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Bachelor Thesis International Economics & Business Economics

The effects of currency unions on access to debt capital markets for firms: Empirical evidence from Estonia joining the Eurozone in 2011

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Abstract

The paper studies the effect of joining a currency union on debt capital market access for firms in emerging countries. The study shows that: (i) firms in general do experience higher access post-entry (ii) National firms experience higher access both in unique and relative terms when compared to Multinational firms (iii) Sectors with higher leverage dependency experience higher access than less dependent sectors. The case of Estonia joining the European Monetary Union is analysed. The analysis uses a large panel of firms across the three Baltic countries, Estonia, Latvia & Lithuania, with an event period of 5 years, 2009-2013.

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1. Introduction

1.1. Motivation

Cross-border integration efforts have been in place for a long time. Despite some exceptions, for almost two centuries countries have been trying to create, join or sustain their membership in monetary unions. The date goes back to the 19th century which witnessed the first attempt to create a monetary union; the German Customs Union which was formally founded in 1834. A long history of currency unions then followed, based on a strong economic and political belief that interdependencies can benefit more than they cost. For instance, according to Glick & Rose (2002, p.1130), a country joining a currency union will experience a doubling of its bilateral trade, while for countries leaving a currency union their bilateral trade will be halved. Their augmented gravity model controlled for a considerable set of influences and the conclusions were statistically significant and economically large. Those beliefs were later built on and got adopted by the European Union, leading to the introduction of the Euro in 1999.

Ever since the adoption of the European single currency, a considerable amount of papers studied the effect of Euro on economic integration for member countries. Some found that pairs of countries adopting the euro has experienced an increase in bilateral trade by about 8-16% when compared to non-euro pairs. (Micco, Stein, & Ordoñez, 2003, p.343). Others argued that the increase in trade between European countries is a result of a historical trend of policy changes over the years, targeting and intensifying their economic integration. Consequently, the effect of creating the European Monetary Union (EMU) on trade fades away once the trend is controlled for (Berger & Nitsch, 2008, p.1258). The latter finding raises the red flag and provides food for thought, is there a real effect of joining the EMU on economic integration for new members? Are all other aspects of economic integration like cross-country capital flows also similarly affected? Berger & Nitsch then concluded by advising countries considering joining the EMU not to raise their expectations above the bar regarding their economic development post-entry. Despite this ongoing academic debate on the macroeconomic effects of currency unions, only a few studies dived into the microeconomic level to study the post-entry effects on firms behavior.

The few firm-level studies mainly shed light on the effects of joining a currency union on the sales of the exporting firms (intensive margins) and the total number of exporting firms/exported goods (extensive margin). A model that was first developed by Baldwin and his co-authors, found that a common currency reduces exchange rate volatility which in turn increases both the intensive and extensive margins. The decrease in volatility pulls down the minimum firm size requirement to export, driving margins to increase. The increase in margins is a result of the reduction in entry barriers for domestic firms in the export market with other members due to lower trade costs. (Baldwin & Di Nino, 2006, p.18). However, little or no previous research has gone in-depth to discuss the possible effects of joining a currency union on the capital structure of firms nor their capital markets access post-entry.

1.2. Relevance

The lack of research on the effects of joining a currency union on access to leverage is surprising given the substantial role that a currency union can play in pouring funds to new member countries. Under the optimal currency area theory, new members will benefit from the risk-sharing system within a union through the integrated fiscal and capital channels for instance. National economic stabilizers will strongly be supported by the central fiscal stabilization aspect of a union, adding more resilience to the contributing economies in the cases of macroeconomic instabilities. Hence, reducing risk premiums for new member countries and allowing firms not to only borrow more but for smaller firms to be able to afford to take on debt at a lower cost. In addition, the large commitment undertaken by a government to join a currency union reflects their willingness to comply with the union's strict measures and forgo its independent monetary policy. One commitment that substantially increases trust in domestic institutions and raises investor confidence leading to the attraction of foreign funds. Furthermore, capital integration between members will ease cross-border capital & credit constraints, allowing for better redistribution of funds to areas of growth and better access to capital markets for firms that were constrained pre-entry.

The relatively increased availability of funds post-entry pushes firms to reach their optimal capital structure, making use of the relatively cheaper debt and the higher access to capital markets. Looking from the wider angle, the underlying relevance of the topic extends to the areas of firm survival and economic growth. Financial constraints represented in weak debt capital markets where debt is either scarce or expensive can have a large impact on the dampening of economic activity for firms. As concluded by Musso & Schiavo (2008, p.147), financial constraints significantly affect firm performance. The study which controlled for size,

age, profitability and productive efficiency has proven that financial constraints significantly determine the probability of firms survival within an economy. At the same time, providing access to external finance has proven to increase firm growth. Consequently, financial constraints are substantial when it comes to hampering of investment or the overall economic growth. Linking back to the theory of optimal currency area, currency unions may significantly contribute to the easing of such constraints. On an overall firm level, through access to stronger capital markets and cheaper sources of debt firms can stimulate firm expansion and economic growth. Additionally and from a narrower angle, credit constraint easing should not only help firms increase growth on an aggregate level, but also give national firms an equal opportunity to compete with multinationals given the similar access to funding. An opportunity which enhances local market performance through higher competition and favorable overall market conditions.

All these potential positive factors and the lack of research on the topic raised the interest to empirically analyze the topic due to its high relevance. For this purpose, this paper will study the impact Estonia experienced after joining the EMU in 2011. The paper is concerned with the impact that a common currency and a currency union might have on firms behavior. Specifically, the difference between national and multinational firms, how their optimal capital structure changes post-entry, and what that may suggest for new policy implications. This leads us to the following research question:

Did Estonian firms experience significantly higher access to debt capital markets than multinationals after Estonia joined the European Monetary Union in 2011? And are different sectors differently affected?

1.3. Paper Structure

Following the introduction, the theoretical evidence underlying the subject will be discussed in the Theoretical Framework section 2. The previous literature will provide some sub-questions or hypotheses that will be tested leading to an answer to the central research question later on. Subsequently, the data used in the analysis will be discussed with regards to the sample selection method, control variables used and their theoretical relevance, and any adjustments carried out to the variables in use in section 3 of the paper. Later on, the methodology adopted for the analysis will be explained. All the analysis methods and techniques will be discussed in section number 4. Reasons with regards to the intuition behind these methods will be given, and statistical tests used to measure the statistical legitimacy of these methods will be

introduced. Later on, the empirical analysis and the discussion of the relevant results will be presented in section 5, linking each case to the relevant hypothesis. Finally, in section 6 under Conclusion, a brief summary will be given leading to a concluded answer to the research question, followed by a discussion on the limitations of the research, policy implications and proposals for future research as an extension of this paper.

2. Theoretical Framework

Previous studies have shown that financial instability is mainly caused by shocks to the financial system, these shocks are driven by four main factors, two of which are increases in uncertainty and increases in interest rates. Economic uncertainty due to currency volatility and weak institutions worsens the adverse selection problem in financial markets, leading to a decline in lending, investment and aggregate activity. In addition, the currency volatility leads to currency mismatch which worsens the indebtedness level of economies. Consequently, interest rates are increased to control volatility which generates maturity mismatch and hurts debt-dependent firms as costs of borrowing increases through higher risk premiums (Mishkin, 1998, p.8-11) & (Demir, 2013). The mentioned consequences can be tackled by currency unions and its strict monetary discipline since a currency union is more costly to break than a promise to maintain a fixed exchange rate (Alesina & Barro, 2002, p.411). The large commitment raises investor confidence and reduces risk premiums. In addition, the union increases the stability of the currency given the fact that a currency will be bound by strong fiscal and monetary discipline. Intuitively this leads us to our first hypothesis:

Firms in emerging countries experience higher debt capital markets access after countries join currency unions.

Even after higher access for firms in general, the effects may vary depending on the type of the firm, whether it is a national or a multinational. Pre-entry, national firms may only have access to local debt capital markets, giving them few to no alternatives as sources of funding. National firms hence are price takers, being totally exposed to domestic interest rate fluctuations with limited flexibility to function differently provided their scarce alternatives. Logically, national firms may have higher exposure to factors that may hinder its growth or slowdown its expansion. In other words, national firms may lack the competency to compete and grow if it only has access to a weak domestic capital market where debt is scarce or expensive. On the other hand, the situation for multinational firms is different. Alternatively, multinational affiliates can substitute external debt with parent-provided debt, making use of internal capital

markets. In locations where external debt may be relatively unattractive, multinational firms can use debt shifting to allocate funds to affiliates in areas with underdeveloped capital markets. Hence, giving multinationals cost advantages over national firms which are totally dependent on its domestic sources of funding (Desai, Fritz Foley, & Hines, 2004, p.2457).

Additionally, multinational firms have the option to respond to tax incentives through rate differentials by facilitating loans between the parent company and its subsidiaries. Thereby, multinationals can exploit tax advantages not available to local firms. For the sake of better understanding, the model developed by Møen, Schindler, Schjelderup, & Bakke (2019, p.1) shows how multinational firms have more options than national firms when it comes to exploiting debt tax shields. To elaborate more, multinationals can make use of three types of debt tax shields: one is a standard debt tax shield and two other shields related to international debt shifting across affiliates. While on the other hand, national firms can only make use of the standard debt tax shield. This implies that multinationals have two additional margins of tax benefits that are not available to national firms, giving another cost of capital advantage for multinationals. Adding all the advantages up, multinationals pre-entry can have a total of three main cost of capital advantages over national firms: access to cheaper debt through the availability of alternative international capital markets, less scarce sources of funding through access to internal capital markets and higher tax shield benefits through debt shifting and internal facilitation of loans.

On the other hand, after an emerging country joins a currency union their NFs are expected to experience higher debt capital market access due to the potentially increased investor confidence and the reduced risk premiums which imply cheaper debt. The cheaper debt theory is possible for many reasons: Firstly, the decision of joining a currency area will not be feasible if the country has weak monetary control taking advantage of money seigniorage to a limit that a currency union would not allow, which usually comes at the cost of inflation. In addition, the decision requires fiscal policy commitment due to the fact that the uncontrolled accumulation of public debt and floating it at the lowest interest rates in the domestic capital market will not be possible anymore (McKinnon, 2004, p.711). Secondly, according to the Optimal Currency Area Theory, financial market integration resulting from currency areas can absorb members' short-term disturbances through capital inflows. Consequently, differences in long term interest rates are reduced allowing for better access to financing external imbalances and more efficient

allocation of resources among the union members (Mongelli, 2008, p.2). Logically, it is more reasonable to test for the following second hypothesis:

National Firms benefit more from better debt capital market access than Multinational Firms after an emerging country joins a currency union.

Despite controlling for the operations level of the firm (national or multinational), other factors may still cause structural differences among firms due to intra-industry structural need differences. For instance, different industries may require different levels of leverage. Braun & Larrain (2005, p.1106) in their research made the same assumption, justifying their theory by the fact that some industries require for example higher levels of capital or higher research and development (R&D) costs. Hence, these industries are highly dependent on external financing relative to other industries that do not require the same high amounts of capital for example. To elaborate more, Bradley, Jarell, & Han Kim (1984, p.858) concluded that indeed the mean firm leverage levels are highly correlated to which industry these firms belong to. The relationship still showed strong signs even after controlling for multiple factors. Industries like Airlines or Electricity & Gas Utilities scored the highest mean debt to value ratios, averaging approximately 58.3% and 53.1% respectively. While on the other end of the spectrum industries like Drugs and cosmetics were found with a debt to value ratio of 9.1%.

In their research, Bowen, Daley, & Huber (1982, p.19) reached the same conclusion as Bradley et al. However, two additional important findings were presented. First, the ranking of the industries based on their mean financial leverage showed statistically significant stability over the entire period of their study. In 18 years, the industries maintained their same debt to value ranking over a large spectrum of industries. Second, it was statistically proven that firms significantly tend to converge to the mean leverage level of their industry over time. The latter finding means that even if a firm has a different leverage level than the average level of its industry at some point, eventually the firm's leverage level will converge to the industry average over time. Linking back to the main driver for this research, the previous findings suggest the following: 1) Firms that belong to the highly leveraged industries may be considered as highly sensitive to any changes in debt capital markets given their relatively large need for debt compared to other industries. Hence, these industries are expected to experience higher or more significant effects from the entry to a currency union and its effect on both domestic capital markets and access to other country members' debt capital markets. 2) Overall, financial constraints may dampen firms' convergence to their industry mean leverage

level, meaning that firms may take suboptimal leverage given the market conditions. Hence, once the financial constraints are relaxed post-entry to currency unions, firms should experience a more effective convergence to their industry mean. The convergence should be specifically significant in industries with high mean leverage levels given the high levels of debt involved, assuming the initial leverage level was considerably low or similar to firms in industries with low mean leverage levels.

Consequently, testing for the effects of the entry to a currency union within different industries and carrying cross-industry comparisons might show a clearer side of the real effect. To clarify from a statistical standpoint, controlling for the industry will show a closer estimation of the real effect given the large part of results that could get eaten up by the statistical bias otherwise. To further simplify the process, it is logically unfair to compare firm X that belongs to an industry with high mean leverage to firm Y with a low mean leverage industry. The change experienced by X will typically be higher than that of Y given the high levels of debt involved in X's industry. However, at the same time, the effect on X might not be significant when compared to other firms within the same industry where all firms experience a high change. Hence, looking at the impact from the industry angle might result in interesting results, leading us to the third hypothesis:

Firms within the external financing highly dependent industries benefit more from debt capital market access after an emerging country joins a currency union.

Generally, when speaking of the benefits firms may experience after an emerging country joins a currency union, higher leverage levels is what is meant in the context of this research. Hence, the higher the positive change in leverage post-entry, the higher the benefit.

3. Data

3.1. Sources

The data used come from two different sources. First, a micro-level dataset extracted from the ORBIS database. ORBIS is a product of Bureau van Dijk (BvD) which compiles data on approximately 300 million companies around the world. The commercial database includes data on private and public companies distributed among 19 different sectors including Banking and Insurance sectors. The data consists of balance-sheet and financial statements' information collected by local chambers of commerce to be used for administrative purposes. The data then is obtained, processed and standardized by BvD allowing for global company comparisons.

Second, macro-level indicators and risk ratings extracted from IHS Markit Database. The commercial data source provides both, information databases plus their own risk ratings for 50,000 customers in over 140 countries, including 80% of the Fortune Global 500. IHS Markit's country risk scoring system tests investment climates in 211 countries worldwide. Scores are constructed based on multiple assessments including ratings of in-house economists, external experts and a network of in-country personnel.

3.2. Sample Selection

Data observations included in the analysis were added based on strict selection criteria to generate a well representative sample. Data included in the analysis range from the year 2009 to 2013. The procedure can be divided into steps for simplification. First, companies that lie outside the Baltic countries, which are Estonia, Latvia & Lithuania, were excluded. Companies in the Baltic countries only were selected to make sure that the companies considered are relatively comparable to the ones in Estonia. Second, influenced by Desai et al. (2004, p.2457) companies with operating revenues of less than 3 million were excluded. This is to ensure that the remaining companies have a large enough operations level to consider raising debt in capital markets. Third, only active companies were selected to ensure that the analysis is not biased. Fourth, companies with no recent financial data or missing values for at least one of the years selected are excluded for robustness sake. Fifth, companies with zero long term debt for at least one of the selected years were dropped as a precaution for inaccurate reporting or measurement errors. Another reason is to restrict the analysis to companies that are already active in capital markets. The selection criteria yielded in 3,227 companies with values for a period of 5 years, generating a total of 16,135 observations for each variable.

Table 3.2.1: Sample Selection Procedure

	Number of Companies.	Percentage
(1) All companies within Estonia, Latvia & Lithuania	663,141	100%
(2) Companies with operating revenues with less than 3 million excluded	16,024	2%
(3) Unactive companies are excluded	16,024	2%
(4) Companies with missing values are excluded	5,588	1%
(5) Companies with zero long-term debt are excluded	3,227	0.5%
Final Sample	3,227	0.5%

3.3. Dependent Variable

The dependent variable in our analysis is the ratio of long-term debt over total assets, the ratio is taken as a proxy of access to debt capital markets. The higher the ratio gets, the better access companies may have to long-term debt through debt capital markets.

$$Debt\ to\ Asset\ Ratio\ (DAR) = \frac{Long\ Term\ Debt}{Total\ Assets}$$

Short-term debt is not taken into consideration since the analysis is targeting the access to debt capital markets, and any debt with maturity less than 12 months is raised and traded on the money market. Hence, using long-term debt is seen as a more suitable fit for the purpose of the analysis.

3.4. Other Variables of Interest

To test for the second and third hypotheses, other variables of interest are targeted. The origin of the company was added to the dataset through a dummy variable returning 1 if the company is multinational and 0 if it's a national company. As discussed in the theoretical framework chapter, multinational and national companies have different opportunities for access to debt capital markets, hence testing for differences across them is essential. Positive coefficients for both categories, national and multinational, are expected. However, the coefficient of national firms is expected to be higher relative to that of multinationals. Furthermore, 19 other different categories are added, each representing a different sector in the economy. Each company in the dataset is classified into one of these 19 different sectors. Essential for the third hypothesis, the effects per each sector will be tested to be able to spot any inter-industry differences on the DAR of firms post-entry. The effect post-entry is expected to be positive for all sectors. However, for external finance highly dependent sectors, the effect is expected to be higher in absolute value and statistically significant.

3.5. Control Variables

Several control variables were collected to add further legitimacy to the analysis by reducing perceived biasedness in order to get as close as possible to the real effect of joining the currency union on companies' debt capital market access. In addition to economic theoretical reasoning, the selection of control variables was inspired by the control variables used in three papers: Desai et al. (2004, p.2459), Demir (2013, p.76-78), and Rajan & Zingales (1995, p.1429-1453).

As followed by Desai et al. (2004, p.2459). Similarly, operating revenues is taken as another indicator for firm size and more importantly the scale of operations at which the firm is

involved. Hence, it is expected that a higher operating revenue would mean a higher DAR for the firm. Tax rates are controlled for as well, different tax rates across countries can induce different optimal capital structure, as well as motivating internal debt shifting. Consequently, higher tax rates mean higher DAR for companies since they take advantage of the tax-deductibility of interest payments which reduces the overall debt burden on companies.

Influenced by Demir (2013, p.76-78), the gross profit margin is controlled for which reflects the profitability situation of a company and to what extent it can rely on retained earnings for internal financing. The sign of the coefficient of profitability is expected to be negative. Moreover, although Demir's paper used growth in employment to reflect the growth rate of the firm, yet in our analysis we take the same approach but without including the growth rates due to limitations in the data. Hence, the number of employees of the company is taken as a proxy for its size. The size of a company can reflect the growth stage for which the company belongs and their scale of need for external financing. With the same intuition for the coefficient of operating revenues, the coefficient of number of employees is expected to be positive.

Furthermore, Rajan & Zingales (1995, p.1453) referred to instruments that make the decision and feasibility of raising debt easier. For instance, the fixed assets ratio computed as fixed assets over total assets reflects to what extent can one company raise debt using its fixed assets as collateral. Simply, the higher the fixed assets ratio, the more available assets to use as collateral to raise debt, the more debt the company could raise. Similar to fixed assets ratio is Solvency Ratio, which measures the ability of one company's free cash flow to cover its liabilities. In econometrical terms, the coefficient of both variables is expected to be positive.

Additionally, whether the company is listed or non-listed is controlled for with a dummy variable. According to Rajan & Zingales (1995, p.1429), past research found listed firms to have better economic performance and higher profitability. Another intuitive reason to control for listed companies could be that listed companies may have an additional source of raising capital through equity capital markets for instance. Hence their optimal capital structure can be different from that of non-listed companies. Thus, controlling for that is essential since listed companies are expected to have a lower leverage level and thus DAR.

Furthermore, risks are controlled for as proposed by Desai et al. (2004, p.2459). Five risk ratings were collected to add insight regarding investor confidence, investment atmosphere, and economic predictions. Sovereign Default Risk reflects the possibility at which the national

government could default on its outstanding debt over the next 12 months. Recession Risk reflects the chances that a country is getting into a recession based on the given and predicted economic indicators. Capital Transfer Risk reflects the risks associated with restrictions on cross-border capital movement and convertibility of currency. Political Risk which reflects three levels of uncertainty: the risk that the government will be replaced, the risk of policy direction shifting and the risk that the state is not able to function effectively. Corruption Risk measures the chances at which individuals/companies will face corrupt practices to carry out business, either on a large scale as securing large deals or small scale as everyday tasks, which threatens the stability and credibility of the investment environment for both the foreign and domestic investors. Similar to Desai et al. and as a further confirmation on the appropriateness of taking risk variables as control variables, Demir (2013, p.86) also controlled for national risks such as political risk and investment profile in a similar quasi-experiment testing for the effect of exchange rate volatility on firms' access to domestic and foreign equity markets. Generally, the coefficients of all the risk variables are expected to be negative, the higher the value of any risk the lower the DAR should be.

3.6. Descriptive Statistics

Table 2 gives statistical insight into all the variables included in the dataset used. Over a period of 5 years, between 2009 and 2013, a total of 3,227 companies were analyzed from three different countries operating in 19 different sectors, generating 16,135 total company observations. Of the total number of companies, 12.8% are listed companies on the stock exchange market and 62.0% are national domestic firms.

The total debt on average equaled approximately a quarter of total assets, leaving the Access to Debt Capital Market proxy at the 20.1% mark. The highest access to a company recorded was 99.9%. The Profit Margin varies substantially with a standard deviation of 14,820% around an average of 450%. The Operating Revenues sits at an average of €1.9 million

On average, fixed assets represent 45.9% of total assets for each company and companies' cash flow stands at 40.6% of their debt obligations. The maximum number of employees of a company reached the 14,698 employee level.

Table 3.5.1: Descriptive Statistics of all variables in use in the years 2009 to 2013

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max

ProfitMargin	15,815	4.499	14.82	-99.51	99.63
SolvencyRatio	16,018	0.406	0.279	-0.998	1
NumberOfEmployees	15,190	153.3	478.1	0	14,698
OperatingRevenue	16,064	1.716e+07	5.873e+07	-224,586	1.508e+09
AccessToDebtCapitalMarkets	12,289	0.201	0.199	4.77e-09	0.999
FixedAssetsRatio	16,135	0.459	0.292	0	6.279
TaxRate	16,135	0.176	0.0294	0.150	0.210
SovereignDefaultRisk	16,135	1.261	0.945	0.100	3
RecessionRisk	16,135	3.371	1.472	1.400	6.100
CapitalTransferRisk	16,135	0.480	0.0400	0.400	0.500
PoliticalRisk	16,135	1.197	0.270	0.500	1.600
CorruptionRisk	16,135	2.601	0.852	0.900	3.800
National	10,425	0.620	0.485	0	1
Listed	16,040	0.0128	0.112	0	1
Country	16,135	-	-	1	3
Sector	16,135	-	-	1	19

The highest risk recorded is in the Recession Risk variable, marked at 6.1 points of the 10-point scale. Additionally, the Recession Risk variable scored the highest average across all firms in the three countries, reaching the level of 3.4 points. The lowest risk category is the Capital Transfer Risk index, with an average of 0.48 points and a maximum of 0.50 points.

4. Methodology

4.1. Intended Method & Reasoning

The general statistical model adopted in the research is the difference-in-difference method. The method solves for time-invariant unobserved differences between treatment and control groups. As long as these unobserved differences stay constant over time, also known as the constant bias assumption or parallel trends assumption, the method is statistically suitable and credible to test for the effects on the dependent variable targeted. The Difference-in-difference method relaxes three important assumptions. First, the with-without assumption which states that the treatment and control group would have the same outcome without treatment. Second, the before-after assumption of the Individual Fixed Effects method for instance, which assumes no shocks nor changing variables affecting the outcome took place between pre and post the entry of Estonia to the EMU in 2011. The second assumption might not be realistic given the large macroeconomic disturbances experienced in the period between 2009-2013, for example, the ex-ante effects of the financial crisis in 2008-2009 and the evolution of the European debt

crisis from 2009 up until 2012 (Lane, 2013, p.55-60). Third, the selection on observables assumption used in the Matching method or the standard OLS regression, which might be challenging given a large amount of possibly unobservable factors that might affect our analysis both on a macro and a micro-level. Hence, the difference in difference method is considered as the most suitable method to be used for the empirical analysis of the research. (Khandler, Koolwal, & Samad, 2010, p.71-86)

The scenario adopted for the analysis is the case of Estonia joining the European Monetary Union in 2011. The case of Estonia is relevant and theoretically matches the assumptions for the difference in difference method for many reasons. Firstly, Estonia joined the EMU in 2011, the only country to do so between the years 2009-2013. Hence, noise effects are limited and the effect on Estonia as a new member will not be distracted nor scattered by other members joining the EMU within the same time period. Secondly, Estonia is the first Baltic country to join the EMU, leaving the other two Baltic countries as a strong control group for the analysis. The other two Baltic countries, Latvia & Lithuania, joined the EMU later on in 2014 and 2015 respectively. The later entries of the other Baltic countries allow for a window of three years post-entry to test for the effect on Estonian firms, which is seen as a more than sufficient time to carry legitimate comparable analysis and spot post-entry effects. Thirdly, Baltic countries are geographically neighbors and culturally similar. Two factors that are extremely important when it comes to comparing economic behavior and projecting economic performance. The similar economic behavior assumption is known as the parallel trends assumption in our case. The assumption will then be formally tested by a statistical test discussed in a later part of the methodology to prove the statistical suitability of using the difference in difference method for the analysis of the case of Estonia.

The analysis takes a general-to-specific approach to arrive at possible answers to the research question. First, the country-level effect of joining the EMU will be tested under the first hypothesis, checking whether there are significant effects on the aggregate level. Afterward, the analysis will go deeper to check for two simultaneous reasons why the effect could be different across firms in Estonia. First, the second hypothesis will test for the effect of joining the EMU on national firms and whether it is significantly larger than that of multinational firms. Second, the third hypothesis will look at different sectors and whether firms in external-financing highly dependent sectors experienced a significantly larger effect than those of external-financing independent sectors.

4.2. Method Explanation

The simplest difference-in-difference model comes in the following standard form:

$$Y_{it} = \alpha + \rho T_i + \gamma t + \beta T_i t + \varepsilon_{it}, \quad t = 0,1 \tag{1}$$

The model is a two-period model, time t takes the value 0 before the treatment and 1 after the treatment. It is also a two-group model, treatment T_i takes the value 1 if an observation belongs to the treatment group and 0 if it belongs to the control group. Y_{it} is the dependent variable, α is the constant term. The coefficient of the treatment group is ρ, which means that if an observation belongs to the treatment group (T_i = 1), the constant changes to ($\alpha + \rho$). The difference in constants is how the diff-in-diff method accounts for unobserved differences between treatment and control groups. The coefficient of the time is γ, which means that at time $t = 1$, or in other words the time after the treatment has taken place, both the coefficients of the treatment group and the counterfactual will change by γ. β is the coefficient of the interaction effect between treatment and time. Hence, if the observation belongs to the treatment group and the time period is 1 then the treatment effect is equal to β. Finally, ε_{it} is the error term.

However, for a more convincing application of the difference-in-difference model, two modifications should be made: 1) Multiple groups are added instead of only two. In our case three groups are used, Estonia, Latvia & Lithuania. 2) Multiple time periods are used instead of only two points which is essential to test for the parallel trends assumption and for a more robust statistical inference. In our case, five time points are used which are the years between 2009 to 2013. Hence, the model changes to take a more complex form:

$$Y_{gt} = \alpha + \rho D_g + \gamma_t + \beta Treatment Post2011_{gt} + \varepsilon_{gt}, \quad t = 2009\ 2010, 2011, 2012, \tag{2}$$
$$2013 \quad \text{g} = \text{Estonia, Latvia, Lithuania}$$

Here D_g is the treatment group dummy and γ_t contains the time dummies. $Post2011_{gt}$ is the treatment dummy which takes the value 1 if an observation belongs to the treatment group and the time is >= 2011. The Treatment dummy takes the value 0 otherwise.

To enhance the robustness and eliminate bias, time-variant control variables shall be added to the model. The control variables listed in the Data chapter under Control Variables section will be added to the models. Hence, the model arrives at the final structure which will be used in the analysis:

$$Y_{gt} = \alpha + \rho D_g + \gamma_t + \beta TreatmentPost2011_{gt} + Control\ Variables_j + \varepsilon_{gt}, \quad t = 2009, 2010, 2011, 2012, 2013 \quad g = \text{Estonia, Latvia, Lithuania} \tag{3}$$

The model will be run including all control variables that are theoretically relevant. Hence, a discussion of all the possible outcomes and units of the control variables is presented: Profit Margin is a ratio which can take any value between [-∞,∞]. Solvency Ratio which is a ratio of free cash flow over total liabilities, the ratio can take any value between [-∞,∞]. Number of Employees which is a discrete variable. Operating Revenues with units in Euro. Fixed Assets Ratio which is a ratio of fixed assets over total assets, the ratio can take any value between [0,1]. Tax Rate is on a percentage scale. Sovereign Default Risk, Recession Risk, Capital Transfer Risk, Political Risk, and Corruption Risk are all risk indices measured in points in a scale from [0,10], with 0 as the lowest risk possible and 10 as the highest risk possible. Finally, Listed is a dummy variable that returns 1 if the company tested is listed on the stock exchange market and 0 otherwise.

As a step of increased precision and higher quality of statistical inference, after running the model, all insignificant control variables will be removed from the model to reduce noise around the treatment effect. Another argument for eliminating the insignificant control variables is the fact that in addition to unnecessary noise around the treatment effect, increasing the number of variables in the regression will often lead to a reduction in the ability of prediction of the model (Xu & Zhang, 2001, p.477). Additionally, the paper follows a general to specific approach meaning that all irrelevant control variables are not added since they don't add any value which gives space to focus on the relevant ones. Hence, only the significant control variables will remain in the specific version of the model.

Lastly, the parallel trends assumption has to be tested to approve whether or not the difference in difference model can be generated. To test for the assumption a lead has to be added to the model:

$$Y_{gt} = \alpha + \rho D_g + \gamma_t + \sum_{j=0}^{q} \beta TreatmentPost2011_{g,t+j} + Control\ Variables_z + \varepsilon_{gt}, \quad t = 2009, 2010, 2011, 2012, 2013\ g = Estonia, Latvia, Lithuania \tag{4}$$

Simply, the coefficient β has to be insignificant for j>0, if that is the case, the parallel trends assumption holds and the difference-in-difference model can be used. Additionally, the

dependent variable, AccesstoDebtCapitalMarkets, will be plotted over the years for the treatment and control groups to visualize the parallel trends and further validate the results of the parallel trends assumption test. The explanation of the method and the steps taken in the analysis is inspired by Khandler et al. (2010, p.71-86).

4.3. First Hypothesis

For the first hypothesis, we are interested in the aggregate effect of Estonia joining the EMU on all firms within Estonia. The treatment group will be any firm in Estonia after the year 2011. First, we start with the general model including all control variables:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \beta T_{CountryY,ear} + Control\ Variables_z + \varepsilon_{Country,Year} \quad \text{(All Control Variables)}$$

AccessToDebtCapitalMarkets is the dependent variable, the variable is a ratio of total debt over total assets. The ratio can take any value between [0,1] since long term debt cannot be expressed in negative signs nor can debt generally exceed the total value of assets, meaning that the ratio can not exceed 1. Later on, insignificant control variables are filtered out leaving only the significant ones:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \beta T_{Country,Year} + SignificantControl\ Variables_j + \varepsilon_{Country,Year} \quad \text{(HYP1.1)}$$

Afterward, the parallel trends assumption is tested to prove that the assumption model HYP1.1 holds and it is statistically fit to analyze the data. The following formula is used:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \sum_{j=0}^{q} \beta T_{Country,Year+j} + Control\ Variables_z + \varepsilon_{Country,Year} \quad \text{(Parallel Trends Assumption)}$$

If the coefficient β is insignificant, then model HYP1.1 can be used to test for the first hypothesis. For clarification, in Model HYP1.1 and other models used in the analysis, the initials HYP stands for hypothesis, the first number stands for the number of the hypothesis

(1st, 2nd or 3rd), and the second number stands for the number of the model used to test for the hypothesis.

4.4. Second Hypothesis

For the second hypothesis, we are interested in the micro-level effect of Estonia joining the EMU on national firms within Estonia. The treatment group will be national firms in Estonia after the year 2011, we do this by adjusting the dataset to exclude all firms that are multinational, then we do the same and exclude all the firms that are national, then see the effects on both types of firms and its significance. First, we start with the general model including all control variables:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \beta T_{CountryY,ear} + Control\ Variables_z + \varepsilon_{Country,Year} \quad \text{(All Control Variables)}$$

Then the insignificant control variables are removed leaving out the significant ones, which yields:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \beta T_{Country,Year} + SignificantControl\ Variables_j + \varepsilon_{Country,Year} \quad \text{(HYP2.1)}$$

Afterwards, the parallel trends assumption is tested with the following model:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \sum_{j=0}^{q} \beta T_{Country,Year+j} + Control\ Variables_z + \varepsilon_{Country,Year} \quad \text{(Parallel Trends Assumption)}$$

4.5. Third Hypothesis

For the third hypothesis, we are interested in the micro-level effect of Estonia joining the EMU on sectors within Estonia. External finance highly dependent sectors are expected to experience a higher effect than other sectors. To be able to spot the effect of countries joining currency unions on external finance highly dependent sectors, a clear specification of these sectors first has to be made. Inspired by Bradley et al. (1984, p.870), a classification of these sectors was made by computing the mean DAR ratio for each sector before the treatment.

The mean of each sector will be calculated at the nearest point before the entry to the EMU was made, which is 2010 in our case. Afterwards, the average of all sector's means will be calculated. Next, all the sectors that scored a mean higher than the average of means will be considered an external finance highly dependent sector, any sector that scored below that average will be considered as external finance less dependent. Afterwards, the analysis can be done for each sector.

There are 19 different sectors meaning that each time the treatment group will be one of the 19 sectors in Estonia after the year 2011, we do this by adjusting the dataset to exclude all firms that are not that one specific sector. This way, the treatment group represents all firms in one of the 19 sectors in Estonia at a period >= 2011. Thus, the treatment effect on this specific sector in Estonia at a period >= 2011 is captured by the coefficient β. The dataset is split instead of using interaction effects due to the limitation of having too many sectors which affect the credibility of the results in addition to the inconvenience of interpreting results in relative terms which is not the purpose of this hypothesis. To clarify further, using interaction variables will make the interpretation of the effects always relative to the base sector that we choose instead of having coefficients that represent the unique effects for each sector. The process is then repeated for the other sectors to see which sectors experienced significant effects. First, we start with the general model including all control variables:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \beta T_{CountryY,ear} + Control\ Variables_z + \varepsilon_{Country,Year} \quad \text{(All Control Variables)}$$

Then the insignificant control variables are removed leaving out the significant ones, which yields:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \beta T_{Country,Year} + SignificantControl\ Variables_j + \varepsilon_{Country,Year} \quad \text{(HYP2.1)}$$

Afterwards, the parallel trends assumption is tested with the following model:

$$AccessToDebtCapitalMarkets_{Country,Year} = \alpha + \rho D_{Country} + \gamma_{Year} + \sum_{j=0}^{q} \beta T_{Country,Year+j} + Control\ Variables_z + \varepsilon_{Country,Year}$$ (Parallel Trends Assumption)

The whole process will be repeated for each of the 19 sectors we have in our dataset.

5. Results

5.1. Effect of joining the European Monetary Union on All Firms in Estonia

In the beginning, the first hypothesis, which assumes that all firms within Estonia will experience a positive change in their access to debt capital markets after Estonia had joined the European Monetary Union, will be tested. In table 5.1.1, three difference-in-difference models are presented. Model (1) includes all the theoretically relevant control variables. However, as discussed in the methodology, including the insignificant variables may cause unnecessary noise around the treatment effect since they don't serve their purpose as good control variables. Statistically, these insignificant variables are not omitted variables since simply they are not significantly correlated with the dependent variable. Hence, it is not logical to keep them in the model used for the analysis. Consequently, all insignificant variables are excluded to arrive at the optimal model used later for the analysis, which is Model HYP1.1. The results of the analysis are presented in the table under the Model HYP1.1. Simultaneously, the parallel trends assumption is tested at the same time under Model (3) to check whether the assumption for the difference in difference method holds or not. Simply, if the parallel trends assumption does not hold, the results of the HYP1.1 model does not represent any statistical nor economical value since the method is faulty and its assumptions are not met. Hence, validation from the test is essential to make sure the results presented under Model HYP1.1 are credible.

Table 5.1.1: The three models testing the first hypothesis

VARIABLES	(1) All Control Variables	(2) Model HYP1.1	(3) Parallel Trends Assumption
Lithuania	-0.000468	0.00557	0.00247
	(0.0131)	(0.00516)	(0.00717)
Latvia	-0.0241**	-0.0227***	-0.0250***
	(0.0123)	(0.00521)	(0.00725)
Year = 2010	-0.0133	-0.00401	-0.00140
	(0.0185)	(0.00477)	(0.00701)
Year = 2011	-0.0158	-0.0104*	-0.00764
	(0.0323)	(0.00557)	(0.00631)

Year = 2012	-0.0277	-0.0146***	-0.0118*
	(0.0313)	(0.00564)	(0.00640)
Year = 2013	-0.0289	-0.0145***	
	(0.0395)	(0.00544)	
Treatment	0.00235	0.00657	0.00639
	(0.0131)	(0.00584)	(0.00786)
ProfitMargin	0.000682***	0.000809***	0.000758***
	(0.000151)	(0.000135)	(0.000152)
SolvencyRatio	-0.419***	-0.435***	-0.433***
	(0.00961)	(0.00918)	(0.0104)
Number of employees (last value)	-5.22e-06*		
	(2.94e-06)		
OperatingRevenue	-9.50e-11***	-1.46e-10***	-1.49e-10***
	(0)	(0)	(0)
FixedAssetsRatio	0.288***	0.295***	0.295***
	(0.0134)	(0.0128)	(0.0154)
TaxRate	-0.177		
	(0.213)		
SovereignDefaultRisk	0.00222		
	(0.00580)		
RecessionRisk	-0.000867		
	(0.0112)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.00813		
	(0.0123)		
CorruptionRisk	-0.00799		
	(0.00679)		
Listed	-0.00660		
	(0.00781)		
Treatment = F,			-0.00519
			(0.00939)
Constant	0.305***	0.236***	0.237***
	(0.0914)	(0.00941)	(0.0112)
Observations	11,210	12,068	9,696
R-squared	0.406	0.424	0.414

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Model number 1 which includes all the control variables in our dataset yields an insignificant treatment effect of $\beta = 0.0024$, p>0.05. The effect is insignificant to a 5% and 10% significance level. Hence, the hypothesis will be rejected since the effect post-entry is proven to be 0. However, excluding the insignificant control variables and using the optimal model is expected to possibly have an impact on the coefficients since the noise is reduced. The following four variables remained as controls: Profit Margin, Solvency Ratio, Operating Revenue, and Fixed Assets Ratio. All four control variables are significant to the 1% significance level. However,

the treatment effect after excluding insignificant control variables still remained insignificant with a β = 0.0066, p>0.05. As a validating step to the robustness of the given model, the parallel trends assumption is tested in Model 3 showing an insignificant coefficient of the lead = -0.0052, p>0.05, meaning that the parallel trends assumption holds which confirms the suitability of Model HYP1.1 to test for the targeted effects. In the figure 5.1.1, a visual representation of the parallel trends assumption is presented.

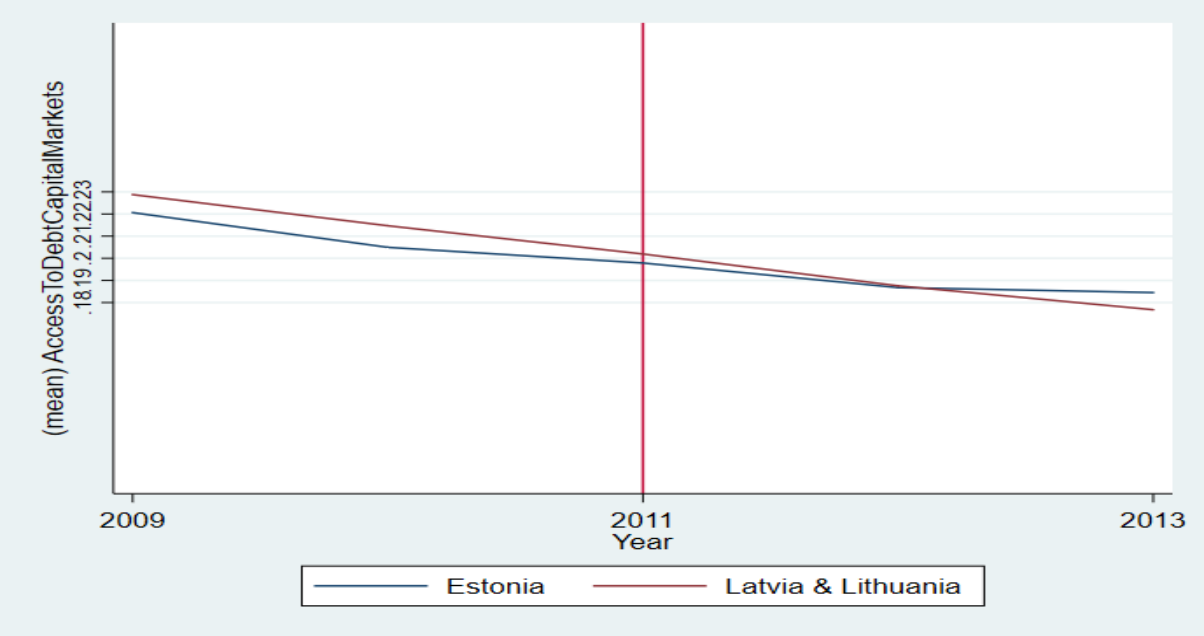

Figure 5.1.1: Visual representation of the parallel trends assumption, the vertical line represents the year 2012

As visually observed from figure 5.1.1, Estonia is seen to take over Latvia & Lithuania with higher access to debt capital markets ratio by the year 2012, despite the fact that both trends are decreasing. Intuitively, we can see that there might be a lagged effect of the treatment, specifically around the year 2012. There can be a lot of reasons justifying why the treatment effect could be lagged. An important potential reason is the transaction costs and time needed for firms to adjust their leverage and reach their optimal capital structure. As stated by Kortweg (2010, p.2138-2143), firms adjust their leverage levels in a dynamic setting and hence firms are not operating under their optimal capital structure most of the time. Thus, it takes time for firms to converge to their optimal leverage levels. Moreover, multiple types of transaction costs can cause a delay or lag, such as the issuance costs of new debt securities or coordination costs between creditor and the firms. Hence, it might be theoretically acceptable to see such a lag in our results. Another reason can be for instance the J-curve theory which resembles the movement of the trade balance after a currency devaluation. The underlying theory of the J-curve expects trade balance to worsen first after the depreciation of the domestic currency

before it improves on the long run creating a J letter looking curve due to sticky factors in the economy. The reasons here are the highly responsive prices of imports and the slowly adjusting volumes of exports and imports causing a lag in the effect of the depreciation of the domestic currency (Rose & Yellen, 1989, p.56). The same idea of sticky factors of the economy and the time needed for adjustment can be seen as an explanation for the lag effect we have in the analysis. Furthermore, there could be even additional reasons explaining the phenomena we see in the results. For instance, a low capacity utilization pre-entry to the EMU can absorb the increased volumes of exports up until a point where expansion and making use of the financing on the now cheaper debt capital markets is needed, which then happens at a later time period. Hence, after the results of Model1.1 and for the sake of the robustness of the analysis, the treatment effect will be tested for at time t+1 with t being the time period at which the treatment took place. In our case, t is the year 2011 and t+1 is the year 2012

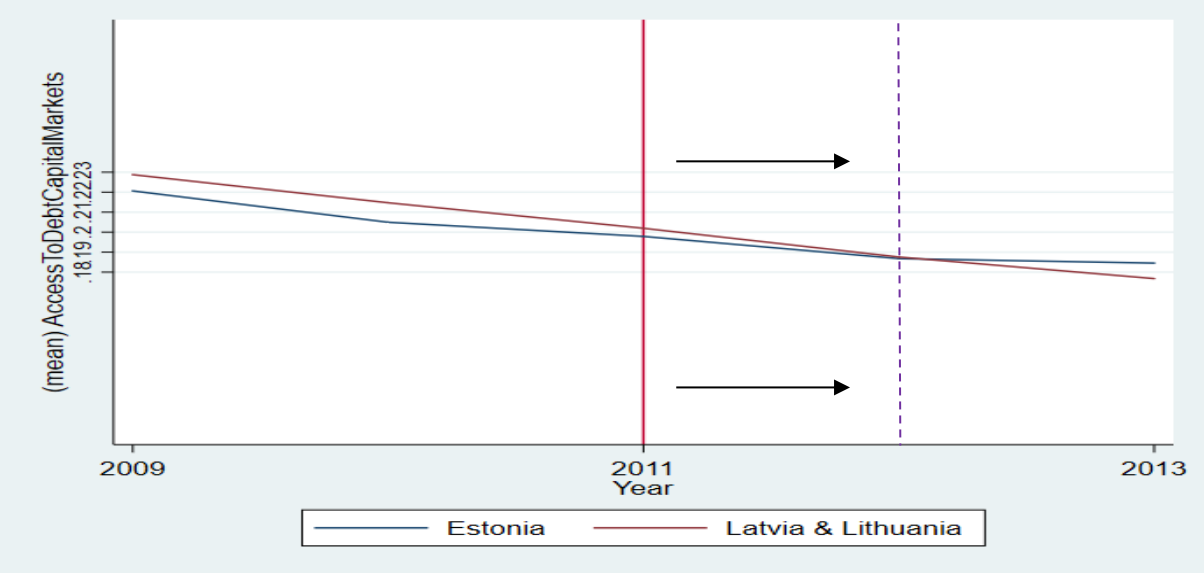

Figure 5.1.1: Visual representation of the parallel trends assumption, the vertical line represents the year 2012

Hence, the effect of Estonia joining the European Union will be tested assuming that the entry took place in 2012 instead of 2011. The results are presented in Table 5.1.2.

Table 5.1.2: The three models testing the first hypothesis with a new assumption

VARIABLES	(1) All Control Variables	(2) Model HYP1.2	(3) Parallel Trends Assumption
Lithuania	-0.00189	0.00628	0.00507
	(0.0140)	(0.00436)	(0.00531)
Latvia	-0.0239*	-0.0220***	-0.0224***
	(0.0123)	(0.00438)	(0.00540)
Year = 2010	-0.0159	-0.00400	-0.00386

	(0.0192)	(0.00477)	(0.00478)
Year = 2011	-0.0198	-0.00725	-0.00605
	(0.0315)	(0.00463)	(0.00614)
Year = 2012	-0.0324	-0.0170***	-0.0159**
	(0.0310)	(0.00559)	(0.00630)
Year = 2013	-0.0343	-0.0170***	
	(0.0362)	(0.00538)	
Treatment	-0.00113	0.0117**	0.0119
	(0.0243)	(0.00560)	(0.00867)
ProfitMargin	0.000683***	0.000810***	0.000759***
	(0.000151)	(0.000135)	(0.000152)
SolvencyRatio	-0.419***	-0.435***	-0.433***
	(0.00961)	(0.00918)	(0.0104)
Number of employees (last value)	-5.22e-06*		
	(2.94e-06)		
OperatingRevenue	-9.50e-11***	-1.46e-10***	-1.49e-10***
	(0)	(0)	(0)
FixedAssetsRatio	0.288***	0.295***	0.295***
	(0.0134)	(0.0127)	(0.0154)
TaxRate	-0.190		
	(0.237)		
SovereignDefaultRisk	0.00184		
	(0.00591)		
RecessionRisk	-0.00184		
	(0.00980)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.00851		
	(0.0125)		
CorruptionRisk	-0.00961		
	(0.0178)		
Listed	-0.00659		
	(0.00781)		
Treatment = F,			-0.00214
			(0.00776)
Constant	0.320***	0.236***	0.235***
	(0.110)	(0.00932)	(0.0109)
Observations	11,210	12,068	9,696
R-squared	0.406	0.424	0.414

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The model with the full list of control variables yields an insignificant treatment effect of β = -0.0011, p>0.05. However, after excluding all the insignificant control variables and leaving Profit Margin, Solvency Ratio, Operating Revenue and Fixed Assets Ratio, model HYP1.2 yielded a significant treatment effect. The treatment effect is β = 0.012, p<0.05. Thus the null hypothesis is rejected at a 5% significance level and the treatment effect is significantly higher

than zero when assuming that the treatment effect is lagged by one year. In other words, firms in Estonia experienced a significant increase in their debt capital market access when the treatment is assumed to take place in 2012. The effect is estimated at a 1.2% increase in access to debt capital markets post-entry which is considered an economically significant effect. To further validate the results, the parallel trends assumption is tested simultaneously in Model 3, the coefficient of the lead = -0.0021, $p>0.05$, meaning that the parallel trends assumption holds. To summarize, the first hypothesis can not be rejected after adding the new assumption regarding the lagged effect of treatment.

5.2. Effect of Joining the European Monetary Union on National & Multinational Firms within Estonia

The second hypothesis states that national firms should get higher debt capital markets access after Estonia had joined the EMU compared to multinational firms. To asses whether or not this the case, the three standard models for the analysis are analyzed per each scenario. The results of the first scenario which tests the effects on the national firms are presented in table 5.2.1.

Table 5.2.1: The three models testing the second hypothesis regarding access to national firms

VARIABLES	(1) All Control Variables	(2) Model HP2.1	(3) Parallel Trends Assumption
Lithuania	0.00597	0.00994*	0.00609
	(0.0142)	(0.00560)	(0.00782)
Latvia	-0.00746	-0.00637	-0.00848
	(0.0135)	(0.00575)	(0.00798)
Year = 2010	-0.0196	-0.00529	-0.00236
	(0.0201)	(0.00521)	(0.00785)
Year = 2011	-0.0274	-0.0168***	-0.0135*
	(0.0351)	(0.00617)	(0.00706)
Year = 2012	-0.0402	-0.0218***	-0.0185***
	(0.0340)	(0.00625)	(0.00717)
Year = 2013	-0.0442	-0.0220***	
	(0.0429)	(0.00602)	
Treatment	0.00746	0.0131**	0.0126
	(0.0143)	(0.00638)	(0.00857)
ProfitMargin	0.000617***	0.000770***	0.000675***
	(0.000161)	(0.000147)	(0.000168)
SolvencyRatio	-0.422***	-0.437***	-0.435***
	(0.0107)	(0.0101)	(0.0114)
Number of employees (last value)	-7.52e-06*		
	(4.13e-06)		
OperatingRevenue	-1.10e-10***	-1.57e-	-1.72e-10***

		10***	
	(0)	(0)	(0)
FixedAssetsRatio	0.265***	0.273***	0.274***
	(0.0155)	(0.0147)	(0.0178)
TaxRate	-0.196		
	(0.234)		
SovereignDefaultRisk	0.00383		
	(0.00640)		
RecessionRisk	-0.00220		
	(0.0123)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.00676		
	(0.0133)		
CorruptionRisk	-0.0102		
	(0.00737)		
Listed	0.00634		
	(0.00918)		
Treatment = F,			-0.00538
			(0.0103)
Constant	0.327***	0.242***	0.243***
	(0.0989)	(0.0106)	(0.0125)
Observations	9,006	9,729	7,818
R-squared	0.400	0.419	0.409

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Looking at model 1 which includes all the control variables, the treatment coefficient is insignificant, β =0.0075, p>0.05. However, after removing the insignificant control variables and leaving in the Profit Margin, Solvency Ratio, Operating Revenue, and Fixed Assets Ratio, model HYP2.1 appears to have significant treatment effects. The coefficient of the treatment effect β =0.013, p<0.05, which means that the national firms experienced a significant positive change in their access to debt capital markets after Estonia joined the EMU as expected. The access for national firms increased by 1.3% post-entry, an effect which is considered economically significant. Moving on to check the parallel trends assumption, the coefficient of the lead stands at -0.0054, p>0.05, meaning that coefficient is insignificant and the parallel trends assumption holds.

Furthermore, the second scenario will be assessed, checking the access effects on multinational firms after Estonia joined the EMU. The results are presented in Table 5.2.2.

Table 5.2.2: The three models testing the second hypothesis regarding access to multinational firms

VARIABLES	(1) All Control Variables	(2) Model HP2.2	(3) Parallel Trends Assumption

Lithuania	0.000319	-0.00603	-0.00552
	(0.0206)	(0.00740)	(0.0101)
Latvia	-0.0330*	-0.0383***	-0.0383***
	(0.0191)	(0.00711)	(0.00982)
Year = 2010	-0.00115	-0.00510	-0.00647
	(0.0251)	(0.00616)	(0.0105)
Year = 2011	0.00889	-0.00752	-0.00686
	(0.0444)	(0.00801)	(0.00941)
Year = 2012	-0.00438	-0.0127	-0.0120
	(0.0445)	(0.00824)	(0.00965)
Year = 2013	-0.000531	-0.0138*	
	(0.0549)	(0.00776)	
Treatment	-0.000617	-0.000649	-0.00408
	(0.0182)	(0.00795)	(0.0108)
ProfitMargin	0.000958***	0.00115***	0.00117***
	(0.000201)	(0.000181)	(0.000199)
SolvencyRatio	-0.407***	-0.432***	-0.437***
	(0.0122)	(0.0119)	(0.0136)
Number of employees (last value)	-9.33e-06*		
	(5.12e-06)		
OperatingRevenue	-5.61e-11		
	(0)		
FixedAssetsRatio	0.293***	0.301***	0.298***
	(0.0216)	(0.0206)	(0.0247)
TaxRate	0.000352		
	(0.336)		
SovereignDefaultRisk	0.00112		
	(0.00852)		
RecessionRisk	0.00529		
	(0.0155)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.00639		
	(0.0186)		
CorruptionRisk	-0.00438		
	(0.00928)		
Listed	-0.000606		
	(0.0117)		
Treatment = F,			0.00218
			(0.0127)
Constant	0.224*	0.240***	0.244***
	(0.135)	(0.0143)	(0.0168)
Observations	6,576	7,051	5,661
R-squared	0.419	0.440	0.431

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In the full model or model 1, the treatment effect is found to be insignificant with β =-0.00062, p>0.05. Furthermore, insignificant control variables are removed to arrive at model HP2.2. However, the treatment effect is still insignificant even after eliminating insignificant control

variables with a β =-0.00065, p>0.05. Moving on to check for the parallel trends assumption to prove that there are not any methodological problems that may lead to this insignificance, we find that the coefficient of the lead is insignificant β =-0.0022, p>0.05. The latter finding means that the parallel trends assumption holds.

Although insignificant, the coefficient of the treatment on multinationals is negative, β =-0.00065. The negative coefficient means that even if the effect was significant or in other words different than zero, it would have been lower than the effect on national firms. To summarize, there is no real unique effect of Estonia joining the EMU Area on the debt capital market access for multinational firms, the effect is zero. Intuitively, National firms experienced a higher benefit from Estonia entering the EMU than multinationals. National firms experienced a unique significant effect of 1.3% increase in their access to debt capital markets compared to a 0% effect for multinationals. The effect on National firms is statistically significant and arguably economically significant as well. An increase of 1.3% within a time window of just 3 years post entry is a considerable amount given the scale and standards of the Estonian economy. Thus, the second hypothesis which states that national firms will benefit more than multinational firms when a country joins a currency union cannot be rejected given the statistical evidence.

5.3. Effect of Joining the European Monetary Union on the Different Sectors within Estonia

Finally, the third hypothesis which states that external-financing highly dependent sectors should experience a higher or a more significant effect after Estonia had joined the EMU will be assessed. First, the specification of external finance highly dependent sectors has to be made. For that, all the sectors in Estonia are ranked in terms of their mean DAR in 2010. Only 17 out of 19 sectors are ranked since no companies were reported in both the Insurance and Public administration & defense sectors. The results of the specification are presented in table 5.3.1:

Table 5.3.1: Mean DAR for the 17 sectors of Estonia in 2010, including the average of all means

Sector	Mean DAR 2010
Hotels & restaurants	42.99%
Publishing, printing	33.50%
Services	33.27%
Chemicals, rubber, plastics, non-metallic products	23.23%
Primary sector	22.48%
Gas, Water, Electricity	22.05%
Transport	21.11%
Education, Health	19.35%
Wood, cork, paper	18.91%
Food, beverages, tobacco	18.89%

Banks	18.17%
Textiles, wearing apparel, leather	15.81%
Machinery, equipment, furniture, recycling	14.60%
Metals & metal products	14.45%
Wholesale & retail trade	14.37%
Post & telecommunications	10.39%
Construction	9.52%
Average	20.77%

Any sector that lies above the average which is 20.77% is considered an external finance highly dependent sectors. Similarly, any sector that lies below the average 20.77% is considered an external finance less dependent sector. Hence, sector Hotel & restaurants up until the Transport sector are all considered external finance highly dependent sectors. While the external finance low dependent sectors are the sectors from Education & health up until Construction which scored the lowest mean DAR with 9.52% only. However, one exception is made into the classification, the Banking sector will be considered a special case given the fact that the Banking sector has a different nature than any of the other sectors. Further discussion and elaboration are made on the Banking sector when it is analyzed later in the section.

As followed in the previous hypotheses testing, three standard models are used for the analysis: 1) Model 1 which includes all variables 2) Model HYP3.1 which represents the optimal model for the analysis with the significant control variables 3) The parallel trends assumption test. This process is replicated for each of the 19 different sectors to be able to assess the third hypothesis of the paper.

The results of the sectors that experienced significant changes in their access to debt capital markets will be presented in this section, while the other sectors that did not experience any change will be moved to Appendix B for reference.

The first sector to be analyzed is the banking sector, the results are presented in Table 5.3.2

Table 5.3.2: The three models testing the third hypothesis regarding access to firms in the Banking sector.

VARIABLES	(1) All Control Variables	(2) Model HYP3.1	(3) Parallel Trends Assumption
Country	0.189	0.473*	1.487
	(0.149)	(0.236)	(1.028)
Year = 2010	1.012**	0.867	-1.983
	(0.368)	(0.658)	(2.131)
Year = 2011	1.056	0.485	-4.115
	(0.646)	(1.130)	(3.581)

Year = 2012	1.553**	0.877	-3.479
	(0.724)	(1.272)	(3.055)
Year = 2013	2.275**	1.302	
	(0.965)	(1.788)	
Treatment	1.931***	1.458**	-0.648
	(0.453)	(0.668)	(1.251)
ProfitMargin	0.00123		
	(0.00244)		
SolvencyRatio	-0.806		
	(0.506)		
Number of employees (last value)	0.000279		
	(0.000604)		
OperatingRevenue	8.60e-09**	1.57e-09	-1.52e-09
	(3.81e-09)	(5.28e-09)	(6.51e-09)
FixedAssetsRatio	-0.615**	0.0403	0.128
	(0.253)	(0.397)	(0.439)
TaxRate = o,	-		
SovereignDefaultRisk	0.0715		
	(0.166)		
RecessionRisk	0.638**	0.392	-1.288
	(0.291)	(0.490)	(1.170)
CapitalTransferRisk = o,	-		
PoliticalRisk	2.060**	1.502	
	(0.776)	(1.133)	
CorruptionRisk = o,	-		
Listed = o,	-		
Treatment = F,			0.496
			(0.649)
PoliticalRisk = o,			-
Constant	-6.007**	-4.215	6.825
	(2.377)	(4.014)	(6.171)
Observations	32	37	31
R-squared	0.550	0.244	0.237

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In model 1, where all control variables are included, the treatment effect is observed to be significant with β =1.931, p<0.05. For the sake of efficiency, insignificant control variables were eliminated even though the treatment effect was significant. Model HYP3.1 shows a significant treatment effect of β =1.458, p<0.05, which means that firms operating in the banking sector experienced a 145.8% increase in their access to debt capital markets after Estonia had joined the EMU. Simultaneously, Model 3 shows an insignificant coefficient for

the lead with β =0.50, p>0.05, which confirms that the parallel trends assumption holds for the model HYP3.1.

The effect on the Banking sector is large and economically significant. However, the Banking sector can be different than other sectors given the special needs banking firms may require in addition to the different capital structure and financial models that such firms operate with. For example, Harris & Raviv (1990, p.297-355) the banking sector is based on leverage due to many reasons, one of them is that high leverage in Banks is essential to control managerial discretion, especially with respect to the large cashflows banking firms, are exposed to. Another reason is the fact that in the Banking sector, the smaller the outstanding equity the higher the stake managers can own. Consequently, the incentive for managers to align their ambitions with equity holders is higher and the principal-agent problem is tackled. Hence, the highly leveraged capital structure of banking firms is seen to be the optimal structure under many theories and the banking sector seems to have special dynamics when it comes to taking on debt. To conclude, Banks may not always behave in the direction which all other sectors may behave in given its special needs and other considerations. Hence, although the effect on the Banking sector is statistically and economically significant, a conservative approach should be taken when generalizing these effects on other sectors or the aggregate level.

After the banking sector, the Gas, Water & Electricity which is also known as Commodities Sector is then analyzed. The results are presented in Table 5.3.3.

Table 5.3.3: The three models testing the third hypothesis regarding access to firms in the Commodities Sector.

VARIABLES	(1) All Control Variables	(2) Model HYP3.6	(3) Parallel Trends Assumption
Country	0.158	0.132***	0.125*
	(0.0964)	(0.0471)	(0.0673)
Country	-0.0408	-0.0493	-0.0468
	(0.0888)	(0.0378)	(0.0572)
Year = 2010	0.0391	-0.0156	-0.0200
	(0.140)	(0.0374)	(0.0513)
Year = 2011	0.0929	-0.0528	-0.0446
	(0.228)	(0.0429)	(0.0477)
Year = 2012	0.0553	-0.0231	-0.0126
	(0.218)	(0.0408)	(0.0469)
Year = 2013	0.135	-0.00389	
	(0.275)	(0.0415)	
Treatment	0.0664	0.0798*	0.0548
	(0.103)	(0.0464)	(0.0613)
ProfitMargin	0.00146	0.00199***	0.00161**
	(0.000904)	(0.000664)	(0.000758)

SolvencyRatio	-0.578***	-0.558***	-0.552***
	(0.0604)	(0.0586)	(0.0667)
Number of employees (last value)	-2.98e-05		
	(3.67e-05)		
OperatingRevenue	2.52e-10***	1.96e-10***	2.09e-10***
	(6.26e-11)	(0)	(0)
FixedAssetsRatio	-0.182**	-0.222***	-0.213**
	(0.0839)	(0.0788)	(0.0973)
TaxRate	0.249		
	(1.572)		
SovereignDefaultRisk	-0.0156		
	(0.0437)		
RecessionRisk	0.0639		
	(0.0792)		
CapitalTransferRisk = o,	-		
PoliticalRisk	0.0340		
	(0.102)		
CorruptionRisk	-0.0554		
	(0.0517)		
Listed	0.156***		
	(0.0458)		
Treatment = F,			0.00808
			(0.0743)
Constant	0.383	0.623***	0.616***
	(0.704)	(0.0799)	(0.0967)
Observations	254	268	212
R-squared	0.397	0.367	0.325

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In the extensive model, the treatment effect is found to be insignificant with β =0.066, p>0.05. However, after eliminating the insignificant variables and leaving in Profit Margin, Solvency Ratio, Operating Revenue and Fixed Assets Ratio, the treatment effect computed was found to be significant to 10% significance level with β =0.080, p<0.1. The coefficient means that firms in general operating in the commodities sector experienced a significant increase in access to debt capital markets by 8%, a result which is economically significant. Moving on to the parallel trends assumption, the coefficient of the lead in Model 3 is estimated at β =0.0080, p>0.5, meaning that the constant bias assumption holds.

The third sector to be analyzed is the primary sector. For clarification, the primary sector includes agriculture, fishing, forestry, and mining. The results are presented at in table 5.3.4

Table 5.3.4: The three models testing the third hypothesis regarding access to firms in the Primary Sector.

	(1)	(2)	(3)

VARIABLES	All Control Variables	Model HYP3.13	Parallel Trends Assumption
Lithuania	-0.0548	-0.0552	-0.0593
	(0.0519)	(0.0483)	(0.0747)
Latvia	-0.0470	-0.0437	-0.0339
	(0.0488)	(0.0450)	(0.0462)
Year = 2010	-0.0144	-0.0267	-0.0432
	(0.0614)	(0.0164)	(0.0315)
Year = 2011	-0.0493	-0.0702***	-0.0810**
	(0.110)	(0.0237)	(0.0334)
Year = 2012	-0.0381	-0.0559**	-0.0692**
	(0.109)	(0.0229)	(0.0311)
Year = 2013	-0.0391	-0.0625***	
	(0.135)	(0.0235)	
Treatment	0.0720	0.0673***	0.0594**
	(0.0460)	(0.0227)	(0.0281)
ProfitMargin	0.00136***	0.00132***	0.00118**
	(0.000469)	(0.000453)	(0.000516)
SolvencyRatio	-0.541***	-0.540***	-0.512***
	(0.0354)	(0.0352)	(0.0353)
Number of employees (last value)	-9.26e-05	-8.36e-05*	-0.000136**
	(6.04e-05)	(4.74e-05)	(6.46e-05)
OperatingRevenue	3.53e-10	3.43e-10	7.19e-10*
	(2.75e-10)	(2.65e-10)	(4.22e-10)
FixedAssetsRatio	0.253***	0.254***	0.277***
	(0.0373)	(0.0366)	(0.0407)
TaxRate	-1.131	-1.111	-1.319
	(0.858)	(0.772)	(0.910)
SovereignDefaultRisk	-0.00284		
	(0.0209)		
RecessionRisk	0.00863		
	(0.0392)		
CapitalTransferRisk = o,	-		
PoliticalRisk	0.0183	0.0123	-0.00351
	(0.0448)	(0.0313)	(0.0795)
CorruptionRisk	-0.00107		
	(0.0225)		
Listed	0.0133		
	(0.0332)		
Treatment = F,			0.0276
			(0.0358)
Constant	0.524	0.564***	0.593***
	(0.324)	(0.176)	(0.202)
Observations	783	790	628
R-squared	0.583	0.582	0.578

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The model with the full list of control variables generated an insignificant treatment effect with β =0.072, p>0.5. However, after eliminating some insignificant control variables, model HYP3.13 returned a significant effect of the treatment with β =0.067, p<0.1. The treatment

effect is significant at 1% significance level and the interpretation suggests that firms operating in the primary sector experienced an increase in their debt capital markets access by 6.7% after Estonia had joined the EMU. The effect is economically significant and quite similar to the effect on the commodities sector compared to the effect on the banking sector. Thus, these results give us another reason to believe that the banking sector might have different needs and can not really be compared nor generalized to other sectors. The parallel trends assumption holds as we can see from the third model in the table, the coefficient of the lead is equal to 0.028 with a $p>0.5$, meaning that the coefficient is insignificant.

All the sectors that experienced a significant effect are sectors that belong to external finance highly dependent sectors, except for the Banking sector which is a special case as mentioned earlier. However, some other sectors belonging to the external financing highly-dependent sectors did not experience any significant treatment effects. Even though the effects were insignificant on some external finance highly dependent sectors, yet at least none of these sectors showed a negative significant treatment effect. To conclude, only external finance highly dependent sectors showed positive significant effects. Hence, the third hypothesis can still hold given the fact that indeed external finance highly dependent sectors benefited more than external finance low dependent sectors from Estonia joining the EMU in 2013.

As an additional point of robustness, all sectors with insignificant treatment effects were tested at t+1 similar to the first hypothesis to check for possible lagged effects of joining the EMU. However, the results still remained insignificant.

6. Conclusion

In this paper, three hypotheses were tested to help answer the research question. Arguably, the three hypotheses were statistically proven to hold even if one held partially or under new assumptions. The first hypothesis states that firms in Estonia generally experienced higher access to debt capital market after Estonia has joined the EMU and the national currency became the Euro. The effect was proven to be insignificant when the treatment period tested for was 2011. However, after adding the assumption that the treatment took place at t+1, the results were proven to be statistically significant. There are many possible economic reasons justifying the real effects happening at t+1 instead of t. For instance, the lag can be justified by 1) the time needed for firms to consider, assess and execute the conversion towards their new optimal capital structure. 2) Large firms wait for the economy to stabilize after the conversion and the capital markets to gain some momentum and benefit from the new favorable market

conditions and low new issue premiums on their bonds. 3) Firms have not experienced yet a high demand for exports due to sticky prices keeping their capacity utilization constant and the need for expansion to be delayed. Hence, a lagged effect on firms within Estonia seems to be not only statistically significant but also economically justifiable.

Testing for the second hypothesis, the effect is found to be significant on national firms within Estonia which managed to experience a higher debt capital market access post-entry. The significant effect verifies all the previous literature which explains why national firms are expected to have larger access than multinationals, by eliminating financial frictions, lowering the transaction costs and reducing risk premiums. Hence, it can be concluded that national firms take higher advantage of the standardization of the domestic currency.

Moving on to the specification of different industries and testing the effects per sector, 2 external financing highly dependent sectors were proven to experience a positive increase in access to debt capital markets post-entry. The former finding supports the academic assumption taken by Braun & Larrain in their research, attributing differences in financial leverage between sectors to differences in capital intensity and high R&D costs for instance. On the other hand, other external-financing highly dependent sectors were expected to experience a similar effect. However, these effects turned out to be insignificant. Taking into consideration the lagged effect spotted in the first hypothesis, a similar approach was taken to test the effect on these targeted sectors at t+1 or in other terms 2012. However, the effects still remained insignificant.

To conclude, as a combination of all above-mentioned findings, the answer for the research question will be the following: National firms within Estonia experienced a higher significant effect than multinationals within Estonia, the effect is an increase in debt capital market access by 1.30%, while the lagged effect on all firms within Estonia added up to a 1.17% increase compared to the period before Estonia was part of the EMU. Different sectors experienced different effects, the sectors that experienced significant effects post-entry are all sectors that belong to the external-financing highly dependent sectors.

Limitations to the research were the limited access of data to only observations starting the year 2009. If that was not the case, the case of Slovenia and Slovakia joining the EMU in 2007 and 2009 respectively would have been examined as well and different scenarios of countries joining currency unions would have been tested to add more statistical power to the paper. Another limitation is the fact that Latvia joined the EMU in 2014 and Lithuania did the same

in 2015 leaving a very small window for the event study of the case of Estonia. A larger window would have allowed testing for the full effect over a longer period of time to spot any possible lags or avoid discrepancies.

The results from this research could be built on once the methodology is replicated and tested on different scales. It would be interesting to test for interaction effects on firms with a specific type, national or multinational, in specific sectors. This can only be done in countries with large economies, a huge amount of firms and quite big sectors for the effect to be as close as possible to the real effect of the entry. Capital markets policy implications and regulatory measures could be an interesting extension to the topic for further research. For instance, the discussion of how can governments support sectors that benefit less from the entry to currency unions by the means of tax reductions or easier access to domestic credit. Another example would be policies that kind of decelerates the accumulation of debt due to higher access to debt capital markets post-entry to currency unions as we have seen. This might be needed if governments are concerned with the certain industries that are highly leveraged and accumulating more debt might put them at high risk. The mentioned policy considerations and more can be interesting topics to build on the findings of this paper for further research.

7. Appendices

7.1. Appendix A

Table A.1: The type and unit of all variables

Variable	Type	Unit
Access to Debt Capital Markets	Continuous	Percentage
Gross Profit Margin	Continuous	Percentage
Number of employees	Discrete	Employee
Multinational	Dummy	1 if Multinational Firm 0 if National Firm
Fixed Assets Ratio	Continuous	Percentage
Solvency Ratio	Continuous	Percentage
Operating Revenue	Continuous	EUR
Sector	Categorical	Sector
Tax Rate	Continuous	Percentage
Sovereign Default Risk	Continuous	Point
Recession Risk	Continuous	Point
Capital Transfer Risk	Continuous	Point
Political Risk	Continuous	Point

Corruption Risk	Continuous	Point
Listed	Dummy	1 if Listed Firm 0 if Non-Listed Firm
Company	Discrete	Rank
Country	Discrete	1 if Estonia 2 if Lithuania 3 if Latvia

Table A.2: List of all 19 sectors included in the analysis

Sector
Banks
Chemicals, Rubber, Plastics & Non-metallics
Construction
Education & Health
Food, Beverages & Tobacco
Gas, Water & Electricity
Hotels & Restaurants
Insurance Companies
Machinery, Equipment, Furniture & Recycling
Metals & Metal Products
Other Services
Post & Telecommunication
Primary Sector
Public Administration & Defense
Publishing, Printing
Textiles, Apparel & Leather
Transport
Wholesale & Retail Trade
Wood, Cork & Paper

7.2. Appendix B

There is a total of 19 different sectors. Three sectors are presented in the main results, which are: Banking Sector, Commodities Sector, & Primary Sector. Two sectors are excluded from the analysis due to insufficient data as mentioned earlier, which are: Insurance Sector, & Public Administration and Defense. The other 14 sectors are analyzed and presented in the tables below.

Table B.1: The three models testing the third hypothesis regarding debt access for firms in the Chemicals, Rubber, Plastic & Non-metallics Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.2	(3) Parallel Trends Assumption
Lithuania	-0.0258	0.00311	-0.0220
	(0.0467)	(0.0220)	(0.0298)
Latvia	-0.119***	-0.0786***	-0.103***

	(0.0456)	(0.0219)	(0.0293)
Year = 2010	-0.103	0.00244	0.0241
	(0.0898)	(0.0196)	(0.0259)
Year = 2011	-0.173	-0.00787	0.00195
	(0.158)	(0.0227)	(0.0246)
Year = 2012	-0.155	-0.0244	-0.0140
	(0.153)	(0.0228)	(0.0246)
Year = 2013	-0.212	-0.0206	
	(0.195)	(0.0209)	
Treatment	-0.00164	-0.0149	0.0134
	(0.0584)	(0.0247)	(0.0338)
ProfitMargin	0.00145***	0.00157***	0.00171***
	(0.000557)	(0.000555)	(0.000494)
SolvencyRatio	-0.457***	-0.454***	-0.441***
	(0.0387)	(0.0379)	(0.0449)
Number of employees (last value)	-7.05e-05*		
	(4.04e-05)		
OperatingRevenue	-1.20e-10	-1.32e-10**	-1.87e-10***
	(7.59e-11)	(6.64e-11)	(6.98e-11)
FixedAssetsRatio	0.364***	0.374***	0.395***
	(0.0317)	(0.0310)	(0.0339)
TaxRate	-0.776		
	(0.774)		
SovereignDefaultRisk	0.0399		
	(0.0244)		
RecessionRisk	-0.0623		
	(0.0534)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.0767		
	(0.0508)		
CorruptionRisk	0.0166		
	(0.0320)		
Listed	0.210***		
	(0.0650)		
Treatment = F,			-0.0550
			(0.0385)
Constant	0.726*	0.236***	0.235***
	(0.404)	(0.0345)	(0.0400)
Observations	602	624	499
R-squared	0.536	0.529	0.517

Table B.2: The three models testing the third hypothesis regarding debt access for firms in the Construction Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.3	(3) Parallel Trends Assumption
Lithuania	-0.0250	0.0447**	0.0227
	(0.0445)	(0.0176)	(0.0233)
Latvia	-0.0928**	-0.0256	-0.0490**
	(0.0409)	(0.0167)	(0.0235)

Year = 2010	-0.0474	-0.00734	0.0117
	(0.0585)	(0.0153)	(0.0231)
Year = 2011	-0.0518	-0.00179	0.0110
	(0.101)	(0.0181)	(0.0204)
Year = 2012	-0.0528	-0.00399	0.00933
	(0.0978)	(0.0182)	(0.0206)
Year = 2013	-0.0811	-0.0129	
	(0.124)	(0.0169)	
Treatment	-0.00107	-0.000178	0.0129
	(0.0424)	(0.0191)	(0.0267)
ProfitMargin	0.000478	0.000598	0.000542
	(0.000556)	(0.000547)	(0.000594)
SolvencyRatio	-0.368***	-0.374***	-0.393***
	(0.0405)	(0.0394)	(0.0451)
Number of employees (last value)	-0.000127***		
	(4.49e-05)		
OperatingRevenue	2.48e-10	-2.32e-10	-1.60e-10
	(4.33e-10)	(1.89e-10)	(2.32e-10)
FixedAssetsRatio	0.312***	0.297***	0.301***
	(0.0256)	(0.0242)	(0.0271)
TaxRate	-1.336*		
	(0.720)		
SovereignDefaultRisk	0.0106		
	(0.0208)		
RecessionRisk	-0.0173		
	(0.0349)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.0469		
	(0.0452)		
CorruptionRisk	-0.00238		
	(0.0222)		
Listed	0.0455		
	(0.0473)		
Treatment = F,			-0.0397
			(0.0304)
Constant	0.604**	0.178***	0.196***
	(0.302)	(0.0259)	(0.0302)
Observations	876	939	758
R-squared	0.396	0.384	0.393

Table B.3: The three models testing the third hypothesis regarding debt access for firms in the Education & Health Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.4	(3) Parallel Trends Assumption
Lithuania	0.0960	0.142***	0.158**
	(0.181)	(0.0411)	(0.0606)
Latvia	-0.0194	-0.0130	-0.00175
	(0.0655)	(0.0346)	(0.0563)
Year = 2010	0.0330	-0.0160	-0.0215
	(0.153)	(0.0370)	(0.0559)

Year = 2011	0.0527	-0.0204	-0.0294
	(0.286)	(0.0442)	(0.0521)
Year = 2012	0.0322	-0.0307	-0.0392
	(0.310)	(0.0445)	(0.0526)
Year = 2013	0.0648	-0.0409	
	(0.390)	(0.0445)	
Treatment	0.0860	0.0440	0.0351
	(0.141)	(0.0426)	(0.0512)
ProfitMargin	0.00281	0.00355**	0.00189
	(0.00192)	(0.00176)	(0.00207)
SolvencyRatio	-0.661***	-0.719***	-0.728***
	(0.0594)	(0.0488)	(0.0548)
Number of employees (last value)	9.62e-05**		
	(4.19e-05)		
OperatingRevenue	-3.12e-09	6.83e-10	6.93e-10
	(2.08e-09)	(6.00e-10)	(6.31e-10)
FixedAssetsRatio	0.0942	0.153*	0.183**
	(0.0909)	(0.0800)	(0.0852)
TaxRate	-0.218		
	(1.172)		
SovereignDefaultRisk	-0.0111		
	(0.0584)		
RecessionRisk	0.0310		
	(0.0899)		
CapitalTransferRisk = o,	-		
PoliticalRisk	0.0515		
	(0.137)		
CorruptionRisk	-0.00876		
	(0.0650)		
Listed = o,	-		
Treatment = F,			0.0237
			(0.0684)
Constant	0.274	0.432***	0.411***
	(0.932)	(0.0778)	(0.0848)
Observations	163	183	146
R-squared	0.557	0.589	0.595

Table B.4: The three models testing the third hypothesis regarding debt access for firms in the Food, Beverages & Tobacco Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.5	(3) Parallel Trends Assumption
Lithuania	-0.0308	-0.0207	-0.00838
	(0.0458)	(0.0207)	(0.0263)
Latvia	-0.0697	-0.0386*	-0.0256
	(0.0425)	(0.0211)	(0.0269)
Year = 2010	-0.0164	0.00385	-0.00874
	(0.0787)	(0.0190)	(0.0248)
Year = 2011	-0.0403	-0.0175	-0.0263
	(0.135)	(0.0196)	(0.0213)

Year = 2012	-0.0624	-0.0383*	-0.0468**
	(0.129)	(0.0205)	(0.0223)
Year = 2013	-0.0693	-0.0358*	
	(0.166)	(0.0192)	
Treatment	0.0331	0.0297	0.0195
	(0.0525)	(0.0235)	(0.0339)
ProfitMargin	-1.97e-05	-9.00e-05	-0.000184
	(0.00129)	(0.00119)	(0.00128)
SolvencyRatio	-0.478***	-0.473***	-0.495***
	(0.0491)	(0.0461)	(0.0538)
Number of employees (last value)	-5.63e-05		
	(3.92e-05)		
OperatingRevenue	-7.85e-11	-2.89e-10***	-3.38e-10***
	(1.86e-10)	(1.07e-10)	(1.24e-10)
FixedAssetsRatio	0.299***	0.289***	0.285***
	(0.0367)	(0.0356)	(0.0407)
TaxRate	-0.599		
	(0.728)		
SovereignDefaultRisk	0.00321		
	(0.0224)		
RecessionRisk	-0.00296		
	(0.0457)		
CapitalTransferRisk = o,	-		
PoliticalRisk	0.00859		
	(0.0472)		
CorruptionRisk	-0.00756		
	(0.0278)		
Listed	0.0115		
	(0.0185)		
Treatment = F,			0.0340
			(0.0377)
Constant	0.416	0.258***	0.262***
	(0.358)	(0.0360)	(0.0411)
Observations	578	610	488
R-squared	0.448	0.445	0.453

Table B.5: The three models testing the third hypothesis regarding debt access for firms in the Hotels & Restaurants Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.7	(3) Parallel Trends Assumption
Lithuania	-0.0711	-0.0341	-0.0799
	(0.118)	(0.0557)	(0.0827)
Latvia	-0.0335	-0.0490	-0.0842
	(0.133)	(0.0668)	(0.0855)
Year = 2010	-0.228	-0.00178	0.0374
	(0.183)	(0.0560)	(0.0961)
Year = 2011	-0.353	-0.0322	-0.0139
	(0.322)	(0.0695)	(0.0796)
Year = 2012	-0.406	-0.0913	-0.0747

	(0.305)	(0.0693)	(0.0775)
Year = 2013	-0.481	-0.0599	
	(0.396)	(0.0629)	
Treatment	-0.0829	0.0428	0.0769
	(0.141)	(0.0696)	(0.103)
ProfitMargin	0.00452**	0.00263*	0.00290
	(0.00182)	(0.00142)	(0.00191)
SolvencyRatio	-0.678***	-0.655***	-0.647***
	(0.117)	(0.0988)	(0.116)
Number of employees (last value)	2.31e-05		
	(0.000129)		
OperatingRevenue	2.77e-09	5.31e-09**	6.13e-09*
	(3.62e-09)	(2.47e-09)	(3.32e-09)
FixedAssetsRatio	0.790***	0.785***	0.783***
	(0.126)	(0.111)	(0.137)
TaxRate	-0.614		
	(1.955)		
SovereignDefaultRisk	0.0409		
	(0.0828)		
RecessionRisk	-0.111		
	(0.122)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.0725		
	(0.140)		
CorruptionRisk	-0.0533		
	(0.0770)		
Listed = o,	-		
Treatment = F,			-0.0783
			(0.116)
Constant	0.882	-0.0617	-0.0467
	(0.787)	(0.107)	(0.129)
Observations	140	150	120
R-squared	0.596	0.585	0.536

Table B.6: The three models testing the third hypothesis regarding debt access for firms in the Machinery, Equipment, Furniture & Recycling Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.9	(3) Parallel Trends Assumption
Lithuania	0.0549	0.0562***	0.0602***
	(0.0397)	(0.0152)	(0.0215)
Latvia	0.0243	0.0148	0.0223
	(0.0377)	(0.0184)	(0.0243)
Year = 2010	-0.0167	0.00505	0.00329
	(0.0670)	(0.0151)	(0.0219)
Year = 2011	-0.0216	-0.00925	-0.00768
	(0.121)	(0.0178)	(0.0199)
Year = 2012	-0.0370	-0.00133	0.000181
	(0.115)	(0.0183)	(0.0205)

Year = 2013	-0.0434	-0.00996	
	(0.146)	(0.0185)	
Treatment	0.00317	0.0113	0.00385
	(0.0483)	(0.0191)	(0.0256)
ProfitMargin	-0.000338	-0.000257	-0.000890*
	(0.000578)	(0.000579)	(0.000516)
SolvencyRatio	-0.339***	-0.355***	-0.341***
	(0.0320)	(0.0310)	(0.0354)
Number of employees (last value)	-1.57e-05		
	(1.81e-05)		
OperatingRevenue	1.70e-10	-2.84e-10	-3.26e-10
	(2.37e-10)	(1.97e-10)	(2.30e-10)
FixedAssetsRatio	0.230***	0.215***	0.225***
	(0.0225)	(0.0215)	(0.0241)
TaxRate	-0.193		
	(0.603)		
SovereignDefaultRisk	0.00806		
	(0.0209)		
RecessionRisk	-0.00190		
	(0.0430)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.0213		
	(0.0433)		
CorruptionRisk	-0.0207		
	(0.0238)		
Listed	-0.104***		
	(0.0194)		
Treatment = F,			0.00846
			(0.0297)
Constant	0.327	0.212***	0.201***
	(0.308)	(0.0252)	(0.0287)
Observations	779	822	657
R-squared	0.390	0.377	0.382

Table B.7: The three models testing the third hypothesis regarding debt access for firms in the Metals & Metal Products Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.10	(3) Parallel Trends Assumption
Lithuania	0.127*	0.117***	0.121***
	(0.0659)	(0.0244)	(0.0326)
Latvia	0.0407	0.00149	0.000717
	(0.0607)	(0.0213)	(0.0291)
Year = 2010	-0.0683	-0.00304	-0.00376
	(0.0729)	(0.0187)	(0.0285)
Year = 2011	-0.0952	-0.000741	0.00122
	(0.126)	(0.0239)	(0.0270)
Year = 2012	-0.134	-0.0162	-0.0140
	(0.123)	(0.0231)	(0.0263)
Year = 2013	-0.148	-0.0112	
	(0.155)	(0.0231)	

Treatment	-0.0420	0.0190	0.0150
	(0.0551)	(0.0244)	(0.0327)
ProfitMargin	0.00107	0.000949	0.000719
	(0.000813)	(0.000779)	(0.000823)
SolvencyRatio	-0.392***	-0.382***	-0.386***
	(0.0314)	(0.0303)	(0.0347)
Number of employees (last value)	-2.63e-05		
	(6.64e-05)		
OperatingRevenue	-1.30e-09*	-1.39e-09**	-1.20e-09*
	(7.77e-10)	(5.73e-10)	(6.69e-10)
FixedAssetsRatio	0.335***	0.336***	0.343***
	(0.0290)	(0.0284)	(0.0327)
TaxRate	0.266		
	(1.050)		
SovereignDefaultRisk	-0.00348		
	(0.0241)		
RecessionRisk	-0.0277		
	(0.0431)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.00372		
	(0.0540)		
CorruptionRisk	-0.0321		
	(0.0285)		
Listed = o,	-		
Treatment = F,			0.00323
			(0.0384)
Constant	0.400	0.176***	0.172***
	(0.387)	(0.0282)	(0.0320)
Observations	444	458	366
R-squared	0.552	0.545	0.549

Table B.8: The three models testing the third hypothesis regarding debt access for firms in the Other Services Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.11	(3) Parallel Trends Assumption
Lithuania	-0.00287	-0.0316	-0.0416
	(0.0464)	(0.0197)	(0.0270)
Latvia	-0.00566	-0.0559***	-0.0676**
	(0.0443)	(0.0195)	(0.0267)
Year = 2010	-0.00527	0.00479	0.0163
	(0.0738)	(0.0180)	(0.0276)
Year = 2011	0.00834	0.00207	0.0124
	(0.126)	(0.0215)	(0.0244)
Year = 2012	0.00577	0.0261	0.0362
	(0.122)	(0.0212)	(0.0244)
Year = 2013	0.00893	0.0244	
	(0.154)	(0.0206)	
Treatment	-0.0415	-0.0318	-0.0296
	(0.0523)	(0.0226)	(0.0308)

ProfitMargin	0.000156	0.000526**	0.000533**
	(0.000250)	(0.000213)	(0.000251)
SolvencyRatio	-0.501***	-0.564***	-0.559***
	(0.0324)	(0.0265)	(0.0305)
Number of employees (last value)	-9.02e-05***		
	(1.95e-05)		
OperatingRevenue	-1.00e-10***	-9.38e-11**	-1.07e-10**
	(0)	(0)	(0)
FixedAssetsRatio	0.331***	0.360***	0.349***
	(0.0245)	(0.0226)	(0.0256)
TaxRate	0.139		
	(0.762)		
SovereignDefaultRisk	0.00352		
	(0.0230)		
RecessionRisk	0.00318		
	(0.0434)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.0293		
	(0.0454)		
CorruptionRisk	-0.0257		
	(0.0279)		
Listed	0.0212		
	(0.0383)		
Treatment = F,			-0.0198
			(0.0363)
Constant	0.306	0.263***	0.273***
	(0.341)	(0.0233)	(0.0267)
Observations	1,052	1,276	1,027
R-squared	0.439	0.499	0.478

Table B.9: The three models testing the third hypothesis regarding debt access for firms in the Post & Telecommunication Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.12	(3) Parallel Trends Assumption
Lithuania	-0.0510	-0.0465	-0.0455
	(0.0970)	(0.0604)	(0.0933)
Latvia	0.118	0.0221	0.0140
	(0.107)	(0.0688)	(0.102)
Year = 2010	0.0759	0.0139	0.0161
	(0.228)	(0.0485)	(0.0542)
Year = 2011	0.0240	0.0363	0.0330
	(0.394)	(0.0484)	(0.0520)
Year = 2012	0.0382	0.0671	0.0608
	(0.373)	(0.0543)	(0.0580)
Year = 2013	0.0313	0.0474	
	(0.486)	(0.0507)	
Treatment	-0.0740	-0.0142	0.00681
	(0.148)	(0.0658)	(0.0809)
ProfitMargin	-0.00193	-	-0.00358**

		0.00419***	
	(0.00128)	(0.00105)	(0.00155)
SolvencyRatio	-0.254*	-0.281***	-0.249***
	(0.130)	(0.0617)	(0.0885)
Number of employees (last value)	-2.73e-05*		
	(1.36e-05)		
OperatingRevenue	1.40e-09***	5.94e-10***	5.19e-10*
	(2.66e-10)	(2.04e-10)	(2.58e-10)
FixedAssetsRatio	0.586***	0.524***	0.527***
	(0.0675)	(0.0586)	(0.0729)
TaxRate	1.318		
	(1.757)		
SovereignDefaultRisk	-0.0716*		
	(0.0396)		
RecessionRisk	-0.00786		
	(0.123)		
CapitalTransferRisk = o,	-		
PoliticalRisk	0.0988		
	(0.0829)		
CorruptionRisk	0.0128		
	(0.0845)		
Listed	-0.216**		
	(0.106)		
Treatment = F,			-0.0240
			(0.115)
Constant	-0.388	-0.0545	-0.0622
	(1.005)	(0.0771)	(0.103)
Observations	65	73	57
R-squared	0.804	0.722	0.672

Table B.10: The three models testing the third hypothesis regarding debt access for firms in the Publishing & Printing Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.15	(3) Parallel Trends Assumption
Lithuania	-0.0504	-0.0301	-0.0376
	(0.0737)	(0.0296)	(0.0449)
Latvia	-0.0822	-0.104**	-0.115**
	(0.0743)	(0.0399)	(0.0545)
Year = 2010	-0.00836	0.00985	0.0171
	(0.117)	(0.0314)	(0.0464)
Year = 2011	-0.0278	-0.00492	0.00228
	(0.203)	(0.0401)	(0.0459)
Year = 2012	-0.0605	-0.0348	-0.0281
	(0.198)	(0.0379)	(0.0436)
Year = 2013	-0.0677	-0.0387	
	(0.253)	(0.0371)	
Treatment	-0.0553	-0.0135	-0.0136
	(0.0830)	(0.0366)	(0.0491)
ProfitMargin	0.00232	0.00244*	0.00275*

	(0.00146)	(0.00134)	(0.00148)
SolvencyRatio	-0.510***	-0.490***	-0.467***
	(0.0596)	(0.0575)	(0.0643)
Number of employees (last value)	0.000546**		
	(0.000212)		
OperatingRevenue	-2.58e-09	7.42e-10	7.03e-10
	(1.64e-09)	(5.65e-10)	(6.36e-10)
FixedAssetsRatio	0.285***	0.301***	0.311***
	(0.0708)	(0.0701)	(0.0804)
TaxRate	0.472		
	(1.309)		
SovereignDefaultRisk	-0.00513		
	(0.0358)		
RecessionRisk	-0.0136		
	(0.0737)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.0299		
	(0.0740)		
CorruptionRisk	-0.00898		
	(0.0423)		
Listed	-0.270**		
	(0.120)		
Treatment = F,			-0.0281
			(0.0604)
Constant	0.342	0.303***	0.297***
	(0.541)	(0.0657)	(0.0734)
Observations	145	145	118
R-squared	0.637	0.616	0.599

Table B.11: The three models testing the third hypothesis regarding debt access for firms in the Textiles, Apparel & Leather Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.16	(3) Parallel Trends Assumption
Lithuania	0.0561	-0.00114	-0.0305
	(0.0793)	(0.0327)	(0.0487)
Latvia	0.0836	0.00613	-0.0335
	(0.0788)	(0.0350)	(0.0500)
Year = 2010	-0.00776	0.0223	0.0635
	(0.148)	(0.0316)	(0.0416)
Year = 2011	-0.0406	0.0478	0.0683*
	(0.258)	(0.0335)	(0.0384)
Year = 2012	-0.0309	0.0256	0.0463
	(0.252)	(0.0345)	(0.0392)
Year = 2013	-0.0846	0.0115	
	(0.315)	(0.0328)	
Treatment	-0.0556	-0.0427	0.000711
	(0.0917)	(0.0381)	(0.0502)
ProfitMargin	-0.000548	-0.000470	-0.000453
	(0.000643)	(0.000673)	(0.000697)

SolvencyRatio	-0.380***	-0.394***	-0.434***
	(0.0555)	(0.0554)	(0.0604)
Number of employees (last value)	0.000115**		
	(5.34e-05)		
OperatingRevenue	-3.45e-09**	-1.62e-09**	-2.05e-09***
	(1.41e-09)	(6.60e-10)	(7.85e-10)
FixedAssetsRatio	0.181***	0.192***	0.178***
	(0.0497)	(0.0468)	(0.0544)
TaxRate	1.230		
	(1.264)		
SovereignDefaultRisk	0.00644		
	(0.0373)		
RecessionRisk	-0.0438		
	(0.0866)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.00652		
	(0.0766)		
CorruptionRisk	0.0244		
	(0.0468)		
Listed	-0.0754**		
	(0.0378)		
Treatment = F,			-0.0826
			(0.0664)
Constant	0.143	0.266***	0.311***
	(0.685)	(0.0589)	(0.0709)
Observations	172	172	140
R-squared	0.491	0.477	0.510

Table B.12: The three models testing the third hypothesis regarding debt access for firms in the Transport Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.17	(3) Parallel Trends Assumption
Lithuania	0.0385	0.0349**	0.0404*
	(0.0483)	(0.0159)	(0.0219)
Latvia	0.0104	-0.0109	-0.00752
	(0.0450)	(0.0137)	(0.0199)
Year = 2010	-0.0133	-0.0111	-0.0148
	(0.0490)	(0.0144)	(0.0229)
Year = 2011	-0.0217	-0.0249	-0.0235
	(0.0857)	(0.0173)	(0.0201)
Year = 2012	-0.0513	-0.0365**	-0.0350*
	(0.0828)	(0.0167)	(0.0195)
Year = 2013	-0.0323	-0.0289*	
	(0.106)	(0.0165)	
Treatment	-0.00519	0.0191	0.00893
	(0.0366)	(0.0168)	(0.0226)
ProfitMargin	0.00133**	0.000722	0.000757
	(0.000521)	(0.000470)	(0.000512)
SolvencyRatio	-0.475***	-0.468***	-0.474***

	(0.0287)	(0.0282)	(0.0321)
Number of employees (last value)	1.91e-05		
	(1.34e-05)		
OperatingRevenue	-5.84e-10***	-3.87e-10***	-4.05e-10***
	(2.12e-10)	(7.25e-11)	(8.78e-11)
FixedAssetsRatio	0.330***	0.344***	0.352***
	(0.0195)	(0.0190)	(0.0217)
TaxRate	0.214		
	(0.792)		
SovereignDefaultRisk	-0.0148		
	(0.0180)		
RecessionRisk	0.00958		
	(0.0307)		
CapitalTransferRisk = o,	-		
PoliticalRisk	0.0170		
	(0.0378)		
CorruptionRisk	-0.0198		
	(0.0188)		
Listed	-0.0223		
	(0.0260)		
Treatment = F,			0.00843
			(0.0282)
Constant	0.203	0.221***	0.216***
	(0.266)	(0.0210)	(0.0232)
Observations	1,208	1,277	1,022
R-squared	0.506	0.510	0.513

Table B.13: The three models testing the third hypothesis regarding debt access for firms in the Wholesale & Retail Trade Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.18	(3) Parallel Trends Assumption
Lithuania	-0.00806	-0.0228**	-0.0236*
	(0.0222)	(0.00904)	(0.0129)
Latvia	-0.000279	0.00313	0.00620
	(0.0207)	(0.00907)	(0.0129)
Year = 2010	0.0273	-0.00696	-0.00884
	(0.0302)	(0.00842)	(0.0116)
Year = 2011	0.0567	-0.00566	-0.00585
	(0.0521)	(0.00956)	(0.0107)
Year = 2012	0.0508	-0.0148	-0.0149
	(0.0496)	(0.00950)	(0.0106)
Year = 2013	0.0609	-0.0170*	
	(0.0639)	(0.00941)	
Treatment	0.0199	-0.00521	-0.00985
	(0.0213)	(0.0102)	(0.0133)
ProfitMargin	0.000529	0.000302	0.000506
	(0.000560)	(0.000456)	(0.000509)
SolvencyRatio	-0.270***	-0.276***	-0.276***
	(0.0156)	(0.0155)	(0.0179)

Number of employees (last value)	9.55e-06**		
	(4.16e-06)		
OperatingRevenue	-1.89e-10***	-1.27e-10***	-1.17e-10***
	(0)	(0)	(0)
FixedAssetsRatio	0.266***	0.262***	0.267***
	(0.0125)	(0.0119)	(0.0134)
TaxRate	0.184		
	(0.356)		
SovereignDefaultRisk	0.00557		
	(0.00933)		
RecessionRisk	0.0175		
	(0.0181)		
CapitalTransferRisk = o,	-		
PoliticalRisk	0.00238		
	(0.0203)		
CorruptionRisk	0.0107		
	(0.0111)		
Listed	-0.00101		
	(0.0249)		
Treatment = F,			0.00347
			(0.0164)
Constant	-0.00523	0.183***	0.180***
	(0.146)	(0.0115)	(0.0134)
Observations	3,385	3,562	2,880
R-squared	0.270	0.264	0.256

Table B.14: The three models testing the third hypothesis regarding debt access for firms in the Wood, Cork & Paper Sector

VARIABLES	(1) All Control Variables	(2) Model HYP3.19	(3) Parallel Trends Assumption
Lithuania	0.0831	0.0417	0.0420
	(0.0718)	(0.0261)	(0.0351)
Latvia	0.0150	-0.0369*	-0.0399
	(0.0683)	(0.0217)	(0.0304)
Year = 2010	-0.00447	-0.00194	0.00254
	(0.0798)	(0.0202)	(0.0357)
Year = 2011	-0.00919	-0.0111	-0.00903
	(0.144)	(0.0260)	(0.0309)
Year = 2012	-0.0115	-0.00865	-0.00717
	(0.139)	(0.0255)	(0.0304)
Year = 2013	-0.0198	-0.0162	
	(0.173)	(0.0264)	
Treatment	0.00464	0.00903	0.0118
	(0.0610)	(0.0254)	(0.0339)
ProfitMargin	-0.000532	-0.000354	-0.000500
	(0.000846)	(0.000781)	(0.000819)
SolvencyRatio	-0.547***	-0.535***	-0.517***
	(0.0424)	(0.0378)	(0.0351)
Number of employees (last	-9.74e-05		

value)			
	(6.41e-05)		
OperatingRevenue	1.79e-09***	1.10e-09***	1.19e-09***
	(3.57e-10)	(2.67e-10)	(3.49e-10)
FixedAssetsRatio	0.0416	0.0464	0.0412
	(0.0258)	(0.0294)	(0.0282)
TaxRate	0.871		
	(1.202)		
SovereignDefaultRisk	0.00741		
	(0.0287)		
RecessionRisk	-0.00433		
	(0.0520)		
CapitalTransferRisk = o,	-		
PoliticalRisk	-0.0302		
	(0.0574)		
CorruptionRisk	-0.00477		
	(0.0296)		
Listed	-0.0704*		
	(0.0427)		
Treatment = F,			-0.00903
			(0.0417)
Constant	0.291	0.406***	0.402***
	(0.425)	(0.0297)	(0.0289)
Observations	522	590	474
R-squared	0.506	0.507	0.488

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