio ryšys patvirtino pasirinkimo eilės hipotezę, kad didesnės įmonės gali sukaupti daugiau vidinių išteklių, todėl naudoja mažiau skolinto kapitalo.

Tiek 2000-2002 m., tiek 2003-2005 m. nustatyta neigiama įmonių augimo galimybes atspindinčio rodiklio Tobin Q ir skolų lygio priklausomybė atskleidė, kad perspektyvios Estijos bendrovės savo augimą stengėsi finansuoti nuosavu kapitalu, o ne pritraukdamos skolintų lėšų. Tai pagrindė kompromisinės teorijos hipotezę, kad sparčiai augančios bendrovės, siekdamos sumažinti būsimus finansinių sunkumų kaštus, visų pirma pasitelkia nuosavus kapitalo šaltinius.

2003-2005 m. Estijos listinguojamose įmonėse reiškėsi vidutinė teigiama turto materialumo ir ilgalaikių įsipareigojimų koreliacija, tuo patvirtindama kompromisinės teorijos prielaidas, kad daugiau materialaus turto turinčios įmonės gali patirti mažesnių finansinių sunkumų kaštų, todėl linkusios naudoti daugiau skolinto kapitalo.

Baltijos šalyse atlikti tyrimai patvirtino kapitalo struktūros ir vidinių veiksnių, tokių kaip pelningumas, turto materialumas, įmonės dydis, augimo galimybės, laisvieji pinigų srautai, priklausomybę.

Tolimesni tyrimai turėtų būti orientuoti į kapitalo struktūros priklausomybės nuo institucinių veiksnių ir šalies makroekonominių veiksnių tyrimą.

Raktažodžiai: *kapitalo struktūra, finansavimo sprendimai, kompromisinė teorija, signalizavimo teorija, pasirinkimo teorija.*

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