

The Impact of Capital Structure on the Firm Risk and Performance

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The decision about the sources of financing is the prior one when incorporating the company, and even before. The perfect balance of capital structure is the issue which the corporate governments often struggle with. The goal was to examine the influence of capital structure on the performance measures of the firm and the risk in order to address the above-mentioned problem. The performance was categorized into market-based, accounting-based, non-financial, and hybrid performance measures. The capital structure was measured from two perspectives, the book value of the debt was compared to the book and market values of equity.

The secondary data were collected of 50 Finnish publicly listed companies for the period from 2012 to 2016. All the data were collected from the Helsinki stock exchange official databases and the financial statements, the reports, and disclosures of the sample companies. The analysis was performed by using of SPSS software. The analysis included descriptive, correlation, and ordinary least square (OLS) regression statistics. The descriptive statistics gave the overview of the data, the correlation analysis showed the level of association between the main variables, and, finally, the regression provided the findings related to the impact of amount of debt on the multiple dependent variables related to performance and risk. The research methods were chosen with diligence to support research hypotheses.

The empirical findings show that the capital structure has an impact on the market-based, accounting-based, and hybrid performance measures, as well as total risk. The results further highlight the attainment of optimum capital structure. Nevertheless, as the proportion of debt starts exceeding the market value of equity a negative influence on the dependent variables is observed. The findings disclose that increased debt leads to the increased total risk, interestingly, the systematic risk is not affected by the changes in the debt-to-equity ratio (a measure of capital structure).

Keywords (subjects)

Capital structure, debt-to-equity ratio, equity, debt, ROA, ROE, EPS, P/E, Jensen's Alpha, Tobin's Q, systematic Risk, total risk, non-financial performance, corporate financing.

Miscellanous

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1 Introduction

1.1 Background

The decision on the development of the future action plan of the company is the prior one that the corporate government should make. One of the most significant responsibilities of the management board of the firm is to fulfill the strategic goals of the company that is to improve the financial performance of the firm and therefore meet the expectations of the stakeholders. The fulfillment of the above-mentioned goal of the firm is highly depends of the firm's capital structure, and it is a big challenge for financial managers to achieve the optimal leverage. Looking back into the corporate history reveals that the boards of directors have always struggled to create the optimum capital structure that would provide financing to the long-term capital needs of the company and ever for the effective operations (Baker & Mallot 1936, 24-55). The main sources of financing are equity and debt, and both have its advantages and disadvantages. To be leveraged, the firm should have financing from both sources, however, the balance between equity and debt is the issue which the researchers in the financial management and corporate governance try to explore. (Chadha & Sharma 2015, 295-296; Donaldson 1978.)

The significance of the capital structure decision is underlined by the researchers through the empirical findings of its influence on the performance and solvency of the firm (Donaldson 1978). The cornerstone of the theoretical research pertaining to the capital structure was the seminal work done by Modigliani and Miller (1958). Their theory of capital structure underlines the irrelevance of the financing decisions and their impact on the market value of the firm. Nevertheless, further studies proved that considering the imperfection of the market, the market value of the company can be dependent on the increased debt. Many researchers tested that the amount of debt borrowed by the firm can affect not only the market value of the company, but also its profitability, and the risk its stock possessing. (Salim & Yadav 2012, 157; Ugwuanui 2012, 49-50.) Both, shareholders and stakeholders of the company are highly interested in the performance of the firm, therefore it becomes possible to distinguish the position of the company and to evaluate the risks of investments to the firm, its financing, or partnerships with the company.

Finding the dependence between the variables of performance, risk and capital structure can show the ways of financial planning, so that the factors of performance are growing while the risk is decreasing. In the thesis, the author is going to explore this tendency and prove the association between the leverage and other control factors, and performance indicators, so that it will be possible to find the character of relationship and make further conclusions on the capital structure significance in the financial decision making among Finnish firms.

After an extensive literature review, the author has found that the majority of papers are exploring the influence of capital structure on one of the performance indicators, but there is a relative shortage of research showing the significance of debt effect on a wide range of variables highlighting firm performance and risk. The goal of this research is to test the dependence of a wide range of performance and risk on the capital structure. Thus, the author was motivated to conduct the research that would include the market-based, accounting-based, hybrid, and non-financial performance, and the risk the stock possesses to the shareholder. The author considers this research important in the understanding of the basic and prior issue in corporate governance in all companies around the world, as the result will give the clear picture of the way the firm can be leveraged successfully. The author was highly interested to study this topic on the sample of Finnish companies in the last years as there is not enough research done assessing the borrowings significance in a stable economic environment with good access to debt and equity for the companies.

The study is built upon the two main research questions.

1. What is the impact of capital structure on the company performance?

2. What is the impact of capital structure on the financial risk of the companies?

To answer the research questions the data of 50 Finnish publicly listed companies from different industries were collected for the period between 2012 and 2016. The influence of capital structure was investigated through the division of the dependent variables on the groups of market-based performance indicators, accounting-based performance indicators, hybrid performance indicator Tobin's Q, non-financial performance indicators and risk measurements. Moreover, the study examined the possible relationships of the performance and risk with the factors affecting it besides the debt share – liquidity, share of independent directors, the size of the firm, and market return. The secondary data needed for the accounting and financial variables calculations were taken from the annual reports of the companies and NASDAQ OMX Nordic stock market database. The data was analyzed through the Pearson's Product Moment Correlation Coefficient measurements and Ordinary Least Square Regression model. The analysis was completed with the use of SPSS software.

The findings of the research disclose the influence of capital structure on the marketbased, accounting-based, and hybrid performance measures, as well as total risk. Nevertheless, there was no same tendency found. While the increased proportion of debt positively affects the accounting-based performance measure Return on Assets and Tobin's Q, the negative influence on other accounting-based and market-based performance measures is observed. Interestingly, at the same time the proportion of debt exceeding the market value of equity always negatively affects the dependent variables. The results show that the leverage of the firm increases the total risk, while the systematic risk is not affected by the changes in capital structure.

1.2 Structure of the thesis

The thesis familiarizes the reader with the theoretical background of the research covering the topics of capital structure, its parts and main theories, performance, its types and ways of measurement, risk, and grand theories, connecting the capital structure decision and all other internal and external environmental factors of the company. The empirical review of the literature is also presented in this chapter. Next, based on the review of the academic literature the hypotheses were formed. The chapter "Research Framework" describes the research methods used for the analysis and presents the data analysis techniques implemented in the research, as well as introduces the key variables. "Research results" chapter shows the analysis findings and their interpretation according to the hypotheses made. The next chapter "Conclusion" summarizes the findings and shows how they answer the research questions and support hypotheses, as well as presents the practical and managerial implications of the results. It also discusses the limitations and recommendations for the future research.

2 Literature review of Firm Risk, Performance, and Capital Structure

2.1 Debt, Equity, Capital structure and its theories.

At the incorporation of the company, and even before, the important question of the firm's structure of capital appears. According to Swanson, Srinidhi, and Seetharaman (2003), capital structure is a mixture of debt and equity which is used in financing the company's productive assets (2). Each part of the capital has its own advantages and disadvantages. There are a lot of advantages of debt, including the mostly discussed in the financial literature - "tax shield", which attracts managers to increase the financial liabilities of the firm. Nevertheless, debt also possesses an extra risk to the firm, which can lead to the bankruptcy and full liquidation of the company, therefore the share of equity in the capital is essential for healthy development of the firm (Hillier et al. 2012, 522). In this chapter, the concepts of debt and equity will be presented and compared. There are also numerous theories covering the topic of capital structure, its optimum mixture, and influence on the firm, such as Modigliani-Miller theory, Tradeoff, and Pecking Order theories, which are also described in this chapter of the thesis.

The main constituents of the capital traditionally stay debt and equity (Figure 1). Both have its types and sources, analyzing which, it becomes possible to create the optimum mixture of debt and equity and minimize the capital cost and risk, as well as boost the performance of the company (Chadha & Sharma 2015, 295-296).



Figure 1 Capital structure sources. (Adapted from Arnold 2007, 190-194)

Equity

The first part of the capital mix is equity – contract, evidencing a residual interest in the entity's assets after the deduction of all the liabilities, and not bringing the obligation of cash or another financial asset delivery to another entity, for example, shareholder (When does debt seem to be equity 2018). Usually, in corporations, equity capital is the capital generated from the shareholders, who have the voting rights, control, and dividend payments as an addition to their investment. Nevertheless, equity can be also raised internally, by owing from family and friends, as small businesses do, angel investors – wealth individuals who are willing to invest in to the start-up with high growth potential, and venture capitalists, who as well invest their personal funds into established companies with high growth potential (Equity Finance 2015). The firm has no financial obligation to the owners, considering the dividend payments and capital appreciation, however, the obligation to the balance sheet is lifelong for the firm. Mainly the money or their equivalent flows to the public traded firms, which are analyzed in this thesis, through the issuing of the common shares. (Agarwal 2013, 12-13.)

This type of shares, which is also called ordinary shares, is used for financing the long-term assets of the company and gives the right to the shareholder to have the control over the firm. Shareholders, owning these shares can make crucial for the firm's development decisions on the composition of the team of directors, strategic policies, type of activities, and merging with the other company. They receive their part of the distributed dividends, which is not fixed, and have a right for the assets of the company in case of liquidation of the firm. However, the shareholder does not make the agreement with the company that he can receive back the initial amount of capital he invested, what differs the equity from debt. Moreover, the holders of this type of the securities depend on the growth of the firm and its success in operations. Consequently, in good times their return increases, but in unpleasant periods for the company, shareholders may lose their money and receive nothing from the firm. (Arnold 2007, 193-194.)

Preference shares are the non-commonly used source of financing which usually constitutes 3-5 percent of the capital. Preference shares offer the fixed rate of the dividends to its owners, nevertheless, in case of bad performance of the firm, these dividends can also be decreased. This type of shares gives the right to the holders to get the dividends before it is paid to the ordinary shareholders. These shares suggest no voting rights to its owners and are not connected with the extraordinary positive performance of the firm due to the fixed payments. Although the high rate of return keeps it attractive preference shares are riskier than ordinary shares as they are valued after the bonds, and in case of liquidation go in the queue after the ordinary shares during the assets sell-off. (Arnold 2007, 196.)

One more way of raising the equity for the firm is an issue of warrants – long-term call options on the issuing firm's equity. They give to the holder the right to buy the share of the company at a pre-specified price for a given period of time. (Hillier, et al. 2012, 61-62.)

Out of the notion of the equity and common shares, which compile it, the positive and negative sides of it can be distinguished. The advantages for management issuing the equity were stated by the Central Highlands Development Corporation (2015) and others.

- Unlike the debt financing, there is no obligation to pay interest, as the shareholders have the long-term perspective and can agree to have several periods without return to get higher one afterwards, what provides extra freedom to the management on using the cash to invest in new projects, which can boost the performance of the company;
- as the shareholders of the company have a direct influence on the development of the firm through the voting right, they can bring not only the money, but their experience, managerial and technical skills, and network connections, increase the credibility of the company on the market;
- equity financing is considered to be less risky, as there is no amortization plan of regular fixed payments, as it is in debt financing, what increases the solvency of the company and decreases the risk of bankruptcy (Zickefoose 2014,1);
- equity is not demanded to be paid back if the business fails (Hecht 2016).

Nevertheless, despite all the pros stated, equity has its cons, which stop managers to make the whole capital out of equity. First of all, Hecht (2016) states that the main disadvantage of the equity for the corporate government is the need of sharing the decision-making right with the shareholders. Considering the agency problem (discussed more in chapter 2.4), the decision can differ, as the shareholder is willing to increase his wealth, while the manager can desire to invest in a stakeholder's welfare. Secondly, the return which is demanded by shareholders is sometimes even higher than the interest of the debt. Even though the company cannot pay it for the certain period of time, eventually, it still has to share it's earning with the shareholder. Over the time, the distribution of profits can exceed the number of loan payments that could be made, what will restrict the growth opportunity in the future. (Zickefoose 2014, 1; Fong Chun Cheong 2015, 4).

Debt

The other part of the capital is debt. Debt is an arrangement between the company and the debtholders which has the interest and maturation date decided (Swanson, Srinidhi

& Seetharaman 2003, 2). Corporate debt demands regular repayments, which can be done in the form of interest or capital payments. There are also possibilities for the extraordinary compensations such as commodities and shares, however, this way is not used often. Usually, companies repay interests or capital repayments during the whole period or at once at the end of the borrowing. (Arnold 2007, 242.)

Debt and Equity differ in several significant respects.

- The claim of the debtholder is paid in full before the equity holder's claims;
- unlike debtholders, equity holders directly control the firm by electing the board of directors;
- interests paid to the debt-holders are tax-deductible to the corporation, as they are considered as an expense, what creates the "tax-shield" for the company when using debt financing. (Hillier et al. 2012, 59.)

Debt can be got through bonds, bank borrowings, leases, commercial papers, etc. Bonds are the long-term contracts, according to which the bondholders lend money to the firm, having in return the series of interest payments, called coupons, till the maturity of the bond. At the maturity date, the company gives to the bondholder the specified principal sum, known as a face or nominal value of the bond. Bonds are usually considered as a public debt, what means that bonds can be traded on the stock exchange, besides being in the over-the-counter market, occurring only between the investor and the bond dealer (company). Nevertheless, the majority of investors prefer to hold the bonds until their maturity, so its secondary market is much less than the market of shares. (Arnold 2007, 242-243; Berk & DeManzo 2017, 898-900.)

The other form of debt is a bank borrowing, which is characterized as the main source of external financing of the firm. The firm receives the money on the terms of the arrangement that it will pay the fixed interest during the period or in another way, which is agreed with the bank. Repayments of the borrowing are personalized and negotiated with the bank representative. The decision is made on the position of the firm and its reliability. When getting the loan from the bank, the company should be ready to prove its security. The bank needs to evaluate the project and see the detailed cash flow forecasts to be sure that the firm is able to repay the loan. (Arnold 2007, 245-247.)

Sometimes, if the large loan is needed, one bank cannot provide it to the company, as it increases the lender's risk of failure on the part of the borrowers. Thus, they suggest to the firm the number of syndicated loans, when several banks contribute to the total loan and diversify their risk by this. The main bank, managing the loan, supports the process of syndicating the loan and negotiating with other banks to form the group. (Arnold 2007, 250.)

The company can also increase its debt funding through the leases of the assets in use to the third party in return for contractually fixed payments. Commercial paper is the other source of short-term debt for the firm, which allows borrowing the money from the lender for a pre-specified period of time, usually one to six months. However, due to the nature of the short-term source of financing, the interest rates of commercial papers can become extremely high. Last but not the least, the company can make the contract with the supplier to have the trade credit so that the payment for the new asset purchases with being delivered later. (Hillier, et al. 2012, 32-34.)

Otzekin (2015) called the capital structure formation decision a "trade-off between the benefits of debt and the costs of debt" (303). Consequently, there are several advantages of debt, which encourage managers to borrow.

- When a company borrows money as a debt, it is obliged to pay fixed interests only, consequently, if the revenue is growing the profit of shareholders is also increasing, while the debt payments stay unchanged.
- Tax deduction is the other benefit. Referring to the income statements of the companies it can be clearly seen that the tax is deducted after the interest payments, that means that the smaller sum is obliged by the tax, a company saves more money. So, the debt creates the tax shield for the company.
- The nature of the relationships between the debtholder and the company assumes that the borrower is responsible for making payments on time.
 However, the control over the actions on the company's run stays in the hands

of the borrower without outside interference. (Allen 2017; Rajan & Zingales 1998, 53-55; Berman & Knight 2009.)

Nevertheless, even considering the advantages of the loan, there are still dark sides of this part of the capital.

- Bank or other lender stays in the priority in case of repayment of all liabilities when the company is bankrupt or closing. This fact also creates extra risk for the shareholders, as they will get their revenue in the form of dividends after the debtholders. Consequently, high debts of the company decrease the result of the return on equity ratio, as the net profit is also calculated after the repayments to the debtholders.
- Each loan has an impact on the credit ratings, what can negatively affect the interest rates as well as the terms of loan suggested by the bank.
- High level of debt increases the risk of bankruptcy, so the cost of bankruptcy rises as well. Creditors can claim the assets of the company in case of non-compliance with the terms of the loan, what can lead to the liquidation of the firm, and decrease the flexibility of corporate governance' decisions.
- Issuing equity is harder when having the debt, thus in case the company wants to raise equity, the market could not be ready for it, as the investors will see it as a signal that the firm is not able to serve additional debt or is going to share expenses with new investors.
- In case the loan is taken to invest in the assets or projects, managers should ensure that there will be enough cash generated by the time of the loan repayment.
- Agency cost appears as the conflict between the shareholders and management. Both are seeking for the benefits, however, as it was said before, shareholders suffer from the high leverage of the firm, as their revenue decreases. (Allen 2017; Arnold 2007, 242; Brealey, Myers, & Allen 2014, 716-719.)

Based on the upper discussion, the capital structure mainly means the ability of the firm to balance between borrowing and equity rising so that the shareholders' wealth is increasing, while the situation when the paying the debt leaves shareholders without any return and brings the company to the bankruptcy is unlikely to happen.

Capital structure decision is the long-term strategic decision which should be taken, revised, and modified in the rolling period. (Agarwal 2013, 12). This decision is done by the management of the company and is aimed to make the ideal capital structure so that it meets the interests of both – stakeholders and shareholders of the firm. Theoretically, the optimum structure is the financing mix which can maximize the value of the company (Baker & Martin 2011, 1-2). Nevertheless, the existence of such ideal formula is under the doubt in the financial world. The first theory of financing business was developed by Modigliani and Miller (1958), who stated the capital structure irrelevance proposition. They suggest that due to the reason that the firm divides the dividend cash flows between investors, as well as the condition that all parties have equal access to financial markets, the capital structure of the firm does not affect its market value. The proposition assumes the existence of perfect capital market, consequently, financial innovation should extinguish any deviation from the suggested equilibrium. They claimed the value of the firm to be constant regardless of the balance between debt and equity. In their second proposition, they have also proved that the Weighted Average Cost of Capital is constant, as the rate of increase depends on the spread of cost of debt between the cost of capital. Therefore, the leverage is irrelevant considering the value of the firm. Nevertheless, in further research, they argue that considering the tax advantage of debt, transaction costs, bankruptcy costs, and agency conflicts, the firm's capital structure can increase the firm value. It depends on how the firm's assets, growth opportunities and cash flows are offered to the investors in form of debt and equity claims. So, the theorem is relevant only in conditions of taxes absence and perfect market existence. As the result, Modigliani and Miller's theorem highlights the significance of the financing reasoning but does not show how to create the capital structure. (Frank & Goyal 2007, 5-6; Salim & Yadav 2012, 157; Focardi & Fabozzi 2004, 84; Myers 2001, 81-86.)

In the last decades, more theories about the importance of capital structure decisions appeared. Based on the fact that Modigliani and Miller's theorem does not consider

the corporate tax and bankruptcy cost, the Trade-off theory was developed. When the tax was added to the proposition, the advantage of debt – tax shield appeared. In 1984 Myers has formulated this theory as the reflection of perfect capital structure on the trade-off between the benefits of debt in tax protection and the threat of bankruptcy it causes. This theory says that the optimal leverage can be achieved when the marginal present values of the tax shield and of the cost of financial distress on additional debt are equal. It is assumed that high profits mean low debt. But based on the trade-off theory the relationship is the opposite. If the firm has high profits, it can mean that there is more taxable income to shield and that it is possible to service more debt without the financial distress risk. (Frank & Goyal 2007, 6-7; Brigham & Ehrhardt 2007, 578, Sekar & Gowri & Ramya 2014, 446; Myers 2001, 88-91.)

The other theory, which was developed by Myers and Majluf in 1984, says that there is no optimal capital structure as the equity of the firm can be internal and external. They state that firms should prefer internal financing to external funds. Internal financing – retained earnings not possessing information asymmetric. But in case it is inadequate, the firm should turn to the debt instead of equity. According to several researches, including Asquinth and Mullins (1986), the announcement of issue new stocks drops the price by 3%. Consequently, the managers will not choose this option, not when they think their shares are overvalued, neither when they are undervalued. The debt was considered as the safer source of financing, as it has less downward impact on the share price. In the ranking of Myers, the retained earnings are better than the debt, and the last one in better than equity. So, the company should follow the pecking order while choosing the financing type. Choosing pecking-order theory, managers are aimed to maximize shareholders' wealth by protecting the price of the share. (Frank & Goyal 2007, 17; Sekar & Gowri & Ramya 2014, 446; Myers 2001, 91-93.)

The issue of finding the perfect balance between debt and equity has also concerned Binsbergen, Graham and Yang (2011), who have developed the approach of predicting what amount of debt should be used by the firm to increase the market value and other determinants of success without putting the company in the considerable risk. They have estimated the cost of debt and its risk to prove that with debt growing to the certain extent the firm performance can increase, nevertheless, there is a point at which the disadvantages of borrowings will start to dominate and natively affect the success of the company. They have illustrated their theory in a scheme representing the significance of finding the perfect balance comparing the marginal cost of debt and marginal benefit of debt, where their equilibrium is a perfect intensity of debt needed to be acquired by the firm. (Figure 2) (1-2.)



Figure 2 Optimal Debt Model (Adapted from Binsbergen et al. 2011)

There are a lot of different measures of capital structure and one of them is leverage the proportion of debt and equity, which shows the relationship in the capital structure between borrowed and owner's funds. Leveraged companies are those which have both options of funding of their capital – debt and equity. (Chadha & Sharma 2015, 295-296.)

Otzekin (2015) has developed the main four predictions of the leverage level of the firm based on the major arguments managers use while choosing the optimal capital structure: bankruptcy costs, tax benefits, and agency costs. The first prediction is the decrease of leverage of the firm (the amount of debt) caused by the higher bankruptcy cost. The author of the research claims that lower debt ratio can mean that the company is less profitable or smaller in size, with fewer tangible assets and operation

in the economy with higher inflation. Secondly, the increase of debt can be caused by the higher value of tax shield. Thirdly, firms with high profitability but law growth opportunity can carry more agency cost of equity and, consequently, should have more debt. And fourthly, the ones with more tangible assets and law growth opportunity will face lower agency cost, and also should carry more debt. So, the conclusion can be made, that the capital structure decision is based on the nature of the firm, its micro, and macro environment, what allows to follow the pattern. (303-304.)

2.2 Performance of the firm

Performance of the firm is the main factor considered in strategic management, as the aim of the latter is to make the long-term perspective of the company's development for maximization of the resources used in relation to organizational objectives. Performance became the main construct of the strategic decision making and is often used in the researches as the dependent variable. (Selvam et al. 2016, 90-91.)

Venkatraman and Ramanujam (1986) considered the performance as the part of organizational effectiveness and divided it into the financial and operational ones. In their model of three circles, they have presented the financial performance as the part of the business performance, which, in its turn, is the part of the overall organizational effectiveness. The latter covers broad factors of the organization's functioning, such as resource acquisition, engagement in legitimate activities, and accomplishment of the goals stated (802-804). The business performance which is mainly referred in this thesis represents the effectiveness of the company in achieving the financial and operational outcomes (Santos & Brito 2012, 98). The financial performance is defined as the effective use of resources, growth, and profit of the company, which justify the existence of the company, while the operational one is represented by the satisfaction of the stakeholders – any individual or group who can influence or be influenced by the firm's achievements (Selvam et al. 2016, 92-93).

The need for the performance measurement is unnegotiable as it allows to identify the level of effective usage of the organizational resources, what enhances the management process (Al-Matari et al. 2014, 25). Hax (2003) underlines the importance of the performance measurement by stating its functions. Firstly, it serves

in the creation of the managers' incentives, by compensation in accordance with performance and their reputation and professional career. Secondly, the market reaction on the performance can increase or drop the firm value (more in the following subchapter). Thirdly, it can make the company attractive for being merged with another firm. (675.)

Consequently, the performance of the firm is significant to different parties included in the firm's operations, as it directly affects their interest. In this sense measuring the performance includes the identification of the main stakeholders and their satisfaction evaluation. Freeman (1984) defines stakeholders as the individuals who can influence or be influenced by the achievements of the company's objectives (46). Clarkson (1995) divided the main stakeholders of the firm into the two groups: primary, which includes shareholders, investors, customers, employees, and suppliers, and secondary, who do not have direct relationships with the company, such as governments, trade associations, communities, and political groups (106-207). Freeman (1984) has formulated the stakeholder theory which says that the relationships between business and its customers, suppliers, employees, investors, and others who have a stake in the company are interconnected. Thus, the firm needs to create the value not only for the shareholders but the stakeholders as well. (Freeman 2014.) The theory significantly affected the morals and values of managing the organization, and, consequently, influenced the process of performance objective setting of the companies. Stakeholder theory suggests the different from the economic view of value maximization perspective on the goals of the firm and uses the satisfaction of the groups of stakeholders the main performance measurement. (Santos & Brito 2012, 99.)

Nevertheless, the ways of affection on the interests of the stakeholders, and, therefore, on the performance measurement can be classified into several dimensions. As one of the main objectives of the firm is the shareholders' wealth maximization and meeting the expectations of other investors the financial performance becomes the essential indicator of the company's ability to generate revenue from business activities. This type of performance can be represented by the profitability of the firm, its growth and value on the market. These three aspects complement each other. Also, considering the stakeholder theory, strategic or non-financial performance stays important to

measure, so it will be possible to fully evaluate the effectiveness of the firm. (Selvam et al. 2016, 93-94.)



Figure 3 Grouping of determinants for firm performance (Adapted from Selvam et al. 2016, 95)

Market-based performance

The market value of the firm shows the expectations of the future performance of the firm. It correlates with the historical profitability and the level of growth, as well as incorporates the possible future market changes and competitive moves. (Selvam et al. 2016, 94.)

From the perspective of the shareholder, there are several effective ways to assess the standing of the company and its shares value. Usually, the market-based performance of publicly listed companies is measured to evaluate the position of the firm on the market – if the stocks are overvalued, priced fairly, or undervalued. (Pealver 2017.)

There are different metrics of market-based performance. Comparing the book value with the market value of the company is one of the most efficient ways to do this. The book value or net worth is the shareholders' equity stated in the balance sheet as capital and reserved - the amount of money which were invested in the company. It is the surplus of the amount of all goods and rights of the company over its debts. (Fernandez 2017, 3). It can be easily calculated by subtracting total liabilities from total assets (Gad 2017). Book value is written in the financial statements and can be considered as the accounting value. According to Fernandez (2017), the book value suffers due to the fact that it is by definition an accounting criteria and subject to a certain degree, and, consequently, significantly differs from the market value (3). By the definition of the International Valuation Standards Committee (2003) market value is a representation of the value of the company in the situation of exchange, or the amount which property will bring in case it will be offered for sale in the open market at the date of valuation (95). The other definition of market value is the calculation via multiplying the number of shares outstanding to the current share price (Market Value, Nasdaq). Market value is calculated by the analysis of the stock market. This value significantly fluctuates during the different periods of lifetime of the company, as it is calculated by share price – the number, which is affected by the forces of supply and demand, change in the value of assets with the depreciation and other market factors. (Folger.)

Sharma, Branch, Chgawla and Qiu stated several reasons for the effectiveness of this way in market performance measurements. First of all, it is its incorporation of historical and current, forward-looking market indicators of the performance. This allows eliminating the probability of data manipulations effect on the result of measurements. Usually, it appears in the income statement and influences the earning-based ratios and measures. Book value is the cumulative variable, what makes it less susceptible to the manager's manipulations. Moreover, due to the cumulative origin, the book value is quite stable, compared with annual earnings and cash flows. Secondly, the effectiveness of the market and book value comparison is appearing in its ability to measure the difference between the value of net assets and the value which is assigned to them by the market. Consequently, it represents the premium or discount given by the market to the company on its assets and reflects the efficiency

of the firm from the management perspective. Thirdly, the comparison indicates the growth potential of the firm, as it shows the incentives for extra capital investments to grow the firm. (4.)

Accounting performance

The other performance of the company which can also be measured is the accounting performance. Brealey, Myers, and Allen (2014) say that this measurement will represent the performance of the manager and will help to compare firms by managerial quality. The accounting performance is also often used as the measure of the profitability of the company. It can be measured via studying the returns in comparison with the invested capital. (Vernimmen, Dallocchio, Le Fur, Quiry & Salvi 2014, 216-217). Profitability performance is the measure which answers the question of how successful the business is and whether it fully utilizes its assets, and consequently, whether it makes a reasonable profit, and if it can be considered as efficient business. Buying shares of the company, investors are expecting the firm to grow its cash flow or earnings streams, as profits represent the company's long-term growth potential and power keeping. (Bajkowski 1999, 5.)

Accounting performance is measured based on the financial statements analysis and ratios counting. According to Bajkowski (1999), financial statement analysis is the implication of various analytical tools in order to quantify the operating and financial conditions of the firm. The most popular tool is the ratio analysis, as it expresses the mathematical relationship between two items. (3.) Calculating the returns to evaluate the profitability, the main part of the capital structure - equity is considered in the most cases. Return on equity is the calculation which assesses how efficiently a firm uses its shareholders' equity to generate returns (net income). (Oliver & Horngren 2010, 695.)

The equity in the firm can decrease due to its borrowings and increased liabilities, what will raise the ratio up, however, it could not represent the good performance in this case (Gallo, 2016). Petersen and Plenborg (2012) distinguished the following factors, which affect the trends in Return on Equity:

- operating profitability,

- net borrowings interest rate after tax,
- and the financial leverage.

Based on the judgments of these sources, it is clearly seen that the academic literature assumes that dependence between return on equity and leverage of the company exists and the capital structure has a significant influence on profitability performance.

Accounting performance can be considered as a more reliable measure than market performance, as it is not affected by the demand and expectations of the investors, which influence significantly the market value of equity. Moreover, the return on equity can be calculated for the entity of the company as well as for the whole enterprise what can let the comparison different parts of one firm. On the other hand, some prefer to carefully calculate these metrics and not asses the performance-based exclusively on them, as the return calculations are quite subjective. Calculations of costs and other expenses sometimes can be very approximate. To understand the results of the evaluation, calculations should be made for the several years and compared, to distinguish, whether there was the growth in the efficiency of the firm, as well as be done together with other tools to evaluate the accounting performance of the company. (Gallo, 2016.)

Hybrid Performance - Tobin's Q

The goal of the management is to increase the value of the firm. The last is generated by the assets present value of the cash flows that consist of the assets in place and growth opportunities. The firm value is estimated by the market capitalization of the debt and equity. (Habib & Ljungqvist 2005, 2056.)

In 1969 Tobin has presented the new measure of a firm's performance which is the mixture of accounting and market values of the firm. Mainly it is used to evaluate the overall market performance of the company – whether it was undervalued, fairly valued or overvalued by the market. Tobin's Q is the ratio of the market value of debt and equity and the replacement cost of the assets in place. If the result is more than 1, then the firm is investing in the assets which are expected to create value. Nevertheless, calculations are hard to make due to the unavailability of the necessary

data. Market value is easy to find by summing the values of stocks and bonds the company issues, but the denominator cannot be accurately estimated. Intangible assets are difficult to value, so the researchers ignore the cost of intangible assets in their calculations. (CFA Program Curriculum 2018 Level III 2017, 157-158; Habib & Ljungqvist 2005, 2056.)

Non-financial performance

Strategic performance of the firm is considered to be the new effective way of measuring the effectiveness of the firm. According to Ahmad and Zabri (2016), classical financial measures of performance do not respond to the trends of the volatile world, such as the development of the technological and competitive environment. Non-financial performance highlights the strengths and weaknesses of the business operations, overall growth, and development. With the use of non-financial measurements, it is possible for management to track the environment, size, structure, and strategy of the firm. To assess the effectiveness of the firm, managers determine the type of the information needed for the execution of their responsibilities in directing, planning, monitoring and controlling, and choose the qualitative measurements they want to test. (476-478.)

The measurement of non-financial performance is proved by the main advantage over the financial measures it has. Financial evaluation is focused on the annual and shortterm performance, and do not represent the progress towards the meeting of the customer requirements or improving the competitive position. The non-financial measures allow to assess the longer-term strategic goals and provides data about strategic performance and strategic plans implementation. Such measures as investments in research and development and customer satisfaction programmes, as well as other strategies aimed at the maximization of stakeholders' welfare require expenditures charged from the period they are incurred and reduce profits. Nevertheless, it can improve future profits, and, consequently, contribute to the longterm benefits of the decisions made in the present. (Non-financial performance measures 2000, 1-2.) The strategic factors of the performance are directly connected with the investments into the human resources practices, service efficiency, R&D, social and environmental performance (Selvam et al. 2016, 93-94). The company can use new debt to finance the investments and boost the non-financial performance of the firm. Acting in the interests of the shareholders, management starts to overinvest and dilute the claim of the debtholders. After investments give the earnings, the equity holders would like to lever the firm back to its full debt capacity, which can be higher than before the investment. This is how the relationship between the leverage and investment behavior of the firm appears. (Arafat et al. 2001, 4.)

On the other hand, in many companies, the drivers of success are their intangible assets, like intellectual capital, goodwill, or customer loyalty. Even though it is hard to value the intangible assets, the non-financial measures can help to quantify these indicators. (Non-financial performance measures 2000, 1-2.)

Intangible assets can be divided into two categories: acquired externally and selfcreated. The first include mergers and acquisitions are done by the company, while the second are the items of substantial value, but often not recorded in financial statements due to the accounting difficulty. This type of assets includes brand names, trademarks, patents, developed technology, in-process research and development, and customer relationships. The correlation between leverage and the amount of the intangible assets of the firm is actively tested in the modern financial world. The tendency is that the companies with more tangible assets have more debt. The explanation of this financial decision lies in their ability to be redeployed at relatively low transaction costs, in case the borrower defaults. Moreover, due to the easy valuation of tangible assets, the borrowing cost can be low, if these assets support the debt. Intangible assets tend to be riskier. (Lim, Macias, & Moyer 2016, 1-4.)

Performance measurement

To measure the performance of the firm the various financial and non-financial indicators are used. To add the comparative character to the analysis, show the dependence between accounting figures presented in the financial statements, and highlight the significant data to the owners and investors, debtholders, and financial

executives, financial ratios are used. Financial ratios analysis is an analysis of financial statements and interpretation of the financial data of the firm for the certain period to evaluate the performance and get the clear picture of the financial health of the firm. (Brealey, Myers, & Allen 2014, 704-705.)

With the use of ratios, it is possible to evaluate and compare the performance of the firm with the industry benchmark and results of competitors, as well as make the inner-firm comparison and draw the trend of improvement or deterioration of the financial position. Financial ratios allow evaluating the liquidity position of the firm, profitability, solvency, stability, quality of management, safety and security of the loans. (Saiduzzaman, 9-10.)

Even though financial ratios analysis is highly used to evaluate the performance, it has several limitations, which can affect the reliability of the results.

- The balance sheets of the company are distorted by the inflation, as they present historical data in the values, which are different from the "real" values of the assets at the time of the analysis;
- ratios present the numbers, but not the causing factors, which led to this indicator;
- considering the inter-comparability function of the ratios, it is important to consider that accounting policies vary in companies, so the comparison can become irrelevant;
- as the data for the analysis is taken from the statements created by the company, it is important to consider the probability of the data manipulation by the management, what leads to the false indicators. (Saiduzzaman, 4-6.)

2.3 Risk

According to Madura and Fox (2007), the main goal of the company is to maximize its value, and, consequently, maximize the wealth of the shareholders, who have invested to the company to get the return (2). Exploring the literature, it is seen that there are numerous performance measures which give the information to shareholders and stakeholders through comparing the market with the book value, revenues with assets, investigating the capital structure, allocation and balancing between equity and debt. Referring to the literature about the investment strategies and the explanations on how to choose the company to invest into, the other performance indicator for the company can be distinguished – risk and its measurement. For example, considering the work of Stephen Lofthouse "Investment Management" (1994) which is written as the guidance to the investors on how to create the profitable and minimum-risk portfolio, can be also considered as the guide to the top managers on what shareholders expect and what should be achieved. In other words, the risk with which shareholder will face if he puts his money to the firm is one more factor to consider while evaluating the performance of the company.

According to International Federation of Accountants (1999), the risk is classified as an uncertainty in future events which can influence the organization's strategic, operational and financial objectives' achievements (Harvey 2008, 3). From both perspectives of companies and investors, risk-return trade-offs play a significant role in corporate finance theory (Watson & Head 2016, 242). The risk which shareholders face holding shares of the company in the portfolio is that the dividends and final share price will be less or more than it was expected, so the realized return becomes risky (Berk & DeMarzo 2017. 370). Rational shareholders are striving to reduce the faced risk for a particular return they expect to gain. To create the less risky portfolio they need the firms to understand the nature of their risks to be able to quantify it to make them manageable and controllable. (Watson & Head 2016, 242.)

The quantification of risk associated with the investment is essential for investors and corporate governance' decision-making process. Higher risk causes the uncertain return which variance is increasing. Consequently, the mathematical measurement of risk discovers the dispersion of the possible returns around the average return. (Quiry, Le Fur, Salvi, Dallocchio, & Vernimmen 2011, 321.) The total risk faced by the company is measured by the standard deviation, which helps to understand the reliability and consistency of the firm's good performance, and, consequently, high returns on the shares to the investor. (Watson & Head 2016, 242.) Standard deviation is the measure which indicates "the dispersion of a set of data from its mean". If the

prices of shares are further from the mean, then the deviation is high what represents high volatility of the share. (Standard Deviation)

By the nature companies' shares are affected by two big factors – broad market factors and factors unique to the share, in other words, systematic and unsystematic ones. (Lofthouse 1994, 36). The first one, unique risk, called unsystematic, is a firm-specific risk which depends on various factors in the industry and the company itself. In other words, it is the risk of the particular company performing badly or going into liquidation. (Watson & Head 2016, 245-246.) Unsystematic risk depends on all events that are specific to the individual firms, while it has nothing to do with the general market-wide factors. It is possible to measure through the deep qualitative analysis of the company's performance and factors which affect it, such as capital structure, managerial approach etc. Investors manage to deal with unique risk diversifying their portfolio and investing in the assets of different companies in various industries and locations. In this way they reduce the firm-specific risk of their total portfolio. (Dimson 1998, 20.)

Unsystematic risk is represented by the numerous factors which can affect the firm's performance and drop the share price. This financial risk is represented by liquidity, industrial, solvency, fraud risk, and many others. The first, liquidity risk, appears from the purchase and sale of securities affected by the business cycles. The company can face this risk when it is unable to sell assets at their carrying value or cannot make on-time payments due to the lack of assets to the sufficient funds. Solvency risk occurred when the party fails to perform according to the contract and the company is unable to meet its loan obligations even in the case of full company liquidation. Strikes of employees, lack of competitiveness or appearance of new competitors on the market, technological breakthroughs are the part of the industrial risks which can stop the operations of the company or even its existence, and demand rapid and effective changes in the firm to overcome the risk. The fraud risk appears due to the information asymmetry when one party is cheating or lying to gain an unfair advantage. (Quiry, Le Fur, Salvi, Dallocchio & Vernimmen 2011, 315-316; Akrani 2012, 4.)

Unsystematic risk can be also classified as an operational one, which is related to the activities of the firm, arising from its structure, people, products, and processes. Usually, it appears due to the human errors. Operational risk can include the risk of using the inappropriate model for assessing and managing financial risk. It can arise from the incorrect actions of people, who do not follow the organization's procedures, practices, and ruler. Operations can fall in risk due to the legal incompetence when parties are not competent to enter the agreements or make the matching with government policies transactions. Regulatory risk can also be considered as unsystematic, and specifically operational risk, if the changes in regulations affect the particular country or industry and unfavorably affect the investor. (Akrani 2012, 5)

Market risk is called systematic risk, it spreads for the whole industry and does not depend on the company's own performance. The factors causing the systematic risk are business cycles, government policy, changes in the interest and exchange rates, natural disasters, etc. (Watson & Head 2016, 245.) To deal with the risk investors demand a higher return to secure themselves from the market risk. The systematic risk can also be classified into the several ones caused by various global factors. The first, most common type is an interest rate risk, which affects the financial well-being of the entity and makes the company to redesign their financing strategy, as with falling interest rates, the bond rates start to grow. The exchange rate risk occurs from the fluctuations of the foreign currency exchange rates in relation to the home currency of the company, and vice versa, what leads to the denomination of the value of the assets held in the foreign currency. Political risk is exposed by the decision of political authorities, for example, nationalization without compensation, revolution, discriminatory tax policies, inability to repatriate capital. Inflation risks the investor to recover his investment with a depreciated currency. (Quiry, Le Fur, Salvi, Dallocchio & Vernimmen 2011, 315-316; Harvey 2008, 4; Akrani 2012, 5). Systematic risk is an undiversifiable risk. Figure 4 shows that even with the excellent diversification of the portfolio by the investor, systematic risk cannot be eliminated and appears constantly due to its effect on the entire industry, country, or world. (Watson & Head 2016, 247.)



Figure 4 The amount of unsystematic risk diversification obtained as the number of investments increases (Adapted from Watson & Head 2016, 246)

The estimation of the systematic risk is essential for investors, it cannot be reduced by the portfolio diversification like the firm-specific risk. So, the need of the sensitivity of the stock to the systematic issues exploration appears as it can influence the whole economy. Assuming that the calculations are done with the efficient portfolio – a portfolio that contains only systematic risk and cannot be diversified, the riak can be measured by the calculation of the sensitivity of the security return to the market portfolio return. Market portfolio consists of all stocks traded on the market. To estimate the systematic risk of the company though exploring the sensitivity of the stock Beta is used as a tool. (Berk & DeMarzo 2017 375.) According to Steven

Nicolas (2017), it measures the volatility of the asset in the relation to the overall market. Watson & Head (2016) define it as an index of responsiveness of changes in return of the security towards the change in the stock exchange market. The author states that by the definition Beta of the market should always be 1 as it acts as a benchmark against which investors usually measure the systematic risk. (260.)

Knowing the Beta, it is possible to calculate the required rate of return of investment – the minimum return that investor is expecting to get. Knowing this value, the manager can compare it with the actual performance and estimate, whether the firm met the expectations of the shareholders or not. To find the answer, the first calculation which is needed to be done is the Capital Asset Pricing Model (CAPM). The model was created by Bill Sharpe, who managed to relate the return on assets to its risk. The main idea of this model is that investors expect the reward for their contribution to a risk of the portfolio. Higher the non-diversifiable risk, higher the required rate of return. In other words, the model helps to find the relationships between the systematic risk and expected return. (Dimson 1998, 19-20.) As the majority of academic models, CAPM is based on the several assumptions. The first one states the rationality of the investors considered in this theory. According to the model, the goal of investors is to maximize their utility. The second assumption is about the availability of information so that all of the investors can have similar expectations. Thirdly, investors are able to borrow and lend at the same risk-free rate. Fourthly, shareholders should hold the diversified portfolio so that that unsystematic risk is limited. Finally, the assumption holds that all of the capital markets are perfectly competitive. (Watson & Head 2016, 258-259.)

The model can be implemented, and the rate can be found through the following formula:

$$R_a = r_f + \beta (R_m - r_f)$$

Where:

- r_f Risk-free rate
- β Beta of the security

 R_m – Expected market return

As it was said before, knowing the actual return and the expected one, it is possible to compare and evaluate the performance of the company in sense of ability to face and overcome the risk. According to the study of Samarakoon and Hansen (2005) Jensen's Alpha is the metric based on the CAPM, which shows the deviation of the actual performance of the firm, which is measured by the actual stock return, from the expected return benchmark, which is measured by CAPM (8). For the first time this measure was used by Michael Jensen in 1968. The unique usability of this ratio is explained by its dependence on two factors: actual return and beta. Nevertheless, it does not reflect the risk of the firm. Generally, higher risk leads to the increased Jensen's Alpha, but still this measure is the absolute measure of market performance. (Jensen's Alpha, 1.) If the Alpha is more than zero, the portfolio earned rate of return is greater than expected one, company overperformed itself in the eyes of shareholders and created more value and wealth for them. (Samarakoon & Hansen 2005, 8-9.)

2.4 Grand Theories interconnecting the capital structure issue and performance of the firm

Agency cost theory

Out of the discussion of the capital structure and performance of the firm it is seen that the corporate governance of the firm makes the financing decision to meet several goals. Firstly, the capital structure should positively affect the performance indicators of the company, such as market value, profitability, which are significant for the shareholders and investors. Secondly, the firm should meet the interests of the stakeholders, based on the stakeholder theory of Freeman (1984) (discussed more in chapter 2.2). Nevertheless, Myers (2001), states that the interests of the financial managers (agents) and shareholders or debtholders (principals) cannot be aligned in practice (95-96). Agency theory developed by the Jensen and Meckling (1976) stresses the separation of the ownership and control in public corporations. They stated that the agency problem (agency cost) is happening when the principals hire the agent to manage the company and delegate to him the decision-making power. The conflict of interests happens due to the fact that owners and agents start to behave according to their own interest, as well as the rationality and ability to form the

unbiased expectations of future wealth by both sides. (308-309; Barnea, Haugen & Senbet 1981, 8.)

Mainly the agency cost appears due to the partial ownership of the shares by the management, what causes them to work less vigorously and consume more of offices, cars, hotels, as the owners of the firm bear the costs. Consequently, with increased costs, the value of the repayments to the owners is decreasing, and with the irresponsible decision-making, the market value of the shares is falling as well. (Grigore & Stefan-Duicu 2013, 862.) The agency theory suggests that debt can restrict the unwillingness of managers to maximize the firm value. First of all, Jensen (1986) considered that in a high-debt company management are obliged to pay interests and have less free cash left for wasting it on the organizational inefficiencies. Vice versa, they are choosing the most effective ways to distribute these cash flows. Secondly, shareholders can delegate their control to the debt providers, so that the capital markets will have the possibility to evaluate the performance of the firm. (324-325.) From the other point of view, Grossman and Hart (1982) suggested that law debt causes less bankruptcy cost and managers of this companies are less penalized if the low profits appear (107-108). Last but not the least, firms with high leverage are less likely to be acquired, so the managers will not lose their position after the merging (Iavorskyi 2013, 8).

Nevertheless, the agency problem can appear also between shareholders and debtholders. The formers want to have a higher return and willing to take more risk, while the latter takes less risk and agree with a lower return. Hence, shareholders will prefer to take projects with higher risks and in case of success take the extra return, while if the project will fail the losses will be shared between debt and stockholders. So, the more leveraged firms take less risky projects. (Jensen & Meckling 1976, 337-338.)

Institutional theory

Making the strategic decisions, managers are affected by the internal and external environments of the company. Actions of the management depend on their perception of the external world and their understanding on how to contribute in it. Consequently, the operations of the firm are not independent and influenced by the social norms and expectations. The institutional theory is based on the concept of social construction and suggests that the external and internal environment of the firm is that which is subjectively understood and perceived by people in those companies. The main principles of the institutional theory are based on the assumptions that

- agencies like state, professional institutes, analysts and consultants, the media, etc. transmit the social perceptions on the organization and carry the beliefs about the appropriate managerial conduct;
- companies increase their "legitimacy" via conforming to social perceptions through securing the approval, support and public endorsement;
- this social perception can be institutionalized and difficult to change and resist;
- As the similar companies experience similar expectations from society and conformity pressures, they tend to adopt the same management strategies, through the process of "isomorphism". (Raynard, Greenwood, & Johnson 2015, 1.)

Social expectations can decrease the efficiency of the company, as the decision of being less efficient is done to meet institutional expectations. For example, the firm can financially support universities, spend time on serving the government committees and community. (ibid., 5.)

The capital structure of the firm, according to the institutional theory, is also affected by the legal and financial institutions. Financing decisions can fluctuate depending on the protected rights of the shareholders and creditors, ownership concentration, law enforcement, the quality of accountancy, which is released by the legal institutions, as well as the allocation of the financial institution's role between the banks and capital markets. Legal and financial institutions are interconnected, as, for example, the high investor's protection law will boost the growth of capital markets, what will affect the financial decisions of the firm, while in the situation of the poor-quality protection's laws companies are forced to be more concentrated on ownership and control structure. (Lopez-Iturriaga & Rodriguez-Sanz 2008, 3-4.)

2.5 Empirical Literature Review

The numerous researchers all over the world took the topic of capital structure for their study and tried to understand its impact on the performance and risk of the companies. They took different variables as dependent but left the Debt-to-equity and its variations as the main independent. All further stated findings were reached through the regression analysis. The empirical review shows that the market performance tends to be decreased by the higher debt borrowings. It was proved by Gokcehan and Waseen (2014) for Turkey companies (65-80). Oppositely, Collins et al. (2012) found out that for Nigerian companies the leverage affects positively the market value of the firm with high significance level. Hoque et al. (2014) have researched the controversial results and found out that the smartly levered companies can increase their market value with higher debt, however, after some point, the dramatically high debt decreased the market value of the firms (84). Ungwuanui (2012) has also proved this fact explaining it with the nature of the equity, which is riskier than debt (from the perspective of the investors). Consequently, investors expect from weakly levered companies higher rate of return on equity and market value. (53.)

Hasan et al. (2014) examined in Bangladesh the negative influence of increased debt on the Return on Assets and EPS, representing accounting performance. Based on their results there are no relationships between leverage and Return on Equity and Tobin's Q. (191-192.) The same results were found in Ukraine. Iavorskyi (2013) also proved the negative influence of increased debt on ROA. (22-25.) Similarly, highly levered companies had decreased ROA in SME's in the Netherlands and in China (Schulz 2017, 9; Shahrani and Zhengge 2016). Salim and Yadav (2012) proved the negative influence of high leverage on accounting performance, which was measured in their research by ROA, ROE, and EPS on the sample of Malaysian firms. They have also found out that Tobin's Q is significantly positively dependent on the increasing debt. (163-164.) At the same time, Chadha and Sharma (2015) examined that the capital Structure has no effect on performance measures such as ROA and Tobin's Q, while the leverage is negatively correlated with ROE (301). Cambini et al. (2015) tested the impact of debt on the investment activities. They have proved that companies with higher debt tend to invest more. (504.) At the same time, Okuda and Nhung (2012) found out the negative relationship between leverage and investing activities of the firms (160).

Concerning the risk, Uskumbayeva (2017) tested the effect of capital structure on systematic, unsystematic and total risk in Finnish listed companies. Her hypotheses about the relationships between the variables were rejected, so, based on her research, leverage has no effect on any risk faced by the company. (75-78.)

Consequently, the balance between debt and equity can vary from country to country, as well as from industry to industry. Controversial results encourage to continue the research and explore the relationships in Finland as well. The lack of research connecting capital structure and risk also motivates to continue the research in this field as well and consider the risk as one of the determines of success.

2.6 Hypothesis development

Bulajic et al. (2012) define the hypothesis as an unapproved assertion, the preliminary outcome of the investigation (171). It is the proposition, which is temporarily considered to be correct based on the current knowledge about the phenomena, usually retrieved from the theoretical review of the literature (Singh 2007, 116-118). Malcom (2003) states that in accounting or financial research the hypothesis supposes the relationship, which represents the casual links between two or more variables. The researcher should be able to validate the hypothesis statement with the evidence collected during the research, however, it is not always possible in case of searching the dependence between abstract concepts. (40). The verification results can appear in three forms: right, partly right or wrong. The hypothesis is characterized by being simple, specific, conceptually clear, related to the existing knowledge body, as well as the ability to be verified through the data analysis and expressed in measurable terms. (Kumar 2014).

Capital structure is proven to be the major decision of each financial manager. Based on the literature review, the conclusion of the interconnection of the capital structure with the performance and risk of the company can be made. This study comprises 6
hypotheses researched in total which were rejected or accepted in the outcome of the analysis based on the regression statistics. The hypotheses were investigated through the observation and comparison of two main theoretical groups - performance and risk of the firm.

During the literature review the following hypotheses were distinguished for the further analysis:

H1: The capital structure influences the firm performance.

H1a: The capital structure influences the market-based firm performance.

H1b: The capital structure influences the hybrid firm performance.

H1c: The capital structure influences the accounting-based firm performance.

H1d: The capital structure influences the non-financial firm performance.

H2: The capital structure influences the risk.

H2a: The capital structure influences the systematic risk.H2b: The capital structure influences the total risk.

3 Research Framework

3.1 Methodology

According to Adams and Khan (2014), the methodology is the philosophy or science which stands behind the research and strives to explain how to create the knowledge, which can answer the research questions (5). Methodology goes beyond the methods and techniques choice, but considers the logic behind them, the assumptions needed to be made, and creates the criteria for choosing the appropriate research methods. In other words, the methodology represents how the research will be done scientifically. (Kothari 2004, 8-9.) In this chapter, the author is going to explain the choice of the research design attributes and show the research implementation process and steps that were undertaken. The clear research methodology allows generating the critical analysis and trustworthy results.

To build the research design the approach, philosophy, purpose and research strategies should be chosen. The research design is a general plan of how the researcher is going to answer the question set (Saunders, Lewis & Thornhill 2016, 130-131). It determines the data collection techniques and explains how and with which perspective the analysis will be done.

As the research is fully quantitative, it was done through the statistical analysis, and was based on the theory that there is the correlation between the leverage and liquidity of the company and its performance, it demands the development of the strict research plan based on the Positivism or Neo-positivism philosophies (Adams, Raeside & Khan 2014, 6). Consequently, during the research observations were mainly used to test hypothesis what characterize the positivism research philosophy. (Saunders, Lewis & Thornhill 2006, 103-104.) Through positivism the knowledge created describes the measurements and careful observations of the objective reality. The individual starts from the theory, and scientific method of positivism considers the creation and testing the theory through the research. (Creswell 2003, 6-8.) Purpose of the research will be explanatory: to find and present the relationship between variables (Saunders, Lewis & Thornhill 2006, 134-135).

The research approach is classified as deductive and inductive. Deductive approach means the conducting of quantitative study via developing the hypothesis from the existing theory, and after testing the hypothesis through the research (Dudovski 2018). Saunders, Lewis, and Thornhill (2006) state that deduction "involves the development of a theory that is subjected to a rigorous test". Authors also explain the key characteristics of this research approach – it explains the causal relationship between variables, quantitative data is collected during the test of hypothesis, and it uses structured methodology to ensure the reliability of the results. (117-118.) In the deduction approach, the researcher should be independent of what he researches. In the current thesis research, the researcher did not have a direct contact with

companies' representatives but used only the quantitative data from the financial statements and the stock market.

To answer the research questions and meet the goals set above the quantitative analysis of the Finnish companies' financial data in the time horizon of five years was conducted. Adams. Raeside and Khan (2014) describe the longitudinal study as a basis for the substantiated explanatory theory (8). The longitudinal approach allowed the researcher to explore the change in the data and its dynamics for a long period, what increased the reliability of the results.

3.2 Data collection

The data collected for the research are characterized as secondary – the one which has already been collected by the third person for the purposes of answering the other from the current study research questions (Saunders, Lewis & Thornhill 2006, 611). The financial data collected for the variables calculation were taken from the secondary sources: NASDAQ OMX Nordic stock market database, and annual reports of the case companies. The first was considered as the best source of the data about companies' share price changing and the dynamics in the market index, while the second was used for extraction of the data from the financial statements and corporate governance reports. Both are the official sources of the actual corporate numerical financial information of the Finnish companies. Consequently, the data collected was considered reliable and precise. The total sample researched consisted of 50 Finnish publicly listed companies, with the shares traded on the NASDAQ OMX Nordic stock market. There are the companies representing the small, medium and high market capitalization and the industries of oil and gas, materials production, industrials, consumer goods and services, healthcare, telecom, utilities, financials, and technology. Banks and financial institutions were excluded from the sample due to the difference in the leverage regulations for these firms. The data was collected from the 1st January 2012 to 31 December 2016, what in total accounts five years of observations.

In the research, the numerical data were mainly collected, thus there is no need to quantify it additionally. As almost all variables are ratios, they were preliminarily calculated out of the data taken from the financial statements of the companies (income statement and balance sheet) and the data from the NASDAQ OMX Nordic stock market.

For the further results representation, the variables were structured in the following way. (Figure 5)



Figure 5 Variables classification (Adapted by the author from various sources)

In this study, the leverage is presented as the main independent variable. To measure the leverage Debt-to-Equity ratio was used. It indicates the proportion of a firm's assets which were financed by the debt (Oliver & Horngren 2010, 693). In other words, it shows how much debt the company has per each Euro/Dollar of equity. The ratio is used by banks and other financial institutions to measure the risk which they will face in case of giving the loan to the company. If the ratio is lower than 1, the company has more assets than debt, and the opposite if it is higher. Understanding the perfect number of the ratio comes from the advantages and disadvantages of debt. The too high ratio can mean that the company could be in financial distress and is no longer able to pay to its debtholders. The low Debt-to-Equity ratio usually means the company with conservative financing policy and ability to borrow more with supporting relatively low risk. The negative site of the low ratio is the over-relying of the firm on equity, what is inefficient and costly. On the other hand, it can be interpreted that the high ratio means high risk for the bank when extending the loan for the firm. In each industry, the optimum number is unique, as well as in each company. Nevertheless, same as in Debt ratio, for bankers, the high measure can mean the high risk, as they can turn the company into bankruptcy, in case it stops paying the interests. (Gallo 2015.)

At the same time, in this study, to extend the reliability and validity of the results, the other view on Debt-to-Equity Ratio was taken. Even though traditionally researchers take the book value of the shareholders' equity in their calculations, to find out the dependence of market performance measures and risk on the debt, as well as set the frames for the perfect capital structure balance, the market value of the equity was also considered in the study.

$D/E = \frac{Total \ Liabilities}{Shareholders \ Equity_{Book \ or \ market \ value}}$

The main dependent variables are the ratios measuring market, accounting, nonfinancial performance, and risk. To make the measurement of the market performance comparable, investors use Market-to-book ratio. The ratio represents the value which is placed by the market on the equity or assets of the firm. It also shows how effectively managers used assets to make the company grow. (Sharma, Branch, Chgawla & Qiu, 2-3.) In other words, this ratio represents what was the value added to each dollar invested by the shareholders. This ratio can show how the share is estimated on the market. In most of the cases, market value is higher than the book value as it includes the investor's estimates of the company's profitability (Peavler 2017). Consequently, the result below 1 can say that the share was undervalued and vice versa, greater than 1 ratio shows that the share performed well and was highly estimated by the investors. Moreover, the ratio can be used to determine if the value of the assets of the company can be comparable to the stock's market price. (Market to Book Ratio 2017.) Market-to-book ratio is calculated by dividing the market value of equity on the book value of equity.

The other measure of the market performance is the Price to Earnings ratio (P/E), which represents the market confidence in the shares of the company. The ratio is influenced by both, internal and external environment in which the company operates. As it takes into account the market price of the shares, it automatically starts to be influenced by the macroeconomics – political situation and economic factors. Moreover, it is influenced by the inner company factors, such as changes in debt, working capital, and non-current assets. (Elliot 2009, 693-694.) The interpretation of the ratio is in its amount – the higher the ratio, the longer market is confident that the current level of a firm's earnings will stay sustained. Moreover, this ratio is usually compared with the industry benchmark which is published in Financial Times or other sources on daily basis. (Weetman 2006, 337.)

As an absolute measure of market performance Jensen's Alpha was taken (discussed more in chapter 2.3) to evaluate the over or underperformance of the firm compared to the expected benchmark of return on the stock (Gerber & Hens 2009,12).

$$\alpha_t = \left[E_t (R_{pt}) - R_f \right] - \beta \left[E_t (R_{mt}) - R_f \right]$$

Where:

 $E_t(R_{pt})$ – annualized return of the stock considered over period;

 $E_t(R_{mt})$ – annualized return of the market considered over period;

 R_f – Risk-free rate;

 β – estimated sensitivity of the stock return to the benchmark deviations.

The most popular ratios for the evaluation of accounting performance are the ratios which are commonly used to evaluate the profitability of the firm - Return on Equity and Return on Assets. ROE is the calculation which assesses how efficiently a firm uses its shareholders' equity to generate returns (net income). This ratio represents the profitability of the company by showing how efficiently money invested by the shareholders were used. (Oliver & Horngren 2010, 695.) The value of ROE should be compared with the industry benchmark, as even if the company shows good performance compared with itself in previous years, is still can be behind the market. And vice versa, the company can have bad times and ROE is decreasing, nevertheless, their performance is still better than the industry benchmark (Return on Equity).

ROA also measures how much money was generated, however not from the usage of the equity, but from the company's total assets (total liabilities + shareholder's equity). In other words, everything that is owned by the business, including cash, equipment, inventory, machinery, vehicles, is taken and compared to the profit generated. It identifies how the return was generated by the assets. If the return is high, the assets are productive and well-managed. (Bajkowski 1999, 5.) However, Gallo (2016) states that too high ROA can be caused by the low renewing of the assets and investments in the new machinery or equipment. Both ratios can be interpreted – more is better as the company generates more cash on the money invested. The difference between the ratios is in the denominator. In the first case performance towards the shareholders' investments is considered, while in the second, both, shareholders' equity and debt are taken to account. (Brealey, Myers & Allen 2014, 710-713.)

One more accounting ratio which is calculated from the book data is Earnings per Share, which shows what amount of profit after tax, interest, and dividends were earned per each share outstanding. (Elliot 2009, 692.) Usually, this ratio is referred to as an investor ratio and its trend in percentage changings is closely analyzed by the shareholders of the company.

The hybrid performance was measured by Tobin's Q (discussed in chapter 2.2) via the following formula:

$$Tobin's Q = \frac{(Total \ Debt + Market \ Capitalization)}{Total \ Assets}$$

The non-financial performance was measured by two factors representing mainly the innovativeness of the firm and its belongingness to the high-tech sector. Consequently, considering the availability of data, the following measurements were chosen for evaluation: the share of the money invested in Research and Development activities of the firm compared to the total revenue of the company, and the share of intangible assets compared to total assets. Both measures can be interacted with the capital structure as the nature of the firm affects the debt capacity (discussed more in chapter 2.2).

The risk is traditionally measured by beta (systematic risk) and standard deviation. (Total risk). To calculate beta the standard deviation of the share returns should be divided on the standard deviation of the market returns benchmark, then the result should be multiplied by the correlation (the degree in which they are moving in relation/to the same direction to each other) of the shares return with the benchmark's return (Nickolas 2017).

$$\beta = Correlation(r_a, r_m) \times \frac{\sigma_i}{\sigma_m}$$

Where:

 r_a – equity shares return

 r_m – benchmark's return

 σ_i - standard deviation of the share returns

 σ_m - standard deviation of the market returns benchmark

Share, moving in the line with the market, has beta equal or close to 1.0. Higher the beta, more aggressively company plays on the market, and consequently, is more affected by the systematic risk. In case of growing market, these shares can outperform, however, in the market with the downward tendency, these shares can fall more than average. In case of beta approximately 0,5, share can be considered as resistant to the bearing market, but if the market prices start growing, these shares can be left behind. Zero beta can mean risk-free investment, however, it is possible only with investing to the treasury bills. All companies are affected by the risk of the market to a certain degree. (Dimson 1998, 20-21.)

For the calculations of the variables under the analysis, the additional calculations of stock return and market index return were made with the use of the following formula.

$$Return = \frac{Closing \ price_{Current \ day} - Closing \ price_{Previous \ day}}{Closing \ price_{previous \ day}}$$

The risk-free rate of return used for the CAPM calculations was taken from the Suomi Pannki [The Bank of Finland] website. The government bonds were considered to be the risk-free rate of return. Therefore, the rate of treasury bonds in Finland – the country of all companies under the analysis, was acknowledged annually in the research.

The aim of the research is to find a correlation between variables to understand the influence of leverage of the company on its performance. The following variables were decided to be taken for the analysis:

Variable	Label	Definition	Source					
	Independent Variables							
Debt-to-Book	DE1	The capital structure of the firm calculated by dividing the	Annual					
value of		book value of debt to the book value of shareholders'	Reports					
Equity Ratio		equity. Determines the leverage of the firm.						
Debt-to-	DE2	The capital structure of the firm calculated by dividing the	Annual					
Market Value		book value of debt to the market value of shareholders'	Reports					
of Equity		equity (Market Capitalization). Determines the leverage of						
Ratio		the firm.						
		Dependent Variables						
		Market Performance						
Price to	P/E	The share price of the firm divided to the Earnings per Share	Annual					
Earnings		by shareholders.	Reports &					
Ratio			NASDAQ OMX					
			Nordic					
Market Value	MVBV	Market Capitalization divided by the book value of	Annual					
to Book		shareholders' equity.	Reports					
Value Ratio								
Jensen's	JensenAlpha	The measure of over- or underperformance of the firm	NASDAQ OMX					
Alpha		compared to the expected return calculated by subtracting	Nordic					
		Cost of Capital (CAPM) from the actual return.						

Table 1 Variables description (Adapted by the author)

Continues on the next page

Table 2 Variables	description	(continued)
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Accounting Performance						
Earnings Per	EPS	(Net Income – Dividends on Preferred Stock)/ Average	Annual			
Share		outstanding shares	Reports			
Return on	ROA	Profitability measure calculated by division of operating	Annual			
Assets		profit to total assets.	Reports			
Return on	ROE	Profitability measure calculated by division of operating	Annual			
Equity	Reports					
		Non-financial Performance				
Investments	RDSales	A measure of innovativeness calculated by division of	Annual			
in		investments in R&D to total sales.	Reports			
Innovations						
Tangibility	IntgTA	Measure on tangibility calculated by the division of total	Annual			
Ratio	-0	intangible assets to total assets.	Reports			
		Hybrid Performance	· ·			
Tobin's Q	TobinQ	Sum of market value and shareholders' equity plus book	Annual			
Proxv		value of debt, divided by the book value of assets.	Reports &			
			Nordic			
		Risk				
Systematic	BETA	The volatility of the stock return to the market return				
Risk	52177	fluctuations	Nordic			
Total Risk	SD	The dispersion of the share process from the mean				
TOTALINISK	50	The dispersion of the share process from the mean.	Nordic			
		Control	Nordie			
The share of	IndDirProp	The number of independent directors divided to the number	Annual			
Independent	шарттор	of total directors	Poports			
directors			Reports			
	CACI	A mean of the distance bulk and built a division of Compart	Areas			
Current Ratio	CACL	A measure of liquidity calculated by the division of current	Annual			
		assets to current Liabilities.	Reports			
Market	MarkRet	Value reflecting the change in the market value of the Index.	NASDAQ OMX			
Return			Nordic			
Total Assets	LnAssets	Natural logarithm of total assets.	Annual			
			Reports			
Market	LnMarkCap	Natural logarithm of market capitalization.	Annual			
Capitalization			Reports			

Note: to analyze several absolute values-based variables natural log values have been taken in order to avoid linearity

3.3 Data Analysis

In the research, several types of analysis were implemented. To understand and summarize the data, all collected variables were processed through the descriptive statistics. It helps to manage all numerical data and present the main facts about it in one table. The main results in the "Descriptive statistics" table were the maximum and the minimum, which represent the extreme values of the variables inserted; mean, which shows the average value of the sample, that is also known as the central tendency; standard deviation, which measures the dispersion – difference between the highest and the lowest values. (Adams & Khan 2014, 171-177.)

Pearson's Product Moment Correlation Coefficient (r) was measured to find the association between the variables. This statistical method allows distinguishing the variable, which is most likely can be explanatory, as it shows a high correlation with the dependent variables. Whereas the value of r is tending to -1, there is a strong negative relationship, while $r = \pm$ indicates the perfect correlation between the two variables. (Adams & Khan 2014, 199-201; Malcolm 2003, 69.) The Pearson's Product Moment Correlation Coefficient is compounded through the formula:

$$r_{xy} = \frac{cov(x, y)}{S_x S_y} = \frac{\sum (X_t - X)(Y_T - Y)/(n - 1)}{S_x S_y}$$

When the dependent and the independent variables were distinguished the main regression analysis was implemented. It allows dealing with the formation of the mathematical model showing the relationship amongst variables that can be further used for the making a prediction of the dependent variables' values. (Kothari 2004, 142.) The chosen regression model for the analysis was ordinary least square (OLS) regression, which explains the changes in the phenomenon as a result of influencing variables. It allows to estimate the coefficients of variables and predict the response. The model was acknowledged by numerous studies in finance similar to the current as it applies a prespecified regression function to the sample data, with the use of single response variable that has been recorded on an interval scale. The main advantage of the OLS for this study is that is can plane the observed data while using more than one explanatory variable. (Pedace 2013; Salkind 2010, 1268.) Besides the possibility of the dynamics prediction, the result of the analysis includes output for the

interpretation is the R Square, the coefficient of determination also used as the test of quality.

$$R^{2} = \frac{Sum \ of \ Squares \ Explained \ by \ Regression}{Total \ Sum \ of \ Squares \ (before \ Regression)} = \frac{\sum (\hat{y}_{t} - \bar{y})^{2}}{\sum (y_{t} - \bar{y})^{2}}$$

The OLS regression equation for the analysis:

$$y_{it} = \alpha_{it} + \sum_{k=1}^{p} \beta_k x_{it} + \varepsilon_{it}$$

Where:

 y_i – dependent variable of firm i in the period t

 α_{it} – intercept of the model

 x_i – corresponds to the i^{th} explanatory variable of the model

 ε – the random error with expectation 0 and variance σ^2

In the analysis, the functional relationships models were measured with the use of a multivariate OLS regression technique.

$$\begin{split} P/E_{it} &= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} \\ &+ \beta_4 (JensonAlpha)_{it} + \beta_5 (EPS)_{it} + \beta_6 (ROA)_{it} + \beta_7 (ROE)_{it} \\ &+ \beta_8 (RDSales)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (BETA)_{it} \\ &+ \beta_{12} (SD)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} + \beta_{15} (MarkRet)_{it} \\ &+ \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i \end{split}$$

$$\begin{split} MVBV_{it} &= \alpha_{it} + \beta_1(DE)_{it} + \beta_2(DEBTMVEQUITY)_{it} + \beta_3(P/E)_{it} \\ &+ \beta_4(JensonAlpha)_{it} + \beta_5(EPS)_{it} + \beta_6(ROA)_{it} + \beta_7(ROE)_{it} \\ &+ \beta_8(RDSales)_{it} + \beta_9(IntgTA)_{it} + \beta_{10}(TobinQ)_{it} + \beta_{11}(BETA)_{it} \\ &+ \beta_{12}(SD)_{it} + \beta_{13}(IndDirProp)_{it} + \beta_{14}(CACL)_{it} + \beta_{15}(MarkRet)_{it} \\ &+ \beta_{16}(LnAssets)_{it} + \beta_{17}(LnMarkCap)_{it} + \varepsilon_i \end{split}$$

JensonAplpha_{it}

$$= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} + \beta_4 (P/E)_{it} + \beta_5 (EPS)_{it} + \beta_6 (ROA)_{it} + \beta_7 (ROE)_{it} + \beta_8 (RDSales)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (BETA)_{it} + \beta_{12} (SD)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} + \beta_{15} (MarkRet)_{it} + \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i$$

$$\begin{split} EPS_{it} &= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} \\ &+ \beta_4 (JensonAlpha)_{it} + \beta_5 (P/E)_{it} + \beta_6 (ROA)_{it} + \beta_7 (ROE)_{it} \\ &+ \beta_8 (RDSales)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (BETA)_{it} \\ &+ \beta_{12} (SD)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} + \beta_{15} (MarkRet)_{it} \\ &+ \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i \end{split}$$

$$\begin{split} ROA_{it} &= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} \\ &+ \beta_4 (JensonAlpha)_{it} + \beta_5 (EPS)_{it} + \beta_6 (P/E)_{it} + \beta_7 (ROE)_{it} \\ &+ \beta_8 (RDSales)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (BETA)_{it} \\ &+ \beta_{12} (SD)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} + \beta_{15} (MarkRet)_{it} \\ &+ \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i \end{split}$$

$$\begin{split} ROE_{it} &= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} \\ &+ \beta_4 (JensonAlpha)_{it} + \beta_5 (EPS)_{it} + \beta_6 (ROA)_{it} + \beta_7 (P/E)_{it} \\ &+ \beta_8 (RDSales)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (BETA)_{it} \\ &+ \beta_{12} (SD)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} + \beta_{15} (MarkRet)_{it} \\ &+ \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i \end{split}$$

$$\begin{split} RDSales_{it} &= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} \\ &+ \beta_4 (JensonAlpha)_{it} + \beta_5 (EPS)_{it} + \beta_6 (ROA)_{it} + \beta_7 (ROE)_{it} \\ &+ \beta_8 (P/E)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (BETA)_{it} \\ &+ \beta_{12} (SD)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} + \beta_{15} (MarkRet)_{it} \\ &+ \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i \end{split}$$

$$IntgTA_{it} = \alpha_{it} + \beta_1(DE)_{it} + \beta_2(DEBTMVEQUITY)_{it} + \beta_3(MVBV)_{it} + \beta_4(JensonAlpha)_{it} + \beta_5(EPS)_{it} + \beta_6(ROA)_{it} + \beta_7(ROE)_{it} + \beta_8(RDSales)_{it} + \beta_9(P/E)_{it} + \beta_{10}(TobinQ)_{it} + \beta_{11}(BETA)_{it} + \beta_{12}(SD)_{it} + \beta_{13}(IndDirProp)_{it} + \beta_{14}(CACL)_{it} + \beta_{15}(MarkRet)_{it} + \beta_{16}(LnAssets)_{it} + \beta_{17}(LnMarkCap)_{it} + \varepsilon_i$$

$$\begin{split} TobinQ_{it} &= \alpha_{it} + \beta_1(DE)_{it} + \beta_2(DEBTMVEQUITY)_{it} + \beta_3(MVBV)_{it} \\ &+ \beta_4(JensonAlpha)_{it} + \beta_5(EPS)_{it} + \beta_6(ROA)_{it} + \beta_7(ROE)_{it} \\ &+ \beta_8(RDSales)_{it} + \beta_9(IntgTA)_{it} + \beta_{10}(P/E)_{it} + \beta_{11}(BETA)_{it} \\ &+ \beta_{12}(SD)_{it} + \beta_{13}(IndDirProp)_{it} + \beta_{14}(CACL)_{it} + \beta_{15}(MarkRet)_{it} \\ &+ \beta_{16}(LnAssets)_{it} + \beta_{17}(LnMarkCap)_{it} + \varepsilon_i \end{split}$$

$$\begin{split} BETA_{it} &= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} \\ &+ \beta_4 (JensonAlpha)_{it} + \beta_5 (EPS)_{it} + \beta_6 (ROA)_{it} + \beta_7 (ROE)_{it} \\ &+ \beta_8 (RDSales)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (P/E)_{it} \\ &+ \beta_{12} (SD)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} + \beta_{15} (MarkRet)_{it} \\ &+ \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i \end{split}$$

$$\begin{split} SD_{it} &= \alpha_{it} + \beta_1 (DE)_{it} + \beta_2 (DEBTMVEQUITY)_{it} + \beta_3 (MVBV)_{it} \\ &+ \beta_4 (JensonAlpha)_{it} + \beta_5 (EPS)_{it} + \beta_6 (ROA)_{it} + \beta_7 (ROE)_{it} \\ &+ \beta_8 (RDSales)_{it} + \beta_9 (IntgTA)_{it} + \beta_{10} (TobinQ)_{it} + \beta_{11} (BETA)_{it} \\ &+ \beta_{12} (P/E)_{it} + \beta_{13} (IndDirProp)_{it} + \beta_{14} (CACL)_{it} \\ &+ \beta_{15} (MarkRet)_{it} + \beta_{16} (LnAssets)_{it} + \beta_{17} (LnMarkCap)_{it} + \varepsilon_i \end{split}$$

The OLS regression model's output represents the several statistical results, allowing to find out the most significant variables supporting the hypothesis, and reflecting the goodness of the model for the theory. The regression coefficient illustrates the prediction of the changes in the dependent variable with the change of an independent one. Standardized coefficient Beta shows the coefficient with zero intercept term and measures the sampling variability of each regression coefficient. The significance level for the regression coefficients in this research was chosen to be 90, and it was computed in the analysis through the ratio of B/standard error B for each variable to represent the t measure. The R square indicated the percentage of the variation of the

dependent variable which was explained by the entered independent variables. (Malcolm 2003, 81-82.)

While implementing the OLS regression model the main assumptions of it were considered. Firstly, the researcher acknowledged that the model is linear in parameters and has an error term. Secondly, there is no independent variable, which is the perfect linear function of any other independent variable can be. Thirdly, the author admits that the model was correctly specified and there is a zero-conditional mean of the error term, as well as it has a constant variance, and values in it have no correlation with each other. (Pedace 2013.)

The whole analysis in this study, including descriptive statistics, correlation and regression, was made with the use of the SPSS software.

3.4 Reliability and Validity

Saunders et al. (2004) state that the validity is the measure of the degree to which the methods of data collection precisely measure what was intended to be measured. In other words, it represents whether the real casual relationship appears after the research. (614.) According to Malcolm (2003), there are two types of validity usually distinguished during the research verification – internal and external. The first refers to the issues which can appear during the research implementation. For example, instrumentation concerns, selection problem, not appropriate overlapping collection of data in longitudinal research, etc. The external validity, which is also referred to as generalizability, requires results to be applicable to the other sites and samples, such as organizations or population. (53-54.)

To ensure the internal validity and avoid the statistical errors in this study the sample was accurately chosen. The author has collected the data only from the official sources such as companies' published annual reports, which state the actual financial data of the firm on the yearly basis, NASDAQ OMX Nordic database and The Finnish Bank website, which are considered as the reliable sources of data. The timeline was accurately chosen to be 5 years and all data on the share price fluctuation were taken without the overlapping dates. The measurements instruments and sample were unchanged during the whole research.

To prove the external validity of the results the author has prepared the sample of 50 companies from different industries. Even though due to the study goals, all firms are from Finland, they represent 10 different sectors, what facilitates the research generalizability and applicability to all companies in the country. Moreover, to avoid the unique results depending on the firm size, the companies were taken equally from the list of Large Cap, Mid Cap, and Small Cap firms of the market.

All variables were taken in accordance with the previous researches on the topic or in the finance field, to ensure the external validity and avoid the ambiguous notation of variables.

Saunders et al. (2004) state that the reliability is the consistency of the research instruments, so that if the other researcher having the same observations will come to the same conclusion. In other words, reliability represents the transparency of the result achievements and the sense of them to be made. (609). To avoid the participant error and bias, the whole research was conducted based on the numerical data received from the annual reports and stock market database. The observer bias and errors were also eliminated by the choice of variables commonly used in the previous similar researches. Consequently, there is no need to change the research method and analysis model in case of taking the other sample companies for the study. The regression model and variable choice should work with the same results on another sample of the appropriate size. The interpretations were accurately made based on the data only and clearly stated in the paper. Therefore, for the reader, it is clear how the conclusions were drawn up. Hence, the paper can be considered reliable.

4 Research Results

In the following chapter, the results of the analysis will be presented and interpreted. The information will be presented in three subchapters. The first will show the basis of the following analysis – descriptive statistics result, which makes the researcher and the reader familiar with the data and variables. The second will represent the findings of the correlation analysis, which highlights the relationships between the variables. The last chapter, which will be the main part of the results, will present the results of the regression analysis and makes the conclusions about the reliability of the hypotheses made.

4.1 Descriptive Statistics results

Table 2 represents the descriptive statistics of all variables used in the analysis. It represents the minimum and the maximum values of the variables during the tested period, as well as the range between them, mean of the values and standard deviation.

Out of table 2, it is seen that in Finland the mean of the Debt-to-Equity ratio is 0,84, what means that for each 1 Euro of shareholder's equity companies tend to owe 84 cents of debt, what represents quite balanced proportion between debt and equity with the slight dominance of equity. However, according to the maximum value of 20,7, one company heavily relies on debt and owes 20 Euro per each Euro of equity, while the minimum of -0,72 states that the company Componenta OYJ had negative shareholders' equity in 2016. At the same time, the Debt-to-Market Value of Equity (market capitalization) ratio's mean is 0,69, what confirms the tendency of Finnish companies to prioritize equity in the capital structure, as well as shows that the market value of equity tends to be higher than the book value of equity. The number means that per each 1 Euro of the market value of equity companies borrow 69 cents of debt. The maximum value is 8,75, what represents that one firm had borrowed 8,75 times more of its market capitalization. Overall, it can be said that Finnish companies do not tend to rely heavily on debt and in average prefer more equity as the source of financing. Nevertheless, both ratios are quite dispersed from the mean as their standard deviations are 1,9 for Debt-to-Equity and 1,05 for Debt-to-Market Value of Equity, thus there is small consistency in the results.

Considering the variables measuring accounting performance, the means of Return on Assets and Return on Equity are 0,15, of Return on Equity, and of the Earnings per Share is 0,62. In average, both ratios, ROA and ROE, are comparatively low, and characterize underperformance of the Finnish companies in the taken period, what is applicable almost to all companies due to the low standard deviation of 0,11 and 0,61 for these variables. The maximum of ROE is 8,9, what identifies that at least one company managed to generate 8,9 Euros per each Euro invested by the shareholders, what characterize this company as a highly profitable one. The EPS ratio shows the difference among the companies, as some have this indicator below zero, while others generate around 9 Euros of earnings per each share outstanding. Despite the mean, high standard deviation of 1,27 does not allow to make some conclusions about the tendency in this ratio.

The market and hybrid performance variables, on the contrary, on average show more positive tendency than accounting ones – means of 13,9; 1,1; 0,04 and 1,34 for Price to Earnings ratio, Market Value to Book Value Ratios, Jensen's Alpha and Tobin's Q respectively. Higher than 1 MV/BV ratio proves that the companies are valued slightly higher on the market than their book value. Exceeding 1 Tobin's Q also represents that the companies tend to be overvalued on the market, as the cost to replace a firm's assets is lower than the value of its stock. Price-to-Earnings ratio represents that in average investors are willing to invest 13 Euros for the Finnish companies to get 1 Euro of return. Nevertheless, due to the high standard deviation of 41,14 it the P/E ratio is dispersed significantly for all companies from the mean, consequently, it is impossible to claim the unified number for the Finnish market. Positive Jensen's Alpha, even though it tends to be quite low during the estimated period, still highlights that companies are able to overcome the expectations of its investors, and almost all do it as the Standard deviation is low – 0,14.

As for non-financial performance indicators, the mean of the share of intangible assets in the firms of 0,36 highlights that Finnish companies tend to be more tangible and do not actively enter the high-tech industry. However, there is still at least one company which has 20,8 times more intangible assets than tangible ones and belongs to the type of so-called "highly innovative" firms. The non-active usage on technologies and innovations is also represented by the low R&D to Sales ratio (mean = 0,014), which shows that companies do not invest a lot in research and development activities compared to their overall sales, what is very consistent among the firm, as the Standard Deviation is 0,06.

The total risk of the companies in Finland measured by Standard Deviation is quite high (mean = 2,12), what highlights the high volatility of the stock. The minimum of 0,97 represents that almost all companies tend to have the total risk close to or higher than 1, what shows the riskiness of them, considering both, systematic and unsystematic risk. Nevertheless, it can be seen that the majority of risk tends to come from the unique risk, as the mean of Beta, the measure of systematic risk, is quite low -0,04, and the maximum is also significantly below 1 - 0,56. The Beta is quite stable for the taken sample of companies during the period as its standard deviation is 0,14.

The huge range in total assets (272827,8) and market capitalization (26775,82) proves that in the sample there are companies of different sizes and the results can be applicable to all companies in the market.

Looking at the control variables the conclusion can be made that in Finland companies tend to have approximately 6-7 members of the board, almost 80% of which are independent directors (Standard Deviation = 0,23). The Current Ratio mean of 1,62 shows that firms are liquid and have 1,62 Euros of current assets per each Euro of their liabilities, however high dispersion (standard deviation = 1,75) highlights the versatility of companies considering this indicator.

Descriptive Statistics										
	Ν	Range	Minimum	Maximum	Mean	Std. Deviation				
P/E	250	542,666667	-161,666667	381,000000	13,91684739	41,135142269				
MVBU	250	12,813488	0,000000	12,813488	1,10876599	1,612816543				
TobinQ	250	12,785714	0,067289	12,853003	1,33953966	1,625732680				
OperProf	250	30591,000000	-2303,000000	28288,000000	575,07504000	3191,737371513				
EPS	249	11,880000	-2,440000	9,440000	0,62120482	1,267159699				
ROA	250	1,247383	-0,546318	0,701065	0,05350136	0,109015169				
ROE	250	11,014185	-2,108108	8,906077	0,15008894	0,606994003				
BETA	245	1,092044	-0,535057	0,556987	0,04261801	0,140210901				
SD	245	11,350731	0,968960	12,319691	2,11679183	1,114273775				
DE ₁	250	21,424368	-0,721665	20,702703	0,83716707	1,904480286				
IntgTA	250	20,803510	0,000000	20,803510	0,36318772	1,509523599				
RDSales	250	0,474771	0,000000	0,474771	0,01485131	0,059932645				
IndDirProp	250	1,000000	0,000000	1,000000	0,78938240	0,228340840				
MarkCAP	246	26775,820400	0,000000	26775,820400	2616,59221930	5467,713722017				
Total Assets	250	272827,800000	0,200000	272828,000000	7713,42682000	36246,926322815				
OperCost	250	79422,100000	-1041,100000	78381,000000	3435,41145200	10755,017624728				
Current Ratio	249	22,985853	0,001027	22,986880	1,62379135	1,749009192				
BoardSize	248	10,000000	3,000000	13,000000	6,98387097	1,632086521				
CAPM	250	0,057702	-0,025827	0,031875	0,00532704	0,006856216				
MarkRet	250	0,055024	0,009197	0,064221	0,04509140	0,020503873				
JensonAlpha	245	1,058779	-0,337887	0,720892	0,04041436	0,137583121				
LnAssets	250	14,126035	-1,609438	12,516597	6,46381512	2,071509698				
LnMarkCap	244	9,381218	0,814036	10,195255	5,90606811	2,174742103				
DE ₂	250	8,790210	0,000000	8,790210	0,69326654	1,047250705				

Table 3 Descriptive statistics results

4.2 Correlation results

Table 3 demonstrates a pairwise correlation between all variables used in this study. The table comprises the list of independent variables, including Debt-to-Book Value of Equity and Debt-to-Market Value of Equity; dependent variables implying accounting measures, market performance and hybrid measures, non-financial measures, and risk; and control variables, including share of independent directors, Current Ratio, market return, total assets, and market capitalization. The correlations only with 0.01% and 0.05% significance levels were considered.

As the result of the correlation analysis, it can be seen that the Debt-to-Book value of Equity ratio is significantly positively correlated with Return on Equity, Tangibility of assets, and Debt-to-Market Value of Equity ratios. A positive correlation means that the higher DE ratio is, the higher Return on Equity the company has. At the same time, this ratio has a significant negative correlation with Market-to Book Value ratio, Earnings per Share, liquidity, and log of assets. Negative relationship means that the higher the DE1 ratio, the lower are the numbers with the MVBV, EPS, liquidity, and LnAssets. Out of the results of correlation, it can be supposed that the more debt the company has, the more its return on Equity is. Nevertheless, correlation can be also interpreted as the fact that higher Return on Equity leads to the decision of managers to obtain more debt. The high positive correlation between the share of intangible assets and share of debt in the firm contradicts the theory, as generally, intangible assets are not considered as the positive condition for the loan borrowing, because they cannot be easily converted into cash when the loan will be called back by the creditor. However, correlation can be considered also in the opposite direction of the dependence of intangibility of debt. The negative correlation of the DE1 and MVBV shows that if the company is undervalued on the market, it has more debt or vice versa, if it has a huge share of debt over the equity, shareholders tend to avoid investing in such company, as their returns can fall, what is also empirically proved by the negative correlation between DE1 and EPS. The negative correlation between DE1 and liquidity also supports the empirical findings of other researchers.

Debt-to-Market Value of Equity is significantly positively correlated with operating profit of the firm, Standard Deviation, Debt-to-Equity Ratio, investments in R&D, total assets. It indicates that either this high Debt-to-Market Value of Equity ratio affects the indicators of firm in its profit, as well as costs, total risk, innovativeness, size, and expected return, what proves the theoretical findings of the fact that from higher debt investors expect higher risk, but at the same time higher returns and profits, as the company is most probably investing this debt to the innovating activities to boost the performance. It can also be interpreted as the fact that the companies with these indicators growing higher, tend to borrow more, compared to their market cap. Debt-to-Market Value of Equity has also a significant negative correlation with Market-to-Book value, Tobin's Q, EPS and ROA, liquidity, Jensen's Alpha, and log

of market cap. These findings highlight that higher than market capitalization debt leads to the lower market performance, and returns on assets and to shareholder's, as well as liquidity of the firm. Or, vice versa, with worse market performance and liquidity, firms tend to borrow more.

Considering the dependent variables, the market performance indicators P/E ratio is positively correlated only with Jensen's Alpha, what can be explained by the fact that they are both belong to market performance measures. MVBV is significantly positively correlated with Tobin's Q, ROA, Investments in R&D, share of independent directors, liquidity, Jensen's Alpha, and log of market cap, while there is also a negative correlation with the significance level higher than 90% with DE2, log of assets, and DE1 ratio. Besides the negative correlation with leverage (considering market value of equity), the Jensen's Alpha is also significantly positively correlated with P/E, MVBV, Tobin's Q, ROA, and DE1, what means that for the company to overperform the expectations of shareholders these factors are significant. Hybrid measure Tobin's Q also has a significant positive correlation with ROA, Investments in R&D, the share of Independent directors, and liquidity.

All accounting measures are significantly positively correlated with each other. They also show the tendency of positive correlation with market performance measures, while all of them are negatively correlated with total risk, what highlights the negative effect of the risk on the accounting performance of the firm. As for the non-financial performance, there is also a significant positive correlation between intangibility of assets and ROE, and between investments in R&D and liquidity of the firm.

The systematic risk, besides SD, is significantly positively correlated with the liquidity of the firm, and total risk is negatively correlated with accounting performance measures, market value, and liquidity of the company.

Table 4 Correlation Analysis Results

	X1	X2	Y1	Y2	Y3	Y4	Z1	Z2	Z3	K1	K2	01	02	S1	S2	S3	S4	S5	S6	S7
X1	1	0,411**	-0,135*	-0,035	-0,034	-0,082	-0,152*	0,084	0,431**	-0,014	0,098	0,251**	-0,078	-0,015	-0,045	-0,146*	0,0612	0,0867	-0,204**	-0,099
X2	0,411**	1	-0,295**	-0,05	-0,258**	-0,217**	-0,169**	-0,178**	-0,014	0,091	0,224**	-0,019	-0,134*	0,212**	-0,069	-0,176**	0,0548	0,0794	0,0012	-0,277**
Y1	-0,135*	-0,295**	1	0,014	0,150*	0,959**	0,08	0,378**	0,055	-0,024	-0,089	0,031	0,297**	-0,075	0,163*	0,245**	-0,111	-0,0524	-0,245**	0,129*
Y2	-0,035	-0,049	0,0147	1	0,126*	0,016	0,039	0,06	0,023	0,008	-0,075	-0,021	-0,11	-0,036	0,013	-0,05	0,0674	0,0818	0,0495	0,061
Y3	-0,033	-0,258**	0,150*	0,126*	1	0,136*	0,089	0,210**	0,060	0,061	0,223**	-0,051	0,035	-0,041	0,092	0,0788	-0,026	0,0016	0,0097	0,118
Y4	-0,082	-0,217**	0,959**	0,016	0,136*	1	0,068	0,439**	0,080	-0,02	-0,075	0,053	0,274**	-0,072	0,157*	0,210**	-0,104	-0,0561	-0,250**	0,121
Z1	-0,152*	-0,169**	0,085	0,039	0,089	0,068	1	0,362**	0,320**	0,007	-0,206**	-0,053	-0,058	0,312**	0,041	0,0678	0,193**	-0,037	0,363**	0,384**
Z2	0,084	-0,178**	0,378**	0,064	0,210**	0,439**	0,362**	1	0,430**	-0,035	-0,320**	0,114	-0,275**	0,094	0,071	-0,125 [*]	0,0719	0,0373	0,0657	0,316**
Z3	0,431**	-0,014	0,055	0,023	0,060	0,080	0,320**	0,430**	1	0,0232	-0,139*	0,373**	-0,079	0,052	-0,038	-0,07	0,1235	0,0405	-0,162 [*]	0,157*
K1	-0,013	0,0918	-0,024	0,008	0,066	-0,019	0,007	-0,035	0,023	1	0,227**	-0,033	0,016	0,032	-0,006	0,141*	-0,033	-0,0217	0,0325	0,002
K2	0,0984	0,224**	-0,089	-0,076	0,223**	-0,075	-0,206**	-0,320**	-0,139*	0,227**	1	-0,032	0,114	-0,121	-0,071	0,158 [*]	-0,122	-0,028	-0,244**	-0,354**
01	0,251**	-0,019	0,031	-0,022	-0,051	0,053	-0,053	0,114	0,373**	-0,034	-0,032	1	-0,04	-8E-04	0,014	-0,038	0,0043	0,0568	-0,232**	-0,083
02	-0,078	-0,134*	0,297**	-0,11	0,035	0,274**	-0,058	-0,275**	-0,079	0,016	0,114	-0,04	1	-0,038	0,117	0,377**	0,0631	-0,0006	-0,072	0,059
S1	-0,015	0,212**	-0,075	-0,036	-0,041	-0,072	0,312**	0,094	0,052	0,032	-0,120	-0,000	-0,038	1	0,144*	-0,006	0,239**	0,0033	0,438**	0,316**
S2	-0,045	-0,068	0,163*	0,013	0,092	0,157*	0,041	0,071	-0,038	-0,006	-0,071	0,014	0,117	0,144*	1	0,0268	0,1225	-0,057	0,326**	0,396**
S3	-0,146*	-0,176**	0,245**	-0,05	0,078	0,210**	0,067	-0,125*	-0,070	0,141*	0,158*	-0,038	0,377**	-0,006	0,026	1	-0,188**	-0,130*	-0,106	-0,043
S4	0,061	0,054	-0,111	0,067	-0,026	-0,103	0,193**	0,071	0,123	-0,033	-0,121	0,004	0,063	0,239**	0,122	-0,188**	1	-0,0147	0,514**	0,455**
S5	0,086	0,079	-0,052	0,081	0,001	-0,056	-0,037	0,037	0,040	-0,022	-0,028	0,056	-0,001	0,003	-0,057	-0,130 [*]	-0,015	1	-0,023	-0,042
S6	-0,204**	0,001	-0,245**	0,049	0,009	-0,250**	0,363**	0,067	-0,162*	0,032	-0,244**	-0,232**	-0,072	0,438**	0,326**	-0,106	0,514**	-0,0233	1	0,758**
S7	-0,098	-0,277**	0,129*	0,060	0,117	0,121	0,384**	0,316**	0,157*	0,001	-0,354**	-0,083	0,059	0,316**	0,396**	-0,043	0,455**	-0,0416	0,758**	1

Note: ** p<0,01; * p<0,05

X1: DE1; X2: DE2;

Y1: MVBV; Y2: P/E; Y3: Jensen's Alpha; Y4: Tobin's Q; Z1: EPS; Z2: ROA; Z3: ROE; K1: BETA; K2: SD; O1: IntTA; O2: RDSales;

S1: OperProf; S2: IndDirProp; S3: MarkCAP; S4: CACL; S5: BoardSize; S6: MarketRet; S7: LnAssets; S8: LnMarketCap;

Number of observations : 250

4.3 OLS regression analysis results

The tables 4, 5, 6 and 7 represent the dependence of market, hybrid, accounting, nonfinancial performance and risk variables on the Debt-to-Equity ratio and Debt-to-MV of Equity ratio, as well as on the other control variables, including Market-Value to Book value, Jensen's Alpha, Price to earnings ratio, Tobin's Q, Return on Assets, Return on Equity, Earnings per Share, investments in R&D, Tangibility of Assets, Standard Deviation, Beta, Current Ratio, log of market capitalization, log of total assets, proportion of independent directors, and market return. The significance levels represented by the denotations of *, ** or *** respectively. The results are represented in two figures. The upper ones are the estimated coefficients for variables. Whether the figures are negative or positive, it means that variables are negatively or positively correlated. Figures in parenthesis show the t-value, which is the indicator of the significance.

According to the table 4 Market-to-book ratio is highly negatively dependent on the Debt to Market Value of Equity ratio and Return on Assets. The significance level of this dependence is around 99%. The conclusion can be made that when the company owes more debt than its market value, the market and the shareholders react negatively, what decreases the value of the firm. It can be explained by the risks of debt, such as bankruptcy cost, what leads to the unpleasurable reaction of the shareholders, what eventually drops the share price. The lower Return on Assets positively affects the ratio due to the increased equity, what is the part of assets, which rises with the better accounting performance, as shareholders tend to invest in the profitable company. The ratio is also significantly positively dependent on the Jensen's Alpha, Tobin's Q, Return on Equity and Liquidity, what highlights that market reacts positively on the overperformance and return on shareholder's investments, as well as the ability of the company to be liquid and cover current liabilities with current assets. These pleasurable for shareholder's factors cause the demand and increase in the share price, which constitutes the market value. Positive dependence on Tobin's Q proves that the overvalued share leads to higher Market-to-Book ratio, again, due to the reason of growing share price.

Jensen's Alpha, the second ratio representing the market performance, is also significantly negatively correlated with Debt-to-Market Value of Equity ratio, what represents the negative effect of debt on the performance of the firm, compared to the expectations of the shareholders. It brightly represents how the high debt can become the obstacle for the company to generate the higher share return so that the positive sides of extra financing for promising projects diminishes with the risks of debt. There is as well negative dependence on the book size of the firm (LnAssets), what can mean with significance level around 90% that small companies generate a higher market return and overperform, probably due to their concentration, high potential, and ambitiousness to impress the potential shareholders.

Jensen's Alpha is also positively dependent on Price-to-Earnings ratio, Return on Assets, Standard Deviation, representing the total risk, and market size of the company (LnMarkCap). These findings, first of all, highlight the significance of accounting performance for the return generation, as profitability causes the better market performance, what is also reflected in the share price. Secondly, it proves the fact that with higher risk, higher returns can be expected, also due to the risk premium. Thirdly, it represents the willingness of shareholders to pay more for 1 Euro of earnings, what boosts the share price and the average return, measured by Jensen's Alpha.

The only variable which is strongly associated with Price to Earnings ratio, the last one representing the market performance in this study, is Jensen's Alpha, what is explained by the fact that for higher returns and overperformance investors keen to pay higher stock price, as they have big expectations about further returns growth in this company.

The R Square for the Market Value-to-Book value Ratio is 0,977, what is very high and proves that the dependent variable's changes are almost fully explained by the chosen independent variables. R square for the P/E ratio is 0,053, and for Jenson Alpha is 0,17 what is quite low, and it is obvious that there are more factors affecting these ratios, which were not considered in this research. Nevertheless, based on the analysis of the dependence between the capital structure and market performance the hypothesis H1a is proved and the capital structure affects the market-based performance. However, it is important to underline that the negative dependence was found between the Debt-to-Market Value of Equity ratio and performance, what tells that the market can react on the debt and admit the risks it possesses only when it does not exceed the market capitalization of the firm.

The hybrid performance represented by Tobin Q is positively associated with the following variables: Debt-to-Market Value of Equity, Market-to-Book Value, Return on Assets, and Standard Deviation. The fact that the debt was used for the calculation of the market value of installed capital in the ratio calculation explains the growth of the nominator with higher debt, what increases the whole ratio. MVBV is also the part of the Tobin's Q formula, and consequently, growing market value causes growing Tobin's Q (through the nominator increase). High risk can lead to the overvaluation of the share due to the increased expectations about the risk premium, so the market value covers the assets even more. At the same time, the Return on Assets can cause the increase of their replacement cost and raise. On the other hand, Tobin's Q is negatively dependent from Jensen' Alpha, Return on Equity, and liquidity of the firm, so if these variables start to grow, the company can become undervalued, but favorable for new shareholders. The Return on Equity can grow and increase the value of assets, due to the retained earnings, etc. If the assets are increasing faster than the market reacts to it, the Tobin's Q should fall. Over liquid companies can be considered by the market as ineffective, as operational resources are not used on the maximum. The R square explaining Tobin's Q is equal to 0,978 what is extremely high and validates the results.

These findings prove the hypothesis H1b that the capital structure affects the hybrid performance of the firm. Nevertheless, same as with market performance, the market value of equity needs to be considered.

			Jensen's	
Dependent Variables	PE*	MVBV*	Alpha*	Tobin Q**
(Constant)	9,781	-0,137	-0,140	0,153
	(-0,58)	(-3,259)	(-4,079)	(3,598)
DE1	-0,968	-,018	-0,051	-0,011
	(-0,373)	(-1,291)	(-0,849)	(0,851)
DE2	-1,27838	-0,092***	-0,038***	0,087***
	-0,37684	(-5,737)	(-4,866)	(5,269)
MVBV	1,109		0,075	0,996***
	(-0,097)		(1,168)	(85,724)
JensenAlpha	47,304*	0,567***		-0,563***
	(-2,098)	(4,559)		(-4,461)
P/E		0,000	0,001*	0,000
		(-0,011)	(2,134)	(0,003)
TobinQ	0,978	0,973***	-0,023	
	(0,088)	(85,724)	(0,351)	
ROA	-35,65	-1,382***	0,357***	1,636***
	(-0,764)	(-6 <i>,</i> 488)	(4,369)	(7,851)
ROE	0,777	0,334***	0,065	-0,355***
	(0,042)	(4,187)	(0,884)	(-4,411)
EPS	0,099	0,016	0,002	-0,020*
	(0,039)	(1,502)	(0,029)	(-1,871)
RDSales	-103,25*	0,007	0,086	0,007
	(-1,844)	(0,596)	(1,369)	(0,605)
IntgTA	-0,679	0,003	-0,035	-0,001
	(-0,337)	(0,276)	(-0,595)	(-0,135)
SD	-3,777	-0,061***	0,046***	0,063***
	(-1,243)	(-3,876)	(5,793)	(3,902)
BETA	6,022	0,003	-0,011	-0,004
	(0,3)	(0,251)	(-0,186)	(-0 <i>,</i> 3850
CACL	-0,289	0,034***	0,068	-0,026***
	(-0,162)	(3,6)	(1,129)	(-2,731)
LnMarkCap	-0,074	0,004	0,01*	-0,004
	(-0,028)	(0,375)	(2,406)	(-0,370)
LnAssets	0,878	-0,008	-0,168*	-0,002
	(0,307)	(-0,753)	(-1,7)	(-0,207)
IndDirProp	-1,872	0,002	0,039	0,001
	(-0,132)	(0,247)	(0,599)	(0,073)
MarkRet	196,266	-0,004	0,001	0,003
	(1,466)	(-0,386)	(0,007)	(0,278)

Table 5 OLS regression results for market-based and hybrid performance measures

Note: ** p<0,01; * p<0,05

Number of observations: 250

* - market-based performance measures; ** - hybrid performance measure

All the accounting performance measures are significantly dependent on the Debt-to-Book value of Equity ratio. However, while Earnings per Share and Return on Equity are negatively associated with the capital structure, the Return on Assets shows positive dependence on it. The difference between the correlations of DE1 and ROE and DE1 and ROA highlights the difference between assets, which include debt and liabilities, and equity, the relative share of which is decreasing with the higher debt. Interestingly, the fall of the ROE ratio contradicts the theoretical findings of debtholders priority, which states that the debt leads to the decreased nominator – operating profit and, consequently increased ROE ratio. The positive influence of debt on the ROA represents the smart allocation of interest cost by the companies, so the production financed from the borrowing generates higher revenue, while the net income is not decreased dramatically by the interest expense. Earnings per share are directly connected with the capital structure decisions, as the interest paid for the debt goes before the allocation of the earnings to the shareholders, what significantly decreases them.

EPS and ROA are negatively correlated with the Debt-to-Market Value of Equity ratio. While for EPS the explanation can be the same as with the case of DE1 ratio as the independent variable, the negative relationship with ROA highlights the negative reaction of the market on the increased debt and falling share of the market value, It represents that even if the future investments are occupied, currently the company is struggling with covering the risk of using external financing from the creditors. Explaining the difference in tendency between ROA and DE1 and DE2, the increased debt compared to the market value of the firm possess extra risk on the company and constant interest payments, what decreases the operating profit. Even though compared to book value, the company does not have the significant financial distress cost, as it is still able to cover the debt with its market value, their returns are growing. However, when the debt exceeds the market value, the company is no longer able to cover the whole debt immediately, so the mistaken financial decision makes the losses more than the returns from the investments done from debt.

There is a significant positive dependence of Earnings per Share on Return on Assets, Return on Equity, liquidity and size of the company (LnAssets), what shows that higher returns lead to the increased earnings for the shareholder's, as well as that big company able to cover their liabilities with assets and having a liquid position also tend to generate higher earnings. EPS have a negative association with the proportion of the independent directors, what highlights the tendency of independent members be less interested in the performance of the firm and the maximization of shareholders' wealth, as independent directors come from the outside and do not invest their time in the understanding of the inner processes of the firm. Return on Assets has a positive association with Jensen's alpha, Tobin's Q, ROE, and EPS, representing the fact that overperformance and consequent overvaluation on the market have a positive effect on the profitability of the firm. At the same time, the following variables have a negative effect on the ROA: MVBV, RDSales, and Standard Deviation, consequently, profitability falls due to the major investments in R&D, that can take the resources, which will not be any more available in the short-term perspective. Also, it decreases from the total risk of the company, including all factors coming from the market and inner decision of the company, which can lead to the negative events within a firm, and growing market value compared to the book value of the firm. ROE oppositely is positively affected by the Book-to-Market value ratio, as growing price calms down the demand and the shareholder's equity can shrink, as some of them will also start to sell the stock. The ROE is also negatively dependent on the RDSales, IntgTA, and Current Ratio what shows that innovativeness can negatively affect the performance on the Finnish market due to the long-term character of the results from the innovation activities, as well as position of the over liquid company what signals about the available resources, which for some reason are not effectively used. Mainly all accounting performance measures are positively correlated with each other, what shows that with the growth of one of them, the other will eventually grow too. The R squares for EPS, ROA, and ROE are 0,271, 0,705, and 0,631, what is high enough for making the conclusion that the accounting performance can be manipulated using these set of variables.

The findings prove the hypothesis H1c that the capital structure affects the accounting-based performance. This conclusion is applicable to both measures of capital structure used in the research. Nevertheless, there is no one tendency of how the optimum capital structure can boost the accounting performance, as while high share of debt affects mainly negatively on the accounting measures, still increased

Dependent Variables	EPS	ROA	ROE
(Constant)	-0,752	-0,003	0,151
	(-2,409)	(-0,286)	(10,048)
DE1	-0,088*	0,018***	-0,087***
	(-1,562)	(5,192)	(-12,321)
DE2	-0,105*	-0,072*	-0,077
	(-1,817)	(-1,611)	(-1,414)
MVBV	0,033	-0,076***	0,073*
	(0,463)	(-5,102)	(1,972)
JensenAlpha	0,014	0,127***	0,022
	(0,245)	(4,193)	(0,515)
P/E	0,004	-0,024	0,003
	(0,08)	(-0,672)	(0,084)
TobinQ	-0,003	0,098***	-0,093*
	(-0,038)	(6,939)	(-2,524)
ROA	4,035***		1,424***
	(4,035)		(13,644)
ROE	0,111*	0,218***	
	(0,107)	(10,212)	
EPS		0,013***	0,021
		(4,173)	(0,489)
RDSales	0,029	-0,384***	-0,014
	(0,46)	(-5,408)	(-0,296)
IntgTA	0,004	0,039	-0,075*
	(0,075)	91,07)	(-1,909)
SD	-0,032	-0,019***	0,049
	(-0,524)	(-5,143)	(1,147)
BETA	-0,016	0,019	0,001
	(-0,278)	(0,522)	(0,009)
CACL	0,114**	0,015	-0,076*
	(2,798)	(0,36)	(-1,785)
LnMarkCap	0,082	0,044	0,034
	(0,821)	(1,06)	(0,798)
LnAssets	0,245***	0,03	0,026
	(6,492)	-0,724	0,607266
IndDirProp	-0,767*	0,015	-0,004
	(-2,216)	(0,399)	(-0,111)
MarkRet	-0,027	0,038	-0,021
	(-0,49)	(1,065)	(-0,532)

Table 6 OLS regression results for accounting-based performance

Note: ** p<0,01; * p<0,05

Number of observations: 250

The OLS regression shows that the non-financial performance, including intangibility of assets and investments in R&D, has no correlation with the capital structure of the firm, what contradicts with the theoretical findings. It highlights that Finnish companies do not tend to invest borrowed money into the high-tech research and development programmes as well as growing and acquiring of intangible assets during the studied period. The share of intangible assets depends negatively on the total assets of the firm, what highlights that bigger companies tend to be more tangible. Moreover, with the proportion of independent directors the share of intangible assets is growing, what shows that if the company has more independent members of the board, it is more high-tech and software oriented. It can be explained by the interest of external experts in participating in the innovative business, whereas in traditional one the interdependence if the board members with the company and their loyalty is valued more. The taken variables could explain changes in the share of intangible assets only for nearly 2%. Investments in R&D are highly dependent on the Marketto-Book Value ratio and market capitalization, what highlights that better market performance and trust of shareholders leads to the innovativeness. Investments form the market gives the vast opportunity for innovations creation, while the failure will not bring the financial obligation to the firm in face of shareholders. Investments in R&D are also negatively dependent on the Return on Assets, what shows that higher profitability makes companies be more stable and decrease R&D investments. Finally, it also has a positive dependence on the Current ratio, what highlights that availability of liquid sources encourages companies to invest them in R&D activities. R square for investments in R&D is 0,355, what shows that the innovativeness can be controlled by these factors, but not fully, as there are more variables affecting this measure. Consequently, the hypothesis H1d was not proved, and there is no effect of capital structure on the non-financial performance of the firm in the Finnish market.

Table 7 OI S	regression results	for non-finan	cial performance
radic / OLS	regression results	s for non-iman	cial periormanee

Dependent		
Variables	IntTA	RDSales
(Constant)	0,969	(-0,028)
DE	(3,271)	(-2,814)
DE	-0,050	0,001
	(-0,78)	(-0,001)
DERIMVEQUITY	-0,057	-0,072
	(-0,892)	(-1,309)
MVBV	0,013	0,016***
	(0,198)	(6,967)
JensonAlpha	-0,053	0,034
	(-0,835)	(0,624)
P/E	-0,017	-0,088
	(-0,258)	(-1,683)
TobinQ	0,019	0,184
	90,282)	(0,577)
ROA	0,042	-0,269***
	(0,649)	(-7,775)
ROE	-0,026	-0,005
	(-0,402)	(-0,082)
EPS	0,001	0,002
	(-0,002)	(0,04)
RDSales	-0,050	
	(-0,777)	
IntgTA		-0,026
		(-0,49)
SD	-,057b	0,026
	-0,85511	(0,44)
BETA	-0,044	-0,030
	9-0,692)	(-0,569)
CACL	-0,039	0,008***
	(-0,602)	(3,968)
LnMarkCap	0,007	0,005**
	(0,069)	(2,986)
LnAssets	-0.099*	-0.047
	(-2,269)	(-0,444)
IndDirProp	0.106*	0.034
	(1.55)	(0.585)
MarkRet	0.037	0.081
	(0,573)	(1,54)

Note: ** p<0,01; * p<0,05

Number of observations: 250

Concerning the risk of the company, while the capital structure has no influence on the systematic risk, there is a significant dependence of Standard Deviation on the balance between the debt and equity, as Debt-to-Book Value of Equity ratio, as Debtto-Market Value of Equity ratio. It highlights that systematic risk measured by Beta represents the broad market factors not depending in internal decisions of the corporate governance, such as capital structure, and, consequently, cannot be diversified. Standard Deviation, on the contrary, represents the overall volatility of the stock, including the unsystematic risk factors such as the dependence of the stock on the main strategic decisions of the management and changes applicable to the industry or sector. The positive dependence of risk on the capital structure shows that higher amount of debt leads to the increased risk of the firm, what proves the disadvantages of the debt and its financial distress cost. Consequently, the hypothesis H2b that the capital structure affects the total risk of the firm was proved, while the hypothesis H2a was rejected.

Out of the analyzed variables, Beta is significantly positively dependent on the Standard Deviation, as Standard Deviation includes the effects of systematic risk as well. Nevertheless, the low R Square of 0,052 represents that there are a lot of other factors influencing the systematic risk.

Standard Deviation is also associated positively with Jensen's Alpha and Beta, and negatively with ROA and market size, what highlights that company's successful overperformance is directly connected with the growing risk, as companies, in order to overperform, tend to make risky decisions, while with the better profitability and size of the company the total risk decreases. With the taken variables the R Square for SD was 0,323, what is high enough for statistics to state that the risk can be managed by the creation of the optimum capital structure but means that there are still more variables which can explain the changes in total risk of the firm.

Table 8 OLS regression results from risk

Dependent		
Variables	BETA	SD
(Constant)	-0,018	2,888
	(-0,946)	(15,588)
DE	-0,082	0,095*
	(-1,291)	(2,277)
DEBTMVEQUITY	0,039	0,184**
	-0,595	-3,025
MVBV	0,003	0,043
	(0,054)	-0,716
JensonAlpha	0,014	2,49***
	(0,217)	(5,579)
PE	0,025	-0,078
	(0,403)	(-1,448)
TobinQ	-0,004	0,073
	(-0,059)	-1,219
ROA	0,033	-2,878***
	(0,494)	(-4,815)
ROE	0,057	0,064
	(0,883)	-0,743
EPS	0,057	-0,009
	(0,892)	(-0,151)
RDSales	-0,010	0,055
	(-0,159)	-0,967
IntgTA	-0,047	0,008
	(-0,742)	(-0,143)
SD	0,029***	
	(3,619)	
BETA		1,598***
		(3,738)
CACL	0,109	0,083
	(1,724)	-1,497
LnMarkCap	0,092	-0,145***
	(1,375)	(-4,928)
LnAssets	0,107	0,083
	(1,650)	-1,498
IndDirProp	0,013	0,048
	(0,206)	-0,82
MarkRet	-0,016	-0,031
	(-0,246)	(-0,574)

Note: ** p<0,01; * p<0,05

Number of observations: 250

5 Conclusion

This section of the thesis is aimed to summarize and clarify the results of the findings so as to answer the research questions and underline the interconnection of the results with the theoretical findings of the thesis. The goal of the chapter is also to provide the recommendations for the further practical implication of this research in the business world, as well as for the following research possibilities.

5.1 Discussion about the findings

The results of the analysis were able to answer all research questions stated in the thesis and support each hypothesis. The influence of capital structure on various areas of performance and risk were tested in this study and the results are quite clear. To answer all the research questions the OLS regression statistics were implemented on the data. Finally, the influence of the capital structure represented by two ratios on all dependent variables was tested.

1. What is the impact of capital structure on the performance of the companies?

H1a: The capital structure influences the market-based firm performance.

H1b: The capital structure influences the hybrid firm performance.

As the result of the analysis, capital structure has a negative influence on the marketbased performance of the firm. With the increase of the share of debt in the capital structure, the market performance of the company is falling. This finding argues with the Modigliani and Miller theory (1984) that the capital structure has no effect on the market value of the company and proves the significance of considering the imperfect environment, including taxes, inflation, interest rate etc. Considering the effect of debt on the hybrid performance, the findings are opposite of the market performance case. Higher debt increases the value of Tobin's Q, consequently, has a positive effect on this type of performance.

Nevertheless, the classical understanding of the capital structure considering the book value of shareholder's equity, when calculating the total equity of the firm, shows that the market is irrelevant to the fluctuations of the borrowings amount in the company.

At the same time the results prove that the market negatively reacts on the debt, when it excesses the market value of the shareholder's equity. This brightly represents the significance of finding the optimum balance between the debt and equity, as it can be concluded that market and hybrid performance are not affected by the debt increase, even if its share is more than the share of equity, until it starts to be higher than the market value of equity, which is represented by the market capitalization.

H1c: The capital structure influences the accounting-based firm performance.

The analysis uncovers that the capital structure affects the accounting-based performance. Nevertheless, it is impossible to say whether this effect is positive or negative, considering the accounting performance as one variable. Different influence of leverage on the ratios of profitability underlines the significance of the Trade-off theory, claiming that the perfect capital structure creation is a trade-off between the benefits of debt in tax protection and the threat of bankruptcy it causes. While smartly managed increased share of debt, compared to the share of the book value of shareholder's equity, boosts up the Return on Assets in Finnish companies, the rest of the accounting performance metrics eventually will fall. Consequently, to choose the perfect proportion of debt and equity in the capital structure companies should make the strategic decision of what are their desired results of profitability, as it is impossible to target the maximum in all of them while using very high, or very low amount of debt. Still, they will be oppositely affected by any decision made. Therefore, it is important to find the optimum proportion of the financing ways to achieve the desired results in all indicators, without compromising some of them to decline. At the same time, these findings also underline the difference of perspectives on the capital structure. Return on Assets can grow up until the debt is exceeding the book value of equity. Nevertheless, the share of market value still should be higher than the share of debt to support the growing indicator. This fact allows to put the hurdle line on the amount of debt to know since which moment high borrowings can start to decrease all indicators of accounting performance.

As it was discussed in the theoretical review of the literature, agency cost theory connects the capital structure and performance of the firm. The negative influence of increased debt on EPS shows the aspect of the grand theory describing the conflict
between debtholders and shareholders. While the debtholders tend to have their stable interest on the loan given to the firm, the shareholders have the returns left after the payment of these interests. Earnings per share are directly connected with the capital structure decisions, as the interest paid for the debt goes before the allocation of the earnings to the shareholders, what significantly decreases them. In can be concluded that to make the smart leverage decision management should make the priorities between the main investors or find the optimum balance to treat both equally.

H1d: The capital structure influences the non-financial firm performance.

The results show that the capital structure has no impact on the non-financial performance of the sample companies. The findings contradict with the theoretical review, as the theory claims that the debt is used for financing the innovation activities. Nevertheless, the conclusion is that in Finland other strategic decisions on the current state of the company have more influence on the nature of the business and its innovativeness than the way of its financing.

2. What is the impact of capital structure on the financial risk of the companies?

H2a: The capital structure influences the systematic risk.

The findings show that the decision on the capital structure has no influence on the systematic risk of the firm. Leverage is an internal factor, specific to each individual company. From the notion of the systematic risk, this type of risk comes from the market changes and general factors influencing the whole industry, sector, country or area. Consequently, the findings prove that the volatility of the stock from the market fluctuations does not depend on any internal company factor, including the capital structure.

H2b: The capital structure influences the total risk.

On the contrary, when adding to the systematic risk the unsystematic one, and measuring the total risk, results show that it is positively impacted by both perspectives on the capital structure taken in this thesis. The conclusion out of this is the fact of high riskiness of debt, what underlines its disadvantages. Thus borrowings increase the total, and unsystematic risk of the firm, as the last comes from the internal decision making within a firm and can be diversified by investors, while holding several stocks with different capital structure in their portfolios.

Despite the fact that the main tested theory in this thesis was about the influence of capital structure, during the research a lot of other factors affecting the performance and risk were found. The profitability of the firm significantly depends on all tested spheres, including market, hybrid, non-financial, and accounting performance, as well as total risk. The ratio influencing the majority of dependent variables was the Return on Assets, what underlines the importance of high profits generation to increase the size of a firm, grow of market potential, and decrease the risk, even though the findings show that is can drop the innovativeness. The other factor significantly affecting all spheres of performance is the liquidity of the company. The influence is contradictory and while the available liquid assets are an advantage for the market potential, generations of Earning per Share for shareholders, and innovativeness, they can decrease the returns on equity and hybrid performance. Consequently, it can be suggested that similarly as leverage, the decision about the level of liquidity can affect the performance of the firm. Furthermore, the significant influence of the Market Value-to-Book Value is seen on all types of the performance as well, what underlines the significance of market perspective on the firm, and probably even the firm's reputation.

To conclude, the findings of the research prove the significance of the decision on the proportion of debt and equity in the capital structure of the firm. Answering the two questions of the study, both performance and risk are affected by the leverage of the firm. Consequently, on the moment of the incorporation of the firm and even earlier the long-term perspective decision on the smartly balanced capital structure should be made to determine the future development of the company, including its profitability, perspective by the market, and risk. Nevertheless, besides the liquidity, there are several more strategic decisions to be made which can have a significant impact on the success of the firm.

5.2 Practical implications of the results

The interdependence between the capital structure and other strategic factors in the firm is actively studied in the financial field. Researchers are aiming to understand the

phenomena of different types of financing and the outcomes of various decisions about it. The perfect structure of the capital had been searched for over the century, the global theories about it were made and acknowledged all over the world. However, still there is no rule of how the company should finance itself.

The unique feature of this study is its broad examination of several factors by which the success is determined and exploration of the capital structure influence on them. The findings of the research may be of interest to the financial researchers aimed to see the big picture of the interdependence of different indicators of the operations within a firm. As the results of this research are based on the numerical valid data, they can be used for further statistical analysis in the field of capital structure, performance, and risk.

Furthermore, the main goal of the research was to give the clue to the Finnish companies mainly on how to plan their financing activities to succeed in the operations. The author believes that the results can give the clear picture of the significance of the leverage decision as the long-term decision needed to be made in advance. Moreover, the findings can help to choose the optimum proportion between debt and equity depending on the strategic goals of the firm. The double perspective on the capital structure allowed to set upper limits for the debt borrowing as well as understand that lower debt can also negatively influence the success. The variety of variables and several views on the performance has also shown the difference in the influence of leverage, as while with higher debt one indicators were improving, the others could dramatically fall. Consequently, based on the results the perfect balance between debt and equity starts to be seen. Depending on the strategy of the firm, each company can choose which indicators they want to improve, what would be the limits of fall of other, and balance the proportions of debt and equity in their capital structure to achieve the desired results. Moreover, from the results of the research, the corporations can see how their other strategic decisions and results, besides the leverage, are perceived by the market, and interconnected with profitability, innovativeness and risk.

Besides researchers and companies, the findings of the research can also be used by the investors, as the author opens up the problem of risk the stock of the firm possess on the total portfolio, compared to the amount of debt the company has. The work also reflects the influence of leverage on the returns to the shareholders, thus familiarizing with the research they can predict the future fluctuation of their earnings from the company's operations and the decisions of the corporate governance.

5.3 Limitations and recommendations for the further research

The research done in this thesis has several limitations, which could affect the results, consequently, there are recommendations for the further work done. The main limitation is the sample of the chosen companies. The research studies 50 companies, however, it is not all firms represented on the Finnish market. Therefore, the results do not cover the whole picture and do not represent the overall situation on the market. Furthermore, the chosen companies represent only the Finnish market, what limits the implications of the research in other countries. However, the stable economy of Finland can be considered similar to the other Nordic countries, what expands the usability of the research. All companies used are publicly listed companies with shares available on the Finnish stock market. Nevertheless, the capital structure decision is made much earlier than the incorporation and the results do not cover the sector of private firms in Finland at all, as the author did not have access to the data of those companies.

The second main limitation is connected with the risk of the relationship between variables in regression analysis and reversed association problem, which is the influence of one variable on the variable which also affects the first one. This phenomenon makes the results less valid and unprecise, what leaves the space for a better choice of variables to test.

Based on the limitations, the further same research can be made, but for the bigger sample of companies. It can be all companies in Finland, or expansion of the sample to the rest of the Nordic countries. Also, the whole new research with the same methodology can be done for the private companies. As all measures and variables were taken with the international perspective on finance, the same research can be made for other countries all over the world. The author finds it interesting to compare the findings between the countries and find out whether the capital mix should be the same globally. Moreover, the research was limited to only two considerations of the leverage measures. The future researchers can test the influence of the short-term and long-term debt and proportion of debt to total assets on the performance and risk, to find more perfect recommendations for the balancing between debt and equity. The research has also covered the influence on risk and performance by numerous control variables. The future study can change the main independent variable to one of them, for example, liquidity, and analyze how those strategic decisions can affect the same success indicators. Furthermore, as the R-Squares for the non-financial performance and risk were quite low, it can be researched what are the factors influencing them besides uncovered in this thesis, to make the control over successful operations more detailed.

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