Ownership Concentration in Swedish Firms: How does it Affect Performance?

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Abstract

This thesis investigates how ownership concentration impacts share performance and firm performance in Sweden, comparing the effects in negatively trending markets with the effects in positively trending markets, adding to the large but dispersed corporate governance literature surrounding the subject. I have gathered information on the ownership structure of the firms listed on the Stockholm Stock Exchange and the NGM Nordic Stock Exchange as well as accounting and share returns from the Swedish stock market during the period 2008-2010 and used the Sharpe Ratio to test what effects different levels of ownership concentration, and different number of large owners have on share performance in Sweden. As an addition, I have also done the same testing with accounting returns measuring firm performance with the Return On Invested Capital (ROIC) measure in order to spot differences in share vs firm performance and provide potential explanations to similarities and differences, providing a larger analytical reference point for the thesis. The findings of this thesis indicate that share pricing in relation to ownership concentration is relatively rationally and efficiently done in Sweden as only two statistically significant differences are found in terms of different categories of ownership outperforming others. It was however found that investors seem to assume larger private benefit extraction from the largest shareholders within firms than is actually occurring when a negatively trending market turns positive. The notion of relatively efficient pricing is further strengthened as accounting performance is found to differ to a larger extent between ownership categories. Specifically, relatively clear evidence is found that a concentrated ownership structure outperforms a more spread ownership structure in 2009 and 2010 while no differences were found in 2008. As accounting returns had their low point in 2009, it signals that lower risk taking by firms with a more concentrated ownership structure paid off during this time period, while it does not seem to have hindered them into performing worse during 2008. Another potential explanation for the findings is that Sweden's business environment is used to, and even favours, concentrated ownership, thus explaining why this thesis have found signs of a positive relationship between ownership concentration and firm performance while other scholars often argues that the reverse should be true in a European nation.

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1. Introduction

1.1 Motivation

Firm ownership is a frequently discussed subject in Sweden. In this country characterised by social welfare, equality, high taxes and large government influence it must be said that it is a bit surprising that this small nation with less than 10 million inhabitants have managed to produce many large, powerful private sector firms (Cooke, 1989), such as H&M, IKEA, Ericsson and Volvo. What is also surprising is that many of these firms have remained under tight control by either founders or strong private owners for a very long time, H&M by the Persson family and IKEA by Ingvar Kamprad and his foundations as two well-known examples. Also, 140 years ago, Sweden was a poor country. Sweden has gone from having the second lowest production efficiency in Europe in the 1870s (Högfeldt, 2005) to become a very rich country today (World Bank 2, 2016), with plenty of large multinational firms (Cooke, 1989). Firm ownership during this transition has been characterised by concentrated ownership and the two largest and most powerful industry spheres, the Wallenberg sphere and the Industrivärlden sphere, have at times enjoyed tight control over firms representing almost half of market capitalization on the Swedish stock market (Högfeldt, 2005). This sparks the obvious question: Is concentrated ownership an important part of the success of Sweden's industrial development? And is this a factor investors should take into account when evaluating whether they should invest in a firm or not?

Corporate governance scholars have for a long time tried to answer the question regarding if concentrated ownership is good or bad for performance in general, with contradicting results (Weiss & Hilger, 2011; Alimehmeti & Paletta, 2012; Hovey et al, 2003; Pedersen & Thomsen, 1999; Chen et al, 2005; Desender, 2008; Johnson et al, 2000; Grant & Kirchmaier, 2004, among others). A common explanation for this is that country specific factors such as regulatory differences among others means different ownership structures have different levels of efficiency in different countries (Weiss & Hilger, 2011; Oded et al. 2010; Grant & Kirchmaier, 2004). Another explanation regards timing, for instance different effects of ownership concentration when a country is suffering from a financial crisis (Alimehmeti & Paletta, 2012).

No study on the effects that ownership have concentration on firm performance has to my knowledge been performed specifically with Sweden as the target market. Different owner types have been studied by Brunzell et al. (2015), but this study the Nordic countries in general was the research subject. The background of Sweden's successful transition from poor to rich and the unanswered question of whether ownership concentration is an aid or an obstacle for this transition, sparked an interest in me to study this subject further. Therefore, I will in this thesis seek out to find whether the concentrated ownership structure in Sweden is good for firm performance, and thus serves the nation well, and whether the efficiency of this system is better or worse during times of financial distress.

1.2 Problem statement

The effect that ownership concentration and structure have on firm performance and value is viewed as a key variable in corporate governance studies (Kumar & Zattoni, 2015). It is also an important variable to consider as an investor when choosing whether to invest in a firm or not. The subject have received plenty of attention in the literature in the past years. Several scholars have attacked the issue in different ways, but the results have generally been varied and often contradicting in terms of whether concentrated or spread ownership is good for performance and value or not (Weiss & Hilger, 2011). Some scholars claim that it is positive (Alimehmeti & Paletta, 2012; Özerhan, 2012; Essen et al, 2015), some find no effect (Pedersen & Thomsen, 1999; Weiss & Hilger, 2011; Hovey et al; 2003) and others a negative effect (Chen et al, 2005; Desender, 2008; Johnson et al, 2000; Grant & Kirchmaier, 2004; Thomsen et al, 2006). Differences might depend country specific factors (Weiss & Hilger, 2011; Oded et al. 2010; Grant & Kirchmaier, 2004) or timing (Alimehmeti & Paletta, 2012). However, the effect of ownership concentration on firm performance during financial crisis times in Europe seems to not be very well covered in the literature (Alimehmeti & Paletta, 2012), leaving a gap that needs to be explored.

Although scholars disagree on whether the total effect of concentrated ownership is positive or negative, the key issues affecting firm performance, is relatively agreed upon. The key starting point is generally agency issues, but not only the traditional agency problem between owners and managers, but also agency problems between different owners of the same firm,

primarily between large shareholders versus minority shareholders (Kumar & Zattoni, 2015). There are several effects that agency issues might have depending on ownership concentration, but scholars seem to agree on three primary issues:

- *Risk taking:* A key point of the governance literature on ownership is that a majority shareholder, or indeed a large blockholder, might be more risk averse than a smaller, minority shareholder. This stems from the fact that large shareholders might not be fully diversified in their investment portfolio. This subjects them not only to systematic risk, but also to un-systematic risk that a smaller shareholder can ignore if they are diversified. (Dhillon et al. 2015; Edmans, 2013).
- *Long-termism vs. short-termism:* Some shareholders have more long-term investment horizons than others. As Brunzell et al. (2015) points out, this is perhaps more related to the type of owner, rather than the percentage of votes that owner holds. Regardless, the investment horizon of the owners does have an effect on the investment decisions made in the firm.
- *The advantage of monitoring vs. the disadvantage of private benefit extraction:* Monitoring of managers is needed to reduce agency problems of the first type. The monitoring of managers cost both time and money. This means that a smaller shareholder might feel that the cost of monitoring exceeds the benefits of it from his own perspective. A large shareholder however, is subjected to similar monitoring cost, but from having a bigger economic stake in the firm, the marginal benefits instead exceeds the cost of monitoring. To have a large shareholder monitoring managers, thus makes it possible for the smaller shareholders to free ride on the larger owner, which is positive for them. The risk this creates however is that no one is monitoring the large shareholder, who might use that opportunity to extract private benefits from the firm rather than focusing on maximizing value. This instead becomes a danger to minority shareholders (Grant & Kirchmaier, 2004; Maury & Pajuste, 2005; Edmans, 2013)

The above reasoning suggests that there are factors potentially causing performance differences between different ownership structures for the firm. It also makes it clear that there can be both positive and negative aspects of having a concentrated ownership structure in a firm.

Country specific factors such as the legal system, primarily the *investor protection level,* also

seem to affect how ownership concentration in turn affects performance and value of the firm, and can be a core factor in determining whether the above agency issues overall has a negative or positive effect on the firm. Commonly, investor protection levels are discussed to determine the possibilities for private benefit extraction from large owners towards minority shareholders, where a low level of protection increases the possibilities for private benefit extraction, while a higher level of protection decrease that possibility. Furthermore, it also affects the risk of managers acting in their own interest rather than in the interest of the shareholders (La Porta et al, 2000; Shleifer & Vishny, 1997; Weiss & Hilger, 2011; Oded et al. 2010; Grant & Kirchmaier, 2004). As this issue is of such great importance, single country studies are needed to find country specific results, as the results tend to differ from country to country (Miller, 2004). While studies on ownership structure in terms of owner types have been performed on the Swedish market (Brunzell et al. 2015), no study have been performed to my knowledge simply with regards to how ownership *concentration* affects performance, leaving a gap in the literature. Ownership concentration (the split of shares between owners) differs from ownership structure (different owner types) since the concentration of ownership defines the amount of power that shareholder holds over management and the firm, while structure defines the objectives and way the power is used (Thomsen & Pedersen, 2000).

Timing is another interesting aspect of the differing results. As time goes by changes happen in regulatory systems and in markets in general. According to Alimehmeti & Paletta (2012), there is a gap in the governance literature covering the European stock markets when it comes to the effect of firm performance during times of financial crisis. In their own study of the Italian market for instance, they find that ownership concentration is generally positively related to stock performance, but that the reverse is true during times of crisis. As much of the literature on the subject relates to risk aversion and long term vs short-termism, it is truly interesting to see whether ownership concentration is a source of performance differences in times with positively trending markets compared to times with negatively trending markets.

The Swedish market provides an interesting research area in this context as ownership of Swedish listed firms is relatively frequently debated. In Sweden, a few very powerful spheres have since the 1930s controlled a large portion of the Swedish stock market due to take overs

of firms in crisis in the 1930s and the use of dual class share systems. In the early 21st century for instance, two business spheres controlled 50 % of the market capitalization on the Swedish market while only holding 2 % of the capital. And even though concentrated ownership have been argued to be value destroying in European countries (Grant & Kirchmaier, 2004), Collin (1998) argues that there might be economic rationality behind the concentrated ownership in Sweden due to the structure of easier credit and a small internal labour market. These differing viewpoints make Sweden a very interesting country to study, as the ownership seems to be structured in a fairly unique way.

1.3 Research question

As the Swedish stock market is not covered in terms of the performance effects of firms depending on ownership concentration, and that changing economic conditions, like the 2008 financial crisis might have an effect on how ownership concentration affects firm performance, my research question is as follows:

Does ownership concentration impact share performance and firm performance in Sweden, and does the effect differ in case the market is going through a negatively trending time period or a positively trending time period?

I attempt to answer this question by performing a quantitative study based on stock, ownership and firm and share performance data. The study will have a historical approach as it focuses on ex ante, actual events, and therefore seek to supply knowledge for the future by studying what has happened in the past.

The inspiration to this study is found in Alimehmeti and Paletta (2012) and their finding that concentrated ownership has different effects on firm performance depending on the market development. As the literature in general provides such dispersed results regarding the effects of ownership concentration in overall, I hope to provide more insight to investors in the Swedish stock market regarding what effects ownership concentration can be expected to have on firm performance depending on the market situation. The dispersed results from previous research also highlight the need to narrow down external conditions such as

differing time periods and different country specific effects.

To study performance in this thesis, I will both use risk adjusted stock returns and an accounting based performance measure to study the effects. The reason is that both stock returns and accounting returns have flaws in themselves, but using both will hopefully bring more clarity to the issue. Stock returns have the disadvantage of not showing any performance differences if investors have already anticipated performance differences due to ownership structures, as this is publicly available information and should thus be included in the pricing of the shares (Fama, 1969). Accounting returns have the disadvantage of not including risk as a performance measure, as well as the general issues of accounting data in terms of asset valuation, being historically based rather than market value based, among other shortcomings.

The contribution of this article is primarily practical but also theoretical. Investors in the Swedish stock market will hopefully find it useful in figuring out how to position themselves toward the concentration of ownership within their firms of interest. Academically, I primarily hope to bring further light to the issue of ownership concentration and firm performance by making, to my knowledge, the first study of the effects of ownership concentration on the Swedish market, and discuss why the results are what they are.

1.4 Delimitations

This study is limited to the Swedish market for three key reasons. First, the Swedish market is characterised by having a very concentrated ownership structure (Fristedt & Sundqvist, 2008), contrary to the US or UK markets for instance, where ownership is usually spread out (Brunzell et al. 2015). Second, No study to my knowledge have been performed on the effect of ownership concentration on the Swedish market, even if Brunzell et als. (2015) study on ownership structure provides some insights. Third, since researches seem to agree that the country in which the study is performed matters (Weiss & Hilger, 2011; Oded et al. 2010; Grant & Kirchmaier, 2004), a study focusing one single nation can more cleanly capture the effects that are studied (Miller, 2004). Pedersen and Thomsen (1999) indeed find large country specific effects when attempting to generalize the discussion in a European setting.

The study is also limited to simply study ownership concentration. The reason is that the number of listed firms on the Stockholm Stock exchange is relatively limited, as only just over 300 firms are publicly traded (Fristedt & Sundqvist, 2008). This means that to get a sample large enough for relevant, generalizable and statistically significant results, categorizing needs to be limited. Also, as Brunzell et al. (2015) studied different owner types, it seems more relevant to extend the current literature with a focus on ownership concentration rather than a copycat study of owner types.

A further limitation is that the study only focuses on three years, 2008-2010. This is partly due that availability of ownership data makes it difficult to re-map ownership structures several times. Focusing on three years makes it possible to assume a fixed ownership structure, as ownership structure rarely changes much over time (Grant & Kirchmaier, 2004). Furthermore, as I will not be studying the effect of regulatory changes, of which there are a few during a financial crisis (Bergström, 2009), the risk of them affecting the results is large enough when basing the study on three years' time. Focusing the study on for instance 10-15 years, would further increase the risk of changing market conditions and rules affecting the results. Furthermore, using the crisis year of 2008 as a baseline followed by the next two years, 2009-2010, gives the opportunity to study more long term effects of the crisis on the firms included in the sample, and whether firms with one type of ownership structure "bounce back" after under- or over-performing during the crisis.

1.5 Structure of thesis

Section 2 will after a background on corporate governance and the efficient market hypothesis and why both stock prices measures and accounting measures are used in the thesis, describe the main theoretical findings that lead to the interest among scholars around ownership structure and ownership concentration, as well as a background of the financial crisis in Sweden, the Swedish stock market and the details on corporate governance during financial crisis times. In section 3, I develop my hypotheses based on previous empirical and theoretical findings of the research area. Section 4 describes the measures I will be using to test my hypotheses, the arguments behind my split of shares into different categories and also

the overall statistical methodology of the study, including robustness tests and advantages and disadvantages of my data and methodology. Section 5 will describe my empirical results and section 6 will provide an overall analysis of the findings. Finally, section 7 will present my concluding remarks and recommendations for future research.

2. Theoretical framework and literature review

I start this section with an overview of efficient markets, what corporate governance is, and why it is important, followed by a review of existing theoretical findings on the ways in which ownership structure affects firm performance. Thereafter, I describe the financial crisis from a Swedish perspective, review specific corporate governance literature discussing the financial crisis as well as the Swedish stock market conditions and ownership structure. Finally, I summarize the findings and their importance for this thesis.

To understand the framework properly, a small note on ownership classification is needed.

1. *Majority owner:* This means one shareholder controlling the entire firm. Researches differ a bit in their definition of this term, and it is not as simple as saying that a majority owner is controlling 50 % of the votes. In my paper, the 50 % threshold will be used in terms of empirical testing. When reading the theoretical review however, caution should be taken towards the fact that some scholars might claim that a shareholder controlling for instance 30 % of the votes can be viewed as a majority owner.
2. *Blockholder:* Like with majority owners, some say a blockholder is a shareholder controlling at least 5 % of the votes. Others say 10 %. For the purpose of the theoretical framework, a blockholder should be viewed as a person having a big stake in a firm and a significant level of power, meaning they need to control a few % of the votes. Due to the different classifications scholars are using, a clearer definition than this is not possible.

As different thresholds are used, and some scholars studies both for instance ownership concentration and owner types, the reader needs to be aware that my definition of a blockholder might not be exactly the same as a below quoted scholars definition. However, the general idea that a blockholder has a significant stake in the firm, and that a majority owner alone controls a firm, stays the same. Expressions such as *concentrated ownership*,

without specification of what exactly constitutes concentrated ownership, is also common in the research field. Interpretation of this expression should simply be that one or a few owners combined exerts a significant amount of control in the firm.

2.1 Efficient markets and the use of dual performance measures

The efficient market hypothesis states that a stock market is efficient if all share prices fully reflect all available information about a firm and follow a random walk, meaning that the changes in pricing cannot be predicted. This is because new information is random, and as stock prices reflect all available information, this randomness should also hold true for the Stock price movements when investors reacts to new information. (Fama, 1969). There are three assumptions backing this statement up. First: Investors are rational. Hence, they will price the security according to its fundamental value of its future earnings. When new information is made available, the rational investors will immediately reflect this information in the pricing of the shares. Second, Even if some investors are irrational, their irrationality will cancel each other out, thus having zero effect on share prices. Third, if the irrational behaviour does not cancel each other out, arbitrageurs will come in and use the opportunities for profit, thus driving the share price back to its fundamental value (Yancin, 2010). A continuation of this is the Capital Asset Pricing Model (CAPM), which basically states all shares prices should be priced so that they form a linear relationship so that the only determinant of a share price is its expected return and expected market risk (Fama & French 2004). One interesting feature of CAPM which is very important for this thesis, is that it assumes a diversified portfolio. Firms have two types of risk, *systematic* risk and *un-systematic risk.* Systematic risk, or market risk, is the risks faced by the firm due to the general economic environment. This risk which is carried at different levels by different firms, cannot be diversified away by holding additional shares in other firms, without impacting the expected return negatively at the same time. Un-systematic risk, or firm specific risk, can be diversified away without impacting the expected return. This is the risk that is specific to one particular firm and is basically possible to ignore once your portfolio holds a large enough number of securities (Brealy et al. 2011). As will be explained further down, investors largely investing their money within the same firm can be subjected to the firm specific risk, causing issues for smaller, diversified shareholders as the risk profile of these two owner types might differ as a

result. The relationship between the risk and return, determining the slope of the line in the CAPM, is commonly measured with the Sharpe-ratio. This ratio is calculated as:

$$\frac{Expected\ return - Expected\ risk\ free\ return}{Expected\ Standard\ deviation\ of\ returns} = Sharpe\ ratio$$

Since CAPM proposes a linear security market line, this means that all shares should be priced so that they have the same Sharpe ratio, to follow the Security Market Line (SML) as the CAPM line is called, assuming investors are risk neutral. This means that if the expected Sharpe Ratio for a firm is higher than what is stipulated by the SML, the share is under-valued. If the ratio instead is lower than the ratio stipulated by the SML, the share is over-valued (Brealy et al. 2011).

What this theory means for this paper is basically that even if it is found that firms accounting wise perform better in one category of ownership concentration than another, this should be accounted for when investors are pricing the shares. The risk adjusted return for shareholders should therefore not differ from the other categories, as this event should already be factored in to the pricing. If the effect is not captured in the pricing it means that ownership concentration works as an *anomaly* in the stock market. An anomaly means that some security is incorrectly priced, and hence makes it possible to earn arbitrarily higher returns on securities than would be possible if all securities were accurately priced (Brealy et al. 2011). For this paper, it means that if a type of ownership concentration outperforms another in terms of Sharpe Ratio, it would suggest that the investors are not including the ownership concentration as a factor in their pricing, or that they simply are not doing so timely or accurately. Late reactions to new information is not that uncommon, for example, share price movements have been found to under-react to news regarding surprisingly high earnings in a firm, and not adjusting for it until a quarter into the future (Bernard & Thomas, 1990). As this kind of issue is relatable to news of for instance a financial crisis emerging, it is likely that late reactions also occur in terms of evaluating the effect of ownership concentration to new market knowledge.

The issue with using stock returns in a study of this nature is that stock prices are, as stated above, based on "all available information" (Fama, 1969). Information on who owns shares in Sweden, and the size of their stake in the firm, is publicly available (except for some cases of

foreign investors) (Fristedt & Sundqvist, 2008). Studying the effect that ownership concentration then have on firm performance through stock returns, might present a challenge of interpreting the results. The problem is that if the level of ownership concentration in a firm is accurately priced by investors (assuming ownership concentration should have a price effect), differences in performance between different ownership structures will not show when comparing ownership structures with the use of the Sharpe Ratio. To account for this risk it makes sense to also include an accounting based measure in the performance testing, is it displays the firm's underlying performance, rather than share performance. The primary issue with using an accounting based measure, is that it is historically based, and it allows for some subjectivity in for instance valuation of assets which in turn affects financial performance as well as accounting R&D expenses as expenses or as an investment for certain industries (Brealy et al, 2011). For the purposes of the paper, I argue that it makes sense to include both as looking at results for accounting based testing can be useful in finding potential explanations for why the Sharpe Ratio testing reveals a certain result. Furthermore, much of the pre-existing literature on this subject is made based on Accounting returns (Weiss & Hilger, 2011; Alimehmeti & Paletta, 2012, for example), meaning findings might differ due to the efficient market hypothesis depending on if share returns or accounting returns are tested.

Theoretical papers sometimes argue that accounting returns are poor proxies for the internal rate of return, which displays the risk taking of the firm, but empirical studies have shown that accounting numbers actually do have relevance for the valuation of a firm (Danielson & Press, 2003). In this paper, I have chosen to robustness test my hypotheses using the Return On Invested Capital (ROIC), as it is a measure showing the ratio of operating profits compared to Operating capital invested (Bacidore et al. 1997). The reason why I choose ROIC rather than ROA as a performance measure, is that ROIC measures operating profit rather than total profit on total assets like ROA, which might include effects that are not part of the organization's core business. In the methodology section 4.5 the equation of how ROIC is calculated as well as more details surrounding the measure is presented in detail.

2.2 What is corporate governance?

The highly cited article "A survey of Corporate Governance" by Shleifer and Vishny (1997) describes corporate governance as the ways suppliers of finance operate to ensure that they get a return on their investment. The issues primarily relates to the agency issue of getting managers to return money to the suppliers of finance, and how the finance suppliers can control the managers in order to ensure that they act in their best interest. The two finance suppliers a firm can choose from is equity and debt providers. Debt providers simply loans the firm money for the exchange of interest rate payments and specific credit terms, such as collateral. Equity providers are the actual owners of the firm and the type of finance suppliers this thesis focuses upon. Equity holders obtain an ownership stake in the firm and the right to vote, especially regarding the formation of the board, on the annual meeting. However, due to dual class share systems, which is common in Sweden (Högfeldt, 2005), not all equity holders have the same voting rights. This split of shares into shares with more or less voting power is not particularly important for a small investor in a big firm, as this investor's stake would be too small to affect the firm no matter what type of share he or she holds. For owners competing for control of the firm however, the strong voting shares become very important as they can help define who has ultimate control, and thus controls the entire firms' direction without investing the amount capital corresponding to that level of control (Shleifer and Vishny, 1997). A key aspect of corporate governance is thus ownership concentration, as it defines how and by who the firm is controlled.

2.3 Why is ownership structure important?

The shareholders thus hold the ultimate power over decisions in a firm, even though most decisions are made by managers, employed by the owners through the board. In the US and the UK, ownership is often spread, giving managers a high amount of power, as shareholders with less stake in the firm are less informed, and since it is harder to make changes when hundreds of shareholders needs to agree to form a majority, than if one owner controls the entire firm (Shleifer & Vishny, 1997). In Europe (Thomsen et al, 2006) and Sweden in particular, ownership is far more concentrated (Jansson & Larsson-Olaison, 2015; Colli & Larsson, 2014), thus giving the owners holding large stakes in the firm, a lot more power. As changes in firm CEOs has a tendency to affect share prices (Beatty & Zajac, 1987), since investors evaluate the CEOs ability to increase or decrease firm performance, the same

evaluation should be made if a new powerful owner comes into play. As owners with power significantly impact the future direction of the firm, which could for instance include changes in strategic direction and top management, the power of different owners should be evaluated carefully by investors when performing a firm valuation.

As the current literature is fairly widespread with regards to whether the effect of concentrated ownership in general is positive or negative (Weiss & Hilger, 2011), more clarity is needed to allow investors to make well-informed decisions when evaluating ownership. As a primary explanation for this spread out research results is country specific differences, especially with regards to regulatory systems (La Porta et al, 2000; Weiss & Hilger, 2011; Oded et al. 2010; Grant & Kirchmaier, 2004), it seems like global, generalizable agreement on what these effects are and how they affect performance will be hard to reach. Therefore, the approach to go for seems to be to identify the effects of ownership concentration at a single country level (Miller, 2004; Pedersen and Thomsen, 1999), to aid investors in their investment decisions for that particular market.

The above discussion also highlights the need for dual performance measures as is used in this thesis. If investors indeed factors in ownership in their valuation of a firm, the Sharpe Ratio should theoretically be constant regardless of ownership structure differences and if accounting performance of firms with varying ownership concentrations differs. The addition of accounting returns as a performance measure in this case might then show if potential similarities or differences in Sharpe ratio is due to investor valuation or underlying firm performance.

The discussion of ownership can be divided into two main parts. 1. *Ownership structure,* which is a more general term that relates to the identity of the owners controlling a firm, for instance families, financial institutions, hedge funds etc., but also to how concentrated ownership is 2. *Ownership concentration,* relates *specifically* to how many people actually share the control of the firm and how powerful each of these owners are. The two are naturally linked, meaning that research in this area might contain effects and findings relating to both. Within the ownership concentration discussion findings can be sought on the effects of having one shareholder in total control of the firm, or when several large blockholders

share the control and need to agree on actions, or the effects when ownership is very spread, and maybe 100 owners or more need to agree to reach a majority. The discussion becomes increasingly relevant in the setting of a financial crisis, as corporate governance have been found to have a massive effect on the stock market performance in crisis times (Johnson et al, 2000).

2.4 Previous research about corporate ownership and performance.

A vast range of literature exists on the subject of how ownership structure and concentration affects firm performance and value. The literature often highlight the same factors, but the empirical findings on how these factors actually affects the firms differs quite significantly. The following section will describe the key issues related to corporate ownership concentration currently highlighted by scholars globally.

2.4.1 Agency problems

An issue commonly brought up in academic literature about ownership structure is agency problems (Brunzell et al. 2015, Edmans, 2013, Grant & Kirchmaier, 2004, Maury & Pajuste, 2005, Thomsen et al, 2006, Weiss & Hilger, 2011; Pedersen & Thomsen, 1999 among others). Agency issues are usually thought of primarily as an issue between managers and the owners of a firm, called Principal-Agent problems, since owners and managers can have different goals with the firm's operations. While the owners want to maximize firm value, the managers wants to maximize their own well-being, which might not always be the same thing (Jensen & Meckling, 1976). This is known as type 1 agency problems. A common example of this is managerial empire building, where managers seek to increase their own compensation and power by pursuing value destroying growth plans through major acquisitions, increasing their salaries as they are then in charge of a bigger firm (Shleifer & Vishny, 1997). There is however another agency problem, or principal problem, worth considering, which is the one between different owners, called a principal-principal problem, or an agency problem of the second type (Kumar & Zattoni, 2015). Basically, different owners can also have different targets with their ownership of a firm's shares. Some owners for instance, might have a short-term investment horizon, and want to maximize profits in a short time frame. Others might instead be interested in a more long term investment horizon (Brunzell et al. 2015).

Furthermore, controlling owners might want to divert profits to another firm under their control, to the expense of the minority shareholders (Maury & Pajuste, 2005). The principal-principal problem can also include risk, as an un-diversified controlling shareholder might want the firm to take less risk than a fully diversified minority shareholder (Dhillon et al. 2015; Edmans, 2013). This of course means that different decisions might be wanted by different shareholders, creating a principal-principal problems as the owners have different ways of maximizing their own well-being. The impact of agency problems between shareholders has been studied widely. Thomsen et al. (2006) suggest that firms in continental Europe with large blockholders as owners destroy firm value due to the agency conflicts between them and minority investors. Weiss and Hilger (2011) find contradicting results and do not find any significant effect on their sample of eight large countries with differing legal systems. However, they did test slightly different nations and only focused on the largest firms per country, and argue themselves that over 50 % of studies performed on the subject *does* find performance differences originating from differences in ownership concentration, indicating that there should be an effect. Ownership is also argued to counter act agency issues between managers and owners, which Alimehmeti and Paletta (2012) view as the reason for their finding that ownership concentration generally has a positive effect on firm value in Italy, except during crisis times where agency issues of the second type rather destroys value. As the discussion in section 2.4.1.3 will show, spread ownership means that shareholders risk not having proper incentives to monitor managers due to their stake in the firm being too small. This creates freedom for the managers to pursue other goals rather than only value maximization. With concentrated ownership, the larger owners do have an incentive to monitor managers, thus decreasing the agency problem of the first type (Edmans, 2013).

As seen from the above examples, scholars do not agree on the agency effects and blame the differing results on for instance country effect or differing methodologies (Weiss & Hilger, 2011). The issues surrounding ownership concentration can be broken down further from the main point of agency problems. Scholars seem to agree on three key agency issue related effects that are important to consider in the firm environment: risk, short term vs. long-termism and monitoring vs private benefit extraction. These effects are described in detail below.

2.4.1.1 Risk taking

A rational, fully diversified investor, is not interested in the risk of an individual stock, but only how that individual stock's risk affect the risk of that investor's entire portfolio (Fama & French, 2004). This is basic efficient market theory as described above, that investors care about market risk rather than firm-specific risk. (Brealy et al. 2011) All investors however, are not fully diversified. A family with majority control of a firm for instance, might have a significant portion of their personal wealth invested in that firm. This means that they are not only subjected to market risk, but also firm-specific risk that a diversified investor would be able to diversify away. What this means is that the investment in the firm is more risky for an un-diversified investor than it is for a diversified one. While the majority owner is undiversified, the minority owners might not be. This risks creating different views on what level of risk a company should take, as the undiversified majority owner might be more risk averse and thus rejecting positive NPV projects due to a too high level of risk. This is not however only related to majority shareholders but also to blockholders who are not fully diversified in general (Dhillon et al. 2015; Edmans, 2013). Dhillon et al. (2015) finds that large shareholders indeed are more risk averse than more diversified owners. According to them, mid-sized blockholders can emerge to mitigate this conflict of interest between the smaller owners and the larger. Edmans (2013) instead points out that blockholders in general might reject investment opportunities suffering from un-systematic risk due to them not being fully diversified, thus somewhat in contradiction to Dhillon et al (2015). A small shareholder who is diversified, might not agree with this decision, as this owner is only subjected to market risk, and would thus like to pursue the investment opportunity. Zhang (1998) also supports the statement of risk aversion with majority shareholders, but claims that risky debt can be issued to mitigate this underinvestment problem, and reinstate a status quo. One could argue however, that issuing debt could have the opposite effect as it increases the risk for the owners further. Jankesgård and Wilhelmsson (2015) find, to their surprise, that concentrated ownership is related to lower stock price volatility in Sweden. They speculate that the reason is that firms with lower levels of ownership concentration produces more information that is then factored in to the pricing, adding volatility. Thus, a less volatile share price might not depend on the fact that large shareholders are more risk averse. It might also mean, that a firm that takes more risk than others, might be perceived as less risky in a paper like this as

the stock return will then show a lower volatility despite higher risk taking from within the firm. This is naturally a risk that needs to be remembered when analysing the findings of this thesis.

As seen from above, the different viewpoints in risk poses a potential principal-principal problem, as the minority owners will be voted down by the larger ones, with a different risk profile (Dhillon et al, 2015). Risk however, is also related to the investment horizon of the decision being made. Hence, the level of risk a firm takes on also should be related to the investment horizon of the owner. Therefore, the investment horizon of different owners also creates an important analytical reference point to investigate in order to see if large owners are more or less long term in perspective than smaller owners. If a large owner is more long term in her horizon, this long-termism might mitigate the risk aversion coming from not being diversified.

2.4.1.2 Short termism vs. long termism.

Different owners of course have different investment horizons. Some people by shares as a short term strategy for a quick profit while others are in it for the long term. Brunzell et al. (2015) study different owner types, such as pension funds, mutual funds, private owners etc. and their investment horizons and find significant differences in the investment horizons between the groups. They also hypothesize that firms with large non-financial blockholders exerts lower short-term pressure than firms with no large blockholders present, but does not find statistically significant support for this. However, long term financial institutions are found to significantly reduce short term pressure on firm managers. In this research, it seems then that the owner type, and not only the block size, is important when considering ownership effects on firm performance. Partly in contradiction to this result, is Edmans (2009) claiming that blockholder presence in general actually reduces short-termism by managers. This is because blockholders are more informed shareholders and hence trade more on fundamental values, and would therefore react negatively to short-termism. If Edmans (2009) is correct then, blockholder presence should be positive for a firm's overall performance as the presence of blockholders should induce a more long term perspective in the firm. However, if smaller shareholders who more frequently trades the shares of the firm

disagrees with the investment horizon, this could potentially have a negative impact on the valuation of the shares.

2.4.1.3 Monitoring and private benefit expropriation

Having large shareholders can also cause two effects that contradict each other in terms of value-creation and value destruction. The value enhancing part comes from monitoring. With monitoring I mean the ways in which shareholders spend time and effort on monitoring the work and actions performed by management in order to ensure that actions taken are in line with value maximization principles. As monitoring cost both money and effort, a small shareholder does not gain much from spending significant resources on monitoring, as the marginal cost of doing so exceeds its benefits (Grant & Kirchmaier, 2004). As someone should monitor managers in order to mitigate principal-agent problems, this can cause serious problems if all shareholders want monitoring but free-rides on each other, hoping someone else will do it (Edmans, 2013). A large shareholder however, has a stake worth more money in the firm, and therefore the gain of monitoring has a bigger probability of exceeding the cost. This in turn is an advantage for the smaller shareholders as the managers are monitored while the smaller shareholders can free-ride on the bigger owner (Maury & Pajuste, 2005). This advantage however, rests on the trust from the smaller shareholders that theirs and the bigger shareholders objectives with the firm are aligned, meaning principal-principal conflicts do not ruin the advantage (Jensen & Meckling, 1987).

Sometimes however, large shareholders use their power to gain private benefits rather than maximizing the value of the firm (Maury & Pajuste, 2005), thus causing principal-principal conflicts. Examples of this include unfavourable contracting with other firms, voting against for instance a labour unions representatives etc. (Edmans, 2013). In doing so, the advantage for smaller shareholders of trusting the larger shareholders to monitor the firm can be lost as the private benefit extraction risks being larger than the shared advantage of monitoring. This is an argument commonly used by researchers finding or expecting negative impacts of concentrated ownership (see for example Thomsen et al, 2006; Weiss & Hilger, 2011; Alimehmeti & Paletta, 2012).

When viewing these contradicting agency issues of having large shareholders present in a firm. It does provide a potential explanation as to why such differing results is found in different markets regarding whether concentrated ownership is good or bad for firm performance and shareholder value. As Dhillon et al (2015) puts it though, it could mean that having multiple blockholders present in a firm provides a safety net for these issues. By having multiple blockholders present, monitoring is still possible as there are owners in the firm with a significant ownership stake. At the same time, the blockholders can in turn monitor each other to decrease the risk of private benefit extraction from one of the large shareholders.

2.4.2 Investor protection effects

The risk of private benefit extraction from large shareholders against small shareholders, or the risk of managers pursuing private benefits when not being properly monitored, is further strengthened when the country in which the firm is listed suffers from poor investor protection (Shleifer & Vishny, 1997). Investor protection relates to how the law protects investors and how the law is enforced. There regulations differs widely between different nations. Examples of regulatory investor protection include rights to dividends, disclosure of accounting statements, the right to vote for directories and the right to sue the elected directories. As important as having these laws in place, is also to have them enforced. This can be done by for example market participants, courts or market regulators. If investor protection is low, insiders can "steal" profits and cash from minority shareholders easily without detection. This is known by these minority shareholders, and hence they are less willing to invest. As protection increases, it after a certain point becomes more costly than beneficial for the insiders to expropriate private benefits and they start paying the cash out as normal dividends instead, giving minority shareholders the same benefits as themselves. This in turn leads to minority investors being more willing to invest and to invest at a higher price. Overall, this loop then means that good investor protection actually leads to a better equity market as it becomes easier for firms to raise capital when trust is higher. (La Porta et al, 2000). When a firm operates within a country with low investor protection, it is easier for both managers and large shareholders to pursue their own objectives, as the risk for detection for what they do, and the consequences if they are caught, are low. If legal shareholder protection is high on the other hand, the cost for private benefit extraction experienced by

managers and large shareholders will start being higher than the profit, and they thus become more prone to act in a value maximizing way, reducing agency problems (La Porta et al, 2000). Thus, countries with low levels of investor protection should react negatively to firms with concentrated ownership, while countries enjoying high investor protection should not be affected.

2.5 The Financial crisis in Sweden

The financial crisis started when the housing market in the United States crashed during the second half of 2007. As this affected the banking sector heavily in the form of bad housing debt, the crisis quickly spread to a global scale affecting many sectors. (Bergström, 2009). Since Sweden has not run into similar deficit problems like the US, Greece or Spain, some might argue that Sweden was not severely hit by the financial crisis. This however, is not true as Sweden's GDP growth was negative in both 2008 and 2009, highly driven by a decrease in Exports by 16 % in 2009 (Bergman, 2011). During 2008 for instance, the stock market index OMXS30, the index of the 30 largest listed firms in Sweden, fell by over 38 % (Nasdaq, 2016). The trend however turned upwards again in both 2009 and 2010 (Nasdaq, 2016), which together with 2008 is the time period of this study. As in most other countries, the Swedish banks also felt the effects in the form of decreasing confidence in their health from the public, and increasing borrowing costs (Bergström, 2009). The most concerning part however, was not the Swedish housing market, but the Swedish Bank's exposure to the Baltic nations who were hit hard by the crisis (Ahnland, 2015). To mitigate this, the Swedish government had to increase the deposit guarantee and launch a special guarantee program for the banks, where the Swedish government served as collateral for the bank's short term financing. This service was however only used by a few banks, while others issued new shares to cover their financing needs (Bergström, 2009). Since Swedish GDP growth is highly dependent on exports to the Euro zone, the Euro zone crisis also hit Sweden negatively, even if the country is not part of the European Monetary Union (EMU) (Österholm & Stockhammar, 2014). Despite the downturn, Swedish GDP growth took off to positive growth again in 2010, after only 2 years of negative growth (2008-2009) (Bergman, 2011) and has been growing steadily in 2013-2015 (SCB, 2016). Unemployment rates did not increase near the levels of for instance Greece or

Spain (Österholm & Stockhammar, 2014), and Sweden managed to keep its debt ratio low at 40 % of GDP throughout the crisis (Bergman, 2011).

In summary, even though Sweden suffered hard from the financial crisis, other countries suffered a lot harder. It is still clear however, that Sweden experience a severe downturn in economic development that hit the stock market in force. Sweden's export dependence also meant that Swedish firms suffered from the poor development in other parts of the European Union, and the world. Central for this paper, is that the stock market had a large downturn in 2008, showing that investors displayed negativity in their faith in future returns of the firms on the market. The turning point of the market, shown in 2009-2010 with high returns in the stock market of 43,69 % and 23,42 %(Nasdaq, 2016), thus also clearly shows a period of more positivism among investors in the years following the crisis.

2.6 Corporate governance during financial crisis

A fairly large range of literature exists on the effect of ownership on firm and share performance during financial crises. There is however, a slight gap in how ownership concentration and firm performance are related in a crisis setting in European markets according to Alimehmeti & Paletta, (2012). Corporate governance is important in the setting of a financial crisis, as the level of investor protection and the level of trust investors have in the governance of a company is important determinants of how a firm is affected by crisis (Johnson et al, 2000; Cheng et al, 2010). Johnson et al (2000) for instance study the Asian financial crisis in 1997-1998 and find that governance structure is more important than Macro economic factors in explaining the effects on price falls on the stock markets. They argue this is because weak corporate governance structures make investors more sensitive in times of crisis, which causes them to allocate less capital to firms. The primary reason for this is poor investor protection. In a study of the Italian market, which has several similarities in terms of family ownership structures like Sweden (Colli & Larsson, 2014), Alimehmeti & Paletta, (2012) find that ownership concentration and firm performance is generally positively related due to positive monitoring effects by large shareholders, but that the reverse seems to be true during the financial crisis year of 2008 due to expropriation effects, indicating similar results as Johnson et al (2000). Desender et al (2008) also find a negative

correlation between ownership concentration and stock returns during crisis, while Lins et al. (2013) find that family control is negative during crisis, while non-family, blockholder controlled firms outperform other firms during the same period, once again highlighting the importance of the owner identity. The reverse however, is found by Essen et al (2015), and Özerhan et al. (2012), who finds a positive relationship between large and concentrated ownership and stock returns in Turkey during crisis, but flags family ownership as less positive.

In Summary, the effect of ownership structure during crisis time can be seen as undecided, but that it is more common that concentrated ownership, and especially firms controlled by families, is negative for firm performance. Investor protection level is view as key, as a high investor protection level would serve as protection for the negative expropriation effects by both managers and large shareholders (La Porta et al, 2000). Despite this, it is hard to determine a global rule stating performance is affected in one way or the other. This seems to further support Miller's (2004) statement that studies of this nature should be seen in a country specific light.

2.7 The Swedish stock market.

The level of ownership concentration in listed firms differs between countries. An often-suggested explanation for this is the different degrees of minority shareholder protection laws and regulations in different countries (Grant & Kirchmaier, 2004; La Porta el al, 2000). The issue is that majority shareholders and managers will expropriate funds from the firms in a way that minority shareholders with less insight in the firm can't see if protection is low, which in turn leads to outside investors and creditors being less willing to invest in these firms (La Porta et al, 2000). Naturally, this gives an agency incentive to hold a large stake in a firm as one can use private benefit extraction to increase personal wealth. In a country with high investor protection levels though, firms should benefit from having a more spread ownership structure, as minority investors are then legally protected, and because diversification would increase and make investors more rational, increasing shareholder value for all (Grant & Kirchmaier, 2004).

According to the World Bank, Sweden is currently ranked no 22 in terms of minority interest protection level out of 211 countries, putting the country relatively high up in the rankings. In 2010 however, closer to the date of the financial crisis, Sweden was only slightly above the mean (World Bank 1, 2016), indicating that actions have been taken in the last few years to improve the regulatory system. La Porta et al (1998) argues that if investor protection is high, then concentration of ownership should be low in the market and that Scandinavian countries have average investor protection. What this means is that if Sweden's market protective mechanisms show an improving trend, it should have become more attractive to invest as a minority investor on the Swedish market in later years, theoretically dispersing the ownership concentration of the firms.

According to the above, Swedish firms should have a fairly spread ownership structure, especially in current times but also a fairly spread structure during the crisis. In reality though, they don't. Two thirds of Swedish listed firms, have one shareholder controlling at least 20 % of the votes. Owners sometimes reach this power by using for instance dual-class shares, cross-holding or pyramid structures. The governance literature often perceives this as a risk for minority shareholder expropriation as control is separated from the capital (Jansson & Larsson-Olaison, 2015; Colli & Larsson, 2014). In the early 21st century two power houses, the Wallenberg sphere and Industrivärlden, controlled almost 50 percent of the Swedish market capitalization while only investing 2 percent of the capital (Högfeldt, 2005), Still, evidence seems to show that minority expropriation only have limited existence in Sweden and that foreign investor ownership is high, also signalling the limited risk of agency problems of the second type. One possible explanation for this, is that large, powerful owners chooses to treat minority, outside investors well as it improves their track record and helps provide opportunities to get access to cheap external financing. This win-win system then works as a protective mechanism even if investor protection regulation is not perfect (Jansson & Larsson-Olaison, 2015).

Due to regulatory changes during the early 20th century, banks started taking control of the largest Swedish firms, often while these firms were undergoing challenging times. Through time and further regulatory changes, banning banks from certain types of firm ownership and control, the ownership has been broken out from the banks into spheres of families and

institutions that control a massive part of the Swedish industry through dual class shares and pyramid structures. The two most famous spheres, the Wallenberg family and Industrivärlden who as stated above controls a massive part of the Swedish industrial firms, are both derived from two of the largest banks in the country, SEB and Handelsbanken (Högfeldt, 2005). Högfeldt (2005) criticizes the Swedish system for favouring retained earnings and bank financing rather than equity financing, since it according to him favours old firms in mature industries rather than young growth firms, which in the long term according to him destroy economic growth for the nation. This is one possible explanation for the fact that these families are still so powerful and have remained in control after such a long time. It does not explain the fact that Sweden's economy has been performing well during the same time period however (World Bank 2, 2016).

Nevertheless, Sweden is often seen as an example of a country with a dynamic and successful business environment, placing itself well in "the third industrial revolution". In this high tech environment. A key player is the old, big "sphere"-controlled firms that have kept on developing into key international players. The family controlled structure is also said to favour long-termism, which is a potential explanation to the long-term survival of these spheres (Colli & Larsson, 2014). Despite the potential problems of second degree agency problems (Kumar & Zattoni, 2015) that can arise in a nation of concentrated ownership and dual class shares (Jansson & Larsson-Olaison, 2015; Colli & Larsson, 2014), Sweden has gone from being a country with the second lowest productivity level in Europe in 1870 (Högfeldt, 2005) to now being one of the richest countries in the world, as measured by GDP per capital (World bank 2, 2016). This indicates that the concentrated ownership structure have served Sweden well during the last 140-150 years. As markets and the world changes however, this thesis tries to provide knowledge into whether it is still a well-functioning system today. Due to the power held by families such as Wallenberg, Stenbeck and others, it is however also important to note that when studying ownership concentration in Sweden, spill over effects from family ownership in particular might exist.

As will be explained further below, Firm ownership in Sweden is very concentrated. On average, the largest shareholder holds 30,91 % of the votes (Fristedt & Sundqvist, 2008). This

means that control of Swedish firms is very tight and concentrated to a few owners. Concentrated ownership is quite common in Europe in general, but according to Grant and Kirchmaier (2004) value destroying. They argue that markets would be more efficient in Europe if the ownership of firms were more widespread. Collin (1998) however, present a different view on why what he calls Business Groups (BGs), groups of several large firms within different industries controlled through one institution and using a "Haus-bank", exists in Sweden. He uses the example of the two largest BGs the Wallenberg family and Industrivärlden, and suggest that their existence might be largely based on two things. First, the scarcity of credits and the costs associated with building a relationship and gathering necessary information for a creditor relationship, makes the use of a Haus-bank well aware of the industrial firms within the BGs businesses cheaper as both parties have plenty of information about each other. Second, in a small country with plenty of big businesses such as Sweden, competent top managers is a scarce resource. In a BG, an internal labour market can be created which decreases firm risk for managers as they can jump between firms, while at the same time providing great career opportunities. Thus, the explanation for the existence of BGs is according to Collin (1998) actual economic efficiency. Furthermore, he theorizes that the government is also positive to these BGs. Since the BGs holds great industrial power, and Sweden has a long tradition of strong labour unions, the government can influence the industries and firms in Sweden by primarily focusing their communication on the labour unions and the BGs, and through them cascading the information throughout the economy. This rhymes well Högfeldt's (2005) statement of the Swedish system favouring bank financing as an advantage for the big, old firms. However, the two authors differ in their opinion on whether this is good or bad for the firms and the markets in general, as Högfeldt (2005) believes it is damaging and hinders new firms from developing while Collin (1998) believes it is efficient.

2.8 Literature summary

Corporate governance relates to the actions taken by suppliers of financing to get a return on their investment, either in the form of interest payments and payback of debt, or in the form of dividends and the purchasing and selling of ownership stakes in a firm. One important aspect in corporate governance is the way in which ownership is structured in a firm. In this

thesis, the area of interest is ownership concentration and how different levels of ownership concentration, and the number of large shareholders, called blockholders, affects firm and share performance. There are several aspects of ownership concentration to consider when studying whether concentrated ownership is positive or negative for firm and share performance. Agency issues, of both the first type (between owners and managers) and the second type (between different owners), are argued by scholars to have a large effect on performance as different types of ownership concentration can lead to for example: different levels of irrational risk taking, monitoring advantages, different investment horizons and private benefit extraction from large shareholders. Scholars are in disagreement with regards to if concentrated ownership is actually positive or negative for firm and share performance as different empirical studies have yielded different results. Two explanations for these results often provided are 1. *Country specific effects:* Due to different levels of regulatory protection levels for minority shareholders in different countries, agency issues have different effects on firm performance. 2. *Timing:* Different effects of concentrated ownership have been found depending on the timing of when the study is performed. One reason for this is thought to be that during a declining market trend such as a financial crisis the agency issues have a different effect on the firm compared to during market times showing positive trends.

The target market for this study is the Swedish stock market. The financial crisis of 2008 hit Sweden just like most other countries. Sweden did fair pretty well though, not ending up in a public debt crisis like for instance Greece. Due to the membership in the EU, causing interdependencies with other countries in the European Union though, and the large export dependency of the Swedish economy, the stock market reacted with a large decline of over 30 % on the OMX30 index in 2008. The recovery was fairly quick though with rising stock market indexes in both 2009 and 2010. The market is interesting to study as it is characterised by a very concentrated ownership structure, with two thirds of listed firms having one shareholder controlling at least 20 % of the votes. As Europe have been criticized in the literature for having an inefficiently concentrated ownership structure, it is interesting that Sweden has gone from being a very poor country in the 1870s to a rich country today, using this structure. One possible explanation provided for this, is that Sweden's large spheres, like the Wallenberg family and Industrivärlden, exercising large control over the market, can make use of "haus banks" for easy financing as well as an internal labour market for top

managers due to the large amount of firms existing within the firm. These examples provide the possible explanation that there is actually economic rationality behind Sweden's concentrated ownership structure. There is however, no current study existing examining the effects ownership concentration have on the Swedish market performance in modern times, which is what has sparked the interest to performing this study.

3. Hypothesis description

The main point of this article is to find out if the concentration of ownership in listed firms affect share performance and firm performance, and if the effects are different when studying negatively trending markets versus positively trending markets. Previous research has found several indications of the effects that ownership has, but often with varying results within varying markets. The following section will describe the findings from previous research which will lead to the hypotheses this thesis will test. Important to know when reading this section is that performance in this thesis will be measured by both risk adjusted stock returns and accounting returns. The choice of measures will especially have implications when discussing the changes in risk profile among firms depending on their ownership concentration, as a decrease in risk might not affect performance negatively just because the expected return will also decrease. This holds in case the risk decrease is systematic, or market risk related. Risk will however have an effect in case the risk decreased by the firm is in the form of un-systematic, or firm-specific, risk, as this is not part of a diversified investor's risk calculation. A more detailed description of the measures used in the thesis can be found in section 4.4 and 4.5. As argued in hypothesis 6, I do not expect differences when testing the two different measures, which is why the hypothesis description in general applies to both measures.

3.1 Grouping of firms

To understand the hypotheses, I first need to explain how the firms will be grouped into categories. In this thesis, firms will be split into three different categories.

1. Single shareholder majority control (MC): One shareholder or shareholder group (for instance a family or a sphere) controls more than 50 % of the vote

2. Multiple blockholder majority control (BC): Two or more shareholders, or shareholder groups, controls more than 50 % of the vote. A blockholder is defined as a shareholder controlling more than 5 % of the shares.
3. Widespread ownership (WO): No single shareholder or blocks of shareholders controls more than 50 % of the vote.

In case I write that a hypothesis related to concentrated ownership in General, MC or BC ownership, I will use the term concentrated ownership (CO). One could of course also argue that a shareholder controlling 45 % of a firm with otherwise spread ownership, actually has the opportunity to act as a majority owner. However, as classification is needed for the first part of my hypothesis testing (z-testing), I believe this split makes more sense. Also, the relationship of ownership concentration and performance will also be studied by simply regressing the size of the largest owners, the total share held by blocks, and the number of blockholders to see if the relationships are positively or negatively linear or not. Thus, not only these three specific categories will be studied, but also how increasing concentration of ownership at all levels affect firm performance. Hopefully this mitigates the above mentioned issue of categorization, and allows for analyses on the general trend rather than fixed categorizations.

3.2 Performance in negatively trending markets

In order to find out how ownership concentration affects firm value in positive versus negative market times, the first four hypotheses will separate my data sample into two periods. The first period, representing negatively trending markets, is the year 2008 when the financial crisis hit, and the Swedish stock market suffered from declining share prices. As part of my research question relates to negative market trends. Hypothesis 1 and 2 specifically relates to performance in the year of 2008.

3.2.1 Hypothesis 1

The research of ownership structures in negatively trending markets varies in terms of findings. Generally though, firms with concentrated ownership (Alimehmeti & Paletta, 2012; Johnson et al, 2000; Desender, 2008) and in particular family ownership (Lins et al, 2013; Özerhan et al, 2012) seems to have a negative impact on firm performance during crisis times,

even if Özerhan (2012) and Essen et al (2015) actually finds a positive relationship between concentrated ownership and performance. Sweden has a long tradition of strong family ownership of firms, where individual families such as the Wallenberg family (Investor) and the Stenbeck family (Kinnevik) controls many large firms in the stock market (Högfeldt, 2005; Fristedt & Sundqvist, 2008). As this thesis does not study owner types, but rather ownership concentration, the previous research points to the direction that the firms with concentrated ownership should be negatively impacted compared to firms with other structures in Sweden. The expectation of this negative relationship, is thus partly based on the large fraction of family owned firms in Sweden. Furthermore, investor protection was not ranked as very high in Sweden during the years following the financial crisis (World Bank 1, 2016). This also indicates that the effects of ownership concentration should be negative. Even if the investor protection is not viewed as poor, the fact that it is so important during times of crisis (Johnson et al, 2000) implies that the effect should be negative considering that the level of protection is not perceived as high. However, as Sweden survived the financial crisis better than many other countries, this might skew the results. Also, as Collin (1998) points out, there might be economic rationality explaining the existence of large BGs, or spheres, in Sweden, Sweden becomes a more tricky market to assess beforehand. However, as the empirical evidence generally suggests a negative relationship, and as Sweden has plenty of family ownership as well as investor protection at an average level, hypothesis one is as follows.

Hypothesis 1: CO firms (MC or BC firms) performs worse than WO firms during a negatively trending market period.

3.2.2 Hypothesis 2

As corporate governance is a very important factor of firm performance in crisis times (Johnson et al, 2000), due to the importance of trust between investors (Cheng et al, 2010), Agency problems of the second type (Kumar & Zattoni, 2015) or the risk of it, might show up in force during crisis times. Even if Sweden has a well-functioning legal system, it was not among the top ranked in terms of investor protection in 2010, but rather average, just after the crisis (World Bank 1, 2016). As I expect under-diversification of majority owners to be perceived even more risky in crisis times, private benefit extraction and expropriation of minority shareholders (La Porta et al. 2000) might have an increasing impact during the

negatively trending market periods. Especially since the mere risk of expropriation in case minority investors feel the threat, might cause them to pull out their money from these firms, thus causing a double effect. As Swedish large owners use dual class shares and pyramid systems (Högfeldt, 2005) minority investors might hold a significant portion of the actual capital, thus increasing this effect. The risk level in itself might also decrease in firms under the control of large majority shareholders due to their under-diversification. However, as one of my performance measures is the risk adjusted Sharpe ratio, a decrease in risk will not lead to worse expected performance, as long as the risk decrease is simply regarding the systematic risk. If the firm becomes more sensitive towards un-systematic risk however, risk might decrease in a way that is not adjusted for in the valuation of the firm by diversified minority shareholders, as unsystematic risk should not be accounted for in their valuation of the firm. Even though blockholders are a part of this under-diversification problem, they are expected to be a smaller problem than majority shareholders, as they hold a smaller part of the firm and should thus be "less" under-diversified. Furthermore, as Dhillon et al. (2015) say, the presence of blockholders might even mitigate the principal-principal problem between majority and small shareholders as they have a larger incentive to monitor the largest owners, thus decreasing the negative effect of concentrated ownership partly. So, even though blockholders seem to share many of the negative impacts held by majority owners, they seem to do so to a lower extent. And since they also seem to have positive effects in terms of mitigating potential conflicts between small shareholders and majority shareholders, Hypothesis 2 is as follows:

Hypothesis 2: BC firms perform better than MC firms during a negatively trending market period.

3.3 Performance in positively trending markets

The second half of my research question regards firm and share performance in times of positively trending markets, and hypothesis 3 and 4 relates to this situation. In this paper, I have chosen to base my testing of a normal market of a period with 2 years of positive stock returns in a row. The years 2009 and 2010 were chosen as the returns on the stock market these years were very high. Positive stock return indicates positivism among investors about

the future of the market and the firms in which they invest, thus potentially changing their behaviour compared to during crisis times. I also choose 2009 and 2010 as it could display if potential differences from the financial crisis in 2008 will be "corrected" in the following years. Also, choosing the years following the crisis year rather than later years mean that fewer regulatory changes and ownership structure changes would logically have taken place to skew the results, improving the reliability of the data.

3.3.1 Hypothesis 3

As seen in Alimehmeti & Paletta (2012) the relationship between ownership structure and performance can differ depending on if the market is going through a positively trending time period or a negative one. For example, from the theories regarding private benefit extraction from large shareholders vs the positive monitoring effect they might also provide, it seems reasonable that this can vary over time, both with "the times" in general as regulatory systems improve/worsen, or with changing market conditions. For instance, it might be more attractive for a majority shareholder to protect him or herself in times where the firm is suffering from a crisis, compared to when the market is booming. According to Alimehmeti & Paletta (2012) this is exactly what happened in Italy during the 2008 crisis. In their sample, ownership concentration seem to have a positive effect on the agency conflict between managers and owners during other years due to effecting monitoring, leading to the advantages being bigger than the disadvantages of agency problems in positive markets, while the reverse is true during crisis times, where the authors argue that the private benefit extraction instead destroys shareholder value.

The above seem to suggest positive relationship between ownership concentration and firm performance in market times characterised by positivism, but a large portion of the literature is of differing views. One example is the issue of risk. There seem to be a fairly widespread agreement that concentrated ownership reduces the risk taken by the firm, due to under-diversification (Dhillon et al., 2015; Edmans, 2013), or due to the lower level of produced information in firms with large, controlling shareholders (Jankesgård & Wilhelmsson, 2015). If we believe the logic of efficient markets and CAPM (Fama & French, 2004) this would mean that the average return required by investors in their pricing decisions goes down when the risk is going down, highlighting the importance of including risk adjusted return in the

hypothesis testing of performance. But as the risk decrease might exist due to firm-specific risk because of this under-diversification rather than market risk, investors will not adjust their expected return according to the CAPM logic (Brealy et al. 2011). Another example is simply that the private benefit extraction from large shareholders is larger than the benefits of monitoring even in normal markets. Thomsen et al (2006) find evidence that large shareholders destroys value in continental Europe and argue that the reason is indeed the agency conflict between larger and minority shareholders. Grant and Kirchmaier (2004) theorize that there shouldn't be a difference in performance depending on ownership structure if markets are efficient. In their study of the European market however, they find that markets are not efficient and that the large fraction of firms with concentrated ownership actually destroys value and are thus inefficient. They go on to claim that European nations would benefit if ownership structures became more dispersed, as the dominant ownership form at the moment, except for the UK, is a more concentrated ownership structure. They find it puzzling that the dominant form of ownership in Europe, which is having large shareholders or a block of large shareholders, is not the most value maximizing one, as this should cause majority owners to diversify their portfolios. Further support to this can be found in Clark & Wojcik's (2005) study of risk adjusted return based on ownership concentration in the German market. Chen et al (2005) does not find a significant relationship between ownership concentration and performance on a sample of firms in Hong Kong. Weiss & Hilger (2011) does a big review of existing research on the issue as well as their own study. The review reveals mixed results tilting towards the answer that ownership structure does not affect firm performance in general, even if more than 50 % of the reviewed study actually shows a difference in either direction. Their own study finds no significant difference in terms of firm performance in relation to the ownership concentration.

As seen above, varying results are found on the effects of ownership concentration and firm performance, showing as Weiss & Hilger (2011) claims, that the discussion is still open. Furthermore, the frequently discussed conflict (Edmans, 2013; Grant & Kirchmaier, 2005; Maury & Pajuste, 2004; among others) between private benefit extraction and positive monitoring effects means that there are both advantages and disadvantages of concentrated vs spread ownership. However, a slight trend towards the negative can be seen when summarizing the previous findings, which does seem to be dependent on the country the

study is performed in though. As seen in regards to the shift in Alimehmeti & Paletta (2012) as well, it seems like studying years following, or leading up to, a crisis might also make sense to spot changing trends within the same market.

When turning the discussion to Sweden, the characteristics of Sweden changes the expectations slightly. During the period of the study, 2008-2010, Sweden was considered having medium shareholder protection in place (World Bank 1, 2016), thus showing a risk of agency issues due to regulatory deficiencies. However, the Swedish model with concentrated ownership has served the country well historically, going from a very poor country in the second half of the 19th century to a very rich one in the 21st century (Högfeldt, 2005), and is argued to have this structure for efficiency purposes, such as easier supply of finance as well as an internal labour market for managers (Collin, 1998). Whether the model is still effective however is a different matter, but there is no denying that it has served the country well in earlier periods. Even though performance more often seems negatively related to ownership concentration when looking at global trends, the evidence is not as convincing as they are for the same reasoning during negatively trending market periods. Also, the fact that Sweden has had great success with this system in the past cannot be ignored. Therefore, hypothesis 3 is as follows.

H3: There is no difference in firm performance between firms with CO (BC or MC control) and WC firms in a positively trending market.

3.3.2 Hypothesis 4

So concentrated ownership and diverse ownership is hypothesized to not affect firm performance in either direction. As previous literature often differs between blockholder ownership and majority ownership by a single shareholder however, there might be differing results between firms controlled under the different schemes, as can be seen in hypothesis 2. As Dhillon et al (2015) says, blockholder presence might decrease the principal-principal conflict between the largest and the smaller shareholders, which should have a positive effect on performance. As the under-diversification also logically should be less for a blockholder holding 5-10 % of the votes than a majority owner holding 50+% of the votes, as his or her investment will require lower capital expenditure. As a lower under-diversification problem

as well as a partly mitigated principal-principal conflict should both be positive, I estimate that blockholder controlled firms perform better than firms under majority control, just as I do in my argumentation for hypothesis 2.

H4: BC firms perform better than MC firms during positively trending market periods.

3.4 Share Pricing efficiency

As I use a share price based performance measure in this thesis, the pricing mechanism of market efficiency needs to be considered when testing my hypotheses, and the reasoning will be explained in hypothesis 5. Partly due to this, an accounting based measure is also included in the testing, and hypothesis 6 relates to the relationship between the two performance measures, and the effects of this relationship.

3.4.1 Hypothesis 5

Shareholders investing in the Swedish market can be expected to be used to having to price concentrated ownership when valuing shares. The reason is that concentrated ownership have been present in the Swedish market for such a long time (Högfeldt, 2005; Collin, 1998). If the pricing is also made accurately, this would mean that no differences can be seen on the Sharpe Ratio of the different ownership categories in different market times. However, as the effects of concentrated ownership can differ in different market times, as seen in Alimehmeti and Paletta (2012), with monitoring effects positively affecting the firm in positively trending markets and private benefit extraction affecting the firm negatively in negatively trending market times, the question is if investors are quick enough on their feet to account for these effects? Market anomalies are after all not that uncommon. One example that can be argued as related to my case, is the *Earnings Announcement Anomaly,* which have proven that firms announcing surprisingly high earnings outperform firms announcing surprisingly negative earnings by about 1 % a month the next six month period (Bernard & Thomas, 1990). The markets should according to the efficient market hypothesis react immediately to these news and the categories should therefore not differ in performance after their announcements. In reality though, the investors under-react to the news. In my case, A crisis emerging, or a

market getting out of a negative trend, could potentially also drive under-reactions from investors, thus meaning that the market are not entirely efficient.

Hypothesis 5: Investors does not react immediately to the changing market trends, thus meaning shares are not priced accurately and hence shows an impact of ownership concentration in the Sharpe Ratio testing between different ownership categories.

3.4.2 Hypothesis 6

The argumentation behind hypothesis 5 of course also gives rise to the question: Does the Sharpe Ratio measure differ from results found by an accounting based measure? The question stems from the fact that differences between ownership categories might vary depending on if they are measured with an accounting based measure or a stock price based measure. The issue in this case is that ROIC, as is used in this thesis, is only available on an annual basis. Also, share prices are not simply set based on the current years, or the next two years expected accounting returns. However, the performance differences between firms in times of negatively trending market periods vs positively trending market periods should be the same for both measures since both the share price movements and the accounting returns are subjected to the same event (a negative or a positive trend in the economy). As stock prices in general should follow the reactions of the future expected returns, the changes in returns for different ownership structures should also be reflected in the share pricing for these structures in the same way. Therefore I do not expect contradicting results from the two performance measures in terms of performance over the entire time horizon, covering both positive and negative market times.

Hypothesis 6: The Sharpe Ratio and ROIC does not show contradicting results from the hypothesis testing on hypothesis 1-4, in terms of performance differences between ownership categories.

4. Methodology

In the methodology section of this thesis I start by presenting my scientific approach and choice of theoretical literature. This is followed by a description of my data collection as well

as pros and cons with the performance measures used in this thesis, as well as the statistical tests performed to test my hypotheses. The section concludes with general remarks of weaknesses in my methodology.

4.1 Scientific approach

I have chosen a quantitative, statistics based approach for this paper with archival data. The reason is simple. By using a large data sample and statistical methods such as Z-testing and regression analysis, relatively objective and generalizable findings can be made. Since I am using publicly traded stock prices, firm earnings signed off by auditors, and official ownership data of firms, the risk of the data having been tampered with in any way is minimum. Working with quantitative data is a good way to organize large data sets and create fact based discussions rather than discussions based on opinions (Lind et al, 2006). As can be seen in Weiss and Hilger's (2011) review of studies in this area, the quantitative methodology is by far the most common when it comes to governance studies relating to ownership concentration. Brunzell et al (2015) does provide an interesting addition in the form of a questionnaire study to capture the psychological effects a certain ownership type has, but this sort of methodology risks presenting more subjective results rather than objective. Also, the large data sample in this study is key, as the research question is framed in a generalizable way, focusing on which direction a potential effect of ownership concentration has rather than the specific detail that explains it. A large data sample is therefore needed to provide general findings for the Swedish market. A qualitative study would make it complicated to gather these generalizable results as a qualitative study is more in depth by nature and thus requires more attention to each observation to answer deeper questions (Berg, 2001). More qualitative, in depth studies in particular firms or sectors would of course also be very interesting to see from other scholars as an extension of the methodology used in this, and many other papers. But as the relationship between ownership concentration and performance in Sweden is far from decided, it makes sense to start in a broader setting.

The choice of regression analysis and Z-testing as primary tools for hypothesis testing is similar. Using well known and commonly used statistical methods such as these does not only provide objective answers to my hypotheses, but also credibility for the reader analysing the

reliability of the findings. The choice of using historical data rather than ex post forecasting or similar, is also due to the credibility of the data, as this allows for studies of realised event rather than assumed.

4.2 Choice of literature

The choice of literature in this study has been made through searching primarily for frequently cited articles from well-known journals. As seen in the literature review, I have not chosen a single, or even a few selected article to base my hypotheses on, but rather tried to get a full picture of the expected situation through multiple sources of information. The reason is the vast range of methods, markets and time periods the studies of ownership concentration and firm performance have been made on. As results are not available on the Swedish market, I believe it is better to use a wide range of empirical findings and theoretical ideas to form my hypotheses, than a single article, not completely relatable to Sweden or what I am testing, which will inevitably be contradicted by other scholars. The hypotheses then, should be seen as my best prediction based on both previous empirical findings of ownership concentration and firm performance, the market characteristics of Sweden that could impact the results, as well as the most frequently used theoretical ideas provided to explain potential effects. It should also be noted that different scholars use different definitions in their research. There is no clear consensus for instance regarding what actually defines "concentrated ownership". Does it mean one shareholder holding 50 % of the votes? Does it mean at least three shareholders controls 20 % of the votes etc.? The lack of commonly accepted definitions and thresholds of this nature then risks meaning that results from different studies and countries can have to do with these thresholds rather than actual performance differences between studies in some cases.

4.3 Choice of stock market data

I have used three years of stock market data, and I have chosen the years 2008-2010. The data from 2008 will study my hypotheses relating to the markets under distress, and the data from 2009-2010 my testing of after crisis, or positively trending, markets. In the below table I present the annual returns on the OMXS30 index, an index covering the 30 largest traded firms in Sweden. The split between negatively vs positively trending markets is based on

these annual returns as they show whether investors had positive or negative beliefs of the market due to the returns of the indexes.

Year	**Annual return on OMXS30**
2008	-38,75 %
2009	43,69 %
2010	21,42 %

Table 1: Historical returns on the OMXS30 index in the Swedish stock market. Source: (Nasdaq, 2016)

As all three years in the sample shows such a return structure that is either very clearly positive, or very clearly negative, I view these three years a good examples to study the effect of ownership concentration on firm performance in good vs bad market times.

To allow the stock market data to be tested appropriately, it needs to be structured. Each share performance included in the sample will be given its monthly Sharpe ratio as a basis, based on the formula from section 4.4. Based on ownership data from 2008/2009 the firm will then be categorized according to the following, as stated in section 3.1.

1. Single shareholder majority control (MC): One shareholder or shareholder group (for instance a family) controls more than 50 % of the vote
2. Multiple blockholder majority control (BC): Two or more shareholders, or shareholder groups, controls more than 50 % of the vote. A blockholder is defined as a shareholder controlling more than 5 % of the shares.
3. Widespread control (WO): No single shareholder or blocks of shareholders controls more than 50 % of the vote.

Note that when testing hypothesis 1 and 3 I often use the term concentrated ownership, CO, which can be seen as firms with either MC or BC merged into one category. Furthermore, each share will be marked by the exact percentage the largest shareholder controls of the vote, as well as the percentage that the blockholders combined (5 % or more per holder) holds. The reason is that this allows me to see trends at different control levels of the firm through regression analysis. Note also that the hypothesis testing because of the inclusion of regression analysis will not be limited or fixed against this categorization. It will however be

the primary categorization used in the simple z-tests that will be used to spot high level trends. The reason I am studying both the trend in the regression analyses as well as the hard categorization is that one could argue that a shareholder holds majority control in a firm even if they are not in control of 50 % of the votes or more. Grant & Kirchmaier (2004) categorize owners reaching the ownership level in line with a country's mandatory bid threshold as an owner in "de-facto control", meaning they have a very large influence on decision making on the annual meeting of a firm. Therefore, a simple Z-test based study of specific categories risk having spill over effects as owners exercising large amounts of control might end up in the WO-category. An example of this is the Wallenberg sphere in Sweden, known for having control over large fractions of the Swedish stock market. Looking in detail on their firm ownership, does reveal that they rarely hold more than 50 % of votes in their firms (Fristedt & Sundqvist, 2008), but still obviously exercise much power (Högfeldt, 2005). In the regression analysis used in this study, I will be able to capture this by studying the linear relationship of ownership concentration and firm performance at all levels of ownership rather than just on a simple categorization basis.

4.4 Performance measure 1: The Sharpe ratio

To calculate the effect ownership concentration has on share performance, I will use the Sharpe ratio, as it is a relevant measure to use when looking at the risk adjusted return in this sort of setting (Clark & Wick, 2005). The ratio is based on stock market data, which means that it does not need to follow accounting returns. Accounting returns will instead be used as a robustness test through the ROIC-measure described in section 4.5. The reason why this choice has been made, is the assumption of a fairly efficient market, meaning that share prices should reflect the fundamental value of the firm. Since accounting returns might be affected by accounting technicalities and industry effects on asset valuation at a larger extent, stock prices will better reflect the development of a firm than simple accounting measures (Grant & Kirchmaier, 2004). The Sharpe ratio basically calculates the expected excess return (return minus risk free rate) divided by the expected risk. Thus, it measures the excess return per risk unit taken. (Clark & Wojcik, 2005). In this case however, I am interested in ex post returns rather than ex ante return, which the Sharpe Ratio works well for as historical standard deviation can be expected to be similar to future standard deviation (Hodges et al. 1997).

Furthermore, I will use a proxy for the risk free return based on short term three-month Swedish government bonds, and will therefore calculate the ratio according to:

$$Sharpe\ Ratio = \frac{Realized\ monthly\ return - Realized\ monthly\ risk\ free\ return}{Realized\ monthly\ standard\ deviation\ of\ stock\ returns}$$

The reason for using the Sharpe ratio is that scholars view ownership concentration as a source of different levels of risk taking between firms (Jankesgård & Wilhelmsson, 2015; Dhillon et al, 2015; Zhang, 1998; Edmans, 2013; Clark & Wojcik, 2005). As rational investors should base their investment decisions on getting the highest expected return per risk unit taken (Fama & French, 2004; Brealy et al, 2011), I believe a performance measure like Return on Assets (ROA) (See for example Alimehmeti and Paletta, 2012 and Brunzell et al, 2015), sometimes used in studies of this nature, or simply stock returns (See for example Grant & Kirchmaier, 2004), are not sufficient to explain the performance differences, as they do not account for risk. If a firm takes lower risk, which according to the literature is expected to be the case for firms with large, un-diversified shareholders, it is completely natural that ROA or stock returns is lower than it is for a firm subjecting itself to more risk. As an investor can leverage his or her portfolio to increase or decrease risk at will using debt, the same return might theoretically be possible to reach by using leverage for the same amount of risk taken as the more risky firms have taken. The Sharpe ratio on the other hand, takes care of this issue. The simple rule to use to spot better performance by one category than another is to see whether the Sharpe Ratio is higher for that category during the investigated time frame.

The return used will be the monthly stock return of each stock in the sample, while the standard deviation will be computed as a the average monthly standard deviation during the entire measured period, meaning one single standard deviation is computed per firm based on 36 observations of monthly returns between 2008-2010. The choice to use one standard deviation per firm for the entire measurement period is based on that it allows for more observations to be included to compute the Standard deviation, thus making it more reliable.

4.4.1 Critique against the Sharpe ratio

One issue with the ratio raised by Hodges et al. (1997) is the choice of time horizon when using the Sharpe ratio. The authors claim that the ratio can only be used if the time period

used as a basis for the calculation is the same as the investment horizon used by the investor. In my case however, I argue that the investment horizon is impossible to know as all owners of shares have different horizons. Which is supported by Brunzell et al. (2015). Also, as the ratio is based on share price returns, it will not show which type of ownership situation is best for accounting returns. The simple logic is that the ownership concentration and structure is known to investor and if one structure is superior to another, this might be factored into the pricing, not showing differences. As accounting returns also has their flaws as explained above however, I maintain that the Sharpe ratio is a good measure of the performance tested in this paper. Furthermore, as I will control for this pricing effect by using the accounting based measure Return On Invested Capital, performance differences can be spotted both in terms of accounting returns and shareholder returns, thus limiting this issue.

4.5 Performance measure 2: Return On Invested Capital

The risk of using the Sharpe Ratio as a performance measure, is that it is hard to judge whether potential differences or similarities is due to actual performance of the firm, or if investors have taken ownership concentration into account in their pricing. As the efficient markets hypothesis states that all information is included in the pricing of shares (Fama, 1969), it might be the case that potential advantages or disadvantages of having concentrated ownership is already factored into the pricing of shares by investors. This is because ownership data is available for Swedish listed firms, except in the case of some few foreign investors, having limited impact on the overall ownership concentration in the market (Fristedt & Sundqvist, 2008) To control for this risk, I will also use the accounting based measure Return on Invested Capital (ROIC), as this is a measure based on operating performance (Bacidore et al, 1997) and is unaffected by the stock market pricing. I choose ROIC rather than the more commonly used Return On Assets (ROA), as ROA is not based on Operating performance which ROIC is. The data for the ratio is pre-calculated by DataStream with the WC08376 measure. The measure is calculated as (Source: DataStream, 2016):

$$\frac{(Net\ Income - Bottom\ Line + (Interest\ Expense\ on\ Debt - Interest\ Capitalized) * (1 - Tax\ Rate))}{(Average\ of\ Last\ Year's\ and\ Current\ Year's\ (Total\ Capital + Short\ Term\ Debt\ and\ Current\ Portion\ of\ Long\ Term\ Debt) * 100)}$$

Because of the differentiating features of ROIC compared to the Sharpe Ratio, I view it as a good complement and robustness test to verify or contradict results reached by Sharpe Ratio

testing. It is also a good way to find out whether pricing of ownership structure is done in an accurate way in case differences are found between the results of the Sharpe Ratio testing and the ROIC testing. It of course needs to be noted though, that ROIC is not risk adjusted like the Sharpe Ratio measure, thus making it rather difficult to assess the impact of risk on differences between the results of the different measures.

For all 228 firms used in the testing for the Sharpe Ratio (described in section 4.7), ROIC was not available, either for one or two specific years or not for the measurement period at all in two cases. These data points with missing data was simply removed from the sample. The mean annual ROIC for all firms in the sample can be seen in the table below.

	2008	2009	2010
ROIC	3,395 %	-0,645	4,081
Number of firms	225	223	208

Table 2: Mean ROIC of all sample firms as well as number of firms with available data each year in the sample. Source: DataStream (2016); Fristedt and Sundqvist (2008)

4.6 Statistical method

This section describes the statistical methods used to test my hypotheses in this thesis. No detailed explanation of how the methods work will be provided. Instead I will focus on describing how the measures is used to evaluate my findings.

4.6.1 Z-testing

The first step of the hypothesis testing will be in the form of standard two sample Z-tests, since the sample size is large, and as the test will capture whether there is indeed significant differences between different ownership categories as outlined in section 4.3. In a Z-test, the hypothesis under investigation is tested by using confidence intervals. Normal distribution in my sample is assumed as each sample size tested is larger than 30. The important variable in the test is the *Z-score*. The Z-score measures the probability that the results found in a test is true or not. To explain how, I will use my Hypothesis 1 as an example.

Hypothesis 1: CO firms (MC or BC firms) performs worse than WO firms during a negatively trending market period.

To test the hypothesis, I will assume that there actually is no difference between the different ownership structures, by stating my null hypothesis as:

H0: Firms earn similar returns regardless if they have WO or CO.

I will then perform a two-tailed test with the significance levels of 5 % and 1 %. The *significance level* in my case would translate to that if my Z-score indicates less than 5 % significance level, let's say 4 % when testing H1, it would mean that there is a 4 % probability that the null hypothesis, stating no difference between the samples, is actually true despite me finding results indicating that there actually is a difference. In a two-tailed test, the Z-values representing a significant result is 1,96 for the 5 % confidence interval and 2,576 for the 1 %-interval. If the Z-value are higher than these, it will be assumed that the null hypothesis is incorrect and that there is a strong likelihood that the category displaying the highest mean will indeed also be performing better in reality, depending on if the mean of the Sharpe ratio or ROIC in the widespread owned firms is lower or higher than the mean for the firms with concentrated ownership (Lind et al, 2006).

4.6.2 Single OLS regression analysis

The Z-testing will only show that there is a difference based on the fixed rules set out in the categorization description in section 4.3. It will not show if the differences are due to the way ownership is concentrated or if there is some other variable that actually defines the difference. To test my hypotheses, I will therefore also perform a number of regression analyses in Excel to see how firm performance is affect by ownership concentration. A single ordinary least squared (OLS) regression analysis is used to see how a dependent variables value depends on another independent variable. In my case this means seeing how the Value of the Sharpe Ratio or ROIC depends on the ownership concentration within firms. The analysis creates a normal linear equation, y=a+bx, showing how a trend line would look like based on that the sum of the squared errors of all the observations in the sample is minimized. In my case, a b-value of 0,5 would mean that the Sharpe ratio increases with 0,5

for each 100 % increase in ownership concentration, as an example if that is the two variables that are tested, stating y=Sharpe Ratio and x=ownership concentration. The a represents the intercept, just as a normal linear equation. A regression analysis also provides an *R-squared value*, representing the squared correlation between the independent and the dependent variable. It can take a value between 0 and 1 where 1 represents a 100 % dependency between the independent and dependent variable and 0 represents 0 % dependency between the independent and dependent variable. The analysis also provides a p-value, just like the z-test, to show the significance level of the results found in the regression analysis. The p-value then indicates whether it can be assumed that there is actually a difference due to the independent variable being tested or not (Lind et al, 2006). In this thesis, relatively low R-squared values are expected, as there are so many other factors also affecting firm performance, outside of ownership structure. Also, as the dependent variable will have for instance 24 observations per 1 observation of the independent variable, when I am testing Sharpe Ratio performance in 2009-2010, this will decrease the R-squared score even more. Therefore, the p-value showing the significance of the results will be the primary value used combined with the trend line to spot performance dependencies.

4.6.3 Multiple regression analysis

Even if a single regression analysis shows dependencies between variables, there is still a risk that the relationship actually depends on that the dependent variable instead is dependent on another independent variable, which the original independent variable in turn is dependent upon. The reason for this is that even one independent variable can show a significant impact on the dependent variable (a high R-Squared or a low p-value) while actually not affecting that dependent variable. Let's say for instance that ownership concentration shows a high R-squared against firm performance in a positive direction. If ownership concentration is highly related to firm size (a high correlation between the two independent variables), and firm size also has a high R-squared against firm performance, it can be either independent variable, or both, that is actually affecting the performance of the firm. The choice of multiple regression is made as it will allow me to control the robustness of the dependency between firm performance and ownership structure, by including other variables such as firm size and industry. In this thesis the primary independent variable I am interested in, is the ownership concentration, both for the single largest shareholder, and the combination of the

blockholders, each controlling more than 5 % of the votes. The use of multiple regression allows me to see R-squared values for all the independent variables used in the regression. As they in general are expected to be low, it is not certain that these will be a primary indication used in my analysis of the findings. To find signs of multicollinearity between different independent variables, correlation matrixes will be used to study the single independent variables effect not only on the dependent variable, but also on each other. P-values on the individual independent variables will also be used to determine the significance of results deviating from status quo (Lind et al, 2006).

The multiple regression equation is similar to the single regression equation, but adds more "b-values" into: $y = a + b_1x_1 + b_2x_2 + \ldots b_nx_n$ where each b represents the slope line of each independent variable. The multiple regression analysis will in this thesis be used when the single regression analysis of the situation currently tested reveals a significant p-value, i.e. when the p-value is lower than 0,05, to see whether the result is still significant when adding additional variables. When performing the multiple regression analysis, all independent variables will be included at once except one omitted industry dummy that will be included in a second running of the multiple regression. From there, p-values will be studies for the different independent variables to see whether they are significant (p-values below 0,05) If a variable is not significant, it will be removed and the regression will be run again only including the variables who show significance in the first test.(Lind et al. 2006)

4.6.4 Robustness

As I am using both stock market returns and accounting returns in my hypothesis testing, I argue that the use of two measures provides a robustness test in itself. When using ROIC, the results achieved depends on the valuation of the assets of the firms. So for instance, a manufacturing firm heavily dependent on machines and equipment will probably have a relatively high amount of assets at a high value in their annual report. A software company on the other hand, might basically have a few computers and servers on their asset side, making it look very small. With the same level of accounting return, it will look like the software company has a much better ROIC than the manufacturing company, while the price of actually investing in the firms are the same. Using stock market data, allows me to assume that pricing is relatively efficient and market price based, and decreases the need to evaluate different

asset types. By using risk adjusted return, I do not even need to test my results for debt ratios, as this will already be factored in the Sharpe ratio by the relationship between risk and return.

By using accounting returns, in my case ROIC, I can control for the risk that investors have already priced shares accurately according to the characteristics of a certain ownership structure. If this is done, no differences will show up from the Sharpe Ratio testing as potential advantages or disadvantages will already be included in the pricing of the shares. Accounting returns will then provide an additional source of knowledge to see whether differences actually exists.

Furthermore, there are two main factors needed to account for when evaluating the results of my testing:

1. Size: Due to the argument that majority owners might be non-diversified (Dhillon et al, 2015; Edmans, 2013), a smaller market value of the firm could potentially decrease the risk of under-diversification, as less capital is needed to own the majority share. Also, as less capital is needed to control a larger stake, there is a risk that ownership concentration is higher for smaller firms, thus showing a relationship between these two variables.
2. Industry: As industries perform differently over time due to different macro-factors, it is important to compare industry differences in performance with industry differences in ownership structure, so that I do not accidently attribute a performance trend to ownership that is actually related to a specific industry that is characterised by a certain type of ownership structure.

These two factors is included in the multiple regression analysis that is performed on my hypotheses as a robustness tests and will also be included in my correlation matrix of all relevant variables.

4.7 Ownership data

The ownership data has been collected from the book "Owners and Power in Sweden's Listed Companies" by Fristedt and Sundqivst (2008), which every year gathers and structure the

ownership of Sweden's listed firms on the Stockholm Stock Exchange and NGM Stock Exchange. Many of the biggest owners of listed firms in Sweden, such as the Wallenberg Family, Stenbeck, Industrivärlden etc., are structured in what Fristedt and Sundqvist call *spheres*. This means one firm can be partly owned by a trust, an investment firm, a normal firm or privately all at the same time while the actual person or organization owning and controlling a firm through these 4 entities is actually the same. The authors of this book have done a heavy work to figure out and display all the structural relationships between and within the spheres, to be able to detail who is actually in control of the shares in the different firms. Brunzell et al, (2015) claims that "pyramiding is not that common in the Nordic countries, the first level of ownership is also the ultimate ownership in most cases" (Brunzell et al. 2015, pp: 234), a statement contradicted by the evidence found in Fristedt and Sundqvist (2008). The ownership data is based on all information available to the authors at January 27, 2008, and is thus a snapshot of how the ownership looked in Sweden's firms at exactly that time. While the authors display how the sphere structure actually look in a separate section, the final presented ownership structure for each and every firm simply states the percentage of votes controlled by the sphere in total, simplifying the data collection massively.

There is however one data quality issue that the authors have not been able to solve. On average, 23,2 % of the votes in each firm in the sample is owned by foreign investors for which there is no available ownership data. Hence, it is impossible to know whether these shares are spread out between multiple investors, meaning they don't become blockholders or majority shareholders, or if there are indeed large shareholders hidden there. In this paper, I will assume that the hidden, foreign owners are spread out as small shareholders that does not affect the size of the blocks used in this thesis. The reason is that I assume that an owner that is actually using its power from holding a large share of the votes, would be known to the authors. Therefore, even if an owner actually controls 5 % of more of the votes, it can still be considered as a part of the small owners as it does not exert power. Nevertheless, there is of course a risk that this creates small errors in the data. Note also that there are foreign owners that are known and presented in many firms, that have blockholder control, and these owners, and other named foreign owners, are thus not included in the 23,2 % unknown foreign investors, but are instead included as blockholders just as Swedish owners holding

similar stakes. The data does not include firms that are foreign legal entities but listed in Stockholm. Furthermore, return data was not found for the entire period 2008-2010 for all firms. Normally, this is due that a firm was delisted of went bust during the measured period. To try to get consistency in the paper, I have therefore excluded all firms in which share return data was not available for the entire period under investigation.

Ownership concentration is assumed to be constant over the time interval under review. The reason is that Ownership in Europe is considered being stable over time, and if trading of large posts occur, the basic structure of categorization (blockholders, majority control etc.) is usually stable (Grant & Kirchmaier, 2004). A sample check has also been made comparing Ownership data from 2005 from Fristedt and Sundqvist (2005). It is here found that some smaller changes do occur, but not in large amounts and that Grant and Kirchmaier's (2004) statement of the general structure being relatively fixed seem accurate.

4.7.1 Details of Swedish ownership in 2008 and stock market data

The data on Stock Market returns, industry belongings and Market values of each firm is collected from Thomson Reuters DataStream. To gather stock returns, DataStream's Total Return Index (RI) is used. This measure presents share prices at specific dates based on the assumption that all dividends are re-invested and also takes stock splits and similar into account. This means that the data is not skewed due to dividend policies or changes in the structure of the issued shares, such as stock splits. As several firms in Sweden use dual class shares, I have simply taken the most commonly traded share-class and used in my sample, usually B-class shares under the "one share one vote"-rule, while A-shares, often giving 10 votes per share, have been excluded. Some firms included in the book by Fristedt and Sundqvist (2008) was not included in the DataStream set, or simply not found. These firms along with those who went out of business or were de-listed during 2008-2010 have been excluded from the sample.

Monthly returns was calculated using the simple formula $\frac{Share\ Price\ at\ time\ T}{Share\ price\ at\ T-1} - 1$, where T is current month share price (i.e. Feb 1 etc.) and T-1 is last month's share price (i.e. Jan 1).

Standard Deviations of stock returns was found by calculating the standard deviation of the 3-years of monthly returns, i.e. 36 observations giving one single standard deviation for each firm. So a firm's monthly standard deviation was assumed to be constant for the measurement period 2008-2010.

Firm size was gathered from DataStream, a variable called MVC: Market Value for Company, using the value of all shares in the share class in each firm with the highest value. This means that a firm with dual class shares will simply show the value of the share class with the highest total value.

Industry classifications were found by using DataStream code ICBIIN, which returns the name of the ICB industry under which the equity is classified. Classified in Basic Materials, Consumer goods, Consumer services, Financials, Health care, Industrials, Oil & Gas, Technology, and Telecommunications. The Industry classifications as well as the firm size variable were gathered in order to use in the multiple regression analysis for robustness purposes.

The risk free rate was also downloaded from DataStream. Here I used the Swedish 90-day T-bill and used the monthly interest rate in the Sharpe ratio formula to compute the monthly excess return.

According to the specified categorization of ownership control categories, the below table presents the split between the three different control types used in this thesis (MC, BC and WO).

Total Number of firms in sample	**Number of MC controlled firms**	**Number of BC controlled firms**	**Number of WC controlled firms**
228	44	66	118

Table 3: Number of Swedish listed firms in each ownership category. Source: DataStream (2016); Fristedt and Sundqvist (2008)

The data also shows that Swedish ownership in general is very concentrated, and that most firms has a strong majority owner, and a strong blockholder presence in general,

Average vote % held by largest owner	**Average vote % held by all existing firm blockholders**	**Average no of blockholders present per firm**
32,53 %	49,79 %	2,8

Table 4: Further detailing of Swedish ownership structure. Based on sample after sorting. Source: Fristedt & Sundqvist, 2008.

4.8 Methodological critique

There are of course a few points that needs to be addressed regarding my methodological choices, and I will be outlining the below.

- *Scientific approach:* The use of historical data has, despite its many advantages, the disadvantage of being historical. What I mean is that the future must not be like the past. A specific area of concern in this paper, is the fact that the investor protection ranking has improved in Sweden since 2008-2010 (World Bank 1, 2016). This of course creates a risk that some of the agency problems such as trust between minority and majority investors, might have changed behaviour as the minority investor protection has increased.
- *Ownership data:* Basing the ownership data in the statistical testing on a snap shot of the 2008 outlook, presents the risk that the ownership concentration in some firms have changed over the investigated time interval. The reason for basing it on a snapshot, is primarily due to lack of data in later years, as the book by Fristedt & Sundqvist (2008) was not found for later years than 2008. Cross checking ownership data from 2005 shows however, that changes are relatively small. It is rare that ownership has changed completely but of course smaller changes of blockholder controlling a few percent more or less are common. Due to my comparison with 2005 data, as well as Grant and Kirchmaier's (2004) assumption of relatively stable structures, I believe this error will not be material in this thesis.
- *The Swedish ownership concentration:* A big issue in studying spread ownership versus concentrated ownership in Sweden is that in my entire sample of 228 firms, there are

only three firms that does not have any blockholders controlling at least 5 % of the votes. This poses a problem as there will in almost all cases be at least one owner incentivized to monitor managers due to the largest stake held in the firm. Comparisons between having no blockholders and having blockholders is of course still possible, but the sample size of firms having no blockholders is too small to trust as a general truth for the entire market.

- *Choice of performance measures:* As ROIC is not a risk adjusted performance measure, it can be argued that it is not directly comparable with the Sharpe ratio. I agree, but would also argue that the difficulty in finding a proper risk measure in accounting returns to find the correct Internal Rate of Return (IRR), would risk causing as many problems as it would solve, as it would be very assumption based.
- *Ownership structure classification:* As described in section 4.2, different scholars use different definitions to define for instance blockholder ownership or majority ownership. This of course poses a problem when studying this phenomena, that there is no clear cut rule to obey. I do argue however, that the use of regression analyses in the hypothesis testing removes some of these issues. The wide range of definitions however, does create a risk when comparing my studies with other studies, as different definitions and thresholds might have been used.
- *Sample Size:* Even though the number of observations in each Z-test or regression in this thesis is well above the critical 30 (number used as a benchmark for considering a variable following the standard deviation curve), the number of firms used in each test category might be lower, especially in the case of firms not having a single blockholder present. This naturally poses the problem of generalizing results. However, as country specific studies is called for (Miller, 2004; Pedersen and Thomsen, 1999), it is a risk I need to allow in order to focus the study on a single country level, as the level of data used in this study would not be possible to obtain for non-listed firms, as they do not have listed share prices to use for testing.

5. Empirical findings

I start this section with descriptive statistics on my entire sample, to provide an overview of my findings to the reader. After this, a detailed description of the findings on each hypothesis

are described. Details on the data from the statistical tests used to assess my findings from section 5.2-5.7 can be found in the appendix.

5.1 Descriptive statistics

The below table describes the mean and standard deviation of the key variables in this thesis. As seen below, the mean Sharpe ratio for the period 2008-2010 in my sample is 0,0575, which is very low, as it means that investors during this period could only expect 5,75 % annual return for a risk of 100 % in annual standard deviation of returns. The reason is of course that the market had a large negative return during 2008, thus driving down the average return. The standard deviation of the Sharpe Ratio is also very high, almost 1. This provides an issue, as differences found in my hypothesis testing needs to be large in order to be significant, as the large standard deviation allows large swings without returning significant differences. The same story holds true also for ROIC, as 2,24 % in annual return is not very high, while the standard deviation of 29,5 % can be seen as large. The table also shows the concentrated ownership structure in Sweden with the largest owner controlling on average 32,5 % of the votes, and the combined blockholders in a firm on average controls 49,8 % of the votes. It also shows that it is common with multiple blockholders in Swedish firms, as an average of 2,8 blockholders exists in every single firm. This shows that as stated above, that ownership structure in Sweden is very concentrated overall.

Measure	*Sharpe Ratio*	*ROIC*	*Largest owner %*	*Blockholder %*	*No of blockholders*
Mean	*0,058*	*2,24 %*	*32,5 %*	*49, 8 %*	*2,798*
Standard deviation	*1,000*	*29,481 %*	*20,9 %*	*21,6 %*	*1,394*

Table 5: Descriptive statistics. Source: DataStream (2016); Fristedt and Sundqvist (2008)

The Correlation matrix below for the Sharpe Ratio shows overall low correlations between the variables. The correlations between the Sharpe Ratio and the different ownership concentration variables falls between -0,02 and 0.02, either indicating that there is a very small relationship between share performance and ownership concentration, or that the

relationship has been included in the pricing of the shares beforehand. It should also be noted however, that one observation for ownership concentration, will have at least 36 corresponding observations for share performance, Share Ratio. Naturally this makes it a bit more difficult to draw conclusions based on the correlation matrix, as the Sharpe Ratio naturally will vary from month to month while the ownership data stays the same. Also, as performance is hardly only based on ownership concentration but many other variables arguably more important such as general market or industry trends, high correlations are not expected. Still, correlations at a level this low, does signal the need for the second performance measure, ROIC, to be included in the thesis.

The Correlation matrix for ROIC shows differing results. The correlation between ROIC and largest owner % and blockholder % is 0,15, indicating a positive relationship between accounting performance and ownership concentration. It also indicates that since the correlation between the Sharpe Ratio and these two variables is so low, that the ownership effect is included in the pricing expectations of the share, thus supporting the above stated need of dual performance measures. One could argue that 0,15 is a relatively weak correlation. However, as there are so many determinants of firm performance, as well as the fact that the ownership variable in this study is fixed per firm, while returns differ over the years, the connection must be taken seriously. Interestingly, the correlation matrix shows only a weak correlation between number of blockholders and ROIC, possibly since the differences generally comes from having 0 or 1 or multiple blockholders, rather than showing differences in case a firm has 3 or 4.

Furthermore, it should be noted that correlations is also relatively low overall between the different ownership variables and the control variables (industry sectors and market cap) indicating that the concentration of ownership in a firm is not so much dependent on which industry the firm operates in or the total value of the firm.

variable	*sharpe*	*largest owner %*	*blockholder %*	*No Of BlockHold*	*market cap*	*BasMat*	*ConGood*	*Conserv*	*Fin*	*HealthC*	*Ind*	*O&G*	*Tech*	*TeleCom*
sharpe	1,00													
largest owner %	0,02	1,00												
blockholder %	0,01	0,79	1,00											
No Of BlockHold	-0,02	-0,39	0,15	1,00										
market cap	0,03	0,03	-0,07	-0,19	1,00									
BasMat	0,00	0,00	-0,02	0,02	-0,03	1,00								
ConGood	0,00	0,09	0,09	0,00	-0,01	-0,06	1,00							
Conserv	-0,01	-0,01	0,02	0,05	0,04	-0,07	-0,09	1,00						
Fin	0,02	0,15	0,15	-0,08	0,08	-0,11	-0,15	-0,16	1,00					
HealthC	0,00	-0,09	-0,09	0,07	-0,08	-0,07	-0,10	-0,11	-0,17	1,00				
Ind	-0,01	0,01	0,01	-0,01	-0,05	-0,14	-0,20	-0,21	-0,34	-0,23	1,00			
O&G	0,00	-0,10	-0,16	-0,07	-0,01	-0,02	-0,03	-0,04	-0,06	-0,04	-0,08	1,00		
Tech	0,00	-0,16	-0,14	0,05	-0,04	-0,09	-0,12	-0,13	-0,21	-0,14	-0,28	-0,05	1,00	
TeleCom	0,00	0,07	0,02	-0,09	0,30	-0,02	-0,03	-0,03	-0,05	-0,03	-0,06	-0,01	-0,04	1,00

Table 6: Correlation Matrix Sharpe Ratio. Source: DataStream (2016); Fristedt and Sundqvist (2008)

variable	sharpe	largest owner %	blockholder %	No Of BlockHold	market cap	BasMat	ConGood	Conserv	Fin	HealthC	Ind	O&G	Tech	TeleCom
sharpe	1,00													
largest owner %	0,02	1,00												
blockholder %	0,01	0,79	1,00											
No Of BlockHold	-0,02	-0,39	0,15	1,00										
market cap	0,03	0,03	-0,07	-0,19	1,00									
BasMat	0,00	0,00	-0,02	0,02	-0,03	1,00								
ConGood	0,00	0,09	0,09	0,00	-0,01	-0,06	1,00							
Conserv	-0,01	-0,01	0,02	0,05	0,04	-0,07	-0,09	1,00						
Fin	0,02	0,15	0,15	-0,08	0,08	-0,11	-0,15	-0,16	1,00					
HealthC	0,00	-0,09	-0,09	0,07	-0,08	-0,07	-0,10	-0,11	-0,17	1,00				
Ind	-0,01	0,01	0,01	-0,01	-0,05	-0,14	-0,20	-0,21	-0,34	-0,23	1,00			
O&G	0,00	-0,10	-0,16	-0,07	-0,01	-0,02	-0,03	-0,04	-0,06	-0,04	-0,08	1,00		
Tech	0,00	-0,16	-0,14	0,05	-0,04	-0,09	-0,12	-0,13	-0,21	-0,14	-0,28	-0,05	1,00	
TeleCom	0,00	0,07	0,02	-0,09	0,30	-0,02	-0,03	-0,03	-0,05	-0,03	-0,06	-0,01	-0,04	1,00

Table 7: Correlation Matrix ROIC. Source: DataStream (2016); Fristedt and Sundqvist (2008)

5.2 Hypothesis 1

Hypothesis 1 stated that firms with concentrated ownership was expected to perform worse than firms with widespread ownership in times with negatively trending markets, meaning 2008 in terms of my testing. The Z-test comparing performance of firms with 50 % of the votes or more controlled by blockholders or a single large owner (CO-firms) with firms with less than 50 % of the votes controlled by blockholders (WO-firms), reveals a mean Sharpe Ratio of CO-firms of -0,3622 and WC-firms -0,3417. The z-score is -0,542 and thus reveals that the difference is not significant. A single OLS regression analysis reveals similar results. It has a slightly negative relationship of a change of -0,056 in Sharpe Ratio per 100 % change in ownership increase in ownership concentration, but with a very weak R-squared value of 0,0002, and a p-value of 0,52. This indicates that ownership concentration in a negatively trending market has a very limited, probably none at all, impact on the Sharpe ratio of a firm.

When testing the hypothesis with the accounting based ROIC, the following results are found. When performing a Z-test between firms with concentrated ownership vs firms with widespread ownership, the mean ROIC was 4,75 % and 2,06 % respectively. However, the Z-score of 0,686 reveals that the results are not significant enough to say that there is an actual difference. Single OLS regression analysis however reveals a positive relationship between concentrated ownership and ROIC, with a trend line of 0,07 % increase in ROIC per 1 % increase in ownership concentration. The results are close to significant on the 5 % level with a P-value of 0,0529 and an R-Squared-value of 0,016. The multiple regression model reveals a higher trend line of 0,09 % per 1 % concentration increase, but with a P-value of 0,1, showing that the results is not significant when including control variables in the regression.

When performing the tests on only the largest shareholders % stake in a firm rather than as above on the combined % stake held by blockholders, no significant results is found for either the Sharpe Ratio or ROIC in Z-testing as well as regression analysis.

Overall, the results of hypothesis one show that the size of the combined blockholders have a very small, if any at all, predictive value when assessing potential performance in a negatively

trending market. Furthermore, the results does not change when using the ownership stake of the largest owner rather than the combined stake of the existing blockholders in the firm. Hypothesis 1 can thus be rejected as it seems like ownership concentration during this period is irrelevant for both share and firm performance.

5.3 Hypothesis 2

According to Hypothesis 2, I expect blockholder controlled firms to perform better than firms controlled by a single large shareholder during the crisis year of 2008. To perform the Z-test, I therefore divided the firms according to the following. Firms where the largest owner controls 50 % or more of the votes in one category, and firms where 2 or more blockholders are needed to form a majority in the other. The Z-test shows that the average Sharpe ratio of blockholder controlled firms is -0,354 while the ratio for majority controlled firms was -0,374. Although different, the z-score is only 0,365, meaning that the result is not statistically significant. Doing a similar test comparing firms with one single blockholder and firms with 2 or more blockholders show that the mean Sharpe ratio for firms with a single blockholder is -0,318 while the mean for firms with 2 or more blockholders is –0,365. Also in this case however, the z-score is 0,943, and hence under the critical value of 1,96 meaning the result is insignificant to prove a difference. Running a single OLS regression with the Sharpe ratio in 2008 as a dependent variable and the number of blockholders as the independent variable also show a slight negative relationship between number of blockholders and performance, but with a very weak R-squared of 0,0006 and a p-value of 0,2, thus also showing that the results are insignificant.

When robustness testing the results with ROIC as the measure instead of the Sharpe Ratio, the results are similar. No significant differences is found when Z-testing ROIC on firms that has 50 % or more votes controlled by one single shareholders compared to firms with 50 % or more controlled by 2 or more blockholders. The mean for BC firms is 3,7 % while it is 6,4 % for MC firms. The z-score however, is only 0,57, thus deeming the results insignificant as the standard deviation of the returns are fairly large. When simply studying blockholder presence similar results are found in the Z-test, where firms with only one blockholder holding 5 % or more of the votes has a mean ROIC of 8,9 % while firms with 2 or more blockholders present

has a mean ROIC of only 3,6 %. Due to the large standard deviation of returns though the Z-score is only 1,12 giving a p-value of 0,13. Thus, there is an indication that having one single large shareholder is better than having several, but based on this sample the statistical significance is too low to determine this relationship. A single OLS regression on ROIC depending on the amount of blockholders present also show a slight weak connection with a trend line of -0,66 % performance decline with each new blockholder added. R-square is a bit higher than in the regressions performed with the Sharpe Ratio, 0,07, but the p-value of 0,65 show that the results cannot be viewed as significant at all. It rather seems to show that ownership concentration does not have an effect on performance in terms of ROIC in this case.

Hence, no statistically significant results is found when testing Hypothesis 2 with either the Sharpe Ratio or ROIC. It seems then, that having one or several blockholders, or having on majority owners or a coalition of blockholders forming a majority, does not affect firm performance in general on the Swedish market during 2008. Interestingly though, 2008 is not the year with the worst performance for Swedish firms in terms of accounting returns. This is instead 2009 which will be described in section 5.4 and 5.5. Based on the above stated hypothesis though and the testing results however, hypothesis 2 can be rejected.

5.4 Hypothesis 3

According to Hypothesis 3, I expect that performance is similar for CO firms and WO firms during positively trending market periods, in this thesis the years 2009-2010. A Z-test of hypothesis 3 reveals that there is no statistically significant difference in performance as measured by the Sharpe Ratio comparison between firms with CO and firms with WO. The mean Sharpe Ratios are 0,269 vs 0,255 with a z-score of 0,53, showing that risk adjusted return during the period of 2009-2010 does not differentiate between the two categories. A single OLS regression on Sharpe ratio depending on the size of block holdings reveals a slight positive trend of 0,0961 Y per X but a R-squared value of 0,0005 and a p-value of 0,1, meaning performance seems unaffected by the ownership structure also in this instance, also excluding the need for a multiple regression analysis as the variable is insignificant. When performing a multiple regression the p-value is as expected even lower, 0,2, and thus confirming that it

cannot be determined that there is a difference as stated in hypothesis 3 in terms of share performance.

Interestingly, when testing the same as above but only including the largest owners %-stake in the firm, differing results are found. The z-test still does not generate significant results, with an insignificant z-score of 0,72 despite a slightly higher mean return for the MC controlled firms vs non-MC controlled firms. The single and multiple regression analysis however shows a significant positive relationship. As the control variables all were excluded due to insignificant p-values, the single regression score can be used. This shows that the positive trend line indicates 0,14x, so 0,14 increase in Sharpe Ratio for a 100 % increase in stake held by the largest shareholder. The effect is thus fairly small, but the p-value of 0,021 implies that the relationship in the regression is not by chance. R-squared is low, 0,001 as expected due to the large number of other variables playing a role as well as the 24 observations per firm on the dependent variable per 1 observation in the independent variable. Thus the result indicates that the largest owners stake in the firm matter for performance during this time period.

When testing hypothesis 3 with ROIC, several significant differences between categories are found. The Z-score when comparing CO firms with WO firms in the period 2009-2010 shows a value of 2,75 giving a p-value of 0,005, thus significant on a 1 % level. The mean ROIC is 5,57 for CO firms and 2,10 for WO firms, showing a better performance for CO firms during the time period. Furthermore, both single and multiple regression analyses on % of votes held by blocks and % of votes held by the largest shareholder shows a positive relationship between ownership concentration and ROIC, with significant p-values on the 5 % level, including controlling for firm value and industry dummies. The trend line equations reveal that ROIC performance increases with around 0,25 % per % increase in ownership concentration both for the largest owner and for the percentage of votes controlled by blockholders. Running a z-test on 2009 only, the year when accounting returns were at the lowest, significant results on the 5 % level is also found supporting that CO firms perform better than WO firms. A similar test for 2010 reveals a z-score of 1,875, thus not significant on the 5 % level for the two-tailed test, but close to. When performing single and multiple regression analyses for 2009-2010, both combined and each year for itself, it reveals that there is a clear connection between

ownership concentration and performance, as all regression's show clearly significant p-values and trend lines of around 0,25 % per 1 % increase in ownership concentration as stated above.

Summarizing hypothesis 3 then reveals that in terms of Sharpe Ratio, the % of votes held by blockholders does not necessarily impact share performance. Instead, share performance seems more impacted by the % held by the largest shareholder in the firm, where a significant positive relationship can be found. When it comes to Accounting performance, the trend becomes even clearer. The more concentrated ownership a firm has the better the performance, both when it comes to the largest shareholders % of votes and the combined % of votes held by blockholders. The breaking point of having 50 % of the votes or not, is not that important in terms of Sharpe Ratio performance, but shows more importance in terms of ROIC. However, overall it seems as though reaching the 50 % mark is not of the greatest importance, but rather that increasing the concentration of ownership in general is positive for performance. The results show that the assumption of performance differences stated in hypothesis 3 appears to be incorrect.

5.5 Hypothesis 4

Hypothesis 4 states that I expect firms controlled by multiple blockholders will perform better than firms controlled by a single large shareholder during times characterized by a positive market trend. When performing a Z-test on the Sharpe Ratio however, the mean for firms with one single blockholder present has a statistically significantly higher Sharpe ratio mean on the 5 % level with a mean Sharpe ratio of 0,338 vs 0,250 for firms with multiple blockholders present. Z-value is -2,56 and P-value is just over 0,01 on a two-tailed level indicating that the result is close to significant on a 1 % level as well. A single regression on the Sharpe ratio with number of blockholders as the independent variable show no direct connection between performance and number of blockholders. The trend line is only slightly negative, -0,016x per additional blockholder and the result is not significant with a p-value of 0,089 and R-square of 0,0008. However, as a z-test of firms with no blockholders vs firms with one or more blockholders present show that firms with zero blockholders performs worse than both single blockholder firms and multiple blockholder firms, the relationship might be

curvilinear, the Z-score of 1.41 is however not significant. The regression line of -0,0155x also shows a very small difference in performance overall. Running the regression on 1 vs 0 blockholders display a positive relationship between having a blockholder compared to having no blockholder, with a slope line of 0,2189x and a p-value of 0,06, showing that the result is not significant, but close. Running the regression comparing 1-8 (maximum in sample) blockholders show a weak negative trend line of -0,0198 with a p-value of 0,035 showing a significant effect. When running a multiple regression with industry dummies and firm value as control variables the p-value however drops to 0,068 and do thus no longer show significance. The testing thus indicates that having 1 blockholder present in a firm is more efficient than having several, as the Z-test is significant. As only 3 firms exist in the sample that does not have any blockholders, testing on these firms is hard to draw conclusions on. Also, as no results from the regression analyses is significant, though close, no statistical statement can be given based on these.

When robustness testing hypothesis 4 with ROIC, the following results were found. The firms only having one blockholder (controlling 5 % of the votes or more) present had a higher mean ROIC of 3,54 % vs firms with multiple blockholders present, 1,87 %. When comparing firms with one owner in majority control with firms having 2 or more blockholders to form a majority, firms with one majority owner also performed better, with a mean ROIC of 6,19 % vs 5,15 %. However, none of the test showed significant results with p-values of 0,74 and 0,75. A Single OLS regression on the number of blockholders as an independent variable shows a p-value of 0,45 which means the results are not significant there either.

In summary then, In terms of share performance, the Sharpe Ratio results show that having one blockholder outperforms having 2 or more blockholders in terms of share performance, while being in actual majority control (holding 50 %) of the votes does not seem to matter. There is no statistically significant linear relationship between no of blockholder and share performance. With regards to accounting returns however, no statistical significance is found showing that there is a difference between having MC or BC control in a firm, or having one or multiple blockholders. Hypothesis 4 then, cannot be accepted as true as indications are given that it is incorrect. The results are not clear enough to reject the hypothesis completely however.

5.6 Hypothesis 5

In hypothesis 5, I assume that investors does not react properly to new trends such as a declining market or a positive market trend, and thus expect this to show on my hypothesis testing of hypothesis 1-4. As seen in the previous result description, there is little, but still some evidence suggesting that shareholders misprice shares depending on ownership categories. During the crisis year in 2008, no differences were spotted in terms of share mispricing between different ownership categories at a significant level. In 2009-2010 though, it was shown that the percentage of votes held by the largest shareholder was positively related to share performance with significant results in the regression analysis. The Z-test did not reveal differences in this regard, showing that the breaking point of having more or less than 50 % of the votes is not that important. In hypothesis 4, it was also discovered that firms with one single blockholder performed better than firms with multiple blockholders in the Z-testing, significant on the 5 % level, and close to significant on the 1 % level. As the regression analysis didn't show a significant result supporting the same, there is of course a risk that the z-test result was random and not actually true, but the high significance level makes it un-likely. Thus, shareholders in Sweden does not appear to price securities in relation to ownership concentration entirely accurately. The biggest difference, seem to have been under-pricing the expected performance of the single largest shareholder after the crisis year of 2008, and an under-pricing of the status of firms with only one blockholder compared to firms with multiple blockholders. The results then show that hypothesis 5 can be accepted.

5.7 Hypothesis 6

In hypothesis 6 I expect that my robustness testing using the accounting based ROIC-measure will yield similar results in relation to my hypotheses testing as the results given by the testing done with the share price based Sharpe Ratio. It turns out however that the results differ. In 2008, no significant results showing an effect on performance due to ownership concentration were found by testing either measure. In the 2009-2010 period however, differences are found. The Sharpe Ratio tests on hypothesis 3 yields no signs of differences in Share performance between concentrated and spread ownership in general, but shows that

the percentage held by the largest shareholder is positively related to share performance during the period. When testing the same thing based on ROIC however, relatively strong results are found showing that firms with concentrated ownership outperform firms with widespread ownership, as well as when it comes to the percentage held by the largest shareholder. It must be said though, that the difference between CO and WO in the Sharpe Ratio testing also revealed differences, even though they are not significant. In the testing of hypothesis 4, the Sharpe Ratio testing show indications through z-testing that share performance is better for firms with one single blockholder present compared to firms with multiple blockholders present. The results are not significant enough to draw a definitive conclusion, but still shows that there might be a difference. The ROIC testing of firm accounting performance however, shows not such differences.

With the above in mind, the assumption in hypothesis 6 can thus be rejected, as differences between accounting performance and share returns in terms of comparing ownership categories do not show the same results in the second testing period in this thesis, 2009-2010. It must be said however, that the results are not crystal clear, as expected when studying only one of so many variables that affect both share- and firm performance. Also, even when results differ, they usually go in roughly the same direction, showing that the measures are affected in similar ways by new information, as expected.

5.8 Summary of empirical findings

The correlation matrices show overall low correlation between the performance measures and ownership concentration, especially in the case of the Sharpe Ratio. This is however to be expected as both measures are just one part of the many variables that determine performance for a firm, combined with the fact that ownership concentration variables in this study is fixed per firm while the performance measures varies over time. The same issue can be seen on the overall low R-squared scores in the regression analyses done to test the hypotheses.

In 2008, the year characterised as a negatively trending year, no significant results were found showing that either share performance or firm performance differed due to differences

in ownership concentration during this period. In 2009-2010 however, several significant findings were found, especially in terms of firm performance as measured by ROIC. Generally, they indicate that concentrated ownership generates better firm performance than widespread ownership. Similar, although not as strong results, were found in the testing of share performance with the Sharpe Ratio. Significant results were also found supporting that ownership concentration is good for share performance, and especially that the percentage of votes the largest shareholder holds, rather than the blockholders in general, are important. The results of the Sharpe Ratio were not as strong as the ROIC testing, but still clearly indicative.

6. Analysis

In this section, my empirical findings will be analysed against the theoretical framework and knowledge presented in the theoretical section of this thesis. I have divided it up in four parts. First, I analyse the findings from primarily hypothesis 1-2 to discuss effects from negatively trending markets. I then analyse the findings from primarily hypothesis 3-4, to do the same for positively trending markets. As the low point in terms of accounting performance took place in 2009 however, and 2008 were not a poor year in this respect, the findings from these different years will be cross analysed in both these sections. I then analyse the findings from hypothesis 5-6 by discussing the efficiency of investor's valuation of firms and how the results correspond between the two performance measures. The analysis is then concluded with a comment on the main weaknesses of the paper.

6.1 Performance in negatively trending markets

When testing hypothesis 1 and 2, my expectation was that firms with concentrated ownership would perform worse than firms with widespread ownership, and that firms with concentrated ownership, would benefit from having multiple blockholders rather than just one strong, majority shareholder. The argumentation behind this was primarily the expectation that the imperfect investor protection levels in Sweden at the time (World Bank 1, 2016) in combination with previous findings that concentrated ownership (Alimehmeti & Paletta, 2012; Johnson et al, 2000; Desender, 2008) and especially family ownership (Lins et

al, 2013; Özerhan et al, 2012) has a negative impact on firm performance in crisis time, suggest that the same would be true in Sweden. This despite the fact that Sweden has a long tradition of concentrated ownership that has served the country well in transforming it from a poor country to the rich country it is today (Högfeldt, 2005) and the argument that there might actually be economic rationale behind the concentrated ownership structure in Sweden (Collin, 1998), as the evidence for the negative relationship seemed more powerful during financial crisis times. My empirical findings however revealed a different story. Both the share performance (Sharpe Ratio testing) and firm performance (ROIC testing) of the year 2008 revealed no statistically significant differences between different ownership structures. The fact that the Sharpe Ratio testing did not reveal and significant results in either direction signals either that shareholders are good at factoring in ownership concentration in the share pricing, thus indicating a functioning efficient market in this respect (Brealy et al, 2011), or it signals that there is actually no performance difference. The hypothesis testing on ROIC from 2008 indicates that there is no difference, but when running the same tests in hypothesis 3 I do find statistically significant results that performance is actually better for firms with concentrated ownership in 2009. I therefore think it is not likely that ownership concentration does not matter in terms of firm performance. It is also important to mention, that the performance difference in ROIC were at its peak in 2009, when accounting return wise, the market suffered from its poorest year in the studied period. Considering my hypothesized statement, it seems a bit odd that concentrated ownership actually outperformed spread ownership during a negatively trending year, but considering the spread out findings in previous research, it is still not surprising. One possible, and likely, explanation for this is that firms with concentrated ownership have a lower risk profile than firms with a more widespread structure, due to the large shareholders not being properly diversified (Dhillon et al. 2015; Edmans, 2013). Since the risk profile does not show when performing tests on ROIC as it does in the Sharpe Ratio where it is accounted for (Clark & Wojcik, 2005), the fact that the same performance difference seems existent in 2010, when accounting returns were showing a more positive trend again does complicate this statement to some extent, as a more risk willing approach from firms with spread ownership should pay off in a more positive market trend. However, Collins (1998) suggestion of spheres having easy credit access might provide an explanation here, as it is likely that credit is still scarce such as short time after a big crisis. Furthermore, the risk aversion likely to be present for

large shareholders might have helped during 2010 as well, as more risk willing firms with less concentrated ownership might still suffer to a large extent from 2009, thus having not fully recovered. Thus, it seems like risk aversion from majority shareholders is actually good for firm performance in this regard, which is logical considering the time of crisis. The results also indicates that that firm-specific risk warned for by some scholars (Dhillon et al. 2015; Edmans, 2013) is not an issue in the valuation of firm's shares in Sweden during crisis times.

6.2 Performance in positively trending markets

When formulating hypothesis 3 and 4, I expected that performance would be similar for firms with a concentrated ownership structure compared to firms with a spread ownership structure, but that firms with multiple blockholders would perform better than firms with only one powerful shareholder. I based the first statement on the fact that previous research is very divided regarding whether concentrated ownership is positive or negative for performance or not, and despite similar considerations as seen in hypothesis 1 and 2 I expected that the negative agency effects such as private benefit extraction would be smaller during a better trending time period and therefore be offset by the positive monitoring effects that is also incurred when having large shareholders present (Maury & Pajuste, 2005). So despite for instance Grant and Kirchmaier's (2004) critique against the concentrated ownership structure in Europe in general, I expected that this would not be the case in Sweden, also since the tradition of concentrated ownership is so strong in Sweden (Högfeldt, 2005) and the fact that there are indications that there are economic rationality behind this (Collin, 1998). The better performance of blockholders were expected due to the fact they blockholder presence provides the possibility of limiting private benefit extraction due to the fact that blockholder existence means that there is an increased possibility of shareholders monitoring each other, while at the same time providing sufficient monitoring of managers (Dhillon et al, 2015). The Sharpe Ratio based testing reveals that there is no difference between firms with CO (50 % or more of votes held by all blockholders in the firm) and firms with CO in terms of share performance, thus suggesting that my analysis was right. Looking at the limited significance found in the Sharpe Ratio testing overall though, it is though more likely that this depends on relatively rational pricing from the shareholders. However, the regression analysis of the stake held by the single largest shareholder in each firm revealed

that there in this case exists a statistically significant positive relationship between this variable and share performance. Interestingly as well, the Z-testing of hypothesis 4 also revealed that firms with only one blockholder present has a significantly better share performance than firms with multiple blockholders present, even though this was not supported by the regression analysis. Thus, these results indicates a mispricing of shares, in terms of understating the performance outlook for firms with one powerful shareholder during a crisis, that then catches up after the crisis period of 2008 causing firms with powerful largest shareholders to outperform others in 2009-2010.

The testing of firm performance with ROIC also revealed interesting results in for the 2009-2010 period. As both testing in 2009 and 2010 individually, as well as the period put together reveals a statistically significant performance difference between firms with concentrated ownership compared to firms with spread ownership, both in terms of the largest shareholders vote power and the total vote power of blockholders. As the results was confirmed both by Z-testing and multiple regression analysis, they seem rather strong. In the case of hypothesis 4 though, no significant differences were found either when testing the same variables with ROIC as done with the Sharpe Ratio. Surprisingly then, the number of blockholders does not seem to matter, as long as there is one large owner present in the firm. Putting the findings from both performance measures from hypothesis 3 and 4 together then, seems to show that private benefit extraction from large shareholders not being monitored is not a problem in Sweden. Dhillon et als, (2015) statement of smaller blockholders providing value in monitoring the largest shareholders also does then not seem to apply in Sweden, as no indication of blockholder presence adding value compared to the largest shareholder in a firm is found. One the contrary, shareholders seem to have overstated the power of having multiple blockholders present in a firm during the financial crisis of 2008 as these firms underperformed in the years after, 2009-2010. One possible answer to why, is provided by Jansson & Larsson-Olaison (2015). They argue that private benefit extraction is rare in Sweden because the large shareholders in Sweden sees the advantage of earning the trust from minority investors, as they are a source of financing. This statement appears to be in line with my findings on hypothesis 3 and 4, since firms with concentrated ownership outperform firms with spread ownership while the addition of multiple blockholders does not seem to have an effect. Perhaps then, the reason concentrated ownership outperforms spread

ownership is due to the trust felt between minority and majority owners, thus limiting the negative effects of investor protection gaps and agency issues of the second type, while still providing appropriate monitoring towards managers in order to limit agency problems of the first type. The statement that this trust is developed over time (Jansson & Larsson-Olaison, 2015) would also explain why the Sharpe Ratio is not displaying the same clear differences as the ROIC testing, but instead in a smaller scale. If the relationship is old, it is also likely that it is known and accepted by investors. As investors according to EMH price securities based on all available information (Fama, 1969), this trust is factored into the pricing of the securities, thus not showing up as a performance difference in the Sharpe ratio testing. When studying the results from hypothesis 3 and 4, it seems then like Sweden does not suffer from the negative agency aspects of having concentrated ownership, such as private benefit extraction, thus revealing differentiating results compared to some other scholars (see Thomsen et al, 2006; Weiss & Hilger, 2011), while instead supporting Alimehmeti and Paletta (2012) that concentrated ownership is instead generally positive due to the monitoring and interest alignment between owners and managers that results from concentrated ownership. And even if the negative aspects does exist, the positive aspects affects the market to a larger extent.

6.3 Share pricing efficiency

In hypothesis 5 and 6, I expected investors to react late to new information in the form of a sudden negative or positive hit, thus showing performance differences between ownership structures in the Sharpe Ratio testing, implying inefficiency in the market. I also argued that Sharpe Ratio results and ROIC results should be similar as the same event hits both measures, and thus should affect the results in similar directions. The Sharpe Ratio testing, revealed this expectation to appear true. In both hypothesis 3 and 4, results were found, indicating inefficient pricing of shares, as it turns out that the percentage held by the largest shareholder does affect share performance positively, and that shares with multiple blockholders performs worse than firms with one single blockholders. Admittedly, these results are not without uncertainty, as the R-squared and correlations between the variables is very low. So even though significant results were reached in some of the tests, the correlation between the variables are too low to say for certain that the difference is due to irrationality. Also, as the

ROIC testing revealed bigger differences in terms of concentrated ownership being better than widespread ownership, than the Sharpe Ratio testing did. It seems then, like investors are fairly efficient (Brealy et al, 2011) in the pricing of ownership concentration in general, but that there is some evidence to suggest that they understate the effect of the largest shareholder in a firm, as well as overstating the impact of having multiple blockholders present in a firm, or under-estimating the positive impact of the largest shareholder. This might be a sign of reacting late to new information (Bernard & Thomas, 1990) as the markets turned positive in 2009, but it cannot be seen as a clear evidence of an ownership anomaly (Brealy et al, 2011) in the Swedish market as several tests also revealed efficient pricing of the shares.

As an effect of shareholders being fairly efficient in their pricing, the ROIC testing did, to the contrary of my belief, generate some differences in terms of ownership effects compared to the Sharpe Ratio testing. Specifically, the ROIC testing showed differences in performance in 2009-2010 of concentrated ownership in general having a positive effect on firm performance which was not revealed to the same extent from the Sharpe Ratio testing in hypothesis 3, although indications were found. Also, No differences in performance were found on hypothesis 4 from the ROIC-testing where the Sharpe ratio indicated differences. Thus, share performance and firm performance did differ in this thesis despite being subjected to the same event, primarily due to investors generally being rational in their pricing (Brealy et al, 2011).

6.4 Analytical weaknesses

A few weaknesses in this study needs to be brought up in the analysis in order to review the results in a proper way.

- *Risk:* Risk is factored into the Sharpe Ratio as it measures the relationship between the return exceeding the risk free rate and the standard deviation of share returns (Brealy et al, 2011), while ROIC compares operating profits with operating assets (Bacidore et al, 1997). This means the ratios are not entirely comparable as the risk factor also plays a role in the pricing of shares according to CAPM (Brealy et al, 2011). I could of course have included a risk measure to account for this when looking at ROIC, but an accounting-based

risk measure would be complicated and flawed as it would need many years of data, risking large changes in the underlying firm. And using Beta values or share-price standard deviations would cause interdependencies between the measures by including investor's pricing decisions into the accounting returns of the firm.

- *Time horizon*: Due to the wish of studying a specific event, in this case the financial crisis and the years following, the time horizon of this study is relatively limited as it only covers three years. Due to the results found in this study, often not showing entirely clear trends in terms of share performance, it might make sense to extend the time horizon of future studies of this nature when evaluating investor rationality.
- *Stock pricing rationality*: As stock prices is only judged ex post as rational, it is of course impossible to determine whether all ownership variables were taken into consideration when pricing the shares included in this sample. As it is impossible to study ex ante stock prices for this purpose without many assumptions though, a better way is difficult to find. Despite this weakness, I still argue that ownership concentration is factored into investment decisions when investors are evaluating the firms, due to the results found in this study through comparing accounting returns and share returns.
- *R-squared results:* The predictor variable R-squared, showing how closely related the dependent and independent variables included in this study are to each other (Lind et al, 2006), showed consistently low values in this study. One explanation, especially in the case of the Sharpe Ratio testing, is that one observation of the independent variable (ownership variable) is related to up to 36 different observations of the dependent variable (Sharpe Ratio). This means that the relationship will look weaker as the Sharpe Ratio observations relating to one single ownership observation will of course vary. Also, as ownership structure is naturally not the only variable determining firm performance, the R-squared value is further weakened by all other variables such as industry, macro effect, strategy, product market etc. that also affects firm and share performance. By only using annual returns, and restructuring ownership variables each year, higher R-squared values would probably be possible to find. As Sweden has so few listed firms however, a large number of years would be needed to make the study statistically meaningful. By having a long time horizon however, updates in investor protection levels would possibly affect the results.

- *The concentration of ownership in the market overall:* Only three listed firms in the entire sample has an ownership structure without a single blockholder present when defining blockholder as a shareholder controlling at least 5 % of the votes, as I have done in this thesis. This presents an issue when studying the Swedish market, as the number of firms lacking owners who has an incentive to monitor manager is so small and thus makes it hard to make any statistically relevant statements of these firms. Therefore, when discussing widespread ownership firms in this papers, many of the firms included in this category still have large owners that can see the benefit to monitor and reduce agency problems of the first type. One potential explanation for why this structure exists, is of course that it is a general advantage for the firms to have at least one owner with a significant stake in the firm in Sweden, but that conclusion cannot be drawn based on the hypothesis testing made in this thesis.

7. Conclusion and future research directions

In this thesis, I set out to investigate the effects ownership concentration have on firm performance and share performance in Sweden, and whether the effects differ depending on if the market is going through a negative or a positive trend. In terms of share performance, the findings of this paper indicate that ownership concentration in general is taken into account in a relatively rational way by investors when valuing firms, but not always. It was found that investors seem to over-estimate the effect of the largest shareholder's private benefit extraction possibilities during a financial crisis, and discovering this in the years after, causing a better performance the coming years. This was seen as statistically significant results were found indicating a positive relationship between the largest owners stake in a firm and share performance, as well as a significant indication that shares for firms with only one blockholder performs better than shares with multiple blockholders during the same periods. Except in these cases, the efficient market hypothesis seems fairly accurate in Sweden in relation to ownership variables as there is no other significant share performance differences between different ownership categories. The small differences in share performance is likely due to the fact that concentrated ownership is so common in Sweden and has been for a long time, so that investors are well aware of the effects this it is likely to have on firm performance. As some significance were found relating to the largest owner of

the firms though, it seems like investors assume more agency problems of the second type, relating to private benefit extraction during crisis periods (Maury & Pajuste, 2005; Edmans, 2013) than actually occurs, indicating that the trusting relationship between large and small shareholders in Sweden, comes more from the large shareholders than from the smaller one as they seem to under-value these types of shares (Jansson & Larsson-Olaison, 2015). Despite these differences, I would still not argue that I have found clear evidence for any sort of anomaly (Brealy et al, 2011) in the Swedish market, as I believe clearer results are needed to make such a claim.

In terms of firm performance as measured by accounting returns, it was found that there is a quite strong positive relationship between ownership concentration and firm performance in 2009 and 2010, but no differences in 2008. Clear results were found showing that concentrated ownership outperforms widespread ownership in both negative markets (2009 for accounting returns) and the year the market turned positive again (2010). When studying ROIC for the time period 2008-2010, it becomes evident that the decline on the world markets hit accounting returns in 2009 rather than 2008. In the declining year of 2009 and the rebound year of 2010, the fact that firms with concentrated ownership outperformed firms with spread ownership indicates that the lower risk profile argued to be present in firms with concentrated ownership (Dhillon et al. 2015; Edmans, 2013) paid dividend in 2009, while the 2010 results likely depends on that firms with spread ownership needed more time to get back on track from earlier declines. Another potential explanation is what Collin (1998) would call the ease of getting credit for sphere controlled firms, as it is likely that they had an easier time getting financing in the crisis years compared to other firms. Also, the trust developed between large and minority shareholders in Sweden (Jansson & Larsson-Olaison, 2015) might have become so strong that the negative effects of private benefit extraction often warned for is simply reduced to such a low level that concentrated ownership is actually more efficient in Sweden than spread ownership.

My overall conclusion from this thesis, is that ownership concentration does matter in Sweden and that in contrast to the common claim that concentrated ownership is bad for performance in Europe (Grant and Kirchmaier, 2004; Thomsen et al. 2006), my findings

indicate that the relationship is positive. I believe this positive relationship is due to the trust existing between small and large investors in Sweden, meaning that Swedish firms is impacted by the positive aspects on agency issues coming from concentrated ownership, while the negative aspects are to a large extent removed. There is however, a slight risk that the findings are due to that lower risk taking by firms under the control of large shareholders makes the findings relevant primarily for this time period and might change if the time scope were to be extended.

Another finding from this thesis however, is as indicated by previous research on other markets on the same subject, that it is notoriously hard to determine the exact effects of the relationship between ownership concentration and performance clearly. The primary issue from using a statistical regression analysis like in this paper, is that correlation coefficients will be low as there is of course so many other variables affecting performance, so there will always be a certain level of uncertainty towards the results found in a study. After making this study, I agree with Miller (2004) that meaningful results are best gathered by focusing on a single market in a study, as not only investor protection levels affect agency problems, but also country culture seems to play a very large role in what type of effect ownership concentration have on a market, as seen by the results in this study for example. Studying a market like Sweden however, will always present the challenge of having a relatively low amount of listed firms, and especially a very low amount of firms without any form of blockholder presence at all in their ownership structure. This makes it very challenging to study the two extremes. Including non-listed firms would likely not help in this respect as these firms in general have a concentrated ownership structure as the shares are not publicly traded and available to everyone.

Therefore, I suggest that future research focuses on long time periods for single market studies to find general trends, in order to establish the general relationship within a market before studying the more complex issues of differing market trends and similar. As stated above, it is important to look at cultural explanations for the trends within a market, but studies over long time periods also presents the need for carefully evaluating changes in the investor protection level for the studied nation. For the Swedish market, a future research

area is the performance of the business spheres like the Wallenberg family and Industrivärlden among others, and how they perform compared to firms controlled by other owners. This is because these spheres is an interesting legacy of the Swedish market having been in existence for such a long time, and since many of Collin's (1998) points of economic rationality explaining the concentrated ownership structure in Sweden is primarily relating to these old spheres. I also believe further research on the effects on different owner types is needed in Sweden, as previous research indicates differences depending on the identity of the owner (Brunzell et al. 2015).

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9. Appendix 1

Hypothesis 1 testing

Firm data from 2008

Concentrated ownership: 50 % or more of the votes controlled by + 5 % blockholders
Spread ownership: less than 50 % of the votes controlled by blockholders.
Sharpe Ratio used as performance measure. 5 % significance level.

	Concentrated ownership	*Spread ownership*
Mean (Sharpe Ratio)	-0,362196976	-0,341734501
Known Variance	0,984731	0,964231
Observations	1344	1392
Hypothesized Mean Difference	0	
z	-0,541991671	
P(Z<=z) one-tail	0,293912122	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,587824244	
z Critical two-tail	1,959963985	

Single OLS regression with % controlled by blockholders as the independent variable and Sharpe ratio in 2008 as the dependent variable. No multiple regression made due to the insignificant p-value in the single regression analysis

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,012348553							
R Square	0,000152487							
Adjusted R Square	-0,000213222							
Standard Error	0,987044754							
Observations	2736							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0,406228674	0,406228674	0,416962392	0,518510846			
Residual	2734	2663,619586	0,974257347					
Total	2735	2664,025815						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-0,323621528	0,047524109	-6,809628583	1,19846E-11	-0,416808323	-0,230434732	-0,416808323	-0,230434732
blockholder	-0,056545196	0,087568371	-0,645726252	0,518510846	-0,228252066	0,115161673	-0,228252066	0,115161673

Z-test on Sharpe Ratio for 2008 MC (Majority controlled) vs non-MC firms. 5 % significance level.

	MC	*Non-MC*
	-	-
Mean (Sharpe Ratio)	0,374274779	0,34640855
Known Variance	0,890143	0,994377
Observations	528	2208

Hypothesized Mean Difference	0
z	-0,60291253
P(Z<=z) one-tail	0,27328344
z Critical one-tail	1,644853627
P(Z<=z) two-tail	0,54656688
z Critical two-tail	1,959963985

Single OLS regression with largest owner's % of votes as the independent variable and Sharpe Ratio in 2008 as dependent variable.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,007595693							
R Square	5,76945E-05							
Adjusted R Square	-0,000308049							
Standard Error	0,987091542							
Observations	2736							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0,153699768	0,153699768	0,157745998	0,691271259			
Residual	2734	2663,872115	0,974349713					
Total	2735	2664,025815						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-0,340163552	0,034820675	-9,769010899	3,51083E-22	-0,408441047	-0,271886057	-0,408441047	-0,271886057
majority %	-0,03575296	0,090018719	-0,397172505	0,691271259	-0,21226455	0,14075863	-0,21226455	0,14075863

Z-test robustness test on ROIC for 2008 annual returns on CO (Concentrated ownership) vs WO (Widespread ownership) firms. 5 % significance level.

	CO	*WO*
Mean (ROIC)	4,746666667	2,06026087
Known Variance	639,2481	1099,561
Observations	111	115
Hypothesized Mean Difference	0	
z	0,686335841	
P(Z<=z) one-tail	0,246250676	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,492501353	
z Critical two-tail	1,959963985	

Z-test robustness on ROIC for 2008 annual returns on MC vs Non-MC firms. 5 % significance level.

	MC	*Non-MC*
Mean	6,4125	2,661104972
Known Variance	488,6922	969,7308

Observations	44	181
Hypothesized Mean Difference	0	
z	0,924531182	
P(Z<=z) one-tail	0,177604912	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,355209824	
z Critical two-tail	1,959963985	

Robustness test – Single OLS regression on ROIC as the dependent variable and % of votes held by blockholders in total as the independent variable.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,128954445							
R Square	0,016629249							
Adjusted R Square	0,012164963							
Standard Error	29,53152347							
Observations	225							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3303,505762	3303,505762	3,787942387	0,052879278			
Residual	224	195352,8367	872,1108783					
Total	225	198656,3425						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Block held %	7,051984105	3,623344621	1,946263699	0,052873661	-0,08821852	14,19218673	-0,08821852	14,19218673

Robustness test – Multiple regression on ROIC as the dependent variable and % held by blockholders in total as the main independent variable. Control variables are industry dummies and Market Value of equity. Industrials is omitted to allow for dummy variable testing.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,275765755							
R Square	0,076046751							
Adjusted R Square	0,032718476							
Standard Error	29,21843739							
Observations	225							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	10	15107,16951	1510,716951	1,769575635	0,0676507			
Residual	215	183549,173	853,7170837					
Total	225	198656,3425						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Block held %	9,267826489	5,574717263	1,662474714	0,097874797	-1,720270825	20,2559238	-1,720270825	20,2559238
Market value	8,19117E-05	6,30925E-05	1,298278855	0,195582441	-4,24474E-05	0,000206271	-4,24474E-05	0,000206271
Basic materials	2,562846863	9,617019402	0,266490766	0,790116676	-16,39286696	21,51856068	-16,39286696	21,51856068
consumer goods	-0,191086677	7,756797649	-0,024634738	0,98036916	-15,48019344	15,09802009	-15,48019344	15,09802009
consumer services	6,308724884	7,021680649	0,898463658	0,369943491	-7,531422812	20,14887258	-7,531422812	20,14887258
financials	-10,46120704	5,389704686	-1,940961082	0,053570213	-21,08463363	0,16221955	-21,08463363	0,16221955
health care	-12,72090694	6,450156814	-1,972185685	0,049870364	-25,43454736	-0,007266508	-25,43454736	-0,007266508
oil & gas	2,483536778	16,91370865	0,146835731	0,883399274	-30,85438295	35,82145651	-30,85438295	35,82145651
technology	6,792620347	5,685862054	1,194650922	0,233539675	-4,414549921	17,99979061	-4,414549921	17,99979061
telecommunications	-4,89578339	22,30647811	-0,219478098	0,826485868	-48,86317055	39,07160377	-48,86317055	39,07160377

Robustness: ROIC single regression with largest owner's % stake as independent variable and ROIC as dependent variable.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,073909341							
R Square	0,005462591							
Adjusted R Square	0,001002782							
Standard Error	29,57034737							
Observations	225							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	1071,014262	1071,014262	1,224848576	0,269603631			
Residual	223	194992,4139	874,4054437					
Total	224	196063,4282						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,030753595	3,622859511	0,008488763	0,993234618	-7,108666964	7,170174154	-7,108666964	7,170174154
Largest owner %	10,35304537	9,354636503	1,106728772	0,269603631	-8,081752876	28,78784362	-8,081752876	28,78784362

Hypothesis 2 testing

Z-test on BC vs MC control during 2008. Sharpe Ratio as performance measure
5 % significance level

	BC	*MC*
Mean (Sharpe Ratio)	-0,354381928	-0,374274779
Known Variance	1,046947	0,890143
Observations	816	528
Hypothesized Mean Difference	0	
z	0,365089404	
P(Z<=z) one-tail	0,357522335	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,71504467	
z Critical two-tail	1,959963985	

Z-test on Sharpe Ratio in 2008.
1 blockholder: only one blockholder holding 5 % or more of the votes present
2 or more blockholders: 2 or more blockholders holding 5 % of the votes each present.
5 % significance level.

	1 blockholder	*2 or more blockholders*
Mean (Sharpe Ratio)	-0,318124482	-0,365142396
Known Variance	0,910443	0,982428
Observations	444	2256
Hypothesized Mean Difference	0	
z	0,94299846	

P(Z<=z) one-tail	0,172840845
z Critical one-tail	1,644853627
P(Z<=z) two-tail	0,345681691
z Critical two-tail	1,959963985

Single OLS Regression with Sharpe ratio in 2008 as the dependent variable and number of blockholders as the independent variable.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,024372956							
R Square	0,000594041							
Adjusted R Square	0,000228494							
Standard Error	0,98682678							
Observations	2736							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	1,582540542	1,582540542	1,625073437	0,202494145			
Residual	2734	2662,443274	0,973827094					
Total	2735	2664,025815						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-0,30349055	0,042322981	-7,170821738	9,5534E-13	-0,386478808	-0,220502293	-0,386478808	-0,220502293
no blockholders	-0,017259276	0,013538984	-1,274783682	0,202494145	-0,04380695	0,009288398	-0,04380695	0,009288398

Robustness Z-test with ROIC on BC vs MC firms. 5 % significance level

	BC	*MC*
Mean (ROIC)	3,708030303	6,4125
Known Variance	755,1954	488,6922
Observations	66	44
Hypothesized Mean Difference	0	
z	-0,569532511	
P(Z<=z) one-tail	0,284497407	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,568994814	
z Critical two-tail	1,959963985	

Robustness Z-test ROIC, of 1 vs multiple blockholders in a firm. 5 % significance level

	1 blockholder	*2 or more blockholders*
Mean (ROIC)	8,851666667	3,359891892
Known Variance	704,8758	823,683
Observations	36	185
Hypothesized Mean Difference	0	
z	1,120252024	
P(Z<=z) one-tail	0,13130319	

z Critical one-tail	1,644853627
P(Z<=z) two-tail	0,26260638
z Critical two-tail	1,959963985

Robustness Single regression analysis of no of blocks as independent variable and ROIC as dependent variable

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,26478151							
R Square	0,070109248							
Adjusted R Square	0,021983512							
Standard Error	29,38057529							
Observations	225							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	11	13927,64678	1266,149707	1,466778273	0,145735358			
Residual	214	184728,6957	863,2182043					
Total	225	198656,3425						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
No of blocks	-0,66109992	1,437000412	-0,460055484	0,645943475	-3,49358761	2,17138777	-3,49358761	2,17138777
Market value	7,22449E-05	6,50645E-05	1,110358806	0,268090506	-5,60044E-05	0,000200494	-5,60044E-05	0,000200494
Basic materials	8,965333893	10,22643643	0,876682112	0,381642379	-11,19211009	29,12277787	-11,19211009	29,12277787
consumer goods	6,9402822	8,224417147	0,843863106	0,399688209	-9,270959027	23,15152343	-9,270959027	23,15152343
consumer services	13,18281944	7,862057222	1,676764626	0,09504864	-2,314170063	28,67980894	-2,314170063	28,67980894
financials	-3,396445214	5,897046571	-0,575956994	0,565249451	-15,0201801	8,22728967	-15,0201801	8,22728967
health care	-6,562039348	7,479375175	-0,877351275	0,381279748	-21,30471996	8,180641259	-21,30471996	8,180641259
industrials	5,700665167	5,412541789	1,053232546	0,29342217	-4,968056885	16,36938722	-4,968056885	16,36938722
oil & gas	5,725599519	17,23387284	0,332229416	0,740041216	-28,24428126	39,69548029	-28,24428126	39,69548029
technology	12,76857039	6,820556018	1,872071771	0,062560751	-0,675504366	26,21264514	-0,675504366	26,21264514
telecommunications	2,430877865	22,59541032	0,107582816	0,914427423	-42,10718979	46,96894552	-42,10718979	46,96894552

Hypothesis 3 testing

Z-test on ROIC on CO vs WO. Firm data from 2009-2010. 5 % significance level.

	CO	*CO*
Mean (Sharpe Ratio)	0,269124275	0,255488332
Known Variance	0,874015	0,899044
Observations	2688	2784
Hypothesized Mean Difference	0	
z	0,535634554	
P(Z<=z) one-tail	0,296105571	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,592211143	
z Critical two-tail	1,959963985	

Single OLS regression with % controlled by blockholders as the independent variable and monthly Sharpe ratio in 2009-2010 as the dependent variable.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,021990867							
R Square	0,000483598							
Adjusted R Square	0,000300871							
Standard Error	0,941470731							
Observations	5472							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	2,345825723	2,345825723	2,646562156	0,103831701			
Residual	5470	4848,428243	0,886367138					
Total	5471	4850,774069						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,214328865	0,03205302	6,686697928	2,50987E-11	0,151492195	0,277165534	0,151492195	0,277165534
blockholder	0,096082281	0,059061198	1,626825791	0,103831701	-0,019701161	0,211865722	-0,019701161	0,211865722

Z-test on MC vs non-MC firms on Sharpe ratio for 2009-2010. 5 % significance level.

	MC	*Non-MC*
Mean (Sharpe Ratio)	0,281185627	0,257643466
Known Variance	0,917029	0,879465
Observations	1056	4416
Hypothesized Mean Difference	0	
z	0,72052926	
P(Z<=z) one-tail	0,235599595	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,471199191	
z Critical two-tail	1,959963985	

Single regression output on Sharpe ratio and largest owner %. Only single regression is displayed as multiple regression revealed all other variables are insignificant in terms of p-values.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,031205797							
R Square	0,000973802							
Adjusted R Square	0,000791164							
Standard Error	0,941239835							
Observations	5472							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	4,723692334	4,723692334	5,331887838	0,020975777			
Residual	5470	4846,050377	0,885932427					
Total	5471	4850,774069						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,216625411	0,023478214	9,226656359	3,90522E-20	0,170598773	0,262652049	0,170598773	0,262652049
largest owner %	0,140152614	0,060696088	2,309088097	0,020975777	0,021164139	0,259141089	0,021164139	0,259141089

Z-test Robustness ROIC, 5 % significance level, with CO-firms and WO-firms in 2009-2010

	CO	*WO*
		-
Mean (ROIC)	5,569285714	2,101855204
Known Variance	550,4748	1142,592
Observations	210	221
Hypothesized Mean Difference	0	
z	2,748223089	
P(Z<=z) one-tail	0,002995961	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,005991922	
z Critical two-tail	1,959963985	

Z-test Robustness ROIC, 1 % significance level, with CO-firms and WO-firms in 2009-2010

	CO	*WO*
		-
Mean (ROIC)	5,569285714	2,101855204
Known Variance	550,4748	1142,592
Observations	210	221
Hypothesized Mean Difference	0	
z	2,748223089	
P(Z<=z) one-tail	0,002995961	
z Critical one-tail	2,326347874	
P(Z<=z) two-tail	0,005991922	
z Critical two-tail	2,575829304	

Robustness Single OLS regression analysis with ROIC as the dependent variable and total % size of block holdings in the firm as independent variable. 2009-2010 data.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,194841214							
R Square	0,037963099							
Adjusted R Square	0,035720588							
Standard Error	28,91209236							
Observations	431							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	14150,97163	14150,97163	16,92884058	4,654E-05			
Residual	429	358604,9973	835,9090845					
Total	430	372755,9689						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-11,60175809	3,505802309	-3,309301857	0,00	-18,49244451	-4,71107167	-18,49244451	-4,71107167
Block held %	26,5558786	6,454269076	4,114467229	0,00	13,86995385	39,24180335	13,86995385	39,24180335

Robustness multiple regression analysis ROIC as the dependent variable and total % size of block holdings in the firm as independent variable as well as market value and health care

industry dummy as robustness variables as the other control variables were omitted due to low significance. 2009-2010 data

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,32775639							
R Square	0,107424251							
Adjusted R Square	0,101153227							
Standard Error	27,913925							
Observations	431							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	3	40043,03073	13347,67691	17,13025671	1,60093E-10			
Residual	427	332712,9382	779,1872088					
Total	430	372755,9689						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-9,500077837	3,546526058	-2,678699573	0,01	-16,47089953	-2,529256146	-16,47	-2,529256146
Block held %	24,68253888	6,278986513	3,93097498	0,00	12,34097007	37,02410769	12,34097007	37,02410769
Market value	9,3661E-05	3,59245E-05	2,607162451	0,01	2,30501E-05	0,000164272	2,30501E-05	0,000164272
health care	-21,27692066	4,351130105	-4,889975741	0,00	-29,8292199	-12,72462142	-29,8292199	-12,72462142

Z-test Robustness ROIC, 5 % significance level, with MC-firms and non-MC firms in 2009-2010

	MC	*non-MC*
Mean (ROIC)	6,185176471	0,518208092
Known Variance	440,8162	966,771
Observations	85	346
Hypothesized Mean Difference	0	
z	2,006058818	
P(Z<=z) one-tail	0,022424986	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,044849973	
z Critical two-tail	1,959963985	

Z-test Robustness ROIC, 1 % significance level, with MC-firms and non-MC firms in 2009-2010

	MC	*non-MC*
Mean (ROIC)	6,185176471	0,518208092
Known Variance	440,8162	966,771
Observations	85	346
Hypothesized Mean Difference	0	
z	2,006058818	
P(Z<=z) one-tail	0,022424986	
z Critical one-tail	2,326347874	
P(Z<=z) two-tail	0,044849973	
z Critical two-tail	2,575829304	

Robustness Single OLS regression between largest owners % vote power as independent variable and ROIC as dependent variable. 2009-2010 data.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,187979133							
R Square	0,035336154							
Adjusted R Square	0,033087521							
Standard Error	28,95153922							
Observations	431							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	13171,76242	13171,76242	15,71450019	8,6273E-05			
Residual	429	359584,2065	838,1916234					
Total	430	372755,9689						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-6,887497648	2,562750155	-2,687541598	0,01	-11,92460646	-1,850388838	-11,92460646	-1,850388838
Largest owner %	26,16377852	6,600094865	3,964151887	0,00	13,19123185	39,13632519	13,19123185	39,13632519

Robustness multiple regression excluding variables that are not significant. Included are thus ROIC as dependent variable and largest owner %, market value and health care industry dummy as independent variables. Data from 2009-2010.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,317751035							
R Square	0,10096572							
Adjusted R Square	0,09464932							
Standard Error	28,01473324							
Observations	431							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	3	37635,57492	12545,19164	15,98469364	7,24406E-10			
Residual	427	335120,394	784,8252786					
Total	430	372755,9689						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-4,317128842	2,605868338	-1,656694922	0,10	-9,439054703	0,804797019	-9,439054703	0,804797019
Largest owner %	22,49478502	6,420781702	3,503434015	0,00	9,874512776	35,11505726	9,874512776	35,11505726
Market value	7,93288E-05	3,59649E-05	2,205729122	0,03	8,63855E-06	0,000150019	8,63855E-06	0,000150019
health care	-21,56058568	4,364056462	-4,940491918	0,00	-30,13829213	-12,98287923	-30,13829213	-12,98287923

Robustness: testing mean ROIC in 2009 only. 5 % significance level.

	CO	*WO*
		-
Mean (ROIC)	3,388035714	4,51112069
Known Variance	609,0533	1198,432
Observations	112	116
Hypothesized Mean Difference	0	
z	1,989182797	
P(Z<=z) one-tail	0,023340515	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,04668103	
z Critical two-tail	1,959963985	

Robustness: Single regression: ROIC as dependent variable and blockholder % as independent variable. 2009 only.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,186681991							
R Square	0,034850166							
Adjusted R Square	0,030579591							
Standard Error	29,8741542							
Observations	228							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	7282,991159	7282,991159	8,160533388	0,004680344			
Residual	226	201697,1102	892,4650893					
Total	227	208980,1013						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-13,69451536	4,982684346	-2,748421214	0,006472012	-23,5129758	-3,876054924	-23,5129758	-3,876054924
Block held %	26,22744245	9,181141267	2,856664732	0,004680344	8,13585446	44,31903045	8,13585446	44,31903045

Robustness: multiple regression excluding insignificant variables. ROIC as dependent variable. Blockholder % as main independent variable and Market value as only significant control variable. 2009 only.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,230346882							
R Square	0,053059686							
Adjusted R Square	0,044642439							
Standard Error	29,65667867							
Observations	228							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	11088,4186	5544,209302	6,303686318	0,002169168			
Residual	225	197891,6827	879,5185899					
Total	227	208980,1013						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-15,52916498	5,024433573	-3,090729483	0,002	-25,43012984	-5,628200123	-25,43012984	-5,628200123
Block held %	27,36947392	9,130826661	2,997480397	0,003	9,37660118	45,36234666	9,37660118	45,36234666
Market value	0,000126392	6,07631E-05	2,080076039	0,039	6,65433E-06	0,00024613	6,65433E-06	0,00024613

Robustness: testing mean ROIC in 2010 only for CO and WO firms. 5 % significance level.

	CO	*WO*
Mean (ROIC)	7,054375	0,506724138
Known Variance	424,3123	975,0992
Observations	112	116
Hypothesized Mean Difference	0	
z	1,875007355	
P(Z<=z) one-tail	0,030395856	
z Critical one-tail	1,644853627	

P(Z<=z) two-tail	0,060791712
z Critical two-tail	1,959963985

Robustness: Single regression: ROIC as dependent variable. Blockholder % as independent variable. 2010 data only

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,195255683							
R Square	0,038124782							
Adjusted R Square	0,033868697							
Standard Error	26,23195351							
Observations	228							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	6163,939089	6163,939089	8,957711488	0,003069999			
Residual	226	155514,077	688,115385					
Total	227	161678,0161						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-8,295098469	4,375204842	-1,895933738	0,059	-16,91651068	0,326313738	-16,91651068	0,326313738
Block held %	24,12849426	8,061793792	2,992943616	0,003	8,24259865	40,01438988	8,24259865	40,01438988

Robustness: multiple regression excluding insignificant variables. ROIC as dependent variable. Blockholder % as main independent variable and market value as only significant control variable. 2010 data only.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,240950241							
R Square	0,058057018							
Adjusted R Square	0,049684192							
Standard Error	26,01636003							
Observations	228							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	9386,543565	4693,271783	6,93398083	0,001196105			
Residual	225	152291,4725	676,850989					
Total	227	161678,0161						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	-10,14125105	4,420962137	-2,293901358	0,022718879	-18,85303719	-1,429464913	-18,85303719	-1,429464913
Block held %	25,32931422	8,01445298	3,160454529	0,001791766	9,536326586	41,12230186	9,536326586	41,12230186
Market value	9,3072E-05	4,26542E-05	2,182011168	0,03014407	9,01914E-06	0,000177125	9,01914E-06	0,000177125

Hypothesis 4 testing

Z-test on 5 % confidence interval. Data from 2009-2010.
Multiple blockholders: Firms with 2 or more blockholders holding 5 % or more of the votes.
1 Blockholder: Firms with only one blockholder holding 5 % or more of the votes in a firm

	multiple blockholders	*1 blockholder*
Mean (Sharpe Ratio)	0,249757899	0,338397467
Known Variance	0,884214	0,887412
Observations	4512	888

Hypothesized Mean Difference	0
z	-2,563821901
P(Z<=z) one-tail	0,005176333
z Critical one-tail	1,644853627
P(Z<=z) two-tail	0,010352665
z Critical two-tail	1,959963985

Z-test on 5 % significance level. Data from 2009-2010
Blockholder presence: Firms with one or more blockholders holding at least 5 % of the votes each in the firm
No blockholder presence: Firms with no shareholder holding 5 % or more of the votes

	blockholder presence	*no blockholder presence*
Mean (Sharpe Ratio)	0,264334184	0,101124661
Known Variance	0,885655	0,946869
Observations	5400	72
Hypothesized Mean Difference	0	
z	1,41441034	
P(Z<=z) one-tail	0,078620728	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,157241456	
z Critical two-tail	1,959963985	

Z-test of multiple blockholders vs 1 blockholder as above on 1 % significance level. Data from 2009-2010.

	multiple blockholders	*1 blockholder*
Mean (Sharpe Ratio)	0,249757899	0,338397467
Known Variance	0,884214	0,887412
Observations	4512	888
Hypothesized Mean Difference	0	
z	-2,563821901	
P(Z<=z) one-tail	0,005176333	
z Critical one-tail	2,326347874	
P(Z<=z) two-tail	0,010352665	
z Critical two-tail	2,575829304	

Single OLS regression with Sharpe Ratio as the dependent variable and number of blockholders as the independent variable. Data from 2009-2010

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,023007202							
R Square	0,000529331							
Adjusted R Square	0,000346613							
Standard Error	0,941449192							
Observations	5472							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	2,567666702	2,567666702	2,89697585	0,088802727			
Residual	5470	4848,206402	0,886326582					
Total	5471	4850,774069						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,305686295	0,02855073	10,70677703	1,7283E-26	0,249715508	0,361657081	0,249715508	0,361657081
no of blockholders	-0,015545313	0,009133286	-1,702050484	0,088802727	-0,033450186	0,00235956	-0,033450186	0,00235956

Single OLS regression on Sharpe ratio as the dependent variable on 0 or 1 blockholders as the independent variable. Data from 2009-2010.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,060663559							
R Square	0,003680067							
Adjusted R Square	0,002638981							
Standard Error	0,943896492							
Observations	959							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3,14932609	3,14932609	3,534832891	0,060395943			
Residual	957	852,6301415	0,890940587					
Total	958	855,7794676						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,11952937	0,112019904	1,06703689	0,286224279	-0,100303635	0,339362376	-0,100303635	0,339362376
blockholders	0,218868097	0,116412072	1,880115127	0,060395943	-0,0095843	0,447320494	-0,0095843	0,447320494

Single OLS regression of firms having between 1-8 blockholders present with number of blockholders as the independent variable and Sharpe Ratio as the dependent variable. Data from 2009-2010

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,028697881							
R Square	0,000823568							
Adjusted R Square	0,000638433							
Standard Error	0,940856463							
Observations	5399							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3,937826968	3,937826968	4,448461984	0,034978635			
Residual	5397	4777,483145	0,885210885					
Total	5398	4781,420972						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,320557073	0,029534512	10,85364395	3,65014E-27	0,262657509	0,378456637	0,262657509	0,378456637
no of blockholders	-0,01979394	0,009384849	-2,109137735	0,034978635	-0,038192033	-0,001395847	-0,038192033	-0,001395847

Multiple OLS regression of firms having between 1-8 blockholders present with number of blockholders as the independent variable and Sharpe Ratio as the dependent variable. Control

variables are industry dummy for financial firms. Other are insignificant. Data from 2009-2010

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,041040551							
R Square	0,001684327							
Adjusted R Square	0,001314375							
Standard Error	0,940474004							
Observations	5400							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	8,053867413	4,026933706	4,552824287	0,010577905			
Residual	5397	4773,599823	0,884491351					
Total	5399	4781,653691						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0,301766305	0,030715843	9,824451221	0,000	0,241550854	0,361981756	0,241550854	0,361981756
no of blockholders	-0,018105677	0,009408253	-1,924446187	0,054	-0,03654965	0,000338297	-0,03654965	0,000338297
financials	0,069537655	0,032093788	2,166701362	0,030	0,006620876	0,132454435	0,006620876	0,132454435

Z-test: robustness on ROIC. Comparing firms with one blockholder present with firms with 2 or more blockholders present. Data from 2009-2010. 5 % significance level.

	1 blockholder	*multiple blockholders*
Mean (ROIC)	3,539722222	1,87325779
Known Variance	1624,61	691,7398
Observations	72	353
Hypothesized Mean Difference	0	
z	0,33651441	
P(Z<=z) one-tail	0,368241494	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,736482987	
z Critical two-tail	1,959963985	

Robustness single OLS regression on ROIC as dependent variable and No of blockholders per firm as the independent variable. Data from 2009-2010

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0,036299053							
R Square	0,001317621							
Adjusted R Square	-0,00100796							
Standard Error	29,46880965							
Observations	431							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	492,6708237	492,6708237	0,567324654	0,451737134			
Residual	430	373416,6192	868,4107423					
Total	431	373909,29						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
No of blocks	0,341601137	0,453527347	0,753209568	0,451736174	-0,549805136	1,233007409	-0,549805136	1,233007409

Robustness Z-test on ROIC, MC firms vs BC firms. Data from 2009-2010

	MC	*BC*
Mean (ROIC)	6,185176471	5,15048
Known Variance	440,8162	628,7622
Observations	85	125
Hypothesized Mean Difference	0	
z	0,32371953	
P(Z<=z) one-tail	0,373075192	
z Critical one-tail	1,644853627	
P(Z<=z) two-tail	0,746150384	
z Critical two-tail	1,959963985	