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THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND PROFITABILITY: NASDAQ OMX HELSINKI

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ABSTRACT

This paper analyzes the effect of capital structure of a company on financial performance of Finnish non- financial companies are listed in NASDAQ OMX Helsinki. The study seeks to extend Abor's (2005), Gill, Biger, and Mathur's (2011), and Shubita and Maroof's (2012) findings. A sample of 39 firms was selected from a population of 117 firms on a period of three years, from 2018 to 2020. The sample was analyzed by chart-based comparisons, Pearson correlation, and multiple regression analyses were. The results indicate a significantly negative relationship between short-term debt to total assets, long-term debt to total assets, and total debt to total assets with profitability, which was measured by return on equity. Additionally, sales growth and firm size were applied in the regression models as control variables and they had a positive relationship with profitability. The study suggests that higher debt levels result in lower levels of profitability.

Keywords: Short-term debt, Long-term debt, Total-debt, Sales Growth, Firm size Return-on-Equity

INTRODUCTION

What's the connection between capital structure and profit? Is debt more appealing than the issuance of new stocks through public offerings because of the tax benefits? Is it possible, or even desirable, for the corporation to take on the risk of increased debt? Should the firm's funding decisions follow a consistent pattern, regardless of the country in which it operates? These are often asked questions that play a crucial role in capital structure related decision-making procedures. Despite the fact that various research have been conducted on the subject, there is no consensus on what constitutes an optimal capital structure.

Capital is what firms use for their operations, and the capital structure of a company is described as the combination of debt and equity it employs in its operations. A company's capital structure is made up of a variety of different securities. In general, businesses have a variety of capital structures to select amongst.. It is divided in debt and equity, and it is crucial to have a healthy capital structure in order to maximize profitability. There are numerous alternatives for financing decisions. For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005).

Firms can finance their assets using either debt or equity capital. As Azhaigah and Gavoury (2011) suggested, a combination of financing and equity is the best option. Firm owners would be agnostic about whether they utilized debt or equity if interest was not tax deductible, but if interest was eligible for tax deductibility, they would maximize the value of their companies by employing 100 percent debt financing. With use of debt in a company’s capital structure, agency costs arise. Agency costs arise as a result of the relationships between shareholders and managers, and those between debtholders and shareholders (Jensen and Meckling, 1976)

When the market overvalues equity, corporations are willing to sell it, according to the pecking order hypothesis by Myers (1984). This is predicated on the notion that executives behave in the best interests of stockholders. As a result, they will not issue undervalued stock until the value

transfer from "old" to "new" stockholders is greater than the net present value of the future growth. It may also be concluded that new shares are only issued at a price that is higher than the firm's genuine market value. As a result, investors see a company's issuance of shares as an indication of overpricing. Abor (2005) argued that if external finance is required, the company will use secured debt rather than hazardous debt, and companies will only sell equity capital as a last measure.

As a result, the bigger the debt ratio, the higher the risk and, and as a result, the higher the interest rate. At the same time, higher interest rates are eroding debt's tax benefits. If the company runs into financial difficulties and its operating income is inadequate to satisfy interest costs, stockholders will be required to make up the difference, and if they are unable to do so, the company may be driven into bankruptcy.

The optimal capital structure is yet to be defined despite numerous prior studies and theories regarding it. A variety of ideas have been proposed to explain corporate capital structure.
Despite capital structure's theoretical appeal, financial management academics have yet to discover a model for an ideal capital structure. The best that academics and practitioners have been able to achieve are prescriptions that satisfy short-term goals (Abor, 2005). I decided to conduct this study since there is no consensus on what constitutes an efficient capital structure with in service and production industries. A deeper understanding of the issues at hand necessitates an examination of capital structure and its impact on the profitability of the company.

Many previous empirical studies have shown contradicting results. The Finnish market is special due to its substantial tax rates, and there have not been recent studies regarding capital structure decisions and profitability of listed companies in Finland.

This study investigates the effect of capital structure decisions on profitability in Finnish publicly listed non-financial firms. The selected variables in this study are based on previous empirical work and profitability theories. Data limitations might limit the choice of variables and as a result the variables are three debt ratios; short-term debt to total assets, long-term debt to total assets, and total debt to total assets. Two control variables have been used, which are sales growth and company size, and the independent variable of profitability in this study is measured by return on equity. The data was retreived from Morningstar’s report, based on the companies financial statements, as well as independently from the sampled companies’ financial statements. The

sample was analyzed with chart-based comparisons a Pearson correlation matrix, and three OLS Regression analyses.

Abor (2005), Gill, Biger, and Mathur (2011), and Shubita and Maroof (2012) have tested these variables in their studies of the Ghana Stock Exchange, New York Stock Exchange (NYSE), and Amman Stock Exchange, respectively. Using Finnish data, this study gives worldwide evidence on capital structure alternatives. The management of capital structure will have a substantial impact on a company's profitability. A number of research have been published in the academic literature that aim to detect and measure capital structure. In this regard, international results are mixed, most likely due to difficulties in quantifying working capital management in different nations. As a result, more evidence in this area is required.

Following research questions have been created based on the purpose of the study:

RQ1: How does a capital structure high on debt impact the company's profitability?
RQ2: How does a capital structure low on debt impact the company's profitability?
RQ3: What is the optimal capital structure to maximize the company's profitability?
RQ4: What is the relationship between capital structure and profitability?

First and foremost, the research questions above outline the study's major motivations.
You will first be provided with a small review of background information about this study. The next section, literature review, contains a review of past relevant literature, history, and hypotheses about the study's core concepts and terminologies. Following the discovery of adequate knowledge behind the title and research questions, the following section will lay the groundwork for this study, including the research's foundations and analysis methodologies for answering the research questions. After the "what," "why," and "how" questions about this thesis have been answered, the next section will lay the groundwork for putting all of the theory into practice: the analyses and findings of this study. When all of the aforementioned is taken into account, the question of "How does the capital structure of a company impact its profitability, and why?" should become much more apparent. This is how the thesis is structured. The literature review and hypothesis underlying this study is presented in Section II, followed by a description of the methodology employed and sample selection in Section III. The study's findings will be presented in section IV, followed by conclusions in section V.

2. LITERATURE REVIEW

As Brealey, Myers and Allen (2008) suggests, capital structure is concerned with the composition of a company's liability, or more particularly, the proportional participation of various funding sources in the composition of total obligations. As a result, it is determined what the volume of common stock and preferred stock is, as well as the amount of finance the company has. This theory is essential because it reveals a number of internal features of the organization, including the company's equity involvement and, as a result, the degree of financial leverage, as well as the relative expiration periods. Because each source has a distinct cost, the composition of the rate of return can have a considerable impact.

Modigliani and Miller (1958) developed the theory of “capital structure irrelevance” which suggests that a company’s market value, which is determined by the mix of its assets is not affected by the amount of debt it has in its capital structure. This is a framework based on various assumptions that are unreal in the current context, such as that perfect markets are ones lacking brokerage expenses or corporate taxes, and that investors may access funding at the same rates as firms. There are no knowledge asymmetries, and the debt of the corporation is risk-free. This however is not the case in the real world.

Modigliani & Miller (1963) later revisited their initial viewpoint and began to factor in the debt's tax benefits. From there on out, it is assumed that the cost of debt will be lower than the cost of equity since the state will be financing the expenses indirectly through interest payments. In other words, because the fiscal law permits the corporation to deduct the total spending on interest payments from operational profit, the value of taxes on revenues would be lowered in the same ratio as the amount of income tax. As a result, the company's profit would be lower than if it had no debt; yet, because the profit would be proportional to a smaller equity, the profit per stock would be higher.

Later, Miller (1977) developed a new interpretation, evaluating the problem of investor taxes and concluded that as taxation on individual person's revenues rises, the firm must raise the interest

rate to match them, establishing a balancing point where the individual and company amounts are equal. As a result, there would be no tax benefit from the debt. Miller (1977) illustrates that the tax savings of debt for corporations are decreased by the personal tax liability.

Warner (1977) studied the associated costs with the potential of bankruptcy, identifying legal, administrative, direct, and indirect costs, all of which are determined by the difficulties of running a business through its bankruptcy process, leading to the conclusion that such costs rise in tandem with the debt, lowering the company's financial performance.

Titman (1988) broadened the determinants of capital structure with his research broadening them to collateral value of assets, Non-debt tax shields, growth, uniqueness, industry classification, size, volatility, and profitability, finding that there are unobservable attributes on the choice of corporate debt ratios. He also includes the relevance of transaction costs in deciding how to finance the firm.

In any case, whereas if cost of debt is lower than the cost of equity, the company with a higher degree of financial leverage tend to have a higher profitability on equity indices in normal operating conditions. In other terms, discounting the risk exposure, which is defined by the probability of lower-than-expected rates of return. The difficulty in estimating the cost for every capital source, as well as the practical validity of the weighted average cost, that, as per Brealey aet al. (2008), essentially serves to calculate the minimal rate of profitability necessary to make the firm's plans appealing.

In this regard, McNulty et al (2002) emphasize the necessity of precisely calculating the capital cost. The cost of capital is used to assess the viability of a project or investment, according to the writers. If the cash flows were discounted at an inaccurate rate, the firm would not accept appealing projects or make investments that would result in losses.

The cost of fixed-payment sources is not difficult to calculate; but, because to the complexity of tributary regulation, estimating the effective cost of the loan is a much more challenging process. Ordinary stock option costs are complicated in and of themselves, given the difficulties of relating the dividends to be distributed – which are variables inasmuch as they are proportionate to profit – to the share prices, which are typically in continuous fluctuation. Furthermore, the estimation of the cost of all sources adopted by the firm has significant flaws because it assumes a constant five

capital structure, which is vary over time, and it also ignores the complexities involved in calculating the cost of each single source.

According to Booth et al (2001), the selection of the optimal capital structure will be made in accordance with proposed theories: i) The Static Trade-off Model asserts that the company chooses an objective based on tributary properties, profitability, types of investment, business risk, and bankruptcy code; ii) the Agency Theoretic Framework asserts that potential conflicts of interests among internal and external investors determine the optimal structure that compensates agency costs with other financial costs; and iii) the Pecking-Order Hypothesis - based on market imperfections, considering shares' costs and asymmetric information - states that the decision will be based on the business's ability to generate cash, given the asymmetry of knowledge (e.g., if the company believes its stocks are currently undervalued, it will employ debt). If, on the contrary, the corporation believes the shares are overvalued, it will issue new shares).

Hadlock and James (2002), in assessing the banking system's ability to provide enterprises with financial security, assert that the decision between equity and debt will be largely decided by the market value of the stock, validating the Pecking-Order Hypothesis. The authors of the study examine 500 non-financial enterprises' financing decisions, concluding that those who were under-evaluated selected bank finance. This type of decision is made because the market sees the loan as a positive move forward, assuming that the company picked the form of funding because it expects strong returns.

Graham (2000) calculated the size of the debt benefit. According to his calculations, a tax benefit of US$ 0.2 for each unit of profit before taxes, or the equivalent of 10% of the company's worth, is still less than the possible maximum benefit. Another result from the same study is that large and profitable organizations have a low debt rate.

Several considerations, not linked to tributary issues, determine the choice of financing, according to Graham (2000). The financial impact of a potential bankruptcy will prevent loans from being granted. The stockholders' ability to give up initiatives with positive net present values (NPVs), which result in bigger advantages for the parties involved, had some influence. Low liquidity and irregular cash flow have an impact on the financing decision because they tend to raise the loan's cost. The administration's attitudes typically push the company to use debts cautiously, because either the administrators don't want to take risks or because they want to enhance their shareholder

participation. Because an extreme scenario of liquidation would be exceedingly disruptive to many parties in the chain, such as suppliers, consumers, and employees, enterprises with high degrees of industrial concentration pared to the unicity of the product line maintain low debt indexes. Large enterprises with the ability to supply good collateral typically have lower financial costs, but this does not imply that they have a large debt level. Aside from these considerations, many businesses can choose to save flexibility reserves by using debt at a level much below their capacity and planning for a future need.

Fama and French (1998) conclude that the debt does not relinquish tax benefits when they examine the relationship between taxes, financing decisions, and the firm's worth. Furthermore, high leverage creates agency issues among shareholders and creditors, implying that leverage and profitability have a negative relationship. As a result, the negative information about the debt's debit and profitability obscures the debt's tax gain.

Another important factor to consider when making financing decisions is the type of financial markets, and more specifically, the stage of development of financial markets in countries with significant economic disparities, in terms of sector structure, income per capita, interest rate levels, rate of inflation, relative stock market participation, tributary legislation, and so on.

Booth et al. (2001) conducted research on the capital structure of many enterprises in countries with vastly different financial markets. Despite the vast disparities provided by financial markets, they determined that the variables which influence the choice of a company's capital structure are consistent with eachother.

Roden and Lewellen (1995) gathered data on organizational capital structure decisions using 107 United States based leveraged buyout firms. They looked at data from 1981 to 1990, a ten year time frame, and with regression analysis, a positive association between profitability and overall debt as a proportion of the total buyout-financing package was found.

Wald (1999) collected data on enterprises from around forty nations using the 1993 Worldscope dataset. Solely for the United States, the sample size for the study was approximately 3,300 enterprises. He discovered a negative link between leverage and profitability using regression analysis.

According to Chiang, Chan, and Hui (2002), capital structure and profitability are linked, according to their regression analysis. They compiled a dataset of 17 contractors and 18 developers from the Hong Kong metropolis.

Mesquita and Lara (2003) also point out the significance of the economic environment, translating to the country of operation, on capital decisions in their study of the Brazilian market.

Gill, Biger, and Mathur (2011) find a positive relationship between short-term debt to total assets and profitability, long-term debt to toal assets and profitability and total debt to total assets and profitability in the American manufacturing industry, as does Shubita and Alsawallah (2012) in their study of the Amman stock exchange.

Nazir, Azam, and Khalid (2021) Found that short-term and long-term debt have significant negative impact on profitability in a study of 30 cross-sectionally sampled non-financial companies listed in the Pakistan stock exchange in years 2013-2017.

Ayaz, Zabri, and Ahmad (2021) argue that the leverage ratio improves company performance, but it switches to a negative when the amount of debt reaches beyond the optimal level indicating a nonlinear impact on profit in their study of non-financial firms on the Bursa Malaysia Stock exchange in years 2005-2016.

Rehman et al. (2012) conclude that there is a significant positive relationship between short-term debt and profitability of a firm, but long-term debt has no impact on it. They studied the impact of debt on profitability in textile industry of Pakistan.

3. DATA AND RESEARCH METHODOLOGY

3.1. Methodology

The methodologies used in this study are often used in empirical finance research at this level. Several research papers were reviewed for structuring this thesis, and many of them used methods similar to this study (Abor 2005, Gill, Bigger and Mathur 2011, Shubita and Alsawallah 2012, Rehman, Fatima and Ahmad 2012).

The quantitative analysis of secondary data is the central research methodology of this thesis, which indicates that the data was acquired mostly through a third party, Morningstar reports in this case. However, companies' yearly financial statements of the studied sample were reviewed first-hand to obtain amounts of sales numbers. The examination begins with informative charts, and tables that highlight the impact of short-term debt to total assets, long term debt to total assets, and total debt to total assets ratios to profitability, including the control variables sales growth and firm size, in the Nasdaq OMX Helsinki.

Because it summarizes the raw data into a visually simple to grasp form, descriptive statistics play an important part in the analysis. Table 1 summarizes the state of 117 units of observation in a simplified manner in a relatively small space. The tables themselves are rather self-explanatory. Additionally, the Pearson correlation and the multiple regression analysis, which are important statistical tools often employed in financial research, are the second and third components of the study.

The Multiple regression depicts the relationship between the three independent variables, and two control variables, to the one dependent variable (short-term debt to total assets, long term debt to total assets, total debt to total assets, sales growth, and size, to profitability (return on equity)) more accurately. T-tests are used to determine the correctness by determining how statistically reliable the influence (between the variables) is. Pearson correlation investigates the correlation between all of the variables.

3.2. Data Collection

The population for this study are the non-financial companies listed in NASDAQ OMX Helsinki from the end of 2017 to the end of 2020. The sample consists of 39 companies and the sampling techique that was used was the random sampling method. The software to generate random numbers which were used in the sampling process is Google's embbed random number generator. Each company in the population were given a personal number, ranging from 1 to 117, and the random number generating software decided which companies would be in the final sample. The data was derived from Morningstar's report and the companies financial statements. The data from Morningstar's report are return on equity, short-term debt to assets, long-term debt to assets, total debt to assets, and sales growth. The data used for the control variable, size, was derived from the sampled companies financial statements, and then calculated by the author using the natural logarithm of one year's sales, lagged one year. The population consists of a total of 354 observations and the sample consists of 117 observations. The time series is three years, from the end of 2017 to the end of 2020.

3.3. Chart-Based Comparison

To begin, the arithmetic mean value of each company's short-term debt to total assets, long term debt to total assets, and total debt to total assets ratios from 2018 to 2012 are calculated. Second, for the same time period, the arithmetic mean value of each company's return on equity ratio is shown. This part of the study ignores the control variables and solely focuses on the relationship between the debt to assets ratio and profitability.

The average trend between profitability and short-term debt to total assets, long term debt to total assets, and total debt to total assets are calculated for the charts and graphs to depict the average trend throughout time. It also helps to clarify the data in several ways. To make things easier, the averaged return on equity ratios are rounded to the nearest decimal place to prevent graphs from becoming too big horizontally. Then, in Microsoft Excel a pivot table is built with the debt ratios on the left side and the average return on equity on the right side. A basic column graph is created from this data, with the X-axle displaying decimal values that are percentages and the Y-axle displaying the number of the sampled company. The colums, labeled ROE and either sda, lda, or da, show the amount of debt to assets and the corresponding return on equity of the corresponding

sampled company. The technique is repeated for each debt ratio (short-term debt to total assets, long-term debt to total assets, and total debt to total assets).

The following visual analysis is created using the same values as in the first one. However, both, the x-axis and the y-axis represent percentages, where the x-axis shows percentages for the debt ratio in question and the y-axis shows return on equity percentages. The diagrams do not clearly convey the density or true reflection of the data, which is why this section presents the data scatter plot. Additionally, a trendline is included to indicate the effect of the particular debt to total assets ratios on return on equity trend, with the more horizontal the trendline, the less impact. If the trendline is skewed downward, the larger is the debt ratio, and the lower is the profitabilty. When the trendline is tilted upwards, the opposite is true: a lower debt ratio means lower profitability.

3.4. Regression Analysis and Hypothesis testing

The arithmetic mean numbers are not used in the regression model; instead, the analysis was done on yearly data to obtain a more accurate depiction and a more thorough examination. Microsoft Excel's data analysis input was used to do the multiple regression analyses. The data analysis tool was used to do multiple regression analysis on the data a total of three times, one for each independent variable (short-term debt to total assets, long term debt to total assets, and total debt to total assets). The profitability data for the specified year and segment can be found in the Y-range. The independent- and control variable (sales growth and size) data can be found in the X-range.

Because the ordinary least squares (OLS) linear regression analysis provides a lot of data, including data that isn't important to this study, I've picked the relevant information to this study in the list below. They were chosen because they have statistical significance for regression model results and provide the impact level of the independent variables' (debts to assets ratios) and control variables' (size and sales growth) value to profitability, as well as a measurement of the rate of variance it explains (R squared and t-stat).

Following that, a brief explanation of the significance of the particulars, as well as some guidance on how to understand the regression analysis tables:

- Coefficient: The most important takeaway from the regression study. It indicates the expected impact of increasing the respective value by one. The standard error is another name for it.
- T-statistic: t = b1 / SE, where b1 is the regression line's slope and SE is the slope's standard error.
- Multiple R: Displays the correlation between the variables Y and X (where 1 denotes totally correlated and 0 denotes no correlation).
- R square: The proportion of Y's movement that is attributed to X. Variance explained by the model divided by total variance (essentially, how near the data points are on average to the regression line) can also be said.
- P-value: Describes the likeliness of the data occurring by chance.

The regression slope test has three null hypotheses in this thesis. The null hypotheses state that

i) there is no statistically significant linear link between short-term debt to total assets and profitability,
ii) there is no statistically significant linear link between the long term debt to total assets and profitability, and
iii) there is no statistically significant linear link between total debt to total assets and profitability. Whereas the alternative hypotheses state that the two variables do have a statistically significant linear relationship.

All debt ratios will be examined to see if the hypotheses are correct. The null hypothesis is used to determine whether the regression analysis results are statistically significant.

Although the P-value is calculated already in the regression analysis, a two-tailed linear multiple regression t-test for the slope coefficients is also used for this section of the study. This section is linked to the regression analysis, which is used to assess the statistical significance of the linear relationship between the variables.

Before performing the multiple linear regression tests, several assumptions must be made: The dependent variable Y has a linear relationship to the independent variable X. For each of X, the probability distribution of Y has the same standard deviation. For any given value of X, the Y values are independent, and the Y values are relatively normally distributed (Brooks, 2008). The

t-statistic is obtained using the data-analysis tool, as well as the regression, in Microsoft Excel, incorporating the procedure listed above.

If the computed t-stat is greater than the upper limit t-critical or less than the lower limit t-critical (in two tailed tests), the null hypothesis can be rejected; if the independent variables' coefficients are statistically significant, the alternative hypothesis should be considered.

The OLS linear regression formulas used in this study:

$$ROE\ (i,t) = \beta 0 + \beta 1\ SDA\ (i,t) + \beta 2\ SIZE\ (i,t) + \beta 3\ SG\ (i,t) + e1$$
$$ROE\ (i,t) = \alpha 0 + \alpha 1\ LDA\ (i,t) + \alpha 2\ SIZE\ (i,t) + \alpha 3\ SG\ (i,t) + e2$$
$$ROE\ (i,t) = \lambda 0 + \lambda 1\ DA\ (i,t) + \lambda 2\ SIZE\ (i,t) + \lambda 3\ SG\ (i,t) + e3$$

Where:
ROE (i,t) = net income divided by shareholder's equity of firm i in time t
SDA (i,t) = short-term debt divided by total assets of firm i in time t
LDA (i,t) = long-term debt divided by total assets of firm i in time t
DA (i,t) = Total debt divided by total assets of firm i in time t
SIZE (i,t) = Natural logarithm of sales, lagged one year period
SG (i,t) = current year's sales minus previous years sales divided by previous year's sales
e = error item

3.5. Limitations

During the data collection process, it was discovered that the required financial data is not very easy to obtain, at least not for free. It would be ideal to collect data from a longer time period than three years. To obtain a strong representation of the findings, decades of yearly, quarterly, or monthly data would have been a more representative option. This would have allowed cross-sectional regression analysis and the application of various valuation models regarding the firm size.

4. DATA ANALYSIS

4.1. Descriptive Statistics

Table 1 shows the descriptive statistics of the variables. First, the values from each company from 2018 to 2020 were taken, and secondly, the arithmetic mean, minimum, maximum, and standard deviation were taken from every variable. The average of the return on equity was negative 5 percent and the median was 6,9 percent. This depicts a negative trend in the market. However, the median is positive, suggesting that the minimum value, which is -799,8%, has a lot to do with the average being so low. Abor (2005), Gill et al. (2011), and Shubita et al. (2012) found significantly higher averages for return on equity in their studies, but the median was close to 6,9 percent, which is the value in this study, with Shubita et al. (2012) coming to 8 percent.

The long-term debt to total assets ratio (LDA) variable's average is 15% and it has a median of 15%. When comparing it to the Short-term debt to total assets ratio (SDA), with an average value of 30% and a median of 29%, it can be determined that companies finance their operations significantly more by short-term debt than long-term debt.

The total debt to total assets ratio (DA) has an average of 46% and a median of 47,5%. It can be determined that the companies have a rather high percentage of debt in their capital structure. The sales growth is 6,8% on average, and the firm size calculated by the natural logarithm of sales, lagged by one year, achieved a value of 19.

Table 2 shows the Pearson correlation coefficents. It was found that the profitability (measured by return on equity) is negatively correlated with each debt to total assets ratio that were used, which differs from the findings of Abor (2005), Gill et al. (2011), and Shubita et al. (2012) in that part. The profitability (return on equity) correlates positively with sales growth (SG) and firm size (SIZE), which in turn is similar with previous research. It can also be seen that the short term debt to total assets ratio correlates positively with sales growth, but long term debt to total assets ratio correlates negatively with sales growth.

4.2. Chart-Based Comparison

The charts are being observed throughout this section. Below is explained the order in which the comments will be added: first, the column chart segments, then the scatter plot parts. There will be comments on what has been noted and what can be observed from the figure in this section. All of the analysis, further insight, and conjecture about various trends and patterns will be found in the discussion section of this chapter. The X-axis, as previously said, displays the sampled company's number in the column charts, while the Y-axis displays percentage values in decimals. The debt ratio value and the accompanying profitability (return on equity) are shown in the columns. The X-axis in the scatter plot charts shows the level of the linked debt ratio value percentage in decimals, while the Y-axis shows the profitability (return on equity) value percentages in decimals. The charts can be found in the appendix part of the study.

Figure 1 shows the relationship of the short term debt to total assets and the return on equity. What can be seen off the bat is that the lowest return on equity values are associated with large amounts of short term debt. In most cases where the return on equity is on the negative side of the axis, the associated short term debt to total assets ratio is quite high. This is however not the case in every observation, as the observation with the highest amount of return on equity has a rather high of a short term debt ratio as well.

Figure 2 shows the scatter plot chart with the trendline of the same variables as there are in the figure 1 that we discussed. The scatter does not exhibit a very strong trend, however, according to the trendline, there is a negative trend because the trendline is downward sloping. The trendline cuts the x-axis at 0,25, meaning that according to the trend, the return on equity will most likely be negative if the short term debt to total assets ratio is greater than 0,25.

Figure 3 shows the relationship of the long term debt to total assets ratio and the return on equity. Comparing figure 3 to figure 1, it can be seen that the long term debt to total assets explains the expected return on equity in a stronger manner than the short term debt to total assets ratio. The largest amounts of return on equity are associated with small amounts of long term debt. However, on the contrary, the smallest amounts of return on equity do not necessarily associate with a largest amount of long term debt. It can be seen though, that the trend is similar to the chart figure 1, with almost every observation with a negative return of equity having a rather large amount of long term debt.

Figure 4 shows the scatter plot version with a trendline, in a similar way as figure 2, of the same observations as we went through commenting figure 3. The scatter is clearer than in figure 2, and shows a stronger trend among the associated variables. The trendline is also downward sloping, but it exhibits a steeper slope. This means that the long term debt to total assets is a stronger indicator for the return on equity than the short term debt to total assets. The trendline cuts the x-axis at about 0,11, meaning that the expected return on equity will be negative when the long term debt to total assets ratio surpasses 0,11.

Figure 5 shows the relationship between the total debt to total assets ratio and the return on equity in a column chart similarly to figure 1 and figure 3. There is a similar trend in figure 5 than in figures 1 and 3. Figure 5 however shows the trend in the strongest manner of the previous column charts that were investigated. Low amounts of return on equity correspond to high amounts of total debt to total assets. Likewise, high amounts of return on equity corresponds to low amounts of total debt to total assets. This is at least true when comparing the ratio of the return on equity to the associated total debt ratio, since the highest value of return on equity on the chart is associated with a rather large amount of total debt, but the return on equity is greater than the value of the total debt to total assets ratio.

Figure 6 shows the scatter plot chart accompanied by the trendline as figures two and three do. It explains the relationship between the total debt to total assets ratio and the return on equity, like figure 5. Figure 6 shows the strongest trend of the scatter plot charts, with the steepest downward sloping trendline. This suggests that the total debt to total assets ratio is the strongest indicator of the expected return on equity. The trendline cuts the x-axis at about 0,415, meaning that the expected return on equity will be negative after the total debt to total assets ratio surpasses the value of 0,415.

4.3. Regression analysis

Regression analysis results in ordinary least squares (OLS) that are presented in the tables. It shows the relationship between the independent variables (capital structure; short term debt to total assets, long term debt to total assets, and total debt to total asstes) and the dependent variable (profitability), represented by the return on equity. The regression analyses were taken from each

independent variable separately (SDA, LDA, DA), including control variables size, and sales growth in every one of them. The analyses are separated in three different tables.

Table 3 shows the results for the first regression model. It shows the relationship between short-term debt to total assets and the return on equity, along with the control variables, sales growth, and size. The relationship between short-term debt to total assets ratio and the return on equity is statistically significant and negative. A one unit move in short-term debt to total assets results in a -0,93 unit move in the return on equity; however, the model explains only 11% of the variance, meaning that there are several other factors that should also be included in the model. The relationship between the firm size and the return on equity is also significant, it is also positive, and has a coefficient value of 0,94. This means that the return on equity grows by 0,94 units when the company size moves by one unit.

Table 4 shows a similar relationship between the long-term debt to total assets ratio and the return on equity, along with the control variables, sales growth, and size. The relationship between the long term debt to total assets and the return on equity is also statistically significant and negative. A one unit movement in the long term debt to total assets ratio results in a -1,5 unit move in the return on equity. Also, the firm size and profitability have a significant relationship, but it is positive, as in table 3. The coefficient for firm size is 0,93, meaning that a one unit movement in firm size results in a 0,93 unit move in the return on equity. The model explains roughly 12% of the variance which also suggests that more variables could be taken into account, or the sample size could be grown.

Table 5 also suggests a statistically significant and negative relationship between the total debt to total assets ratio and the return on equity. The relationship between the firm size and the return on equity is also statistically significant, and like in tables 3 and 4, it is positive. The total debt to total assets ratio has the strongest relationship between the return on equity on this study, with its coefficient being 1,96. This means that a one unit movement in the total debt to total assets ratio leads to a -1,96 unit movement on the return on equity. The model explains 20% of the variance, making the total debt to total assets ratio to the return on equity the strongest analysis by this model.

The results imply that equity is a cheaper solution to finance the company. In other words, debt is relatively more expensive than equity and can therefore lead to a lower profitability. The results

suggest that the increase of short- and long-term debt leads to a decrease in profitability. The results support the findings of Shubita et al. (2012) and a part of Fama and French (1998), Booth et al. (2001), and Nazir et al. (2021)

4.4. Hypothesis and regression slope

To determine the statistical significance of the regression results obtained, two-tailed t-tests were used. The null hypothesis indicated that there is no statistically significant linear association between the short term debt to total assets, long term debt to total assets and total debt to total assets ratios and the return on equity in the sampled companies on the OMX Helsinki exchange. The hypotheses were put to the test a total of three times (one for each debt ratio that was used). In the regression tables, statistically significant findings are shown in bold font. The t-tests were run at a 95% significance level, or in other words, alpha of 5, which is a widely used level of significance in academic research.

Altogether three regression outputs (as the regression tables suggest) were accepted during hypothesis testing, rejecting the null hypothesis and accepting the alternative hypothesis, claiming that all of the three outcomes are statistically significant. Furthermore, the various R values in the tables, which measure the model's strength, are not defined to limit the significance of the results by any percentage. As previously stated, they are to provide an assessment of how close to the regression slope the data points are. Higher R values suggest that the model's predictions have more predictive power.

The critical T-value is 1,9806 in all three regression models that have been used in this study.

5. DISCUSSION

To respond to the first research question, "How does a high-debt capital structure affect a company's profitability?" With the acquired data, timeframe, and methodologies used, the results would indicate that they had a negative impact. There not much evidence for the

opposing argument, that high levels of debt would have a positive impact on profitability. It can be seen in figures 1, 3, and 5 though, since a few of the sampled companies had high debt levels and high profitability, but the evidence is not statistically significant, and the strength of the argument is weak since the regression models proved differently. To support the argument that a high level of debt has a negative impact on profitability, the regression tables (tables 3, 4, and 5), all show a statistically significant, and negative relationship between every debt to total assets ratios and the return on equity. However, it must be remembered that the models show a relatively small amount of variance, so there are indeed, companies with high levels of debt, and a high level of profitability, but looking at the trends seen in figures 2, 4, and 6, it can be determined that the trend is downward sloping and therefore negative.

Moving on to the second research question, “how does a capital structure low in debt impact the profitability?”. Looking at figures 1, through 6, we can make the observations important for answering this question. Although high levels of debt imply a lesser amount of profitability, the figures suggest that low levels of debt do not mean that the profitability would necessarily be high. The negative trend can be seen in figure 6 in the clearest way, however, the company with the lowest level of debt is making negative profits. Anyhow, the trendline in figure 6 shows strong support that a lower total debt to total assets ratio is related to higher profitability. That is also what the regression analyses suggest, and therefore, for this sample of companies, we can determine that a lower amount of debt has a positive impact on profitability, but the relationship is not exactly linear. Meaning that some, yet to be defined amount of debt is the optimal level of debt, but according to this study, that should not be a very large amount of debt.

To answer research question number three: "what is the optimal capital structure to maximize the company’s profitability?" we must go further in figures 1, 2, and 3. As mentioned above, the optimal capital structure is yet to be defined, but as far as this study goes, we can interpret the column charts and the regression analyses. What can be seen in the column charts, is that low levels of debt are linked to the higher levels of return on equity, and vice versa. The regression analyses also suggest that the lower the debt level is, the higher the profitability will be. However, when discussing the first two research questions, it was determined that some level of debt leads in fair results profitability-wise, but the amount couldn't be determined. This study, numerically, suggests that the optimal capital structure would be fully equity in these sampled companies, but as the regression models only showed a 10% to 20% fraction of the total variance, the data gathered, and the calculations made are not sufficient enough to answer the question on a wider

basis. The question of the optimal capital structure has still not been answered by anyone, and this includes every financial professional, including Nobel prize winners etc.

The fourth research question is "what is the relationship between capital structure and profitability?". In this study, looking at all the evidence gathered and taking to account that the studied capital structure is the alternative capital structure, it can be said that the relationship is downward sloping and follows a linear trend. It has been proven figuratively and mathematically in this study, that it does have a linear trend that it does slope downwards. However, going deeper to the question, we can see that the long term debt to total assets ratio has a more significant impact on the return on equity than the short term debt to total assets ratio has. In the models, the significance level for the long term debt to total assets ratio has a slightly greater significance level than the short term debt to total assets ratio, but companies clearly prefer the short term debt over the long term debt, when we look at the amounts each company has. We can conclude that the relationship of the capital structure to profitability is at least two-fold. This study investigated only the debt structure and the associated relationship with the profitability. It is a negative relationship, but the associated relationship with equity might also be downward sloping. The existing problem perseveres, in other words, we don’t know what the optimal capital structure is.

6. CONCLUSION

It may be concluded from the findings of this study that the firm's capital structure has an impact on the profitability. Although interest on debt is tax deductible in Finland, the tax rates are high comparing to other nations, so the tax deductibility does not play as big of a role as in many previous studies. Also, the interest rates on debt have been close to zero because of the current pandemic.This results in value so low that there would be relatively nothing to deduct.
The findings imply that profitable businesses rely on equity as their primary source of funding. Although the interest on the debt is tax deductible, the higher the level of debt is, the higher it raises the danger of default, which again increases the likelihood of the company going bankrupt. Finland is again known for substantially high rates of taxes, and the current economic situation imposes very low rates of interest, resulting in extremely minor deduction possibilities. As a result, the company should think about utilizing an optimal capital structure for them. The optimal capital structure is partly consisted of debt, but considering the findings of this study, it is mainly consisted of equity. Another way of saying this is that it is the most preferrable mix, a debt/equity ratio, which will reduce the company's cost of capital, or the cost of funding its operations. Furthermore, it will lessen the likelihood of bankruptcy along with maximizing the possible profits.

Similar regression variable results depicting short-, long, and total debt ratios to return on equity were found by Shubita et al. (2012). This study found that higher levels of debt result in lower levels of profitability, and higher levels of sales growth and firm size led to higher levels of profitability. These findings differ from various previous studies, like Abor (2005), Gill et. Al (2011), and Ayaz et al. (2021) This can be explained by the different geofinancial area, which in this study is Finland. Finland has one of the world’s highest tax levels, so the tax deductibility on interest payments does not bring as large of an effect as in countries with lower tax levels. Also, the covid-19 pandemic has brought an unstable financial environment along, and that has had a negative effect in many industries during the years this study is based on, as well as the interest rates on debt, which have been close to nothing. The negative effects lead to lower sales, and therefore lower cash inflow. Firms have had a larger incentive to finance its operations with debt in a situation where their asset levels are sub-par. This in turn leads to higher interest rates from lenders. This research is however confined to a sample of publicly listed, non-financial Finnish companies. The conclusions of this study could only be applied to non-financial companies that are similar to those in the study. Future research should look into expanding the findings outside the defined sample of companies, and from a longer time period. This study has limitations due to

the sample size, the limited financial data that is available, at least for free of charge, and to the non-financial publicly listed Finnish companies.

For further research, it would be recommended to take a larger sample, longer time frame, and other countries' companies into account to be able to make a cross-sectional study. Other elements that impact the relationship between capital structure and profitability of the company should be determined using appropriate control variables including such as industry sectors from different nations.

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APPENDICES

Appendix 1. Descriptive Statistics

Table 1: Descriptive Statistics of Variables

	SDA	LDA	DA	SG	ROE	SIZE
Mean	0,307907692	0,152765812	0,460673504	0,068155556	-0,050876923	19,25046538
Median	0,2914	0,1533	0,475	0,0034	0,0691	19,01396891
Min	0,0126	0	0,0831	-0,792	-7,5839	14,43984342
Max	0,7047	0,4493	0,9965	7,9985	2,4614	23,07302073
St. Dev.	0,167607685	0,117617404	0,154429597	0,763308606	0,835212845	2,320424531

Source: Author's calculations based on Morningstar's reports and companies' financial statements

SDA = short-term debt divided by total assets
LDA = long-term debt divided by total assets
DA = Total debt divided by total assets
SG = current year's sales minus previous years sales divided by previous year's sales
ROE = net income divided by shareholder's equity of firm
SIZE = Natural logarithm of firm's sales, lagged by one year period

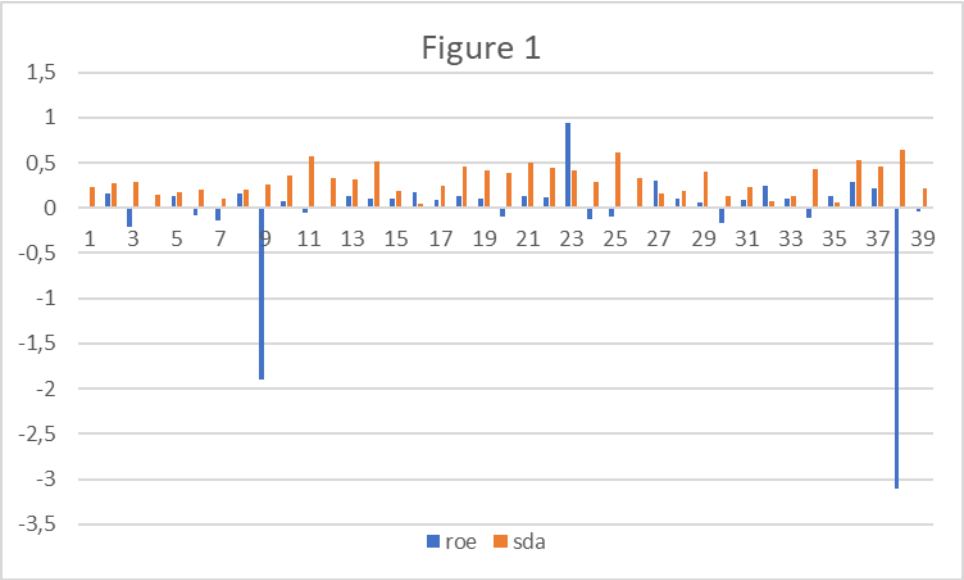
Table 2: Correlation Analysis

	ROE	*SDA*	*LDA*	*DA*	*SG*	*SIZE*
ROE	1					
SDA	-0,19184	1				
LDA	-0,21988	-0,45851	1			
DA	-0,37568	0,736123	0,26399	1		
SG	0,052607	0,012909	-0,02046	-0,00157	1	
SIZE	0,266463	-0,02542	-0,03169	-0,05173	0,0946	1

Source: Author's calculations based on Morningstar's reports and companies' financial statements

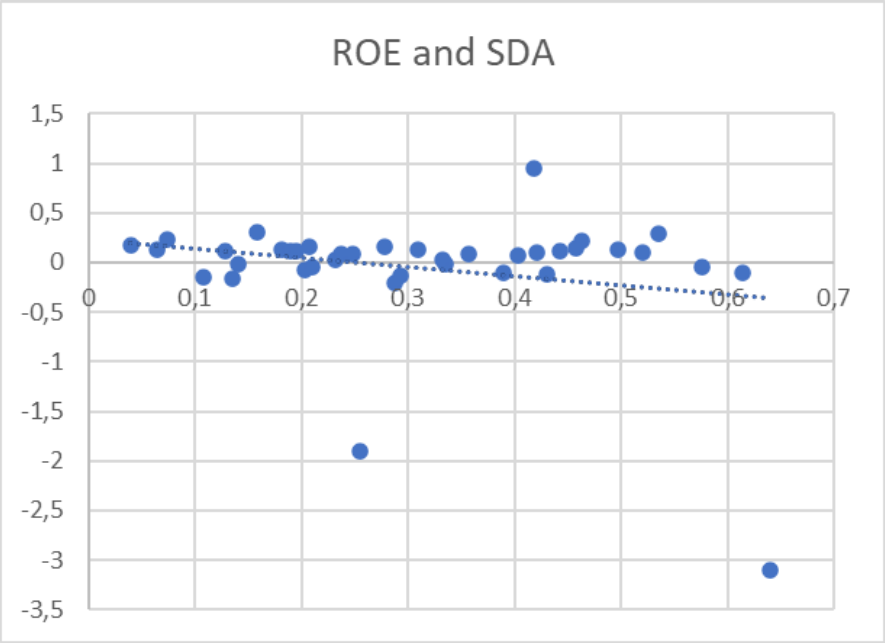
Appendix 2. Chart-Based Comparison

Figure 1: Short-term debt to total asets ratio and return on equity column chart



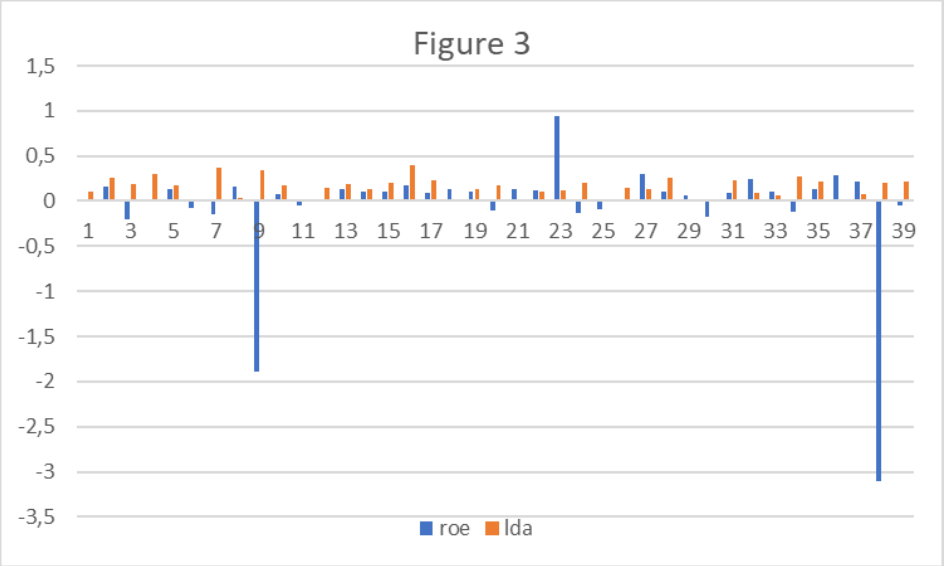
Source: Author's calculations based on Morningstar's reports and companies' financial statements

Figure 2: Short-term debt to total asets ratio and return on equity scatter plot



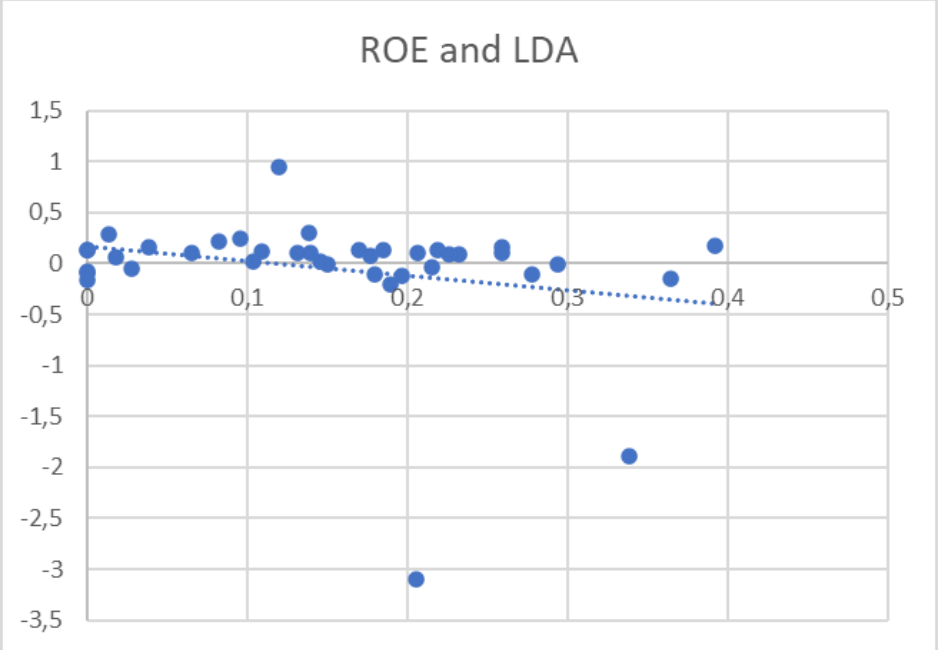
Source: Author's calculations based on Morningstar's reports and companies' financial statements

Figure 3: Long-term debt to total asets ratio and return on equity column chart



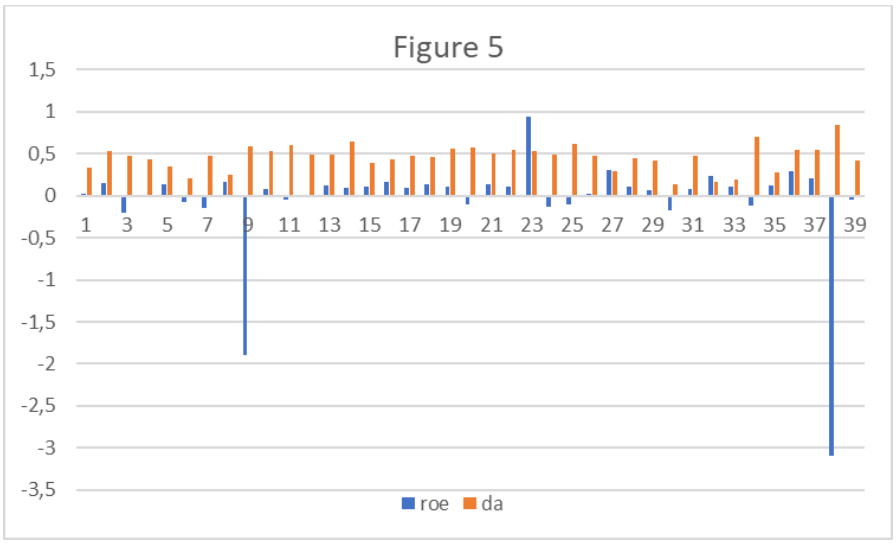
Source: Author's calculations based on Morningstar's reports and companies' financial statements

Figure 4: Long-term debt to total asets ratio and return on equity scatter plot



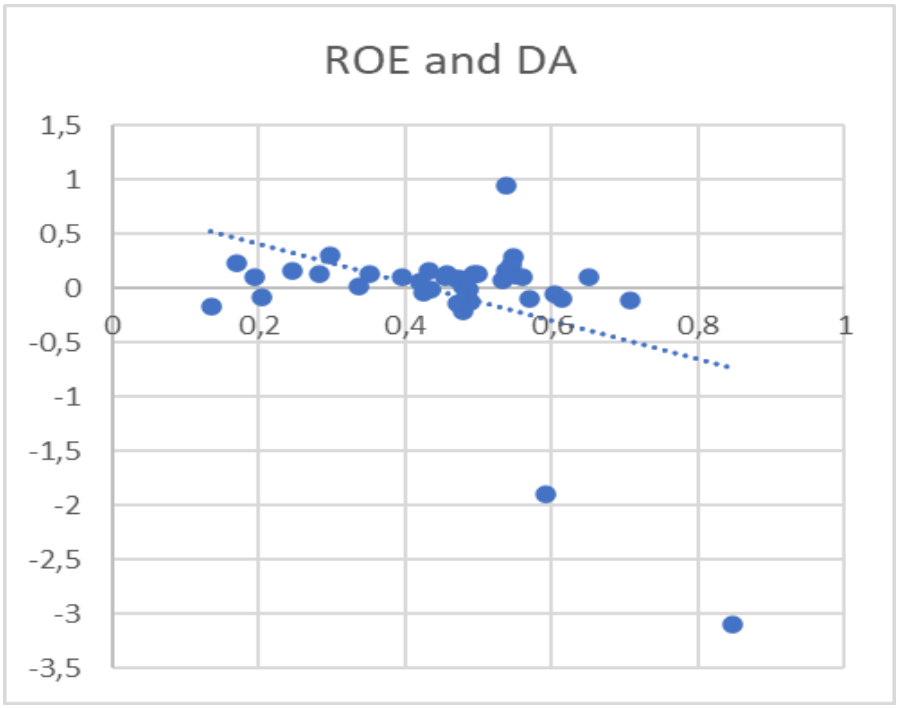
Source: Author's calculations based on Morningstar's reports and companies' financial statements

Figure 5: Total debt to total asets ratio and return on equity column chart



Source: Author's calculations based on Morningstar's reports and companies' financial statements

Figure 6: Total debt to total asets ratio and return on equity scatter plot



Source: Author's calculations based on Morningstar's reports and companies' financial statements

Appendix 2. Regression Tables

Table 3: Regression table, short-term debt

	Coefficients	*Standard Error*	*t Stat*	*P-value*	R Square
Intercept	-1,569622708	0,643968629	-2,437421076	0,016351659	0,106198119
SDA	-0,925153957	0,443380377	-2,08659202	0,039174551	
SG	0,033390205	0,097764656	0,341536562	0,733333983	
SIZE	0,09357343	0,032305966	2,896475229	0,004532266	

Source: Author's calculations based on Morningstar's reports and companies' financial statements

Table 4: Regression table, long-term debt

	Coefficients	*Standard Error*	*t Stat*	*P-value*	R Square
Intercept	-1,61544653	0,6324308	-2,554345123	0,011969463	0,116320844
LDA	-1,499984421	0,62837473	-2,387085842	0,018642735	
SG	0,026179747	0,097212918	0,269303172	0,788187513	
SIZE	0,093085108	0,032125356	2,897558822	0,004517733	

Source: Author's calculations based on Morningstar's reports and companies' financial statements

Table 5: Regression table, total debt

	Coefficients	*Standard Error*	*t Stat*	*P-value*	R Square
Intercept	-0,853307326	0,637492054	-1,33853798	0,183408026	0,203150431
DA	-1,963055505	0,45477843	-4,3165097	3,41545E-05	
SG	0,03158355	0,092299728	0,342184654	0,732847546	
SIZE	0,088548793	0,030533626	2,900041807	0,004484594	

Source: Author's calculations based on Morningstar's reports and companies' financial statements

Appendix 3. Table of Sample

Table 6: Sampled companies and observations used

	2018						2019						2020					
Company	ROE	SDA	LDA	DA	SG	SIZE	ROE	SDA	LDA	DA	SG	SIZE	ROE	SDA	LDA	DA	SG	SIZE
SSAB	0,063	0,2304	0,1048	0,3352	0,1345	22,62945	0,018	0,2141	0,1048	0,3189	0,0206	22,71909	-0,0089	0,252	0,1019	0,3539	-0,145	22,70516
Keskisuomalainen	0,0684	0,2256	0,2763	0,5019	-0,0456	18,9749	0,1682	0,3453	0,2479	0,5932	0,3915	18,92806	0,2397	0,2629	0,2524	0,5153	-0,1052	19,25836
Robit	-0,4188	0,2624	0,2166	0,479	-0,0628	18,29537	-0,1339	0,3051	0,168	0,4731	0,0459	18,23052	-0,0592	0,2965	0,1845	0,481	0,0595	18,27545
Tallink	0,0473	0,1416	0,2872	0,4288	-0,0178	20,68971	0,0592	0,1445	0,2616	0,4061	-0,0006	20,67166	-0,1409	0,1374	0,333	0,4704	-0,5333	20,67102
Metsä Board	0,1634	0,2154	0,1473	0,3627	0,0517	20,71372	0,1087	0,1729	0,175	0,3479	-0,0063	20,70199	0,125	0,1543	0,1871	0,3414	-0,0219	20,98474
Trainer's House	0,111	0,1647	0	0,1647	0,1897	15,72529	0,0691	0,155	0	0,155	-0,017	15,79538	-0,4111	0,2914	0	0,2914	-0,1039	15,76484
Ovaro Kiinteistösijoitus	-0,1707	0,1005	0,4493	0,5498	-0,0362	16,40282	-0,0851	0,2089	0,2841	0,493	-0,1442	16,36597	-0,1769	0,0126	0,3602	0,3728	-0,1175	16,21031
Nokian Tyres	0,1998	0,2711	0,003	0,2741	0,0147	21,17593	0,2457	0,1271	0,0576	0,1847	0,0001	21,19052	0,0523	0,2245	0,0548	0,2793	-0,1767	21,19064
Nurminen Logistics	-0,6922	0,347	0,3264	0,6734	0,0409	14,43984	-2,3178	0,2141	0,2504	0,4645	-0,1209	14,60032	-2,6747	0,2025	0,4379	0,6404	0,1639	14,60533
Konecranes	0,0807	0,3545	0,1605	0,515	0,0063	21,8666	0,0647	0,3569	0,1784	0,5353	0,0538	21,8726	0,0986	0,3578	0,1914	0,5492	-0,0453	21,92531
Lehto Group	0,1824	0,5748	0,0429	0,6177	0,2143	20,20836	-0,2607	0,6176	0,0131	0,6307	-0,0745	20,39681	-0,0695	0,536	0,026	0,562	-0,1843	20,31935
Teleste	0,0947	0,3603	0,137	0,4973	0,0672	19,38728	-0,0178	0,3247	0,1425	0,4672	-0,0595	19,39146	-0,1157	0,3213	0,1692	0,4905	-0,3843	19,2861
TietoEVRY	0,2573	0,3965	0,1542	0,5507	0,0365	21,15725	0,0727	0,3042	0,1533	0,4575	0,0841	21,19296	0,057	0,2292	0,2458	0,475	0,6069	21,2737
Exel Composites	0,0141	0,4927	0,1528	0,6455	0,12	18,27282	0,092	0,5086	0,1319	0,6405	0,0743	18,38617	0,1946	0,5589	0,109	0,6679	0,0464	18,45782
Fortum	0,0677	0,1326	0,2234	0,356	0,1567	22,3309	0,1194	0,0778	0,258	0,3358	0,0391	22,49533	0,1406	0,3573	0,1365	0,4938	7,9985	22,57377
Kojamo	0,1009	0,0323	0,436	0,4683	0,0647	19,63559	0,3029	0,0473	0,3595	0,4068	0,046	19,69828	0,0978	0,0398	0,3809	0,4207	0,0229	19,7419
Kemira	0,0759	0,2547	0,2338	0,4885	0,043	21,63394	0,0916	0,2503	0,2186	0,4689	0,0255	21,676	0,109	0,2412	0,2252	0,4664	-0,0871	21,70114
Raute	0,2746	0,5112	0	0,5112	0,2179	18,81316	0,1601	0,3865	0	0,3865	-0,1641	19,01397	-0,02	0,4746	0	0,4746	-0,2399	18,83476
Wärtsilä	0,1612	0,4304	0,1233	0,5537	0,051	22,31474	0,0902	0,4176	0,133	0,5506	-0,0008	22,36691	0,0586	0,4159	0,1613	0,5772	-0,1095	22,36614
Soprano	0,0478	0,3513	0,1864	0,5377	-0,0204	16,57634	-0,0324	0,3911	0,1372	0,5283	-0,056	16,55906	-0,3169	0,4277	0,2158	0,6435	-0,1995	16,51439
Qt Group	-0,1238	0,4816	0	0,4816	0,2573	16,12884	-0,02	0,5683	0	0,5683	0,2804	16,22587	0,5479	0,4436	0	0,4436	0,3612	16,64324
Wulff-Yhtiöt	0,0914	0,4584	0,0476	0,506	-0,0183	17,85735	0,0875	0,4363	0,1502	0,5865	0,0081	17,83888	0,1702	0,4326	0,1277	0,5603	0,0212	17,84699
Neles	0,1673	0,4111	0,1168	0,5279	0,1726	21,71615	0,2055	0,588	0,0093	0,5973	-0,792	21,87794	2,4614	0,2547	0,2329	0,4876	-0,1273	22,01387
Finnair	0,1356	0,3997	0,1607	0,5604	0,1036	21,66655	0,0623	0,3152	0,1231	0,4383	0,0928	21,76517	-0,5805	0,1633	0,3047	0,468	-0,7323	21,85393
QPR Software	0,1066	0,5536	0	0,5536	0,1844	16,00627	-0,0571	0,6058	0	0,6058	-0,0531	16,12278	-0,3407	0,6828	0	0,6828	-0,0571	16,06817
PunaMusta Media	0,0374	0,3322	0,1143	0,4465	0,0939	18,14337	0,0471	0,325	0,1596	0,4846	0,2257	18,28815	-0,0151	0,3407	0,1639	0,5046	-0,0421	18,49163
Revenio	0,4758	0,1741	0,008	0,1821	0,1443	17,10391	0,2267	0,1415	0,2169	0,3584	0,6137	17,23977	0,1993	0,1583	0,1893	0,3476	0,2343	17,71748
Terveystalo	0,1418	0,1698	0,3207	0,4905	0,0801	20,35148	0,1028	0,195	0,2439	0,4389	0,384	20,42849	0,0823	0,2209	0,2134	0,4343	-0,043	20,7535
Dovre Group	0,0377	0,3755	0,012	0,3875	0,0444	17,95357	0,09	0,4326	0,0229	0,4555	0,2699	17,99704	0,0682	0,3998	0,0172	0,417	-0,0681	18,23598
Biohit	-0,1294	0,0877	0	0,0877	0,106	16,0104	-0,093	0,1368	0	0,1368	0,0122	16,11117	-0,2846	0,18	0	0,18	-0,2914	16,12328
Elecster	0,1034	0,265	0,2254	0,4904	0,0697	17,49006	0,0397	0,2242	0,2319	0,4561	-0,0663	17,55746	0,1111	0,2242	0,2382	0,4624	0,0004	17,4889
Ilkka-yhtymä	0,5583	0,068	0,0151	0,0831	-0,03	17,44265	0,0293	0,0609	0,04	0,1009	-0,0013	17,41217	0,1272	0,0913	0,23	0,3213	0,2574	17,41085
UPM	0,162	0,1433	0,0474	0,1907	0,0473	23,02685	0,1069	0,1236	0,0469	0,1705	-0,0234	23,07302	0,0577	0,117	0,0999	0,2169	-0,1619	23,04937
Tulikivi	-0,1755	0,7047	0	0,7047	-0,0238	17,1931	-0,193	0,2958	0,4226	0,7184	0,0034	17,16892	0,0304	0,289	0,4104	0,6994	0,0168	17,17241
Taaleri	0,191	0,0666	0,2303	0,2969	-0,2145	17,78609	0,0898	0,061	0,1843	0,2453	0,1621	17,6361	0,1	0,064	0,2415	0,3055	-0,0149	17,64528
Kone	0,2822	0,5204	0,0207	0,5411	0,0143	22,89764	0,2986	0,5263	0,0186	0,5449	0,1004	22,92832	0,2959	0,5594	0	0,5594	-0,0043	23,02403
Sanoma	0,2143	0,5512	0	0,5512	-0,0823	21,00694	0,0203	0,4975	0,1001	0,5976	-0,3057	20,99741	0,4046	0,3427	0,1462	0,4889	0,1625	20,63225
Enedo	-0,9546	0,6122	0,1181	0,7303	-0,25	18,06218	-0,7651	0,6298	0,1807	0,8105	-0,1735	17,77444	-7,5839	0,6797	0,3168	0,9965	-0,1113	17,58394
Viking Line	0,0242	0,2044	0,2215	0,4259	-0,0476	20,05696	0,0464	0,2059	0,211	0,4169	-0,003	20,02571	-0,1971	0,2188	0,2119	0,4307	-0,6197	20,02289

Source: Author's calculations based on Morningstar's reports and companies' financial statements

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