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The Impact of Capital Structure and Board-Related Characteristics on Investment Decisions and Performance of Finnish Companies

Nikita Staroshvetckii

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Abstract

The aim of this study was to examine the impact of capital structure and board-related characteristics on investment decisions and performance of the company. The analysis of secondary company-provided data was performed on information dating from 2014-2018. The main objective was to find out the connection between the boards, investments, capital structure, and profitability.

Secondary numerical data was collected from annual, financial, corporate governance, and remuneration reports of the companies. With the usage of SPSS software descriptive, correlational and multivariate ordinary least square analyses were conducted. Descriptive statistics provided an overview of the main variables' characteristics. The correlation test enabled to tracking of association levels between the two variables. The ordinary least square analysis outcomes demonstrated the extent of a set of independent variables' impact on the chosen dependent ones. The described methods allowed the author to answer the research questions and test the proposed hypotheses.

The empirical findings answered all the research questions. The debt-to-equity ratio had a negative effect on the operating profit ratio and no effect on the sales revenue. The amount of total assets, share ownership by the board, and education level had a positive influence on the debt-to-equity ratio. Board size and independence of the board had a negative influence. Sales revenue had a positive effect on equity financing. Investments had no influence on the capital structure. Incentive-based pay to the CEO and a board with many members were positively related with the performance measures of a company. Share ownership by the board had no effect on the performance of the company but had a positive impact on the amount of investments. The education level of the board was positively associated with the current investments.

Keywords/tags (subjects)

Capital structure, investments, corporate governance, performance analysis, debt, equity, experience of the board, education level, independance of the board, NPV, IRR, WACC, Finland, agency problems, behavioural finance

Miscellaneous (Confidential information)

Contents

1 Introduction 3
1.1 Research Background 3
1.2 Research objective 6
1.3 Structure of the thesis 7
2 Literature review of Capital Structure, Corporate Governance, and Investment Decisions 8
2.1 Capital Structure 8
2.1.1 Debt 8
2.1.2 Equity 9
2.1.3 Optimal Capital Structure 10
2.1.4 Cost of Equity and Capital Asset Pricing Model 11
2.1.5 Beta 12
2.1.6 Cost of debt 13
2.1.7 WACC 14
2.1.8 Capital Structure Theories 15
2.1.9 Modigliani and Miller Propositions 15
2.1.10 Trade-off Theory 17
2.1.11 Pecking Order Theory 17
2.1.12 Financial Distress Costs and Bankruptcy 19
2.2 Investments 20
2.2.1 Investment Decisions 20
2.2.2 Net Present Value 21
2.2.3 Internal Rate of Return 23
2.2.4 Return on Assets 24
2.3 Corporate Governance 24
2.3.1 Board of Directors and Executive Board 24
2.3.2 Agency Problems and Their Solution 25
2.3.3 Compensation 27
2.3.4 Behavioral Finance 28
2.3.5 Board size 29
2.4 Hypotheses development 29
3 Research Framework 31
3.1 Methodology 31

3.2 Data Collection 33
3.3 Methods of Data Analysis 37
3.4 Reliability and Validity 41
4 Empirical findings 43
4.1 Descriptive Statistics Results 43
4.2 Correlation analysis results 49
4.3 Regression results and findings 53
4.3.1 Sales Revenue Growth as a Dependent Variable 54
4.3.2 Operating Profit Ratio as a Dependent Variable 58
4.3.3 Debt-to-Equity ratio as a Dependent Variable 60
4.3.4 Current and non-current assets as dependent variable 63
5 Conclusion 67
5.1 Discussion about the findings 67
5.2 Practical Implications of the Results 71
5.3 Limitations and Recommendations for the Further Research 72
References 73

Figures

Figure 1. Saunder's "Research Onion" 32
Figure 2. Industries of chosen companies 43

Tables

Table 1. Variables characterization 35
Table 2. Descriptive statistics 48
Table 3. Codes of the variables 51
Table 4. Correlation results 52
Table 5. Regression results - sales revenue growth as DV 57
Table 6. Regression results – operating profit ratio as DV 60
Table 7. Regression results – debt-to-equity ratio as DV 63
Table 8. Regression results – CA and NCA as DV 66

1 Introduction

1.1 Research Background

This research investigates the influence of the capital structure and board-related characteristics on the investment and profitability measures of Finnish companies. The work operates with four interlinked key topics: capital structure decisions, investment decisions, board characteristics, and profitability measures.

One company to succeed in a long-term run needs to take a lot of decisions in meeting its business goals. The most important ones are investment decisions and financing decisions.

By investment decisions, a company needs to ask itself two questions: first, whether to invest in a project or not; second, what amount of money is available and reasonable for investment purposes. To take a decision whether to proceed with the investment or not, several methods of defining its profitability can be applied. These can be IRR and NPV methods or other. The amount of cash which the company invests in future and current operations depend on several factors. First, the industry in which the company is operating in. Does the company need high investments at all to succeed in the market? Second, the size of the company and money availability. The bigger the company is in size, the more money it generates from its operations, and at the same time more debt is available to borrow at a lower interest rate due to reduced risks, this all leads to higher amount of money available for investments. The investment decisions often let the managers struggle, and the more cash is available for investment, the more difficulty in its allocation managers find. (Magni 2009, 4-5.) The research looks underneath the investment decision taking. The influence of selected board-related characteristics and capital structure on investment levels have been explained.

Financing is closely linked to investments; this is the basis of the organizations functioning. Capital structure is a mix of various sources of financing: short-term and long-term debt, common and preferred equity. (Myers 2001, 81-82.) Both debt and equity have its pros and cons, which have been analyzed in the work. Donaldson

(1978) states that there is enough empirical proof that the capital structure decisions influence the performance of the company and its risk of getting bankrupt. According to Baker and Mallot (1936) the board of directors has been always facing difficulties to find the ideal mix of debt and equity for ensuring internal financial control and long-lasting business success. (24-55.) Leverage is by many researchers seen as a cheaper way of financing, however some empirical studies contradict with this statement and show a negative effect of debt on the profitability. (Titman and Wessels 1988, 1-19; Rajan and Zingales 1995, 1421-1460; Fama and French 2002, 549-582.) The question researched in this paper is whether there exists an optimal capital structure for one company, and how to find the balance between debt and equity, which will lead the organization to "healthy" growth. Factors influencing capital structure have been analyzed, also the influence of capital structure on corporate governance and investments have been researched.

The questions of investments and financing are solved by the shareholders and management. That is why a deep look in the performance and composition of the board of directors and executives has been taken in this research. There are several theoretical and empirical works commenting on agency problems. The agency problems exist for ages and it is a principal-agent problem. It occurs as the agent is permitted to take decisions on behalf of the principal, however the interest of two mentioned parties are conflicting, and the agent acts in a way more profitable for his/her own benefit, rather than in the interest of the principal. (Eisenhardt, 1989.) It is hard to detect the agency problems in the companies' reporting, and that is why not many studies show the practical finding and only cover the theoretical part of this issue. In order to correctly understand the possibility and outcomes of the agency problems the research is comparing various attributes of corporate governance not covered by other works and compares them with the company performance, as well as with the investments and profitability. These corporate governance attributes include: board size and its independence, educational and experience background of the board members, as well as percentage of shares owned by the members and remuneration schemes. At the same time valuing investments can get confusing when applying net present value and internal rate of return calculations. An idea which lies behind the research is that educational background and experience of the board members matters, the higher it is, the higher the performance and investment success is seen in a

company. These predictions are being studied in the work. The author found out that there is no enough data regarding this specific topic, except some articles of behavioral finance, which makes the topic studied unique for the research. Previous empirical studies were primarily conducted in developing markets where the results might differ from the results in Finland. Cagle (1988) reported a positive relationship between experience and education of the board and the performance of the company, however, it was a study of the developing market, and the results could also get outdated and irrelevant. This research is a full and thorough study of internal corporate governance arrangement compared to the business outcomes and other characteristics. This kind of a research was previously not conducted in the same way as it is in this paper. The research is supposed to answer the questions if the agency problems exist in real life as a big scale and important problems or it is just a rather small issue. The influence of the board composition, its related characteristics, and possible agency costs on investments, capital structure, and performance of the company has been researched.

In order to reach the goals of the work, following questions should be answered:

1. What factors influence capital structure composition?
2. How is capital structure linked with a company's performance?
3. What structure of the board is the most effective one for the firm's performance? What are the "good to have" characteristics of the boards?
4. Do board-related characteristics and capital structure affect investments?

To answer these questions, the data of 14 Finnish companies has been taken in the period of 2014-2018 has been taken for analysis. 48 key variables were introduced to track the capital structure, boards, and performance of the companies. Finnish market was chosen due to its stability and reporting requirements. Companies of varying sizes and from different industrial sectors were taken to ensure the data applicability on other researches. The number of selected companies was limited to 14 as there is a lack of corporate governance reporting in a large share of publicly traded companies in Finland. As well as the numbers of variables complicated the data collection

process. However, a large time horizon and a diversification in size and industry allow to form enough observations to analyze the data.

The data has been collected primary from the companies' reports: annual, corporate governance, financial, and remuneration reports. NASDAQ OMX Nordic stock market database was used to compare the findings and collect some financial data. The data has been analyzed through descriptive statistic, Pearson's Product Moment Correlation Coefficient, and Ordinary Least Square Regression models. The dependent variables (the one which are explained) have been chosen in according with the theoretical findings and hypotheses and include: sales revenue growth ratio, operating profit ratio, and share price growth ratio as performance of the company measures; debt-to equity ratio to analyze the capital structure decisions and influence; and current and non-current assets increase ratios to track the influence on investment decisions.

The motivation to study the Finnish market is also explained by the author's personal interest in European market. It follows the author's studying path of Finance and Corporate, and the interest to become a managing director in a large corporation. The work has also an impact on the further master's degree specialization which is going to be taken by the author.

1.2 Research objective

The objective of the research is to find out whether companies' performance is dependent on the financing decisions, remuneration structure and qualifications of the boards of directors and executives. Another objective is to determine by what factors are the investment decisions influenced. The influence of both boards on investments is measured and linked to the outcomes of investments. As the main concern discussed in most of the chapters, the relation between financing and investment decision is clearly explained and a comment on optimal capital structure for a firm is given.

The paper covers not only the influence of the capital structure on the company performance, but it also examines the factors that influence the composition of capital structure.

The paper gives a clear insight for managers of the company, especially useful for financial managers and controllers, to equity and debt questions, importance and reasons for investment decisions, and advices and understanding of how to deal with the most arising issues in managing of the boards of directors and executives, giving the answer to the questions of optimal board sizes and comment on importance of education and experience levels of board members. The research becomes especially actual for current years, when the companies are rapidly growing in size, less control is applied, and the capital market offers a lot of various financing sources.

The paper gives advice of remuneration schemas and answers the question: how the company performance should be optimally linked with the remuneration. Agency problems and costs are examined as well by considering the remuneration schemes and shares ownership compared to performance measures. Additionally, the influence of capital structure decisions on agency costs is discussed.

The influence of corporate governance specifics and capital structure on investments is being explained, and main influencing factors are highlighted.

1.3 Structure of the thesis

The thesis includes an overview of related theories, articles and work to familiarize the reader with the theoretical background and previous empirical findings and evidence. Following topics are covered: capital structure and theories of capital structure, debt and equity, and their pros and cons, investments and methods to analyze the investment opportunities, corporate governance issues, agency problems, and other supportive topics. The empirical findings of other researchers are also discussed in the literature review chapter. Based on the collected information and on individual ideas of the author the hypotheses of the work were developed.

There is the chapter "Methodology" after the hypotheses, which describes the applied research approaches and techniques. The methods of data collection and introduction to key variables are as well mentioned in “Methodology”. In the chapter “Research results” the empirical findings of the study are revealed. Empirical finings and its analysis are presented. “Conclusion” is the last chapter where the reader gets a brief overview of the whole research and connection of the data analysis outcomes to the

theories and hypotheses. Additionally, practical and managerial implications of the results are discussed. Limitations and recommendations for future research are given.

2 Literature review of Capital Structure, Corporate Governance, and Investment Decisions

The research covers three main topics: capital structure, corporate governance and investments. The literature review is thus also divided into three parts according to the topics. Decisions taken on these topics are one of the most important once for the firms well-functioning. Capital structure, corporate governance and investments are overlinked and thus discussed both separately and together. The information is given gradually introducing new topics and materials on top of already discussed ones, so the reader can get familiarized with the theoretical and empirical background even with little previous knowledge on the topics.

2.1 Capital Structure

Capital structure represents the financing of an organization. The two main components of capital structure are debt and equity. (Myers 2001, 81-82.) First, debt is discussed, then in chapter 2.1.2 – Equity, and in chapter 2.1.3 Capital Structure as a concept is being explained. Further topics on capital structure include calculations of financing cost and theories review of capital budgeting.

2.1.1 Debt

Debt represents the borrowed capital of the company, it can be in form of financial resources, or other property values, involved in the financing of the company with the obligation to be returned. (Bradley 1984, 577.)

A distinct feature of debt it that it has an interest and a maturity date decided between the company and debtholders. (Swanson, Srinidhi & Seetharaman 2003, 2.)

When a company issues debt it gets several advantages. Compared to equity, debt does not give the creditor a possibility to make any direct claims regarding the future incomes of the company, the creditor always gets the agreed amount plus interest. The

sum is defined and not depending on how the company performed. (Bradley 1984, 579.) This characteristic of debt encourages financial planning, as the exact amount of payment and the exact date it is due are already known.

The fundamental difference between debt and equity is that debt doesn't lead to a dilution of the share of the company's owner. (Hamberg 2001, 107.)

Another important advantage of debt is tax deductibility. As the tax is deducted after interest payments of debt, the company spends less money paying taxes. This feature of debt is often referred as "tax shield".

Debt finance allows a company to raise funds at a lower cost than equity (both pre and post-tax) and have more flexibility when managing the pool of capital. Additionally, it can enhance the return on equity via the leverage affect. The terms of a debt funding agreement may require the borrower to provide significant commitments by way of security, representations, warranties and covenants, depending on the balance between the return for the lender and its perception of the risk involved.

The point of debt being tax-deductible, and its advantages are clearly seen in the amount of companies that decide to choose debt as their financing source. However, debt has some limitations and downsides. The most important disadvantages are reduced financial stability, loss of solvency and bankruptcy risks. (Altman 2002, 8.)

2.1.2 Equity

In financial accounting, owner's equity consists of the net assets of an entity. Net assets are calculated as the difference between the total assets and total liabilities as quoted in the IFRS Framework quotation: International Accounting Standards Board F.49(c).

Equity is the financing one company gets either from internal operations and sales (the cash flow generated by existing assets can be reinvested into new assets without issuing new shares) or raised externally. Three types of external securities by which companies raise equity exist: common stock, preferred stock, and warrants. Equity holders are people who use their own fund to operate and control the business. Based on the proportion of shares held, the shareholders can have some control over the organization and get dividends pay out. Equity is always bounded with the

performance of the company thus the shareholders do not get guaranteed the money and additional interest fully back or on certain amount of time. This is the fundamental difference with debt.

According to Agar (2005), equity financing enables shareholders to receive an income return in the form of dividends paid out of post-tax profits (if distributable profits were available, and if the company decided to pay a dividend), to receive a repayment of the investment on the winding up of the company, limited to any surplus funds from the sale of assets after settlement of all other prior claims (liabilities and non-equity), and to vote at a shareholders' meeting. Thus, having a higher price and maybe unpleasant conditions to a company as it loses control (686).

2.1.3 Optimal Capital Structure

Researcher and managers of the company seek to find an optimal capital structure; however, it doesn't exist, at least a universal one. Searching for an optimal capital structure means searching for an inexpensive capital, which allows the company to perform above the market and grow pushing the company ahead the competition. To find a right financing path a company needs to balance the advantages of debt, because it is a cheaper way of financing, and the risks associated with debt which have a negative influence on the company. The choice of capital structure is depended on many factors such as size of the company, industry, profitability and corporate tax level, tangibility of assets, growth opportunity, required flexibility, etc.

One may think, if debt is a cheaper way of financing, the optimal capital structure may consist solely on debt. No, debt possesses an extra risk to the company, which can lead to bankruptcy of the firm. That is why the mix of cheap debt and stable equity is always needed in a "healthy" capital structure. (Hillier 2012, 522.)

Capital structure allows investments to be pursued. By financing decisions following factors are considered: overall cost of capital which should be as low as possible, operating cash flows and assets realizations are matched to financing cash flows, and the post-financing cash flows are minimized. (Agar 2005, 3.)

When choosing the capital structure, the companies' liability is to increase the current value of the company and the wealth of its shareholders. The increase in valuable effects should be also sustained in future, and not just one-time payment.

By reading the annual reports of companies, one gets an idea that companies while managing their financing, seek to support the profitable growth of operations by securing an adequate liquidity and capitalization of the corporation. The target for them is to maintain a capital structure that contributes to the creation of shareholder value. A reasonable aim taken by most of the companies considered when building the capital structure is to ensure strong credit quality to provide for ample access to external funding sources and to support the growth ambitions of the business. KONE annual report has given ample proof of that.

In order to build a strong capital structure which will fulfill the criteria mentioned above, several methods of determining the debt and equity mix can be applied. A review of common capital structure theories is given in the next chapters.

2.1.4 Cost of Equity and Capital Asset Pricing Model

For planning future profits in price-regulated companies, interest costs for borrowed funds and equity must be considered. As a part of the cash flow-based business valuation, it depends on the valuation model applied whether a return on equity (return required by the investor) or a weighted average cost of capital (WACC) is used as the discount interest calculation. Common to all cash flow-based procedures is that the rate of return is contained in the discount interest calculation. To calculate the return on equity, the capital asset pricing model (CAPM) is explained. (Hierzenberger 2010, 7.)

To estimate the cost of equity, which is the expected return on the firm's common stock, the capital assets pricing model (CAPM) may be applied:

Expected stock return = $Rf + \beta(Rm - Rf)$, where

Rf - the return from a risk-free capital investment (risk-free interest rate);

β - measurement for the systematic risk of security (beta factor), which will be explained in the next chapter; and

Rm – the expected return from the market portfolios.

The expected stock return implies the expected income earned on investment. (Medina 1988, 70.)

The risk-free rate is an investment with no (or actually very low) risk. Usually, the risk-free rate governmental bond is taken as a Rf measure.

Rm is usually recognized as one of the market indexes, as it describes the average market return. (Bukhvalov 2006, 11.)

When determining risk premium, CAPM assumes the entire risk of a precarious security decomposes into a systematic and an unsystematic part. The unsystematic risk is not influenced by the capital market, rather it is influenced from factors that are evaluated as specific to a security. These could be certain characteristics of the management or the client structure. These factors can be diversified through portfolio formation, which is why the capital market does not compensate for unsystematic risk components. (Mandl and Rabel 1997, 290; Fischer 2002, 74-103; Copeland et al. 2002, 265; Damodaran 2001,155.)

Systematic risk components cannot be avoided through diversification, which is why they are compensated from the capital market. Systematic components are generally tax policy measures, economic and interest trends. (Spremann 2006, 314; Mandl and Rabel 1997, 290; Purtscher 2006, 108.)

2.1.5 Beta

To calculate the Capital Asset Pricing Model (CAPM) (the cost of equity) beta needs to be estimated. Beta refers to the indication of the systematic risk, also known as undiversifiable or market risk. It shows how companies stock return moves in comparison with the market as whole.

The beta factor represents the quotient of the covariance between the rate of return of the security "i" and the rate of return on the market portfolio "m" and the variance of the rate of return of the market portfolio (Fischer 2002, 75.)

$\beta = \frac{Cov(Ri,Rm)}{\sigma_m^2}$, with

β is the Beta factor from the company (company i in this case),

$Cov(Ri, Rm)$ is the covariance of security return (i) and the market (m),
σ_m^2 is the variance in the market return (m).

If beta equals one, then the company's stock moves accordingly to the market. Beta equaling one is also considered as market beta to which financial analysts often refer. (Watson & Head 2010, 239.)

A Beta of more than 1 means that the reaction of the security rate of return is high and disproportional to the market, thus meaning price fluctuations and higher required rate of return on the equity. A Beta lower than 1 on the other hand means that the company has a lower risk and price fluctuation than the market, which leads to lower required return on equity.

With an understanding of how to estimate Beta and a CAPM formula, the cost of equity can be calculated.

2.1.6 Cost of debt

The cost of equity can already be identified through the CAPM calculations. The other part of capital structure and WACC is debt.

The cost of debt is a return the company provides to its debtholders and creditors in terms defined in the agreement. The cost of debt is basically the interest rate minus the "tax shield". Debt offers the advantage of being a cheaper source of financing relative to equity. It provides the additional benefit that interest payments are tax-deductible. This feature of debt is often referred as tax shield.

As debt is a tax-deductible expense the after-tax cost of debt is

$After - Tax\ Cost\ of\ Debt\ =\ (1 - Tc) * Rd$, where

Tc is the corporate tax rate, and

Rd is the cost of debt (the interest the company pays for holding debt).

According to CAPM, the higher the risk (beta) is, the higher is the expected return from the company. The same goes along with debt, the higher the risk is the more the interest rate for a debt is, resulting in higher costs of debt. So risky companies no matter of what financing way they choose have a larger WACC, than safe and stable ones.

2.1.7 WACC

WACC or the weighted-average cost of capital is the companies' cost of funds calculated by individual costs of debt and equity and their total weight in capital structure. It serves as a benchmark for companies' performance related to capital structure. The company's goal is to minimize WACC by balancing debt and equity. (Watson & Head 2010, 259.) The total cost of capital results in the average value of prices of each financing source. (McLaney 2009, 282-283.)

A formula for the weighted-average cost of capital after tax (WACC) is

$WACC\ =\ (1 - Tc)\ *\ Rd\ (D/V) +\ Re\ (E/V),$ where

Tc is the corporate tax rate,

Rd is the cost of debt,

Re is the cost of equity, and

V is the sum of debt (D) and equity (E).

The cost of equity is calculated using CAPM, described in chapter 2.1.4. The cost of debt is the interest a company pays on its debt divided by the total amount of debt. The corporate tax rate is defined as the income tax expense divided by the income before taxation.

WACC becomes also important when considering investments. It is often used as a discount rate for investment analysis. A profitable project should have the internal rate of return (IRR) higher than the cost of capital or WACC.

2.1.8 Capital Structure Theories

Capital structure is one of the most important decisions which should be taken in a company. Financial managers need to balance two main source of financing debt and equity in order to find an optimal gearing level resulting in maximization of profit.

The term gearing refers to the amount of debt compared to equity in a company, the more debt, the higher the gearing level is. Gearing is a synonym to leverage. Why is it good or bad? On the one hand, leveraging enables gains to be multiplied. On the other hand, losses are also multiplied. (Brigham 1995, 578.) That is why debt as a financing instrument should be used with a great care and conscious. The ratio of debt-to-equity is used in this work as one of the ways to measure gearing. The higher the debt-to-equity ratio is, the more aggressive is the financing and more growth is expected. Such method of financing is often used when the risks are high and the earning volatile.

A high gearing ratio leads to higher potential profit, because of the tax advantages of debt and no need to issue more equity. However, high levels of debt financing results in increased costs as the risk rises. A task of the financial manager is to balance the advantages and costs, finding the most profitable combination of both financing sources.

According to the Modigliani and Miller leverage formula, that applies to one-period levered investments, if the rate of Return on Investment (ROI) is not less than the Rate of Debt (ROD) then external financing increases ROE. (Farinelly, 2017.)

As the capital structure is a basic task each company faces, several theories have been developed, in the next chapters an overview of most important theories is presented.

2.1.9 Modigliani and Miller Propositions

The first theory covered is the theory of Modigliani and Miller, as they were the first economists who attempted to develop a theory on capital structure in 1958. Modigliani and Miller say that in a perfect market any combination of securities (debt

or equity) is as good as other. The Modigliani-Miller theorem (MM) states that the market value of a company is calculated using its earning power and the risk of its underlying assets and is independent of the way it finances investments or distributes dividends. Meaning that the choice of capital structures does not affect the value of a firm.

As long as investors can borrow or lend on their own account on the same terms as a firm, the value of levered and unlevered firms should be the same. There also exists a law of conservation of value, which says that the value of an asset is preserved regardless of the nature of the claims against it. Thus, Proposition 1 of MM: Firm value is determined on the left-hand side of the balance sheet by real assets – not by the propositions of debt and equity securities issued to finance the assets. Which means that the market value of any firm is independent on its capital structure.

Leverage is discussed in Proposition 2 of MM. Leverage, as discussed in previous chapter, increases the expected stream of earnings per share. However, as the Proposition 2 says, not the share price. The reason for that is that the change in expected earnings is exactly offset by a change at which the earnings are discounted.

Through WACC the expected rate of return on equity can be found.

$$WACC = (1 - Tc) * Rd\,(D/V) + Re\,(E/V)$$

The second MM proposition states that the expected rate of return on the common stock of a levered firm increases in proportion to the debt-equity ratio, expressed in market values; the rate of increase depends on the spread between Re, the expected return on a portfolio of all firms' securities, and Rd, the expected return on the debt.

Any increase in expected return is exactly offset by an increase in risk and therefore in shareholders' required rate of return. That is why shareholders "stay indifferent" to increased expected return.

MM's propositions, being the first work on capital structure, face some difficulties in application, first of all, a perfect capital market does not exist, secondly, such advantages and disadvantages of financing methods as tax shield or agency costs are not taken into account. Moreover, bankruptcy and financial distress costs are also not considered, as well as inflation rate. (Brealey et al. 2006, 421.)

The propositions incorrectness can be also easily defined by looking how much cash stays inside the company, as paying less taxes means paying less to the government, this increases the wealth of the stockholders by the amount of present value of the "tax shield" (PV tax shield).

2.1.10 Trade-off Theory

The theoretical optimum is reached when the present value of tax savings due to further borrowing is just offset by increases in present value of costs of distress, this is called the trade-off theory of capital structure. The theory recognizes that target debt ratios may vary from firm to firm.

The trade-off theory states that an optimal capital structure can be established by allocating as many debt as possible until the point where the net tax savings of debt exceeds relevant costs associated with leverage (bankruptcy costs, and other, discussed later in the paper). With the high financial leverage, the probability of bankruptcy increases, and tax advantages may not cover the growing financial distress costs. (Kraus & Litzenberger, 1973.) The theory argues that there is a point of maximum marginal benefit, which the firms need to determine and adapt the capital structure to it.

An interesting idea was proposed by Myers (1984), he argued that the more profitable the company is, the lower the risks of financial distress are, consequently the costs associated to it are also lower. Thus, large and profitable companies are supposed to employ a larger amount of debt in their capital structure. (575-590.)

According to the trade-off theory, a firm manages to find the point of maximal leverage benefit, that is why firms that can manage a higher leverage ratio at lower costs should be more profitable.

However, one of the main predictions of the trade-off model, the positive relation between leverage and profitability, is at odds with the empirical evidence. Several empirical studies have reported a negative relationship. (Titman and Wessels 1988, 1-19; Rajan and Zingales 1995, 1421-1460; Fama and French 2002, 549-582.)

2.1.11 Pecking Order Theory

The pecking order theory is based on a concept of asymmetric information. The theory states that asymmetric information affects the choices between internal and external financing and between new issue of debt and equity securities.

Raising capital under asymmetric information exposes existing shareholders to potential value dilution. When insiders have better information than investors on the value of their firm's assets, firms of better-than-average quality may find that the market price of their securities are below the fundamental value perceived by the insiders, exposing existing shareholders to dilution. (Fulghieri et al. 2013.)

The pecking order theory is popularized by Myers and Majluf (1984) where they argue that equity is a less preferred means to raise capital because when managers, who are assumed to know better about true condition of the firm than investors, issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value to the new equity issuance. (190-220.)

This leads to a pecking order, in which investment is financed first with internal funds, reinvested earning primarily; then by new issue of debt; and as the last option with new equity issue. New issues of equity by this theory happen when the debt capacity is already used.

According to the pecking theory:

1) Firms prefer internal finance.

2) They adapt their target dividend payout ratio to their investment opportunities, while trying to avoid sudden changes in dividends.

3) Internally generated cash flow is sometimes more than capital expenditure and sometimes less. If it's more, the firm pays off debt or invests in marketable securities. If it is less, the firm first draws down its cash balance or sells its marketable securities.

4) If external financing is required, firms issue safest security first. That is, they start with debt, then possibly hybrid securities such as convertible bonds, then equity as last resort.

This theory explains why profitable firms generally borrow less – they have enough internal financing. This theory also explains why less profitable companies issue debt first. (Brealey and Myers 2006, 448-470.)

Concerning the pecking-order theory, equity issue announcements are associated with stock price drops, the empirical evidence was shown in the papers of Asquith and Mullins (1986), Jung et al. (1996) and Masulis and Korwar (1986), whereas debt issue announcements have no significant effect on the stock price (e.g. Jung et al. 1996, 159-185; Mikkelson and Partch 1986, 31-60.) That is, debt is a more favorable signal than equity.

2.1.12 Financial Distress Costs and Bankruptcy

Both financial distress and bankruptcy costs were already mentioned in chapter 2.1.10, however as debt financing can lead to these situations it is increasingly important to understand to what consequences this may lead.

As a rule, the term “financial distress” is used in a negative connotation in order to describe the financial situation of a company confronted with a temporary lack of liquidity and with the difficulties that ensue in fulfilling financial obligations on schedule and to the full extent. (Gordon 1971, 348.)

Financial distress is defined as an inability of the company to meet its current financial obligations, the examination of the phenomenon of financial distress can be limited to the analysis of companies with external financing only. All-equity companies are not taken into consideration because without leverage operating difficulties of the company cannot be interpreted as financial distress. High leverage constitutes the core of the financial distress problem. (Altman 2002, 8.)

The costs of the financial distress depend on the probability of distress and the magnitude of costs encountered if distress occurs.

Costs associated with bankruptcy may take different forms. First, there are direct (out-of-pocket) costs which include legal, administrative, and advisory fees paid by the firm. Second, there are indirect bankruptcy costs which arise because financial distress affects the company's ability to conduct its business. For example, financial distress

can reduce the sales or increase its production costs. These costs result in the value of the firm in financial distress (or in bankruptcy) being less than the expected cash flows from operations. (Aydin 1996, 17.)

The value of the firm can be described as following:

$$\begin{aligned} &Value\ of\ the\ firm \\ &\qquad = value\ if\ all - equity - financed\ +\ PV(tax\ shield) \\ &\qquad -\ PV(cost\ of\ the\ financial\ distress). \end{aligned}$$

This equation idea goes along with the trade-off theory where you need to balance between the advantages and downsides of debt. A manager needs to ensure that the PV of the tax shield is more than the PV of the financial distress cost.

2.2 Investments

Investments and investment decisions is the second important topic that is researched in this work. The investment process always includes two questions: the financing part of the investment, and the decision-taking part of taking the investment or not. In chapters 2.1.1-2.1.12 financial questions related capital structure were being discussed. In chapter 2.2 general knowledge on the process of investment decisions is given, and following questions as how much to invest and in what projects to invest are covered. In the research the investment decisions are tracked compared to financing issues and corporate governance information. A set of variables for this purpose is introduced: research and development costs, sales revenue growth, operating profit ratio, investment increase ratio, and other. The chapter aims to explain the appropriate use of investment-related variables used in data analyzes.

2.2.1 Investment Decisions

Investments is in basic terms saving now for consumption in future. To understand if the saving now is worth the future gains several analyses can be made. But first, it is important to realize where the companies can invest.

Companies usually invest in tangible assets required to generate revenues, as well as for the sake of business growth, such investments include capital expenditure on plant,

machinery, equipment, assets, bonds, mortgages, and other fixed assets or even businesses - acquisitions. (Hiriyappa 2008, 2.) An investor needs to ensure that the investment is paying off and that financial gains for shareholders are maximized.

The intrinsic value of an investment can be determined by estimating the current value of expected future cash flows - usually net present value (NPV) or internal rate of return (IRR) formulas are used. They take into account the cash flows, time, and risk. The investor's shareholders will require a higher return if their capital is invested in assets and businesses with greater risk, which was already proofed both for debt and equity. Before committing capital, the investor should estimate the investment's intrinsic value, based on a reasonable forecast of future cash flows (considering the most likely scenarios) and an acceptable method of capturing relevant risk. Economic gains will arise for shareholders if the intrinsic value of the investment exceeds the cost of investment. (Agar 2005, 3.)

2.2.2 Net Present Value

Net present value or NPV is a method of estimating the investment which shows how the investment will contribute to the wealth of shareholders in terms of present value. It is possibly one of the easiest methods that can be used when it comes to interpreting the final results. If NPV has a positive value, then the project needs to be pursued, negative – abandoned.

To calculate a project's NPV, its future free cash flows are discounted using a defined discount rate, the discounted free cash flows are later added to each other and the initial investment from the total sum is subtracted. (Surendranath et al. 2016, 86-99.)

The NPV is calculated as following:

$NPV = \sum_{t=0}^{n} \frac{Rt}{(1+i)^t}$, where

Rt = net cash inflow-outflows during a single period t,

i = discount rate or return that could be earned in alternative investments (opportunity cost of capital), WACC is also often used as a discount factor,

t = number of time periods.

In other words, NPV it is the difference between todays value (present values) of the output (expected cash flows) and the invested cash in the project or asset.

The NPV method is used in most of the companies, and, maybe not solely, but surely applied to value the investment. To calculate the NPV with the mentioned formula, there are two main steps, which should be taken before calculation:

1) Calculating the expected cash flows and their time position (period), and

2) Defining the discount rate (use of WACC, interest rate, opportunity cost of capital or other rates (discount rate is one of the hardest factors to evaluate and it leads to great differences in NPV calculation outcomes)).

The third step taken after the expected cash flows are calculated, time horizons, and discount factor defined is the calculation itself and valuing the investment, interpreting the results, and deciding of whether to invest or not.

The NPV method is great as it gives an absolute answer which is easy to interpret, keeps track of time value of money, takes into account the riskiness level of the investment and all of the cash inflows and outflows. The method as well accepts the idea of reinvestment of the cash flows, which makes it more relevant to business operations than many other methods.

The formula and the steps seem to be quite easy to follow and the NPV method has undeniable advantages, but it has also some difficulties beyond it. It suggests that there is a perfect capital market, which is not the case in the real world; there are difficulties in the discount rate calculation; it is a dimensionless value; and projects with the same NPV may last for different time periods, which complicates the result interpretation.

Described above advantages and disadvantages make NPV a “must have” tool to consider when valuing investment, but the method should not be considered on its own. without further calculations and other methods applied.

2.2.3 Internal Rate of Return

Internal rate of return or IRR is another method of valuing investment. IRR acts a discount rate that makes the NPV equal to zero. The formula of IRR is:

$$IRR = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_0,$$

where C_t = net cash inflow during the period t,

C_o = total initial investment costs,

r = the discount rate, and,

t = the number of time periods.

Two or more investments are considered, and one needs to be chosen to invest in, assuming the costs of investment are equal among considered investments, the project with the highest IRR would probably be considered the best and be undertaken first. This can be explained by a fact that a NPV of zero can be reached with a higher cost of capital (discount rate), which is calculated with the IRR methods.

In theory, when the IRR is higher than the cost of capital (WACC), the company should undertake the project or investment. IRR is extremely useful when comparing several investment opportunities and comparing the expected return rate to the required rate of return set by a company. The IRR considers the cost of capital and time perspective making it a useful tool to use.

The interpretation of IRR may mislead someone who does the analyses solely with the IRR formula. As an example, one gets a low IRR, and decides not to invest in a project. However, if an NPV analyses was made on top of the IRR, an outcome of a high NPV of the project could be gotten. The correct interpretation of the following situation is so: considering the excellent NPV the project or investment is adding a lot of value to the company; however, the low IRR would indicate that the earnings are flowing slowly and steadily. This investment analyzed by both NPV and IRR methods results in no concrete answer about acceptance of the investment, but it acts as a

starting point of discussion by the management. If only one technique (NPV or IRR) would be used, the interpretation could be confusing and misleading.

2.2.4 Return on Assets

Return on assets is used in the research as it is one of the key metrics of return on investment (ROI). It measures the profitability of the business compared to assets. The higher the return, the more profitable the investment is, and the more efficient and productive decisions managers make. In the work net income to total assets is measured, both current assets and non-current assets are being studied. This gives an understanding of how well the managers invest overall, in short-term investments, and how well they see the future of the company investing in fixed assets. (Crosson 2008, 209.)

2.3 Corporate Governance

Corporate governance is the last large topic discussed in this work. The chapter will give the basic understanding of the internal company work and structure, go deeper into theories of the required personal characteristics of the board members, and focus on agency problems and solutions.

2.3.1 Board of Directors and Executive Board

A company in Finland is ruled by two boards: the board of directors (BoD), and the executive board (BoE). A board is an organized group of people with joint governing power.

The shareholders of the company periodically (usually once a year) elect a board of directors who collectively manage the company's affairs and reach decisions by a majority vote but also have the right to delegate any of their powers, or even the whole management of the company's business, to one or more of their number. According to Woodward, it is common for a managing director be appointed, often with one or more assistant managing directors, and for the board of directors to

authorize them to enter into all transactions needed for carrying on the company's business, subject only to the general supervision of the board and to its approval of particularly important measures, such as issuing shares or bonds or borrowing.

Both board of directors and executives work closely together, however the functions and duties are not the same.

The board of directors is appointed by votes from shareholders. It has to determine and lead the organization's vision, mission and strategic planning goals. One of the main functions of the board are: choosing the CEO, approving and taking major policies and decisions, overseeing performance, and serving as external advocate. (Barlow 2016.)

The CEO leads the organization closely being in touch with the board of directors. Main management functions are: making operational decisions and policies, keeping the board educated, bringing well documented recommendations and information to the board.

Both boards together lead the organization by creating, approving, and exercising decision on behalf of the organization and its shareholders.

To sum up, the board of directors is hired by shareholders, and its main functions are determining the direction of the company, making the strategical plan, and overseeing the performance of the board of executives. The board of executives is hired by the board of directors, the main tasks are daily leadership of the company in the interest of the BoD and the shareholders, and the plan implementation of BoD.

2.3.2 Agency Problems and Their Solution

Jensen and Meckling (1976) defined agency problems as the conflict between two parties: principle and the agent. The conflict starts as the agent gets right to manage decision making in principals' interests. (5.) However, the interests of the parties differ, and each one behaves in a way of their own interest. The process of acting against the principles' interest and the costs to monitor and control the agent are called agency costs.

In reality it happens similarly to the theory developed in 1976. In public corporation there is a separation of ownership. As discussed in the previous chapter, the way for shareholders to control the corporation is through the board of directors. Managers at the same time while not being enough controlled can use the money of the corporation in their own interest, or lead the company strategically in a way, most profitable for the managers in terms of position, revenue, or other interests. Because of this separation of ownership and conflict of interests' agency problems exist. As a consequence of agency problems, agency costs arise either from managers not attempting to maximize the firm value, or from shareholders incurring costs of monitoring the managers' performance.

Agency problems can and should be mitigated by a good system of corporate governance. To mitigate those, a framework of control and a right compensation way (remuneration system) should be established. The managers can be more or less controlled through following methods and channels.

1) The managers are obliged to act in the interest of the shareholders legally. Failing to do so can result into a judging process against the manager where he/she would be liable for damages. (Law/Legal framework)

2) The compensation plan of managers should be bounded to performance of the company, it makes sense to give bonuses for both short-term and long-term performance of the firm, and to set KPI's which will be tracked and rewarded. (performance-based pay).

3) Ownership of the shares by board members is also an opportunity to bind the interests of managers/directors to the company's long-term success.

4) As discussed previously the board of directors is the shareholders way to influence the decisions of the company, if the board is actively involved, serious agency issues can be mitigated just by active discussions on meetings.

5) Managers are also monitored by security analysts and banks, which opinion matters for shareholders and debtholders affecting the share prices of the firm.

6) Audits both internal and external can find previously made harming activities by managers and keep them conscious about their future actions.

The following problems arise the most.

Managers have incentives to cause their firms to grow beyond the optimal size. Growth increases managers' power by increasing the resources under their control. It is also associated with increases in managers' compensation, because changes in compensation are positively related to the growth in sales. (Murphy 1985, 11-42.)

Free cash flow is cash flow in excess of that required to fund all projects that have positive net present values when discounted at the relevant cost of capital. To reduce it, debt can be used as a tool. Debt reduces the agency costs of free cash flow by reducing the cash flow available for spending at the discretion of managers. These control effects of debt are a potential determinant of capital structure. Nevertheless, as already discussed by the capital structure theories reviewed, all needs to be into balance. As leverage increases, the usual agency costs of debt rise, including bankruptcy costs. The optimal debt-equity ratio is the point at which firm value is maximized, the point where the marginal costs of debt just offset the marginal benefits. (Jensen 1986, 323-329.)

The agency costs associated with debt consist of:

1) the opportunity wealth loss caused by the impact of debt on the investment decisions of the firm,

2) the monitoring and bonding expenditures by the bondholders and the owner-manager (i.e., the firm),

3) the bankruptcy and reorganization costs.

(Ibid.)

2.3.3 Compensation

Managers compensation usually exists of a base salary, a target bonus and long-term incentives, different companies as well as different countries have different ways to balance the total pay of a manager, however usually the stock and option grants

influence the total pay a lot. In these cases, the amount of compensation may become less relevant then its structure.

According to Brealey and Myers (2006), a fixed salary for a manager at a top level is probably the worst decision one can set up dealing with agency problems. The manager most probably will be working with reduced effort, will use as much as possible perks, or invest in such projects where the manager is playing an important role and will be needed in the future even if his performance is not as good as expected from him. When having a look on the compensation packages in analyzed companies in most of the companies the compensation package looked as following: basic salary, bonuses, pension, incentive plan, and long-term incentives. This was also a situation seen for example in the Fiscar's Remuneration Report. This helps to guarantee that the CEO is working in the interests of the company and is focusing on the long-term growth and profitability (usually the largest part of the total pay observed, were bonuses received for long-term goals). In the work the basic salary to total pay is measured for each company and year giving a picture of how the remuneration management helps to control and influence the behavior of management in terms of the profitability of the company.

2.3.4 Behavioral Finance

Behavioral finance topics are closely related to the educational background and experience of the board members.

The prospect theory states that the value investors place on a particular outcome is determined by the gains and losses they have made since the asset was acquired or the holding last reviewed, and investors are particularly averse to the possibility of even a small loss and need a high return to compensate for it.

As a consequence of the theory, a more experienced manager will do less mistakes associated with previous gains and losses or high return on small loses as if this phase of assumptions got into the mind of the manager, he or she already learned on the mistakes. Experience of the manager also helps to figure out the best investment's possibilities and amount. Difficulties of NPV and IRR calculations should not be a problem for an experienced person.

Another assumption is that investors tend to evaluate data on previous similar situations. That is why they are focusing their attention to a number of recent events which may lead to false investment decisions and guesses of profitability, as it is hard to evaluate and requires a lot of market knowledge, experience, and education.

Education of the board members should mitigate problems of not knowing how to research the market and count the profitability, this will lead to the fact that the more educated the board is the more successful outcomes can be expected from investments.

Nusbuga (2009) and Cagle (1988) reported a positive relationship between experience and education with the performance of the company. However, their works focused primarily on the leadership styles and were conducted in the developing markets. A question with what power experience and education of the boards affect the performance of the Finnish companies is still unanswered.

2.3.5 Board size

Logically to assume, the more people the board has the more total experience, different educational insides, and expertise can be used while making decisions in a company. Probably, these factors should lead to better decisions and consequently higher return on investment and profit. However, there is a point where there are just too many people in the board, which leads to harder decision taking, less flexibility, conflicts, and other interpersonal problems which can hurt the company. This is why the paper looks at the board size and also at the sum of experiences and educations of both boards, commenting on the reasonable size of the boards and the matter of education and experience.

2.4 Hypotheses development

A hypothesis is a tentative statement about the relationship between two or more variables. It is a specific, testable prediction about what you expect to happen in a study. (Cherry 2019.)

A well formulated hypothesis is based on the research topic and connected with literature review and research questions. It should be possible to test the hypothesis, and the hypothesis should include two types of variables: dependent and independent.

The hypothesis should lead to an answer, either there is a dependency or not, or there is a partly dependency. Which basically will give the answers true, false, or partly true. For this reason, the hypothesis should be formulated clear, specific, and simple. It should have the ability to being analyzed through some data analyses methods and lead to measurable results.

This study comprises eight hypotheses investigated. Regression and correlation analysis are applied, as well as descriptive statistics is used to interpret the data. According to the findings, the hypotheses are either rejected or accepted.

Based on the literature review, following hypotheses were determined for analyzes:

Capital Structure Related:

H1: Financing (D/E ratio) affects the performance of the company.

H2: The amount of total assets and the board-related characteristics influence the D/E ratio.

H3: Sales revenue affects the financing choices.

H4: The investment increase rate in assets affects the D/E ratio.

Board Characteristics Related:

H5: Remuneration plan of CEO affects the performance of the company.

H6: Qualifications of the board (size, educational and experience background, board discipline) affects the performance of the firm.

H7: The more percentage of companies shares management and directors own, the more successful the company operates.

Investment Related:

H8: Financing, remuneration and board related characteristics affect the amount of Investments.

3 Research Framework

3.1 Methodology

The term Methodolohy is refering to methods used in the research. Methods are divided in 2 groups, one stands for quantitative research, another - for qualitative. As the main research approach in the current paper is quantitative, this chapter will discuss relevant methods of data analisis only considering quantitative methods. The methods are needed at the data collection, analysis and interpretation stages of the work. The choice of methods is justified. (Kananen 2011, 11.) A precise and clear choise of methods, allows one to create precise analysis and trustworthy results. It also informs about the assumptions and the logical process of the author in binding the literature review to the hypotheses, data analysis and interpretation.

"Whether you are consciously aware of them or not, at every stage in your research you will make a number of types of assumption". (Burrell and Morgan 1979.) These assumptions include information about human knowledge (epistemological assumptions), the realities encountered in the research (ontological assumptions) and the extent and ways of values influencing the research process (axiological assumptions). They inevitably shape how the research questions are understood, the methods used and the way the findings are interpreted. (Crotty 1998.) A well-thought-out and consistent set of assumptions will constitute a credible research philosophy, which will underpin methodological choice, research strategy and data collection techniques and analysis procedures. This allows to design a coherent research project, in which all elements of research fit together. (Johnson and Clark 2006, 25-55.) Philosophical commitments we made through the choice of research strategy have a significant impact on what is done and how the data is interpreted. (Ibid.)

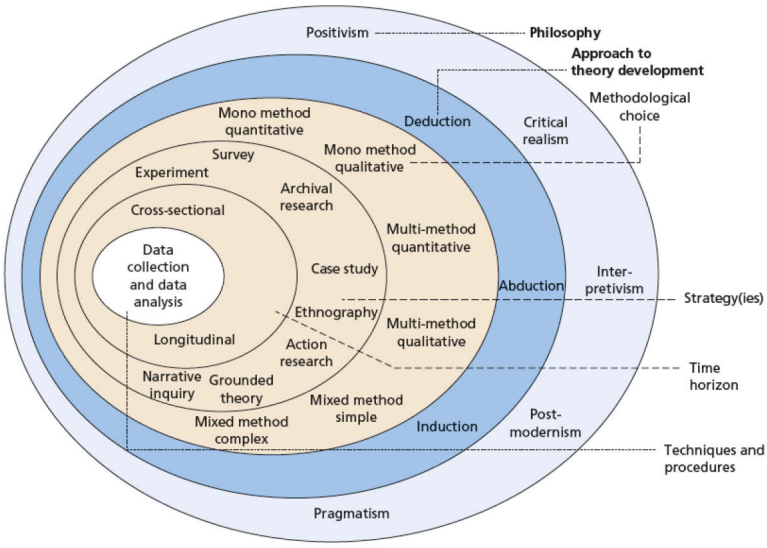


Figure 1. Saunder's "Research Onion"

To give an understanding about the reasearch framework, the author is using the Saunder's "Research Onion" model, and describing each layer (see Figure 1). A researcher should start analyzing the methods from the outer layer and move layer by layer to the core – data collection and analysis.

As the author bases the analysis on facts and numbers, objectivism approach is used in this paper. The main philosophy taken is Positivism. Positivism relates to the philosophical stance of the natural scientist and entails working with an observable social reality to produce law-like generalizations. As a positivist researcher, existing theories might be used by the author in developing the hypotheses. These hypotheses would be tested and confirmed, in whole or part, or refuted, leading to the further development of theory which then may be tested by further research.

The approach to the theory development chosen is deductive. Following a simple logic, when the premises are true, the conclusion must be also true. In this approach data collection is used to evaluate propositions and hypotheses. Sahay (2016) is as well mentioning that, besides mixed methods, deductive approach to theory development is usually chosen for the quantitative research, whereas inductive – for the qualitative. (3.)

Going deeper in the core of the onion, it is necessary to mention that the research uses several quantitative techniques, and works with a data base collected from annual reports, NordicOMX and other related documents found publicly available, making the research classified as archival. (Saunders et al. 2009.)

The time horizon of the study is longitudinal. It has a time horizon of 5 years and analyzes the changes throughout this period, however the conclusions are drawn with no concrete time horizons (event based) - if this variable(s) have an value of x, the dependent variable is change with y percent of x.

3.2 Data Collection

Only secondary data was used in this research – the data not collected primary by the author. (Saunders, Lewis & Thornhill 2006, 611.) Secondary data analysis involves use of existing data by investigators who were not involved in the original data collection. These data can be analyzed to replicate or extend previously observed findings or to address new research questions that were not a part of originally published analyses of the data. (Greenhoot 2012, 5.) The data collected is classified as panel data, as it depicts data retrieved over different time periods for the same companies.

The annual, financial, corporate and remuneration reports of the companies, found on their websites, were for many variables the solely source of getting data, as the variables used in this research were individually developed by the author. The Nordic OMX was used as a helping source for compilation of the financial data of the companies. Nordic OMX helped the author to choose the companies analysed. Considering the location, size, and industry of the company shown at Nordic OMX the author selected the companies for analyses.

Totally 14 companies were chosen for the analysis. They all origin from Finland and operate in the 7 various industries: basic material, consumer goods, telecommunication, industrials, oil and gas, technology, consumer services. The attention of the thesis was also put on the diversification of data. To make it more reliable not only different industry sectors were taken into the account, but companies of different sizes from small to MNE's were taken. The size of the sample (resulted in

the number 14 companies because of the difficulty of information finding. The most problems of information (reporting) lack were associated with the amount of corporate governance information, especially the educational and work history of boards of the company. To achieve significantly reliable results at the analysis phase, the data for 5 years was chosen. The years are 2014-2018.

Another distinctive quality of this research is the number of variables considered. In the table below all variables are named, the source of data origin is mentioned, and explanation of the variable meaning is given.

Mostly numerical data was collected. When dealing with other data it was formatted in numerical data as well (example, experience background –> years of relevant experience total). Most of the variables are ratios. Ratios allow to give a more competent image of a company's structure and its functioning, reducing the size effect of money and size.

The sales revenue growth, operating profit ratio, debt-to-equity ratio, current and non-current assets increase ratio are considered as dependent variables are seen as independent. Operating profit ratio and sales revenue growth are introduced and recognized as performance variables. Debt-to-equity ratio acts as the main binding variable of independent variables with the capital structure theories, and assets increase ratio allows to track the investment performance.

Table 1 informs about most important variables used in the research, label of the variable, measurement and definition of the variable, and its source.

Table 1. Variables characterization

Variable	Variable's Label	Measurement and Operationalization	Source
Debt-to-equity ratio	DE	(Short-term debt+long-term debt)/total equity	Nasdaq, Annual reports
Sales Revenue Growth	SRG	(Current year sales revenue – previous year sales revenue)/previous year sales revenue	Nasdaq, Annual reports
Board Size	BS	Number of people in BoD and BoE summed up	Annual, financial, corporate governance reports
Independence	Ind	Amount of independent from the company people divided by the board size	Annual, financial, corporate governance reports
Performance Based Pay CEO - percentage of salary as bonuses performance linked	PBP	Incentive pay divided by incentive pay summed with base salary	Annual, financial, corporate, remuneration governance reports

Continues on the next page

Table 1. Variables characterization (continued)

Variable	Variable's Label	Measurement and Operationalization	Source
Education Sum	Edu	Calculated for each board member and summed up. Calculated as following: High school: 12 years Bachelor:15 years Master or licentiate: 17 years or +2 years PhD: +4 years	Annual, financial, corporate governance reports
Experience Sum	Exp	Sum of relevant job years	Annual, financial, corporate governance reports
Board Discipline	BD	Attendance ratio of BoD to general meetings	Annual, financial, corporate governance reports
Percentage of shares by directors	ShD	Shares owned by directors divided by total shares	Annual, financial, corporate governance reports
Percentage of shares by Executives	ShEx	Shares owned by BoE divided by total shares	Annual, financial, corporate governance reports
R&D to Sales ratio	RS	R&D expenditure divided by sales revenue	Annual report, Nasdaq
Current assets investment increase ratio	CA	(Current assets this year/current assets last year)-1	Nasdaq
Non-current assets investment increase ratio	NCA	(Non-current assets this year/non-current assets last year)-1	Nasdaq

Continues on the next page

Table 1. Variables characterization (continued)

Variable	Variable's Label	Measurement and Operationalization	Source
LN Total Assets	LNTA	Natural logarithm of	Annual report
LN Education	LNED, LNEDD, LNEDE	Natural logarithm of	Annual, financial, corporate governance reports
LN Experience	LNEX, LNEXD, LNEXE	Natural logarithm of	Annual, financial, corporate governance reports
Operating Profit Ratio	OPR	Operating profit/Total Assets	Annual report
Share price growth	SPG	(Share price of current year/share price of last year)-1	Nasdaq
LN Sales	LNS	Natural logarithm of Sales Revenue	Annual report

3.3 Methods of Data Analysis

The author implemented several methods of data analyzes in this report: Descriptive statistics, correlation, and multiple regression models. In most of the researches descriptive statistics is applied first, this research is not an exception. Descriptive statistics shows the main characteristic of the data set in one table. Giving a lot of outcomes: range, minimum and maximum results, mean, standard deviation, skewness, kurtosis, and the median of the variables; it helps to understand with what data you are working and if it is reliable at all. (William 1950, 221.)

For the correlation, the Pearson's model was applied. Pearson correlation measures the existence (given by a p-value) and strength (given by the coefficient r between -1 and +1) of a linear relationship between two variables. It should only be used when its underlying assumptions are satisfied. If the outcome is significant, we conclude that a correlation exists. (Samuels 2014, 2.)

According to Cohen (1988) an absolute value of r of 0.1 is classified as small, an absolute value of 0.3 is classified as medium and of 0.5 is classified as large.

Pearson's correlation is the ratio of the variance shared by two variables. (Cramer, 1998, 137.) To measure this shared variance a formula is applied:

$r = \frac{(\Sigma XY)-(\Sigma X)(\Sigma Y)}{\sqrt{[n(\Sigma X^2)-(\Sigma X)^2][n(\Sigma Y^2)-(\Sigma Y)^2]}}$, where:

r = Pearson's correlation coefficient,

n = number of paired scores,

X = score of the first variable,

Y = score of the second variable,

XY = the product of the two paired scores.

This formula can be read as following:

$$r = \frac{covariance\ of\ variable\ A\ and\ B}{(standard\ deviation\ of\ variable\ A) * (standard\ deviation\ of\ variable\ B)}$$

The Pearson's r is a rather simple method for interpreting the results and defining the shared variance. The r (Pearson's correlation result) will result in shared variance of interdependency of variables, and the significance value will point at the data reliability. However, as each method, there are some limitations or disadvantages of using Pearson's r. The disadvantages of using Pearson's r is that it cannot identify relationships that are not linear and may show a correlation of zero when the correlation has a relationship other than a linear one. Additionally, the types of variable that can be evaluated are limited. (Chee 2015, 3.)

As far as variables were defined and dependent and independent variables chosen, regression analyzes was applied. The regression analysis is the main analysis of this research, as it gives the answer if there exists a dependency between variables (firms internal characteristics, capital structure, investments and performance), and how strong it is. The regression models overall will also give an answer with what percentage can we explain the change in the dependent variables by the chosen set of independent ones.

Multiple regression is "a statistical tool that allows you to examine how multiple independent variables are related to a dependent variable. Once you have identified how these multiple variables relate to your dependent variable, you can take information about all of the independent variables and use it to make much more powerful and accurate predictions about why things are the way they are." (Higgins 2005, 2.)

The regression model chosen for the research is ordinary least square (OLS) regression. This is a standard technique appreciated by many other financial researches, which explains the influence of a set of variables in the phenomenon. (Pedace 2013.)

An important advantage of OLS regression for this research is its ability to plane the observed data while using more than one explanatory variable. (Salkind 2010, 1268.)

One of the main outputs of the regression model is the R Squared. R Squared is calculated as following:

$$R^2 = \frac{Sum\ of\ Squares\ Explained\ by\ Regression}{Total\ Sum\ of\ Squares\ (before\ Regression)}$$

It provides a measure of how well observed outcomes are replicated by the model, based on the proportion of total variation of outcomes explained by the model. (Steel 1960.)

The OLS regression has a following formula:

$y_{it} = \alpha_{it} + \sum_{k=1}^{p} \beta_k x_{it} + \varepsilon_{it}$, 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 $\sigma 2$.

Following regressions were being studied in the research:

I. $Sales\ Revenue\ Growth_{it} = \alpha_{it} + \beta_1(DE)_{it} + \beta_2(IND)_{it} + \beta_3(BS)_{it} + \beta_4(PBP)_{it} + \beta_5(BD)_{it} + \beta_6(ShD)_{it} + \beta_7(ShEx)_{it} + \beta_8(ShBo)_{it} + \beta_9(RS)_{it} + \beta_{10}(CA)_{it} + \beta_{11}(NCA)_{it} + \beta_{12}(LNED)_{it} + \beta_{13}(LNEDE)_{it} + \beta_{14}(LNEDD)_{it} + \beta_{15}(LNEX)_{it} + \beta_{16}(LNEXD)_{it} + \beta_{17}(LNEXE)_{it} + \beta_{18}(LNS)_{it} + \varepsilon_i$

II. $Operating\ profit\ ratio_{it} = \alpha_{it} + \beta_1(LNS)_{it} + \beta_2(NCA)_{it} + \beta_3(DE)_{it} + \beta_4(CA)_{it} + \beta_5(ShEx)_{it} + \beta_6(RS)_{it} + \beta_7(PBP)_{it} + \beta_8(ShD)_{it} + \beta_9(ShBO)_{it} + \varepsilon_i$

III. $Debt - to - equity\ ratio_{it} = \alpha_{it} + \beta_1(LNEX)_{it} + \beta_2(CA)_{it} + \beta_3(SRG)_{it} + \beta_4(ShEx)_{it} + \beta_5(RS)_{it} + \beta_6(Ind)_{it} + \beta_7(PBP)_{it} + \beta_8(ShBo)_{it} + \beta_9(NCA)_{it} + \beta_{10}(LNEd)_{it} + \beta_{11}(LnExD)_{it} + \beta_{12}(LNExE)_{it} + \beta_{13}(LNEDE)_{it} + \beta_{14}(LNEDD)_{it} + \varepsilon_i$

IV. $Current\ Assets\ Increase\ Ratio_{it} = \alpha_{it} + \beta_1(LNEDE)_{it} + \beta_2(DE)_{it} + \beta_3(LNEXD)_{it} + \beta_4(BD)_{it} + \beta_5(PBP)_{it} + \beta_6(ShEx)_{it} + \beta_7(ShBo)_{it} + \beta_8(ShD)_{it} + \beta_9(BS)_{it} + \beta_{10}(LNED)_{it} + \beta_{11}(LNEDE)_{it} + \beta_{12}(LNEDD)_{it} + \beta_{13}(LNEX)_{it} + \beta_{14}(LNEXD)_{it} + \beta_{15}(LNEXE)_{it} + \varepsilon_i$

V. $Non - Current\ Assets\ Increase\ Ratio_{it} = \alpha_{it} + \beta_1(LNEDE)_{it} + \beta_2(DE)_{it} + \beta_3(LNEXD)_{it} + \beta_4(BD)_{it} + \beta_5(PBP)_{it} + \beta_6(ShEx)_{it} + \beta_7(ShBo)_{it} + \beta_8(ShD)_{it} + \beta_9(BS)_{it} + \beta_{10}(LNED)_{it} + \beta_{11}(LNEDE)_{it} + \beta_{12}(LNEDD)_{it} + \beta_{13}(LNEX)_{it} + \beta_{14}(LNEXD)_{it} + \beta_{15}(LNEXE)_{it} + \varepsilon_i$

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 output of the OLS regression model of mentioned formulas allows to detect the most significant variables affecting the dependent one and supporting the hypotheses.

Important is also to always have a look at the significance level, it should be below 0,05 for the model. Perfect correlation between variables should be detected, as it does not give any new information or benefit to the regression model.

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.)

In order to apply the OLS model several assumptions were made:

1) This is a linear regression, that is why the model is linear in parameters and has an error term.
2) There is no perfect correlation between two variables

The analysis was made using SPSS Statistics 17.0 software, including descriptive statistics, correlation, and regression analyses.

3.4 Reliability and Validity

"Validity is defined as the extent to which a concept is accurately measured in a quantitative study."

Reliability refers to the extent to which a research instrument consistently has the same results if it is used in the same situation on repeated occasions. (Ibid.)

According to Heale (2015), there are three main categories of validity: Content validity, construct validity, and criterion validity. (66-67.)

Content validity – this type of validity questions the researcher whether he or she has covered all necessary content in respect to the variable. In order to ensure the content validity, the researcher has been studying and covering in literature research all appropriate theories and taken the main elements as variables to research. A correlation analyzes and descriptive statistics also helped the author to filter out inappropriate variables that could alter the outcome.

Construct validity is the extent to which a research instrument measures the intended construct. To prove the construct validity the author has used homogenic data and the theory evidence.

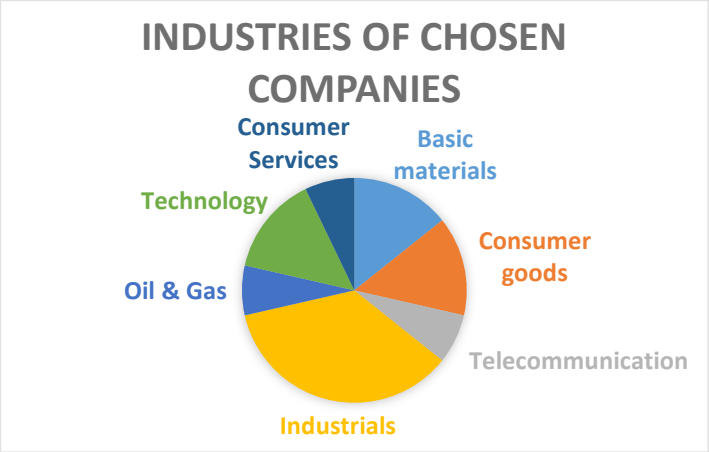
The last validity measure is criterion validity. A criterion is a different instrument that measures validity. The main method in order to get rid of the criterion effect is correlation, it identifies and allows to filter out instruments measuring the same variability. The author applied all the knowledge and correlation methods in order to make the data analyzes valid.

Reliability on the other hand relates to the consistency of data. It also has several attributes: homogeneity, already discussed and followed, stability, which is the consistency in a repeated testing event, and equivalence. Equivalence measures "Consistency among responses of multiple users of an instrument, or among alternate forms of an instrument"

In order to eliminate bias and make the research results valid and reliable, the author used data available from public sources, usually the data reported by the company itself. The data was also collected and proofed with the usage of NordicOMX. The usage of previously used variables in other researches, and application of theories in variables created by the author eliminates errors and biases as well. Due to a large sample and a range of different size companies and industries, however focused on Finland, the regression model should work with the same outcomes applied to any country with the similar business conditions. This model is perfectly replicable to Finland's neighbors like Sweden or Norway, as well for highly developed countries as Germany, the Netherlands, and other European countries, where it should lead to similar result. The interpretations were explained by the author and based on relevant theories; therefore, the paper should be considered as reliable.

The figure 2 shows the diversification in the choice of companies on the example of the industry the company operates in is presented below.

Figure 2. Industries of chosen companies



4 Empirical findings

The following chapter of the study represents the empirical findings of this research. The research results chapter has three subchapters: descriptive statistics findings, which familiarizes the reader with the data set and its characteristics; correlation results, discussing the relations between variables; and finally, and most importantly the regression analyzes results.

4.1 Descriptive Statistics Results

Descriptive statistics gives an overview on variables chosen for the research. Table 2 provides the main information gotten from the descriptive statistics analysis. In this tables such information attributes as range, minimum and maximum values, mean, standard deviation, median, and mode are being displayed.

Skewness and Kurtosis tests, not included in the table, were also applied and the data was accordingly analyzed. In the descriptive statistics skewness and kurtosis are used to describe the distribution. "When both skewness and kurtosis are zero (a situation that researchers are very unlikely to ever encounter), the pattern of responses is considered a normal distribution. A general guideline for skewness is that if the number is greater than +1 or lower than –1, this is an indication of a substantially skewed distribution. For kurtosis, the general guideline is that if the number is greater

than +1, the distribution is too peaked. Likewise, a kurtosis of less than –1 indicates a distribution that is too flat. Distributions exhibiting skewness and/or kurtosis that exceed these guidelines are considered nonnormal." (Hair et al. 2017, 61.)

Out of Table 2, an overview of the firm's capital structure in Finland is seen. Equity has a much greater range compared to total debt, 20027,72 against 3822. The minimum values are close to zero by both of the variables, which means that both types of the companies financed by either a large proportion of debt or a large proportion of equity are presented in the research. Out of this data, a pre-conclusion is made that Finnish companies prefer equity financing in general. The finding is also supported by the mean (2253) and median (1143) of equity, and total debt measures with a mean of 661,35 and a median of 571,8. As well as the median of D/E ratio being 0,427 proofs that Finnish companies prefer internal financing against debt. With each euro they hold as equity, there is only about 43 cents of debt. These findings lead the author to the conclusion that Finnish companies rely mostly on stability and internal financing. Both debt and equity related variables are highly skewed and have large results in Kurtosis. However, the proportion of debt to equity has more or less the form of a normal distribution with skewness being only 0,31, and kurtosis -1.

Not surprisingly there exist great variations in sales revenue, as the firms were taken to represent various outcomes. An important variable to pay attention to is the growth in sales revenue, with a mean of about 6,7% per annum, and a median of 2,5%. In general, Finnish companies are experiencing at least some growth, most of them expand even very rapidly.

Looking at the board, one can see that the minimum amount of people in the board of directors is 6, and the maximum is 12. As the range is not that big and there are a lot of observations, a mode will be a useful statistical term to describe the mostly met number of people in the board of directors. It is 7 persons. For the board of executives or management the minimum number of employees is 5, and the maximum is 17. The range is a bit higher compared to the range of the board of directors. The range results in a number of 12, as the maximum number of boards of executive's members is affected, which is much higher than in the board of directors. To determine the "usual" size of it, median was considered as a reliable measure, and it resulted in 10 people in the BoE. The ideal size of the boards for an average Finnish company

resulted in 7 directors and 10 executives, with an overweight of power to the management.

The independence mode and median result in the same number – 0,4375. For each member of the board of executives, there is 0,4375 member of the board of directors. The total board size has a range of 12, starting from 14 people, and ending up with 26, with a median of 17. The median and determined "optimum" of people lies closely to the minimum edge, that is why an increase of board members can be considered, however a decrease for more than 3 people may have damaging outcomes. Most of the variables associated with board sizes have more or less a distribution close to normal.

Non-surprisingly, the range of pay to the CEO is enormously big. This happens mostly because of different company sizes and requested experience and knowledge. Both of the distributions of the total pay, and the performance-based pay are seen as similar to normal distribution. The performance-based pay gives an interesting inside in the CEO's salary composition. Starting with a number from 0 it gets to 89% of pay from the total salary acquired as a bonus part. The mean and average, however, stand closely to 60%, pointing to the fact that a bigger proportion of total salaries of the CEOs of Finnish companies is resulting from bonus payment. Consequently, the performance of the CEOs in Finland is highly linked to what they get as an ending or final salary.

When it comes to the education of the boards, there is a big range in outcomes. This mostly happens as the number of people in the boards is directly affecting the sum of educational background years and experience. Most of the results have skewness and kurtosis less than 1 in module. The mean education years spent by the boards of directors and executives is 133 and 169 respectively, resulting in the sum mean of nearly 303 years of experience in both boards. Experience of the boards has similar features to the education, however we see that usually there are more experience years, than education per person. Considering the amount of people in the boards is constant, a conclusion can be made that the average person worked more than he has studied. The results also show a high level of educational background and experience in both boards overall. The mean result for experience of the BoD is 205 years, BoE has a value of 228 years, and the sum of both boards results in 433 years.

Board Discipline, or the attendance ratio of the general meeting shows up interesting results with a range of only 0,12. Even in the worst years in the worst company by attendance, the attendance rate averagely by each person was about 88%. Giving the fact that the mean is 96,7% a conclusion is made that the attendance rate and board discipline in Finland is generally at a very high level.

The data of total shares of the company and shares owned by boards gives an understanding on the size, control and incentives. To compare companies with each other due to size differences, a ratio of percentage of shares owned by boards divided by the number of total shares is used. This allows to eliminate the size differences. According to the data, executives usually have at least a small number of shares owned, the minimum is not zero. This happen due to agency problems and incentive ideas. At the same time the maximum level of executive shares is highly limited to a small fraction of total shares with the maximum of only 0,67%. On the other hand, the board of directors, which in its maximum result holds 47% of all company shares, and a mean of 6,4% is much higher than the maximum number of shares owned by the BoE. In the average, both boards own together about 6,7% of all shares. This should link their interest and performance to the company's success. Directors appointed to the board, usually have a significant amount of the companies' shares, whereas management share ownership acts mostly as an incentive and control instrument, their shares result in a small fraction and in no control "as a shareholder".

The results in the R&D to sales ratio vary greatly as well, covering a range of 25% difference in reinvestment from operating cash flow. This happens as companies from different industries have different needs, as well as the sum of cash flows may affect these results.

Operating profit, because of the size and industry concerns, has a wide range. However, it also results in negative numbers, meaning the company is working "in minus". The median, though, has not a fascinating big, but a positive number. It indicates that throughout of the chosen period, most of the Finnish companies were profitable.

The current and non-current assets increase ratio has positive numbers. The medians of 5,9% for current assets, and 1,4% for non-current assets, show healthy growth for most of the companies and a developing market in Finland within years 2014-2018.

The operating profit ratio (sales/total assets) results closely to a normal distribution. On average the operating profit resulted in 8% of total assets sum, with a median of 7,6%.

Another important variable is share price growth, as it is the valuation of the performance of the company by the “outside” world. The share price changed tremendously and differently across years and companies. The minimum was a loss of 59% of the share value in just one year, and the maximum was 211%, more than triple of what was before. The median is 8,7%, it can be considered as the average growth in share price within all companies and all years.

Name of the Variable	Range	Minimum	Maximum	Mean	Std. Deviation	Median	Mode
	Statistic	Statistic	Statistic	Statistic	Statistic		
Equity	20027,72	66,28	20094	2253,28	3651,581619	1143,2	66,28000[a]
Short- term debt	994	0	994	167,4924286	182,2153835	113,15	0
Long-term debt	2828	0	2828	493,859	526,1221244	412,6	0
Total debt	3822	0	3822	661,3514286	666,2824918	571,8	0
D/E	1,177379481	0	1,177379481	0,454474263	0,34677396	0,426882096	0
Sales Revenue	23466,39	147,61	23614	4670,752	5538,101825	2486,2	147,61000[a]
Sales Revenue Growth	1,147797654	-0,258526512	0,889271142	0,066566552	0,168984999	0,025179016	-,25853[a]
№ BoD	6	6	12	7,871428571	1,317897189	8	7
№ BoE	12	5	17	10	2,226324716	10	9
Independence	0,322857143	0,32	0,642857143	0,443517932	0,05948272	0,4375	0,4375
Board Size	12	14	26	17,87142857	2,888866327	17	16
Perf ormance Based Pay CEO	0,889669038	0	0,889669038	0,577305234	0,207464298	0,612261543	,00000[a]
Education BoD	102	95	197	132,9714286	24,1228567	130	115,00000[a]
Education BoE	202	85	287	169,2318841	39,24626057	164	138,00000[a]
Education Sum	254	200	454	303,2352941	52,66115781	290	281,00000[a]
Experience BoD	204	115	319	204,6470588	40,56936743	206,5	158,00000[a]
Experience BoE	286	105	391	228,9552239	59,54891873	224	222
Experience Sum	411	299	710	433,4776119	82,07689636	427	427
Board Discipline	0,12	0,88	1	0,96737124	0,029272954	0,972492674	1
%of shares by directors	0,471813953	0	0,471813953	0,063765488	0,122905095	0,00081764	7,42388E-05
%of shares by the board of executives	0,00663805	3,41917E-05	0,006672242	0,00193642	0,001688041	0,001406424	,00003[a]
% of bod and boe shares	0,471818105	0,000287722	0,472105827	0,066635835	0,123459819	0,003898942	,00029[a]
R&D	4916	0	4916	291,0077143	1038,935447	7,945	0
Sales	23466,39	147,61	23614	4670,752	5538,101825	2486,2	147,61000[a]
R&D/Sales	0,248114925	0	0,248114925	0,033926735	0,069138585	0,001739936	0
Operating Profit	2080	-364	1716	320,321	427,9455121	167,95	204,6
Current assets	20677,8	41,2	20719	2616,930143	4462,920122	1080,35	41,20000[a]
Non-current assets	24157,49	24,51	24182	2706,707857	4401,34219	1822,3	24,51000[a]
CA investment increase ratio	3,402095426	-0,376361464	3,025733962	0,149951626	0,437915707	0,058618781	-,37636[a]
NCA InvIncRatio	4,505043038	-0,437972942	4,067070096	0,202399761	0,769857931	0,013587449	-,43797[a]
Operating Profit Ratio	0,281350227	-0,039155601	0,242194626	0,080085667	0,053802202	0,076299344	-,03916[a]
Share price at the end year	42,48	2,3	44,78	18,14507143	12,26307101	17,18	5,03
Share price growth	2,700116421	-0,586563307	2,113553114	0,130265127	0,384604203	0,086940377	-,58656[a]

Table 2. Descriptive statistics

4.2 Correlation analysis results

The correlation analysis was applied to all variables introduced in this research. It includes both dependent and independent variables. In this chapter only variables with a significance level of less than 0,05% are taken, as they will be considered as statistically significant and as not occurred by chance. The correlation itself, as described earlier, measures the strength of the linear relationships of the components.

As there are 48 Variables, and 2304 pairs, it is almost impossible to cover all the findings in a report. That is why, the author decided to cover only the most relevant findings and findings which were not expected (predicted). At the end of this subchapter, a table with correlation results can be found for most relevant variables.

Both the Equity and Debt have a positive correlation with sales revenue, however equity is more largely correlated with sales revenue (0,897), against total debt (0,568), among other factors it can be explained by a higher proportion of equity in general in firms financing and reinvestment of cash flow in operations.

An interesting to notice correlation is the effect of equity to number of people in both boards and total board size (0,683), the total debt level at the same time has almost no effect on the board size (0,055). Taking the idea that equity financed firms are more stable than mostly debt financed, we can say that the stable firms hire more board members, and at the same time the stability, control and decisions is coming from the board, being more conscious about decisions and having more collective knowledge and experience.

Equity has no influence on board discipline, however total debt has. A correlation between total debt and attendance ratio of general meetings is positive (0,248) with a significance <0,05. That means that the more debt the company has in its financing, the more attention the debt requires, thus leading to higher attendance rate by board members.

Both equity and debt have a strong impact on the percentage of shares owned by boards (from the total amount of issued shares). This makes sense, as the larger the company is the more equity and debt it holds, and the more the number of shares

issued is, thus making the fraction of shares hold by boards lower in percentage. However, the total debt correlates more strongly with the percentage of shares owned by boards (-0,397) than equity. It can be explained by the reduced amount of agency problems, and the reduced amount of need to use shares to control the decision-making of the boards. As well as a reduced amount of equity available can be the explanation for this situation.

Debt is as well influencing investments in current and non-current assets negatively, the growth ratios of assets are -0,204 and -0,040 respectively. This may be a sign that not all the debt taken by the company might be considered as a healthy sign for shareholders, and, for sure, it explains that not most of the debt taken is not for expansion of the business, but for sustaining its operations.

Sales revenue has a strong correlation with the performance-based pay (what percentage in total salary is the bonus part) (0,499), it can be seen as a good sign to control the managerial behavior – introducing the salary highly affected by the performance of the company.

Sales revenue also correlated with R&D/Sales ratio with 35,1%. Investments in research and development of the company show generally positive correlation results in terms of sales in Finnish companies.

The performance-based pay correlates positively with all performance indicators in a company. This holds true as the more money CEO gets as a bonus, the better the firm has performed. Additionally, this may be regarded as a healthy sign of a structured performance-based payment which in most of the cases is considered as working (both in sense of measuring the pay, and in sense of increased company performance).

Education Sum correlates negatively (-0,358) with d/e ratio. This situation can have several explanations: the more the sum is – the more people there are in the boards, the bigger the company is supposed to be, and large corporations usually prefer equity more than debt. Another answer would be taking less “risky” debt by well educated workers and taking more by less educated, this holds true as far as the correlation between experience sum and d/e ratio is only (-0,070).

An unpredictable correlation was found out concerning the board attendance ratio and the percentage of shares board of directors holds. The correlation is -0,519. Looking at the number it seems like the more shares and power the board of director has, the less its members attend the meetings. It can be explained by holding of shares of other companies by the directors and being busy with other things they have to manage, but for a company it means having a powerful director not attending some meetings.

The more shares are held by both boards, the more is the current assets investment increase ratio, with a correlation of 0,357. It can be explained by the interest of shareholders to reinvest in the business long-term and anticipate the share growth, which they hold on hands. Firms seeking for successive investment opportunities should consider allowing boards to own their shares.

The table 4 presents the correlation results. Green cells indicate the significance level of <0,05, orange color indicates the significance <0,1, and the blue cell indicate a significance of >=0,1. The variables were given a number. The codes of the variables are presented in table 3.

Table 3. Codes of variables

Number	1	2	3	4	5	6	7	8	9	10	11	12
Variable	Eq	Total debt	DE	Sales Revenue	№ BoD	№ BoE	Board Size	PBP	Edu BoD	Edu BoE	Edu Sum	Exp BoD
Number	13	14	15	16	17	18	19	20	21	22	23	
Variable	Exp BoE	Exp Sum	BD	ShD	ShE	ShBo	RS	CA	NCA	Total Assets	OPR	

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1	,455**	-,291*	,897**	,548**	,518**	,649**	,431**	,400**	,489**	,543**	,466**	,424**	,542**	,009	-,165	-,309**	-,174	,539**	-,020	,247*	,993**	-,206
2	,455**	1	,348**	,568**	-,003	,073	,055	,252*	,049	,057	,046	,324**	,064	,211	,248*	-,385**	-,138	-,397**	,101	-,204	-,040	,489**	-,235
3	-,291*	,348**	1	-,265*	-,472**	-,252*	-,410**	-,045	-,367**	-,210	-,358**	-,076	-,048	-,070	,194	-,359**	,269*	-,364**	-,364**	-,244*	-,019	-,260*	-,154
4	,897**	,568**	-,265*	1	,423**	,556**	,621**	,499**	,359**	,523**	,547**	,390**	,360**	,457**	,039	-,171	-,300*	-,182	,351**	-,030	,123	,890**	-,064
5	,548**	-,003	-,472**	,423**	1	,282*	,673**	,194	,917**	,325**	,660**	,620**	,325**	,547**	-,242*	,029	-,281*	,020	,203	,143	-,042	,516**	,024
6	,518**	,073	-,252*	,556**	,282*	1	,899**	,415**	,297*	,946**	,841**	,072	,796**	,615**	-,147	,102	,084	,100	,181	,174	,060	,525**	,149
7	,649**	,055	-,410**	,621**	,673**	,899**	1	,408**	,647**	,878**	,951**	,338**	,763**	,723**	-,224	,092	-,063	,086	,232	,200	,027	,640**	,126
8	,431**	,252*	-,045	,499**	,194	,415**	,408**	1	,167	,419**	,369**	,211	,366**	,376**	-,030	-,006	,065	-,022	,127	,155	,045	,421**	,239*
9	,400**	,049	-,367**	,359**	,917**	,297*	,647**	,167	1	,342**	,709**	,525**	,316**	,493**	-,270*	,060	-,258*	,051	,011	,218	-,100	,376**	,079
10	,489**	,057	-,210	,523**	,325**	,946**	,878**	,419**	,342**	1	,901**	,098	,862**	,676**	-,129	,094	,007	,095	,127	,177	,068	,499**	,192
11	,543**	,046	-,358**	,547**	,660**	,841**	,951**	,369**	,709**	,901**	1	,302*	,783**	,725**	-,205	,088	-,119	,087	,158	,237	,004	,539**	,194
12	,466**	,324**	-,076	,390**	,620**	,072	,338**	,211	,525**	,098	,302*	1	,301*	,719**	,106	-,406**	-,014	-,409**	,106	-,111	-,107	,472**	-,017
13	,424**	,064	-,048	,360**	,325**	,796**	,763**	,366**	,316**	,862**	,783**	,301*	1	,879**	-,001	-,063	,164	-,061	,089	,075	,050	,455**	,143
14	,542**	,211	-,070	,457**	,547**	,615**	,723**	,376**	,493**	,676**	,725**	,719**	,879**	1	,049	-,249*	,112	-,248*	,109	-,002	-,017	,567**	,093
15	,009	,248*	,194	,039	-,242*	-,147	-,224	-,030	-,270*	-,129	-,205	,106	-,001	,049	1	-,519**	-,128	-,519**	-,184	-,067	-,175	,027	-,123
16	-,165	-,385**	-,359**	-,171	,029	,102	,092	-,006	,060	,094	,088	-,406**	-,063	-,249*	-,519**	1	-,080	1,000**	,281*	,359**	,047	-,171	,107
17	-,309**	-,138	,269*	-,300*	-,281*	,084	-,063	,065	-,258*	,007	-,119	-,014	,164	,112	-,128	-,080	1	-,066	-,125	-,050	,016	-,285*	,094
18	-,174	-,397**	-,364**	-,182	,020	,100	,086	-,022	,051	,095	,087	-,409**	-,061	-,248*	-,519**	1,000**	-,066	1	,277*	,357**	,045	-,180	,107
19	,539**	,101	-,364**	,351**	,203	,181	,232	,127	,011	,127	,158	,106	,089	,109	-,184	,281*	-,125	,277*	1	-,075	,270*	,545**	-,170
20	-,020	-,204	-,244*	-,030	,143	,174	,200	,155	,218	,177	,237	-,111	,075	-,002	-,067	,359**	-,050	,357**	-,075	1	-,077	-,039	,162
21	,247*	-,040	-,019	,123	-,042	,060	,027	,045	-,100	,068	,004	-,107	,050	-,017	-,175	,047	,016	,045	,270*	-,077	1	,234	-,284*
22	,993**	,489**	-,260*	,890**	,516**	,525**	,640**	,421**	,376**	,499**	,539**	,472**	,455**	,567**	,027	-,171	-,285*	-,180	,545**	-,039	,234	1	-,231
23	-,206	-,235	-,154	-,064	,024	,149	,126	,239*	,079	,192	,194	-,017	,143	,093	-,123	,107	,094	,107	-,170	,162	-,284*	-,231	1

Table 4. Correlation results

4.3 Regression results and findings

Several regressions analyses were made in order to interpret the collected data and compare the outcomes with the hypotheses made. As previously described the OLS regression was applied. The methods used were linear multiple regression with either enter or stepwise method. Additionally, Durbin-Watson and Anova test were applied to ensure the relevancy and correctness of the outcomes.

The Durbin-Watson test has always an outcome of value between 0 and 4. Where 2 would mean no autocorrelation detected, a higher number than 2 indicates a negative correlation, and a lower – a positive one. All the regressions were proved with this test to determine if autocorrelations exist. Any data with the Durbin-Watson being closely in its number to 2 was taken as reliable. Further in this chapter all the regressions discussed will have the Durbin-Watson test "passed", that is why this topic will be not covered a lot again in the discussion of results.

The R square and the Adjusted R square results will be taken as true with a significance level of the model lower than 0,05. A table with a summary of relevant outcomes is made for each regression. There, IV's individual correlation with the DV is shown, as well as R Square and significance is mentioned. T-statistics appear in parentheses. The significance level is denoted as *, **, and for *** which stands for the significance level of <0,1, <0,05, and <0,01 respectively.

Totally, 4 regression models were chosen for this research as valuable and reliable. The first explains the change in sales revenue growth, the second one – in operating profit ratio (operating profit/total assets), the third one – in share price change, and, finally, the last fourth one – in debt to equity ratio and composition of the capital structure.

All relevant regression information is available in tables at the bottom of each subchapter.

4.3.1 Sales Revenue Growth as a Dependent Variable

The first regression explains the changes in profitability of the company, by the sales revenue growth, which was calculated as a percentage in change of sales by comparing current and last year sales results. Sales revenue growth acts as a dependent variable in this analysis, as changes in sales revenue growth are explained by influencers – independent variables. For the independent variables several variables were chosen to track their influence (total), these are: debt-to-equity ratio, independence of the board, board size, performance-based pay, board meeting attendance ratio (discipline), percentage of shares owned by the BoD, percentage of shares owned by the BoE, percentage of shares owned by the BoE and BoE together, R&D to sales ratio, current assets investment increase ratio, ln sum of BoD and BoE education years, ln sum of BoD and BoE experience years, ln BoD education years, ln BoE education years, ln BoD experience years, ln BoE experience years, ln sales revenue, non-current assets investment increase ratio.

The results are shown in Table 5.

The method applied for the sales revenue growth regression is stepwise, as it gives more precise results. In the stepwise regression the choice of predictive variables is carried out by an automatic procedure. (Efroymson 1960.)

The regression succeeded with a significance level of 0,000. This means that the overall regression model is significant and valid. The R Square resulted to be 0,417; and the adjusted R Square - 0,408. This explains two things. First, 40,8% of the variance in the dependent variable is explained by the set of independent variables mentioned above. This number is extremely important for the research as with the significance of almost 0 it explains almost a half part in sales revenue growth, drawing managers' attention to factors in the organisation that they need thoroughly to follow in order to expand their operation and allow the company to grow. Secondly, as there is no much difference between R Square and adjusted R Square the variables have been chosen with almost no common correlation between each other. Because, if two variables are perfectly correlated then one of them does not offer anything unique in explaining the variance of the dependent variable (DV).

The F value of the model resulted in 45,118, which as well proofs the significance of the model. The null hypothesis for the F test is that the model has null explanatory power and no of the independent variables (IV) predicts the DV. That is why an F of 45 allows safely to say that the null hypothesis is wrong.

In order to better understand the result, coefficients of predictors are individually discussed. When looking at the table with coefficients three values are being the most important ones for the research purpose: Beta, t value, and the significance level. Starting with a value which is already known, significance. If significance is <0,05 or as decided by the researcher for the current regression <0,1, then the regression model reliably predicts the outcome of the dependent variable. The t value is the coefficient divided by its standard error. It is a measure of the precision with which the regression coefficient is measured and should be not equal to zero. A standardized beta indicated the strength of each individual IV to the DV.

In the result, non-current assets increase ratio has the strongest influence on the sales revenue growth. With a significance level of 0,000, and a t-value of 6,717 its beta, the amount of change in variance in the DV with all other IV constant, amounts for 14%. This seems logical, as the more a company invests in the long-term operation, the more growth it anticipates, and the more sales revenue is growing. So, investing into a companies' non-current assets will have in average a 14% impact on the sales growth rate.

The other three variables, which influence the model a lot, have a significance level of 10,8%, but due to limited observations, the researcher decided to consider this level of significance reliable for the regression. All variables also share a t-value of 1,63. These are: board size, natural logarithm of both boards' education sum, and natural logarithm of BoP education sum. The more people there are in the boards, the more effective the company performs in sense of sales revenue growth. The beta is 15,5%, which indicates a larger proportion of sales growth from the number of people in the boards. Education on the other hand, is as well important, the analysis shows that the more education years (as a sum of all members) there are in the board, the more successive the company performs. Significance level difference shows as well that BoD educational background plays a larger role than the BoEs' one.

From the current data set hypothesis comments can be given. Even though, the remuneration plan has an impact on the sales revenue growth (performance) of the company, the final conclusion has not to be made out of the regression due to a high individual significance level against the DV.

It appears that the size of the board has a strong impact on its performance, as well as the education level. The experience of the board members seems to have no concrete influence on the DV from this regression model. The independence level has no effect at all on the sales revenue growth.

Dependent variables	SRG
(Constant)	0,044 (2,56)
NCA	0,140*** (6,717)
Ind	0 (0,003)
BS	0,155* (1,631)
PBP	0,058 (0,6)
BD	0,038 (0,383)
ShD	0,044 (-0,456)
ShEx	-0,085 (-0,879)
ShBo	-0,045 (-0,468)
RS	-0,075 (-0,749)
CA	0,135 (1,408)
LnED	0,155* (1,631)
LNEX	0,055 (0,572)
LNEDD	0,156* (1,632)
LNEDE	0,115 (1,195)
LNEXD	-0,028 (-0,288)
LNEXE	0,099 (1,025)
LNS	0,061 (0,630)
R Square	0,417
Adjusted R Square	0,408

Table 5. Regression results - sales revenue growth as DV

Note: *, **, and for *** which stands for the significance level of <0,1, <0,05, and <0,01 respectively. T-statistics appear in parentheses.

4.3.2 Operating Profit Ratio as a Dependent Variable

Operating profit ratio has been chosen as an alternative to sales revenue growth performance analysis measure of the firm. Operating profit ratio is calculated as operating profit divided by total assets. In the current research the term operating profit ratio stands for how much profit is generated from the underlying resources. The more it is, the more successful a company is performing. This ratio considers not only the sales revenue, but as well the costs and the amount of money involved.

Operating profit ratio was taken as a dependent variable. The independent variables were: ln sales, non-current assets investment increase, debt to equity ratio, current assets investment increase, percentage of shares from total owned by BoE and BoD individually, R&D to sales ratio, performance-based pay in percentage, percentage of shares from total owned by both boards together.

Table 6 summarizes the findings.

The standard OLS regression with the usage of enter method was applied. The model has a significance level of 0,023, F of 2,453, and a Durbin-Watson measure of 2,202. These numbers are within the borders to confirm the model relevancy.

The R Square resulted in 0,250, however the Adjusted R Square is 0,148. To be sure, the Adjusted R Square is taken for the research conclusion. The set of independent variables explains 14,8% variance in the DV.

Four variables were chosen as the main predictors: debt-to-equity ratio, performance-based pay in percentage, R&D to sales ratio, non-current assets investment increase.

Performance-based pay had the lowest significance level (0,017), Beta resulted in 0,091, explaining about 9% of the DV. It is clearly seen that a good-structured remuneration plan of the CEO is highly linked with the performance of the company, which proofs the initial hypothesis.

Non-current assets increase ratio had the significance rate of 0,039, it accounted for -1,7% of the DV. As the non-current assets increase, the total assets increase with them. The non-current assets do not deliver instant return as they are supposed to last

for more than a year. In the short-run an increase in non-current assets harms the operating profit ratio, however no conclusions out of this data should be done for the long-run.

R&D to sales ratio has in the regression the significance level of 0,049 and accounted for almost -21% of the DV change. This data is a trap for misunderstanding. R&D expenditure does not for sure lead to a lower operating profit ratio. A negative number with a high beta is seen because of the following reason: two fractions are compared, R&D/sales and operating profit/total assets. Now one should understand that operating profit depends a lot from sales, the correlation between these two variables is close to 47%. As a result, there can exist a negative correlation. Consider a situation when the R&D ratio goes up. One of the following situations may happen. R&D expenditure stays the same, sales go down. If sales go down, operating profit goes down by 47% of sales change. Which lowers the numerator in the second fraction and let the operating profit ratio fall.

Debt-to-equity ratio with the significance slightly higher than other discussed variable (0,106) accounted for -3,4% change in the operating profit ratio. Another hypothesis is directly explained by this finding. A larger proportion of debt leads to lower efficiency of the company. However, the change explained by the IV in the DV is not that big and may come from different factors which influence capital structure decisions.

The sales revenue growth in percentage is not anyhow affected by the LN of Total Assets, which means the size of the company is not affecting the growth (in proportional size).

Due to high significance levels, no conclusions of percentage of total shares hold by boards can be met.

Dependent variables	OPR
(Constant)	0,087* (1,864)
DE	-0,034* (-1,642)
PBP	0,091** (2,445)
ShEx	2,184 (0,557)
ShBo	0,042 (0,679)
RS	-0,209** (-2,009)
CA	-0,004 (-0,264)
NCA	-0,017** (-2,108)
LNS	-0,005 (-0,804)
R Square	0,25
Adjusted R Square	0,148

Table 6. Regression results – operating profit ratio as DV
Note: *, **, and for *** which stands for the significance level of <0,1, <0,05, and <0,01 respectively. T-statistics appear in parentheses.

4.3.3 Debt-to-Equity ratio as a Dependent Variable

In order to track capital structure decisions, D/E ratio was taken as a dependent variable. The independent variables are: SRG, Ind, BS, PBP, BD, ShEx, ShBo, RS, CA, NCA, LNTA, LNED, LNEX, LNEDD, LNEDE, LNEXD, LNEXE, OPR, SPG, LNS.

Table 7 presents the regression results.

The model resulted in following outcomes: significance level 0,000; F = 7,287; Durbin-Watson = 1,814. These numbers indicate the model to be accurate in predictions.

The R Square is 0,768; the Adjusted R Square = 0,663. 66,3 percent of change in the debt to equity ratio is explained by the IV used.

Sales Revenue Growth has no correlation with the D/E ratio. Performance-based pay, shares held by BoD, R&D to sales ratio, change in assets, experience of the boards, operating profit ratio and share price growth have no direct effect on capital structure.

Following the above information, sales of the company do not depend on the capital structure. Also, the experience of the board members does not change the D/E ratio. The D/E ratio does not depend on the innovativeness of the company (on its R&D expenditure) and investments, as well as D/E has nothing in common with the share price change.

The independence ratio has a strong effect on the DE (-3,67). The significance level is only 0,006, and the T is -2,871. The amount of B is large, but the range of independence is only 0,322. This explains a strong move in B. Out of the results a statement can be made – the more directors there are in the firm compared to executives, the more equity compared to debt the company uses. This situation can be explained by the agency problem, when the company uses debt as the way to control the available cash managers can use.

Board size also affects the capital structure. It has a 0 in significance level and -6,16 in T, and correlates with D/E ratio at -0,218. The results can be interpreted in the following way: The more members there are totally in the board, the less debt is used compared to equity. An explanation can be the riskiness of debt. Usually, more people in the board means a larger company, which gets 1) enough operating cash flow from operations for investment and refinancing, 2) prefers not to risk and be stable. These are the reasons for this observation.

As mentioned in the descriptive statistics chapter, executives do hold shares, but only a small fraction out of it. From the regression it is clearly seen that the more shares the executives hold, the more debt the company employs in the operations. The Beta is 67,138, T is 2,955 and the significance level is 0,004. Following situation can be a result of executives trying to increase the revenue of the company, followed by share price growth, by using a cheaper way of financing operations – debt.

Total assets also influence the D/E ratio. A Beta of 0,618 and t of 5,059 were obtained with a sig. of 0. It does not primary imply that larger companies prefer higher debt levels, it can be a result of a similar equation. The more debt and equity a company has, the more assets it can possess. That is why an increase in assets can lead to higher debt.

Education of both boards matters. With a significance of lower than 0,1, the B of BoD's education (natural logarithm) is 3,612, and the B of BoE's is 4,131. The more educational background the board members have, the better they know how to manage and employ debt. That is why an increase in experience is positively related with an increase in the share of debt in the capital structure.

An idea that larger companies employ more equity can explain the results of the influence of the natural logarithm of sales on the D/E ratio. It has a B of -0,49 and a significance value of 0. The larger the company is, the more sales it has, the more equity is employed in its operations.

Dependent variables	DE	Dependent variables	DE
(Constant)	-3,741 (-1,060)	**LNED**	-5,56 (-1,34)
SRG	0,005 (0,024)	**LNEX**	2,485 (0,802)
Ind	-3,666*** (-2,871)	**LNEDD**	3,612* (1,938)
BS	-0,218*** (-6,160)	**LNEDE**	4,131* (1,754)
PBP	-0,194 (-1,103)	**LNEXD**	-0,75 (-0,537)
BD	-2,155* (-1,686)	**LNEXE**	-1,352 (-0,802)
ShEx	67,138*** (2,955)	**OPR**	-,193 (0,3)
ShBo	-0,382 (-0,138)	**SPG**	0,001 (0,011)
RS	-0,144 (-0,226)	**LNS**	-0,491*** (-4,499)
CA	-0,076 (-1,06)	**R Square**	0,768
NCA	-0,039 (-0,787)	**Adjusted R Square**	0,663
LNTA	0,618*** (5,5059)		

Table 7. Regression results – debt-to-equity ratio as DV

Note: *, **, and for *** which stands for the significance level of <0,1, <0,05, and <0,01 respectively. T-statistics appear in parentheses.

4.3.4 Current and non-current assets as dependent variable

In order to track the influence on investment decisions current and non-current assets increase ratio was taken as a measure. The idea behind the test is to figure out if financing, remuneration, education, experience and other variables related to board and capital structure influence the investment amount. Table 8 presents the regression results.

The first model is with current assets increase ratio in DV. IV chosen are: natural logarithm of the sum of education years of the board of executives, debt-to-equity ratio, natural logarithm of the sum of experience years of the board of directors, discipline of the board (meeting attendance ratio), performance based pay in percentage, percentage of shares from total owned by BoE, percentage of shares from total owned by both board together, natural logarithm of the sum of education years of the board of directors, independence ratio, natural logarithm of the sum of education years of the board of executives, board size, natural logarithm of sum of experience years by both boards, natural logarithm of the sum of education of both boards, percentage of shares owned by directors.

The model resulted in a significance level of 0,003, a F of 9,553, and Durbin-Watson of 2,125. The model can be considered as truthful.

The R Square is 0,132 and the Adjusted R Square is 0,118, which explains almost 12% in the change of the current assets increase ratio.

The variables which influenced the result the most are: percentage of total shares owned by the board of directors, natural logarithm of the sum of education of both boards, natural logarithm of the sum of education years of the board of directors.

Percentage of total shares owned by the board of directors with a significance level of 0,003 has the biggest influence among other variables on the current assets increase ratio. With a T of 3,091 it has a B value of 1,304. A large B can be explained by rather a small range of IV possible. The outcome is: the more shares the board of directors controls, the more is the current assets increase rate, considering other IVs do not change.

Natural logarithm of education and the natural logarithm of board of directors' education have an influence on current asset growth with a significance level of 0,083 and 0,069 respectively. Beta is 0,204 and 0,213 respectively in that case. A conclusion that the education level of the board matters when dealing with investments, and, especially, the education level of board of directors, is made. The more educated the board is, the more investments (current) are made.

The next step was the same regression analysis but with non-current assets increase ratio as the dependent variable. The significance level of the model resulted to be 0,856. The significance level of the variables was high as well, so no independent variable could explain the outcomes in the current regression model.

Therefore, as a conclusion, the education level of the board and the board of directors in particular, as well as the percentage of shares owned by BoD can explains the short-term investments (current assets increase). A higher education level, as well as a higher percentage of the share ownership by directors' lead to higher investments.

Dependent variables	CA	NCA
(Constant)	0,067 (1,118)	19,146 (1,417)
ShD	1,304*** (3,091)	(excluded by the model)
DE	-0,113 (-0,881)	-0,002 (-0,004)
Ind	-0,013 (-0,113)	1,992 (0,388)
BS	0,168 (1,44)	0,076 (0,594)
PBP	0,187 (1,61)	0,416 (0,665)
BD	0,177 (1,299)	-9,014* (-1,847)
ShEx	-0,026 (-0,221)	-57,643 (-0,74)
ShBo	-1,918 (-0,221)	-1,325 (-1,068)
LNED	0,204* (1,761)	15,337 (0,936)
LNEX	0,093 (0,757)	-14,036 (-1,16)
LNEDD	0,213* (1,849)	-8,534 (-1,191)
LNEDE	0,137 (1,168)	-9,274 (-0,996)
LNEXD	0,068 (0,523)	5,677 (1,038)
LNEXE	0,072 (0,609)	8,142 (1,248)
Durbin-Watson	2,125	1,834
Sig. of model	0,003	**0,856**
R Square	0,132	0,192
Adjusted R Square	0,118	-0,093

Table 8. Regression results – CA and NCA as DV

Note: *, **, and for *** which stands for the significance level of <0,1, <0,05, and <0,01 respectively. T-statistics appear in parentheses.

5 Conclusion

In this chapter empirical findings are being explained and connected with the theoretical background, research questions are answered, and some practical tips for managing a company in Finland are given. The chapter concludes with recommendations for future researchers and discusses the limitations of the research.

5.1 Discussion about the findings

The empirical and theoretical study enabled the author to answer all research questions set and explain the hypotheses. A summary of findings is presented in a form of answers to questions developed from literature review.

How is capital structure linked with a company's performance?

H1: Financing (D/E ratio) affects the performance of the company.

Two ratios were taken as performance indicators. The first one is operating profit divided by total assets. This is the effectiveness of assets utilization by the company. The second performance metrics was assigned to sales revenue growth. Additionally, the financing influence on share price change was measured.

According to the results of the analyses, a higher debt level negatively influences the operating profit ratio. However, the influence is small.

The D/E ratio has no influence on the sales revenue growth. Changes in share price have also no effect on the D/E ratios of companies. The results go along with the MM Proposition 2, where MM argue that the share price is independent from capital structure. The pecking-order theory, as well as MM's finding, link leverage to higher earnings. The straight connection of this variables was not found in the research. It either means that almost all firms can find the point where debt starts to bring more downsides than savings, or that capital structure has no strong influence on the sales and revenues. The debt-to-equity ratio in Finnish companies has not a high standard deviation, the median is 42,7%. A rather small share of debt is mostly involved in Finnish companies financing. Considering profitability and leverage relation, the research is showing opposing results to empirical evidence by Titman and Wessels (1988), Rajan and Zingales (1995), and Fama and French (2002). The researchers

reported a negative relationship of leverage and profitability. The difference in outcomes can be explained by different market realities where the firms operate. For a developed economy, the influence of capital structure on profitability has less impact compared to developing countries.

What factors influence capital structure composition?

H2: The amount of total assets and the board-related characteristics influence the D/E ratio.

The amount of total assets has a positive influence on D/E ratio. The finding supports the ideas of Myers (1984), where he argued that larger companies can employ more debt as the risks associated with financial distress are low, consequently the costs are also lower.

Another factor affecting the capital structure is the board size. The bigger the board is, the less debt is employed. This may be the result of difficulties in decision making towards debt, as this source of financing is riskier as proposed by Altman (2002).

Education level of both boards has a positive effect on the amount of debt involved in a firm financing. This finding follows the rules developed by behavioral finance theories and go along with previous empirical studies by Nusbuga (2009) and Cagle (1988).

Besides board size, board composition is an important variable influencing D/E ratio. The more executives there are in the company, the more debt is involved in the capital structure. Agency theories would explain this phenomenon. As mentioned by Jensen and proved my many empirical studies, debt reduces the agency costs of free cash flow by reducing the cash flow available for spending at the discretion of manager. Exactly that is the reason why companies with a higher share of executives over directors employ more debt financing.

Share ownership by the executives has a positive influence on the amount of debt involved in financing. The analysis showed that in most cases, executives of Finnish companies hold shares of the company. This amount is limited to a small number and is supposed to increase the performance of the executives. The share ownership positively affects the D/E ratio, because by using a cheaper source of financing,

executives try to increase the earnings, and consequently get more return on the shares they hold.

H3: Sales revenue affects the financing choices.

Sales revenue has a negative effect on the D/E ratio. The more revenue there is, the more equity the firm has. It happens as of no need of external financing. This finding supports the Brealey and Myers ideas, where they suppose that more profitable firms (usually the larger ones) borrow less as they have enough internal financing.

H4: The investment increase rate in assets affects the D/E ratio.

The investment increase rate in current and non-current assets have no effect on the D/E ratio. R&D expenditure has also no effect on the capital structure. Relying on data a conclusion is made that the capital structure has no effect on investments in Finland.

What structure of the board is the most effective one for the firm's performance? What are the "good to have" characteristics of the boards?

H5: Remuneration plan of CEO affects the performance of the company.

A typical CEO in Finland receives about 60% of his salary through bonuses and incentive schemes. The regression results show a positive effect of the increase of performance-based pay (percentage of incentive-based pay from total pay) at both the sales revenue growth and the operating profit ratio (asset utilization). The higher the bonus part from the total pay of the CEO is, the better the companies perform. These outcomes indicate a "healthy" and transparent pay structure for in Finland. And due to high rates of bonuses, it may be concluded that the findings support the Brealey and Myers theory, where they state that with a fixed salary, the manager will be likely to work with less effort, the CEO could use perks and bonuses the company offers and ensure his placement by investing in the project, where he or she will be needed to sustain their profitability. Generally, Finnish companies succeed in managing agency problems and costs with the remuneration instruments.

H6: Qualifications of the board (size, educational and experience background, board discipline) affects the performance of the firm.

A bigger size of the board positively affects the sales revenue growth. Another factor positively affecting sales revenue growth is education level of the board members. The board of directors' education level affects the performance of the company the most.

H7: The more percentage of companies shares management and directors own, the more successful the company operates.

The data indicates that the percentage of share ownership by any of the boards has no effect on any performance measures.

Do board-related characteristics and capital structure affect investments?

H8: Financing, remuneration, and board related characteristics affect the amount of Investments.

The regression results imply that the share ownership by the BoD has a positive influence on investment in current assets. This is explained by the directors' personal interest in putting more effort in managing current operations.

Education level of both boards and the BoD in particular has also influences the current investments positively. The more educated the board generally is, the more investments a company is making in the current operations. The long-term investments have resulted in no relation with any of the variables. Financing also does not affect the amount of investments that the company makes.

To sum up, all research questions were answered. D/E ratio has a small negative effect on the operating profit ratio and no effect on the sales revenue. The amount of total assets has a positive influence on D/E ratio. Board size and independence of the board have a negative influence on the D/E ratio, whereas share ownership by the board and education level – a positive. The more sales revenue the company has, the more equity is employed in its financing. Investments, on the other hand, have no influence on the capital structure. Incentive-based pay to the CEO is positively related with the performance measures of a company, also a bigger board by size positively affects performance. Share ownership by the board has no effect on the performance of the company but has a positive impact on the amount of investments. Education level of the board is positively associated with the current investments.

5.2 Practical Implications of the Results

There has been a lot of arguing in the financial field of whether a perfect capital structure exists or not. A lot of theories were developed, many empirical studies were conducted, however the results always differ. The capital structure assumptions vary among different markets, industries, approaches.

The research focuses on the set of rules (variables) that effect the capital structure. It explains the influence on the capital structure by a set of board characteristics, performance measures, and investment activities by firms. The set of independent variables makes the research unique. The findings of the research may be of interest to researchers in finance, corporate governance, and business fields, to company owners, shareholders, and company management. The research gives a "look inside" into the best practices of board composition in Finland and suggests relevant D/E ratios for a typical firm. The results of the research are fully based on numerical data interpretation, and the findings can be reapplied for further statistical analysis in capital structure, investment, and corporate governance areas.

Not only the explanation of factors influencing capital structure is given, but also the influence of capital structure on performance and investments is tracked and explained. As well as the best practices of elimination of agency problems considered.

The most uncovered topic by the other researchers is corporate governance and board-related characteristics. This work gives a deep and thorough look into factors affecting the performance, investments, and capital structure of the firms by the board characteristics. Such factors as educational background and experience of both boards, size of the boards, meeting attendance and other are being studied in this paper. The information collected gives an idea how significant for the company performance are directors' and managers' characteristic, as well as remuneration structure, and organizational issue.

The study was based on Finnish companies. Most of the capital structure studies provide empirical evidence of developing counties. But this work will be a "must have" paper to read for all professional who are interested in the discussed topics for companies in the developed market. The findings are perfectly replicable to Finnish neighbors like Sweden or Norway, as well as to developed European countries like

Germany or the Netherlands, where not so many previous researches have been conducted yet.

5.3 Limitations and Recommendations for the Further Research

The conducted research has several limitations. The limitations could affect the results provided by the author. First of all, the sample size. It was of great difficulty finding companies fully reporting about the capital structure, and a lot of reports should have been read through by the author. This not transparent and not full reporting by Finnish companies was the greatest difficulty in the work, which results in a limited sample size of 14 companies. The time period of the research was limited for the same reasons, most of the Finnish companies started publishing their reports about the corporate governance situations only in the last 5 years. This period was chosen for the work, and it enabled the results to be significant and correct. However, this sample does not represent all of the Finnish firms' characteristics. The research is also limited to companies operating in Finland and trading in the Finnish stock market. The interpretation of the results, as previously mentioned, can be reapplied to Nordic and highly developed European countries, due to a similar business environment. The results cover only publicly traded companies and have no insight into private small businesses.

The research is also limited by the time frame of 2014-2018 and may become irrelevant if the factors influencing the model will significantly change in the future, for example a large increase in the interest rate of debt would make the model less relevant for consideration.

For the future researches the author recommends using a larger number of variables, and reconsideration of ratios. The sales revenue growth and operating profit to total assets are for sure not the only performance analysis which can be applied for a company, choosing a different set of variables may reveal new correlations between existing data.

There is a lack on board-related empirical and even theoretical data, a more extensive literature review may help to improve the result interpretation by future researchers. Adding private companies to the study is also a way to new research outcomes.

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