

Ownership Structure and Corporate Performance

An empirical study on the impact of managerial ownership & concentrated ownership on corporate performance of Swedish publicly traded firms

Authors:

Melker Melin
Ismailcan Korkmaz

Supervisor:

Marco Bianco

Abstract

Title	Ownership structure and corporate performance
Seminar Date	1 June 2022
Course	BUSN79, Degree Project in Accounting and Finance 15 ECTS
Authors	Melker Melin Ismailcan Korkmaz
Advisor	Marco Bianco
Keywords	Agency costs, ROA, corporate governance mechanisms, corporate performance, Managerial ownership, Ownership concentration, Stewardship, Tobin's Q
Purpose	The purpose of this study is to empirically investigate the relationship between the corporate governance mechanisms, managerial ownership, and concentrated ownership, on corporate performance in Swedish companies. With its distinguishing corporate governance regime and financial environment, Sweden facilitates a unique contribution to the ongoing discussion on ownership structure and agency conflicts.
Methodology	Quantitative method with a deductive approach
Theoretical perspectives	Principal-agent problem, Stewardship theory
Empirical foundation	The empirical foundation is the intersection between Modular Finance, Bloomberg, and Retriever. The final sample consists of 1440 firm-year observations of companies listed on the OMX Nasdaq Stockholm small, - mid, -and large-cap lists between 2017 and 2021.
Conclusion	We find evidence of a negative statistically significant relationship between managerial ownership and ownership concentration with corporate performance measured as Tobin's Q.

Acknowledgments

We would like to thank our supervisor Marco Bianco for his valuable support and guidance. We also would like to pay special regard for an outstanding program to the faculty, those in charge, and professors within the master's program in Accounting and Finance.

Melker Melin

Ismailcan Korkmaz

Table of Contents:

1. Introduction	1
1.1 Background	1
1.2 Problem Discussion	3
1.3 Research Question	5
1.4 Purpose	5
1.5 Scope and limitations	5
1.6 Target Group	6
1.7 Outline	6
2. Theory and literature review	7
2.1 Principal-Agent Problem	7
2.1.1 Mechanisms to Control Agency Problems	8
2.1.2 Managerial Ownership	8
2.1.3 Concentrated Ownership	10
2.2 Stewardship Theory	11
2.3 Previous Empirical Research	12
2.3.1 Managerial Ownership	12
2.3.2 Ownership Concentration	14
2.3.3 Endogeneity	16
2.4 Hypothesis Development	17
3. Methodology and data description	20
3.1 Research Design	20
3.2 Data and sample description	20
3.2.1 Data Collection	24
3.3 Description of Variables	26
3.3.1 Dependent variables	26
3.3.2 Independent variables	28
3.3.2.1 Managerial Ownership	28
3.3.2.2 Concentrated Ownership	28
3.3.3 Control Variables	29
3.3.3.1 Firm Size	29
3.3.3.2 Firm Age	29
3.3.3.3 Debt Ratio	30
3.3.3.4 Firm Risk	31
3.3.3.5 Industry Dummy	31

3.3.3.6 Dividend Dummy	32
3.3.3.7 Year Dummy	32
3.4 Descriptive statistics	33
3.5 Statistical Framework	36
3.5.1 Panel OLS regression model	36
3.5.1.1 Endogeneity related to explanatory variables	38
3.6 Pre-regression diagnostics	40
3.7 Criticism of Methodology	41
3.7.1 Reliability and Replicability	41
3.7.2 Validity	42
4. Empirical result and analysis	44
4.1 The statistical framework	44
4.2 Managerial Ownership and corporate performance	45
4.3 Ownership Concentration and Corporate Performance	50
4.4 Robustness checks	54
5. Conclusion	56
Tables and graphs	59
References	73

1. Introduction

1.1 Background

The return on investment is the combination of stock appreciation and any dividends paid within an investor's investment time frame (Berk and DeMarzo, 2019). While stock price is affected by several short-term aspects such as market psychology and other abruptions, the long-term duration of the stock price is the function of the present value of the market's future expectations of the company's ability to generate free cash flows (Berk and DeMarzo, 2019). The dividend ratio is ultimately dependent on a company's financial position to allocate excess capital, which is therefore directly a decision tied to the corporate performance. Corporate performance, therefore, lends itself as an important variable.

Given that the general purpose of equity investments is to generate as high returns as possible (Berk and DeMarzo, 2019), investors expect their invested capital to be allocated to investments and projects that maximize the company's financial performance. Within the corporate arena, this is referred to as shareholder maximization (Berk and DeMarzo, 2019). These expectations can be applied globally, and in some countries such as Sweden, these expectations are also engraved into the law (ABL; 1975:1385).

Individual shareholders are generally dispersed and hold well-diversified portfolios. They, therefore, delegate the decision-making regarding the allocation of corporate resources to corporate managers (stewards) and expect them to steward the invested capital to maximize shareholder wealth, i.e., allocating corporate resources toward projects and assets that will yield the best financial returns (Shleifer and Vishny, 1997). The stewards include the CEO and executive management and are in turn supervised by the board of directors. Corporate performance, and thus also the individual investors' return, is therefore reliant on the steward's decision-making.

While the result of a decision might be worse than expected the intent behind a decision is more important in determining the steward's ability to allocate corporate resources. If the stewards are making decisions that are not in line with the intent to maximize shareholder wealth, they are not upholding their part of the contract. This will likely yield inconsistent and worse results than would have been able to be achieved (Celona and McNamee, 2005).

Extensive empirical evidence suggests that stewards are inclined to deviate from incorporating shareholder maximization when allocating corporate resources. The misalignment of interests between the stewards and individual shareholders has been an important and well-studied phenomenon in the corporate finance literature since Berle and Means, (1932) provided empirical evidence of it. Years later, Jensen and Meckling, (1976) coined the relationship and conflict as the principal-agent conflict. They suggested that the misalignment stems from the fact that stewards may be given control over situations not specified in the contract. This may result in the expropriation of the minority shareholders, where various ways are utilized to pursue personal interests at the expense of shareholders.

Entrenched stewards with decision-making power are argued to allocate corporate resources to further their benefits, comply with their risk profile, or for empire building and status purposes. Moreover, they might undertake risk-reducing investments and takeovers for complementing their risk profiles or further their social status, favor loss-making investments over value-increasing investments, and disregard opportunities for value-increasing takeovers for the fear of losing control (Grossman and Hart, 1988; Shleifer and Vishny, 1989, 1997). These decisions are not consistent with the shareholder maximization approach and are thus not aligned with good decision-making (Celona and McNamee, 2005). This arguably leads to worse financial performance and a reduction of the capital that individual investors are willing to finance a company with (Grossman and Hart, 1986).

Managerial ownership (ownership among individuals of management and the board) and concentrated ownership (majority shareholders) have been introduced- and frequently empirically investigated as means for channeling the interests of stewards toward the shareholder maximization approach (e.g., Agrawal and Knoeber, 1996; Bhagat and Bolton, 2008; Demsetz and Lehn, 1985; Demsetz and Villalonga, 2001; Himmelberg et al., 1999; Jensen and Meckling 1976; McConnell and Servaes, 1990; Morck et al., 1988; Murphy, 1990,

1999, Short and Keasey, 1999; Shleifer et al., 1999; Wright and Ferris, 1997). These studies investigate whether there is an association between these corporate governance mechanisms and corporate performance to see if they work as ways to converge the interests of the stewards and individual shareholders.

Some empirical evidence suggests that managerial ownership is positively and linearly related to corporate performance (Chang, 2003; Gibbs, 1993; Jensen and Meckling, 1976; Jensen and Murphy, 1990). Other evidence suggests a non-linear relationship (Hermalin and Weisbach, 1987, 1991; Morck et al., 1988; McConnell and Servaes, 1995). Managerial ownership as a mechanism stem from its aim of tying the steward's own wealth into consideration when making decisions. Consequently, the intent behind the decision is supposed to be closer to that of shareholder maximization and lower the incitement in taking actions at the expense of individual shareholders.

Likewise, other studies find a positive and linear relationship between concentrated ownership and performance (e.g., Jensen and Meckling, 1976; Shleifer and Vishny, 1986; Zeckhauser and Poun, 1990). Ownership concentration as a mechanism stem from majority shareholders' influence and ability to monitor the decisions made by the stewards more closely than minority shareholders. By taking an active and monitoring role over the stewards, the majority shareholder can make sure the shareholder maximizing approach is embedded into the decision-making process. Some scholars argue that majority shareholders might on the contrary be incentivized to expropriate the minority shareholders by siphoning resources to enhance their private benefits (Bebchuk, 1999; Baek et al., 2004; Claessen et al. 1999; Joh, 2003; La Porta et al., 1999; Mitton, 2002; Pagano and Röell, 1998; Shleifer et al., 2000). Similarly, to the conflict between management and minority shareholders.

1.2 Problem Discussion

While embracing a variety of results, the literature report two important results. First, multiple studies find empirical evidence that supports the notion of a relationship between managerial ownership and concentrated ownership on corporate performance respectively. A positive relationship both indicates that the principal-agent relationship gives rise to agency costs and can be mitigated through the convergence of interest by introducing managerial equity (Jensen and Meckling, 1976). Second, the coefficient varies, indicating that more aspects should be

considered. A negative relationship also supports the notion that the agency-principal relationship gives rise to agency costs stemming from entrenched stewards. While this was the issue originally aimed to be mitigated by the majority shareholders, the results point to a possible new agency conflict where the equity stakes lead the stewards and/or majority shareholders to act accordingly with the entrenchment hypothesis (Short and Keasey, 1999).

Consistent within the literature is that most are dealing with data samples covering Anglo-Saxon countries, meaning that individual shareholder protection is extensive. This facilitates the analysis of a particular sample covered by a specific type of corporate governance regime and financial environment. Shareholder protection might be an issue for this relationship as ownership is likely to suffer from endogeneity. What this means is that managerial ownership is often driven by compensation contracts which in turn are often tied to performance targets. Corporate governance regimes might therefore play a role in the ownership-performance relationship. Since most studies deal with data of these characteristics, we argue there is a need for extending the empirical findings on the agency problem in a different setting, affected by different corporate governance regimes and financial environments.

By using a data sample of Swedish publicly listed companies, we contribute to the literature in line with this argument. Individual investors in Swedish companies are much less protected than in Anglo-Saxon countries and when compared to European standards, are about average (La Porta et al., 1997, 1998, and 1999). Stock compensation seems also to be less used in comparison to Anglo-Saxon countries, arguably to limit a possible endogeneity in the sample. Despite its lower minority shareholder protection and comparably bigger separation of ownership and control, the Swedish markets are well developed (Agnblad et al., 2002; La Porta et al., 1997, 1998, and 1999). Informal enforcements such as reputation and social status and unspoken laws might explain this as informal means to limit the abuse. This is another interesting aspect of this study as it distinguishes itself from previous literature.

While some literature covers the German market which is not an Anglo-Saxon country, there is a concern that the ownership data is insufficient, as it is not compulsory to disclose owners below a 25% threshold of ownership (Frank and Meyers, 2001). The corresponding threshold for U.S. markets is 5%, and 3% for UK firms and most Western European countries (Faccio and Lang, 2022) and East Asian countries (Claessens et al. 2002). An additional contribution

of this study is therefore higher quality data set without these limitations, which should yield more robust results and be less prone to disruptions from insufficient data. Our data set also covers a completely new and up-to-date time frame ranging from 2017 to 2021 that covers both an economic upturn and an economy-wide phenomenon that pretty much affected all companies and industries at once.

This study is furthermore unique as it uses a theoretical framework that enables a review of the most used statistical models within the literature that aims to uncover the potential ownership-performance relationship. From a more technical aspect, our results should also be less inclined to methodological objections as we measure performance both as ROA and Tobin's Q.

1.3 Research Question

Is there a relationship between corporate governance mechanisms based on managerial- and concentrated ownership on corporate performance of publicly listed companies in Sweden?

1.4 Purpose

The purpose of this study is to empirically investigate the relationship between the corporate governance mechanisms, managerial ownership, and concentrated ownership, on corporate performance in Swedish companies. With its distinguishing corporate governance regime and financial environment, Sweden facilitates a unique contribution to the ongoing discussion on ownership structure and agency conflicts.

1.5 Scope and limitations

As a natural consequence of the purpose of this study, only Swedish publicly listed companies are included. An additional delimitation is the inclusion of companies solely being listed on the small, - mid, - and large-cap of the OMX Nasdaq Stockholm Stock Exchange. This enhances the quality of the data as the availability of financial data is more comprehensive for these companies than for companies listed on smaller lists such as NGM and First North. The chosen timeframe of five years between 2017 and 2021 is another limitation. The time frame facilitates years of economic upturn and a period affected by an economy-wide phenomenon

(Covid-19 pandemic). This might enhance the analysis and smoothen the effects of significant economic trends and events. Because of common limitations in empirical corporate finance studies, companies operating in the financial sector are excluded.

1.6 Target Group

The primary target group of this study is academics and researchers. As argued in the problem discussion, there is a need for more evidence on the ownership-performance relationship in different corporate governance regimes as well as legal and financial environments. This study aims to achieve this. The study also aims to be relevant for practitioners of the Swedish publicly listed companies in that it hopefully can provide insights into how ownership structure affects their performance and how it could be resolved or improved.

1.7 Outline

The remainder of the paper is organized as follows. Section 2 discusses the theoretical framework, previous empirical findings, and research hypothesis within the scope of the ownership structure and corporate performance. Section 3 introduces methodology and estimation procedures by describing samples, data, and variables. Section 4 presents the empirical results and analysis of the relationship between ownership structure and corporate performance. Finally, section 5 concludes with a summary, research limitations, and recommendations for future research.

2. Theory and literature review

2.1 Principal-Agent Problem

Berle and Means (1932) revealed that the capital requirements of modern corporations make them difficult to be operated by a single owner. Shareholders, who are substantially dispersed and have well-diversified portfolios, therefore, delegate the decision-making to corporate managers each of whom has a propensity to maximize their interests. The separation of ownership and control which arises from the delegation of decision-making creates a new discussion, the agency problem. The study by Jensen and Meckling (1976) shed light on the agency problem. They pointed out that the firm is a network of contractual relationships that proposes individuals with different objectives to collaborate to achieve a common goal. The contractual view of the firm indicates that shareholders, who are the original owners of the firm, enter a comprehensive contract with the managers to control how the funds are used and how returns are divided (Jensen and Meckling, 1976; Fama and Jensen, 1983; Shleifer and Vishny, 1997). Designing a complete contract, however, is not easy as much of what the company will experience is uncertain, thereby resulting in a situation where contracts are not sufficiently defined due to future contingencies. Residual control rights, therefore, are allocated between management and shareholders in case of encountering an unforeseen situation (Grossman and Hart, 1986). Sufficient information on each action against an unforeseen situation, on the other hand, may not be conveyed to the shareholders who are not involved in the day-to-day operation. Managers consequently will have substantial residual control rights, which gives rise to discretion by having room for their decision on how to allocate investors' funds (Shleifer and Vishny, 1997). Managerial discretion arising from the significant control rights may lead managers to expropriate, resulting in a situation where they pursue a variety of personal interests at the original owners' expense (Jensen and Meckling, 1976; Mueller, 1969). In the literature, the private benefits of control have been well documented by pointing out that managers may use their control rights to seek to consume excessive perquisites at the expense of shareholders (Grossman and Hart, 1988; Jensen, 1986). They can pursue pet projects and make short-term operating decisions that mitigate personal risk to strengthen their position on the job even though they are no longer competent for adding value to the firm (Shleifer and Vishny, 1989). Entrenched managers, who face little threat of being fired or replaced, may in turn feel free to run the firm in their interest (Berk and DeMarzo, 2019). As a result of the

problems arising from the misuse of control right by the managers, the willingness on the investment decisions of the shareholders can be affected (Grossman and Hart, 1986).

This reasoning has led to the assumption that corporate governance may limit the discretion stemming from the significant control rights of managers by providing owners with an opportunity to exercise control over corporate insiders and management (Jensen and Meckling, 1976; Fama and Jensen, 1983).

2.1.1 Mechanisms to Control Agency Problems

Jensen and Meckling's (1976) principal-agent model demonstrated that agency problems arise when there are possibilities and incentives for the management to pursue their interest at the expense of shareholders (Agrawal and Knoeber, 1996). Drawing on the agency discussion, Jensen and Meckling (1976) pointed out the importance of ownership structure and managerial incentives as a mechanism to curb the problem originally arising from the separation of ownership and control. Berle and Means (1932) also put forward concentrated ownership as a disciplining device for managers. It has been documented in the literature that these mechanisms are substantially associated with the firm's financial performance (Hermalin and Weisbach, 1988).

2.1.2 Managerial Ownership

Management ownership as an incentive mechanism has intrigued researchers, especially within the framework of the agency theory implying the misalignment of the interests of agents and principals (Jensen and Meckling 1976). As presented in the previous section, the incompleteness of contracts between management and shareholders results in managers having substantial control rights providing them independence for self-interested behavior (Shleifer and Vishny, 1989). It is well documented in the literature that one of the obvious solutions to mitigate this problem is to give managers an equity stake in the firm. Interests and actions therefore can be aligned between management and shareholders with the possibility of introducing managerial ownership (Grossman and Hart, 1983; Himmelberg et al., 1999; Jensen and Meckling, 1976; Kroll et al., 1997; Wright and Ferris, 1997).

The attempt to mitigate the agency problem with managerial ownership was observed to be linear in the earlier analysis (Demsetz and Lehn, 1985; Gibbs, 1993). However, later analysis of the managerial ownership revealed a non-linear relation between the performance of firms

and ownership (Morck et al., 1988; McConnell and Servaes, 1995). The analysis demonstrated the fact that on the one hand, managerial ownership can align the interests and actions between management and shareholders by cutting down on unnecessary consumption of perks and encouraging sub-optimal investment policies (Jensen and Meckling, 1976; Kroll et al., 1997). As a result of the incentive effect, the convergence of interest between management and shareholders reduces the agency cost. On the other hand, under-or-over management ownership creates differences in the actions of management and gives rise to divergence of interests, leading to an entrenchment effect (Morck and Yeung, 1992). Jensen and Meckling (1976) pointed out that the actions of entrenched management are in the direction of deploying corporate assets to maximize their personal benefits at the expense of the other owners' best interests.

The increase in managers' shares has been reported negatively in many studies, considering the effects such as complacency, entrenchment, and expropriative behavior of managers (Morck et al., 1988). When the fraction of shares held by managers increases, external shareholders might find it difficult to monitor the actions of entrenched managers. With a substantial equity stake, the managers can take decisions in their interests without fear of discipline mechanisms (Short and Keasey, 1999). Managers can maximize their self-interest by increasing their control over assets or filling jobs with family members to consolidate their position, making them irreplaceable (Fama and Jensen, 1983; Denis et al., 1999). They can assume that their position and employment are secure since they will have sufficient voting power (Demsetz, 1983; Fama and Jensen, 1983; Beyer et al., 2012). There may be also a misalignment in managers' perception of risk in comparison with the shareholders of the company. Substantial levels of equity stake held by management may also result in risk aversion and lower liquidity (Benson and Davidson, 2009; Fama and Jensen, 1983). Since the wealth portfolio of managers holding substantial stakes is in a much less-diversified position compared to the shareholders, their wealth and reputation are based on the performance of a single instrument i.e., the firm performance. Therefore, high insider shareholding encourages reducing the risks that the managers will take (Gibbs, 1993; Wright et al., 1996), which can be achieved by undertaking risk-reducing acquisitions not necessarily adding value (Wright et al., 2002b).

2.1.3 Concentrated Ownership

A significant amount of theoretical and empirical studies concerned with ownership concentration have been conducted within the scope of the dispersion of ownership and agency theory (Berle and Means, 1932; Jensen and Meckling, 1976). It has been well documented in the literature that ownership concentration can be motivated by two leading factors - the shared benefits of control and the private benefits of control.

It has been pointed out that one of the most obvious ways to mitigate the principal-agent problem is to have a concentrated ownership structure where a few large shareholders have an incentive and power to monitor management effectively (Shleifer and Vishny, 1986). Drawing on the agency theory, ownership concentration improves firm performance by providing large shareholders with the ability to control managers. Shareholders with a substantial equity stake in the company, thus, may have an incentive to play an active role in corporate decisions by ensuring effective control over the residual control rights given to managers to cope with unforeseen events in the contract design, thereby avoiding the traditional free-rider problem (Pagano and Röell, 1998; Shleifer and Vishny, 1997). In addition to the monitoring mechanism that comes with the concentrated shareholdings, large shareholders have also an opportunity to place a takeover bid for a firm managed badly, aiming to alleviate the agency conflict stemming from the dispersion of ownership. Superior monitoring arising from the substantial collocation of decision rights, therefore, gives large shareholders to have a greater incentive to increase firm value, which is shared with minority shareholders.

On the other hand, the concentrated ownership model, which was introduced to reduce the conflict of interest between management and shareholders, may come with a new conflict between majority and minority shareholders (La Porta et al., 1999, 2002; Pagano and Röell, 1998). It has been pointed out that high ownership concentration in countries with low shareholder protection engenders the agency problem between majority and minority shareholders more drastic than between management and shareholders (La Porta et al., 1999; Shleifer and Vishny, 1997). In a structure where ownership is heavily concentrated, large shareholders may find an opportunity to engage in ex-post opportunistic behavior at the minority shareholders' expense (Bebchuk, 1999). If large shareholders have control over the firm, they can use their voting power to enjoy corporate benefits that are not shared with

minority shareholders or manipulate managers to act at the expense of those whose interests are not aligned with them.

As for the formation of this mechanism, ownership concentration can occur in different forms such as family groups, multinational organizations, private equity firms, or individuals. The study by La Porta et al. (1999) revealed that the effect of ownership concentration may vary from country to country. The concentrated ownership model, which might be unique for each region, is quite common in such Scandinavian countries as Sweden, which is the subject of this study. In Sweden where heavily concentrated ownership is prevalent, two business groups have historically been situated in place; the “Wallenberg group” and the “Handelsbank group” (Carlsson, 2007; Lubatkin et al., 2005). Large shareholders in such countries have an incentive to directly monitor managers, resulting in managerial agency costs being lower (Johanson and Østergren, 2010). However, the Swedish setting of ownership concentration where the control over management is further reinforced by providing controlling owners with multiple voting rights can be misused to expropriate minority shareholders (Högfeldt, 2005; Söderström et al., 2003).

2.2 Stewardship Theory

Stewardship theory is a framework implying the fact that stewards are responsible for acting in the best interests of their principals (Donaldson and Davis, 1989, 1991). The theory does not argue those managers are individualistic and selfish, but that they have character traits such as being collective-minded and pro-organizational, aiming to attain the goals and objectives set within the organizational framework. Given a choice of behavior either self-serving or pro-organizational, a steward is expected to be inclined to choose the option that will maximize his or her organization’s interest (Davis et al., 1997). In the light of embracing pro-organizational behavior by a steward, the trade-off between organizational objectives and personal needs can be met. Hence, decisions that help maximize the principal's wealth are thought to also maximize the steward's utility functions.

Stewardship theorists argue that a steward's performance is based on whether upper managers can take effective action in the structural situation (Donaldson and Davis, 1989, 1991). For this reason, it is mentioned that stewards should be presented with a structure that will enable them to have high authority and discretion so that they can prioritize organizational benefits that will lead them to realize their own needs (Donaldson and Davis, 1991). In this respect, the resources

that are necessary to make sure pro-organizational behavior is in place from the agency theory point of view (monitoring and incentive contract) can be decreased since a steward is motivated with empowerment instead of being monitored and controlled (Davis et al., 1997).

2.3 Previous Empirical Research

Previous empirical studies pointing out the relationship between the corporate governance mechanism and firm performance have been backed by the arguments of the separation of ownership and control (Berle and Means, 1932) and the agency theory (Jensen and Meckling, 1976). Due to the deficiencies in the contract design, managers are given substantial control right over unforeseen events that may be encountered, resulting in a conflict of interest between management and shareholders. Managers may be inclined to have incentives to take actions that maximize their utility at the expense of shareholders (Watts and Zimmerman, 1986). The corporate governance mechanism aims to direct and control management activities within companies, thereby minimizing these agency conflicts.

2.3.1 Managerial Ownership

Drawing on the agency arguments, the impact of managerial shareholdings on firm performance has drawn the attention and interest of many researchers. It is well documented in the literature by Jensen and Meckling (1976) and Stulz (1988) that ownership structure affects firm value. Jensen and Meckling (1976) demonstrated that ownership by management serves to align the interests of managers with those of shareholders, thereby raising the value of the firm. Stulz (1988) on the other hand addressed that managerial ownership can lower the firm value since it facilitates managers to block takeover bids. Despite valuable insights that empirical studies provide within the framework of agency argument, the literature includes no consensus on the relationship between management ownership and firm performance. This empirical ambiguity stems mainly from the argument based on the alignment or entrenchment.

On the one hand, the shares offered to the managers make the interest common between the managers and the shareholders, as the company's value increases, it will increase the manager's wealth (Chang, 2003; Fernandez and Arrondo, 2005; Gibbs, 1993; Jensen and Meckling, 1976; Jensen and Murphy, 1990). The divergence of interests thus decreases, as the increase in the value of the firm will increase the total earnings of the managers as well. Mehran (1995) examined 153 U.S. manufacturing firms and found a positive relationship between insider

ownership and firm performance measured by Tobin's Q and ROA. The study revealed that the free-rider problem stemming from the separation of ownership and control may be mitigated by introducing managerial ownership, thereby encouraging managers to maximize the shareholders' benefit by considering the investments that add value to the firm.

On the other hand, other studies analyzing the impact of managerial ownership on firm performance revealed non-linear relation (Hermalin and Weisbach, 1987, 1991; Morck et al., 1988; McConnell and Servaes, 1990, 1995; Kole, 1995; Short and Keasey, 1999). Morck, Shleifer, and Vishny (1988) analyze the relation between managerial ownership and firm value measured by Tobin's Q. The study provides evidence of a significant non-linear 'roof-shaped' relationship between firm value and managerial ownership. Using a sample of 371 Fortune 500 firms, they built a piece-wise linear regression where the dependent variable is Tobin's Q while the main independent variable is the fraction of insider equity stake. The study reveals that the value measured by Q rises with low levels of ownership i.e. when ownership increases to 5%. However, firm value initiates to decrease at some level where managers become entrenched; between 5% and 25%, then rises slightly at higher managerial ownership. Using a similar methodology utilized by Morck et al. (1988), another study by McConnell and Servaes (1990) with a larger data set provides evidence for both the alignment and the entrenchment effects, revealing an inverted U-shaped relationship between managerial ownership and firm performance. The study found a strong curvilinear relation between the fraction of insider shareholdings and firm performance measured by Tobin's Q. It has been pointed out that the relationship between managerial ownership and firm performance is positively related to low levels of insider ownership. On the other hand, the relation is negative at high levels of ownership. The results found by McConnell and Servaes (1990) are substantially consistent with the model developed by Stulz (1988), indicating that the value of the firm increases at first and then decreases as equity ownership held by insiders increases. A similar conclusion was put forward by Short and Keasey (1999) who analyzed and reported a cubic relationship between firm value and managerial ownership for a sample of 225 UK listed companies. The study observed a positive relationship between these two variables when the stake held by managers is below 12% or above 40%, but a negative relationship between 12% and 40%. Benefiting from the similar regressions, Hermalin and Weisbach examined the relation for 134 NYSE firms. They found an inverse W-shaped relationship between the fraction of stock owned by management and financial performance measured by Tobin's Q. The study pointed

out that the relationship between managerial ownership and Tobin's Q is positive between 0% and 1%, negative between 1% and 5%, positive between 5% and 20%, and negative when higher than 20%. Studies that found non-monotonic relationships are consistent with the hypothesis by Jensen and Meckling (1976) and Stulz (1988) - that ownership structure affects firm value.

Some studies conducted to reveal the effect of managerial ownership on firm performance did not find a particular relation. Cho (1998) examined the relationship between managerial ownership and corporate performance for a sample of 326 Fortune 500 firms. Considering the effects of endogeneity in the corporate value, the study revealed that managerial ownership did not affect corporate value and investment decisions. Therefore, it was pointed out that managerial ownership may not be an effective incentive mechanism to encourage managers to make value-maximizing investment decisions. Agrawal and Knoeber (1996) examined the listed firms in the USA in 1987 and found a statistically significant relationship between firm performance and insider ownership in the single mechanism OLS regression but, the relationship between insider shareholding and firm performance disappeared in the expanded OLS regression.

2.3.2 Ownership Concentration

Early studies regarding the mitigation of agency conflict have prompted researchers to examine the impact of ownership structure on corporate performance. The agency theorists put forward that concentrated ownership might be an effective mechanism to reduce the problems arising from the dispersion of ownership. Despite a lot of discussion and research, especially within the framework of agency argument, the results associated with the effect of ownership structure on performance are mixed. As presented earlier, concentrated ownership, on the one hand, was found to provide for better control by facilitating an incentive to monitor management closely (Shleifer and Vishny, 1986), but later revealed that it can on the other hand introduce a new conflict between controlling shareholders and minority shareholders (Bebchuk, 1999; La Porta et al., 1999, 2002; Pagano and Röell, 1998).

Prior studies concerned with the relationship between firm performance and concentrated ownership revealed a positive relationship. Berle and Means (1932) and Jensen and Meckling (1976) pointed out that the free-riding problem that occurs with dispersed ownership can be reduced by introducing ownership concentration. Touching upon the argument concerned with

information asymmetry, Zeckhauser and Pound (1990) explained why the existence of large shareholders may increase the firm performance. They tested the relationship between large shareholdings, corporate performance, and corporate financial policy by drawing a sample of 286 firms, dispersed across 22 industries. The findings of the study revealed that large shareholders are associated with significantly higher expected earnings growth rates in industries with an open information structure. However, the same finding was not observed in industries with a closed information structure, implying that these corporations are more difficult to monitor. Shleifer and Vishny (1986) examined the relationship between firm value and the presence of a large shareholder of the 456 firms in their sample between January 1980 and December 1984. It has been found a shred of evidence that share prices increase when the stake held by concentrated owners increases. The model also revealed that large shareholders take an active role in activities of the firm, including taking control over the management and replacing poorly performing managers.

On another note, Shleifer and Vishny (1997) revealed that substantial ownership concentration causes more serious problems between majority and minority than management and shareholders. Leech and Leahy (1991) created a sample consisting of 470 UK-listed companies from a wide range of industries. They reported a negative significant relationship between ownership concentration and corporate performance. Baek et al. (2004) examined 644 non-financial firms listed on the Korean Stock Exchange (KSE) between November 1997 and December 1998. They found evidence that equity drops experienced in companies with a high concentration of ownership where voting rights exceed ownership rights are higher than in those without. Bae, Kang, and Kim (2002) analyzed 87 non-financial firms that are listed on the KSE between 1981 and 1997. Their findings were also consistent with the findings associated with an integral part of South Korea's ownership structure where higher expropriation of minority shareholders by large block-holders. pointed out that while controlling owners gain from acquisitions, minority shareholders of firms within the top 30 Korean chaebols typically lose out.

Demsetz and Lehn (1985) examined the relationship between corporate performance (measured by using accounting profit) and large shareholdings (measured by using the percentage of shares owned by the five and ten largest shareholders). They found non-significant relationships between corporate performance and ownership concentration where ownership structure is treated as an endogenous variable. McConnell and Servaes (1990)

pointed out the relation between large shareholders' corporate performance measured by Tobin's Q. The study could not find evidence to support the hypothesis implying the importance of large shareholders to monitor corporate managers. The findings of the study by Holderness (2001) about the impact of block ownership on firm performance are consistent with the study by McConnell and Servaes (1990). It is demonstrated that ownership structure appears to have little or no impact on the valuation of the firm.

2.3.3 Endogeneity

While more studies have not controlled for the endogeneity issue, some studies do. This is especially observed in the more recent literature (e.g., Agrawal and Knober, 1996; Cho, 1998; Demsetz and Villalonga, 2001; Himmelberg et al., 1999; Kapopoulos and Lazaretou, 2007; Hu and Izumida, 2008). These studies emphasized the endogeneity issue by adding a simultaneous model in addition to the single-OLS model. The most often used simultaneous model is the two-stage least squares (2SLS) regression model with instrumental variables ("IV"). Important to note is the fact that these studies always present a single OLS regression at the first stage, suggesting that the endogeneity issue is more of a robustness check or additional control.

The empirical findings from the 2SLS are divided and most scholars conclude that when controlling for endogeneity, the statistical significance from the OLS regression either remains insignificant or disappears. There is a clear distinction between the studies that still end up with a statistically significant result after introducing the data sample to a 2SLS. The data sample is non-US data and covers non-Anglo-Saxon countries (Hu and Izumida, 2008; Kapopoulos and Lazaretou, 2007). While not confirmed, these observations might support the notion that the ownership variables are more endogenous to performance in Anglo-Saxon countries than in their counterpart. The Anglo-Saxon system supports the shareholders over management and the board, and management is given secondary authority. Stock grants and other incitement programs are also often more common and tied to the performance of the stock- and company performance. The endogeneity might therefore become a greater issue for these data samples as managerial ownership should rise when a performance level is triggered.

After a comprehensive and thorough investigation of the results by the most prominent researchers such as Himmelberg et al. (1999) and Demsetz and Villalonga (2001), there seem to exist several issues and challenges with the results, all stemming from weak instrumental variables. The choice of appropriate instrument variables is profoundly challenging in the

context of the relationship between ownership structure and financial performance. The theory for choosing instrumental variables is moreover poor, and in combination with a poor explanation in the literature (e.g., Agrawal and Knober, 1996; Cho, 1998; Demsetz and Villalonga, 2001; Himmelberg et al. (1999); Kapopoulos and Lazaretou, 2007; Hu and Izumida, 2008), the procedure in identifying suitable IV's is complicated. This poses a problem to the robustness of the mentioned studies' results, which is also acknowledged by the authors of these studies. Himmelberg et al. (1999) conclude for instance that "instrumental variables for managerial ownership are difficult to find. The basic problem is that for any variable that plausibly determined the optimal level of managerial ownership, it is also possible to argue that the same variable might plausibly affect Tobin's Q" (p. 379). The formulations made around the weak instruments by the most prominent researchers raise doubts about the robustness of the empirical results that control for possible endogeneity issues. In comparison to the single OLS model, the instrumental variable is much less investigated in this context. Yet, more and more are used for investigating the potential relationship between performance and ownership structure.

2.4 Hypothesis Development

Ownership concentration

Prior studies indicate that ownership dispersion is associated with poor shareholder monitoring over management. The incentives to monitor shareholders with a low level of equity are considered low because the cost of monitoring exceeds the benefits of their smallholdings. Moreover, with a dispersed ownership base it is more difficult to make demands as more individuals must get together to make an impact. The inability to monitor the management exacerbate the agency conflict between the management and individual shareholders. Touching upon the study by Jensen and Meckling (1976) and Grossman and Hart (1980), concentrated ownership has been observed to curb the free-riding problem, thereby being positively associated with fewer agency conflicts. The main idea behind the positive relationship between ownership concentration and firm performance is that concentrated ownership is a structure that facilitates a greater level of incentives to monitor management (Walsh and Seward, 1990). Compared to a dispersed ownership structure, concentrated ownership might therefore also facilitate a better platform for making demands. As the wealth of shareholders is mostly based on the performance of the corporation where they hold a substantial equity stake, they are

expected to both have the economic justification and ability to monitor and make demands on management (Shleifer and Vishny, 1986).

There are however studies that argue that a high level of concentrated ownership exacerbates a new agency problem between majority and minority shareholders (Davies, 2000; La Porta et al., 1999). In countries where legal and institutional frameworks offer poor individual shareholder protection, La Porta et al. (1999) argued that this agency problem might be more severe than the one between management and shareholder. Despite not being an Anglo-Saxon country, the minority protection in Sweden might be stronger than suggested, made sure by strong rule-of-law measures, legal enforcement in corporate law, and informal enforcement. The latter relates to the social prestige and reputation resulting from majority ownership, which can be argued to limit the minority abuse suggested by La Porta et al. (1999). We follow the more used approach and test for a linear relationship. On this notion, this study expects a positive relationship between ownership concentration and corporate performance as specified below:

H1: Concentrated ownership is positively associated with corporate performance measured using ROA.

H2: Concentrated ownership is positively associated with corporate performance measured using Tobin's Q.

Managerial ownership

It has been well established in the literature that another way to align the interest of management with those of shareholders is to introduce managerial ownership (Himmelberg et al., 1999; Jensen and Meckling, 1976; Fama and Jensen, 1983; Kroll et al., 1997). The main argument behind this mechanism stems from its ability to converge the interest between management and shareholders, which arises from steering clear of the self-opportunistic behavior. Managers are therefore expected to become less entrenched when holding equity stakes in the company in which they steward. Most empirical findings are consistent with these theoretical predictions as they mostly find a positive association between managerial ownership and corporate performance (Chang, 2003; Gibbs, 1993; Jensen and Meckling, 1976; Jensen and Murphy, 1990). Drawing on the entrenchment hypothesis, Demsetz (1983) and Stulz

(1988) on the other hand argued that beyond a certain level of managerial ownership, managers could use their power to pursue their interests. The argument of alignment or entrenchment beyond a certain level is also discussed by several studies that found evidence of a non-linear relationship between managerial ownership and corporate performance (e.g., Morck et al., 1988; McConnell and Servaes, 1990; Kole, 1995). Touching upon the studies by Bebchuk et al. (1999) and La Porta et al. (1999), the attractiveness of the corporations may be due to their reputation for managerial competence. Hence, in countries such as Sweden where reputation and social status seem to be of primary importance, empire-building and other actions of entrenchment may be less observed. We follow the most used approach and test for a linear relationship. Under the agency-conflict and entrenchment theory, we formulate the following hypotheses:

H3: Managerial ownership is positively associated with corporate performance measured using ROA.

H4: Managerial ownership is positively associated with corporate performance measured using Tobin's Q.

3. Methodology and data description

3.1 Research Design

This quantitative study adopts a deductive approach. This approach takes its starting point in existing theories and empirical findings and formulates hypotheses around those (Bryman and Bell, 2017). As presented, this study's hypotheses have emerged from and rely on agency theory and various empirical foundations. The deductive approach further means that the data collection process is guided and influenced by theory and previous empirical findings. Reliant on the findings, the hypotheses are either confirmed or rejected. This enables a revision of the theories and existing empirical findings in the analysis. The deductive approach, therefore, appears to provide the most suitable and viable approach to investigating managerial ownership and ownership concentration, and financial performance. It is furthermore a superior approach for quantitative studies as it preserves the validity and objectivity of the results (Bryman and Bell, 2017). This chapter will proceed as follows: 3.2 Data and sample description; 3.3 Description of variables; 3.4 Descriptive statistics; 3.5 Statistical frameworks; 3.6 Pre-regression diagnostics; 3.7 Criticism of Methodology.

3.2 Data and sample description

The sample used is represented by companies listed on the small, - mid, - and large-cap indices on the OMX Nasdaq Stockholm stock exchange. The size requirements and characteristics for these price index lists are the following: Large-Cap - Market cap exceeding > €1 Bn; Mid-Cap - Market cap between €150 Mn and €1bn; Small-Cap - Market Cap below < €150 Mn (Nasdaq, 2022). Please refer to (Nasdaq, 2022) for more information regarding this and other characteristics such as regulations and requirements.

As was presented in the introductory chapter, we are interested in analyzing the ownership-performance relationship on Swedish publicly listed companies. The chosen country improves the quality of the empirical analysis as the ownership data is in comparison to most other countries more comprehensive, monitored, and accessible. This is also evident from the differences in respective countries' regulations and requirements. According to Faccio and Lang (2002), the threshold for compulsory ownership disclosure is 3% for publicly listed

companies on the U.K. stock markets. Similar limitations seem to be true for most Western European stock exchanges as well according to the author's observations. Claessens et al. (2002) observe similar traits in East Asian markets. While these thresholds might be different now because most empirical evidence is from around this time, these thresholds are valid as a reference. The Swedish Financial Supervisory Authority (“FI”) does not have these limitations (for further discussion we refer to section 3.2.1 *Data Collection*). Our choice of data, therefore, ensures high-quality ownership data.

The final data sample is the intersection of three databases, Modular Finance, Bloomberg, and to a small extent Retriever. These are discussed more comprehensively in *section 3.2.1 Data Collection*. The sample covers an unbalanced panel data of the companies listed on the small, - mid, - and large-cap on OMX Nasdaq Stockholm for the five years between 2017 and 2021. The time frame was determined by Modular Finances data availability, capping the time frame in 2017. The time frame benefits the study’s contribution as it is one of few studies that use this recent data. The time frame of five years is also coherent with the more prominent studies as can be seen in the previous literature summary table 3.8.2-1.

We do not include the Nordic Growth Market (“NGM”) and First North Stockholm and Spotlight SE, all of which are also price indexes on the OMX Nasdaq Stockholm stock exchange. The companies listed on these indices are in comparison to the small, - mid, - and large-cap companies less regulated and have fewer requirements related to accounting standards and information transparency. This place demands on the investor's own ability to find information about the companies. These regulatory differences and lack of transparency (in comparison) are one of the reasons why these companies were not included in the data sample. Another reason, and perhaps the more prominent reason, stems from the poor availability and completeness of financial data on Bloomberg for these companies. This is also the case for platforms such as Orbis and Thomson Reuters - all of which are highly recognized platforms for financial data on listed companies. Even if it was possible, it seems that previous research would suggest against it. At least advocate a separation between the samples since most studies either utilized a data sample of companies listed on exchanges such as NYSE and Fortune500 or in emerging markets (often less prominent ones). Additionally, in line with previous studies, we drop all financial firms from the sample (e.g; Barnhart and Rosenstein, 1998; Cui and Mak, 2002; Davies et al., 2005; Florackis et al., 2009; McConnell and Servaes,

1990; Short and Keasey, 1999). Financial firms are balance sheet heavy. Measures of value such as Tobin’s Q is therefore not entirely representative of what it aims to measure. Thus, it might generate false or misleading results. The final sample consists of 1440 firm-year observations on 364 individual firms, corresponding to an average listed rate of about 4 years within the time frame. While a more extensive time frame would have benefited the observation size, our 1440 observations are comparably bigger than most previous studies on the ownership-performance relationship. See table 3.8.2-1 for evidence. Below, we display and analyze some statistics on the OMX Nasdaq Stockholm:

Table 3.2-1 Number of companies per indices

	2017	2018	2019	2020	2021
Large Cap	112	116	119	122	128
Mid Cap	113	120	122	128	140
Small Cap	80	83	83	84	88
Total Small, Mid, Large	305	319	324	334	356
Other	407	456	492	530	654

Other include First North Stockholm, Spotlight SE & Nordic SME

Table 3.2-2. Market cap (in %) representation per indices

	2017	2018	2019	2020	2021
Large Cap	91%	91%	92%	90%	90%
Mid Cap	6%	6%	5%	6%	5%
Small Cap	1%	1%	1%	1%	1%
Total Small, Mid, Large	98%	98%	98%	96%	96%
Other	2%	2%	2%	4%	4%

Other include First North Stockholm, Spotlight SE & Nordic SME

Table 3.2-1 illustrates the number of companies listed on each price index list on the OMX Nasdaq Stockholm. It shows that the number of firms has increased rapidly for firms listed on “other” lists, while the small, - mid, - and large-cap remains rather solid and predictable. This further strengthens our data set because the “other” list seems to be characterized by a much higher turnover. A shorter period for some companies could influence and yield biased results.

Put together, the small, - mid, - and large-cap cover around half of the number of companies. Table 3.2-2 shows that the large-cap account for between 90-92% of the OMX Nasdaq Stockholm market measured as market capitalization. This is not surprising considering the above-mentioned requirements. It further shows that our data sample covers between 96% and 98% of the total market capitalization, while showcasing around half of the listed companies on the OMX Nasdaq stock exchange.

Table 3.2-3 Number of years publicly listed

Years listed 2017-2021	1	2	3	4	5
Amount	25	10	6	15	303
Percentage	7.0%	2.8%	1.7%	4.2%	84.4%
(%) of total market cap	1.1%	0.4%	1.9%	4.4%	92.1%

Table 3.2-4 Industry representation

Sector	Observations	Market representation	cap
Communication Services	5%	4%	
Consumer Staples	3%	5%	
Industrials	28%	40%	
Health Care	18%	19%	
Consumer Discretionary	15%	11%	
Information Technology	14%	8%	
Energy	2%	1%	
Materials	7%	5%	
Real Estate	9%	7%	
Utilities	1%	0%	
Total	100%	100%	

From table 3.2-3, we can observe the first main reason why the time frame results in an unbalanced data sample. 16% of the sample companies have been listed between 1 and 4 years within the five-year period. The remaining 84% was listed for all five years within the chosen time frame. Another interesting observation made is that 96% of the total market capitalization is attributable to the companies that have been listed for at least 4 years within the period. Missing data observations might skew the results compared to companies with a longer panel.

The observations are beneficial for our purposes because it means that the unbalanced parts of the observations should have minimal influence on the results.

Table 3.2-4 shows the distribution of the observations by industry sector and by market capitalization by industry. The data is presented for improving the transparency and comparability of our data sample. As mentioned, all financial firms were dropped and are thus not presented in the table.

3.2.1 Data Collection

Ownership data

Our data collection process takes its starting point on ownership data. This data consists of two distinctive data. (1) managerial ownership and (2) ownership concentration. The definitions are further presented and explained in the next section *3.3 Descriptions of variables* and descriptive statistics of them are presented in section *3.4 Descriptive Statistics*. To retrieve this data, the database Holdings by Modular Finance was utilized. This is the biggest, most comprehensive, complete, and updated database on ownership data for listed companies in the Nordic Region (Modular Finance, 2022). The company provides many services, but for this purpose, their Holdings tool was utilized. It provided us with the following data:

(1) Managerial ownership data involves individual shareholdings, both cash-flow-, and voting rights respectively, among the companies' management and board members. Managerial and board member shareholdings are commonly referred to as "insider ownership". An insider is classified by the Swedish Financial Supervisory Authority ("FI") as an individual who has a relationship with the company in a way that he or she is exposed to information that is not publicly announced ("insider information"). Such individuals have either a managerial position within the firm or a board member seat. The FI publicly publishes all insider trading, which Modular Finance collects - thus the data is of superior quality. An example of how the data is structured in its raw form is presented in Table 3.2.1-1. Astra Zeneca per 2021-12-31 is used for illustrative purposes.

[Please insert Table 3.2.1-1 about here]

(2) Ownership concentration was retrieved by downloading the shareholding lists. According to Swedish Law, insider transactions are required to be reported, which is monitored by FI and both announced and available to the public. Modular Finance makes this data available in an accessible way, suitable for large data collection. The data is therefore highly reliable and comprehensive. All shareholders in listed companies on Nasdaq OMX Stockholm are also automatically reported and registered in ownership lists in Euroclear (Euroclear, 2022). While all shareholders are registered in this list, only the first 200 are presented. All other shareholders are clustered into one “other” category. Due to integrity reasons, stakes below 0.1% are also clustered into this category. For our purposes, this is far beyond enough. An example of how this data looks in its raw form is presented in table 3.2.1-2. Astra Zeneca per 2021-12-31 is used for illustrative purposes.

[Please insert Table 3.2.1-2 about here]

Financial fundamental data

Yearly fundamental financial data was retrieved from Bloomberg. The platform was chosen based on its reputation for providing quality data and its user-friendly functionality in providing tools for sorting and collecting the financial data this study needs. The Member Weighting function (MEMB) was used to extract the yearly fundamental data for each company on each price index respectively. Bloomberg did not provide the Large-cap price index, however, when merging the OMX30 index with the Nordic Large Cap price index it was possible to tailor the large-cap index that matched with the index observed on OMX Nasdaq Stockholm. The standard deviation of stock return was not accessible on Bloomberg. Consultation with other platforms such as Orbis and Thomson Reuters did not yield a different result. Therefore, we calculated it ourselves in excel. Through Bloomberg, monthly average stock prices for all companies in our data set were extracted for the five years prior to “year one”, where year one is the year that we study. I.e., for the year 2017 for example, the standard deviation was based on the five years prior. Therefore, the monthly stock return was extracted for each of the companies in our data set for the period 2013-2021. This was made manually for each firm in isolation, resulting in several excel files equal to the number of firms in the final data sample. Macro in excel was used for automating the computation of standard variation and for sorting it in a compatible way. Another variable missing in Bloomberg was the firm age variable. This variable was instead extracted from Retriever (Retriever, 2022). Due to the lack of

functionality, the firm age was manually extracted by searching for each of the companies used in this study and manually plugged into an excel sheet, pre-programmed for computing the firm age for all years within the chosen time frame.

3.3 Description of Variables

This section provides a description and explanation of dependent, independent, controlling, and dummy variables used in this study. For a summary table of the definitions, refer to *table 3.3.1*.

3.3.1 Dependent variables

Corporate performance, which is the dependent variable in this study, was estimated by two measurements – the market-oriented performance measure, Tobin's Q, and accounting performance measure, return on assets (ROA). Even though there is usually a correlation between these metrics, the main difference between the two measurements is closely related to the time perspective. Tobin's Q is forward-looking while ROA is backward-looking (Demsetz and Villalonga, 2001). The literature uses Tobin's Q more frequently (e.g; Agrawal and Knoeber, 1996; Cheng, 2008; Demsetz and Villalonga, 2001; Hermalin and Weisbach, 1988; Loderer and Martin, 1997; McConnell and Servaes, 1990; Morck et al., 1988, 2000), while ROA is used to a lesser extent (e.g., Demsetz and Lehn, 1985; Pervan et al., 2012).

Tobin's Q

Tobin's Q is the market capitalization of the firm divided by its assets' replacement cost. Tobin's Q, which is a forward-looking performance measure, reflects a firm's value relative to book value and facilitates the transmission of the market image of the corporation's performance. The use of Tobin's Q, thus, enables researchers to reduce the costs of one-sidedness, by presenting a model that will incorporate both past performance and future growth opportunities. Since Tobin's Q is forward-looking and based on the market, it expresses the firm value in terms of performance, making it a relevant variable for comparing values between companies. A higher Tobin's Q might be interpreted as a signal of effective governance and enthusiastic market views on the performance of the company (Weir et al., 2002). It is worth mentioning however that the measure is not unproblematic. As the book value of assets is used might not represent the value of intangible assets properly. The underlying assumption here is that the numerator of Q partly exhibits the value of intangible assets assigned by investors while

the denominator of Q does not consist of the intangible asset investments the firm has made (Demsetz and Villalonga, 2001). Hence, the revenue stream that will be generated by the firm in the future is considered as if it can be solely generated from the investments in tangible assets, which distorts the performance comparisons (Weiss, 1969).

$$\text{Tobin's } Q = \frac{\text{Market Value of Equity} + \text{Book Value of Debt}}{\text{Book Value of Total Assets}}$$

Return on Assets (ROA)

ROA equals net income divided by total assets and is a commonly used performance measure by investors. The measure is accounting-based, meaning that it reflects historical performance and historical decisions made by the stewards (Christensen et al., 2010). It has been documented by Core et al. (2006) that ROA is generally preferred as an operating performance within the framework of the corporate governance studies given the fact that it is not spoiled by leverage and extraordinary items. ROA is a backward-looking measure reflecting the accounting rules and managerial discretion by measuring the profitability of the firm (Kapopoulos and Lazaretou, 2007). It is important as it represents the steward's ability to allocate corporate resources. It is worth mentioning that the nominator's net income is subject to accounting manipulation and other assumptions made by management.

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$$

3.3.2 Independent variables

3.3.2.1 Managerial Ownership

Managerial ownership is measured as the sum of the shares owned by the board of directors and management combined. Management includes those individuals that have a leading position in a company, that could be considered to hold information that is not disclosed to the public (FI, 2022). For illustrative purposes, Table 3.2.1-2 displays an example of how the data looks in its rawest form once retrieved from Modular finance. The table presents the ownership stakes of all managerial individuals of the company Astra Zeneca. Drawing on the previous studies (e.g., Agrawal and Knoeber, 1996; Cui and Mak, 2002; Florackis et al., 2009; Himmelberg et al., 1999; McConnell and Servaes, 1990; Morck et al., 1988; Short and Keasey, 1998), the measure of managerial ownership was defined as the sum of the capital rights of all individuals listed as board members and management in the table.

Managerial ownership = Sum of managerial individual #1 to #i capital rights

3.3.2.2 Concentrated Ownership

Concentrated ownership is measured as the sum of the fraction of shares held by the five largest shareholders in each company. Due to Sweden's high ownership concentration characteristics, the sum of the five largest owners was deemed reasonable. For illustrative purposes, Table 3.2-1 displays an example of how the data looks once retrieved from Modular Finance. As we can see, Blackrock is the largest majority shareholder as it owns the most capital rights (largest amount of shares). Concentrated ownership has been measured differently in the literature. Our definition is a widely used measure (e.g., Demsetz and Lehn, 1985; Leech and Leahy, 1991)

Ownership concentration = Sum of shareholders #1 to #5 capital rights

3.3.3 Control Variables

Finally, this study considers a range of control variables related to industry and firm characteristics. Controlling variables include measures of firm size, firm age, firm risk, and debt ratio, as well as dummy variables for industry, year, and dividends.

3.3.3.1 Firm Size

There have been several studies in the literature on the relationship between firm performance and firm size. It has been reported in many studies that firm size affects profitability. Hall and Weiss (1967) and Fiegenbaum and Karnani (1991) have found a positive relation between firm size and profitability while Shepherd (1972) and Becker et al. (2010) have found a negative relationship. As the size of firm changes, there are also changes in corporate governance practices. Lehn et al. (2003) put forward that larger-sized firms need more board independence since they have fewer shareholders with substantial equity stakes and greater cash flows. On the one hand, these firms can utilize economies of scale, and investment opportunities, and can employ more skilled and differentiated employees and managers (Himmelberg et al., 1999). On the other hand, larger firms have a greater scale of operations, resulting in a greater incentive for managers to shirk (Demsetz and Lehn, 1985). As the firm grows and ownership disperses, it will be difficult to monitor, which exacerbates the agency problem between management and shareholders. To avoid inducing spurious correlations, firm size effects are important variables to include.

Given the literature on the ownership-performance relationship, the most popular proxies used for firm size are, in rank accordingly: total assets, total sales, and market value of equity. We measure firm size as the logarithm of the book value of total assets, which is supported by several studies within the scope of the corporate governance literature (e.g; Agrawal and Knoeber, 1996; Anderson and Reeb, 2003; Baek et al., 2002; Bhagat and Bolton, 2008; Black et al., 2005; Demsetz and Villalonga, 2001; Eisenberg et al., 1998; Ferris et al., 2003; Kim et al., 2007; Konijn et al., 2011; Maury and Pajuste, 2005).

3.3.3.2 Firm Age

Firm age, determined as a control variable, has the capacity to influence the organization's strategies and performance (Eisenberg et al., 1998). On the one hand, older firms can benefit

from economies of scale and reputation effects. On the other hand, they can suffer from organizational rigidity and inertia (Barton, 1992). Older firms may be delayed in reacting to changes in the external environment or may have difficulty adapting because of having inflexible and bureaucratic structures. As presented in the study by Loderer et al. (2017), organizational rigidity that stems from the firm age may cause a decline in growth opportunities. Firm age is therefore expected to affect corporate performance.

Firm age equals the number of years between the founding year and observation year. This control variable has frequently been used within the framework of corporate governance studies (e.g., Anderson and Reeb, 2003; Cashman et al., 2012; Denis and Sarin, 1999; Fich and Shivdasani, 2007; Field et al., 2013; Haniffa and Cooke, 2002; Konijn et al., 2011).

3.3.3.3 Debt Ratio

The impact of leverage on firm performance has been well established in the corporate finance literature. Jensen and Meckling (1976) pointed out that financing through debt affects the incentives of management. A higher debt level facilitates higher variance in returns and enhances the incentive to accept high-risk investments to transfer wealth from one party to another, which introduces different sets of agency problems between shareholders and creditors. In addition to bearing risk, corporations with a high level of debt experience a dysfunctionality in decision-making regarding new investment opportunities. They are also likely to forego positive NPV investments that can add value for bondholders (Myers, 1977). Therefore, strategic choices that the firm can utilize decrease when the debt level is increased, which may lead to a decline in the performance of the corporation (Marlin et al., 1994). On the other hand, debt can serve as a disciplinary device that limits the agency costs of equity holders. According to the free cash flow hypothesis by Jensen (1986), debt can reduce the amount of free cash flow that can be wasted by management, thereby mitigating managerial discretion. The argument was also discussed by Grossman and Hart (1982) pointing out the role of debt in lowering agency problems between management and shareholders. Drawing on the studies by Bebchuk et al. (2004), Bhagat and Bolton (2008), Graham et al. (2004), and Wintoki et al. (2012), leverage was computed as follows:

$$\text{Debt Ratio} = \frac{\text{Book Value of Total Debt}}{\text{Book Value of Total Assets}}$$

3.3.3.4 Firm Risk

The associations between risk and performance are well established in the literature. Risky firms often have a high default risk, which means they are generally more prone to external shocks. Riskier firms, therefore, may look for ways to reduce the perception of risk, thereby lowering the cost of capital because firm risk indicates the variability in returns, giving rise to increasing the chance of corporate ruin (Bloom and Milkovich, 1998). Riskier firms, hence, are expected to have stronger monitoring functions, stemming from stronger governance mechanisms (Black et al., 2005). Drawing on the studies by Agrawal and Knoeber (1996), Anderson and Reeb (2003), Bhagat and Bolton (2008), Black et al. (2005), Denis and Sarin (1999), the standard deviation of the monthly stock returns for the previous five years issued as a proxy for firm risk.

3.3.3.5 Industry Dummy

Nearly most studies on the relationship between ownership and performance include dummies for different industries (Agrawal and Knoeber, 1996; Barnhart and Rosenstein, 1998; Coles et al., 2011; Demsetz and Lehn, 1985; Himmelberg et al., 1999; Kaserer and Moldenhauer, 2006; Maury and Pajuste, 2005; Morck et al. 1988). These dummies are used to account for the industry-specific characteristics and how those affect the expectations of the financial performance of a company. Barnhart and Resenstein (1998) and Morck et al. (1988) found that OLS regressions that included dummies for different industries found a significant non-linear relationship between managerial ownership and corporate performance. When these regressions excluded the industry dummy, however, the non-linear relationship was statistically insignificant. This study looks at if higher ownership results in higher performance metrics. It is therefore important to acknowledge and account for the varying industry-specific norms on financial performance as the extent of the performance measure is subject to industry-specific norms. For instance, we can expect that industries differ in terms of the competitive landscape, financial pressure, growth opportunities, regulatory differences, etc. These differences will likely also influence the financial performance measure. As presented in *section 3.2*, this sample includes 9 different divisions of industries after dropping the financial industry companies: Basic Materials, Consumer Goods, Consumer Services, Energy, Health Care, Real Estate, Technology, Telecommunications, and Industrials. By accounting for these different industries as dummy variables, we control for specific industry characteristics.

3.3.3.6 Dividend Dummy

It has been well documented within the scope of the agency argument that one way to mitigate the problem, stemming from the separation of ownership and control, is to introduce dividends (Rozeff, 1982; Easterbrook, 1984). Touching upon the agency argument, Easterbrook (1984) pointed out that dividends are supposed to have a controlling role by introducing capital market monitoring on the activities and performance of the firm. Considering that firms are expected to sell common stock in primary capital markets, the investigation of management by external mechanisms (e.g., investment banks, securities exchanges, and suppliers of the capital) will be in place. Being one of the most favorable means of aligning the interest of managers with those of shareholders, Jensen (1986) argued that dividends can limit the prospective investment, which can undermine the value of shareholders, thereby reducing the agency cost. Dividends, therefore, play an important role in limiting the expropriation of insiders (Faccio et al., 2001; La Porta et al., 2000). In addition to the mechanism referring to the reduction of cash flow in the hands of management, dividends are also tied to long-term sustainable earnings, thereby demonstrating that the company is performing well. The study by Graham et al. (2004) revealed that dividends are prioritized investments that managers are predisposed to have a strong aversion toward cutting dividends until a point at which they are forced by creditors. The payout, on the other hand, may represent the value transfer from creditors to shareholders, thereby increasing the volatility of assets. The dissatisfaction of the creditors regarding the payout policy of the firm may lead to a conflict of interest, which requires creditors to make sure by introducing constraints on the payout that their wealth will not be transferred to shareholders. Drawing on several studies (e.g., Cho, 1998; Kaserer and Moldenhauer, 2005), the dividend dummy was used as a control variable in a formulation referring to the assigning one (1) for the firms that pay a dividend, and zero (0) for the firms that do not pay a dividend.

3.3.3.7 Year Dummy

It has been remarkably observed in the research design of the studies within the scope of the corporate governance literature that a year dummy is often used to distinguish different time groups (Anderson and Reeb, 2003; Goodstein et al., 1994; Short and Keasey, 1999; Cui and Mak, 2002; Himmelberg et al., 1999). To capture any time-related effects, yearly time dummies were therefore used for the years between 2017 and 2021.

3.4 Descriptive statistics

Table 3.4-1. presents four panels of descriptive statistics for our sample of firms. Panel A and Panel B give information about means, medians, standard deviations, and maximum and minimum values for the independent variables of the study - concentrated ownership and managerial ownership. Panel C demonstrates the results of descriptive information for the dependent variables and Panel D, reports summary statistics for the controlling variables.

[Please insert table 3.4-1 about here]

Panel A displays the summary statistics for the concentration measures. While only the Top 5 capital is used, the inclusion of the top 1 and top 10, as well as voting rights, facilitates a deeper analysis. We can observe that the mean and median values are similar between capital and votes for the top 5 majority owners combined. A mean of 47.3%, a median of 46.3%, and a standard deviation of 16% suggest there is a rather low dispersion in the sample. However, the values for the Top 1 capital imply that nearly half of capital and votes are owned by a single owner, both measured as mean and median. Another interesting observation is that the voting rights exceed the capital rights in all concentration measures. It illustrates the dual-class system of Sweden. Compared to previous literature, the values are considerably higher. For instance, McConnell and Servaes (1990) reported a mean value of 32.4 percent for US firms listed on the NYSE and AMEX while Faccio and Lasfer (1999) revealed 34.57 percent for companies listed on the London Stock Exchange. The study examining the situation in UK and US by Davies et al. (2005) reported a mean value of 37.3 percent.

Panel B displays the summary statistics for managerial ownership. While we solely use managerial capital, it is interesting to present the other measures as well. The mean and median managerial ownership is 22.4 and 18.9% respectively, with a high standard deviation of 20.1%. The standard deviation suggests that caution should be exercised when interpreting the statistics. When comparing these levels of managerial ownership to previous studies made in the U.S. and U.K., the Swedish characteristics are noticeable. Morck et al. (1988) (using Fortune 500 companies) and McConnell and Servaes (1990) (using companies of the NYSE and AMEX) exhibited mean and (median) managerial ownership values of 10.6% (3.4%) and 11.84% (5%), respectively when using U.S. data. Studies using U.K. data, such as Short and Keasey (1999) (companies on the London Stock Exchange between 1988 and 1992) and Davies et al. (2005) (companies on the London Stock Exchange) present some slightly higher mean

values of 13.34 percent and 13.02 percent, respectively. Since the managerial capital is the sum of board capital and management capital, it is particularly interesting to note that the mean values for board capital are considerably higher at 21.6% than management capital at 4.1%. The standard deviations of the values are very high however at 19.4% and 9.6% respectively. This implies that the board's stake is generally higher than the management, which might not be totally unexpected as the board usually consists of a higher number of people than the management. The capital owned by the CEO displays a mean of 3.3%, a median of .2%, and a standard deviation of 8.8%. This behavior is particularly interesting when observed in relation to the mean values for management capital. The mean and median values are just slightly higher for the management combined, suggesting that the CEO is the insider person with the greatest ownership stakes on average. A similar observation holds for voting rights.

Panel C illustrates the summary statistics for the dependent variables. Tobin's Q shows a mean value of 3.47 and a median of 1.38. The lower median value implies that there are many observations that assume lower values. Moreover, the high standard deviation of 7.5 and the large span between the max and min values, further indicate there is a significant variation in the measure. To improve, the measure is both logarithmic and winsorized at the 1 and 99 percentiles. The volatility is not totally unexpected as there are several factors affecting the measure, even within industries.

ROA displays a mean value of 1.8% and a much higher median of 5%. The distribution is therefore negatively skewed, implying that more observations assume values of 5% and higher. A standard deviation of 19% and the large span between the min and max values imply there is high volatility in the measure. Following the same argument as for Tobin's Q, it is not unexpected. Moreover, the characteristics are like previous observations (e.g., Eisenberg et al., 1998; Anderson and Reeb, 2003).

Panel D demonstrates the summary statistics for the controlling variables. Firm risk displays a mean of .937 with a median value of .930. A standard deviation of 1.465 implies there is high volatility in the values which is not unexpected considering that stock return is affected by many inputs. The mean (median) debt ratio is .221 (.206). The standard deviation of 19% and span between min (0%) and max (81.3%) implies a large variety of ratios. The mean and median total assets equal 17,358 and 1,159 million sek respectively. The statistics also show

that total assets vary substantially throughout the sample, which was expected. The mean and median firm age is 50.09 and 31 years respectively, ranging from 0 years upwards to 332 years.

[Insert Tables 3.4-2 and 3.4-3 about here]

The correlation matrix in table 3.4-2 showcases that the variables used in this study are generally not considered highly correlated. The two ownership measures are an exception as well as dividend dummy and ROA. The first mentioned illustrates a correlation of 70.3%. To extend the analysis, we include an additional correlation matrix in table 3.4-3 concerning other ownership measures. We can observe that board ownership correlated close to 99% with managerial ownership. This is not surprising as the summary statistics in panel A indicated that the board owned a considerably higher percentage of shares than the management. Moreover, we note that the number one majority shareholder correlates 82.1% with the cumulative 5 majority shareholders. This further showcase that the number one majority shareholder owns a considerable amount of the shares in our sample.

3.5 Statistical Framework

This section describes the statistical frameworks used for investigating the relationship between ownership and financial performance.

3.5.1 Panel OLS regression model

Most studies on the agency problem and performance use Ordinary Least Squares (OLS) regression (Demsetz and Lehn, 1985; Morck et al., 1988; Holderness et al., 1999; McConnell and Servaes, 1990) to uncover the possible relationship between various ownership- and performance measures. This is also true for the studies that control for the endogeneity issue that was discussed in section 2.4 (e.g., Agrawal and Knober, 1996; Cho, 1998; Demsetz and Villalonga, 2001; Himmelberg et al., 1999; Kapapoulos and Lazaretou, 2007; Hu and Izumida, 2008). The distribution between cross-sectional and panel data is noticeable, where the first-mentioned seems to have been used more than the latter. The distinction is important as studies that use panel data control for the heterogeneity of the data sample differently, using Fixed Effects equations. While controlling variables are included to control for the heterogeneity of the sample, it is usually not enough. To improve the controls for heterogeneity, most studies include dummies for different industries and years within the panel. This ensures that the equation captures the industry-wide effects (as was mentioned earlier as a likely variable to have a substantial effect on the heterogeneity of the sample), and year-specific effects.

The industry and year dummies might however not, for instance, capture the unobserved heterogeneity among the firms within a particular industry and year - though it is expected that some characteristics correlate with the industries and years. While it seems that most previous studies use this approach, some have used a Fixed Effects model to further capture the unobserved characteristics within the sample firms. Himmelberg et al. (1999) use the Fixed Effects model and argue that the unobserved firm heterogeneity explains to a great extent the variation in the insider ownership. This would imply that some previous empirical findings fail to account for unobserved heterogeneity and thus present results that are affected by the unobserved firm characteristics. It is expected that the Fixed effects model controls for these differences that might not be captured by these industry and year dummies. With a fixed-effects model, we cannot include the industry and year dummies in the equation. However, the fixed effects model instead adds a constant term (“C”) to control for the individual characteristics of the data sample (i.e., the unobserved heterogeneity).

As a result of this discussion and the hypothesis developments in *section 2.4*, we establish one equation for Managerial Ownership and ROA, Managerial Ownership and Tobin's Q, Ownership Concentration and ROA, Ownership concentration and Tobin's Q, respectively. These equations are regressed four times respectively with the following control features: Panel OLS with industry dummies, Panel OLS with industry dummies controlled for clustered robust standard errors, Panel OLS with Fixed Effects, Panel OLS with Fixed Effects controlled for clustered robust standard errors. Clustered robust standard errors are used to further ensure that heteroskedasticity is controlled for. By computing it this way, this study aims to add some clarity on which method is more appropriate and at the same time improve the comparability of the results to previous empirical findings. The choice of a Fixed Effects model is further supported by the Hausman tests. The results from the Hausman test are reported in table 3.5.1.

For the equations below, the performance is either ROA or Tobin's Q, and C is the constant term assigned by EViews.

Regular Panel OLS equation:

$$(1) \text{ Performance } i,t = \alpha + \beta (\text{Managerial ownership})i,t + \beta (\text{Log Assets}) i,t + \beta (\text{Firm age}) i,t + \beta (\text{Debt to Assets Ratio}) i,t + \beta (\text{SD of stock return}) i,t + \beta (\text{Dividend dummy})i,t + \beta (\text{Industry dummy})i,t + \beta (\text{Year dummy})i,t + \varepsilon i,t$$

$$(2) \text{ Performance } i, t = \alpha + \beta (\text{Ownership concentration})i,t + \beta (\text{Log Assets}) i,t + \beta (\text{Firm age}) i,t + \beta (\text{Debt to Assets Ratio}) i,t + \beta (\text{SD of stock return}) i,t + \beta (\text{Dividend dummy})i,t + \beta (\text{Industry dummy})i,t + \beta (\text{Year dummy})i,t + \varepsilon i,t$$

Fixed Effects panel regression equation:

$$(3) \text{ Performance } i,t = C + \beta (\text{Managerial ownership})i,t + \beta(\text{Log Assets}) i,t + \beta (\text{Firm age}) i,t + \beta (\text{Debt to Assets Ratio}) i,t + \beta (\text{SD of stock return}) i,t + \beta (\text{Dividend dummy}) i,t + \varepsilon_{i,t}$$

$$(4) \text{ Performance } i,t = C + \beta (\text{Ownership concentration})i,t + \beta(\text{Log Assets}) i,t + \beta (\text{Firm age}) i,t + \beta (\text{Debt to Assets Ratio}) i,t + \beta (\text{SD of stock return}) i,t + \beta (\text{Dividend dummy}) i,t + \varepsilon_{i,t}$$

3.5.1.1 Endogeneity related to explanatory variables

Despite our determination to control for a possible endogeneity between firm performance and ownership structure, the poor instrument variables in comparable studies limit the execution. Moreover, highly renowned scholars such as Himmelberg et al. (1999) and Demetz and Villalonga, (2001), conclude that almost any instrument variable is likely to be related to at least another endogenous variable when investigating the ownership-performance relationship.

Despite the poor theoretical foundation, we identify which instrument variables were used in the studies that conducted simultaneous equations with instrument variables. We do this for enabling a revision of the chosen instruments from the most prominent studies (e.g., Agrawal and Knober, 1996; Cho, 1998; Demsetz and Villalonga, 2001; Himmelberg et al. (1999); Kapapoulos and Lazaretou, 2007; Hu and Izumida, (2008)), to see if these are compatible to our data sample. The instruments need to be exogeneous to Tobin's Q and ROA (not correlated with the error term) and correlate with the exogenous variable ownership structure. According to Demsetz and Lehn (1985), potential instruments are CAPM risk variables, capital structure variables, and firm size.

Himmelberg et al. (1999) argue that capital expenditures (CAPEX) control for growth prospects and should therefore be a potential variable that affects the ownership structure. E.g., higher CAPEX could indicate that the growth prospects are greater, thus establishing incentives for managers and owners to increase their stakes in the company. There is however a serious threat to this instrument as it likely affects the financial performance as well. Another one is firm size. The reasoning behind this one stems from the notion that the share of the insider shareholdings is likely lower the larger the company is. I.e., it requires a substantially larger investment than smaller companies. The problem is, however, that as Himmelberg et al. (1999)

also mention, firm size also affects financial performance. It was also argued that stock price volatility is a potential instrument for ownership structure. While not discussing this further, stock volatility might affect the ownership structure, however, as this is a risk measure, the relationship between beta for instance is likely to have a non-linear relationship with the ownership structure. E.g., since ownership is linked to risk, the ultimate ownership structure is attributable to the individual risk preferences of the insiders and large owners. Fixed capital measures such as fixed capital to assets and sales were used by Himmelberg et al. (1999). The argumentation stem from the notion that fixed capital might be linked to lower managerial ownership. Regarding the robustness of these instruments, it lends itself to situations where the authors choose instrumental variables based on the relative usefulness of other candidates. We simulated a pairwise correlation of these potential instruments used by the most prominent researchers in the field to conclude whether to proceed with the endogeneity issue or leave it for future research.

[Please insert table 3.5.1.1 about here]

Table 3.5.1.1 shows that the correlations between the instruments and ownership variables are low. Instrumental variables seem to have been chosen for their alternative fit, rather than an actual fit, which provides inconsistent and insufficient results - which was also discussed by Demsetz and Villalonga, (2001) and Himmelberg et al. (1999). Therefore, this study will not address endogeneity related to the explanatory variable. As mentioned in the problem discussion, the ownership structures in Sweden are less likely to be endogenously determined by performance as is the case for Anglo-Saxon countries, which Demsetz and Villalonga, (2001) and Himmelberg et al. (1999) used. The explanatory variable is therefore assumed to be less endogenous than the corresponding literature using a 2SLS framework.

3.6 Pre-regression diagnostics

We already concluded that our data sample likely suffered from heteroscedasticity. To control for this, we apply clustered robust standard errors to the regression equation. Moreover, the Hausman test showed that fixed effects should be utilized.

Another important assumption that needs to hold for the regression to provide consistent and reliable results is normality. We observe the descriptive statistics for all variables used in the equations to identify outliers in the data. Outliers threaten the results as they can skew and bias the data sample. Our observations showed that ROA, Tobin's Q, and Debt to asset ratio particularly included outliers. As a result, these ratios are winsorized at the 1 and 99 percentiles to improve normality. Furthermore, we conduct a Jarque-Bera test to identify whether the sample data have the skewness and kurtosis of a normally distributed sample. If not, the coefficients are not to be considered reasonable to analyze. While not tabulated, we performed this test for all variables used in the regression equations. The test results identified two variables that particularly deviated from a normal distribution. Total assets and Tobin's Q. The normal distribution for these measures is presented in graphs 3.6-1 and 3.6-2, for total assets and Tobin's Q respectively.

[Insert Graphs 3.6-1 and 3.6-2 about here]

To improve the normal distribution, both measures were logarithmized. While this has been noted before, these results further strengthen the choice. The controlling variable firm size is nearly always logarithmized in previous studies (e.g., Agrawal and Knoeber, 1996; Anderson and Reeb, 2003; Baek et al., 2002; Bhagat and Bolton, 2008; Black et al., 2005; Demsetz and Villalonga, 2001; Eisenberg et al., 1998; Ferris et al., 2003; Kim et al., 2007; Konijn et al., 2011; Maury and Pajuste, 2005). After logarithmizing, graphs 3.6-3 and 3.6-4 showcase substantial improvements in the normal distribution of the variables. Graph 3.6-3 shows an improvement in the Jarque-Bera score from 151,750 to 33, as well as a visual improvement in the distribution curve. Graph 3.6-4 show similar artifacts, with a particularly noticeable improvement for the Jarque-Bera score from 3,733,504 down to 134.25.

[Insert Graphs 3.6-3 and 3.6-4 about here]

3.7 Criticism of Methodology

In this section, an overall assessment of the three most superior criteria for evaluating the quality of a research study is presented. Reliability, replicability, and validity (Bryman and Bell, 2017).

3.7.1 Reliability and Replicability

According to Bryman and Bell, (2017), the reliability issue is particularly relevant for empirical results that rely on quantitative data. The main concern regards the question of the stability of the chosen measures (Bryman and Bell, 2017). Our variables consist of accounting measures and ownership data. If applying the same calculations for the accounting data, it should yield the same metrics and ratios as this study. In addition, the accounting data should not vary depending on the source. Therefore, if other researchers use the same metrics and ratios as we did, their results should not differ if using a different compatible data source. Regarding the ownership data, we have already conducted an extensive discussion on it and can conclude its high-quality characteristics. Moreover, it is superior to the data many other empirical studies have utilized. In this study, we utilized the Modular Finance database. By deciding not to extend the time frame of the data sample, we reduced the human factor of error as ownership data was not manually collected. The reliability of this data in annual reports might be lower in comparison to the data on Modular Finance. The human error factor is present from many sides. First, the annual report producer, second, the auditor's precision in identifying errors, and third, the researchers' ability to collect the data manually is equally good as being retrieved directly from the database. Our approach, therefore, ensures the stability of the measures because they are not subject to interpretations and subjectivity. We, therefore, argue that the reliability of this study is solid. Given this reasoning, this study should be highly replicable as well. Replicability is an important feature of a research study due to the importance of enabling a comparison to other evidence (Bryman and Bell, 2017).

3.7.2 Validity

Validity consists of internal and external validity and is an important criterion for studies like this one (Bryman and Bell, 2017). The internal validity mainly concerns the discussion on whether one can determine if there is a causal relationship within the variables studied. I.e., if the independent variable (x) explains the dependent variable (y). We deal with this issue by including control- and industry dummy variables. These were carefully chosen by drawing from the most cited, prominent, and well-regarded comparable studies that were published in well-regarded financial academic journals. Replicating the approach of these studies does not necessarily mean that the validity is improved. A similar assertion can be applied to the way the independent variable is measured in this study. It can be noted that the percentage of shares owned by a group of individuals is sensitive to, for example, rights issues, spin-offs, and stock incentives. A rights issue will for instance lower the percentage owned in our definition if the insider shareholders or the major shareholders did not defend their pre-rights issue position. Another example is when a company implements an option-based incitement program that aims to improve the management and board members' involvement (reduce the agency conflict by aligning the interests of stakeholders). Those individuals will now hold options that should have similar characteristics as direct stock ownership. The validity of this matter can therefore be discussed. We approach this by dealing with panel data, which aims to smooth out these effects. Moreover, as described in section 4.4 *Robustness tests*, we consider a wide range of alternative definitions of ownership and concentration measurements.

Another interesting variable to discuss is the error term because it shows that other factors affect financial performance. The error term absorbs these factors. We, therefore, need to acknowledge that the variation of the dependent variable is also a potential outcome of other variables that are not considered. Another important internal validity issue is the possibility that the independent variable is endogenous to the dependent variable. This issue is partly dealt with by including control variables and using panel data. While we preferably would compute a simultaneous model to control for the possible endogeneity issue, our literature observations resulted in the conclusion that the theory of choosing instrumental variables was poor. Moreover, we tested the compatibility of the most used instrumental variables to this study's data sample and found a poor fit.

External validity regards the concept of the generalizability of a study (Bryman and Bell, 2017). We acknowledge some potential limitations to the level of external validity in this study. For

instance, we use a data sample representing around 96-98% of the total market capitalization of publicly listed companies on the OMX Nasdaq Stockholm stock exchange. Though the sample covers a large piece of the market capitalization, our results might not be generalizable to the companies that cover the remaining 2-4% of the market capitalization. *Section 3.2* uncovered that these firms accounted for about half of the number of companies listed on the OMX Nasdaq Stockholm stock exchange. Our results might also not be generalizable to private companies. This was however not the aim of this study as the characteristics and ownership are different from publicly listed companies. Another important aspect of the level of external validity stems from the chosen time frame. We noted that previous studies use a wide range of time periods. The once using panel data as this study seems to have used a similar number of years (see table 3.8.2-1 in appendix). We note that while we use a five-year period, our observations are most often larger or like studies using more than five years. This could illustrate the superiority of our data as we can use a smaller period for a similar set of observations. The generalizability across a longer period might be limited to a five-year period. Our time frame also covers the pandemic starting in early 2020. This might also have an impact on the validity of our results due to its abnormal turnout and impact on financial metrics and market appetite. Where the latter particularly influences Tobin's q . The impacts of the pandemic have varied between countries due to for example different market regulations and restrictions, however, most companies were affected simultaneously. The generalizability can therefore be said to be dispersed due to the chosen time frame. The cross-country generalizability is however not the aim of this study. We argue that our market and data sample is what distinguishes our study from most other studies and are therefore not concerned as much about the external validity attributable to cross-country generalizability. We are more interested in the implications of the agency conflicts on the Swedish market, which notably presents itself with both distinguishing ownership characteristics and legal and financial environment.

4. Empirical result and analysis

4.1 The statistical framework

As our literature review and section 3.5 *Statistical framework* pointed out, the statistical frameworks laid forward by previous scholars in the field have varied. The use of a standard OLS regression model seems to be dominant, however. Presumably, a result of a more dominant use of cross-sectional data is likely to be a result of the difficulties and unavailability of ownership data in the countries being studied. While we did conclude the superiority of the fixed-effects model with clustered robust standard errors in the methodology chapter, to deepen our analysis and contribute to the lack of equilibrium in existing research, we present results from a standard panel regression model without (panel A) and with clustered robust standard errors (panel B). We also present results from a panel data regression with a fixed-effects model without clustered robust standard errors (panel C) and with (panel D). We do this for all models as defined in section 3.5 *Statistical frameworks*. The empirical results are presented in tables 4.2-1 - 4.2-4 and include panels A-D as just specified. Before providing a more detailed explanation and analysis of the results for the respective relationship, we will first go through the results, and observations made on the overall statistical framework.

[Please insert tables 4.2-1 - 4.2-4 about here]

We notice two particularly interesting patterns observable in all tables 4.2-1 – 4.2-4. First, we noticed that all tables 4.2-1 – 4.2-4 displayed an adjusted R-squared significantly higher for panels C and D compared to panels A and B. Interestingly, the observations seem to be consistent with theoretical predictions lay forward by Himmelberg et al. (1999). They argued that the unobserved firm heterogeneity was likely a strong determinant for the variation in measures closely related to agency cost mechanisms. Although we use controlling variables and industry and year dummies to account for the heterogeneity of the data sample, it is often not enough according to Himmelberg et al. (1999) as unobserved heterogeneity and individual firm heterogeneity within industries are not accounted for. The findings not only provide evidence of the complexity in what ultimately determines the managerial ownership and concentration measures but also possibly suggest that Himmelberg et al. (1999) arguments fit with our data sample. I.e., while the validity of the controlling variables is argued to be strong, the fixed effects model can capture the unobserved determinants of ownership levels in this

data sample much better. Drawing on the existing empirical findings, the most comparable findings display adjusted R-squares at around 20-30%. Not surprisingly, as we apply similar controlling variables, the adjusted R-square for panels A and B are like most existing findings. While being humble to alternative viewpoints and angles, this observation might not only provide evidence of the complexity of the relationship but also question the validity of some previous research. Consequently, this study's results could imply that the unobservable heterogeneity is larger than the observable heterogeneity within the relationship between ownership structure and corporate performance measured as ROA and Tobin's Q. When studying the relationship between ownership structure and corporate performance measured as ROA and Tobin's Q, at least for this data sample, the fixed effects is superior in controlling for heteroscedasticity and explaining the variation in the dependent variable.

An additional important observation made by presenting various alternative regression models can be observed at the estimated coefficient for the main independent variables. We notice that the estimated coefficients remain the same when comparing the models with clustered robust standard errors (panels B and D) with those without (panels A and C). This holds for all models presented in tables 4.2-1 – 4.2-4, which shows evidence that the estimations are valid.

4.2 Managerial Ownership and corporate performance

In this section, the results of the panel OLS regression equations (1) and (3) are presented and analyzed.

Equation 1 - Hypothesis 3

[Insert Table 4.2-1 about here]

Table 4.2-1 presents the results of equation 1 where the main independent variable is managerial ownership, and the main dependent variable is ROA. Panel A and B present the results from the regular panel regression without and with clustered robust standard errors respectively. Panels C and D present the results of the panel regressions with Fixed Effects as suggested by the Hausman test and arguments layed forward by Himmelberg et al. (1999), without and with clustered robust standard errors respectively. Based on Panel A, there is evidence that insider ownership is statistically significant at the 1% level with a positive coefficient of .073. This implies that a 1 unit increase in the cumulative insider ownership, on average, is associated with a 7.3 percentage point higher ROA. The standard deviation is 0.022.

The magnitude of the estimated coefficient remains when introducing clustered robust standard errors and the 1% significance level remains (panel B). The adjusted R-squared is 27.1% for Panel A and B.

Panel C and D present the results from the fixed effects panel regression without and with clustered robust standard errors respectively. Panel C shows that when introducing fixed effects to the panel regression, the coefficient is positive at .05 with a standard variation of .039. The statistical significance disappears when introduced to fixed effects. This also holds when introducing clustered robust standard errors. The adjusted R-squared is 75% for both panels C and D, which is a noticeable difference from the panel regressions in panels A and B.

It is evident from the adjusted R-squared that the fixed effects model is a better predictor of the variation in managerial ownership and ROA. It is furthermore a more robust model for final interpretations. The results from panel B are however also interesting to discuss since most studies utilized a similar simpler model. While empirical evidence on the relationship between managerial ownership and ROA is rather limited in comparison to Tobin's Q, the theoretical foundation laid forward in section 2 of this study would suggest a positive coefficient for managerial ownership and ROA. This primarily stems from the principal-agency conflicts between managers and shareholders. Entrenched managers might allocate corporate resources for their personal benefits over that of maximizing shareholder wealth. The magnitude of the corporate performance measure ROA is determined by the efficiency of the allocation of assets and the profitability of a firm as is therefore highly related to this issue. The allocation of assets and corporate resources is especially vital for the discussion around the principal-agency conflict and entrenched managers and is argued to be one reason why managerial ownership is expected to improve the ROA measure. Theoretical foundations suggest that there should be a positive relationship between managerial ownership and ROA because entrenchment is expected to be lowered when the interests are more aligned between the agents and principals. The theoretical predictions, therefore, suggest that managerial ownership incentivizes the managers to allocate corporate assets for the purpose of maximizing shareholder wealth. The Board of directors' ownership is also a key player in this setting because of the nature of the board. The board members' task is to be a controlling mechanism between the managers and shareholders. The theoretical prediction is then that the board of directors is incentivized to make decisions and monitor activities that ensure an allocation of assets to maximize

shareholder value. As a result of this, agency costs should then be observed lower for companies with a certain level of managerial ownership. The lower agency costs are reflected in a higher ROA as the assets allocated are more toward shareholder maximizing projects than entrenched projects. Thus, the positive coefficient was expected by the theoretical foundation laid forward by literature. Comparing our results to existing empirical evidence, the positive statistically significant coefficient in panels A and B is like that of Mehran, (1995) who examined 153 U.S. manufacturing firms. However, when introducing a fixed-effects model with clustered robust standard errors, the positive sign is remained but without statistical significance. Our results, therefore, support a rejection of the “H3: *Managerial ownership is positively associated with corporate performance measured using ROA.*”, while it would have been accepted if assuming panels A and B were sufficient as other scholars did (e.g., Morck et al. (1988); McConnell and Servaes (1990); Anderson and Reeb (2003)).

Equation 3 - Hypothesis 4

[Insert Table 4.2-2 about here]

Table 4.2-2 presents the results of equation 3 where the main independent variable is the managerial ownership, and the main dependent variable is Tobin's Q. Panel A and B present the results from the regular panel regression without and with clustered robust standard errors respectively. Panels C and D present the results of the panel regressions with Fixed Effects as suggested by the Hausman test, without and with clustered robust standard errors respectively. Based on Panel A, there is evidence that insider ownership is statistically significant at the 1% level with a negative coefficient of .356. This implies that a 1 unit increase in the cumulative insider ownership, on average, is associated with a 35.6 percentage point lower Tobin's Q measure. The standard deviation is .059.

The statistical significance at 1% also holds when clustered robust standard errors are introduced as presented in Panel B. The standard deviation displays a lower number of .029. The adjusted R-squared is 17.3% for Panel A and B. This Implies that a modest 17.3% of the negative coefficient of .356 is explained by the model.

Panel C and D present the results from the fixed effects panel regression without and with clustered robust standard errors respectively. Panel C shows that when introducing fixed effects

to the panel regression, the coefficient is negative at .149, which is considerably lower than what is displayed in panels A and B. The standard deviation is .068. When introduced to fixed effects, the statistical significance is lowered to the 5% level. When including clustered robust standard errors, it makes no difference to our results (panel D). The explanatory power of the fixed effects model is considerably higher at an adjusted R-square of 88.4%. This implies that the magnitude of the coefficient in panels A and B might be biased due to the model specifications' inability to account for the heteroscedasticity in managerial ownership.

The negative sign of the coefficient is at a first glance opposite to what the theoretical foundation laid forward in section 2 suggests (e.g., Jensen and Meckling, 1976). Equity ownership amongst the management and board of directors was expected to mitigate the agency costs as it reduces the likelihood of entrenched managers and board members. Keeping in mind the nature of Tobin's Q, we know that market psychology determines a part of the measure. The measure is both a result of historical events and actions, as well as future expectations on events that affect the business strategy and the performance of the company. In addition, the book value generally does not reflect the actual intangible assets of the firm, such as human capital, and brand management, as some are not capitalized on the balance sheet. While there is also a concern that the noise from this issue increases the standard errors, the use of clustered robust standard errors alleviates this problem to a certain degree - improving the robustness of the results. The logarithmic transformation is also alleviating this problem (Gompers et al., 2010). Keeping in mind the nature of Tobin's Q measure, the negative coefficient to Tobin's Q would according to principal-agency theory mean that managerial ownership signals a poor perception of future performance and ineffective corporate governance. The expectations might hence be of relevance for the discussion on the negative relationship uncovered by this study. By approaching the impact of the expectations in a setting relating to previous studies we can deepen the analysis.

Compared to previous studies, the negative relationship in our study is not unique (e.g., Morck et al., 1988). Several studies also find a non-linear relationship between managerial ownership and Tobin's Q. While Morck et al. (1988) find a similar relationship as this study, McConnell and Servaes (1990) for instance finds a U-shaped relationship when utilizing a similar methodology. The U-shape meant that the Tobin's Q decreases (showing a negative coefficient) at certain levels of managerial ownership (between 5% and 25%). The study used

a data sample of Fortune 500 firms (US firms). Similar findings were reported by Stultz (1988) using US firms between 12% and 40%, and Short and Keasey (1990), using UK firms, negative when higher than 20%. Hermalin and Weisbach (1988) find a negative relationship when managerial ownership levels are between 1% and 5% and above 20% again. They use a sample of 134 NYSE firms. While this study found a significant negative linear relationship, the empirical findings of a non-linear relationship establish some similarities and possibly some hints of explanation and argumentation for the negative relationship. In contrast to the possible principal-agency-reducing effect of managerial ownership, our results might introduce a different view. Substantial managerial ownership might in fact increase the agency costs. When a manager for example owns large cash-flow rights of a company, it might incentivize a risk aversion that is not in alignment with the other shareholders. Higher ownership rights might also establish a “safe ground” where individuals of managerial heritage can act upon their entrenchment without or with lowered risk of disciplinary actions. Going back to the nature of Tobin's Q, these expectations and views on the principal-agency relationship could possibly explain the negative relationship between higher managerial ownership and lower Tobin's Q.

On another note, Tobin's Q is also an outcome of historical events. For instance, Roulstone (2003) and Holden et al. (2014) argue that liquidity is higher for more mature and high-performing companies. These are usually also more frequently followed by analysts, thus in theory presence of fewer information asymmetries. These types of firms are more likely to have higher Tobin's Q than unsuccessful firms as the moral hazard, adverse selection issues and information asymmetries likely should be lower. This is usually reflected in the liquidity of the stock. A possible reason for the negative relationship to Tobin's Q, might therefore stem from the fact that insiders more easily can sell their shares when Tobin's Q displays higher values. Higher Tobin's Q might therefore be associated with lower managerial ownership. This would suggest that managerial ownership is endogenous to Tobin's Q. From this angle, the coefficient of managerial ownership is the outcome of historical performance and not so much a predictor for future corporate performance.

This is furthermore interesting to discuss for this data sample and market. The Swedish market distinguishes itself from most other markets. The descriptive statistics displayed much higher managerial ownership levels than previous studies' data samples. The psychology is also considered different, and managerial ownership is often viewed as positive for an investment

as it expects to improve the likelihood of a good yield of return - consistent with the theoretical foundations presented in section 2. A reduction in managerial ownership might therefore be viewed as a betrayal of the established norms in the society. Thus have a greater impact on the agency-principal relationship than elsewhere. It could therefore be argued that the managerial ownership levels are kept high to improve their reputation and limit bad reviews from other shareholders.

Consequently, the results support a rejection of “*H4: Managerial ownership is positively associated with corporate performance measured using Tobin's Q.*”. The findings give rise to an interesting discussion however and the statistical significance indicates that managerial ownership does affect firm value measured as Tobin’s Q, though not consistent with the hypothesis.

4.3 Ownership Concentration and Corporate Performance

In this section, the results of the panel OLS regression equations (2) and (4) are presented.

Equation 2 - Hypothesis 1

[Insert Table 4.2-3 about here]

Table 4.2-3 presents the results of equation 2 where the main independent variable is the ownership concentration, and the main dependent variable is ROA. Panel A and B feature the results from the regular panel regression without and with clustered robust standard errors respectively. Panels C and D feature the results of the panel regressions with Fixed Effects as suggested by the Hausman test and the discussion in section 4.1, without and with clustered robust standard errors respectively. Based on Panel A, there is evidence that the concentrated ownership measured as the cumulative holdings of the five largest shareholders is statistically significant at the 1% level with a positive coefficient of .084. This implies that a 1 unit increase in the ownership concentration, on average, is associated with an 8.4 percentage point higher ROA. The standard deviation is 2.8 percentage points. The statistical significance at 1% also holds when clustered robust standard errors are introduced as presented in Panel B. The adjusted R-squared is 26.6% for Panel A and B. Implying that 26.6% of the positive coefficient of .084 is explained.

Panel C and D present the results from the fixed effects panel regression without and with clustered robust standard errors respectively. Panel C shows that when introducing fixed effects to the panel regression, the coefficient is positive at .128, which is higher than the .084 features in panels A and B. The statistical significance is lowered to the 5% level when introduced to fixed effects, while it disappears when introducing clustered robust standard errors in panel D. The explanatory power of the fixed effects model is considerably higher than the regular panel regression model in panels A and B at an adjusted R-squared of 76%.

A similar discussion that was presented for equation 1 on insider ownership and ROA can be applied to this setting. However, with modifications to a slightly different setting and theoretical angle. We observe a similar pattern between insider ownership and ROA as we observe in Table 4.3. However, the fixed effects in panel C are statistically significant at the 5% level but disappear when introduced to clustered standard errors as displayed by panel D. While there seems to exist some evidence of the relationship, the clustered standard errors in panel D support a rejection of the “*H1: Concentrated ownership is positively associated with corporate performance measured as ROA*”. While the empirical evidence on the relationship between concentrated ownership and ROA is limited in comparison to Tobin's Q, our results are still interesting to discuss. Especially in the Swedish setting. Because the discussion is like that of equation 4, the analysis is baked into that discussion.

Equation 4 - Hypothesis 2

[Insert Table 4.2-4 about here]

Table 4.2-4 presents the results of equation 4 where the main independent variable is the ownership concentration measure, and the main dependent variable is Tobin's Q. Panel A and B present the results from the regular panel regression without and with clustered robust standard errors respectively. Panels C and D present the results of the panel regressions with Fixed Effects as suggested by the Hausman test and section 4.1, without and with clustered robust standard errors respectively. Based on Panel A, there is evidence that ownership concentration is statistically significant at the 1% level with a negative coefficient of .588. This implies that a 1 unit increase in the ownership concentration, on average, is associated with a 58.8 percentage point lower Tobin's Q. The standard deviation is .077 and .053 on panels A and B respectively while the magnitude of the coefficient remains the same. The statistical

significance at 1% also holds when clustered robust standard errors are introduced as presented in Panel B. The explanatory measure adjusted R-squared is 18.7% for panels A and B. Implying that a modest 18.7% of the negative coefficient of .588 is explained by the model.

Panel C and D present the results from the fixed effects panel regression without and with clustered robust standard errors respectively. Panel C shows that when introducing fixed effects to the panel regression, the coefficient is negative at .219 with a standard deviation of .101. When introduced to fixed effects, the statistical significance is lowered to the 5% level. This level holds when clustered robust standard errors are introduced in panel D. The explanatory power of the fixed effects model is considerably higher than the regular panel regression model in panels A and B at an adjusted R-squared of 88.6%.

These results are like the results from equation 2 in section 4. Even though the theoretical foundation is similar in that it involves the principal-agency conflict, these results lend themselves to a slightly different angle of discussion. The theory suggested that a concentrated ownership structure likely is beneficial for the alignment of interests in the manager-minority shareholder relationship. The argument stems from the majority shareholders' interests and abilities to monitor these managerial individuals and allocate corporate resources with the shareholder wealth approach in mind. Several scholars such as Bebchuk et al. (1999) and Wolfenzon et al. (1998) suggest that while majority shareholders are incentivized to control management in favor of the minority shareholder, it might introduce a new, perhaps more severe, principal-agency conflict between the majority and minority shareholder. Majority shareholders might be incentivized to act in a similar manner as entrenched managers e.g., empire-building at the expense of the minority shareholders. Their power might also enable them to manipulate managers to act in their interests despite their willingness to maximize shareholder wealth. Based on observations, Bebchuk et al. (1999) and Wolfenzon et al. (1998) concluded three common ways minority shareholders are being exploited by majority shareholders: Overinvesting, holding onto negative NPV investment segments too long, and resisting positive NPV investments due to entrenchment, and third, involved in risk-reducing and diversifying investments and takeovers. The negative relationship found in this study might therefore be explained, at least discussed, by these observations. Comparing the results to previous research, our results are consistent with some studies (Turki and Ben Sedrine, 2012), and inconsistent with some (e.g., Karaca and Halil, 2012; Morck et al., 2000; Sulong and Nor,

2010). The inconsistencies in existing empirical evidence might suggest that country-specific corporate governance elements affect the sign of the coefficient. The observations made by Bebchuk et al. (1999) and Wolfenzon et al. (1998) seem to be particularly interesting in a Swedish setting, which seems to provide both support in the negative relationship observed in this study, however, also some contradicting, more complicated elements pointing at the opposite.

As laid forward in section 2, the Swedish market is characterized by a high level of ownership concentration and social prestige among the largest shareholders. Violating the shareholder wealth maximizing approach could therefore be argued not to be in the interest of the majority shareholders as it would deteriorate their social status. The negative relationship is not consistent with this notion. Moreover, the minority shareholder protection is lower compared to Anglo-Saxon countries and places average by Continental European standards, which could point to the contrary and thus find support for the negative relationship. On another note, the shareholder wealth maximization is protected by both corporate laws stating that companies should maximize shareholder wealth and informal social constraints. The latter should in theory limit the abuse of deviate from the shareholder wealth maximization approach. We find the support for these informal social constraints in that the Swedish financial markets are highly developed despite the minority protection restraints.

The discussion above therefore provides elements that both support the negative relationship and contradict it. Another interesting aspect is the discount observed on firms with a large majority of votes such as Investor, Kinnevik, Latour, and Industrivärlden. The discounts support the negative relationship because it suggests there is a conflict of interest between majority and minority shareholders. As Tobin's Q is a measure that is highly reliant on market expectations (due to the market capitalization element in the ratio), these elements are likely to affect this measure, where the chosen period might be a factor if underlying behavioral factors changed during that period. The ROA measure however is not sensitive to expectations and is purely based on accounting principles. Hence why the discussion for Tobin's Q is different in that it captures behavioral aspects. The results, therefore, support a rejection of “*H2: Concentrated ownership is positively associated with corporate performance measured using Tobin's Q*”.

4.4 Robustness checks

Around 40% of this study's observations accrue to a period that was affected by the Covid-19 pandemic (years 2020 and 2021). While it was argued favorably in this study, we conduct a robustness test where we control for this economy-wide factor to see if the period influences the results. Dummy variables that discriminate between pre-and pandemic were used, where a zero was assigned to the years between 2017 - 2019 and a one for the years 2020 and 2021. With respect to the sign of the coefficient and statistical significance, the results were unchanged. We, therefore, present the results from the statistically significant results solely in Table 4.4.1.

[Please insert Table 4.4.1 about here]

Panel A and B report the panel regression results for fixed effects without and with clustered robust standard errors for ownership concentration as the independent variable and Tobin's Q as the performance measure. Panels C and D display the panel regression results for fixed effects without and with clustered robust standard errors for managerial ownership as the independent variable and Tobin's Q as the performance measure.

Although not reported and tabulated, additional tests were performed to ensure the robustness of the results. To ensure that the results are not driven- or biased by the way the main independent variables are defined, alternative definitions were employed. For managerial ownership, we conducted panel regressions where we discriminated between the managers' and board of directors' ownership stakes. Considering our summary statistics, this was interesting as we observed a significantly higher mean and median ownership among the board of directors than for management. The magnitude of the coefficients did not change noticeably, and the statistical significance remained. In addition to that, we also employed an alternative definition of managerial ownership, where instead of employing the definition "the fraction of shares owned", we used "the fraction of votes owned". Results remained statistically significant. Regarding ownership concentration measures, Sweden is a country where concentration levels are on average greater than most other countries. Our summary statistics showed that nearly half of the five majority shareholders' combined stake in the mean and median company was owned by the major shareholder. We, therefore, measured ownership

concentration as the top 1 and 10 as a robustness check if alternative definitions affect the results. The top 1 measure did not yield consistent results with the top 5 measure. While the negative sign remained, the magnitude of the coefficient was about 40% of the corresponding top 5 measures to both ROA and Tobin's Q. There was no statistical significance. For the top 10 measures, the sign was negative, but the magnitude of the coefficient was economically insignificant. Statistical significance was found at the 10% level. The results from these robustness checks confirm that while a company generally has a large owner, the second to fifth owner seems important when investigating this relationship in this particular data sample. Beyond the fifth majority shareholder, the economic significance seems to vanish.

We also employ one-year lagged performance measures as an additional robustness check. For the observations in the year 2021, the latest filings were used as a lagged performance measure in order not to limit the observation size.

5. Conclusion

Drawing on the agency theory, Jensen and Meckling (1976) put forward that ownership concentration and managerial ownership are supposed to mitigate the principal-agency costs arising from the separation of ownership and control. This study was therefore expected to find a positive relationship between concentration and managerial ownership in corporate performance. Despite valuable insights that previous empirical results revealed within the scope of agency argument, the literature provides inconsistent evidence on the relationship between ownership structure and corporate performance.

The theory suggested that managerial ownership facilitates a reduction of the unnecessary consumption of perks, thereby rendering the alignment of interests between managers and shareholders closer. Ownership concentration also facilitated an alignment between shareholders and management, however from the majority shareholders' ability and incentives to control that the management act upon the interest of the shareholder wealth maximization approach and avoids entrenched managers. On another note, our observations showed that concentration might introduce new principal-agency conflicts where the majority shareholder/s abuse minority shareholders with their superior influence. This gives rise to having entrenched managers who are interested in maximizing their own benefit once again.

This study empirically investigated the effect of these ownership structures, managerial ownership, and concentrated ownership on corporate performance. We use an unbalanced panel of non-financial firms traded on the small, -mid -and large-cap on OMX Nasdaq Stockholm for the five years between 2017 and 2021. The chosen market is important for the following reasons: First, the level of managerial and concentrated ownership is relatively high and stable in comparison to most other countries. Second, the data represents a higher level of transparency, detail, and comprehensiveness. Third, as a non-Anglo-Saxon country, the data set of Swedish companies facilitates an analysis that contributes to an enhanced comprehension and review of the diversity and applicability of the principal-agency conflict.

We uncover the possible relationship using a statistical framework consisting of multiple statistical models commonly used by comparable studies. In this aspect, we also contribute with an extensive revision of the most prominent frameworks utilized. Moreover, is the inclusion of both ROA and Tobin's Q as dependent variables a contribution to this paper. The

literature review reported more extensive use of Tobin's Q, despite its limitations regarding its dependency on psychological factors such as market expectations. Considering that historical cost accounting is still important within the framework of the Continental-European accounting context (Kaserer and Moldenhauer, 2006), we apply a broader approach by including accounting measure (ROA). Our findings, therefore, are relatively less vulnerable to methodological objections about the measurement of corporate performance. The discussion and analysis of the differences in the relationship between ROA and Tobin's Q in section 4 facilitate a deeper analysis of the different aspects of how the agency conflicts are reflected in different measures. As for the statistical framework, the fixed effects model renders itself with a much higher explanatory power than the regular panel regression. The magnitude of the explanatory power of the regular panel data regressions in panels A and B were like studies utilizing a similar OLS model. Consequently, this study concludes that the fixed effects model with clustered robust standard errors is superior for this data set and studied relationship.

With a regular panel regression model, we provide statistically significant evidence of a positive relationship between both governance mechanisms to ROA. The economic significance is rather low, however. The results did not hold when introduced to fixed effects and clustered robust standard errors. Using market-based measures of firm performance (Tobin's Q), on the other hand, we provided evidence that contradicts agency mitigation methods proposed by Jensen and Meckling (1976). The relationship is negative and statistically significant for both managerial ownership and concentrated ownership. While we can find evidence that it might be a result of a newly introduced conflict of interest between majority and minority shareholders, we conclude that there are many contradicting aspects to this. Overall, we find robust evidence that both managerial and concentrated ownership might be an important variable explaining the corporate performance of Swedish listed companies.

As for future research and analysis, there are several valuable topics and extensions to this study to investigate. It would for instance be valuable to investigate the relationship studied within a different time frame. As noted, this study covers a period pre-pandemic and during the pandemic. It might therefore be valuable to capture the post-covid crisis as well. Another interesting angle would be to investigate the relationship post-acquisition. We established that stewards were inclined to be involved in acquisitions for empire building and for risk reducing purposes. It would therefore be interesting to investigate a potential relationship between

ownership mechanisms and corporate performance post-acquisition. Under the agency-conflict, it would be further interesting to investigate whether there is a relationship between the ownership mechanisms and the premium paid as well as the number of acquisitions. Finally, the most important and valuable topic for further research is the possible endogeneity issue. Existing research on this matter is poor, and while some scholars provided some evidence and guidance, all of them concluded that the chosen instrumental variables were substandard. This topic is more likely to be approached by professionals in the field.

Tables and graphs

Table 3.2.1-1. Illustrating data on the top 5 majority shareholders

#	Shareholder	Shares owned	Value (MSEK)	Capital rights	Voting rights	Country
1	BlackRock	138 932	176	8.97%	8.97%	USA
2	Capital Group	100 405	127	6.48%	6.48%	USA
3	Wellington Management	73 498	93	4.74%	4.74%	USA
4	Vanguard	71 656	91	4.62%	4.62%	USA
5	PRIMECAP	46 343	59	3.53%	3.53%	USA

Table 3.2.1-2. Illustrating data on managerial ownership

Shareholder	Managerial person	Managerial position	Total shares	Capital right	Voting right
Investor	Marcus Wallenberg	Board member	51 587 810	3.33%	3.33%
Pascal Soriot	Pascal Soriot	CEO, Board member	646 322	0.04%	0.04%
Marc Dunoyer	Marc Dunoyer	Board member	353 976	0.02%	0.02%
Aradhana Sarin	Aradhana Sarin	CFO	150 762	0.01%	0.01%
Marcus Wallenberg	Marcus Wallenberg	Board member	60 028	0.00%	0.00%
Leif Johansson	Leif Johansson	Chairman of the board	39 009	0.00%	0.00%
Philip Broadley	Philip Broadley	Board member	7 045	0.00%	0.00%
Tony Mok	Tony Mok	Board member	3 000	0.00%	0.00%
Michel Demaré	Michel Demaré	Board member	2 000	0.00%	0.00%
Sheri McCoy	Sheri Mccoy	Board member	1 736	0.00%	0.00%
Euan Ashley	Euan Ashley	Board member	1 150	0.00%	0.00%
Nazneen Rahman	Nazneen Rahman	Board member	1 017	0.00%	0.00%
Deborah DiSanzo	Deborah Disanzo	Board member	1 000	0.00%	0.00%
Diana Layfield	Diana Layfield	Board member	-	0.00%	0.00%
<i>TOTAL</i>			<i>52 854 855</i>	<i>3.41%</i>	<i>3.41%</i>

Table 3.3 Definitions of variables

Variables	Acronym	Description
<u>Dependent variables</u>		
Tobins Q	Q	The ratio of the market value of equity plus total debt divided by the book value of total assets of the firm
Return on assets	ROA	Net Income / Total Assets
<u>Independent variables</u>		
Ownership concentration	OC	Sum of shares held by 5 majority shareholders
Managerial ownership	MO	Sum of shares held by board members and management
<u>Control variables</u>		
Firm size	FS	Logarithm of total assets
Firm age	FA	Number of years since origination
Debt ratio	DR	Total book value of debt / total book value of assets
Firm risk	FR	SD of monthly stock return, previous 5 years
Dividend dummy	DD	One (1) for firms if paying dividend and zero (0) if not
Industry dummy	ID	Industry controls include: Basic Materials, Consumer Goods, Consumer Services, Energy, Health Care, Real Estate, Technology, Telecommunications, and Industrials.
Year dummy	YD	A year dummy for each year 2017 - 2021

Table 3.4-1. Summary statistics**Panel A: Concentration measures**

Variable	Mean	Median	Maximus	Minimum	Standard Deviation
Top 1 Capital	22.69%	18.99%	74.71%	0.78%	15.46%
Top 1 Votes	26.54%	22.11%	87.74%	0.78%	18.91%
Top 5 Capital	47.31%	46.30%	75.0%	2.88%	16.02%
Top 5 Votes	51.90%	50.60%	75.0%	2.88%	18.30%
Top 10 capital	59.19%	59.98%	92.31%	0.84%	16.56%
Top 10 votes	63.1%	63.49%	95.22%	0.84%	17.62%

Panel B: Insider ownership measures

Variable	Mean	Median	Maximus	Minimum	Standard Deviation
Managerial Capital	22.4%	18.9%	82.0%	0.0%	20.05%
Managerial Votes	28.5%	25.2%	96.0%	0.0%	25.1%
Board Capital	21.6%	17.3%	80.0%	0.0%	19.4%
Board Votes	27.8%	25.0%	76.0%	0.0%	24.3%
Management Capital	4.1%	0.44%	69.9%	0.0%	9.6%
Management Votes	5.5%	0.42%	72.3%	0.0%	13.9%
CEO Capital	3.3%	0.20%	69.9%	0.0%	8.8%
CEO Votes	4.8%	0.18%	72.3%	0.0%	13.2%

Panel C: Main Dependent variables

Variable	Mean	Median	Maximum	Minimum	Standard Deviation
ROA	1.8%	5.0%	130%	-210%	19%
Tobins Q	3.47	1.38	115.93	0.03	7.5

Panel D: Financial Measures

Variable	Mean	Median	Maximum	Minimum	Standard Deviation
SD Stock Return Y-5	0.937	0.930	8.416	-8.329	1.464
Debt ratio	22.13%	20.64%	81.31%	0.0%	19.0%
Total Assets	17,358	2,159	524,942	12.631	45,398
Firm Age	50.09	31	332	0	47.98

Table 3.4-2 Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) ROA	1.00	0.02	0.08	0.05	0.08	0.12	0.15	(0.08)	0.32
(2) Tobin's Q	0.02	1.00	(0.04)	(0.06)	(0.07)	(0.08)	(0.09)	(0.00)	(0.03)
(3) Managerial	0.08	(0.04)	1.00	0.70	(0.06)	0.14	0.05	(0.08)	(0.04)
(4) Top 5	0.05	(0.06)	0.70	1.00	(0.18)	0.10	0.02	(0.07)	(0.01)
(5) Total assets	0.08	(0.07)	(0.06)	(0.18)	1.00	0.15	0.18	0.01	0.09
(6) Debt ratio	0.12	(0.08)	0.14	0.10	0.15	1.00	0.04	(0.05)	0.02
(7) Firm age	0.15	(0.09)	0.05	0.02	0.18	0.04	1.00	0.02	0.15
(8) SD return	(0.08)	(0.00)	(0.08)	(0.07)	0.01	(0.05)	0.02	1.00	(0.01)
(9) Dividend dummy	0.32	(0.03)	(0.04)	(0.01)	0.09	0.02	0.15	(0.01)	1.00

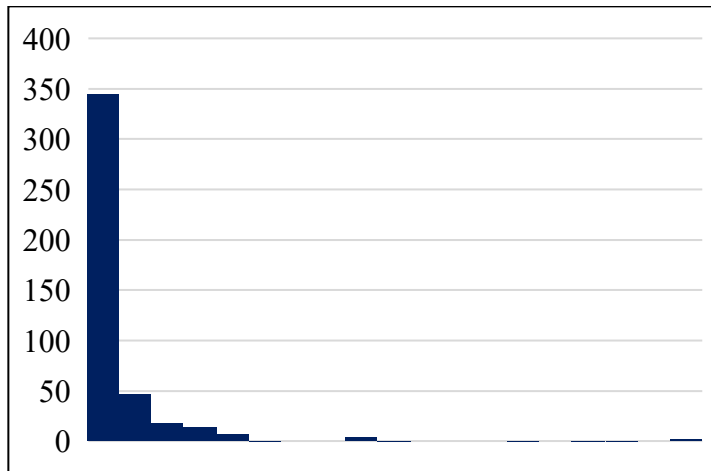
Table 3.4-3 Correlation Matrix – extended

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Managerial ownership	1.00	0.99	0.68	0.70	0.32	0.33
(2) Board ownership	0.99	1.00	0.69	0.70	0.30	0.27
(3) Top 1	0.68	0.69	1.00	0.82	0.25	0.22
(4) Top 5	0.70	0.70	0.82	1.00	0.26	0.26
(5) CEO ownership	0.32	0.30	0.25	0.26	1.00	0.96
(6) Management ownership	0.33	0.27	0.22	0.26	0.96	1.00

Table 3.5.1.1. Correlation matrix for potential instrumental variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Top 5 Capital	1.00	0.69	-0.09	-0.19	-0.26	-0.13	-0.07	0.01
(2) Managerial Capital	0.69	1.00	-0.10	-0.08	-0.09	-0.04	0.06	0.08
(3) Beta	-0.09	-0.10	1.00	0.02	0.09	0.01	0.03	-0.04
(4) Market Cap	-0.19	-0.08	0.02	1.00	0.56	0.23	0.32	0.10
(5) Log Market Cap	-0.26	-0.09	0.09	0.56	1.00	0.39	0.72	0.28
(6) Capex	-0.13	-0.04	0.01	0.23	0.39	1.00	0.48	0.10
(7) Log Capex	-0.07	0.06	0.03	0.32	0.72	0.48	1.00	0.24
(8) Fixed capital/assets	0.01	0.08	-0.04	0.10	0.28	0.10	0.24	1.00

Graph 3.6-1. Total assets



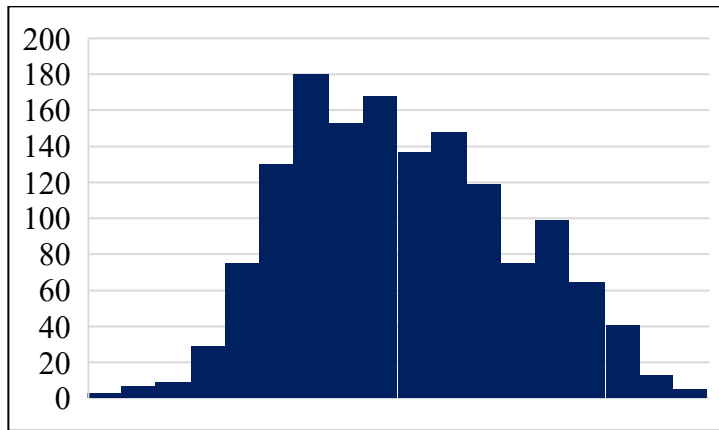
Series	Total assets
Sample	2017-2021
Observations	1456
Mean	17,358
Median	2,159
Max	524942
Min	12
Jarque-Bera	151750
Prob.	0.0000

Graph 3.6-2. Tobin's Q



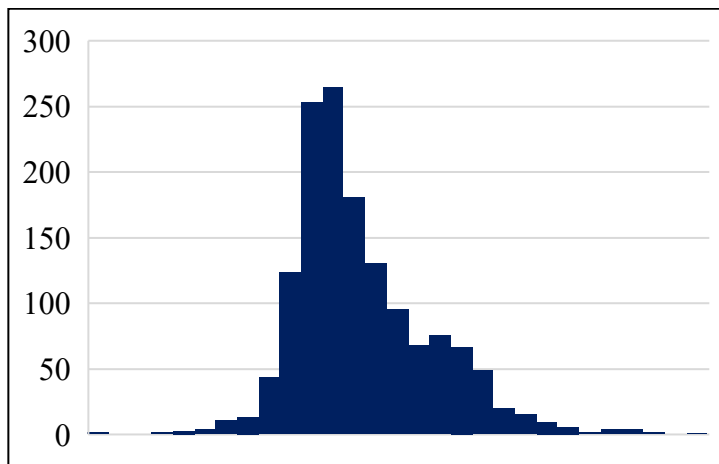
Series	Tobin's Q
Sample	2017-2021
Observations	1456
Mean	3.47
Median	1.38
Max	115.93
Min	0.03
Jarque-Bera	3,733,504
Prob.	0,0000

Graph 3.6-3. Log Total assets



Series	Log assets
Sample	2017-2021
Observations	1456
Mean	9.47
Median	9.37
Max	11.72
Min	7.10
Jarque-Bera	32.94
Prob.	0,0000

Graph 3.6-4. Log Tobin's Q



Series	Log Q
Sample	2017-2021
Observations	1456
Mean	0.27
Median	0.16
Max	2.47
Min	-1.52
Jarque-Bera	134.25
Prob.	0,0000

Table 3.5.1. The Hausman test

ROA - managerial ownership	
chi2	68.26
Prob > chi2	0.0000

Tobins q- Managerial ownership	
chi2	94.16
Prob > chi2	0.0000

ROA - Concentrated ownership	
chi2	67.43
Prob > chi2	0.0000

Tobins q- Concentrated ownership	
chi2	94.42
Prob > chi2	0.0000

Table 3.8.2-1. Summary of previous studies

No	Author	Sample	Regression Type	Ownership Variables	Performance Measures	Control Variables	Endogeneity	Main Results
1	Demsetz and Lehn (1985)	511 listed firms in USA, 1976-1980	OLS, recursive	% outside ownership by 5 and 20 largest shareholders	Accounting Profit Rate	Firm Size, CAPEX, R&D Cost, Advertising Cost, Industry Dummy	Yes	No relationship
2	Morck et al. (1988)	371 listed firms in USA in 1980	OLS	Inside ownership by board members and top officers	Tobin's Q and Accounting Profit Rate	Firm Size, R&D Cost, Advertising Cost, Debt Ratio, Industry Dummy	No	Nonmonotonic relationship; Profitability is significantly increased, then decreased, then increased again
3	McConnell and Servaes (1990)	1,173 firms in 1976 and 1,093 firms in 1986	OLS	Managerial ownership, institutional shareholders and large blockholdings	Tobin's Q	Firm Size, R&D Cost, Advertising Cost, Debt Ratio, Industry Dummy	No	Non-linear relationship
4	Agrawal and Knoeber (1996)	Listed firms in USA in 1987	OLS, 2SLS	Insider ownership and institutional shareholders	Tobin's Q	Firm Size, R&D Cost, Advertising Cost, Debt Ratio, Industry Dummy	Yes	No relationship
5	Demsetz and Villalonga (2001)	223 listed firms in USA, 1976-1980	OLS, 2SLS	Managerial shareholdings and large five blockholdings	Tobin's Q	Firm Size, CAPEX, R&D Cost, Advertising Cost, Debt Ratio, Industry Dummy	Yes	No relationship
6	Bhagat and Bolton (2008)	The full sample period is from 1990 to 2004. Simultaneous	OLS, 2SLS and 3SLS	Insider ownership concentration	Shareholder return (Risk-adjusted) and Operating Rate of Return	Firm Size, Board Size, R&D Cost, Firm Risk, Advertising Cost, Debt Ratio, CEO Tenure-Age Industry Dummy	Yes	Positive relationship
7	Himmelberg et al. (1999)	600 firms from 1982 through 1984, declines to 551 by 1985 and falls to a low of 330 by 1992	Panel Fixed Effect	Managerial shareholdings	Tobin's Q	Firm Size, R&D Cost, Advertising Cost, Industry Dummy	Yes	No relationship
8	Anderson and Reeb (2003)	S&P 500 firms from 1992 through 1999 with 2,713 firms observations.	OLS and 2SLS	Insider ownership	Tobin's Q and ROA	Firm Size, Growth Opportunities, Firm Risk, Debt Ratio, Firm Age, Industry Dummy	Yes	Positive relationship
9	Cho (1998)	326 Fortune 500 listed firms in 1991	OLS, 2SLS	Insider ownership	Tobin's Q	Firm Size, CAPEX, R&D Cost, Debt Ratio, Industry Dummy	Yes	No relationship

Table 4.2-1: ROA and Managerial ownership

	A	B	C	D
Method	OLS	OLS	FE	FE
Variable	ROA	ROA	ROA	ROA
Managerial ownership	0.073*** (0.022)	0.072*** (0.010)	0.050 (0.039)	0.050 (0.025)
Log Total Assets	0.0389*** (0.005)	0.039*** (0.004)	0.163*** (0.021)	0.163 (0.088)
Debt ratio ¹	-0.0004 (0.026)	-0.0004 (0.022)	-0.158*** (0.032)	-0.158 (0.084)
Firm Age	7.11 (9.45)	7.11 (4.5)	-0.008*** (0.002)	-0.008 (0.005)
Sd. Stock return	-0.014 (0.010)	-0.014* (0.006)	0.001 (0.008)	0.001 (0.004)
Dividend dummy	0.092*** (0.008)	0.092*** (0.007)	0.025*** (0.007)	0.025*** (0.003)
Constant			-1.074*** (0.185)	-1.074 (0.577)
Industry controls	<i>YES***</i>	<i>YES***</i>	No	No
Year controls	<i>YES***</i>	<i>YES***</i>	No	No
SE Type	Conventional	Clustered Robust	Conventional	Clustered Robust
Observations	1440	1440	1440	1440
R-squared	0.279	0.279	0.813	0.813
Adj. R Squared	0.271	0.271	0.75	0.75

¹Winsorized at 1% and 99% percentile

Table 4.2-2: Tobin's Q and Managerial ownership

	A	B	C	D
Method	OLS	OLS	OLS	OLS
Variable	Tobin's Q ¹	Tobin's Q ¹	Tobin's Q ¹	Tobin's Q ¹
Managerial ownership	-0.356*** (0.059)	-0.356*** (0.029)	-0.149** (0.068)	-0.149** (0.048)
Log Total Assets	-0.138*** (0.016)	-0.138*** (0.008)	-0.233*** (0.037)	-0.233*** (0.037)
Debt ratio ¹	0.032 (0.071)	0.032 (0.052)	-0.172*** (0.055)	-0.172 (0.086)
Firm Age	-0.001*** (0.000)	-0.001*** (0.000)	0.033*** (0.003)	0.033** (0.010)
Sd. Stock return	0.046** (0.023)	0.017*** (0.001)	0.010** (0.005)	0.010** (0.002)
Dividend dummy	0.046** (0.023)	0.046** (0.011)	0.030*** (0.013)	0.040** (0.009)
Constant			0.871*** (0.319)	0.871 (0.639)
Industry controls	<i>YES***</i>	<i>YES***</i>	No	No
Year controls	<i>YES***</i>	<i>YES***</i>	No	No
SE Type	Conventional	Clustered Robust	Conventional	Clustered Robust
Observations	1440	1440	1440	1440
R-squared	0.182	0.182	0.914	0.914
Adj. R Squared	0.173	0.173	0.884	0.884

¹Winsorized at 1% and 99% percentile

Table 4.2-3: ROA and Ownership Concentration

	A	B	C	D
Method	OLS	OLS	FE	FE
Variable	ROA ¹	ROA ¹	ROA ¹	ROA ¹
Top 5 Ownership	0.084*** (0.028)	0.084*** (0.010)	0.128** (0.060)	0.128 (0.062)
Log Total Assets	0.039*** (0.006)	0.039*** (0.004)	-0.137*** (0.033)	0.136 (0.077)
Debt ratio ¹	0.007 (0.027)	0.007 (0.029)	-0.136*** (0.033)	-0.135 (0.085)
Firm Age	5.78 (0.0001)	5.78 (4.07)	-0.006*** (0.002)	-0.006 (0.004)
Sd. Stock return	-0.015 (0.010)	-0.015* (0.006)	0.0003 (0.008)	0.0003 (0.002)
Dividend dummy	0.085*** (0.008)	0.085*** (0.007)	0.027*** (0.008)	0.027*** (0.002)
Constant			-1.006*** (0.201)	-1.006 (0.500)
Industry controls	Yes***	Yes***	No	No
Year controls	Yes***	Yes***	No	No
SE Type	Conventional	Clustered Robust	Conventional	Clustered Robust
Observations	1440	1440	1440	1440
R-squared	0.276	0.276	0.824	0.824
Adj. R Squared	0.266	0.266	0.76	0.76

¹Winsorized at 1% and 99% percentile

Table 4.2-4: Tobin's Q and Ownership Concentration

	A	B	C	D
Method	OLS	OLS	FE	FE
Variable	Tobin's Q ¹	Tobin's Q ¹	Tobin's Q ¹	Tobin's Q ¹
Top 5 Ownership	-0.588*** (0.077)	-0.588*** (0.053)	-0.219** (0.101)	-0.219** (0.091)
Log Total Assets	-0.160*** (0.017)	-0.160*** (0.008)	-0.2189*** (0.040)	-0.2189** (0.048)
Debt ratio ¹	0.061 (0.073)	0.061 (0.061)	-0.113** (0.058)	-0.112 (0.082)
Firm Age	-0.001*** (4.85)	-0.001*** (4.84)	0.034*** (0.003)	0.034** (0.010)
Sd. Stock return	0.015 (0.011)	0.015*** (0.002)	0.007 (0.005)	0.008* (0.002)
Dividend dummy	0.040* (0.023)	0.040** (0.009)	0.040*** (0.014)	0.040** 0(0.011)
Constant			0.692** (0.349)	0.692 (0.753)
Industry controls	Yes***	Yes***	No	No
Year controls	Yes***	Yes***	No	No
SE Type	Conventional	Clustered Robust	Conventional	
Observations	1440	1440	1	Clustered Robust
R-squared	0.197	0.197	1440	1440
Adj. R Squared	0.187	0.187	0.916	0.916
			0.886	0.886

¹Winsorized at 1% and 99% percentile

Table 4.4.1: Tobin's Q and Ownership Concentration with year dummy

	A	B	C	D
Method	FE	FE	FE	FE
Variable	Tobin's Q ¹	Tobin's Q ¹	Tobin's Q ¹	Tobin's Q ¹
Managerial ownership			-0.135** (0.065)	-0.135** (0.045)
Top 5 Ownership	-0.190** (0.082)	-0.190* (0.073)		
Log Total Assets	-0.227*** (0.036)	-0.227*** (0.042)	-0.220*** (0.036)	-0.220*** (0.043)
Debt ratio ¹	-0.103* (0.054)	-0.103 (0.065)	-0.110** (0.054)	-0.110 (0.065)
Firm Age	0.01* (0.006)	0.010 (0.014)	0.011* (0.006)	0.011 (0.014)
Sd. Stock return	0.007 (0.004)	0.007** (0.002)	0.007 (0.004)	0.007** (0.002)
Dividend dummy	0.046*** (0.013)	0.046** (0.013)	0.046*** (0.013)	0.046** (0.013)
Constant	1.997*** (0.401)	1.997** (0.789)	1.860*** (0.396)	1.860* (0.740)
Year Dummy	-0.068*** (0.016)	-0.068 (0.037)	-0.068*** (0.016)	-0.068 (0.037)
Industry controls	Yes***	Yes***	No	No
Year controls	Yes***	Yes***	No	No
SE Type	Conventional	Clustered Robust	Conventional	Clustered Robust
Observations	1440	1440	1440	1440
Adj. R Squared	0.88	0.89	0.89	0.89

¹Winzorized at 1% and 99% percentile

References

Agnblad, J., Berglöf, E., Högfeldt, P., & Svancar, H. (2001). Ownership and control in Sweden: Strong owners, weak minorities, and social control. In F. Barca & M. Becht (Eds.), *The control of corporate Europe*, (pp. 228–258). Oxford, UK: Oxford University Press

Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of financial and quantitative analysis*, 31(3), 377-397.

Anderson, R. C., & Reeb, D. M. (2003). Founding-family ownership and firm performance: evidence from the S&P 500. *The journal of finance*, 58(3), 1301-1328.

Bae, Kee-Hong, Jun-Koo Kang, and Jin-Mo Kim. (2002). "Tunneling or Value-Added? Evidence from Mergers by Korean Business Groups," 57 *Journal of Finance* 2695-2740.

Baek, J. S., Kang, J. K., & Park, K. S. (2004). Corporate governance and firm value: Evidence from the Korean financial crisis. *Journal of Financial economics*, 71(2), 265-313.

Barclay, M. J., & Holderness, C. G. (1989). Private benefits from control of public corporations. *Journal of financial Economics*, 25(2), 371-395.

Barnhart, S. W., & Rosenstein, S. (1998). Board composition, managerial ownership, and firm performance: An empirical analysis. *Financial Review*, 33(4), 1-16.

Bebchuk, L. A., & Roe, M. J. (1999). A theory of path dependence in corporate ownership and governance. *Stan. L. Rev.*, 52, 127.

Benson, B. W., & Davidson III, W. N. (2009). Reexamining the managerial ownership effect on firm value. *Journal of Corporate Finance*, 15(5), 573-586.

Berk, J. & DeMarzo, P. (2019). *Corporate Finance*. (Fifth edition). Pearson.

Berle, A. A. and G. C. Means (1932). *The Modern Corporation and Private Property*. New York: Harcourt, Brace, and World.

Beyer, M., Czarnitzki, D., & Kraft, K. (2012). Managerial ownership, entrenchment and innovation. *Economics of Innovation and New Technology*, 21(7), 679-699.

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of corporate finance*, 14(3), 257-273.

Black, B. S., Kim, W., Jang, H., & Park, K. S. (2015). How corporate governance affect firm value? Evidence on a self-dealing channel from a natural experiment in Korea. *Journal of Banking & Finance*, 51, 131-150.

Bloom, M., & Milkovich, G. T. (1998). Relationships among risk, incentive pay, and organizational performance. *Academy of Management journal*, 41(3), 283-297.

Bloomberg. (2020). The Terminal, Bloomberg Professional Services. Available online: <https://www.bloomberg.com/professional/solution/bloomberg-terminal/> [Accessed March 2022]

Bryman, A. & Bell, E. (2017). *Företagsekonomiska forskningsmetoder*. (Third edition) Stockholm: Liber

Carlsson, M., & Rooth, D. O. (2007). Evidence of ethnic discrimination in the Swedish labor market using experimental data. *Labour economics*, 14(4), 716-729.

Cashman, G. D., Gillan, S. L., & Jun, C. (2012). Going overboard? On busy directors and firm value. *Journal of Banking & Finance*, 36(12), 3248-3259.

Celona, P. & McNamee, P. (2005). *Decision Analysis for the Professional*. (Fourth edition). Smartorg Inc.

Chakravarthy, B. S. (1986). Measuring strategic performance. *Strategic management journal*, 7(5), 437-458.

Chang, S. J. (2003). Ownership structure, expropriation, and performance of group-affiliated companies in Korea. *Academy of Management Journal*, 46(2), 238-253.

Cheng, S. (2008). Board size and the variability of corporate performance. *Journal of financial economics*, 87(1), 157-176.

Cho, M. H. (1998). Ownership structure, investment, and the corporate value: an empirical analysis. *Journal of financial economics*, 47(1), 103-121.

Christensen, J., Kent, P., & Stewart, J. (2010). Corporate governance and company performance in Australia. *Australian accounting review*, 20(4), 372-386.

Claessens, S., Djankov, S., & Lang, L. H. (2000). The separation of ownership and control in East Asian corporations. *Journal of financial Economics*, 58(1-2), 81-112.

Claessens, S., & Fan, J. P. (2002). Corporate governance in Asia: A survey. *International Review of finance*, 3(2), 71-103.

Cohen, J., Krishnamoorthy, G., & Wright, A. M. (2002). Corporate governance and the audit process. *Contemporary accounting research*, 19(4), 573-594.

Coles, J. L., Lemmon, M. L., & Meschke, J. F. (2012). Structural models and endogeneity in corporate finance: The link between managerial ownership and corporate performance. *Journal of financial economics*, 103(1), 149-168.

Core, J. E., Guay, W. R., & Rusticus, T. O. (2006). Does weak governance cause weak stock returns? An examination of firm operating performance and investors' expectations. *the Journal of Finance*, 61(2), 655-687.

- Core, J. E., Holthausen, R. W., & Larcker, D. F. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of financial economics*, 51(3), 371-406.
- Cui, H., & Mak, Y. T. (2002). The relationship between managerial ownership and firm performance in high R&D firms. *Journal of corporate finance*, 8(4), 313-336.
- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Davis, Schoorman, and Donaldson reply: The distinctiveness of agency theory and stewardship theory. *Academy of Management. the Academy of Management Review*, 22(3), 611.
- Davis, J. H., Schoorman, F. D., & Donaldson, L. (2018). Toward a stewardship theory of management. In *Business ethics and strategy* (pp. 473-500). Routledge.
- Davies, J. R., Hillier, D., & McColgan, P. (2005). Ownership structure, managerial behavior and corporate value. *Journal of Corporate Finance*, 11(4), 645-660.
- Demsetz, H. (1983). The structure of ownership and the theory of the firm. *The Journal of law and economics*, 26(2), 375-390.
- Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of political economy*, 93(6), 1155-1177.
- Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of corporate finance*, 7(3), 209-233.
- Denis, D. J., & Sarin, A. (1999). Ownership and board structures in publicly traded corporations. *Journal of financial economics*, 52(2), 187-223.
- Denis, D. J., Denis, D. K., & Sarin, A. (1999). Agency Theory and the Influence of Equity Ownership Structure on Corporate Diversification Strategies. *Strategic Management Journal*, 20(11), 1071-1076. <http://www.jstor.org/stable/3094032>
- Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of management*, 16(1), 49-64.
- Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of financial economics*, 48(1), 35-54.
- Euroclear. (2022). Euroclear Sweden. Available online: <https://www.euroclear.com/sweden/sv/om-oss.html> [Accessed March 2022]
- Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. *The American economic review*, 74(4), 650-659.
- Faccio, M., Lang, L. H., & Young, L. (2001). Dividends and expropriation. *American economic review*, 91(1), 54-78.
- Faccio, M., & Lang, L. H. (2002). The ultimate ownership of Western European corporations. *Journal of financial economics*, 65(3), 365-395.

- Faccio, M., & Lasfer, M. (1999). Managerial ownership, board structure and firm value: The UK evidence. *Cass Business School Research Paper*.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
- Fernández, C., & Arrondo, R. (2005). Alternative internal controls as substitutes of the board of directors. *Corporate governance: an international review*, 13(6), 856-866.
- Ferris, S. P., Jagannathan, M., & Pritchard, A. C. (2003). Too busy to mind the business? Monitoring by directors with multiple board appointments. *The Journal of Finance*, 58(3), 1087-1111.
- Fich, E. M., & Shivdasani, A. (2007). Financial fraud, director reputation, and shareholder wealth. *Journal of Financial Economics*, 86(2), 306-336.
- Fiegenbaum, A., & Karnani, A. (1991). Output flexibility—a competitive advantage for small firms. *Strategic management journal*, 12(2), 101-114.
- Florackis, C., Kostakis, A., & Ozkan, A. (2009). Managerial ownership and performance. *Journal of business research*, 62(12), 1350-1357.
- Franks, J., Mayer, C., & Renneboog, L. (2001). Who disciplines management in poorly performing companies?. *Journal of financial intermediation*, 10(3-4), 209-248.
- Gibbs, P. A. (1993). Determinants of Corporate Restructuring: The Relative Importance of Corporate Governance, Takeover Threat, and Free Cash Flow. *Strategic Management Journal*, 14, 51–68. <http://www.jstor.org/stable/2486420>
- Gompers, P., Kovner, A., Lerner, J., & Scharfstein, D. (2010). Performance persistence in entrepreneurship. *Journal of financial economics*, 96(1), 18-32.
- Goodstein, J., Gautam, K., & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic management journal*, 15(3), 241-250.
- Graham, J. R., Lang, M. H., & Shackelford, D. A. (2004). Employee stock options, corporate taxes, and debt policy. *The Journal of Finance*, 59(4), 1585-1618.
- Grossman, S. J., & Hart, O. D. (1983). An Analysis of the Principal-Agent Problem. *Econometrica*, 51(1), 7–45. <https://doi.org/10.2307/1912246>
- Grossman, S. J., & Hart, O. D. (1986). The costs and benefits of ownership: A theory of vertical and lateral integration. *Journal of political economy*, 94(4), 691-719.
- Hall, M., & Weiss, L. (1967). Firm size and profitability. *The Review of Economics and Statistics*, 319-331.
- Haniffa, R. M., & Cooke, T. E. (2002). Culture, corporate governance and disclosure in Malaysian corporations. *Abacus*, 38(3), 317-349.

- Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of accounting and economics*, 7(1-3), 85-107.
- Hermalin, B. E., & Weisbach, M. S. (1991). The Effects of Board Composition and Direct Incentives on Firm Performance. *Financial Management*, 20(4), 101–112. <https://doi.org/10.2307/3665716>
- Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously Chosen Boards of Directors and Their Monitoring of the CEO. *The American Economic Review*, 88(1), 96–118. <http://www.jstor.org/stable/116820>
- Himmelberg, C. P., Hubbard, R. G., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of financial economics*, 53(3), 353-384.
- Holden, C. W., Jacobsen, S. E., & Subrahmanyam, A. (2014). The empirical analysis of liquidity. *Foundations and Trends in Finance*, 8, 263-365.
- Holderness, C. G. (2001). A survey of blockholders and corporate control. *Available at SSRN 281952*.
- Högfeldt, P. (2005). The history and politics of corporate ownership in Sweden. *A history of corporate governance around the world: Family business groups to professional managers*, 517-580.
- Hu, Y., & Izumida, S. (2008). Ownership concentration and corporate performance: A causal analysis with Japanese panel data. *Corporate Governance: An International Review*, 16(4), 342-358.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review*, 76(2), 323-329.
- Jensen, M. C. and W. H. Meckling (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3(4), 305–360.
- Jensen, M. C., & Murphy, K. J. (1990). Performance Pay and Top-Management Incentives. *Journal of Political Economy*, 98(2), 225–264. <http://www.jstor.org/stable/2937665>
- Joh, S. W. (2003). Corporate governance and firm profitability: evidence from Korea before the economic crisis. *Journal of Financial Economics*, 68(2), 287-322.
- Johanson, D., & Østergren, K. (2010). The movement toward independent directors on boards: A comparative analysis of Sweden and the UK. *Corporate Governance: An International Review*, 18(6), 527-539.
- Kapopoulos, P., & Lazaretou, S. (2007). Corporate ownership structure and firm performance: evidence from Greek firms. *Corporate Governance: An International Review*, 15(2), 144-158.

- Karaca, S. S., & Eksi, I. H. (2012). The relationship between ownership structure and firm performance: An empirical analysis over Istanbul Stock Exchange (ISE) listed companies. *International Business Research*, 5(1), 172.
- Kaserer, C., & Moldenhauer, B. (2006). *Insider ownership and corporate performance: evidence from Germany* (No. 2005-01). Working Paper.
- Kim, K. A., Kitsabunnarat-Chatjuthamard, P., & Nofsinger, J. R. (2007). Large shareholders, board independence, and minority shareholder rights: Evidence from Europe. *Journal of Corporate Finance*, 13, 859–880.
- Kole, S. R. (1995). Measuring managerial equity ownership: a comparison of sources of ownership data. *Journal of Corporate Finance*, 1(3-4), 413-435.
- Konijn, S. J., Kräussl, R., & Lucas, A. (2011). Blockholder dispersion and firm value. *Journal of Corporate Finance*, 17(5), 1330-1339.
- Kroll, M., Wright, P., Toombs, L., & Leavell, H. (1997). Form of Control: A Critical Determinant of Acquisition Performance and CEO Rewards. *Strategic Management Journal*, 18(2), 85–96. <http://www.jstor.org/stable/3088156>
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of financial economics*, 58(1-2), 3-27.
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The journal of finance*, 54(2), 471-517.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2002). Investor protection and corporate valuation. *The journal of finance*, 57(3), 1147-1170.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal determinants of external finance. *The journal of finance*, 52(3), 1131-1150.
- Leech, D., & Leahy, J. (1991). Ownership structure, control type classifications and the performance of large British companies. *The Economic Journal*, 101(409), 1418-1437.
- Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic management journal*, 13(S1), 111-125.
- Linck, J. S., Netter, J. M., & Yang, T. (2008). The determinants of board structure. *Journal of financial economics*, 87(2), 308-328.
- Loderer, C., & Martin, K. (1997). Executive stock ownership and performance tracking faint traces. *Journal of Financial Economics*, 45(2), 223-255.
- Loderer, C., Stulz, R., & Waelchli, U. (2017). Firm rigidities and the decline in growth opportunities. *Management Science*, 63(9), 3000-3020.

- Lubatkin, M. H., Schulze, W. S., Ling, Y., & Dino, R. N. (2005). The effects of parental altruism on the governance of family-managed firms. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 26(3), 313-330.
- Maury, B., & Pajuste, A. (2005). Multiple large shareholders and firm value. *Journal of Banking & Finance*, 29(7), 1813-1834.
- Marlin, D., Hoffman, J. J., & Lamont, B. T. (1994). Porter's generic strategies, dynamic environments, and performance: A profile deviation fit perspective. *The International Journal of Organizational Analysis*.
- McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, 27(2), 595-612.
- McConnell, J. J., & Servaes, H. (1995). Equity ownership and the two faces of debt. *Journal of financial economics*, 39(1), 131-157.
- Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of financial economics*, 38(2), 163-184.
- Mitton, T. (2002). A cross-firm analysis of the impact of corporate governance on the East Asian financial crisis. *Journal of financial economics*, 64(2), 215-241.
- Morck, R., Wolfenzon, D., & Yeung, B. (2005). Corporate governance, economic entrenchment, and growth. *Journal of economic literature*, 43(3), 655-720.
- Morck, R., & Yeung, B. (1992). Internalization: an event study test. *Journal of international economics*, 33(1-2), 41-56.
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of financial economics*, 20, 293-315.
- Morck, R., Yeung, B., & Yu, W. (2000). The information content of stock markets: why do emerging markets have synchronous stock price movements?. *Journal of financial economics*, 58(1-2), 215-260.
- Mueller, D. C. (1969). A theory of conglomerate mergers. *The Quarterly Journal of Economics*, 83(4), 643-659.
- Murphy, K. J. (1999). Executive compensation. *Handbook of labor economics*, 3, 2485-2563.
- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of financial economics*, 5(2), 147-175.
- Pagano, M., & Röell, A. (1998). The choice of stock ownership structure: Agency costs, monitoring, and the decision to go public. *The Quarterly Journal of Economics*, 113(1), 187-225.

- Patro, S., Lehn, K., & Zhao, M. (2003). Determinants of the size and structure of corporate boards: 1935-2000. *Financial Management*, 38, 2009.
- Pervan, M., Pervan, I., & Todoric, M. (2012). Firm ownership and performance: Evidence for Croatian listed firms. *World Academy of Science, Engineering and Technology*, 61(2012), 964-970.
- Peter McNamee, & John Celona (2005). *Decision Analysis for the Professional: Fourth Edition*
- Riordan, M. H., & Williamson, O. E. (1985). Asset specificity and economic organization. *International Journal of Industrial Organization*, 3(4), 365-378.
- Roulstone, D. T. (2003). Analyst following and market liquidity. *Contemporary accounting research*, 20(3), 552-578.
- Rozeff, M. S. (1982). Growth, beta and agency costs as determinants of dividend payout ratios. *Journal of Financial Research*, 5(3), 249-259.
- Shepherd, W. G. (1972). The elements of market structure. *The review of economics and statistics*, 25-37.
- Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of political economy*, 94(3, Part 1), 461-488.
- Shleifer, A., & Vishny, R. W. (1989). Management entrenchment: The case of manager-specific investments. *Journal of financial economics*, 25(1), 123-139.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, 52(2), 737-783.
- Short, H., & Keasey, K. (1999). Managerial Ownership and the Performance of Firms: Evidence from the UK. *Journal of corporate finance*, 5(1), 79-101.
- Söderström, H. T., Berglöf, E., Holmström, B., Högfeldt, P., Milgrom, E. M. M., & Förlag, S. N. S. (2003). *Structural Change*.
- Stulz, R. (1988). Managerial control of voting rights: Financing policies and the market for corporate control. *Journal of Financial Economics*, 20, 25-54.
- Sulong, Z., & Nor, F. M. (2010). Corporate governance mechanisms and firm valuation in Malaysian listed firms: A panel data analysis. *Journal of Modern Accounting and Auditing*, 6(1), 1.
- Turki, A., & Sedrine, N. B. (2012). Ownership structure, board characteristics and corporate performance in Tunisia. *International Journal of Business and Management*, 7(4), 121.
- Walsh, J. P., & Seward, J. K. (1990). On the efficiency of internal and external corporate control mechanisms. *Academy of management review*, 15(3), 421-458.

Watts, R. L., & Zimmerman, J. L. (1986). Positive accounting theory.

Weir, C., Laing, D., & McKnight, P. J. (2002). Internal and external governance mechanisms: their impact on the performance of large UK public companies. *Journal of Business Finance & Accounting*, 29(5-6), 579-611.

Weiss, L. W. (1969). Advertising, profits, and corporate taxes. *The Review of Economics and Statistics*, 421-430.

Wernerfelt, B., & Montgomery, C. A. (1988). Tobin's q and the importance of focus in firm performance. *The American Economic Review*, 246-250.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of financial economics*, 105(3), 581-606.

Wright, P., & Ferris, S. P. (1997). Agency conflict and corporate strategy: The effect of divestment on corporate value. *Strategic management journal*, 18(1), 77-83.

Zeckhauser, R. J., & Pound, J. (1990). Are large shareholders effective monitors? An investigation of share ownership and corporate performance. *Asymmetric information, corporate finance, and investment*, 1, 149-180.

