

The Impact of Corporate Capital Structure on Investments in Finnish companies

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Bachelor's thesis
May 2019
School of Business
Degree Programme in International Business

Author(s) Sarbassova, Elmira	Type of publication Bachelor's thesis Number of pages 57	Date May 2019 Language of publication: English Permission for web publication: X
Title of publication The impact of corporate capital structure on investments in Finnish companies		
Degree programme Degree programme in International Business		
Supervisor(s) Hundal, Shabnamjit		
Assigned by -		
Abstract <p>The aim of the research was to investigate the impact of capital structure on investments within Finnish companies. It was essential to determine the influence of the nature of financing on the nature of investing. The correlation between different types and forms of both financing and investing was analyzed. The investigation covered a period of 2008-2017 and was based on the secondary data derived from companies' official annual reports and financial statements and Nasdaq OMX database. The capital structure was considered based on two components: the book value of total debt in terms of book and market values of equity, and similarly, the current and non-current debt. Regarding the investing, in total five forms of investments, as the dependent variables, were analyzed.</p> <p>Secondary data was used for the analysis through the SPSS software, which provided an opportunity to derive descriptive, correlation and OLS regression analyses. The descriptive statistics provided an overview of the data, while the correlation analysis showed the degree of association between variables. The regression analysis, in turn, demonstrated the effect of multiple independent variables on one dependent variable. The research methods were selected to prove the research hypotheses.</p> <p>The empirical findings showed that the nature of financing has an influence on the nature of investing. To be more precise, the total current debt was correlated with fixed, current, non-current, tangible, and intangible investments in a different manner. Non-current debt also demonstrated the relationship with fixed and intangible assets. Meanwhile, the performance and control variables were also strongly associated with tangible and intangible investments. The outcomes revealed that companies perform diverse investment decisions, depending on the form of the financial leverage they carry.</p>		
Keywords/tags (subjects) Capital structure, debt, equity, financing, investing, leverage, borrowing, real, financial, fixed investments, intangible investments, assets, Finnish companies		
Miscellaneous		

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1 Introduction

1.1 Background

This research investigates the impact of capital structure on corporate investment decisions. The capital structure is extremely significant for a corporation, and, here, Finnish companies are not an exception. Stewart Myers (2001) defines capital structure as a blend of various sources of funds used to finance company's operations. It illustrates corporate financing strategy via analyzing different types of debt and equity (81-82). Capital structure consists of long-term debt, short-term debt, common equity and preferred equity. Besides, capital structure influences the profitability of assets and equity, forms the proportion of income and risk development. (Berk & DeMarzo 2017, 25.)

According to Graham and Harvey (1999), the most significant aspect that influences the decision to deal with a debt instead of equity is financial flexibility of the company (4). Financial flexibility is a company's capability to assemble its business capital, so as to counter insecure future emergencies on time to boost the company's market capitalization (Byoun 2008, 212). The leverage ratio is chosen by managers in a way to finance their future investment opportunities. This, in turn, alters manager's activity regarding the present value of future growth opportunities, as they hesitate to undertake debt overhang.

Every financial-economic activity requires constant investment in capital, and managers have to be accurate when distributing debt and equity of the company. There is the connection between capital structure and investment decisions. For example, in the work of Odit and Chittoo (2008), they determined empirical proof of this correlation via investigating the influence of leverage on investment decisions on 27 Mauritian firms. The paper of Varouj A. Aivazian (2007) also supported their work, where Canadian publicly traded companies were explored. Both of them found the proportion between leverage and investment decisions very negative.

Nevertheless, there are two types of financing (capital structure): short-term and long-term financing, which affect either real or financial investment or even both.

Real investments refer to tangible assets such as land or property, whilst financial investments imply written or electronic contracts (ibid). These indeterminate relations were explored from the point of leverage.

1.2 Motivation for the research

The author's lifelong interest in corporate finance was the main cause for choosing the topic about capital structure and investments. It is widely discussed on Internet, books, and articles. However, having researched the relation between capital structure and different types of investment (real and financial), the author found out that there is no a considerable amount of data regarding this specific topic.

The author has already got ground knowledge of theories on this topic from the lectures of Finance and Corporate Governance track, hence, she will be able to evaluate literature more critically, and possibly provide thoughts from a different angle. Moreover, the research in corporate finance will become an author's decent basement for future studies and career development in the field of Finance.

1.3 Research questions

The main purpose of the research is to investigate the effect of capital structure on financial managers' investment decisions. In order to reach the ultimate goal, following questions should be answered respectively:

1. Does the nature of financing affect the nature of corporate investments?
2. What type of financing does influence the real investments?
3. What type of financing does influence the financial investments?

Overall, 25 Finnish new- and old-fashioned companies have been the target for the analysis. Based on their annual reports, various calculations and estimations have been made.

2 Theoretical framework and literature review

In order for a firm to maintain functioning, it is increasingly important to constantly generate real assets, namely, investments. According to Kaptan (2001), investment implies the exploit of capital with a view to increase the value of a firm through generating more cash flow. In order to accomplish one or another investment decision, it is necessary for the company to utilize resources that have been stored in advance or taken from usage in current operations. Thus, the venture aims to get benefits that will begin to bear fruit in future. (1-2.) Issuing financial assets or securities helps the firm to generate cash flow and buy the assets in the future. Company decides on its financing decisions to raise cash today as well as to accomplish commitments to banks, bond- and stockholders that managed to add value to the company in the past. (Brealey, Myers, & Allen 2011, 2.)

2.1 Investment

Investment is the manufacture of capital products that are not employed today but utilized in future manufacture. In finance, investment implies purchasing of assets, e.g. stocks or bonds, mortgages, etc. (Hiriyappa 2008, 2.) Investment includes multiple characteristics, and return is a crucial element affecting the arrangement of investment. Business entities seek to gain positive returns by investing in target companies, and they always prefer high rates of returns. Nevertheless, they have to take into account the possible risk, in which the company may either fail or succeed. *Risk* is characterized by the following features:

- risk is directly proportional to the duration of maturity period, therefore, investment lasting for more a longer period of time bear a higher rate;
- when the solvency and creditworthiness of the borrower are high, the investor carries less risk;
- risk is dependent on the style of investment whether it is debt or equity financed or deposit, etc.;

- ownership capital is riskier since the return fluctuates along with the net profits after all pledges are fulfilled; and
- the presence of tax can affect the return on assets as well as the risk what means that the risk is more for tax-payers who may gain more return in the end. (Kaptan 2001, 5.)

Safety has a significant power over investments as well. Investors desire to invest their assets and keep their capital as safe as possible. Safety reflects the security of investor principal number and expected rate of return.

Marketability belongs to trading of securities in the market. In other words, it implies how much an asset is saleable. Listed securities are easier to operate with than not listed ones, thus, Public Limited Companies stocks can be more easily exchanged in comparison to private firms.

Liquidity of investment implies the cash equivalent of the investment. Put another way, the investment can be instantly converted into cash. If the investment is highly liquid, then it can be easily carried out, marketed or sold, yet, it carries lower return.

Another important element of investment is *concealability*, which indicates investment to be protected from such threats as too high taxation, government seizure, social riot, etc. Estate should be concealable, and income generated from it should not be recorded.

Increase in capital, also known as *capital growth*, is one of the key characteristics of investment. Investors always search for stocks with good growth opportunity and try to buy them in the proper industry and at the proper time.

Stability of income, namely, constant return from investment, as well as tax benefits are also important traits of investment, which investors should always take under consideration. (Hiriyappa 2008, 4.)

In addition, Hiriyappa also shows different types of investments. They are divided into two main categories: physical (tangible assets) and financial (intangible assets) where the latter further classified on the basis of marketable and transferable, and

non-marketable investments. Physical investments are material objects like houses, land, equipment, etc., whereas marketable investments include shares, bonds, securities, etc., and non-marketable investments reflect bank deposits, pension funds, insurance certificate, firm deposits, etc. (ibid., 8-9.)

Proper investment behaviour is vital for company's performance; therefore, it is necessary for managers to be aware of both internal and external factors affecting investment decisions as well as consider and alter them whenever needed. The most common factors that influence investments are

- interest rates,
- economics growth,
- confidence/ expectations,
- technological development, and
- availability of sources from banks (Pettinger 2017).

Bialowski and Weziak-Bialowolska (2014) also investigated external factors affecting investment decisions in corporate world. According to their paper, determinants of investment decisions are legal environment and macroeconomic environment, where the former has a lower impact than the latter, and payment delays. Their extent of influence varies based on third-party factors as well.

2.2 Equity and debt

Capital is the most crucial ingredient in running the business, therefore, it is increasingly important to determine which sources of funds will be utilized to raise the value. Investment in capital should be financed, provided that a firm ensures it will have optimal and harmless cost of capital, reasonable running cash flows, and sufficiently stable post-financing income. Equity capital represents the ownership of a firm, to say more precisely, stocks that holders acquire as a share of the business (Coyle 2002, 2). Benjamin and Margulis (2005) in their paper, claim that private investors, also known as angel investors, are a fundamental source of equity financing, particularly for small ventures on early-stages, which usually comes after

personal savings, friends' and relatives' financing are used up. Angel investors can be either individuals or group of individuals. They tend to expect rapid and high return on investment (ROI), therefore they are ready to invest in risky projects, and moreover, demand some authority over corporate decision-making. Yet, abundance of such investors on the market expands the choice of entities, and just as importantly, they are less strict and formal regarding the paperwork than other types of investors. However, if firms aim to find wealthy investors to finance their projects, it will be truly challenging to reach them, as managers have to face a harsh rivalry within selection process. (7-8.)

Equity

Private equity is frequently issued at the buy-out stage that consists of the following buy-out activities: (1) management buy-out, (2) management buy-in, (3) and leveraged buy-out. Management buy-out is valid when managers of the desired firm gain an entity from the desired company or the whole firm from present stockholders with aid of angel investors. The transaction of management buy-in works vice-versa since the acquisition is accomplished by outer managers. When the target corporation is highly leveraged, the transaction is called leveraged buy-out. (Jung-Senssfelder 2006, 9.)

In addition to that, equity can also be in a form of venture capital. Jung-Senssfelder (2006) states that this term was often closely associated with private equity due to their common features. Venture capital, however, can be used for investing companies not only in their early stages but also further organizational operations, i.e. expansion, bridge, turnaround. Expansion capital is utilized as advancement capital for raising production scale, developing working assets, or promoting products. At this stage, firms are supposed to already possess production level without initial loss. Companies, which set a target to enhance capital ratio and are about to run initial public offerings, often issue bridge capital to raise funds. Turnaround capital helps companies to overcome adversity like sales volume or industrial obstacles, so as to bring back the initial prosperity. (8-9.) Besides, companies can get equity financing from international trading and government in the form of loans or grants.

Most of young private companies implement the policy of initial public offerings (IPO). Offerings can be primary or secondary. The former implies raising more cash for the firm via selling new shares, whereas the latter is provided by current shareholders trying to sell the part of existing shares. (Benjamin & Margulis 2005, 85.)

Furthemore, Hillier, Grinblatt and Titman (2002) alternatively describe three main categories of equity capital: (1) common stock, (2) preferred stock, and (3) warrants (69).

Common shareholders own a number of shares of the company which reflect so called long-term assets in financial statements. Individuals or group of individuals become owners of company's shares, and thus, get opportunity to participate in corporate management of the firm. That is, these entities have partial and sometimes even significant authority and control over decision-making within financial operations. On the other hand, they have to deal with risk on an equal basis with initial owners of the company, foreasmuch as in the event of bankruptcy, the stockholders will never be paid at all or merely provided with a very small amount of cash. Indeed, common shareholders are residually paid since they stand behind debtholders and the rest of other sources for raising funds. Under such circumstances, no surprise common shareholders tend to expect higher returns compared to lenders, and therefore they are ready to undertake riskier projects. (ibid., 71.)

Moving up the hierarchy of profit distribution among holders, common shareholders have to share the control over the firm with preferred stockholders. This category of holders receives a claim on generated cash flow prior to common owners but still cannot outrun debt holders. (ibid., 72.) Corporations issue preferred stocks less often in comparison with common options, and managers of the company can choose not to pay a dividend to them. Yet, such decision is usually made quite accurately as the misstep with payment may tarnish the company's reputation to investors. (Brealey et al. 2011, 350.)

One more type of security that companies can issue is warrant, a call option on stocks, which has an essential impact of value. These options allow owners to buy

stocks at a set price for a given period of time. Such type of options is usually included in a package together with other securities, most commonly bonds. (ibid., 353.)

Debt

In contrast, financing with debt is more flexible in terms of the pool of capital and it allows the company to avoid taxation by creating a tax shield as well as to tackle overinvestment problem at a lower cost. Furthermore, a corporation can get a considerable amount of debt funding comparatively faster than equity financing, especially when it possesses confidence in its financial operations in front of banks and other lenders. Debt holders, however, may demand from the firm some authority for administrating essential commitments that will eventually curtail managers' control over financial operations. (Agar 2005, 43-44.) Money can be borrowed for either a short-term or long-term period of time. In most companies, short-term debt matures in a year or less, whereas long-term obligations last two or more years. (ibid., 47.)

When companies do not own exuberance of earnings, they resort to the option of short-term borrowing entitled loans. Loans are most frequently provided by banks, but usually common finance companies can offer cash to needy firms as well. The usage of offerings from finance organizations is especially appropriate for funding inventories and receivables. Loans are normally counted as a source of short-term debt since banks mostly provide loans with the maturity only for a few months. However, they it is also possible to issue a longer-maturity loans, which are called term loans and last 4-5 years. (ibid., 777.)

Bond is another type of debt recorded in capital structure. In order to make a new investment, firms need to raise more cash from investors. Unless they choose to borrow money for a short period of time, bonds can become a great solution, which commonly represent long-term loans. When issuing a bond, the firm gets rewarded more in the end. To put it in other words, annually before the bonds expires, managers gather constant interest payments, and at maturity day, they obtain the face value of the option as well. This kind of cash is also called principal of the bond. (ibid., 46.)

According to Berk and DeMarzo (2017), it is of vital importance to determine the type of security in the company so as to maintain the dynamics of future work within financial decisions. In the majority of cases, individuals or organizations choose to issue either equity alone or a set of equity and debt. In case of equity financing, entrepreneurs have to deal with unlevered equity, which implies equity without debt, whereas a combination of debt and equity financing requires levered equity (equity with debt). (521-522.)

2.3 Theories of capital structure

Modigliani-Miller theory

Modigliani-Miller (MM) theory is a widely recognized theorem which was established and developed by Franco Modigliani and Merton Miller in 1958 (Eckbo 2007, 140). Basically, there are two main leverage irrelevance propositions developed by Modigliani and Miller. The researchers explain the concept of the first proposition through subject of arbitrage. Arbitrage implies selling and purchasing assets simultaneously in order to get a benefit from the price difference. Arbitrageurs, in this case, deal with undervalued and overvalued stocks. Hence, they buy the former and sell the latter in order to get profit as long as information asymmetry takes place in the market. (Brigham & Ehrhardt 2007, 607.) In other words, there are sellers and/or buyers who possess more information about the market and their competitors than others (Hubbard 1990, 2). This process lasts until two prices become equivalent due to impact of supply and demand in market. Accordingly, the theorem illustrates that, under certain conditions, assets may be similar enough for the arbitrage to function. (Brigham & Ehrhardt 2007, 607.) To be more precise, the MM theorem claims that, in a perfect capital market, the market value of the company is not dependent on its capital structure (Bailey 2005, 457).

A second irrelevance proposition is related to multiple equilibria. That is to say, based on the model, equilibrium connects the aggregate number of leverage components (debt and equity), yet, without specifying how the elements will be distributed among the companies. The paper of Miller (1977) indicates that application of “both personal and corporate tax determines an economywide leverage ratio”, however, in

some equilibria debt is employed by different organizations. (Eckbo 2007, 140.) In order for the theorem to persist, there has to be no place for taxes, no bankruptcy that may cause destruction of costs of the firm nor “reputation costs” for its executives, and above all, no information asymmetry in perfect markets (Pagano 2005, 8).

After the paper of MM was published, researchers had to face harsh criticism as the theorem seemed to distort expected results due to different circumstances such as taxes, transaction costs, and other market imperfections. In 1963, the new model of Modigliani and Miller’s paper included corporate income taxes. The modification of the paper stated that a company that pays interest on borrowed capital which is perceived as an expense that contains tax benefits, that is, issuing a leverage, possesses a higher market value. (Modigliani & Miller 1963, 434-435.) Taking the “tax profit” into account, the cost of debt financing is lower, as well as more expensive dividends reduce the weighted average cost of capital. Under such circumstances, the firm using financial leverage is capable of not only cutting down the cost of capital but also growing its significance on the market.

Trade-off theory

Trade-off theory’ principle arose as a result of contradictory statements of Modigliani and Miller theorem. As it was mentioned above, the MM theory can exist in case of no bankruptcy costs, which, yet, conversely, may be quite excessive in practice (Brigham & Ehrhardt 2007, 578). Bankruptcy can often entail selling of assets cheaper, let alone their liquidation from the market. Furthermore, the financial distress is able to cause loss of collateral factors which help the company to operate e.g. dismissal of core employees, deprivation of grants from suppliers, loss of loyal customers, and increase of interest rates from lenders. Consequently, the company can no longer meet its expenses demanded from entities which are necessary to maintain functioning. (ibid.)

In majority of cases, these kinds of issues appear due to a great amount of debt in the capital structure. Hence, it is suggested for companies which are more unstable and vulnerable in terms of earnings, to have less financial leverage in their operations. Unlike them, firms with higher financial leverage got to deal with a greater business risk and they are more capable of it. (ibid.)

Fundamentally, trade-off theory implies that companies have balanced debt-equity relationship, which is set by compromising the advantage of debt with costs (Graham & Harvey 1999, 10). The firm should issue debt to maximize its value as long as it compensates the costs of financial distress, namely, “the total value of a levered firm” should be equal to the value of an unlevered firm with addition to the interest tax shield, minus financial distress costs (Berk & DeMarzo 2017, 594).

Agency problem theory

Jensen and Meckling (1976) were the pioneers in suggesting that agency relationship can be turned into conflict of interests between various parties. Basically, they explain that agency relationship is built between two or more entities, the principal(s) and the agent, where the latter partially receives rights to manage decision making in ownership's operations (5-6). Usually, the parties aim for holistic outcome which should favour both of them, however, each unit tries to behave in their own interest to maximize the benefit. The principal is capable of limiting agent from interest deviation through implementing several measures to oversee and control agent's actions, not to mention, is ready to raise costs of resources so as to prevent the agent from inappropriate and adverse activity, or at least provide them decent refund in the matter of possible fail. Essentially, agency problem emerges when the principal is not able anymore to persuade the agent to act in a way of augmenting the capacity of the principal's welfare. Here, the agent can be either a debtholder or a shareholder. (ibid.)

Agency costs arise with regard to the divergence of interests between the principal and shareholders, and/or between debtholders and equity owners. The reason for this is that debt and equity are being unbalanced which does not correspond to the principle of the trade-off theory. (ibid.; Graham & Harvey 1999.). The conflict between shareholders and managers becomes a harmful debate when the firm achieves considerable free cash flow since managers tend to invest in inefficient projects or beneath the cost of debt and equity on such occasions, while they should be convinced to rather privatize the cash. The paper of Jensen (1986) has a positive insight on association between agency costs of debt and company's growth. As a result of substantial cash flow, managers attempt to grow dividends or re-buy stocks

what leads to squandering current cash which would be spent on irrelevant expenses which were mentioned above. Hence, managers end up assuring shareholders to pay out future cash flows at a constant rise in the dividend that, in fact, might decrease in the value in future. This makes their statement quite vulnerable. (326.)

In this case, debt helps managers bind their words about future free cash flows without saving "the proceeds of the issue". By offering a debt option instead of stock, managers allow shareholders to "take the firm into bankruptcy court" unless they have capability to cover the interest and necessary expenses according to the contract. Therefore, agency costs of FCF (free cash flow) are lessened by debt which can be further used in the pure interest of managers. (ibid.)

Besides, Jensen supports the importance of tax advantages that appear as a consequence of debt financing that was first discovered by Modigliani and Miller (1963). Regardless numerous benefits of debt, the expert concluded on the presence of negative effects as well. For instance, he claims that these benefits would not be significant for high-growth companies with substantial positive net present value projects but no free cash flow. Thus, it is increasingly important for such firms to constantly visit the market in order to gain more capital. (ibid.)

Pecking-order theory

It would be increasingly important to emphasize the principle of pecking-order theory that plays a vital role in decision-making procedures regarding financing measures. To recap, the trade-off theory claims that debt and equity must be balanced within the trade-off relation between debt and costs of financial distress. By way of contrast, the pecking-order theory suggests the ordered system of issuing internal funds first, then debt and equity. The pecking-order theory was initially proposed by Donaldson (1961), where he claimed that managers tend to prefer internally generated funds over security financing, which can be issued, if and only if, inevitable occurrence ("bulges") is about to happen. Hereafter, his paper was developed by Myers and Majluf (1984) who underscored the value of solid hierarchy when choosing sources of funds. They believe managers should draw new funds from internal generations, followed by debt preferred to equity security financing. The last

thing which managers resort to is issuing equity when debt may not be employed anymore, what means that the firm must be ready for incoming costs of financial distress (Brealey et al. 2011, 460).

Indeed, abundant internally generated funds help companies ultimately avoid selling security and therefore, prevent costs of capital structure and information asymmetry issues. The pecking-order theory shows that high-growth companies have lower borrowings compared to less profitable firms. The reason is that the latter do not have ample internal funds what makes them issue more debt, whilst the former are capable of managing financial operations without borrowing any external money. (ibid., 462.)

2.4 Association between leverage and investment decisions

2.4.1 Leverage

It is no wonder that many researchers did not investigate extensively the influence of both types of security (equity and debt) on investment policy of the company as debt financing, namely, financial leverage. In finance, the term of leverage has numerous definitions but the most widely recognized one is the extent to which managers use borrowed capital to maximize possible return of investment (Berk & DeMarzo 2017, 73). There is an endless discussion and argument on the amount of leverage that companies should utilize within their financial operations since the presence of debt can bring positive change as well as be accompanied by e.g. inevitable high costs of financial distress, and ultimately, bankruptcy. In the past, no managers wanted to accept the nature of leverage, and indeed, in times of the great depression, in 1930s and 1940s, was largely considered as a real calamity (Odit & Chittoo 2008, 47). However, now firms perceive debt as a critical capability for running their businesses. Leverage is also known as a debt-equity ratio, which can be expressed through the division of total debt to total equity (Berk & DeMarzo 2017, 74).

2.4.2 Overinvestment and underinvestment

Problems of overinvestment and underinvestment are actively brought up by various researchers, therefore, it is crucial to describe about their place in the field of corporate finance. The paper of Myers (1977) illustrates that excessive amount of debt is

able to cause underinvestment regardless corporate taxes and bankruptcy. There are two imperative reasons behind this articulation. Firstly, the advantage of a positive net present value investment in a very levered corporation goes partly to the debt holders as a foremost priority rather than to shareholders only. Here, managers have to act in shareholders' interests, and thus, forego positive net present value projects. More vital in any case, a high leverage ratio diminishes the degree of corporate financial flexibility, what can lead to a liquidity issue in future. Hence, this can push the increase of a negative association between investment and leverage ratio, since having started to perceive significant development opportunities, managers will be taking actions to prevent high liquidity ratio.

Another fallout of debt overhang is the prevention of overinvestment problem, which is most likely lead by the agency problems, to say more precisely, by a conflict of interests between principals and shareholders within a company with more internally generated funds than positive net present value investment opportunities. According to Jensen (1986), in order to enhance company's profit, the former group is ready to initiate negative net present value projects even at the detriment to the welfare of the shareholders. Nevertheless, the firm ought to borrow cash due to the scarcity of available free cash flows, what ultimately leads to the raised amount of debt. As a result, managers can no longer invest in poor projects, following by overinvestment problem. Hence, this infers a negative relation between debt and investments for companies with low-growth opportunities, because the absence of assets keeps managers away from undertaking negative NPV-ventures (Odit & Chittoo 2008, 50).

McConnell and Servaes's research (1995) supports the perspective of Myers. They concentrated on the association between leverage, firm value, and equity ownership, and determined that for companies with low-growth opportunities, leverage positively affects the firm's value owing to the overinvestment issue. Therefore, the market value of the company grows up, when firms finance their projects with debt on a basis of more internally generated funds and few positive net present value projects. (132.)

Additionally, they verified their assumption about the effect of distribution of equity ownership on value of high- and low-growth firms. As it was proposed by Jensen (1986) and Stulz (1990) prior to McConnell and Servaes's (1995) investigation, typically, managers get rewarded, inasmuch as they manage to raise the scale of the company even if it is contrary to interests of shareholders. (ibid., 135-136.) They speculated a substantial relationship between the fraction of shares and the corporate value. The discrepancy of interests is the largest in companies with a lower amount of beneficial growth opportunities, i.e. managers desire to manage a bigger firm. In this case, they have to initiate negative net present value investment projects so as to grow the market value of the firm. There will be no dispute between the two parties as long as the division of management equity does not exist. Hence, this lessens overinvestment and grows firm's value.

Whited (1992) has investigated the sensitivity of investments to cash flow via utilizing Euler equations and came to the conclusion that investment is more delicate to cash flows within highly leveraged firms compared to low leveraged firms. They are more likely to face financing constraints. (1440.) Whited took manufacturing companies combined in both annual files and OTC tape with a sample period of 1972-1986. Cantor (1990), in turn, inferred that the investments are more sensitive in highly leveraged firms, what implies that the magnitude of the reaction on changes of the financial leverage of the company is much stronger in case of larger debt proportion (215).

2.5 Hypothesis development

Martin and Bridgmon (2012) define hypothesis as a theoretical rationalization of a particular phenomenon the correctness of which is not validated (223). In order for a hypothesis to be called a scientific hypothesis, the researcher has to test it. hypothesis is usually extracted from from the past researches that may not be proved by the actual scientific theses. (Poletiek 2001, 118.) Grinnel (1988) and Cauvery et al. (2007) explain that the hypothesis testing produces outcomes that are expected to be either justified or denied by the accurate data set (198, 45). The main goal hypothesis creation is to design the basis for the research, so as to reinforce the neutrality of the study (Romesburg 2009, 102). It is crucial to be able to justify the hypothesis with aid

of proof retrieved in the research, yet, when seeking the correlation between ambiguous conceptions (Wilcox 2012, 45). The hypothesis should be short, precise and clear, be validated via the data analysis and conveyed in perceptible language (Khantzode 2007, 198).

In the study, a total of 5 hypotheses, 2 out of which with sub-hypotheses, are examined. Each of them were either rejected or accepted as a result of the analyses that is derived from the descriptive and inferential statistics.

Based on the literature review, the next hypotheses were determined for the future analysis:

H1: The total debt influences the total investments.

H2: The total current debt influences the total current investments.

H3: The total non-current debt influences the total non-current investments.

H4: The debt influences the total intangible investments.

H4a: The total debt influences the total intangible investments.

H4b: The total current debt influences the total intangible investments.

H4c: The total non-current debt influences the total intangible investments.

H5: The debt influences the total fixed investments.

H5a: The total debt influences the total fixed investments.

H5b: The total current debt influences the total fixed investments.

H5c: The total non-current debt influences the total fixed investments.

3 Methodology

3.1 Research approach

According to Saunders and colleagues (2009), the methodology is outlined as the philosophy used for implementation of the research and striving to elucidate the way to produce data that may answer the essential questions of the investigation (594). Methodology besets the selection of methods and techniques, yet, examines the logical explanation for them, and forms the criteria for adopting convenient research methods. That is to say, methodology reflects the way research can be carried out from scientific perspective. (Kothari 2004, 10-11.) The chapter elucidates the steps taken and selections upon the implementation of the study. The research paper can be perceived more clearly and make the reader build their crucial stance through providing the insight of the author's concerns.

To set up the research design, it is essential to choose the appropriate philosophy and research strategies. The crucial philosophies that coincide with the research objectives are pragmatism, realism, positivism, and interpretivism (2009b, 599). The concept of positivism is employed in this paper, as it represents the most suitable approach to analyze the observable reality and generalize the results, which may be applied in similar conditions within different time frame (*ibid.*, 578). Foremost, the author considered the theoretical background of the research, whereas the objective methods of positivism helped form and test the theory via the research (Creswell 2003, 4-6).

The method of the research can be quantitative, qualitative, or mixed-method. The method of this study is quantitative, what implies that the author employed the statistical analysis and relied on the evidence stating that there is the association between the leverage and investment capacity of the firm and its functioning. Different variables were employed, thereby transformed into empirical numerical data. (*ibid.*, 32.)

The key aim of this research paper was to ascertain whether there is the correlation between capital structure and firm's investment with regard to their different forms

and types. Relevant research approach has to be chosen, so as to carry out quality research study. Research objectives can be categorized as exploratory, explanatory, or descriptive. This research is based on explanatory approach, which suggests determination and presentation of correlation between variables (Saunders, Lewis, & Thornhill 2006, 133-139).

In terms of the reasoning of the approach the research can be either inductive or deductive. The author used existing theory, developed particular hypotheses, and inferred specific results, what implies that the deductive approach was applied.

(Sachdeva 2008, 14.) The research is constructed upon usage of historical documents that allow the author develop research questions focusing on the changes over time, on basis of which it is considered as archival research (Saunders et al. 2009).

In order to find answers to research questions, Finnish companies' business data was exploited to undertake the analysis. According to Adams, Khan, Raeside, and White (2014), longitudinal research implies the ground for valid explanatory research (7). With aid of this approach, the author could analyse the data diversity and its fluctuation over a period of time, what in turn boosted the accuracy of the outcomes.

3.2 Methods of data collection

The data compiled for the research is defined as secondary data that had been previously collected as primary data by different individuals (Saunders et al. 2009, 599). The information utilized in this study was determined as panel data that may be a set of four-dimensional knowledge encompassing evaluation though time. Panel data contains examinations of numerous phenomena retrieved over different time periods from the identical companies.

Stock exchange market and the firms' annual reports were the sources of secondary data, from which the information about the companies was collected. In order to determine the range of targeted companies as well as their stock prices, the author used the database of Nasdaq OMX Nordic, which is easily accessible on internet. The platform encompasses archival prices of the firms' stocks in all Nordic nations. The information derived from annual reports was representative of financial statements and aggregate reports on corporate governance. These sources of secondary data

provided the author with the official and real corporate scientific information about Finnish corporations. Hence, the data utilized is reliable and accurate for the research. Overall, 25 Finnish case companies were examined, 13 out of which belong to conventional industrial and consumer goods sectors and 12 others specialize in new technology solutions such as software and service sectors. The results of the study may vary depending on the type of company and its operations nature. Banks or financial organizations were avoided in this research due to the reason that their management of leverage is distinct from other companies (Alves & Francisco 2014). The data retrieved from secondary sources was taken for the period between 2nd January 2008 an 29th December 2017 inclusive (i.e. the total of 10 years of numerical data).

Only numerical data was utilized in the research, thereby relieving the researcher from quantifying anything. The variables used for the study are all ratios and were derived from information provided in financial statements of the corporations, namely income statement, balance sheet and cash flow statement, and at the Nordic stock exchange market Nasdaq OMX.

There are two types of variables: dependent and independent, where the former one represents performance variables, and the latter encompasses leverage, performance, and control variables.

(Table is shown on next page)

Table 1. Variables characterization

Variable	Variable's label	Measurement/Definition	Source
Dependent variables			
Performance			
Total investment-to-total equity	InvestEquityBV	Total investment/total equity	Annual reports
Current investment-to-total equity	CurrentInvestEquityBV	Current investment/total equity	Annual reports
Non-current investment-to-total equity	NonCurrentInvestEquityBV	Non-current investment/total equity	Annual reports
Intangible investment-to-total equity	IntangibleInvestEquityBV	Intangible investment/total equity	Annual reports
Fixed investment-to-total equity	FixedInvestEquityBV	Fixed investment/total equity	Annual reports
Independent variables			
Leverage			
Total debt-to-total assets	TotalDebtAssetsBV	Total liabilities/total assets	
Total debt-to-total equity (market value)	TotalDebtTotalEquityMV	Total liabilities/market value	Nasdaq OMX Nordic/ Annual reports

Current debt-to-total assets	CurrentDebtAssetsBV	Current liabilities/total assets	Annual reports
Current debt-to-total equity (market value)	CurrentDebtTotalEquityMV	Current liabilities/market value	Annual reports
Non-current debt-to-total assets	NonCurrentDebtAssetsBV	Non-current liabilities/total assets	Annual reports
Non-current debt-to-total equity (market value)	NonCurrentDebtTotalEquityMV	Non-current liabilities/market value	Annual reports
Performance			
Operating cash flows	LnOCF	Natural logarithm of operating cash flows	Annual reports
Return on investments	ROA	Total book value/net profit	Annual reports
Earnings per share	EPS	The part of company's earnings allocated to every stock of common shares	Annual reports
Control			
Total revenue	LNTR	Natural logarithm of total revenue	Annual reports

3.3 Methods of data analysis

The analysis of the data was conducted via SPSS Statistics software, which was accessed through university database. In order to interpret the data, variables were

converted into visual descriptive and inferential statistics. Descriptive statistics provided the author with six key indicators:

- range, which shows the difference between the highest and the lowest values;
- minimum and maximum, which demonstrate extreme values of the variables;
- mean, which represents the average of the sample values;
- standard deviation, which is used to quantify the dispersion of a range of values; and
- variance, which illustrates how far the numbers of the data are spread out.
(Adams et al. 2014, 161-169; William 1950, 221.)

After determining all dependent and independent variable, the multivariate ordinary least (OLS) regression analysis was implemented as the next step. Linear regression model is described as an analysis aimed at determining the relationship between one dependent variable and one or more, as practiced in this work, explanatory variables (or independent variables). (Yan 2009, 42.)

The model allows the researcher to identify the influence of several independent variables on one dependent variable, to be more precise, the correlation between them (Pedace 2013, 1268). The model was conceded as extremely functional for this explanatory archival research work owing to its ability cover numerous independent variables and emerge as more diverse outcomes (Chatterjee & Simonoff 2012, 33-35). The benefit that the author had gotten from the usage of this model is that it can structure the sample data accurately whilst utilizing multiple variables (Rawlings, Sastry, & Dickey 1998, 52).

The next essential step was the inferential analysis, which encompasses the overview of correlations between the variables. The correlation coefficient reflects this association. There are multiple possibilities to estimate the correlation coefficient but the most frequently used one is the Pearson product-moment correlation coefficient. The main function of this coefficient is to measure the intensity of the linear relation

between two values. (Kern 2014, 3.) Another important measurement to consider was significance level. It enables the researcher to utilize the probability that the correlation arose unintentionally between the independent and dependent variables (Saunders et al. 2009, 366). The significance level under which correlations were considered representative by the author, had to be 90 or higher. The fundamental premise about multiple regression model is that the association between the remaining values is zero. Moreover, the analysis covers r-squared value that shows how accurately the regression model suits. The bigger the value, the better the match, however, lower r-squared value may be satisfactory as well, in case the coefficients are statistically valuable. (Kern 2014b, 15.) The OLS regression analysis is based on the formula represented in the work of Edwards (1985, 67):

$$y_{it} = a + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_t x_{it}$$

Where:

y_{it} = dependent variable of firm i in the time period t ;

a = intercept term;

x_{it} = independent variable including explanatory and control variables of firm i in the time period t .

The multiple regression technique is used to measure the following functional relationships of the models:

$$\begin{aligned} \text{I. } \frac{\text{TotalInvest}}{\text{TotalEquityBV}} &= \\ &= \alpha_{it} + \beta_1 \left(\frac{\text{TotalDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{TotalDebt}}{\text{TotalEquityMV}} \right)_{it} \\ &+ \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it} \end{aligned}$$

$$\begin{aligned} \text{II. } \frac{\text{CurrentInvest}}{\text{TotalEquityBV}} &= \\ &= \alpha_{it} + \beta_1 \left(\frac{\text{CurrentDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{CurrentDebt}}{\text{TotalEquityMV}} \right)_{it} \\ &+ \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it} \end{aligned}$$

$$\begin{aligned}
\text{III. } \frac{\text{NonCurrentInvest}}{\text{TotalEquityBV}} &= \\
&= \alpha_{it} + \beta_1 \left(\frac{\text{NonCurrentDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{NonCurrentDebt}}{\text{TotalEquityMV}} \right)_{it} \\
&\quad + \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it}
\end{aligned}$$

$$\begin{aligned}
\text{IV. } \frac{\text{IntangibleInvest}}{\text{TotalEquityBV}} &= \\
&= \alpha_{it} + \beta_1 \left(\frac{\text{TotalDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{TotalDebt}}{\text{TotalEquityMV}} \right)_{it} \\
&\quad + \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it}
\end{aligned}$$

$$\begin{aligned}
\text{V. } \frac{\text{IntangibleInvest}}{\text{TotalEquityBV}} &= \\
&= \alpha_{it} + \beta_1 \left(\frac{\text{CurrentDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{CurrentDebt}}{\text{TotalEquityMV}} \right)_{it} \\
&\quad + \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it}
\end{aligned}$$

$$\begin{aligned}
\text{VI. } \frac{\text{IntangibleInvest}}{\text{TotalEquityBV}} &= \\
&= \alpha_{it} + \beta_1 \left(\frac{\text{NonCurrentDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{NonCurrentDebt}}{\text{TotalEquityMV}} \right)_{it} \\
&\quad + \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it}
\end{aligned}$$

$$\begin{aligned}
\text{VII. } \frac{\text{FixedInvest}}{\text{TotalEquityBV}} &= \\
&= \alpha_{it} + \beta_1 \left(\frac{\text{TotalDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{TotalDebt}}{\text{TotalEquityMV}} \right)_{it} \\
&\quad + \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it}
\end{aligned}$$

$$\begin{aligned}
\text{VIII. } \frac{\text{FixedInvest}}{\text{TotalEquityBV}} &= \\
&= \alpha_{it} + \beta_1 \left(\frac{\text{CurrentDebt}}{\text{TotalEquityBV}} \right)_{it} + \beta_2 \left(\frac{\text{CurrentDebt}}{\text{TotalEquityMV}} \right)_{it} \\
&\quad + \beta_3 (\text{LnTR})_{it} + \beta_4 (\text{LnOCF})_{it} + \beta_5 (\text{ROA})_{it} + \beta_6 (\text{EPS})_{it}
\end{aligned}$$

$$\begin{aligned}
 IX. \frac{FixedInvest}{TotalEquityBV} = & \\
 = \alpha_{it} + \beta_1 \left(\frac{NonCurrentDebt}{TotalEquityBV} \right)_{it} + \beta_2 \left(\frac{NonCurrentDebt}{TotalEquityMV} \right)_{it} & \\
 + \beta_3(LnTR)_{it} + \beta_4(LnOCF)_{it} + \beta_5(ROA)_{it} + \beta_6(EPS)_{it} &
 \end{aligned}$$

3.4 Validity and reliability

Krishnaswamy, Sivakumar, and Marhitajan (2009) claim that the validity is the extent to which the test measures what it intended to measure. To put it simply, it indicates the soundness and accuracy of the research. (135.) According to Cohen, Manion, and Morrison. (2011), the quantitative research identifies two types of the study validity: external and internal (229). The former reflects the problems that may emerge when the research is undertaken. At the meantime, internal validity entails the achievement of the main research objectives and examination of admission of all variables altered in the exemplary (Baumgarten 2010, 155).

The author properly followed numerous tactics so as to guarantee that the research is valid enough. First, the sample number of companies was conscientiously chosen for the quantitative analysis to conform the essence of the study. Overall all 25 listed companies based in Finland were selected. Each of them belongs to a particular type of industry, what makes the study stay rational and rational, as well as helps to avert generalization of the outcomes within the research paper (see Figure 1).

(Figure is shown on next page)

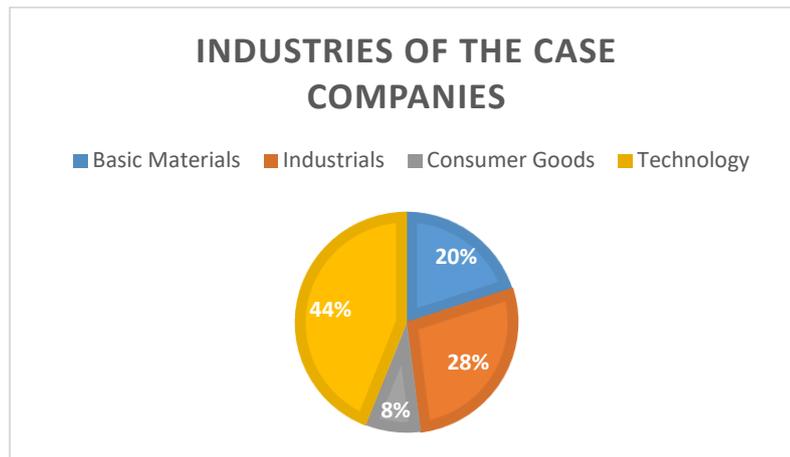


Figure 1. Industry categorization of Finnish case companies

Moreover, the past studies in the analogous fields were regarded with aim to justify external validity of the research and avert unclear documentation of the variables. To ensure the internal validity and to evade typical statistical errors, the author attentively chose the appropriate data sample for the research paper. The data set was retrieved from the companies' annual reports and Nasdaq database, both of which are official reliable sources. The hypotheses assembled results, which corresponded the predicted outcomes. Therefore, the validity of the study products was a guaranteed.

Krishnaswamy and colleagues (2009) characterize reliability as the capacity to build logical outcomes for the sample data set. To put it simply, different researchers has to be capable of carrying out analogous research including the identical arrangements and bringing the same results (56). The reliability in this research paper is sustained by the circumstance that the approaches issued within the work framework have been employed by other numerous researches in the related field. Furthermore, the variables utilized in the study may be supplanted by different samples and serve comparable results. The data, on basis of which the analysis was undertaken, was collected from reliable sources – the official representative websites of the case companies. Besides, the research is efficiently acceptable by a reader, as the investigation process of the gathered information was undertaken in details and multiple strategies were used. Consequently, it can be inferred that the research is acknowledged as both reliable and valid.

4 Empirical findings

4.1 Descriptive statistics results

From the table 2, it can be clearly seen that the mean of the total debt-to-total book value of the firm ratio equals 0,561, which means that 56,1% of total assets of the companies were financed by creditors. In other words, it represents Finnish companies' average financial leverage. Such level of leverage may be considered as moderate depending on other financial indicators of capital structure. The maximum value, however, is extremely high in relation to the mean, as it is equal to 322,99%, which belonged to the company Afarak Group Oyj in 2016. Nevertheless, in one year the value has decreased almost 10 times and was equal 33,69%. In the past years as well as in 2017, the financial leverage of Afarak Group was mostly relatively low (approximately 30%), but 2016 showed very high value, which most probably means that the company had taken a short-term debt and repaid it successfully. On the contrary, total debt-to-market value of equity (market capitalisation) ratio has a mean of 2,069, and the minimum value of 0,020, what implies that some case companies from the list prioritize debt over equity in their capital structure. 2 firms from the industrial sector rely heavily on debt in the capital structure and 2 more have very extreme levels of debt, whereas technology and IT area also own 4 companies with high debt-to-market value of equity ratio. However, considering the fact that the variance of this ratio is quite high (14,057), namely, the spread of the numbers in the data set, it is not possible to perceive these results as representative for all case companies. The mean of this ratio means that firms borrow 2,069 Euro for each 1 Euro of their market capitalisation, to be more precise, the market value of equity. According to these results, it can be inferred that some companies from both types of firms tend to finance themselves with higher very high proportion of debt. Current debt-to-total assets ratio shows the mean of 0,362 and non-current debt-to-total assets ratio 0,198, signifying that the short-term debt finance slightly prevails the long-term debt. For current debt-to-market value of total equity and non-current debt-to-market value of total equity ratios, the means are 1,318 and 1,013, respectively. These results signify that debt overall takes a dominance role in the capital structure regarding the market capitalisation. Nevertheless, there are companies which had very little amount of

both kinds of debt or completely avoided long-term liabilities with regard to the market capitalisation.

Independent performance variables, which are operating cash flows, return on assets, and earnings per share, also have quite diverse results. For instance, the mean of the logarithm of operating cash flows is 3,382 signifying that Finnish companies generate significantly high amounts of cash flows through regular business operations. On the other hand, the minimum value equals -1,790, which means that one company has negative operating cash flows. Earnings per share variable shows a mean of 0,471, whereas the minimum EPS is -2,130 signifying that one company is not capable of generating enough cash for the dividends to be paid to shareholders. In contrast to operating cash flows, there is a negative mean of the return on assets variable (-0,067). Hence, it can be assumed that Finnish corporations do not generate sufficient profit in relation to their total assets. A number of companies have very low negative values of return on assets (up to -19,631), what make the range appear to be much bigger.

Independent control variable highlights firm's specific characteristics such as the total size of the company, namely total revenue. The mean of the total revenue was 5,816, whilst the minimum value was worth 0,889 and the maximum 10,804. The range of 9,916 and the variance of 4,276 demonstrate that the case companies have different amount of amounts of revenues with regard to various market capitalisation.

Considering the dependent variables, the descriptive statistics of the number of ratios were undertaken: book values of total investment-to-total capital, total current investment-to-total capital, non-current investment-to-total capital, total intangible investments-to-total capital, and total fixed investment-to-total capital. The results were quite ambiguous. Total investment-to-total equity is fairly high (mean = 2,208), what shows the positive tendency of Finnish companies' investment capacity. Yet, one company has a quite negative value worth -17,990 signifying that its management team decided to avoid investment operations throughout that period. The means of the current and non-current investments are almost at the same level (1,163 and 1,076 respectively), what demonstrates that Finnish companies invest

nearly the same amount in both short-term and long-term assets. Nevertheless, there are still firms that carry very low negative values, thereby making the range extremely high, particularly in case of non-current investment-to-total capital ratio (up to -20,000). Looking at the means of tangible and intangible investments of the companies (0,200 and 0,370 respectively), it can be inferred that the firms target both fixed and financial investments evenly. However, the maximum levels of these two values have a big discrepancy: the one of the intangible investments is approximately three times higher than that of fixed investments. The former is 3,680 and the latter is 1,721. Moreover, the minimum value of the total intangible investment-to-total capital ratio is nearly twice less than that of the fixed investments, -1,030 and -0,573 respectively. Such results reveal the versatility of the case companies in terms of these two indexes.

(Table is shown on next page)

Table 2. Descriptive statistics results

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
InvestEquityBV	247	25,03	-17,99	7,04	2,2084211	1,67813641	2,816
TotalDebtAssetsBV	248	3,0931	0,1368	3,2299	0,5605089	0,24498306	0,06
TotalDebtTotalEquityMV	248	24,5159	0,02	24,5359	2,0691357	3,74925957	14,057
LNTR	248	9,9156	0,8887	10,8043	5,8164444	2,06795426	4,276
LnOCF	212	9,0668	-1,7898	7,277	3,3821665	2,20453684	4,86
ROA	245	28,293	-19,6308	8,6622	0,0668355	1,71044289	2,926
EPS	247	6,838	-2,13	4,708	0,47133	0,93323031	0,871
CurrentInvestEquityBV	248	8,94095	-4,64181	4,29914	1,1631478	0,77521259	0,601
CurrentDebtAssetsBV	248	0,80276	0,07426	0,87702	0,3623883	0,14646625	0,021
CurrentDebtTotalEquityMV	248	18,26415	0,03763	18,30178	1,317631	2,41831462	5,848
NonCurrentInvestEquityBV	248	19,77931	-14,5834	5,19591	1,0764362	1,20859811	1,461
NonCurrentDebtAssetsBV	248	4,30221	0	4,30221	0,197894	0,29645652	0,088
NonCurrentDebtTotalEquityMV	248	24,59666	0	24,59666	1,0126101	2,45657311	6,035
IntangibleInvestEquityBV	248	4,71006	-1,0304	3,67965	0,1987836	0,29365945	0,086
FixedInvestEquityBV	248	2,2935	-0,57272	1,72078	0,3698175	0,37288792	0,139
Valid N (listwise)	209						

4.2 Correlation analysis

Overall, correlation analysis of 25 Finnish companies during the period of 2008-2017 showed 248 observations. Table 3 gives an overview on pairwise correlation between variables exploited in the research. 0,01% and 0,05% significance level correlations were examined.

According to table 3, total debt-to-book value of total assets is the only independent variable that does not demonstrate valid correlation to any dependent variable considering the significance level. On the contrary, the total debt-to-market value of the firm has a significantly strong positive correlation with fixed investment-to-total capital variable. This positive correlation implies that the higher the total debt of the company in terms of the market value, the more tangible investments the company makes. Meanwhile, there is a moderate negative correlation between this former variable and the total current investment-to-total capital ratio. Such negative association means that the higher the total debt in terms of the market value, the lower the short-term investments in the company. Overall, it could be assumed that the companies with higher debt tend to invest in long-term tangible assets. Yet, the results are considered ambiguous and it is not possible to make accurate conclusion, as there was no clear correlation of total debt to long-term investments. At the same time, total current debt-to-total book value of the firm demonstrate substantial positive correlation with total current investment-to-total capital variable, what means that the more short-term debt the company carries, the more short-term investments it makes. However, two other variables, i.e. non-current investment-to-total capital and fixed investment-to-total capital, are negatively correlated to this independent variable. Hence, high amounts of current debt in the capital structure makes the company less capable of undertaking non-current or fixed investment operations. But in comparison, current debt-to-market value of the firm display significantly strong positive correlation with tangible investments, and moderate positive association with intangible investments. Thus, it means that higher percentage of short-term liabilities in the company leads to both higher fixed and financial investments portions. Unlike current debt, non-current debt ratios demonstrate more positive relations with dependent variables. For instance, regarding the total book value of the firm the non-current debt is significantly positively correlated with fixed investment-to-total capital ratio, whereas non-current debt-to-market value of the firm shows three positive associations, with non-current, intangible and tangible investments, where the last one is extremely strong and compelling. All in all, it definitely confirms that long-term company liabilities in terms of the market capitalisation, positively affect tangible and intangible investment, and to a lesser extent, long-term investments.

In order to accurately interpret results, it is extremely important to consider the correlation between dependent variables and performance and control variables, which in turn allows to identify whether the company belongs to high-growth or low-growth kind of firm. Depending on the type of the corporation, high leverage can differently influence investment opportunities. The company is called high-growth if it generates significant cash flows and earnings. Total revenue, as a control variable, is substantially positively correlated with total fixed investment and positively influences total investments in general. These numbers imply that the bigger the total size of the company, the more likely it is to undertake investments, particularly fixed/tangible investments. Yet, financial investments provide completely different result, i.e. -0,184, which suggests that firms with larger size do not choose to make intangible investments. Yet, the results of the total revenue still confirm the positive association with investment activity of the firms. Larger amounts of operating cash flows, as known from the theory, should lead to higher proportions of investments. Indeed, net operating cash flows are positive correlated with total investment-to-book value of the total capital signifying that the more the net operating cash flows the company owes, the more likely it will invest. Moreover, there a significantly positive correlation between the former variable and total fixed investment-to-total capital. Hence, companies feel more confident at investing in tangible assets among all forms of investments. Nonetheless, Finnish companies with high operating cash flows do not seem to issue intangible assets, as the relation between these two variables is negative (-0,170). Apparently, financial investments are not the most preferred source of investment activity for Finnish corporations. Similarly, return on assets also shows the negative correlation with intangible assets, what means that the more profit the company makes relative to its total assets, the less it is likely to invest in intangible assets, or vice versa. Considering the correlation between the last independent variable, which is the earnings per share, and all dependent variables, it can be clearly seen that there is a negative relation with both tangible and intangible investments. However, it still positively influences total debt-to-market value of the firm ratio. This positive correlation implies that the greater the company's profit per share, the more likely the firm to invest.

All performance and control variables are in significantly positive correlation with each other. At the same time, they are all negatively correlated with total intangible investment-to-total capital ratio.

In terms of both book and market values, non-current debt is negatively correlated with current investment-to-book value of total capital, while with other leverage ratios it demonstrates only positive association.

(Table is shown on next page)

Table 3. Correlation analysis results

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	Y1	Y2	Y3	Y4	Y5
X1	1	,202**	,369**	,144*	,233**	0,121	0,075	0,123	-0,122	0,036	0,007	0,055	0,021	0,052	0,109
X2	,202**	1	0,015	,808**	0,093	,489**	,170**	,210**	-0,02	-,138*	0,034	-,135*	0,12	-0,074	,367**
X3	,369**	0,015	1	0,102	-,159*	-,159*	-0,086	-0,012	-0,056	,151*	0,056	,406**	-,135*	0,081	-,288**
X4	,144*	,808**	0,102	1	,182**	,689**	-0,043	,174*	0,031	-,211**	0,011	-0,043	0,119	,183**	,329**
X5	,233**	0,093	-,159*	,182**	1	,387**	-0,014	,272**	,282**	-0,042	-0,08	-0,112	0,117	-0,016	,339**
X6	0,121	,489**	-,159*	,689**	,387**	1	-0,035	,205**	0,087	-,199**	-0,032	-0,099	,140*	,345**	,499**
X7	0,075	,170**	-0,086	-0,043	-0,014	-0,035	1	,871**	0,014	,402**	,166**	0,093	0,099	-,184**	,396**
X8	0,123	,210**	-0,012	,174*	,272**	,205**	,871**	1	0,077	,400**	,162*	0,126	0,114	-,170*	,378**
X9	-0,122	-0,02	-0,056	0,031	,282**	0,087	0,014	0,077	1	,131*	-0,085	-0,056	-0,026	-,156*	-0,015
X10	0,036	-,138*	,151*	-,211**	-0,042	-,199**	,402**	,400**	,131*	1	0,037	,189**	-0,074	-,137*	-,159*
Y1	0,007	0,034	0,056	0,011	-0,08	-0,032	,166**	,162*	-0,085	0,037	1	,733**	,891**	,376**	,264**
Y2	0,055	-,135*	,406**	-0,043	-0,112	-0,099	0,093	0,126	-0,056	,189**	,733**	1	,402**	,296**	0,046
Y3	0,021	0,12	-,135*	0,119	0,117	,140*	0,099	0,114	-0,026	-0,074	,891**	,402**	1	,350**	,367**
Y4	0,052	-0,074	0,081	,183**	-0,016	,345**	-,184**	-,170*	-,156*	-,137*	,376**	,296**	,350**	1	0,093
Y5	0,109	,367**	-,288**	,329**	,339**	,499**	,396**	,378**	-0,015	-,159*	,264**	0,046	,367**	0,093	1

Note: ** p < 0.01; * p < 0.05

X1: TotalDebtAssetsBV, X2: TotalDebtTotalEquityMV, X3: CurrentDebtAssetsBV, X4: CurrentDebtTotalEquityMV, X5: NonCurrentDebtAssetsBV, X6: NonCurrentDebtTotalEquityMV, X7: LNTR, X8: LnOCF, X9: ROA, X10: EPS, Y1: InvestEquityBV, Y2: CurrentInvestEquityBV, Y3: NonCurrentInvestEquityBV, Y4: IntangibleInvestEquityBV, Y5: FixedInvestEquityBV.

Number of observations: 248.

4.3 Regression analysis results

The next step was to conduct the stepwise linear regression analysis, which implies that not important variables were excluded from the results, while the rest were regressed. In total, there was 9 models created and interpreted in the study. The values with significance levels $<0,1$, $<0,05$, and $<0,01$ were considered and denoted as *, **, and ***, respectively. Unstandardised coefficient B was the focus of the interpretation. Negative value reflects negative correlation between the dependent and independent variables. Positive value likewise demonstrates positive association.

Table 4 illustrates the association between total investment-to-total capital, as dependent variable, and other essential independent variables, such as total revenue and return on assets. It can be clearly seen that unstandardized coefficient of total revenue is equal 0,182, which implies that with the increase of one unit of total revenue, total investments rise 0,182 times. Yet, return on assets shows negative coefficient of -0,062, hence, meaning that the growth of this variable makes the dependent variable decrease in value. The 90% confidence intervals for two variables are 0,060-0,155 and -0,130-(-0,018). The table demonstrates very low value of R square for these independent variables signifying that there is a low percentage of variance in the dependent variable, which can be explained by the independent variables.

(Table is shown on next page)

Table 4. Regression analysis results – InvestEquityBV

Dependent variables	InvestEquityBV
(Constant)	1,251 (5,072)
TotalDebtAssetsBV	0,35 (1,449)
TotalDebtTotalEquityMV	-0,005 (-0,296)
LNTR	0,182** (3,105)
LnOCF	-0,078 (-1,469)
ROA	-0,062* (-1,833)
EPS	-0,028 (-0,368)
R Square	0,099
Durbin-Watson	1,896
Adjusted R Square	0,072
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01

T-statistics appear in parentheses

Number of observations: 250

Model 2 demonstrates the correlation between the dependent variable called total current investments-to-total capital of the firm with current debt to book and market value of the firm. According to table 6, current debt-to-total book value of the firm is significantly positively correlated with current investments ratio (2,725). It indicates that when the unit of current debt ratio rises by 1, short-term investments increase in value 2,725 times the former. Meanwhile, there is a relatively low association between the dependent variable and total revenue (0,036). Hence, total current investments rise only 0,036 times the increase of total revenue. Considering the R square indicator, for both variables the numbers are relatively higher in comparison with the first model. Therefore, there is higher variance of the independent variables.

(Table is shown on next page)

Table 5. Regression analysis results - CurrentInvestEquityBV

Dependent variables	CurrentInvestEquityBV
(Constant)	-0,085 (-0,434)
CurrentDebtAssetsBV	2,725*** (9,029)
CurrentDebtTotalEquityMV	-0,023 (-1,293)
LNTR	0,036* (0,914)
LnOCF	0,012 (0,331)
ROA	-0,033 (-1,488)
EPS	0,039 (0,762)
R Square	0,341
Durbin-Watson	2,078
Adjusted R Square	0,322
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01

T-statistics appear in parentheses

Number of observations: 250

The interrelation between non-current investments-to-total capital variable and a number of independent variables. Non-current debt to both book and market value of the firm show positive associations with the dependent variable, where the former is almost 5 times bigger. The results demonstrate that for every one unit of change for non-current debt-to-total book value of the firm, there was 1,530 change in the non-current investment-to-total capital variable. One additional point on non-current debt to-market value is associated with 0,038 non-current investment increase on the dependent variable. Earnings per share, a performance measure variable, however, works differently. With the earnings per share, there is a negative value for the unstandardized coefficient, -0,076. As the profit per share increases by 1 Euro, the proportion of non-current investments decreases by 0,076. Higher earnings are associated with a smaller amount of long-term investments. Looking at the standard deviations, for every full standard deviation of movement of long-term debt to book and market values, the dependent variable, non-current investments-to-

total capital, increases by 0,46 and 0,18 standard deviations, respectively. For EPS, as it increases by one standard deviation, there is a decrease on the dependent variable of -0,14. According to table 6, the adjusted R square value is 0,326. It indicates that 32,6% of the variances for the dependent variable are explained by independent variables.

Table 6. Regression analysis results - NonCurrentInvestEquityBV

Dependent variables	NonCurrentInvestEquityBV
(Constant)	0,666 (6,304)
NonCurrentDebtAssetsBV	1,53*** (6,436)
NonCurrentDebtTotalEquityMV	0,038** (3,074)
LNTR	0,05 (1,714)
LnOCF	-0,038 (-1,404)
ROA	-0,021 (-1,295)
EPS	-0,076** (-2,051)
R Square	0,345
Durbin-Watson	2,116
Adjusted R Square	0,326
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01
T-statistics appear in parentheses
Number of observations: 250

The regression analysis results of the dependent variable called total intangible assets-to-total capital and the independent variables highlighted two essential independent variables: return on assets and total revenue. The results are unexpectedly ambiguous meaning that there is negative correlation for the dependent variable to both independent variables. This in turn means that as the return on assets and total revenue increase by one unit, the value of total intangible assets decreases by 0,026 and 0,009, respectively. With 90% confidence level, the return on assets measures come from -0,036 to -0,016, and total revenue – from -0,019 to -0,002. Table 7 also

indicates 9,6% of variances for the dependent variable are explained by the independent variables.

Table 7. Regression analysis results – IntangibleInvestEquityBV

Dependent variables	IntangibleInvestEquityBV
(Constant)	0,218 (4,834)
TotalDebtAssetsBV	0,046 (1,033)
TotalDebtTotalEquityMV	-0,002 (-0,849)
LNTR	-0,009* (-0,84)
LnOCF	-0,004 (-0,443)
ROA	-0,026*** (-4,24)
EPS	0,017 (1,192)
R Square	0,123
Durbin-Watson	0,152129
Adjusted R Square	0,096
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01
T-statistics appear in parentheses
Number of observations: 250

Table 8 demonstrated that current debt-to-total book value of the firms positively correlates with the dependent variable intangible investments-to-total capital (B = 0,323). The results demonstrate that for every one unit of change for short-term debt-to-total book value of the firm, there was 0,323 change in the intangible investment-to-total capital variable. On the contrary, return on assets show slightly negative interrelation, indicating that one additional point on return on assets value is associated with 0,026 intangible investment decrease on the dependent variable. Nevertheless, the latter has a lower value of adjusted R square, which means a lower proportion of variance is explained.

(Table is shown on next page)

Table 8. Regression analysis results - IntangibleInvestEquityBV

Dependent variables	IntangibleInvestEquityBV
(Constant)	0,109 (2,098)
CurrentDebtAssetsBV	0,323*** (4,018)
CurrentDebtTotalEquityMV	-0,002 (-0,469)
LNTR	-0,004 (-0,415)
LnOCF	-0,006 (-0,632)
ROA	-0,026*** (-4,318)
EPS	0,005 (0,397)
R Square	0,183
Durbin-Watson	1,976
Adjusted R Square	0,159
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01
T-statistics appear in parentheses
Number of observations: 250

Table 9 provides an overview on Model 6 that considers the function of non-current debt and other independent variables. Both long-term debt and return on assets are slightly negatively correlated with the dependent variable total intangible investment-to-total capital ratio (-0,007 and -0,027). One additional unit in independent variables lead to 0,007 and 0,027 decrease in total intangible investment-to-total capital ratio. Yet, table 9 shows that the Adjusted R square value for both variables is very low.

(Table is shown on next page)

Table 9. Regression analysis results - IntangibleInvestEquityBV

Dependent variables	IntangibleInvestEquityBV
(Constant)	0,251 6,285)
NonCurrentDebtAssetsBV	0,012 (0,133)
NonCurrentDebtTotalEquityMV	-0,007* (-1,495)
LNTR	-0,012 (-1,137)
LnOCF	0 (0,017)
ROA	-0,027*** (-4,4)
EPS	0,014 (0,962)
R Square	0,126
Durbin-Watson	2,05
Adjusted R Square	0,1
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01

T-statistics appear in parentheses

Number of observations: 250

Model 7 illustrates association of independent variables with total fixed investment-to-total capital of the firm. Out of the independent variables, 3 were considered: total debt-to-market value of the firm, total revenue and earnings per share. The first two are moderately correlated with the dependent variable, whereas EPS shows a negative interrelation. Hence, the more profit per share the company generates, the lower proportion of tangible investment it makes.

(Table is shown on next page)

Table 10. Regression analysis results - FixedInvestEquityBV

Dependent variables	FixedInvestEquityBV
(Constant)	-0,043 (-0,514)
TotalDebtAssetsBV	0,046 (0,562)
TotalDebtTotalEquityMV	0,034*** (6,249)
LNTR	0,048** (2,384)
LnOCF	0,029 (1,598)
ROA	-0,011 (-0,946)
EPS	-0,117*** (-4,53)
R Square	0,407
Durbin-Watson	1,762
Adjusted R Square	0,389
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01

T-statistics appear in parentheses

Number of observations: 250

Table 11 depicts the relationship between independent variables and total fixed investments-to-total capital ratio. This model showed the highest amount of significant results. There is a negative correlation with current debt-to-book value (-0,601) and earnings per share (-0,093), whereas current debt and total revenue demonstrate positive results (0,059 and 0,071, respectively). The less short-term debt with regard to market value the company owes, the more likely it is to invest in fixed assets. Moreover, the result of adjusted R square for the book value is quite high, what brings the author to the inference that the big proportion of the variance is explained by the independent variables, and thus, makes the number more reliable.

(Table is shown on next page)

Table 11. Regression analysis results - FixedInvestEquityBV

Dependent variables	FixedInvestEquityBV
(Constant)	0,11 (1,157)
CurrentDebtAssetsBV	-0,601*** (-4,084)
CurrentDebtTotalEquityMV	0,059*** (6,787)
LNTR	0,071*** (3,765)
LnOCF	0,009 (0,505)
ROA	-0,017 (-1,513)
EPS	-0,093*** (-3,723)
R Square	0,464
Durbin-Watson	1,794
Adjusted R Square	0,448
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01
T-statistics appear in parentheses
Number of observations: 250

Table 12 illustrates the correlation from the perspective on non-current debt and other independent variables, such as total revenue and earnings per share. With regard to both book and market values, long-term debt positively correlates with fixed investments, where the former has a higher value of the unstandardized coefficient (0,902). For every one unit of change for non-current debt-to-total book value of the firm, there was 0,902 change in the fixed investment variable. One additional point on non-current debt to-market value is associated with 0,045 tangible investment increase on the dependent variable. Total revenue is also positively correlated with the dependent variables with the result of 0,059. Nonetheless, earnings per share show negative value of -0,012, which demonstrates negative association between variables. According to table 12, the adjusted R square value is relatively high for these independent variables, what makes the regression a better fit, thereby the results more accurate.

(Table is shown on next page)

Table 12. Regression analysis results - FixedInvestEquityBV

Dependent variables	FixedInvestEquityBV
(Constant)	-0,151
NonCurrentDebtAssetsBV	0,902***
NonCurrentDebtTotalEquityMV	0,045***
LNTR	0,059**
LnOCF	0,003
ROA	-0,012
EPS	-0,092***
R Square	0,549
Durbin-Watson	1,854
Adjusted R Square	0,536
N	248

Note: *** p < 0.001; ** p < 0.005; * p < 0.01

T-statistics appear in parentheses

Number of observations: 250

5 Conclusions

The conclusion section covers the summary and clarification of the empirical findings, helping to answer the research questions and point up the association of the results with theoretical background. The findings are interpreted within the limitations of this research. Furthermore, it presents a number of suggestions for the further practical implication for the research paper.

5.1 Discussion about key findings

The initial goal of this research work was to investigate the effect of capital structure on the nature of investments. The theoretical and empirical findings enabled the author to achieve the main goals of this study. To summarize the main findings of the research paper, the research questions were answered.

1. Does the nature of financing affect the nature of corporate investments?

All types of analysis helped answer this research question. The capital structure definitely impacts corporate investments to certain extent. The results varied depending

on the different forms of financing and investments. One type of financing can have various effects on different forms of investments.

2. What type of financing does influence the real investments?

The outcomes showed that total debt as well as non-current debt in terms of market value positively influence the real investments. From the perspective of the book value, the long-term debt also has a positive impact on this type of investments. Meanwhile, tangible investments are negatively influenced by current debt-to-book value of the firm.

3. What type of financing does influence the financial investments?

According to the analysis results, intangible investments were influenced by two types of financing, i.e. current and non-current debt. Both of them positively impact the financial investments. Meanwhile, non-current debt in terms of the market capitalization showed positive correlation with long-term investments. Intangible investments are positively affected by the book value of current debt, whereas fixed investments are in positive relationship with the market value of the total debt as well as the current debt. Yet, there is a negative correlation between the book value of the latter and tangible investments. Non-current debt-to-book value of the firm, however, demonstrates positive association with fixed investments as well. Moreover, regarding the performance and control variables, the bigger the total revenue of the company, the more investments companies undertake in total.

H1: The total debt influences the total investments.

According to the results of the analyses, total debt does not influence the total investments based on the considered significant level. This contravenes the philosophy of Myers (1977), who claimed that high leveraged firms tend to have problems when raising finance to materialize positive NPV projects. Nevertheless, the total revenue as well as operating cash flows are positively correlated with total investments of the Finnish companies. The latter proves the sensitivity of total investments on the

changes in cash flows of a company, stated by the researcher Whited (1992). The regression analysis demonstrated negative relationship between return on investments and total investments.

H2: The total current debt influences the total current investments.

H3: The total non-current debt influences the total non-current investments.

The results of the analysis show that when the total current debt grows, the current investments tend to rise in the company as well, or vice versa. The total revenue also positively corresponds to this dependent variable. Considering the non-current investment, there is the positive correlation with long-term debts of the firm. Nonetheless, earnings per share tend to decline in relation to long-term investment signifying that the former is sensitive to changes in the latter, as it was claimed by Cantor (1990).

H4: The debt influences the total intangible investments.

H4a: The total debt influences the total intangible investments.

H4b: The total current debt influences the total intangible investments.

H4c: The total non-current debt influences the total intangible investments.

These three sub-hypotheses indicate the relationship between intangible investments and several forms of debt. Like the total investments, intangible investments do not demonstrate any correlation between each other within the results of this analysis. However, when the current debt increases, intangible investments in the companies are likely to rise too. The regression analysis, however, shows that non-current debt, return on investments and total revenue are negatively associated with intangible investments.

H5: The debt influences the total fixed investments.

H5a: The total debt influences the total fixed investments.

H5b: The total current debt influences the total fixed investments.

H5c: The total non-current debt influences the total fixed investments.

The hypothesis 5 illustrates the dependence of fixed investments on financial leverage of the firms. Fixed investments also show quite diverse results. According to both description and inferential statistics, unlike other forms of investments, they rise together with the total debt of the companies. Moreover, current and non-current debt, as well as total revenue, are positively correlated with tangible investments proportion. Yet, they tend to decline in relation to the EPS, based on the regression analysis.

5.2 Practical implications, limitations and recommendations

The impact of the capital structure on investment decisions in a company has always been a critical topic of interest for numerous researches and corporations. It is extremely important for companies to be aware of this information and its empirical implications, so as to properly find the optimal level of the financial leverage within the firm and distribute the financials for appropriate projects. This research may be beneficial to the existing literature about the capital structure and investments philosophies. Nonetheless, the study was conducted based on only Finnish corporations.

The empirical findings of this particular study can be useful for financial and business investigators. The paper illustrates how Finnish corporates' capital structure impact their investment capability and decisions. This information can be of a high interest to independent financial analysts and investors. Overall, it will help them understand the financial market of Finland more clearly.

This chapter also described the list of limitations and recommendations of the study. The research is limited to the analysis of only 25 Finnish listed sample companies. Even though it is considered as reliable and valid, this number of the case companies cannot be representative for the whole country. Hence, it would be a complicated procedure to reflect the research outcomes to a different company, let alone a country. Not every company would be able to interpret the analogous approach within their current or future situation. Still, the limitation of the research allows other researchers apply the information from this study in their future research. In order to

broaden the horizons of this topic, more variables could be considered for the analysis, aiming to understand the issue more profoundly. There is an abundance of different measures of both capital structure and investments, as well as correlations between other variables. For instance, any other control variables except total revenue could also be included in future. Moreover, the more extensive literature review may be done for the future investigations, since the information on this topic is affluent. Regarding the sampling of the analysis, one of the recommendations could be to undertake the identical analysis for all Finnish companies to observe the behaviour of the entire market. On top of that, it would be thought-provoking and worthwhile to have other parts of the world researched as well.

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