The Effect of Ownership Structure on Firm Performance

Evidence from Non-financial Listed Companies in Scandinavia

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Abstract


In the theory review, transaction cost theory (TCT) and corporate governance theory (CGT) are introduced as theoretical foundation, followed by studies about ownership structure and studies about national effect. While TCT introduces the concept of transaction cost, and the cost related to corporation organization; CGT discusses the relationship between principal and agent, and specifies the agency problems (adverse selection, hold up and moral hazard). Ownership structure is believed to affect firm performance. Thus different arguments related to the effect of ownership concentration and owner identity on firm performance are reviewed. Finally, national effect on ownership structure is investigated with evidence from the Scandinavian countries.

In regards to the methodology, twelve testable hypotheses are generated for empirical analyses. Simple statistics analysis and regression analysis are combined: simple statistics analysis allocates firms and their four performance ratios according to their owner identities/nationalities, to find the predominating owner identity in each country and compare performance among the four owner identities (dispersed, family/foundation, institution and government); regression analysis applies OLS regression to test the effect of ownership structure on firm performance, based on the assumption that the relationship is linear and ownership structure is exogenous.

Finally, the research questions are answered: ownership concentration has a positive effect on firm profitability and growth, and a negative effect on firm valuation and risk; divergence between voting right and capital right has positive influence on firm valuation; and owner identities do influence firm performance, especially with regard to profitability and growth.
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The Effect of Ownership Structure on Firm Performance
1 Introduction

1.1 Motivation
Ownership structure, as a mechanism in corporate governance to facilitate increased efficiency of a firm, has been believed to effect firm performance for many years. For example, Adam Smith (1776) points out that the joint-stock companies are less efficient than private copartner companies because the directors would not watch over ‘other people’s money’ with ‘the same anxious vigilance’\(^1\) as their own.

Transaction cost theory considers a firm as an offer of contracts where the activities are cheaper internal than external. However, inside of the firm, there are conflicts between different parties. The Principal-agent theory mentions the conflict between shareholders and management. The conflict is led by the different agendas of shareholders and managers, more specifically, the divergence between the control right and cash flow right. In the recent decade there has been no shortage of corporate scandals as a result of inefficient governance structures and perverted inventive schemes. The question of what may be the most efficient ownership structure is therefore as relevant as ever.

Shareholders and managers are making effort to combine their interests to reduce agency costs. In a structure-conduct-performance framework, a set of conditions determines the ownership structure of the firm, which then determines the corporate behavior and performance. The relationship between ownership structure and corporate performance are assumed to exist, because ownership concentration and owner identity influence the incentives of each party within the firm, and thus influence the firm’s ability to solve agency problems. However, the relationship between ownership structure and firm performance remains blurred in previous studies. To illustrate with the effect of ownership concentration on the corporate performance, the effect has contradicting conclusions from former studies. While Shleifer (1986), Agrawal (1996) and Ødegaard (2003) found positive effect of high concentration; Hingley (1970), Fama (1983) and Pedersen (1999) found the effect to be negative. Furthermore studies related to owner identities and firm performance also have contradicting conclusions. To illustrate with managerial ownership, when Jensen (1990) Huddart (1993) and Cui (2002) found positive effect of managerial ownership on firm performance; Morck et al

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\(^1\) Adam Smith (1776)’ An Inquiry into the Nature and Causes of the Wealth of Nations’ P317.
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(1988) and Stulz (1988) found the effect to be negative and argued the existence of managerial entrenchment.

Apart from that, most empirical studies use the data from United Kingdom and United States, in which the ownership structures are quite different from the markets in North Europe. The Nordic countries show higher ownership concentration and higher divergence of voting right and capital right through more complex shareholdings such as multiple control chains, pyramiding and crossholding. Furthermore, the firms in the Nordic countries are normally controlled by family/foundation, institutions or the government.

1.2 Problem Statement
To meet the main objectives of this thesis, the effect of ownership structure on firm performance will be investigated. The following questions will be answered:

A. How does ownership concentration influence the performance of Scandinavian firms?
B. How does divergence between voting right and capital right influence the performance of Scandinavian firms?
C. Does owner identity influence the performance of Scandinavian firms?

Furthermore, derived from the review of corporate governance theories and previous studies of ownership structure, twelve hypotheses are developed in the data and methodology part. These hypotheses (listed below) will be the foundation of empirical tests and are either verified or rejected in the later empirical analysis:

Hypothesis 1a: ownership concentration has positive effect on firm valuation.
Hypothesis 1b: ownership concentration has positive effect on firm profitability.
Hypothesis 1c: ownership concentration has positive effect on firm growth.
Hypothesis 1d: ownership concentration has negative effect on firm risk.
Hypothesis 2a: control right divergence has negative effect on firm valuation.
Hypothesis 2b: control right divergence has negative effect on firm profitability.
Hypothesis 2c: control right divergence has negative effect on firm growth.
Hypothesis 2d: control right divergence has positive effect on firm risk.
Hypothesis 3a: there is a relationship between owner identity and firm valuation.
Hypothesis 3b: there is a relationship between owner identity and firm profitability.
Hypothesis 3c: there is a relationship between owner identity and firm growth.
Hypothesis 3d: there is a relationship between owner identity and firm risk.

1.3 Definitions

1.3.1 Ownership Structure
The term ‘ownership structure’ has two widely applied dimensions: ownership concentration and owner identity. Furthermore, the divergence of voting right and capital right allow shareholders to gain control with little equity involvement through mechanisms such as dual class equity, pyramiding, etc. Thus, divergence should be taken into consideration when analyzing the effect of ownership structure on firm performance.

Ownership concentration measures the degree of concentration of voting right in Scandinavian listed corporations, it is measured by the voting right of the largest shareholder, and by the sum of voting rights of the second and third largest shareholder. Furthermore, the divergence ratio of the largest shareholder illustrates ownership concentration from another perspective. Owner identity is based on the type of the largest shareholder.

1.3.2 Firm Performance
The aim of this thesis is to examine whether firm performance is affected by ownership structure. In regards to firm performance, four dimensions are applied to illustrate different aspects of firm strategy.

Firm valuation is measured by Tobin’s Q; firm profitability is measured by Return on Equity (ROE); firm growth is measured by the growth in total asset; and firm risk is measured by Beta.

1.4 Theory and Methodology

1.4.1 Literature Review
Transaction cost theory (TCT) and corporate governance theory (CGT) lays the foundation of the theoretical framework. While TCT introduces the concept of transaction cost, due to uncertainty and risk of opportunistic behavior; corporate governance theory introduces the principal-agent problems and review the subsequent agent costs.
Ownership structure, as one dimension of corporate governance, is believed to influence firm performance through its influence on the principal-agent relationships. The literature review on ownership structure is divided into two themes: ownership concentration and owner identity, both with opposing argumentation of different ownership setups presented in a sequence of positive, negative and neutral.

Furthermore, studies of nation effect are reviewed, as ownership structure and its effect on firm performance varies among different countries. At last, the characteristics of ownership structure in Scandinavia are investigated.

1.4.2 Methodology Review
The test methods applied in the former ownership structure studies are reviewed in two different dimensions: linearity vs. non-linearity; endogenous vs. exogenous. They are described in detail in the relevant sections.

While the linearity vs. non-linearity focus on whether the effect of the ownership structure on firm performance is linear; the endogenous vs. exogenous focus on whether the ownership structure is independent from firm performance.

The method applied for empirical analysis (linearity vs. non-linearity; the endogenous vs. exogenous) influences data processing, method selection and results. To illustrate, when assuming the effect of ownership structure on firm performance to be non-linear, a possible method is to set one or more thresholds, and conduct piecewise regression. When assuming the ownership structure to be endogenous, generalized method of moments with panel data is usually applied.

1.4.3 Data Selection
The 20 largest non-financial listed firms in each of the Scandinavian countries (Denmark, Finland, Norway and Sweden) are selected for investigation. Accounting data, ownership date and market data of these 80 firms from the period 2008-2010 are collected. The period is chosen because by the time of data selection, the annual reports of the majority of the firms are not released yet. The data limitations and the selection process reduce the firm sample to 40 for empirical test, with 10 firms from each country.

1.4.4 Choice of Method
To investigate the effect of ownership structure on firm performance, simple statistics analysis and regression analysis are combined. In the simple statistics analysis section, the 80 firms and their firm performance are allocated according to their nation and
owner identity. The owner identity allocation in each country and their valuation, profitability, growth rate and risk are compared and discussed. In the regression analysis section, regressions and empirical tests are conducted based on the 40-firm sample, three ownership concentration variables and four owner identity dummy variables are combined with eight control variables in OLS regressions. The significance of their coefficients is based on t-test.

1.5 Thesis Outline
The thesis consists of five parts. Part one is the introduction of the whole thesis, including thesis motivation, problem statement, definitions of key concepts, theory and methodology background, thesis outline and delimitations. Part two introduces the theoretical and literary foundation of the thesis: Transaction Cost Theory (TCT), Corporate Governance Theory (CGT), studies about the effect ownership structure has on firm performance, studies about national effect and Scandinavian characteristics of ownership structure. Part three reviews the methodology and set the research method. Furthermore, this part presents the selection of variables and data; and formulates testable hypotheses. Part four contains the simple statistics and regression analyses and discusses the results with the arguments from the reviewed literature. Finally part five summarizes and concludes on the findings of this thesis.

Figure 1: Thesis Model

Source: Own make
The model of this study is illustrated in figure 1. The theoretical framework includes transaction cost theory (TCT), corporate governance theory and a selection of studies of national effects. The opposing arguments of positive and negative effects of different ownership structures are reviewed and applied in the final discussion of results. The core objective is to test the effect ownership structure has on firm performance. As mentioned above, ownership structure is divided into two dimensions (ownership concentration and owner identity) and firm performance is divided into four dimensions (valuation, profitability, growth and risk).

1.6 Delimitations
While this study focus on the effect ownership structure has on firm performance, the simultaneous effect firm performance might have on ownership structure is not tested due to complexity of ownership data selection.

As this study focusses primarily on Scandinavia due to its unique ownership structure, non-Scandinavian companies are excluded in the empirical tests. Furthermore non-listed companies are also excluded due to unavailability of data. Because of measurement criteria differences regarding firm performance (financial ratios), financial companies also have to be excluded from the tests.

Although interesting, the operational and financial mechanisms behind the effect of ownership structure on firm performance are not analyzed for the sake of limiting the scope of analysis.
2 Literature Review
The following part will review literatures related to the relationship between ownership structure and firm performance and is divided into four sections. The first two sections are dedicated to the more general theories related to the topic, including transaction cost theory and principal-agent theory in order to draw up the universe within which this research is constructed. Section one introduces transaction cost theory which consider corporation as an offer of contracts to avoid the transaction costs existing in the market, the cost is generated from information asymmetry and opportunistic behaviors of the contracting parties. Section two focuses on the principal-agent problems within the firm and the related agent costs. Three detailed principal-agent problems are introduced: adverse selection, hold-up and moral hazard.

The remaining two sections of the literature review are more concrete in the way that they deal with specific studies. Section three provides an overview of studies of ownership structure and corporate performance, the effects of ownership concentration and owner identities on firm performance are reviewed separately. Finally in section four studies on national effect and the ownership structure characteristics in Scandinavia are reviewed.

2.1 Transaction Cost Theory (TCT)
The transaction cost theory is based on the work of Coase (1937) where he explains the existence of firms as an organization that is able to undertake the certain transactions at a lower cost comparing to the market until it expands to the point where ‘the costs of organising an extra transaction within the firm become equal to the costs of carrying out the same transaction by means of an exchange on the open market or the costs of organising in another firm’\(^2\).

Later Williamson (1971) and Alchian & Demsetz (1975) contribute to the TCT by introducing the market failures and firm inefficiency and come to the conclusion that there is a need to ‘work out the trade-off that characterize firm and market organization as these vary with the attributes of transactions.’\(^3\)

Williamson (1979) describes three aspects of transactions: 1, the frequency of the transaction; 2, the uncertainty of the transaction; 3, the type and degree of asset

\(^2\) Coase, 1937, p395
\(^3\) The economics of transaction costs, Williamson, Masten,, 1999, introduction.
specificity. Asset specificity refers to the extent the cost or investment in a transaction relationship is recoverable and can be used in another relationship. Thus high asset specificity brings risk in the contract because the party with higher bargaining power could try to renegotiate the contract by the threat of cancelation. Moreover, in the process of transaction, information asymmetry and bounded rationality lead to the fact that not all the contingencies can be predicted ex ante, and, as a consequence, incomplete contracts occur. Transactions will therefore have to yield high rents or not occur in the worst case due to unwillingness to take on inherent risk of opportunistic behaviour.

A way to overcome this dilemma is through governance mechanisms (economic organization), which varies in controlling instruments and consequently lead to different levels of incentive intensity and control property, and therefore has impact on the incurring transaction costs. Williamson (1991) further compares the cost-effective choice of three organization forms (market, hierarchy and hybrid) and found that market is optimal for the transactions that are ‘‘sharp in by clear agreement; sharp out by clear performance’’\textsuperscript{4}, while hierarchy is optimal for the transactions with high asset specificity. Hybrid mechanism displays the intermediate characteristics comparing with market and hierarchy. The choice of the organization form depends on the characteristic of the transaction.

TCT is applied in corporate governance theories to explain principal-agent problems and ownership structure. Holmstrom & Milgrom (1991) use TCT to analyse the multidimensional tasks in the principal-agent model. Different instruments including employment contracts, ownership assignment, private activities limitation, are analysed based on their cost and incentive benefit in solving the principal-agent problems. Considering the high performance measurement cost, the author suggests analysing incentive problems in totality. To be more specific, the corporate governance instruments should be combined together in analysing the opportunity cost and measurement cost of every aspect of the agent’s performance to achieve the lowest uncertainty and cost.

According to Grossman & Hart (1986), asset specificity and ex post bargaining problems will drive the preference for integration of parties, to reduce opportunity costs.

\textsuperscript{4} MacNeil 1974, p.738
While in the process of integration, the allocation of ownership is accompanied by costs and benefits. The optimal ownership structure is thus to ‘minimize the overall loss in surplus due to investment distortions [instead of maximizing] the total ex ante net benefits’\(^5\). In another word, the optimal ownership structure is in place when transaction costs are minimized in the long run.

The following section offers a review of corporate governance theory with focus on principal-agent theory and agency problems.

### 2.2 Corporate Governance Theory (CGT)

#### 2.2.1 Principal-Agent Theory

The forerunner of principal-agent theory is the expense-preference model of Williamson (1963). In Williamson’s statement, managerial discretionary spending can be in two forms: 1) Emolument which include perquisites and has no productivity; 2) Discretionary profits which include expenditures on the expansion of staff, physical plant and equipment.

As the preference of the principal is profit maximization, while the preference of the agent is utility maximization (including both emolument and discretionary profits) conflicts may arise. Profit maximization and emolument maximization would go hand in hand if more emoluments would always lead to better management. However, as assumed by Williamson, when management has an expense preference for emolument and unnecessary staff expenditures, the utility maximization of management will conflict with profit maximization. According to his conditions, utility-maximizing management will always spend more on staff rather than profit-maximizing expenditures. This is allowed because of the owners’ inability to monitor.

The economic principal-agent theory considers ‘institutions as nexus for contracts’ and according to Jensen & Meckling (1976) and Furubotn & Richter (2005), the principal-agent relationship is a contract relationship where the principal establish appropriate incentives for the agent. However, since principal and agent have different incentives and because of information asymmetry and external disturbances, the principal is not able to adequately monitor the agent’s actions. Therefore the economic principal-agent theory is about the principal designing remuneration plans for the agent to protect himself against opportunistic behavior.

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\(^5\) Grossman, 1986, p. 710
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Under the assumption of self-interested behavior and rational expectations three roots of agency problems are discussed by Barnea et al (1981). These include: 1) Information asymmetry as market imperfections lead to the inability of the principals (equity as well as debt financiers) to be fully informed. 2) Debt financing under limited liability as equity holders have an incentive to undertake high-risk projects which will transfer wealth from debt holders to equity holders. 3) Partial ownership with controlling interests as an owner-manager may pursuit non-pecuniary benefits conflicting with the other owner’s benefits. It should be noted that the latter two roots display conflicts of interest among the principals themselves and that the definition of principals include debt holders as well as equity holders.

The costs associated with the principle agent dilemma are various. As stated by Darrough & Stoughton (1986): ‘the market impaction induced by unobservable actions, lack of contracting ability, and information asymmetry generally lead to second-best outcome in which the distribution of corporate ownership is achieved only at significant cost. These costs take the form of excessive perquisite consumption, overinvestment, underinvestment, and incomplete diversification of personal investment portfolios’.

Everything else equal agency problems will reduce market value if the financial and human capital markets are not able to resolve the problems without costs. In the following sub-section three agency problems (adverse selection, hold-up and moral hazard) are discussed in order of appearance.

2.2.2 Agency Problems
While adverse selection problems originates ex ante the contract and arises because of hidden information; the moral hazard problems exists ex post the contract and arises because of hidden actions - the principals inability to observe the actions by the agent (Arrow 1984). However, in between adverse selection and moral hazard, another principal-agency problem, hold-up; will be introduced as the managers hold up to take actions according to the contract, because they do not want to lose the flexibility towards the principals.

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6 Darrough & Stoughton 1986 P.501
Adverse Selection:

According to Furubotn & Richter (2005), adverse selection is related to the ex ante opportunity of the agent to misrepresent his qualifications due to the principals inability to fully observe the qualities of the agents before the contract conclusion.

The adverse selection problem may be explained by ‘the lemons principle’ (Akerlof 1970). One example is the secondhand car market where there is also information asymmetry between sellers and buyers since sellers are better informed about quality. Because buyers cannot tell the difference between above- and below-average quality cars, they will offer a price for the average quality car. Thus, above-average cars will not get sold and eventually be ‘driven out’ of the market by below-average cars.

When searching for a qualified agent, the principal faces a similar problem as he does not know the quality of the agent, and therefore may offer an average remuneration based on his understanding of the agent market. While the above-average agent rejects the offer as being too low, below-average agents will accept and get over paid. Thus, the principal will end up with an under qualified agent.

As a solution, Furubotn & Richter (2005) suggests that principals will ‘[propose] a menu of contracts that leads the individual agent, under certain conditions, to reveal his type (qualities) and at the same time promote the principal’s welfare’. The assumption of Furubotn & Richter is that firms behave as option fixers even under perfect competition. The candidate has to choose between different contracts provided by the firm and is thereby forced to reveal truthful information about himself via the productivity signal he send. This is because the agent will only accept the contract that pays off his implicit cost. This will end up at a zero-profit point, where there is equilibrium between the cost of labor and productivity. An example used by Furubotn & Richter (2005) is education-costs case.

\[ c_j(e) = \frac{k_1}{2}e^2, \]

In the function: \( c_j(e) \), \( e \) is the educational level of agent \( j \), and \( c_j(e) \) the cost of agent \( j \) to achieve \( e \) level of education. Assume that worker 2 is less productive than worker 1 and his education therefore causes higher cost/time (\( k_1 < k_2 \)), then education level can be considered a signal of productivity. The signal is easier to acquire for worker 1 than worker 2. If the firm offers two contracts differing in educational requirement and salary, worker 2 will choose the contract paying less and requiring less education while worker 1 will choose the contract with higher wage and educational requirement as long as his cost of achieving higher education is lower than the wage difference.

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7 Furubotn & Richter 2005 p.182
8 First used by Spence 1973 p 392
However, it is complicated for principals to design contracts that fit the investment in signaling for both the buyers and sellers in reality. Hence the adverse selection problem still widely exists in the corporate governance.

**Hold-up Problem**

As mentioned above the hold-up problem emerges in a situation where two parties refrain from cooperation due to a shared concern that the other party will gain increased bargaining power and, thus, acts opportunistically. In a corporate governance context Blair (1995) states that a hold-up problem occurs in a situation where the principal recognizes, but is unable to sanction or prevent the agent’s opportunistic actions.

Klein et al (1978) explain the concept by introducing the ‘quasi rent’ as the payment of production activity over the opportunity cost in the short run. Such quasi rents are created after the making of a specific investment. ‘*The quasi-rent value of the asset is the excess of its value over its salvage value, that is, its value in its next best use to another renter*’\(^9\). It is the existence of such quasi rents that facilitate the hold-up dilemma. Furthermore asset specific investments are still subject to high risk even when all contingencies are accounted for in the contract because contracts are not always honored. Under such circumstances, small scale opportunism ex post is very normal (Williamson et al. 1975). The treat of the agent reneging on his contracts is stronger under the presence of quasi rents. Furthermore, it is impossible to make complete contracts that cover all contingencies that may arise (Grout 1984).

From a transaction cost perspective, these inefficiencies lead to either a failure in making optimal investments or that resources are spent on wasteful defensive activities. This could be solved by internalizing the two parties into one unit. The corporate governance structure could be considered as a mechanism for solving the hold-up problem.

**Moral Hazard\(^{10}\)**

The problem of moral hazard arises after the contract completion and is caused by information asymmetry combined with diverging incentives between principal and agent (Jensen & Meckling 1976, Barnea et al 1981). It exists under the assumptions that

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\(^{10}\) The term moral hazard is borrowed from insurance theory where Shavell (1979), found out that the health insurance cause an incentive for using excessive medical care.
the principal is unable to fully observe not only the agent’s actions but also the causes of outcome, since the outcome is influenced by internal as well as external factors. As Arrow (1984) state it: ‘the outcome is a random variable whose distribution depends on the action taken’\(^{11}\). Moreover, shareholders and management have differing utility functions (Jensen & Meckling 1976).

Consequently, the conflict of incentives and information asymmetry will lead to a situation in which management will act on their own incentives at the cost of the shareholders (Jensen & Meckling 1976). The management may pay themselves excessive salaries, do business with subcontractors that are controlled by themselves or pursue expansionary corporate strategies that will only yield personal benefit of control (La Porta et al. 1997).

To reduce the conflict between principals and agents, the principal may try to control the agent and reduce the information asymmetry wherefore performance-based compensation, prestige and career prospects are relied on, especially in the Anglo-America countries (Barnea et al 1981). Apart from that, trust building is also widely applied including the creation of positive reputation (Fama 1980). To reduce information asymmetry, monitoring efforts are made to gather information about the agent’s action (Bushee 1998) including the application of specified accounting standards (Jensen 2000).

However, all these actions to avoid agency problems come at a price. The sum of monitoring expenditure, bonding expenditures and the residual loss is defined as ‘agency costs’. Reducing the principal-agent challenges at a low cost is therefore an important topic in corporate governance (Jensen & Meckling 1976).

In a study by Sinani et al. (2008), both formal institutions and informal networks are found helpful in mitigating the problem while decreasing the agency cost. The design of ownership structure, as part of the formal institutional setup, is an important aspect of reducing the conflict between shareholders and management. Examples include: the existence of a block holder (high concentration) will increase the incentive and capability of the block holder to monitor management; and the inclusion of management among shareholders will align the incentives of managers and shareholders. The

\(^{11}\) Arrow 1984, p.3
following section will elaborate further on the topic of ownership structure and its effect on firm performance.

2.3 Ownership Structure and Corporate Performance

Firm performance is supposed to be independent from the ownership structure in the absence of agency cost. However, in the real world, the agency cost generated from principal-agent problems exists widely. Equity ownership structure as an important mechanism in corporate governance (Denis & McConnell 2003), influence the quality of corporate governance and its ability to reduce agency costs (Berk & DeMarzo, 2007).

The path dependent argument (Coffee 1999 and Dyck 2004) state that the ownership structures are path dependent, and are determined by the vested interests. Therefore, the current ownership structure may not be the most efficient one. Thus, testing the relationship between ownership structure and financial performance could help the investors to gain value by optimizing the firm’s ownership structure.

The following two subsections review the literatures which investigate the effect of ownership structure on firm performance according to two dimensions: ownership concentration and owner identities.

Ownership concentration provides quantitative information about the capital right of the largest shareholder(s). Owner identity information provides qualitative information about the character of the controlling shareholder(s). One issue to pay attention to is the divergence of capital right and voting (control) right. Normally the two kinds of right are the same, however, when the voting right is different from the capital right due to control mechanisms\(^{12}\), the incentives of the principals and agents would get influenced.\(^{13}\)

2.3.1 Ownership Concentration and Corporate Performance

Three papers by Short (1994), Gross (2007) and Holderness (2003) review the studies that investigate the relationship between ownership structure and firm performance thoroughly.

Some studies investigate the effect of ownership concentration on growth and risk. For example, Larner (1966) use the variance in profit/equity ratio as an expression of risk.

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\(^{12}\) Explanation of the control mechanisms is present in Appendix I.

\(^{13}\) More detailed description of the ownership concentration, owner identity, divergence of voting right and capital right is in 3.1.1 methodological review.
and tested its dependence on the ownership concentration using a sample of 187 of the largest 500 US non-financial firms. The study finds that there is an insignificant positive relationship between manager-controlled firms (as opposed to owner-controlled) and a high variance in profit/equity. In other words low ownership concentration may imply higher risk. Another study by Radice (1971) tests the relationship between the growth in net assets and ownership concentration using a sample of 86 large UK firms. The study finds that owner-controlled firms tend to have higher profit rates and growth rate. Most other studies investigate the effect of ownership concentration on profitability and valuation rather than growth and risk.

Positive effect of ownership concentration on corporate performance (measured by profitability and valuation) is found in many studies. The main explanation of the positive effect is that block holders has both the ability and the incentive to monitor and control agents, in order to operate the firm for the good of the shareholders. This is defined as incentive alignment. As La Porta et al. (1998) explained: low investor protection will lead to higher ownership concentration in order to protect the benefits of minority shareholders, even at the cost of increased private control benefits for block holder. The cost-efficiency of monitoring by block holders yields a better performance of the firm. However, in the cases where there is a large divergence of control right and cash flow right, block holder has less incentive to monitor the managers to pursue profit-maximization goal.

Other studies, which find negative effects, argue that the increased control by block holders reduces the self-realization of managers who consequently get discouraged. This phenomenon is defined as over-monitoring (Burkart et al 1997, Pagano & Röell 1998). Furthermore, some studies argue that high concentration will enable block holders to exploit their position and gain private control benefits, because they have more information and higher control power than the other shareholders (Dyck & Zingales 2004, Burkart et al. 1997, Zingales 1994). This argument can be defined as private control benefit. Another argument for the negative effect is the cost-of-capital argument first introduced by Fama & Jensen (1983a). They argue that the higher the ownership concentration is, the lower the liquidity of the stocks will be because there

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are less shares available for trade in the market. As a consequence, stocks become more risky as the beta of the firm increases and the cost of capital gets driven up (Barclay & Holderness 1989, Bolton & Von Thadden 1998). This argument is empirically supported by Beaver et al. (1970), Rosenberg (1976), Thompson (1976) and Hartzell & Starks (2003).

Yet other studies find no observable effect of ownership concentration on corporate performance. The natural selection argument by Alchian (1950), Friedman (1953) and Becker (1962) is applied to explain their study results. The argument is that corporations perform equally well under different ownership structures because market competition will eliminate all inefficient forms in the long run. Thus the selection of optimal ownership structure depends on the environment and there is no effect of ownership structure on performance. Another argument applied to explain the non-observable result is mutual neutralization argument. According to this argument, the positive and negative effects of different mechanisms offset each other and result in neutralization (Eckbo & Smith 1998, Himmelberg et al. 1999, Bahng 2004).

Non-linear effects are also found by introducing thresholds in the concentration measurement and investigating the correlation in a certain range using piecewise regression techniques (Morck et al. 1988). Other methods include squared variable value in the regression and found curvilinear relationships between ownership concentration and performance (McConnell & Servaes 1990). The arguments introduced above are normally combined to explain the non-linear results.

Many studies combine ownership concentration and owner identity to have a broader view of the effects. Four types of owner identity would be introduced in the following sub-section.

2.3.2 Owner Identity and Corporate Performance

The effect of owner identities on corporate performance is a part of the management/strategy literature. The existence of an owner identity effect is based on the argument that different owners may have different strategic goals (valuation, profitability, growth and risk) and the controlling owner’s goal preference would influence the operation and performance of the firm. The most frequently defined

15 This argument is also supported by Demsetz (1983), Demsetz & Lehn (1985), Kole & Lehn (1997) and Bolton & Von Thadden (1998)
identities are dispersed (insider) ownership, family, institution and government. In this sub-section, studies related to these four owner identities are reviewed separately.

**Dispersed Ownership and Insider Ownership**

Firms with dispersed ownership are the firms that have low ownership concentration. When there is not a single large shareholder or a group of shareholders that can control the firm, the managers, under the assumption of information asymmetry and opportunity behavior, is believed to take control over the firm.

Furthermore, managers may, in many cases, own a portion of the shares large enough to provide a sufficient performance incentive. Studies about the effect of insider ownership on firm performance first became popular in 1970s when stake compensation to management was widely applied to align the incentives of managers and shareholders.

The earliest argument of the positive effect of insider ownership on corporate performance is brought by Jensen & Meckling (1976), and is based on the principal-agent theory. In Jensen’s article, he assumes a positive effect of managerial ownership on corporate performance because managerial ownership combines the incentives of managers and shareholders and thus reduces the agency problems. In later studies, the incentive alignment argument is further developed. Furthermore, the arguments in support of the negative effect of ownership concentration also apply to the positive effect of dispersed (insider) ownership.

A negative effect of ownership disbursement on corporate performance is also found (Demsetz & Lehn 1985). Fama & Jensen (1983b) introduce the argument that dispersed ownership leads to the creation of a hold-up problem, in which the shareholders cannot prevent manager’s opportunistic behavior even though they are able to recognize it. This is defined by Morck et al. (1988) and Stulz (1988) as managerial entrenchment, where management is able to undertake value-destroying activities at low personal cost/risk because of the low risk of sanctions or of takeover.

The non-linear effect is found and discussed by Morck et al. (1988). The n-shape distribution is explained by a combination of the positive incentive alignment argument and negative managerial entrenchment argument. With a low level of insider ownership,

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the positive effect of incentive alignment is dominating and lead to a combined positive effect; in the medium range of insider ownership, the entrenchment effect dominates and lead to a combined negative effect and then again with a high level of managerial ownership, the incentive alignment effect outweigh the entrenchment effect and turn the combined effect positive. The thresholds of 5% and 25% are altered in the studies of Hubbard & Palia (1996), Short et al. (2002) and Welch (2003).

Finally some studies that find no observable effect between insider ownership and firm performance explained by the *natural selection argument* (Demsetz & Lehn 1985) and *mutual neutralization argument* (Eckbo & Smith 1998, Himmelberg et al. 1999) as mentioned above.

**Family Ownership**

Family ownership is very common worldwide. According to La Porta et al. (1999) and La Porta et al. (2000), family owned firms are the most common type of economic organization among the listed companies in 27 countries around the world. Anderson & Reeb (2003) found that more than one third of the S&P 500 companies are family firms. Many studies investigate whether family ownership influences firm performance from different aspects. For example, Anderson & Reeb (2003) investigate the founding-family owner effect, Sonfield & Lussier (2004) investigate the generation difference of the family ownership and King & Santor (2008) investigate the difference between those family owned firms which are managed by the family and those which are not. However, because of their high specificity in research field, these are not included in the following review.

Some studies find a positive effect of family ownership on firm performance\(^{17}\). Here the *Incentive alignment* argument is applied to explain the positive effect especially when family members also act as managers. The conflicts between principal and agent are reduced. Another widely applied argument is the *long-term orientation* of the family owner. While other owner types focus on profit maximization in the short term, family owners have a long term commitment to the firm and are willing to invest in the capacities that will create competitive advantages which require large investment in the beginning (Hsu & Chen, 2009).

Some other scholars find negative effects of family ownership\textsuperscript{18}. The \textit{Private control benefit} argument supports the view that the conflict between the family owner and the minority shareholders increases along with the increased degree of family ownership, especially when shareholder protection is low. Because the family owners have more opportunities to gain private control benefit by expropriating minority shareholders’ benefit. Furthermore, family ownership is usually accompanied with the family being involved in management. The hired professional managers become discouraged in improving their efficiency under this mechanism; this argument is \textit{manager discouragement}. (Smith & Amoako-Adu 1999).

Villalonga & Amit (2006) distinguish three elements in the definition of family firms: ownership, control and management. They find that family ownership creates value only when the founder serves as CEO of the firm because then the positive effect of incentive alignment outweigh the negative effect of potential private benefit. However, when the descendants serve as CEOs, firm value will deteriorate because the descendants may not have the same level of inspiration as the founder and thus the negative effect of private benefit and manager discouragement outweigh the positive effect of incentive alignment.

\textit{Institutional Ownership}

Taylor (1990) find that the percentage of US equity held by institutional owners has increased from 8\% in 1950 to 45\% in 1990. Institution ownership attracts much attention along with its increased importance in the equity markets. Although institutions can be divided into different types (financial and non-financial; domestic and foreign, etc.) in this review such distinctions are not made.

Positive effects of institution ownership on firm performance is found by McConnell & Servaes (1990), Han & Suk (1998) and Tsai & Gu (2007), who explain the positive effect by the \textit{active monitoring} argument. The monitoring effect should be stronger for institutional investors than general shareholders. According to Hand (1990), institutional investors are more sophisticated than other shareholders because they are more professional regarding capital markets, industries and businesses and they are better informed. Apart from that, institutional shareholders have higher capabilities in taking actions and can therefore monitor managers more effectively and less costly. One

A piece of evidence found by Hartzell & Starks (2003) is that the compensations level is negatively related with institutional ownership, as the institutional owners’ monitoring effect can replace the incentive alignment effect by management compensation whereby mitigating the agency problems.

Negative effects are also found in the studies of Pound (1988) and Hand (1990). One argument to support this result is the institutional myopia argument, which implies that the institutional investors prefer short term returns and will use their influence to encourage managers to pursue short term gains. Wahal (1996) find only short term positive effects of institutional ownership but not long term, as he argues that institutional investors have a time preference for short term result. Other studies illustrate this argument: institutional investors are sensitive to earning news, because they might use current earnings as proxy under the information asymmetry circumstance (Porter 1992); institutional investors consider the investment in a firm as one asset in a portfolio (Coffee 1991); the managers in the investing institutions are measured on short term results by their principals (Badrinath et al 1989). Another argument is strategic-alignment-conflict-of-interest by Pound (1988). The conflict of interest and the strategic alignment hypothesis suggest that institutional investors tend to support managers instead of monitoring and controlling them, because of their interpersonal business relationship with the firm in which they are investing and because the benefit they gain from supporting the managers is higher than the effective monitoring gain. Therefore institutional investors may have incentives to cooperate with managers.

Some studies did not find a relation between institutional ownership and firm performance19, the natural selection argument is applied once more.

**Government Ownership**

Between the 1930s and 1970s, the 1929 financial shock and following great depression had created a tendency to ‘socialization’ worldwide. It was intended that the state should play the role of planning in a market economy, to overcome the social monopoly cost (Meade 1948).

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19 Studies such as: Karpoff, Malatesta & Walkling (1996), Duggal & Millar (1999), Edwards & Nibler (2000), etc.
However, during 1970s and 1980s, most of the government owned firms went through a privatization process to reduce the involvement of government in the market mechanisms. Nowadays government ownership is mostly found in the former socialist countries such as Russia, (China) and the East European countries. As changing political/economic regimes have shaped and reshaped ownership structures over time, a debate of government impact on firm performance has naturally emerged with arguments for as well as against government ownership.

On the positive side, traditionally, government ownership is argued to cure market failures. When the social cost of monopoly power becomes significant, government ownership is assumed to restore the purchasing power of the citizens (Atkinson & Stiglitz 1980). Furthermore government ownership in industries which is of strategic importance for the nation (ex. natural resources, utilities and infrastructure) could also be argued to benefit the society as a whole (Grout & Stevens 2003). However, this argumentation does not rely on the isolated performance of the individual firm as success criteria, but rather on the total benefit for society. Nevertheless some studies do find that government ownership expose higher firm efficiency than private ownership in some industries including electric utilities, refuse handling and water. A possible argument in favor of state ownership leading to higher firm performance is that active monitoring will decrease agency costs. A recent study of more than 1000 Chinese listed firms find a positive relationship between state ownership and firm performance, but it is in question whether the result is due to higher efficiency or higher power in the Chinese business environment which does not necessary imply higher efficiency (Le & Buck 2011).

On the negative side, however, state ownership is, in most cases, regarded as inefficient and bureaucratic. As Stulz (1988) and Shleifer & Vishny (1994) stated, the state-owned enterprises allow a big divergence between the control right and cash flow right of the decision maker. While the control right is concentrated to some bureaucrats or politicians, there is no significant cash flow since all profits generated are allocated back to the firm itself or to the national budget. The divergence and bureaucracy lead to a lack of incentives for decision-makers to pursue profit maximization, furthermore, they also increase information asymmetry in the decision making process. Thus, Meffinsson

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et al. (1994) concluded that government ownership is highly inefficient comparing with private ownership, even in pursuing public interests. Furthermore, the dual-role argument is also widely applied. Government plays the dual roles of regulator and owner, thus its preferences regarding company strategy would involve a trade-off between the pursuit of shareholder value and other goals (Hill & Jones 1992).

It should be noted that the quality of government owned firms may largely depend on the “quality” of the government itself as well as other factors such as path dependency, which vary greatly from country to country (La Porta et al 1999).

2.4 National Effect and Evidence From Scandinavia
Widely dispersed ownership is prevailing in North America, the UK and other advanced economies that use common law and have a high degree of investor protection (La Porta et al 1999). However, this is not necessary the case in most other countries. Nationality may influence ownership structure and its effect on corporate performance (Roe 1993). In the following parts, the national effect is first reviewed, followed by a review of studies describing the characteristics of Scandinavian ownership structure.

2.4.1 National Effect Overview
Roe (1993) compares the corporate ownership structures in Germany, Japan and the United States and find significant differences when comparing same industry and size classes. One should assume that the ownership structure adopted to reduce the cost of organization in similar industries with similar firm sizes would also be similar. Since this is not the case in reality, Roe finds that differing political histories, cultures and the paths of economics and financial markets development also matter when explaining the difference in ownership structures.

In a review of economic literature on institutions and national differences Pedersen & Thomsen (1997) find that formal institutions shapes the informal rules of the game in the long run. The capital market, which is determined by a nation’s political, cultural and economic factors, influences the ownership structure of firms. They identify four positive relations: 1) between the ownership dispersion and the stock market size and liquidity, 2) between the extent of dominant minority ownership and the concentration of the banking sector, 3) between the degree of private (family and individuals) majority ownership and the existence of dual class shares and 4) between the openness of the
economy to international capital and the degree of foreign ownership. They also find that a national effect on ownership structure does exist in Europe.

La Porta et al (1999) identify the 20 largest public firms in 26 wealthy economies to test the ownership patterns in these countries. They divide the 26 countries according to good and poor shareholder protection and investigate the effect on ownership concentration and owner identities. They find that the existence of good shareholder protection coexists with low ownership concentration and, in turn, poor shareholder protection coexists with high ownership concentration and the dominance of family and government ownership.

2.4.2 Ownership Structure in Scandinavia

Ownership Concentration

Eklund (2007) find that the ownership concentration is very high among firms in Scandinavia\(^{21}\). The average Scandinavian ownership share of the largest shareholder is 23.5\% (44.8\% for top five). Moreover, Scandinavian countries have high divergence between capital rights and voting rights. On average, the divergence ratio (voting right divided by capital right) for the largest shareholder is 1.25 (1.16 for top five).

| Table 1 Mean and St.Div of the Scandinavian Average and Four Countries |
|-------------------|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|
|                  | All Firms        | Scandinavia     | Denmark          | Finland          | Norway           | Sweden           |
| Capital Share One Owner, CR1 | 23.5 16.7 | 23.9 14.4 | 20.3 15.6 | 27.8 16.6 | 22.9 14.9 |
| Capital Share Five Owners, CR5 | 47.4 19.9 | 37.1 17.6 | 37.1 18.1 | 43.9 21.4 | 44.9 18.2 |
| Vote Rights One Owner, VR1 | 29.4 19.7 | na na | 23.8 19.3 | 29 16.7 | 32.5 20.7 |
| Vote Rights Five Owners, VR5 | 52 22.6 | na na | 43 22.9 | 56.5 21.8 | 55.8 21.6 |

<table>
<thead>
<tr>
<th>Vote-Differentiated Firms</th>
<th>All Firms</th>
<th>Scandinavia</th>
<th>Denmark</th>
<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Share One Owner, CR1</td>
<td>23.5 16.7</td>
<td>23.9 14.4</td>
<td>20.3 15.6</td>
<td>27.8 16.6</td>
<td>22.9 14.9</td>
<td></td>
</tr>
<tr>
<td>Capital Share Five Owners, CR5</td>
<td>47.4 19.9</td>
<td>37.1 17.6</td>
<td>37.1 18.1</td>
<td>43.9 21.4</td>
<td>44.9 18.2</td>
<td></td>
</tr>
<tr>
<td>Vote Rights One Owner, VR1</td>
<td>29.4 19.7</td>
<td>na na</td>
<td>23.8 19.3</td>
<td>29 16.7</td>
<td>32.5 20.7</td>
<td></td>
</tr>
<tr>
<td>Vote Rights Five Owners, VR5</td>
<td>52 22.6</td>
<td>na na</td>
<td>43 22.9</td>
<td>56.5 21.8</td>
<td>55.8 21.6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Firms With One-Share-One-Vote</th>
<th>All Firms</th>
<th>Scandinavia</th>
<th>Denmark</th>
<th>Finland</th>
<th>Norway</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Share One Owner, CR1</td>
<td>23.2 16.7</td>
<td>20.3 16.7</td>
<td>28.4 17.3</td>
<td>20.7 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Share Five Owners, CR5</td>
<td>42.9 19.9</td>
<td>36.4 19.3</td>
<td>53.9 20.5</td>
<td>40.7 17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote Rights One Owner, VR1</td>
<td>23.2 16.7</td>
<td>20.3 16.7</td>
<td>28.4 17.3</td>
<td>20.7 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote Rights Five Owners, VR5</td>
<td>42.9 19.9</td>
<td>36.4 19.3</td>
<td>53.9 20.5</td>
<td>40.7 17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: (Eklund 2007)

Regarding firm performance Eklund (2007) finds that ownership concentration has a positive effect on firm performance (measured by marginal Tobins Q), and, furthermore, that high divergence ratio has a negative effect on firm performance.

\(^{21}\) Eklund (2007) ownership concentration is measured by the capital share and voting right of the largest single shareholder and the five largest shareholders (CR1, VR1, CR5, VR5).
Faccio & Lang (2002) state that the Scandinavian countries including Denmark, Sweden, Finland and Norway, resemble most of the continental European countries by using control mechanisms (dual class equity, pyramiding and cross holding) to divert voting right from capital right. Comparing with Europe as a whole the divergence between voting right and capital right is wider in Scandinavia. La Porta et al (1999) provide more evidence of this as they calculate the minimum percent of the equity required to control 20% of the voting rights and find that the four Scandinavian countries have higher divergence than the others.

Table 3 Usage of Control Mechanisms in Scandinavia

<table>
<thead>
<tr>
<th>Country</th>
<th>Usage of dual-class shares</th>
<th>Usage of pyramid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>29%</td>
<td>17%</td>
</tr>
<tr>
<td>Finland</td>
<td>44%</td>
<td>7%</td>
</tr>
<tr>
<td>Norway</td>
<td>11%</td>
<td>33%</td>
</tr>
<tr>
<td>Sweden</td>
<td>62%</td>
<td>27%</td>
</tr>
<tr>
<td>European average</td>
<td>24%</td>
<td>20%</td>
</tr>
</tbody>
</table>


To conclude, the Scandinavian countries are characterized by high ownership concentration and high divergence between voting right and capital right.

Owner Identity in Scandinavia

Based on a sample of the 20 largest and 10 medium sized companies in 27 countries La Porta et al (1999) divide owner identities into six groups: widely held, family, state, widely held financial, widely held corporation and miscellaneous. An overview of owner identities in the four Scandinavian Countries is provided in below table 4 which also includes the United States, United Kingdom and Germany for comparison.

Table 2 Equity Ownership for 20% of the Control Right

<table>
<thead>
<tr>
<th>Country</th>
<th>Equity Ownership for 20% of the control right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>14.87%</td>
</tr>
<tr>
<td>Finland</td>
<td>15.75%</td>
</tr>
<tr>
<td>Norway</td>
<td>18.15%</td>
</tr>
<tr>
<td>Sweden</td>
<td>12.63%</td>
</tr>
<tr>
<td>United States</td>
<td>19.19%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>20.00%</td>
</tr>
<tr>
<td>Germany</td>
<td>18.61%</td>
</tr>
<tr>
<td>High antidirector avg.</td>
<td>19.65%</td>
</tr>
<tr>
<td>Low antidirector avg.</td>
<td>17.69%</td>
</tr>
<tr>
<td>Sample average</td>
<td>18.56%</td>
</tr>
</tbody>
</table>

Source: La Porta et al. (1999)

22 Widely held financial and widely held corporation implies that the majority shareholder is in itself widely held (financial and non-financial corporations). In other words: a type of indirect ownership disbursement.

23 See Appendix II for the detailed table.
As it appears the prevailing owner identities in Scandinavia are significantly different from the ones in United States, United Kingdom and Germany. While these three countries have ‘widely held’ as dominating ownership type, ‘family’, ‘state’, ‘widely held financial’ and ‘miscellaneous’ are more common in Denmark, Finland, Norway and Sweden. Since ‘miscellaneous’ along with ‘widely held financial’ include institutions such as pension funds, mutual funds and some foundations, the typical Scandinavian owner identities can be described as: high ownership concentration of families, state and institutions.

Table 4 Owner Identity Allocation Comparison at 10% Cutoff

<table>
<thead>
<tr>
<th>Country</th>
<th>Widely Held</th>
<th>Family</th>
<th>State</th>
<th>Widely Held Financial</th>
<th>Widely Held Corporation</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>10%</td>
<td>35%</td>
<td>20%</td>
<td>5%</td>
<td>0%</td>
<td>30%</td>
</tr>
<tr>
<td>Finland</td>
<td>15%</td>
<td>10%</td>
<td>35%</td>
<td>25%</td>
<td>0%</td>
<td>15%</td>
</tr>
<tr>
<td>Norway</td>
<td>5%</td>
<td>25%</td>
<td>40%</td>
<td>10%</td>
<td>0%</td>
<td>20%</td>
</tr>
<tr>
<td>Sweden</td>
<td>0%</td>
<td>55%</td>
<td>10%</td>
<td>30%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>United States</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>90%</td>
<td>5%</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Germany</td>
<td>35%</td>
<td>10%</td>
<td>30%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Sample Average</td>
<td>24%</td>
<td>35%</td>
<td>20%</td>
<td>8%</td>
<td>4%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: La Porta et al. (1999)

A Special Owner Identity: Foundation

Legally, there are two kinds of foundations according to the Danish law: industrial foundations and family foundations. The difference lies in the importance of the foundation to the business activities (Thomsen & Rose 2004). A family foundation resembles a voting trust of the family owner and primarily seeks the interest for this family in terms of cash flow right, whereas an industrial foundation is defined in the following way: ‘a legal entity without owners, in many cases created to administer a large ownership stake in a particular company, very often donated by the company’s founder or his or her family. The foundation is a non-profit entity run by a self-selective board, constrained only by law and its charter. Normally, the charter stipulates that the foundation should serve some broadly defined social purpose, e.g. to act in the company’s best interests and use the excess cash revenue for charitable purposes.’ (Rose & Mejer 2003, p 337). Industrial foundations exist only in the North European countries and are very popular in Denmark. According to Thomsen (1999), 19 out of the 100 largest firms in Denmark were controlled by industrial foundations.
The foundation exists in most cases for tax reduction purposes (Thomsen 1999, Thomsen & Rose 2004). The high taxes when passing the family control to the next generation (including inheritance and capital gains taxation), are avoided by donating the family’s shares to a foundation. Family foundation ownership is also considered as a special kind of family control pattern because family members are usually members of the foundation board, which then have a large influence on the firm’s operation and profit distribution.

Considering the traditional agency theory, foundation (not controlled by the founding family) ownership seems to fail in monitoring the managers and would end up with big principal-agent problems because it has no principal to monitor the agent (both foundation board and firm managers). However, in the research of Thomsen & Rose (2004), the foundation-owned companies listed in the Copenhagen Stock Exchange are compared with the other firms in terms of risk-adjusted stock return, accounting returns and Tobin’s Q. The paper found that the foundation owned companies outperformed in risk adjusted stock return comparing with the other firms. Thomsen and Rose explain this result as the foundation managers’ concern for effecting their reputation and losing their jobs, furthermore, the foundation ownership limits the contested takeover pressure.

Many large Scandinavian firms are controlled by the foundation, e.g. A.P. Moller, Carlsberg, LEGO, Novo Nordisk, Stora Enso OYJ, Marine Harvest AS, SKF AB, etc. These companies occupy a high or even monopoly status in the industries they belong to, more investigations are needed to explore whether their ownership structure matters in their performance.

**Sub-Conclusion**

The literature review was initiated with a section on transaction cost theory and introduced some fundamental challenges of transactions and economic organization such as market failure and firm inefficiency due to incomplete contracts and opportunistic behavior.

In a corporate governance context such challenges between principal and agent arises due to conflicting incentives, which is why there is a need for governance mechanisms. Such agency problems include adverse selection, hold-up and moral hazard. The
adverse selection problem exists ex ante and implies an increased risk of hiring the less qualified managers due to information asymmetry of quality. In the context of this thesis the holdup problem implies that the principal is reluctant to sanction the agent’s opportunistic behavior, not because of lack of information, but because the cost of doing so is high due to the high cost. Moral hazard implies that the agent is able to pursue his own interests at the cost of the principle due to information asymmetry of action. This may include excessive salaries, excessive risk taking, aggressive and unprofitable growth strategies or even embezzlement. These challenges all represent agency costs which may be reduced through incentive alignment and effective supervision facilitated by an ‘optimal’ ownership structure.

The review continued with a section on different ownership structures and their impact on corporate performance, within two dimension of ownership structure, namely ownership concentration and owner identity. Previous studies contain conflicting findings, as well as arguments, as to what owner identity and ownership concentration results in the best financial performance (or lowest risk). Studies about four types of owner identities are reviewed: dispersed, family, institution and government.

The review then turned its focus to national differences and subsequently the characteristics of Scandinavia. National difference in ownership structure is explained by differing historical, economic and financial market development. Scandinavia is characterized by high ownership concentration and also high divergence between capital rights and voting rights, comparing with other countries. Furthermore Scandinavian firms are dominated by family, state, and institution owners as opposed to the US and UK dominated by dispersed ownership. A unique feature of Scandinavian companies is the relative importance of foundation ownership which is found to outperform other owner identities.

24 ‘optimal’: What is optimal may depend on many different factors such as industry, country and size class which are all influenced by the nature of the given institutional environment.
3 Data and Methodology
This part specifies the methodological review, research method, variable selection, hypotheses formulation and data generation. The first section focuses on the reviews about the definitions and measurement of the related concepts such as financial performance, ownership structure and the relationship models. The second specifies the research methods for the thesis and introduces simple statistics and regression analysis. The third section introduces the variable selection for performance, ownership structure and control variables. The fourth section formulates testable hypotheses for the empirical tests and final section focuses on the generation of date. It introduces the source restrictions and of the data.

3.1 Methodological Review

3.1.1 Firm Performance
Researchers divided the financial performance ratios into different context according to their characters. Demsetz & Villalonga (2001) divided the measures according to the time perspectives and the measuring identity: the accounting profit is backward-looking and are calculated by accountants under the constraints of standards; Tobin’s q, on the other hand, is forward-looking and are caught by the community of investors under the constraints of markets.

In this paper, the performance measures are divided into four groups to conclude different perspectives of the firm performance: valuation, profitability, growth and risk.

Valuation Measure
There are fundamentally two different definitions in the valuation measure: Tobin’s Q and Marginal q. While Tobin’s Q measures the over- and undervaluation of the whole firm, Marginal Q only measures the valuation of a project/investment.

Tobin’s Q
Tobin’s Q was first introduced as the ratio of the market value to replacement values of a firm’s assets (Tobin 1969). It combines both the market information and accounting information to measure the firm’s reproduction ability25.

25 Tobin’s Q is also applied in the studies of Monsen, Chiu & Cooley (1968), Morck, Shleifer & Vishny (1988), McConnell & Servaes (1990), Hermalin & Weisbach (1991), Loderer & Martin (1997), Barnhart &
The calculation of the Tobin’s Q is very complex because it includes all the assets a firm owns. This calculation issue is more complicated for continental European firms because the accounting standards they apply allow companies to only report historic purchase value of the firm instead of the current value, thus the replacement value of the assets are not listed in the financial statements.

To cope with this practical problem, two approaches are introduced basically by Lindenberg & Ross (1981) and Chung & Pruitt (1994), respectively. Lindenberg & Ross (1981) use Tobin’s Q to measure the monopoly rents of the firm. They use the sum of market value of outstanding debt, common stock and preferred stock to represent the market value of the firm, and the sum of replacement values of the fixed assets and inventories and the book values of the rest of the assets to represent the total replacement costs of the production capacity. This method required high data input and sophisticated programming, however, it produce high accurate estimates (DaDalt et al 2003).

The other approach was based on the formula supported by Chung & Pruitt (1994). Their Tobin’s Q calculation assumes that the replacement costs of the plant, equipment and inventories are equal with their book values. And it proxy the market value of the debt as the book value of long term debt plus the book value of short term liabilities net the book value of short term assets. Their method is for approximating Tobin’s Q that only requires basic financial and accounting information. The regressions showed that this simplified formula can explain at least 96.6% of the variability of Tobin’s Q estimated by Lindenberg & Ross (1981). Thus the simply technique is preferred unless there are extremely precise cases (DaDalt et al 2003).

**Marginal Q**

Hayashi (1982) defined the marginal q to be the ‘the ratio of the market value of an additional unit of capital to its replacement cost. It is different from the average q when monopoly rent and other factors such as tax and depreciation allowances have function. Later Mueller & Reardon (1993) and Mueller (2003) argued that marginal q is an appraisement of the marginal return on capital.

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26 Detailed description of the measurement is in Appendix III.
The marginal q has a straightforward interpretation. When the return of the capital is less than the capital cost \((r_c < i_c)\), \(q_m\) is lower than 1, it implies that the managers are over-investing; conversely, when the return of investment is higher than capital cost \((r_c > i_c)\), \(q_m\) is bigger than 1, it implies that the managers are under-investing.

Gugler & Yurtoglu (2003), Bjuggren et al (2007) and Eklund (2007) applied marginal q as the measure of the firm performance in their studies as they believe that marginal q measures the marginal performance and thus is more appropriate in testing the managerial discretion.

Table 5 Measurement of Firm Valuation

<table>
<thead>
<tr>
<th>Name</th>
<th>Short Defination</th>
<th>Representative studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin’s q</td>
<td>Q  The ratio between the market value and replacement value of the same physical asset</td>
<td>Demsetz &amp; Villalonga 2001, Gugler &amp; Yurtoglu 2003, Bjuggren &amp; Wiberg 2008</td>
</tr>
<tr>
<td>Marginal q</td>
<td>MQ  The ratio of the market value of an additional unit of capital to its replacement cost</td>
<td>Gugler &amp; Yurtoglu 2003, Bjuggren et al. 2007, Eklund 2007</td>
</tr>
</tbody>
</table>

Source: Own make

*Profitability Measure*

Profitability measures are the most frequently applied measures in the ownership literatures in estimating the financial performance of the firm\(^{27}\). The profitability measures are divided into marketing related and accounting related according to their data resources.

*Market Related*

Cumulated abnormal return (CAR) calculates the potential abnormal stock returns related to a specific event (Mathiesen 2002). The stock returns estimated by the CAPM model are compared to the actual stock returns, and the excesses (abnormal returns) are summed up to be CAR. The CAR measure is normally used in takeover research because it is only useful to test the stock reaction to an unexpected event. The ownership literatures that applied CAR include Slovin & Sushka (1993), Loderer & Martin (1997), Eckbo & Smith (1998), etc.

Market returns (MR) measures the growth in stock value over a specific period under the assumption that dividends are reinvested. It measures the shareholder income in forms of both dividend and capital gains.

**Accounting Related**

One big advantage of the accounting related profitability ratio is that they do not require the firm to be listed. Thus they are suitable for small and private firms. Furthermore, they are not influenced by the market expectation.

Return on equity (ROE) and Return on assets (ROA) are the most commonly used measures in the former ownership literatures. The ROE measures the return on the investment of the equity owners; and ROA measures the return of both equity holders and debt holders. There are many studies that applied ROA as measurement\(^{28}\). ROA in most of the cases have the same function as the ROE in measuring the firm performance. Some studies that applied both ROA and ROE found similar coefficients for both measure\(^{29}\). However, ROE is a more sensitive measure in the ownership research, as Chaganti & Damanpour (1991) found that ROA was insignificant and ROE to be highly significant in his research. The ROE is thus more popular to measure the effect of equity ownership on performance\(^{30}\).

Return on investment (ROI) and Earnings per share (EPS) are not used frequently in the former literatures. Studies of Schellenger et al (1989) and Gugler et al (2004a) applied ROI as the firm performance measure, while studies of Kesner (1987) and Kim et al (1988) applied EPS as the measure.

In these definitions, one important issue is to identify the earnings. The income of the firm could be divided into three kinds according to their characters: The first part is the income from ordinary operating activities such as the selling of the firm’s main product, those are frequent and usual events; The second part is the income from extraordinary


activities, such as the restructuring activities or changes in accounting principles, those
are unusual events; The **third** part is the income from non-operating events, such as the
rents and the return on non-operating financial assets which are arbitrary and unusual
events. The management has effect only on the first kind of income, while the other two
kinds are one-time effects that will reduce the comparability among companies. Thus
only the income from ordinary operating activities should be included when calculating
profitability.

Table 6 Measurement of Firm Profitability

<table>
<thead>
<tr>
<th>Name</th>
<th>Short Definition</th>
<th>Representative studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market-related</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumulated abnormal return</td>
<td>CAR Sum of the differences between the expected returns on a stock and the actual returns</td>
<td>Slovin &amp; Sushka 1993, Loderer &amp; Martin 1997</td>
</tr>
<tr>
<td>Market returns</td>
<td>MR The returns that the investors generate out of the stock market</td>
<td>Chaganti &amp; Damanpour 1991</td>
</tr>
<tr>
<td><strong>Accounting-Related</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on equity</td>
<td>ROE The rate of return on the ownership interest (shareholders’ equity) of the common stock owners</td>
<td>Demsetz &amp; Villalonga 2001, Gugler et al. 2004a</td>
</tr>
<tr>
<td>Return on assets</td>
<td>ROA A financial ratio that shows the percentage of profit a company earns in relation to its overall resources</td>
<td>Denis &amp; Denis 1994, Lehmann &amp; Weigand 2000</td>
</tr>
<tr>
<td>Return on investment</td>
<td>ROI A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments</td>
<td>Schellenger et al. 1989; Gugler et al. 2004</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>EPS The portion of a company’s profit allocated to each outstanding share of common stock</td>
<td>Kesner 1987, Kim et al. 1988</td>
</tr>
</tbody>
</table>

Source: own make

**Growth Measure**

Growth is not frequently used as performance measure in the ownership structure
literature. In most of cases, it is include as a control variable (Leech & Leahy 1991).
There are two most frequently mentioned ratios in the growth measurement: growth in asset and growth in sales.

Growth in asset measures the change of the total assets, which is the gain/loss of investor (debt holder and equity holder).
Growth in sales is the growth rate in the revenue (Bracker et al 1988). In some cases, the total sale is replaced by the income from ordinary operating activities to increase compatibility among the firms.

### Table 7 Measurement of Firm Growth

<table>
<thead>
<tr>
<th>Name</th>
<th>Short</th>
<th>Definition</th>
<th>Representative studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth in asset</td>
<td>GA</td>
<td>Rate of increase in asset value</td>
<td>Radice 1971, Holl 1977</td>
</tr>
<tr>
<td>Growth in sales</td>
<td>GS</td>
<td>The increase in sales over a specific period of time</td>
<td>Bracker, Keats &amp; Pearson 1988</td>
</tr>
</tbody>
</table>

Source: Own make

*Risk Measure*

The risk measurements are various, among the pure risk measurement, two types would be introduced. One type is the Beta from capital asset pricing model (CAPM) that only measures non-divestible risk; the other one type is the standard deviation of the profitability that measures the total risk of one firm. Apart from this, risk could combine with other performance measures. To illustrate, combining risk with valuation to measure the Value-at-Risk (VAT) is getting popular in firm financial management. However, the combined risk measures are not included in this review.

### Table 8 Measurement of Firm Risk

<table>
<thead>
<tr>
<th>Name</th>
<th>Short</th>
<th>Definition</th>
<th>Representative studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systematic risk β</td>
<td>Std.dev</td>
<td>A measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole</td>
<td>Fama &amp; Miller 1972</td>
</tr>
<tr>
<td>Total risk</td>
<td>Std.dev</td>
<td>A measure of the dispersion of a set of data from its mean.</td>
<td>Holl 1977</td>
</tr>
</tbody>
</table>

Source: Own make

Beta measures the systematic risk of the firm and it indexes the cost of capital. It is calculated by Fama & Miller (1972) in the CAPM model. The calculation is based on the assumptions that 1) market is perfect (no taxes or transaction costs); 2) all investors are single period risk-averse, and they choose the investment solely base on mean and variance of the firms return; 3) all investors are homogeneous in the view of the probability distribution of all assets’ returns; 4) all investors can borrow and lend at a given riskless rate of interest. Even though not all of these assumptions are satisfied in the reality, beta ratio provides relatively adequate information of the asset’s risk comparing to the ‘market portfolio’.
The standard deviation of the profitability measures the total risk of an asset (Holl 1977). In this sense, risk is defined as the probability of the actual return on an asset deviating from the historic mean level. This ratio is used to reflect the fluctuations in the firm’s profitability (Demsetz & Lehn 1985).

### 3.1.2 Ownership Structure

Ownership structure is a multidimensional concept that constitutes a large spectrum of measures because of its various aspects and dimensions. Two major dimensions of the ownership structure are ownership concentration and owner identities (Leech & Leahy 1991). And in the ownership concentration dimension, the divergence between capital right and voting right is included.

**Ownership Concentration**

The ownership concentration provides quantitative information of ownership, representing the concentration of the capital right of the largest shareholder(s). Measures of ownership concentration could be divided into non-metric and metric types. In the non-metric type, ownership concentration is normally measured by the share size/value of the largest shareholder(s), or by the chance of winning majority vote. Firms are divided into few classes according to thresholds or split conditions. For example, Larner (1966) and Radice (1971) divided firms into owner-controlled (OC) and management-controlled (MC) with one threshold. Radice defined the threshold at 15% while Larner defined the threshold at 10%.

<table>
<thead>
<tr>
<th>Measure type</th>
<th>Examples</th>
<th>Representative studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-metric</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>By share size/value</td>
<td>Separation of concentrated and dispersed firms with one threshold</td>
<td>Berle &amp; Means 1932, Chevalier 1969, Holl 1977</td>
</tr>
<tr>
<td></td>
<td>Separation of concentrated and dispersed firms with more than one thresholds</td>
<td>Radice 1971, Sørensen 1974</td>
</tr>
<tr>
<td></td>
<td>Separation of concentrated and dispersed firms with a split condition</td>
<td>Elliott 1972, Boudreaux 1973, Palmer 1973</td>
</tr>
<tr>
<td>By chance of winning majority vote</td>
<td>Separation of concentrated and dispersed firms with probability threshold</td>
<td>Cubbin &amp; leech 1983, Leech &amp; Leahy 1991</td>
</tr>
<tr>
<td><strong>Metric</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ownership distribution</td>
<td>Herfindahl index</td>
<td>Demsetz &amp; Lehn 1985</td>
</tr>
<tr>
<td>Ownership ratios</td>
<td>Largest shareholder vs. Group of largest shareholders</td>
<td>Demsetz &amp; Lehn 1985, Pedersen &amp; Thomsen 1999</td>
</tr>
<tr>
<td></td>
<td>Voting right vs. Capital right</td>
<td>Mørck et al. 1988, Pedersen &amp; Thomsen 1999</td>
</tr>
</tbody>
</table>

Source: Own make

The Effect of Ownership Structure on Firm Performance
In the metric type, the ownership allocation is also brought into consideration. Herfindahl index measures the distribution of the ownership and is quite complex to calculate; ownership ratios provide comparisons in different perspectives. The most popular two are: the comparison of capital/voting right between the largest shareholder and a group of shareholders; the comparison between capital right and voting right of the largest shareholder(s)

**Divergence of Voting Right and Capital Right**

The ownership structure become complex when the voting right of the shareholder divergent from his capital right. Voting right measures the degree of control by the shareholder under the complex ownership structure, while capital right measures the cash flow entitled to the shareholder through the shares he actually owns. The divergence leads to a special pattern of ownership structure: ‘controlling minority structure’, as it ‘permits a shareholder to control a firm while holding only a fraction of its equity’.

Three mechanisms are normally used by shareholders to gain control at a low involvement of the shareholdings. They are crossholding, pyramiding and dual-class equity (Claessens et al 2000, Faccio & Lang 2002).

These control mechanisms enable the controlling shareholder or group to maintain a complete lock on the control of a company while holding less than a majority of the cash flow rights associated with its equity (Faccio & Lang 2002), thus the incentive of the controlling shareholder(s) to expropriate the firm value is enhanced. In Eklund (2007) and Bjuggren et al (2007)’s studies, the existence of dual-class equity has negative effect on firm performance.

In the calculation of the capital right and voting right, the methodology developed by La Porta et al (1999) is widely accepted. The capital right size is measured as the product of the share percentage of the control chain and the voting right size is measured as the lowest percentage in the control chain. This methodology was followed by many other studies. Edwards et al. (1999) calculated the two rights in a different method: capital right is measured as the fraction of total dividend paid to a shareholder; and the voting

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32 For more information of control mechanisms, please refer to appendix I
right is measured as the votes exercised by the shareholder at the last annual shareholding meeting.

The divergence is calculated as the ratio of capital right size to voting right size or the opposite. Faccio & Lang (2002) find out that among the 13 western European countries, the average ratio of capital to voting right is 0.868. While Switzerland (0.740), Italy (0.743) and Norway (0.776) have the largest divergence, Spain (0.941), Portugal (0.924) and France (0.930) has the smallest\textsuperscript{34}.

**Owner Identity**

Table 10 Owner Identity Measures

<table>
<thead>
<tr>
<th>Measure type</th>
<th>Examples</th>
<th>Representative studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Metric</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of the shareholder</td>
<td>Type of the controlling shareholder</td>
<td>Leech &amp; Leahy 1991</td>
</tr>
<tr>
<td></td>
<td>Type of the controlling shareholder</td>
<td>Nyman &amp; Silberston 1978</td>
</tr>
<tr>
<td></td>
<td>category</td>
<td></td>
</tr>
<tr>
<td><strong>Metric</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiation of owner type</td>
<td>Type A Owner vs. Type B Owner</td>
<td>Demsetz &amp; Lehn 1985,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jarrell &amp; Poulsen 1987</td>
</tr>
</tbody>
</table>

Source: Own make

The owner identities provide qualitative information about the type of the shareholder. It is important because different shareholder types have different incentives, control means and utility functions. As a consequence, the type of the owner would influence the firm’s strategy making, policy implementation and performance. Normally the shareholders could be divided into management insiders (with sub division of managers and boarders), families, institutional investors (financial and non-financial institutions), and government organizations and others.

In the non-metric measure, dummy variables are widely applied in delineating the firm’s owner identity. Two alternatives are introduced in defining the owner identity. The first alternative is by defining the identity of the largest shareholder. Leech & Leahy (1991) defined the leading shareholdings type by the percentage of voting shares held by a single shareholder. He categorized the owners into four groups: company interest group that represent a single individual, family or group of linked individuals, company pension fund or charity; bank or nominees with beneficiaries unknown; insurance company and non-financial company. The other alternative is by calculating

\textsuperscript{34} See appendix IV
the total shares owned by one type of the owners\textsuperscript{35}. Nyman & Silberston (1978) defined eight types of identity according to the percentage of voting shares held by each owner identity. The eight types of holder are: another industrial company, financial institution, directors and their families, charitable trust, government or quasi-Government agency, mixed control type, other control type and the type that is not classifiable due to lack of information.

The metric measure among the owner types is not widely applied. Demsetz & Lehn (1985) and Jarrell & Poulsen (1987) compared the ownership between insider and institutional investors.

3.1.3 Relationship Model

\textit{Linearity and Non-linearity}

In the ownership literatures, the assumed relation between ownership structure and firm performance could be divided into two kinds: linear\textsuperscript{36} vs. non-linear\textsuperscript{37}.

The linearity assumption is simple to apply and is suitable for both small and big samples. In the study of Pedersen & Thomsen (1999), 100 largest companies in 12 European countries are selected to test the relation between ownership concentration and accounting profitability under the linearity assumption, an insignificant effect is found to exist. Another study of Hill & Snell (1989) applied the same model on the data from United States and found positive effect of ownership concentration on the productivity of the firm. The difference between different findings could be partly explained by the data source and sample selection.

The non-linearity assumption is popular in the insider ownership literature and for large samples. One most cited study is Morck et al (1988), in which it set two turning points at 5% and 25% and run the regression in three areas separately. This method is applied also by Cho (1998) while some other studies set only one turning point and assume a bell-shaped relation (McConnell & Servaes 1990, Hermalin & Weisbach 1991, McConnell & Servaes 1995, Short 1994). The turning points applied by these studies vary according to the researcher’s own estimation and sample characteristic. Another


\textsuperscript{36} Studies of Radice (1971), McEachern (1975), Stano (1976), Steer & Cable (1978), Thon & Poensgen (1979) and Pedersen & Thomsen (1999) assume linear model.


The Effect of Ownership Structure on Firm Performance
widely applied method to test non-linear relationship between ownership structure and firm performance is to include squared variable values in regressions and investigate curvilinear relationship.

**Exogenous and Endogenous**

Another difference occurs in modeling in the ownership literature is the way to treat the nature of the ownership structure: exogenous vs. endogenous.

Exogenous studies consider ownership structure as an exogenous variable, based on the path-dependence assumption. Thus, the ownership structure is assumed to be stable. Papers of Morck et al (1988), McConnell & Servaes (1990), Shleifer & Vishny (1986) and Leech & Leahy (1991) test the relationship between firm value and ownership under the exogenous assumption. This kind of studies uses transversal analyses and ordinary least square regression (OLS) techniques.

Endogenous studies consider ownership structure as an endogenous variable, under the assumption that the shareholders could alter the ownership structure freely according to their own investment preference. Papers of Demsetz & Lehn (1985), Cho (1998), Hermalin & Weisbach (1989) and Loderer & Martin (1997) test the relation under the endogenous assumption. This kind of studies use generalized method of moments with a panel of data to remove the simultaneous effect of performance on ownership structure and to increase the adequacy of the empirical test. The study of Demsetz & Lehn (1985) is one of the first studies to apply endogenous methodology in ownership literature and they find insignificant relationship between ownership structure and firm performance with US sample.

In the study of Agrawal & Knoeber (1996), different models are applied to test seven governance mechanisms. When the mechanisms are considered exogenous, four of them (insider holdings, board independence, leverage and corporate control activity) are significant; however, when allowing for two-way causality and consider the mechanisms endogenous, only one of them (board independence) is significant.

### 3.2 Research Method

This thesis combines simple statistics analysis and regression analysis in research. In the simple statistics analysis, firms and their average performance measures are allocated
according to owner identity and nationality. This is to show the predominant owner identity in each country and compare their performance across the nations.

The regression analysis conducts empirical tests. It adopts the linearity, exogenous assumptions about the effect of ownership structure on firm. OLS regression is conducted with three ownership concentration variables and four owner identity dummy variables as explanatory variables and eight control variables. The four explained variables are the measure of firm valuation, profitability, growth and risk.

To compare among the effect of different variables and increase the adequate of the test, three models are conducted in the regression analysis:

Model 1: \[ \text{perf} = \beta_0 + \beta_1 \text{ownership concentration} + \beta_2 \text{controlling variables} \]

Model 2: \[ \text{perf} = \beta_1 \text{ownership concentration} + \beta_2 \text{controlling variables} \]

Model 3: \[ \text{perf} = \beta_1 \text{ownership concentration} + \beta_2 \text{owner identity} + \beta_3 \text{controlling variables} \]

Model 1 is with intercept, and ownership concentration variables and controlling variables are combined to explain the dependent performance variables. In the model 2, intercept is excluded to increase the OLS explanation ability. In model 3, ownership concentration variables, owner identity dummy variables and controlling variables are combined in the regression while intercept is still excluded to focus only on these explaining variables.

3.3 Variables Selection
Variables could be divided into four parts: the first part is the variables related to the performance; the second part is the variables related to the ownership structure; the third part is the control variables that may have effect on performance; and the forth part is a concluding description of all the variables.

3.3.1 Performance Variables
Tobin’s Q is used to measure the valuation of the firm. The simplified formula by Chung & Pruitt (1994) is used because of its easy calculation and high explanation power. The liquidation value of preferred stock is replaced by its stock price in this thesis. So the formula is:

\[
Q_{CP} = \frac{MVCS_t + PPS_t + BVLT_A_t + BVSTL_t - BVSTA_t}{BVTA_t}
\]
Where

\[ MVCS_t = \text{year-end market value of common stock} \]
\[ PPS_t = \text{the year-end price of the preferred stock} \]
\[ BVLTA_t = \text{year-end book value of the firm’s long-term assets} \]
\[ BVSTL_t = \text{year-end book value of the short term liabilities} \]
\[ BVSTA_t = \text{year-end book value of the short term assets} \]
\[ BVTA_t = \text{year-end book value of the total assets of the firm} \]

ROE is used as the profitability measure. Because of the difference in the taxation level in different nations, the income before the taxes is used in the calculation.

Growth in asset is used to measure the firm’s growth. Growth in asset is calculated as the growth rate in the year-end book value of total assets.

Beta is used for risk measure. It is calculated by the Capital Asset Pricing Model (CAPM) as the sensitivity of the expected excess asset returns to the expected excess market returns.

### 3.3.2 Ownership Structure Variables

In the Nordic countries, there is a big divergence between capital right and voting right. Both the direct and indirect ownership influence the capabilities and incentives of the principals to monitor agents and influence the firm’s performance. To illustrate the Scandinavian ownership structure, some typical variables are used.

**VR\_1**: Voting right of the largest shareholder (in percent) measures the controlling power of the largest shareholder.

Voting right of the largest shareholder (VR\_1) is used to represent power of the block holder because the Scandinavian countries are significantly higher concentrated, where the largest shareholder has significant control power comparing with the rest of the shareholders (Dyck & Zingales 2004). VR\_1 is assumed to have positive effect on firm valuation, profitability and growth, and negative effect on risk, according to the *incentive alignment* argument that the existence of a block holder could better monitor the management and reduce agency problems.

**VR/CR\_1**: Ratio of the voting rights of the largest shareholder divided by its capital right measures the control divergence.
VR/CR_1 measures the divergence level of the largest shareholder, and it is assumed to have negative effect on the first three performance measures (valuation, profitability and growth) and positive effect on the firm risk. This assumption is based on the private control benefit argument.

**SUMVR_23**: Sum of the control rights of the second and third largest shareholders, measures the power of these two shareholders. SUMVR_23 is assumed to benefit the firm performance because the powers of the second and third largest shareholders allow them to monitor the largest shareholder from gaining private benefit. It is assumed to have positive effect on valuation, profitability and growth, and negative effect on risk.

**Owner Identity Dummy**: defined by the identity of the largest shareholder. Owner identities are divided into four groups: dispersed, family, institution and government with cutoff level at 10%. The firms that do not have a majority shareholder (no shareholder own more than 10%) are defined as dispersed firm. Dummy variables are applied to represent different owner identities. They are assumed to have significant effect on all the four perspectives of firm performance.

### 3.3.3 Control Variables

**Firm Size**: the variable size is defined as the logarithm of sale. Pedersen & Thomsen (1999) state a positive direct effect of size on performance because the larger size brings economies of scale and synergies, moreover, the costs of production, distribution, etc. are reduced by vertical integration and increased market power. However, the larger size may also decrease firm’s growth, because of the decreasing marginal benefit of the scale. Positive effects of size on profitability and risk and negative effects on valuation and growth are assumed.

**Financial Leverage**: variable Debt is defined as the long-term debt divided by total assets and it measures the effect of financial leverage on firm performance. Jensen (1986) and Kim & Sorensen (1986) state a positive relation between leverage and performance because the high financial leverage gives incentive of the debt holders to monitor the agent and reduce the agency costs. However, Myers (1977) developed the pecking order theory and claim that the good firms tend to avoid high leverage and use its internal fund.
Positive effects of \textit{Debt} on all the four performance measures are assumed.

\textbf{Investment Activities:} variable \textit{Inv} is defined as the net cash used by investing divided by the total assets. Investment level is regarded to be positively related with the firm performance because the investment improve the potential production capacity and explore the positive present value of the projects. However, some studies state the overinvestment issue in the company and the very high level of investment has a negative effect on the firm performance (Aggarwal & Samwick 1999, Eklund 2008). Positive effects of \textit{Inv} on valuation, growth and risk, and negative effect on profitability are assumed because the investment occupies the cash flow that could bring profit in the short term.

\textbf{Liquidity:} variable \textit{Liq} is defined as the net cash from operating activities divided by current liabilities and the higher \textit{Liq} is, and the lower the risk of bankruptcy would be. Liquidity is argued to be negatively related with the firm performance because the high financial liquidity is a signal as inefficient use of cash and may lead to a takeover (Agrawal & Mandelker 1990). Positive effects of \textit{Liq} on firm valuation and profitability, and negative effects on growth and risk are assumed, because low bankruptcy risk reduces the cost of capital, and in term increase the profitability.

\textbf{Firm Age:} the variable is defined as the logarithm of the number of years between the observation year and firm founding year. This variable shows the life cycle effects. While most of the studies show negative relationship between firm age and performance (Anderson & Reeb 2003, Han & Suk 1998), some studies show the opposite result. This constriciting results could not be explained by the life cycle theory because the old firms do not necessary situate in the mature or even saturated stage, on the contrary, old firms has the capital to diversify their business units and have a good performance. Positive effect of \textit{Age} on valuation and negative effects on the rest three performance measures are assumed.

\textbf{Diversification:} the variable of \textit{Div} is defined as the number of different SIC (standard industrial classification) codes of two-digit groups a firm has. There are contradicting arguments about the effect the diversification has on the firm performance. Studies found diversification reduce value because the incentive to reduce the firm risk by diversifying business area conflict with the shareholders’ incentive, and thus increase
the conflict between managements and shareholders (Amihud & Lev 1999). However, diversification might also have a positive effect on performance because it reduces the risk of the firm, and thus reduce the equity costs, so the return of investment could increase (Lang & Stulz 1994, Aggarwal & Samwick 2003). Positive effect of diversification on firm profitability and growth; negative effects on valuation and risk are assumed.

**Industry:** the dummies variable *Industry* is defined based on the first digit of the SIC code. According to Pedersen & Thomsen (1997) and Thomsen & Pedersen (1998), industry effect and it has a significant influence. This is because the existence of product Life Cycle in different industries and inter-industries accounting differences.

**Earlier Year’s Performance:** the variable of $p_{ef_{t-1}}$ is defined as the performance of the firm in the former year. $p_{ef_{t-1}}$ influence on the performance because of the existence of path-dependence (Coffee Jr 1999). The former year’s firm performance would influence on the later year’s performance because: first, the inner firm policies (of operating, financing and investment) and the inter-firm relationship (with suppliers, customers and competitors) are stable and have long-term effect on the firm performance; second, the management adjust operating activities according to the firm performance, thus the firm performance will be consist in a certain period. Significant positive coefficient between $p_{ef_{t-1}}$ and $p_{ef_{t}}$ is assumed.

**3.3.4 Variables Description**

In total, for the further empirical investigation of the topic, four performance variables, seven ownership structure variables and ten controlling variables are selected.

The performance variables are: Tobin’s Q representing firm valuation; ROE representing firm profitability; Growth in total asset representing firm growth; and beta representing firm risk.

The ownership structure variables are: VR_1, VR/CR_1 and SUMVR_23 calculating the ownership concentration and control divergence of the controlling shareholders; four dummy variables represent the owner identity of dispersed, family/foundation, institution and government.

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38 There are six different industry dummies in the regression sample for this thesis. With the suggestion of supervisor, industry is included in regressions directly with its value (the first digit of SIC code) instead of being dummy variables.
The control variables include: SIZE, DEBT, INV, LIQ, AGE, DIV, IND, Tobin’s Q_t-1, ROE_t-1 and G_t-1.

Table 11 Variable Description

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin’s Q_t</td>
<td>Tobin’s Q ratio calculated according to Chung’s methodology</td>
</tr>
<tr>
<td>ROE_t</td>
<td>Profit before taxes divided by shareholder equity</td>
</tr>
<tr>
<td>G_t</td>
<td>Growth rate of the year-end book value of total assets during the year</td>
</tr>
<tr>
<td>Beta_t</td>
<td>Beta of the firm calculated with CAPM</td>
</tr>
<tr>
<td>VR_1</td>
<td>Voting right of the largest shareholder</td>
</tr>
<tr>
<td>VR/CR_1</td>
<td>Ratio of the voting right of the largest shareholder divided by its cash flow right</td>
</tr>
<tr>
<td>SUMVR_23</td>
<td>Sum of the voting right of the second and third largest shareholders</td>
</tr>
<tr>
<td>Dispersed_D</td>
<td>Dummy variable of dispersed owner identity. =1 if firm's largest owner owns less than 10% of the shares, otherwise=0</td>
</tr>
<tr>
<td>Family_D</td>
<td>Dummy variable of family owner identity. =1 if firm's largest owner is family or foundation, otherwise=0</td>
</tr>
<tr>
<td>Institution_D</td>
<td>Dummy variable of institutional owner identity. =1 if firm's largest owner is an institution (financial or non-financial), otherwise=0</td>
</tr>
<tr>
<td>Govern_D</td>
<td>Dummy variable of government owner identity. =1 if firm's largest owner is a public authority, state or government, otherwise=0</td>
</tr>
<tr>
<td>SIZE</td>
<td>Logarithm of sales</td>
</tr>
<tr>
<td>DEBT</td>
<td>Long-term debt divided by total assets</td>
</tr>
<tr>
<td>INV</td>
<td>Net cash used by investing divided by the total assets</td>
</tr>
<tr>
<td>LIQ</td>
<td>Net cash from operating activities divided by current liabilities</td>
</tr>
<tr>
<td>AGE</td>
<td>Logarithm of the number of years between the observation year and firm founding year</td>
</tr>
<tr>
<td>DIV</td>
<td>Number of different SIC codes of two-digit groups the firm has</td>
</tr>
<tr>
<td>IND</td>
<td>The first digit of the SIC code of the firm</td>
</tr>
<tr>
<td>Tobin’s Q_t-1</td>
<td>Tobin’s Q ratio calculated according to Chung’s methodology using data from the earlier year</td>
</tr>
<tr>
<td>ROE_t-1</td>
<td>Profit before taxes divided by shareholder equity in the earlier year</td>
</tr>
<tr>
<td>G_t-1</td>
<td>Growth rate of the year-end book value of total assets during the earlier year</td>
</tr>
</tbody>
</table>

Source: Own make

3.4 Hypotheses Formulation

Based on the literature review in part two and the assumptions about the effect of ownership structure variables on firm performance variables, 12 testable hypotheses are formulated for regression analysis:

Hypothesis 1a: ownership concentration has positive effect on firm valuation.
Hypothesis 1b: ownership concentration has positive effect on firm profitability.
Hypothesis 1c: ownership concentration has positive effect on firm growth.
Hypothesis 1d: ownership concentration has negative effect on firm risk.
Hypothesis 2a: control right divergence has negative effect on firm valuation.
Hypothesis 2b: control right divergence has negative effect on firm profitability.
Hypothesis 2c: control right divergence has negative effect on firm growth.
Hypothesis 2d: control right divergence has positive effect on firm risk.

Hypothesis 3a: there is a relationship between owner identity and firm valuation.

Hypothesis 3b: there is a relationship between owner identity and firm profitability.

Hypothesis 3c: there is a relationship between owner identity and firm growth.

Hypothesis 3d: there is a relationship between owner identity and firm risk.

The assumptions of the relationships between the variables are concluded in table 12.

Table 12 Assumption Conclusion

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Tobin's Q</th>
<th>ROE</th>
<th>Growth</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR_1</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>VR/CR_1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>SUMVR_23</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Family_D</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Institution_D</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Government_D</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Dispersed_D</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>SIZE</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>DEBT</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>INV</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>LIQ</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AGE</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DIV</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>IND</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>PERF_t-1</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Note: * means that there is a relationship between the variables;

Source: Own make

3.5 Data Selection

3.5.1 Data Source

By the time of writing, the annually reports of the year 2011 were not released yet, so the year 2010 is selected for analyzing. The largest non-financial firms in the four Scandinavian countries (Denmark, Finland, Norway and Finland) are selected from the four stock exchanges: Copenhagen stock exchange in Denmark, Helsinki Stock exchange in Finland, Oslo Børs in Norway and Stockholm Stock Exchange in Sweden ranked by their total year-end book assets in EUR in the year 2010.

The marketing and accounting data for calculating performance variables and controlling variables are extracted from Obris and the annual reports of the firms.
The ownership data are abstracted from the annual statements manually, because the ownership structure information is not completely correct and updated in the online databases. For some firms those do not show its largest shareholders and their capital right and voting right, multiple databases such as Reuters and Obris are combined in usage. To increase accuracy, the divergence of voting right and capital right is only based on the existence of dual class equity\(^\text{39}\).

### 3.5.2 Sample Restrictions

The availability of variables data restricts the sample. The goal is to select the suitable sample under the constraint of a minimal bias. The criteria of sample restrictions are\(^\text{40}\):

1. The nationality of the firms must be in one of the four Scandinavia countries.
2. The firms must be listed at one of the four Nordic exchanges: NASDAQ OMX Copenhagen, Stockholm, Helsinki and Oslo Børs.
3. The firms are non-financial firms
4. The accounting standard must be IFRS.
5. The statement currency must be Euro.
6. Annual reports, ownership and market data must be available for the year 2010, 2009 and 2008 to calculate all the prelisted variables.

Finally, 80 firms\(^\text{41}\) (20 largest non-financial firms from Denmark, Finland, Norway and Sweden respectively) are selected for simple statistics analysis. These firms include the ones that do not show detailed control right or capital right for all the three largest shareholders. 40 firms\(^\text{42}\) (10 largest firms in Denmark, Finland, Norway and Sweden respectively) that have all the variables available are selected for further regression analysis.\(^\text{43}\)

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\(^{39}\) To avoid complexity and errors in analyzing, we only count the voting right divergence from the dual-class equity. When there are no dual-class equity and the firm does not show special information about its shareholder’s voting right through pyramiding and cross-holding, we assume that the voting right equals capital right.

\(^{40}\) See appendix V for sample selection process

\(^{41}\) See appendix VI for the firm list

\(^{42}\) See appendix VII for the firm list

\(^{43}\) The samples are kept relatively small comparing with the other ownership structure studies, this is because of the data availability is low and there is a time limitation for date collection and manually checking.
Sub-Conclusion

Part three consists of five sections. The first section reviews methodology that is related to the thesis topic. It specify the concepts and measurement of performance, ownership structure and relationship models. The second section introduces research method of the thesis, which includes simple statistics analysis and regression analysis. The first one compare the firm allocation among different owner identity groups in each nation; while regression analysis conducts regressions for further observation. The third section describes the variables selected for empirical analysis: four performance variables (Tobin’s Q, ROE, growth rate in asset and beta); three ownership concentration (voting right of the largest shareholder, the control divergence of the largest shareholder, and the voting right sum of the second and third largest shareholders); four owner identity dummy variables (dispersed, family/foundation, institution and government) and eight control variables (firm size, financial leverage, investment activities, liquidity, firm age, diversification, industry and earlier year’s performance) are selected. In the fourth section, 12 testable hypotheses are formulated about the effect of ownership concentration, control divergence and owner identity on four firm performance perspectives. And finally in section five, data selection process and restrictions are introduced. It ends up with an 80-firm sample for simple statistics analysis and a 40-firm sample for regression analysis.
4 Results and Discussion
This part is divided into three sections: the first section is the simple statistics analysis of the 80 firms about the allocation of their owner identities and firm performance. The following section is the regression analysis of the 40 firms with descriptive statistics and regression results. And the last section is the discussion based on the results.

4.1 Simple Statistics Analysis of 80 Firms: Allocation of Variables
Among the 20 largest firms selected from each Scandinavian country, the allocation of different owner identities and the financial performance are listed below:

Table 13 Owner Identity Allocation in Four Scandinavian Countries, 80 Firms

<table>
<thead>
<tr>
<th>Count of Companies</th>
<th>Owner identity</th>
<th>Nation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DEN</td>
</tr>
<tr>
<td>Dispersed</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Family/Foundation</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Institution</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Government</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Grand Total</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Note: cutoff level at 10%: when a firm has its largest shareholder owning less than 10% of its shares, it has a dispersed ownership.

Source: Own make

From the above table, institution is found to be the most popular owner identity among the 80 largest firms and government is the second popular. The predominant owner identity type is family/foundation in Denmark, government in Finland; and institution in both Norway and Sweden.

Comparing with the result found by La porta et al (1999), the institutional ownership and dispersed ownership have increased in all the four countries while government and family/foundation have decreased. Most of the family/foundation owned firms are found in Denmark, while most of the government owned firms are found in Finland and Norway.

When allocating the four firm performance values in the 16 categories defined by the country and owner identity of the firm, some preliminary conclusions could be draw.

In terms of Tobin’s Q, all the values are below 1, which indicates that a low valuation of Scandinavian firms. In the total sample, the owner identities that have the highest Tobin’s \( q \) across the four countries are government and institution; however, the
government owned firms’ q is highly fluctuated. The owner identity that has the lowest q is dispersed. From the national perspective, the q of the same owner identity varies among nations. In Denmark, the best performing owner identity is institution while the worst performing identity is government; with predominant owner identity (family/foundation) has the second largest Tobin’s q across the nation. In Finland, the best performing owner identity is government, which is also the predominant identity; and dispersed firms perform the worst among the four owner identities. The Norwegian firms have the highest q comparing with the other three countries, and the dispersed firms and government-owned firms perform better than institutional-owned firms, even though the institutional-owned firms is predominating; in Sweden, the government-owned firms perform better than the institutional-owned ones.

Table 14 Financial Performance Ratios in 16 Categories, 80 Firms

<table>
<thead>
<tr>
<th>Average value Owner identity</th>
<th>Average of Tobin's Q_2010</th>
<th>Average of ROE_2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEN</td>
<td>FIN</td>
</tr>
<tr>
<td>Dispersed</td>
<td>0.41</td>
<td>0.36</td>
</tr>
<tr>
<td>Family/Foundation</td>
<td>0.58</td>
<td>0.56</td>
</tr>
<tr>
<td>Institution</td>
<td>0.81</td>
<td>0.49</td>
</tr>
<tr>
<td>Government</td>
<td>0.17</td>
<td>0.65</td>
</tr>
<tr>
<td>Grand Total</td>
<td>0.56</td>
<td>0.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average value Owner identity</th>
<th>Average of G_2010</th>
<th>Average of Beta_2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEN</td>
<td>FIN</td>
</tr>
<tr>
<td>Dispersed</td>
<td>0.10</td>
<td>0.07</td>
</tr>
<tr>
<td>Family/Foundation</td>
<td>0.16</td>
<td>0.08</td>
</tr>
<tr>
<td>Institution</td>
<td>0.03</td>
<td>0.05</td>
</tr>
<tr>
<td>Government</td>
<td>0.21</td>
<td>0.07</td>
</tr>
<tr>
<td>Grand Total</td>
<td>0.12</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Source: Own make

In terms of ROE, one owner identity to pay attention to is the government ownership in Finland. This is the only owner identity that is predominant but performs the worst in a nation. To compare among the four ownership identities, family/foundation owned firms have the highest ROE ratio, while dispersed firms has the lowest. To compare among the four countries, Swedish firms and Danish firms earn ROE above the average while the Norwegian firms earn below the average.

In terms of growth rate, the performances of firms with the same owner identity fluctuate across nations. To compare among the four ownership identities, both family/foundations owned firms and institution owned firms have high growth rate,
while the dispersed firms have the lowest. To compare among the four countries, Swedish firms have the highest growth rate, while Finnish firms have the lowest.

In terms of beta, dispersed owned firms have the highest risk while the family/foundation owned firms have the lowest when comparing among the four ownership identities; while comparing among nations, the Norwegian firms have the highest risk and the Danish firms have the lowest.

To consider the four aspects of the financial performance altogether, family/foundation ownership performs the best because it has medium valuation, high profitability and high growth rate, while keeping the risk low. Dispersed ownership performs worst considering its high risk with low valuation, profitability and growth. Institution- and government-owned firms are in medium. While Institution owned firms have high Tobin’s Q, ROE, growth and risk in their performance set, Government owned firms have high Tobin’s q, but relatively low ROE, low growth and low risk in their performance set.

According to La Porta (1998), investor protection in Scandinavian civil law countries (Denmark, Finland, Norway and Sweden) are lower than the common law countries (UK, US, Canada, etc.). To be able to protect the minority shareholders’ benefits from the management expropriation, ownership concentration is preferred. In this case, block holder could monitor the management better than the dispersed shareholders. This could explain, to a certain extent, why the family/foundation, institution or government owned firms perform better than the dispersed firms in the sample.

The good performance of the family/foundation owned firms shows the efficiency of incentive alignment and active monitoring of the family/foundation block holder. Most of the family/foundation owned firms have family members in executive positions. This initiative aligns the incentives of the dominant shareholder (the family/foundation) and the management (lead by the family member). Furthermore, the involvement of the family member in management allows the family to be more informed of the operation, and thus more efficient initiatives could be taken to monitor the management and reduce the agency problems. Furthermore, as argued by Le Breton (2006), the dominant ownership, lengthy tenures and profound business expertise allow some family owned firms to have long-term and sustainable investment. Its investment in staff & training and enduring relationships with partners, and its compelling mission cooperated for the
build-up of long-term competitive advantages. Thus, family/foundation owned firms are more competitive than firms with other types of owner.

The strategic preference of the institution and government owners are different. The high-risk-high-profitability of the institution owned firms show the myopic of the institution. While the low-risk-low-profitability of the government owned firms show the bureaucracy of the government, state and/or public authority.

The inefficient performance of the dispersed firms can be caused by severe agency problems. As stated in the corporate governance literature review, the principals and agents have different utilities and incentives; principals are not able to fully monitor the agents’ opportunistic behavior under information asymmetry. In the dispersed ownership, the managerial entrenchment become more attractive to managers as there is no shareholder having both the incentive and capability to execute monitoring.\(^4^4\)

The firm performance among the four Scandinavian countries varies, mainly influenced by its predominant owner identity’s character. However, Norwegian firms and Swedish firms show low profitability and valuation respectively, even though their predominant owner identity is institution, which is chartered by high valuation and profitability. The underperformance of Norwegian firms in ROE is affected by the underperformance of its dispersed firms; while the underperformance of Swedish firms in Tobin’s Q is affected by its family/foundation owned firms.

The allocation of firm performance to different owner identities in the four countries shows the correlation between owner identities and performance to some extent. To be more specific about the effects of ownership structure on firm performance, regression analysis are conducted based on the 40 firms (10 largest firms from each country) in the sample.

4.2 Regression Analysis of 40 Firms: Regression Tests

In this section, the data of the 40 firms sample is analyzed to test whether the effects of ownership structure on firm performance do exist and how the effects are. Descriptive statistics are showed first for a general view, and then regression results are presented.

\(^4^4\) However, another explanation for underperformance of dispersed firms related to the life cycle theory by Mueller & Dennis (1972). When the firm is in its developing stage, to gain more capital, it would choose to go public and thus has a more dispersed ownership structure. When it moves to the recession stage, it is characterized with low but stable profitability and growth.
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according to the four perspectives of the firm performance: valuation, profitability, growth and risk.

4.2.1 Descriptive Statistics
The average Tobin’s Q is below 1, furthermore, there are only three firms that have Tobin’s Q above 1 in the year 2010. The low Q level is influenced by the low activity in the investment market and the illiquidity financial market in the small countries.

In regards to the ownership concentration measurements, both VR_1 and SUMVR_23 have high average. The data are consistent with other studies, which show that the Scandinavian firms are highly concentrated in ownership (La Porta et al. 1999).

Furthermore, the VR/CR_1 varies from 1 to 3.86 and average at 1.46. The control right of the largest shareholder is highly divergent from its capital right. The dual-class equity controlling mechanism is widely used. 15 out of 40 firms in the sample apply dual-class equities and some firms allocate 10 times voting right to A share than B share. These data is consistent with the former studies such as Faccio (2002) and Eklund (2007).

Table 15 Descriptive Statistics of the 40 Firms

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Std. D</th>
<th>Kurtosis</th>
<th>Skewness</th>
<th>Min.</th>
<th>Max.</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin’s Q_2010</td>
<td>0.54</td>
<td>0.50</td>
<td>0.32</td>
<td>-1.19</td>
<td>-0.04</td>
<td>-0.02</td>
<td>1.06</td>
<td>40</td>
</tr>
<tr>
<td>ROE_2010</td>
<td>19.02</td>
<td>16.50</td>
<td>17.67</td>
<td>1.26</td>
<td>-0.15</td>
<td>-32.68</td>
<td>62.32</td>
<td>40</td>
</tr>
<tr>
<td>G_2010</td>
<td>0.12</td>
<td>0.10</td>
<td>0.13</td>
<td>3.89</td>
<td>0.80</td>
<td>-0.25</td>
<td>0.52</td>
<td>40</td>
</tr>
<tr>
<td>Beta_2010</td>
<td>1.00</td>
<td>1.05</td>
<td>0.39</td>
<td>-0.08</td>
<td>-0.09</td>
<td>0.11</td>
<td>1.89</td>
<td>40</td>
</tr>
<tr>
<td>VR_1</td>
<td>33.85</td>
<td>31.50</td>
<td>19.79</td>
<td>-1.03</td>
<td>0.15</td>
<td>1.30</td>
<td>70.94</td>
<td>40</td>
</tr>
<tr>
<td>VR/CR_1</td>
<td>1.46</td>
<td>1.00</td>
<td>0.82</td>
<td>1.80</td>
<td>1.72</td>
<td>1.00</td>
<td>3.86</td>
<td>40</td>
</tr>
<tr>
<td>SUMVR_23</td>
<td>13.84</td>
<td>10.94</td>
<td>10.24</td>
<td>1.85</td>
<td>1.49</td>
<td>2.03</td>
<td>43.10</td>
<td>40</td>
</tr>
<tr>
<td>SIZE</td>
<td>15.44</td>
<td>15.78</td>
<td>1.34</td>
<td>0.11</td>
<td>-0.52</td>
<td>11.94</td>
<td>18.02</td>
<td>40</td>
</tr>
<tr>
<td>DEBT</td>
<td>0.22</td>
<td>0.23</td>
<td>0.12</td>
<td>0.03</td>
<td>0.33</td>
<td>0.00</td>
<td>0.54</td>
<td>40</td>
</tr>
<tr>
<td>INV</td>
<td>0.05</td>
<td>0.05</td>
<td>0.04</td>
<td>1.02</td>
<td>0.85</td>
<td>-0.02</td>
<td>0.17</td>
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<tr>
<td>LIQ</td>
<td>0.46</td>
<td>0.35</td>
<td>0.43</td>
<td>4.42</td>
<td>1.75</td>
<td>-0.32</td>
<td>2.00</td>
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<tr>
<td>AGE</td>
<td>4.15</td>
<td>4.50</td>
<td>1.03</td>
<td>0.35</td>
<td>-1.10</td>
<td>1.61</td>
<td>5.87</td>
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<tr>
<td>DIV</td>
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<td>0.00</td>
<td>1.19</td>
<td>2.12</td>
<td>1.44</td>
<td>0.00</td>
<td>5.00</td>
<td>40</td>
</tr>
<tr>
<td>IND</td>
<td>3.15</td>
<td>3.00</td>
<td>1.08</td>
<td>0.36</td>
<td>-0.05</td>
<td>1.00</td>
<td>6.00</td>
<td>40</td>
</tr>
<tr>
<td>Tobin’s Q_2009</td>
<td>0.58</td>
<td>0.61</td>
<td>0.32</td>
<td>-1.30</td>
<td>-0.18</td>
<td>0.03</td>
<td>1.07</td>
<td>40</td>
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<tr>
<td>ROE_2009</td>
<td>11.56</td>
<td>10.41</td>
<td>19.57</td>
<td>0.05</td>
<td>0.24</td>
<td>-30.98</td>
<td>57.93</td>
<td>40</td>
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<tr>
<td>G_2009</td>
<td>0.03</td>
<td>0.00</td>
<td>0.13</td>
<td>7.59</td>
<td>2.28</td>
<td>-0.14</td>
<td>0.59</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: Own make

Among the 40 firms in sample, 9 of them are dispersed in ownership; 4 of them are controlled by family/foundation; 16 of them are controlled by institution and 11 of them are controlled by government/public authority.
Table 16 shows the correlation matrix of the variables. It is worth notification that the four firm performance variables are not highly correlated. This proves that the selection of these four performance measures is reasonable since they test the firm performance in different perspectives. This is the same for the three ownership concentration variables: low correlations reduce collinear possibility. The correlations that are high enough for notification are: the 0.60 correlation between DEBT and Tobin’s Q\textsubscript{2010}; the 0.61 correlation between DEBT and Tobin’s Q\textsubscript{2009}; the 0.94 correlation between Tobin’s Q\textsubscript{2009} and Tobin’s Q\textsubscript{2010}; the 0.62 correlation between ROE\textsubscript{2009} and ROE\textsubscript{2010} and the 0.47 correlation between DIV and SIZE. The first two correlations are caused by the calculation formula of Tobin’s Q, as it proxy the market value of debt as the book value of long term debt plus the book value of short term liabilities net the book value of short term asset. The third and fourth coefficients show the influence of the former year’s performance on the later year’s performance because of path dependency effect.

4.2.2 Regression Results
Tobin’s Q, ROE, Growth rate and Beta are tested separately with three models for each dependent variable. In all 12 model tests, the goodness-of-fits are acceptably high. However, when comparing among the three models for each dependent variable, model 2 always has higher $R^2$ and adjusted $R^2$ than model 1, while model 3 has slightly higher
adjusted $R^2$ than model 2 when adding owner identity dummy variables in the regression.

In the following test, the regression results on valuation, profitability, growth and risk are discussed separately, followed by a general discussion of the control variables at the end\(^{45}\).

**Regression Results on Firm Valuation**

In both the results of model 1 and 2, VR\(_1\) is found to have insignificant negative effect on Tobin's Q; while the other two ownership concentration variables are found to have effect at the 10% significance level: VR/CR\(_1\) has positive effect; SUMVR\(_{23}\) has negative effect.

Both VR\(_1\) and SUMVR\(_{23}\) have negative effect, which is consistent with the *over monitoring* argument by Burkart et al (1997), *private control benefit argument* by Zingales (1994) and the *cost-of-capital argument* by Barclay & Holderness (1989).

Model 3 shows that none of the dummy variables has significant effect on the Tobin’s Q. The coefficients of the dummy variables of dispersed, institution, government ownerships are positive, while the coefficient of family/foundation ownership is negative; dispersed ownership has the largest absolute coefficient. This result is conflicting with the higher (lower) Q value of family/foundation (dispersed) owned firms in the simple statistics analysis. However, since all the four dummy variables are statistically insignificant, the owner identity is found to have no influence on the Tobin’s Q.

In conclusion, hypothesis 1a (ownership concentration has positive effect on firm valuation and hypothesis 2a (control right divergence has negative effect on firm valuation) are strongly rejected because their effects are significant in another direction.

Hypothesis 3a (there is a relationship between owner identity and firm valuation) is rejected because the coefficients of the owner identity dummy variables are not significant.

\(^{45}\) The complete regression results are present in appendix VIII

The Effect of Ownership Structure on Firm Performance
## Table 17 Regression Results

<table>
<thead>
<tr>
<th>Ind. Variable</th>
<th>Tobin's Q_2010</th>
<th>ROE_2010</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
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<tr>
<td>Intercept</td>
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<td>-0.0144</td>
</tr>
<tr>
<td>VR_1</td>
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<td>-0.0004969</td>
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<tr>
<td>VR/CR_1</td>
<td>0.04852**</td>
<td>0.04628**</td>
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<tr>
<td>SUMVR_23</td>
<td>-0.00401**</td>
<td>-0.00395**</td>
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<tr>
<td>Family_D</td>
<td>-0.05258</td>
<td>0.03429</td>
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<tr>
<td>Institution_D</td>
<td>0.11351</td>
<td>Dispersed_D</td>
</tr>
<tr>
<td>Govern_D</td>
<td>0.11351</td>
<td>Dispersed_D</td>
</tr>
<tr>
<td>Dispersed_D</td>
<td>0.11351</td>
<td>Dispersed_D</td>
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<tr>
<td>SIZE</td>
<td>-0.00042376</td>
<td>-0.00539</td>
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<td>DEBT</td>
<td>0.38555**</td>
<td>0.37170**</td>
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<tr>
<td>INV</td>
<td>114972*</td>
<td>114753*</td>
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<tr>
<td>LIQ</td>
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<td>AGE</td>
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<td>Tobin's Q_2009</td>
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<tr>
<td>R-Square</td>
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<td>Adj R-Sq</td>
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<td>F Value</td>
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<table>
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<th>Ind. Variable</th>
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<th>Beta_2010</th>
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<td>Model 2</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.65277**</td>
<td>135879</td>
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<tr>
<td>VR_1</td>
<td>0.00021167</td>
<td>0.00040457</td>
</tr>
<tr>
<td>VR/CR_1</td>
<td>-0.02510</td>
<td>-0.01603</td>
</tr>
<tr>
<td>SUMVR_23</td>
<td>0.00371***</td>
<td>0.00365***</td>
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<td>Family_D</td>
<td>0.58516***</td>
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<tr>
<td>Institution_D</td>
<td>0.51660***</td>
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<td>Govern_D</td>
<td>0.57419***</td>
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<td>Dispersed_D</td>
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<td>SIZE</td>
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<td>DEBT</td>
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<td>DIV</td>
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</table>

**Note:** *=significance level at 5%; **=significance level at 10%; ***=significance level at 15%

*Source: Own make*
Regression Results on Firm Profitability
According to the first two models, both VR_1 and SUMVR_23 have positive effect on ROE while VR/CR_1 has a negative effect. Among them, only the negative effect of VR_1 is significant at 15%. However, when combining with the owner identity in explaining variables in model 3, none of the ownership concentration variables is significant.

The results match the theory that the existence of the block holder could reduce the principal-agent problems; however, the divergence of his voting right and cash flow right would encourage the majority holder to gain private benefit at the cost of the firm. (Dyck & Zingales 2004, Burkart et al 1997, Zingales 1994)

There is only the dispersed owner identity dummy variable that is significant at 15% in model 3. All the four dummy variables have negative coefficients. In regards to the adequate value of the coefficients, the one of dispersed dummy is the highest, and the one of family/foundation dummy is the lowest. So assume all the other variables equal, the dispersed owned firms have the lowest profitability among the four categories of firms, and the family/foundation owned firms has the highest. This match with our findings in the simple statistics analysis, where family/foundation owned firms perform the best in profitability while the dispersed firms perform the worst because the dispersed firms have severer agency problems.

To conclude, hypothesis 1b (ownership concentration has positive effect on firm profitability) is fail to reject because the coefficients of VR_1 is significant;

Hypothesis 2b (control right divergence has negative effect on firm profitability) is rejected because the effect of VR/CR_1 is negative but not significant;

Hypothesis 3b (there is a relationship between owner identity and firm profitability) is fail to reject because the coefficient of dispersed dummy is significant.

Regression Results on Firm Growth
SUMVR_23 is found to have a significant positive effect on the firm’s growth at 10% significance level in model 1 and at 15% significance level in model 2. The effects of the VR_1 and VR/CR_1 are not significant.
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In the model 3, three out of four owner identity dummy variables are found to have significant positive effect on the firm’s growth rate. The three owner identities are: family/foundation, institution and government. The absolute value of the dispersed dummy is the smallest and the absolute value of the family/foundation dummy is the largest.

To conclude from the results, the hypothesis 1c (ownership concentration has positive effect on firm growth) is fail to reject because the coefficient of SUMVR_23 is significantly positive in model 1 and model 2;

Hypothesis 2c (control right divergence has negative effect on firm growth) is rejected because the coefficient of VR/CR_1 is negative but insignificant;

And hypothesis 3c (there is a relationship between owner identity and firm growth) is fail to reject because the dummy variables have significant coefficient.

**Regression Results on Firm Risk**

The coefficients of the three ownership concentration variables are all negative on beta. VR_1 and SUMVR_23 are significant at 10% and 15% respectively. According to model 2, 1% increase in the largest shareholder’ voting right would reduce the beta by 0.00561; while 1% increases in the voting right of the second and third largest shareholders would reduce the beta by 0.01076. However, when adding the owner identity dummy variables in model 3, the negative effects of the owner concentration variables become statistically insignificant. The coefficients of the VR/CR_1 are negative but insignificant in all the three models.

Results from model 3 show that none of the coefficients of the four dummy variables are significant. One thing to pay special attention to is the coefficient related to the institution dummy, as it is significantly higher than the ones allocated to the other three dummies. The smallest coefficient is of the government dummy variable.

To conclude, hypothesis 1d (ownership concentration has negative effect on firm risk) is fail to reject because both VR_1 and SUMVR_23 have negative coefficients that are significant;

Hypothesis 2d (control right divergence has positive effect on firm risk) is rejected because the coefficient of VR/CR_1 is insignificantly negative.
And hypothesis 3d (there is a relationship between owner identity and firm risk) is rejected because the coefficients of the four dummy variables are not significant.

**Controlling Variables Effect**

The control variables that have significant effect on the four firm performance variables are: SIZE, AGE, DEBT, INV and LIQ.

**SIZE** is positively related with ROE and negatively related with Growth and risk. **AGE** is positively related with growth and negatively related with risk. Even though these two variables are found not coordinated with each other, they can be explained by the life cycle theory (Mueller, 1972) and proved by Wilson & Morris (2000).

**DEBT** measures the liquidity leverage of the firm and it has significant positive effect on Tobin’s Q, and significant negative effect on ROE and Growth. DEBT has insignificant positive effect on beta. The positive relationship between DEBT and Tobin’s Q is also showed in the correlation matrix where the correlation is 0.60 between DEBT and Q_2010 and 0.61 between DEBT and Q_2009. The negative effects DEBT has on ROE and Growth are evidence of the pecking order theory developed by Myers (1977): the ‘good’ firms (high profitability, high growth potential) tend to use its internal fund and avoid high leverage to lower capital cost and liquidity risk.

**INV** measures the investment activities of the firms by dividing the investing by total assets. It has significant positive effect on Tobin’s Q and significant negative effect on ROE. According to Aggarwal & Samwick (1999), investment activities increase the potential capacity and explore the positive value of the investing projects, thus it has positive effect on firm’s valuation. However, investment activities occupies also capital and has negative effect on the firm’s short-term profitability.

**LIQ** measures the firm’s liquidity and the higher the number, the lower the risk of bankruptcy is. Thus, its negative effect on firm risk is understandable. Furthermore, as stated by Agrawal & Mandelker (1990), high financial liquidity is a signal of inefficient use of cash and may lead to takeover; this is consistent with its negative effect on growth. LIQ has positive effect on ROE at 10% significance level, this is because the decreased liquidity risk reduces the cost of the capital, thus increases the profitability of the firm.
The last year’s performance is significantly related with the dependent variables in terms of valuation and profitability. In other word, Tobin’s Q and ROE in the year 2010 are highly correlated with Tobin’s Q and ROE in the year 2009. This correlation is an evidence of the path-dependence theory provided by Coffee (1999) and Dyck & Zingales (2004).

4.3 Discussion
The allocation of the owner identities and their performance in the four countries not only shows the predominating owner identity in each Scandinavia country, but also provide a simple picture of the performance of each type of the firms. The predominating owner identity is family in Denmark, government in Finland and institution in both Norway and Sweden. Most of the dispersed owned firms are in Sweden, while most of the family owned firms are in Denmark.

To compare the firm performance from four dimensions (valuation, profitability, growth and risk): family owned firms perform best with high valuation, profitability, growth and low risk; while dispersed firm performed worst with low level in the first three measures and high risk; Institution ownership orient to high profitability and high risk; and government ownership has low risk.

In the regression analysis, eight control variables are included to increase the accuracy of the analysis. The regression results are compared with the assumptions as listed below:

In regards to the ownership concentration, the performance measure is always statistically dependent on at least one of the ownership concentration variable. Both the VR_1 and SUMVR_23 have negative effect on Tobin’s Q and beta; positive effect on ROE and growth. The results are consistent with two arguments: the cost-efficiency of block holder argument by La Porta et al. (1998) which states that the block holder monitors the managers to pursue the profit maximization goal and reduces agency problems, thus the higher concentration leads to higher profitability and growth, and lower risk; however, the cost-of-capital argument by Fama & Jensen (1983a) states that the high ownership concentration results in low liquidity because there are less share available for trading in the market, thus, the market value of the firm is understated and, as a consequence, Tobin’s Q is reduced.
The Effect of Ownership Structure on Firm Performance

The divergence of the largest shareholder is found to have significant positive effect on Tobin’s Q, and insignificant negative effects on ROE, growth and beta. Its positive effect is also consistent with the cost-of-capital argument, as the divergence allow owners to take control over the firms with low capital involvement, thus it increases the market liquidity of the firm and avoids under-estimation. Its insignificant negative effect on ROE is consistent with the private control benefit argument: the divergence allows the block holder to gain private benefit because it has high control power and low capital involvement.

In regards to the owner identities, the results are consistent with the simple statistics analysis and they are consistent with the principal-agent theory (Jensen & Meckling 1976, Furubotn & Richer 2005). The only difference between the two analyses is that the dispersed and family/foundation dummies are found to have high positive and negative coefficient on Tobin’s Q, respectively. This is contrary to the finding in the simple statistics analysis, where the corrections are the opposite. However, the coefficients are not significant in regression, so they do not affect the conclusion. Managerial entrenchment increase in a dispersed ownership firm, when there are neither incentive nor ability for the principals to monitor the agents to pursue profit maximization goal; as a result, managements may undertake value-destroying activities.

Note: only the significant effect found in the regression are present in the finding. The effect market with light blue means the finding is different from the assumption

Source: Own make
to pursue private welfare (Morck et al, 1988; Stulz 1988). On the contrary, family ownership aligns incentives of the owner and manager, and has a long-term orientation in operating the firm, thus the conflicts between principal and agent are reduced significantly (Jonchi Shyu 2011). Institution owned firms are characterized by high risk, while government ownership displays the opposite. The Myopia argument evidenced by Wahal (1996) is found applicable in this study as institution owners focus on the profitability and growth at the cost of high risk. In contrast, the government bureaucracy lead to a preference for low risk of government owned firms (Hill & Jones 1992). Different owner identities have different preferences from a firm performance perspective. This is decided by the character of the owner and their utility formulas.

The predominating owner identities in Scandinavia are not the most efficient ones. For example, the government owned firms in Finland have the lowest average profitability among the other firms; the Norwegian institution owned firms has a Tobin’s Q lower than the average of the Norwegian firms, etc. The predominating status of the inefficient owner identity could be explained by the path dependence theory. As Bebchuk & Roe (1999) argued: the initial ownership structure effects the present ownership structure by affecting both the identity and the rule of the structure. Factors such as sunk adaptive costs, complementarities, network externalities, endowment effects, multiple optima and the beneficial owner’s rent seeking incentives all make the ownership structure persist. Furthermore, the corporate rules that affect the choice of ownership structure are made based on the existing structure, and the interest group plays a role in the choice of the legal rule. Thus, the inefficient ownership structures continue to exist, and even keep their predominating statue across a nation.

**Sub-conclusion**

The result and discussion part shows the results of simple statistics and regression analyses. The simple statistics analysis allocates firms and their performance according to their owner identity and nation. The predominant owner identity in each Scandinavian country is found: family/foundation in Denmark, government in Finland, and institution in both Norway and Sweden. The performance of each owner identity group is compared: dispersed firms are in one extreme with low valuation, profitability, growth and high risk; family/foundation owned firms are in the other extreme with high value in the first three performance measure and low value in risk; institution owned
firms and government owned firms are in medium, the former type of firms have the high-profitability-high-risk performance orientation, while the lateral one have the opposite.

The regression analysis conducts OLS regressions to explain the four performance measures separately. Five out of the 12 testable hypotheses are fail to reject:

Hypothesis 1b: ownership concentration has positive effect on firm profitability;
Hypothesis 1c: ownership concentration has positive effect on firm growth;
Hypothesis 1d: ownership concentration has negative effect on firm risk;
Hypothesis 3b: there is a relationship between owner identity and firm profitability;
Hypothesis 3c: there is a relationship between owner identity and firm growth.

The remaining hypotheses are rejected because the effects are either insignificant or in an opposite direction. Furthermore, two ownership effects on firm performance are found to be significant in the opposite direction as assumed: ownership concentration has negative effect on valuation and control divergence has positive effect on firm performance.

To conclude, the research questions are answered with evidence from non-financial listed companies in Nordic countries: ownership concentration has a positive effect on firm profitability and growth and a negative effect on risk; divergence between voting right and capital right has positive influence on firm valuation; owner identity does influence firm performance, especially with regard to profitability and growth.
5 Conclusion
This thesis investigates the effect of ownership structure on firm performance with samples from Scandinavian countries. Three research questions are answered: 1. how does ownership concentration effect on firm performance; 2. how does control divergence effect on firm performance and 3. does owner identity influence on firm performance.

It is found that ownership concentration has a positive effect on profitability and growth and a negative effect on firm valuation and risk (lower risk) which is consistent with the *cost-efficiency of monitoring by block holder* argument (La Porta et al. 1998). This argument states that the block holder has increased ability to monitor the agent and that profit is increased (and risk reduced) along with increased ownership concentration. It is also found that ownership concentration has a significant negative effect on valuation. This is consistent with the *cost-of-capital* argument (Fama & Jensen 1983a) which states that high ownership concentration results in low liquidity, thus undermining the firm’s market value.

Divergence between voting rights and capital rights display the opposite effect. It is found that divergence has a negative effect on firm profitability and growth and a positive effect on valuation. The *private control benefit* argument (La Porta et al. 1998) and the *cost-of-capital* argument are combined to explain this phenomenon. The *private control benefit* argument finds that when there is a high divergence, it is less costly for the block holder to expropriate firm value and gain private benefit, because his proportion in capital loss is less than his gain from control power. On the other hand, high divergence allows shareholder to gain control with less capital involvement, thus the negative cost-of-capital effect (lower valuation) is avoided because it does not effect on market liquidation in gaining control.

The nature of ownership identity in Scandinavia and its effect on firm performance was analyzed using simple statistics. It is found that family/foundation owned firms have a better performance set (medium valuation, high profitability, high growth rate and low risk) and firms with dispersed ownership have the worst performance set (low valuation, low profitability, low growth and high risk). Institution owned firms are more high-valuation-high-risk oriented and government owned firms are more low-profitability-low-risk oriented. Arguments are combined to explain the results: *management*
*entrenchment* argument for dispersed ownership; *incentive alignment* argument and *long-term orientation* argument for family ownership; *institutional myopia* argument and *cost-efficiency of monitoring* argument for institution ownership; *information asymmetry of bureaucracy* argument and *dual-role* argument for government ownership. The effect of owner identity on firm performance exists and varies among different types of owner, because the different owner has its own preference on firm strategic goals and varies in incentive and capability to deal with agency problems.
6 Reference

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