Family firms during economic recession

An investigation of the performance of public Swedish

family firms during a macroeconomic downturn

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Abstract

The objective of this thesis is to investigate how public Swedish family firms managed to perform during the most recent recession that started in 2008. Accounting data is combined with information regarding ownership structure to examine family firms' performance in comparison to non-family firms. Our evidence implies that family firms perform better in terms of operating performance (return on asset) relative to other public firms. Our study also establishes that family firms perform at their best when the company founder is still active within the firm. Further, the thesis also suggests that there is a positive relationship between enhanced control ownership and operative performance, which implies that the family advantage is not completely distinguishable.

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SEMINAR DATE 28th of May 2015

COURSE Master Thesis in Finance, 30 Swedish credits (30 ECTS)

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KEY WORDS Family Firms, Performance, Recession, Founder, Control, Ownership, Panel Data

PURPOSE This thesis seeks to investigate whether family firms perform better than non-family firms do during economic recession. Further, the study intends to investigate how the presence of a company founder and enhanced voting rights affects firm performance during these market conditions.

METHODOLOGY We perform a set of panel data regressions to analyse operating- and market based performance. In addition to this, we present thorough descriptive statistics that we combine with the regression analysis to draw our conclusions.

THEORETICAL PERSPECTIVES The theories applied in this study are substantially based upon the competitive advantages of family firms, as well more renowned theories regarding separation of ownership and control.

EMPIRICAL FOUNDATION We include all public, non-financial firms listed on the large- mid- and small-cap lists of the Stockholm Market Exchange. The final sample consists of 139 firms, including 62 family firms. Over five years (2009-2013) the observations add up to 695.

CONCLUSIONS Our results suggest that family firms outperform non-family firms in terms of operating performance. In addition, the family firm performance appears to be at best when the company founder is still active within the top management team or board of directors.

Acknowledgements

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May 15th 2015

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Chapter I – Introduction

In the first chapter, the reader is introduced to the subject area of this thesis. Further, the chapter will raise a few questions regarding family ownership and its impact on firm performance and ultimately present the reader with the purpose of this study.

1.1 Background

Studies of family firms offer a wide range of discoveries and interesting topics throughout the world of corporate finance. Many studies focus on the competitive advantages of running a family business, pointing out how their financial incentives and unique working environments can improve corporate value. In 2003, Ronald Anderson and David Reeb published an article on the subject in *The Journal of Finance*, where they established how family owned firms outperform other firms, especially in the presence of the company founder.

Moreover, there are a few reasons to believe that family owned firms inherently possess some characteristics regarding business structure, strategy and management as opposed to large block holders such as private investors, venture capitalists, states or financial institutions. For instance, a family shareholder finds a key relationship between personal wealth and the value of the company. In other words, the family firm is a long-term investment that represents the family legacy, and the investment horizons and business strategies of family firms are therefore longer (Poutziouris et al., 2006; Barontini & Caprio, 2006; Brokaw & Murphy, 1992).

The theory of families' long investment horizons brings a different nuance to the debate that Michael E. Porter shed light upon in 1992, where he emphasised short investment horizons as one of the major shortcomings of the U.S market during the late 20th century. The reasons for this were, as he put it, that the system had grown to become even more complex and that investment decisions were driven more by external stakeholders or governmental regulations than by personal incentives. Porter highlighted the increasing competitive advantages of maintaining 'patient capital' within the business. The mere fact that the average stock holding periods had declined, from being more than seven years during the 1960s to being only two years in the early 1990s, was one of Porters arguments for why longer horizons ought to create competitive advantages (Porter, 1992).

For a long time, financial researchers have devoted a lot of attention to studies of publicly listed, large and widely held companies. As it turns out, most firms around the world have a dominant owner – in many instances the founding family (Sraer & Thesmar, 2007). As it also appears that investment horizons ought to differ in the case of family owned firms, research have focused on translating such business characteristics to actual results. Family business scholars often refer to the study of Villalonga & Amit (2006) – an article that presented evidence of the superior market performance of family firms compared to regular firms in the United States. Another similar study at that point of time was that of Maury (2006), establishing that European family firms outperform the market in terms of operational performance. As of the beginning of the 21st century, plenty of renowned family firm studies in different countries had managed to establish that public family firms enjoy performance advantages in comparison to non-family firms. Regardless of these results, it is still not obvious whether these findings apply to the Swedish market, despite the country's high frequency of family owned firms. In 1999, La Porta, Lopez-De-Silanes and Shleifer showed that concentrated ownership through family control is common in almost all developed countries. The older and more traditional view of Berle and Means (1932), which implied a separation of ownership and control because of dispersed ownership, is nowadays more often found in the USA and the UK. Sweden, however, provides an interesting case with the highest frequency of dual-shares in the entire world, as well as second highest frequency of pyramidal structures as of the late 20th century (La Porta, et al., 1999). In such a relatively small country as Sweden, a handful of families, with perhaps the Wallenberg family as the most notable, can exercise large influence in many listed Swedish firms.

Henceforth, there is a willingness to explore the elements behind the family firm competiveness. Research implies that several factors differ from non-family firms, such as more consistent management goals, influence of family network and culture and increased resilience to hostile takeovers (Poutziouris et al., 2006; Villalonga & Amit, 2006). Conversely, some research highlight differences that may not be only positive. For instance, Ward (1997) describes that family firms despite their competitive advantages are often slow moving 'steady old ships' that have lower growth potential than regular firms. Meanwhile, other scholars argue that such drawbacks in family firms are merely consequences when exercising longer investment horizons, which ought to be advantageous in a long perspective (James 1999; Stein 1989). Kashmiri & Mahajan (2013) described the extended view of

investments and decisions in family firms as a natural outcome based on family ties and being loyal towards your family. Also, these ties remain over succeeding generations and grant the family firms with an increased incentive to care for the family legacy. Therefore, family executives tend to see their family business as a long-term investment to pass on to generations to come (Casson, 1999; Le Breton-Miller & Miller, 2006). In other words, strategic decisions in family firms tend to be driven less by short-term goals and achievements and more by long horizon interest of family's succeeding generations, thus increasing the firms' resilience to market fluctuations (Kashmiri & Mahajan, 2013). Furthermore, studies in the United States and Europe also conclude that family owners value the firm's continued viability rather than reaching target goals of growth or carrying out dividend to the shareholders (Poutziouris, et al., 2006).

Even if there appears to a common consent regarding the family firm performance advantage, some studies choose to break down the ingredients of family control into somewhat contradicting evidence. Anderson & Reeb (2003) and Villalonga & Amit (2006) jointly highlights how family firm performs at best in presence of the company founder as CEO, whereas other studies point to a neutral relationship (Ehrhardt, et al., 2006) or even a negative impact on firm performance (Bennedsen, et al., 2007). Altogether, there appears to be a consensus of entrepreneurial advantages in young family firms that translate into good performance when the founder of a family firm is still active within the company. Interestingly though, it is easy to debate how older firms have endured economic cycle(s) before and therefore ought to be more resilient in a macroeconomic downturn than younger firms. However, there is no apparent evidence regarding family founder effect on performance during financial recession.

1.2 Problem Discussion and Thesis Contribution

These theories urge one to find more evidence. The research at hand implies that there is conclusive evidence of a certain amount of endurance in family firms that separates them from the regular market. As has been noted, theory suggests that family firms ought to be more long-term oriented and able to bring an element of security to the firm even in times of high market uncertainty. Earlier studies have explored these differences between family and non-family companies during periods of no recession, such as the ones of 1992-1999

(Anderson & Reeb, 2003), 1994-2000 (Villalonga & Amit, 2006) or 1992-2002 (Lee, 2006). Ultimately, it is not obvious whether family firms perform better than non-family firms during times longer periods of market contraction.

On the contrary, one could wonder why it is of importance to evaluate family firm performance specifically during times of global financial crises. First of all, economic recessions are re-occurring events that come around frequently in all major global economies. The consequences and the frequency of crises make them a valid subject of study let alone in their own right. Similarly, strategies that help companies improve profit and firm value during growth cycles are not often the same as those that make firms able to maintain good performance during recessions (Srinivasan, et al., 2011). One could also argue that a long-term strategy ought to encounter stressful cycles eventually, if the company is intended to pass on for succeeding generations. Still, businesses with successful strategies and competitive advantages have many times fallen behind their competitors during times of financial crisis since they failed to adjust their strategies to endure such events (Bajeva, et al., 2002).

In short, family firms are likely not only to outperform other firms during times of no recession – they also appear to have incentives of running a long-term and viable business strategy over generations. There is however little evidence regarding the performance of family firms during times of recessions and high market uncertainty. Additional empirical evidence on the subject would therefore be of helpful contribution in cycles to come. This thesis will explore the performance of publicly listed family firms compared to non-family firms in Sweden during the most recent recession. In addition to this, the study will investigate how the family firm performance is affected if the company founder is still active within the firm. To thoroughly distinguish such effect, the thesis will also test a contradicting argument of how firm age ought to improve company performance in times of recession.

Further, if theory suggests that family firms possess a unique set of characteristics that enhances their performance, there are also more observable mechanisms of a family firm that ought to be highlighted as well. For instance, as noted by La Porta *et al*, family firms tend to exercise high frequencies of pyramidal ownership structures and excessive voting rights – which is particularly common in Sweden but perhaps not generally an acclaimed international practice. Still, if the theories regarding performance of family firms is perceived as accurate,

one could also ponder whether family firm performance origins from the family or simply from the ownership control itself – a critique that we aim to control for in this thesis.

Another central item in every study of family firms is how the scholar choses to define the family firm. In this study, a family firm is identified if the founder of any given firm or a close relative of his/hers hold at least 25 % or more of the voting shares. In addition to this, a family firm can be defined by having a member of the founding family in the top management team or board of directors as well. A thorough discussion of the family firm definition will be given in the third chapter.

1.3 Purpose

Earlier studies suggest that family firms often outperform non-family firms. Theory also suggests that family firms have incentives of running a sustainable long-term business strategy with a focus on maintaining a viable business over generations and in like manner also over business cycles. Therefore, the authors of this study seek to examine whether family firms performed better than non-family firms did during the most recent macroeconomic recession.

In addition to this, the study also seeks to test previous performance findings regarding the impact of the family firm *founder*, but in a Swedish context of market recession. In order to distinguish that impact, we will also study how firm age affects overall firm performance during such circumstances.
Lastly, in order for us to draw adequate conclusions regarding the family firm performance, we will also investigate the connection between ownership control and overall firm performance.

1.4 Audience

This study is essentially directed towards students and scholars of business and finance. Equally so, the authors of this study hope that this thesis will provide help and guidance to anyone that is conducting research in the field of family business.

Chapter II – The Natures of Family Firms and Recessions

This section provides a more thorough understanding of the uniqueness of family firms and especially their effect on company performance. The chapter ends with a discussion of recessions, with a focus on the recent cycle that we aim to examine.

2.1 Behaviours of Family Firms

For the last 30 years, the family business research field has evolved immensely. Studies have progressed from understanding the family business organizational composition to measure their performance capabilities. Early notable contributions focus on the systematic nature of family firm behaviour (Davis & Stern, 1980; Brown & Whiteside, 1991), whereas more recent studies tend to search for more evidence of the distinctive operational and managerial advantages of running a family business (Villalonga & Amit, 2006).

Despite all negative publicity over the years that often illuminate the tearing conflicts within families' corporate empires, the general scientific take on family firms is that they are more likely to succeed than any other kind of business (Brokaw & Murphy, 1992).

The probably most consistent argument for this positive view of the family business is their urge to create multigenerational success, resulting in unique competitive advantages and often-superior firm performance (Habbershon & Williams, 1999).

"Family firms breed sacrifice –

And resilience in tough times"

Brokaw & Murphy (1992) – *'Why family businesses are best' (p.74)*

So, why does not all firms apply the successful recipe of family firms? The answer is that the extraordinary nature of family firms is difficult to replicate. The family firm fosters a family-oriented workplace and is as a result of this it often described as a completely unique working environment. Moreover, the family company is often referred to as the caring company, offering great employee care and as a result of this maintain great employee trust and loyalty (Ward, 1988).

2.2 Performance Capabilities

These family firm characteristics often translate into high productivity and efficiency, which ultimately has its foundation in the concentration of shares a family holds at hand. This has been asserted to increase the sense of mission and long-term goals, since these shares directly represent the private wealth of the family name (Moscetello, 1990; Aronoff & Ward, 1994). Broadly speaking, family controlled firms make greater commitments to their mission and have the ability of sustaining higher amounts of self-analysis, with lesser impact of managerial politics. They find a direct link between family prosperity and company performance, hence possess unique incentives to sustain a viable business over a long time (Habbershon & Williams, 1999).

Processes
- Managing Employees
- Getting Goal Agreement
- Increase Trust
- Encouraging Participation
- Socializing New Employees
- Enhancing Reputation
- Unify the Beliefs Structure of the Group
- Bolster Commitment
- Gaining Flexibility
- Nourish Creativity
- Gain Productivity
- Share Culture across International Borders
- Build Global Alliances
- Abet R&D

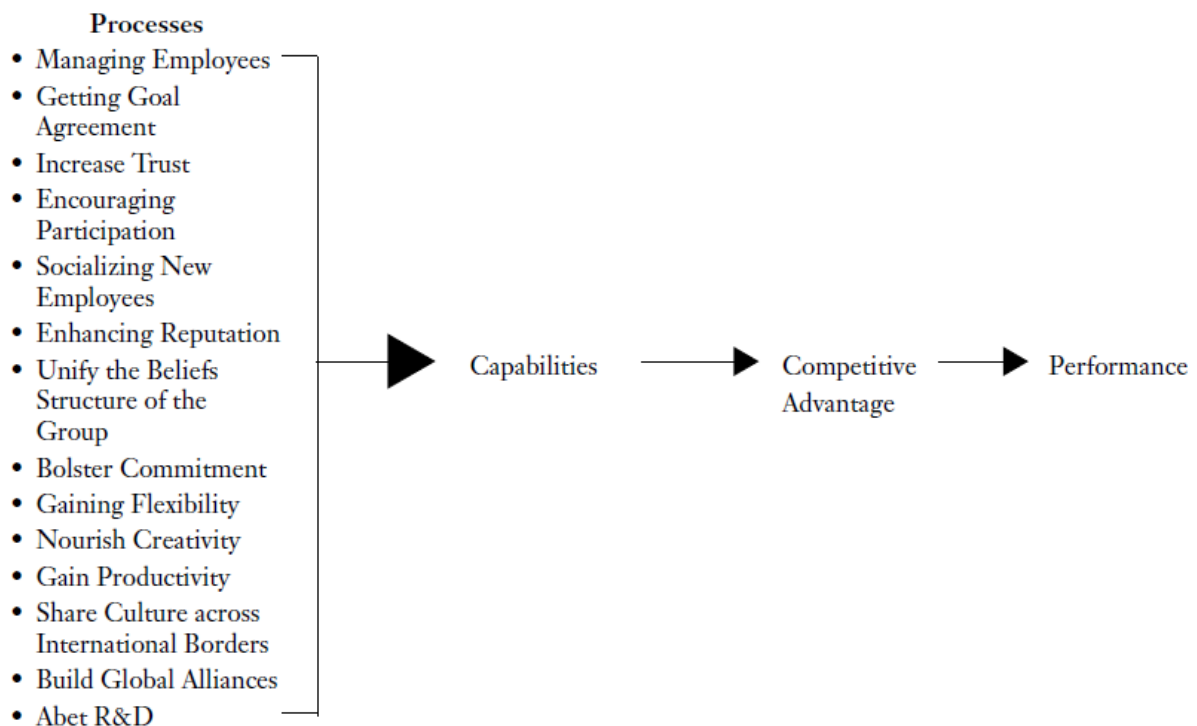→ Capabilities → Competitive Advantage → Performance

Figure 2.1: The process of family business performance *(Habbershon & Williams, 1999)*

As stated in *figure 2.1* above, the family firm characteristics make for multiple benefits that eventually translate into company performance. Some of the advantages are pure results of traditional customer perceptions of family ownership. That is to say, that people who do

business with family members have no reason to doubt the motives of their counterpart (Brokaw & Murphy, 1992). The long and prosperous relationship between a family and its customers, suppliers and other external stakeholders create efficiencies that will have significant impact on company performance (Habbershon & Williams, 1999).

2.3 The Endurance Factor

Again, let us discuss how family firms apply longer horizon goals in their business strategy than other companies do. Since the family firm represents the family legacy it differs from regular companies in many ways, as they do not strive for reaching target growth or realizing excessive return for shareholders (Poutziouris, et al., 2006). Instead, in completely reverse manner, family firms invest in a unique kind of durability - giving up excessive return just to sustain firm viability, if necessary. Members of a family in a certain business are often willing to give up pay, time and status for the sacrifice of the firm (Brokaw & Murphy, 1992). The business strategy of a family firm is said to be inseparable to the family objectives, hence creating a unity in the firm's long-term vision and enhances their commitment to fulfil it.

Such evidence regarding family firm resilience makes it possible to see the link between other family firm theories regarding their endurance ability - especially through rough market conditions. Ward (1997) suggests that family firms are less reactive to economic cycles and Donckels & Frohlich (1991) imply that family firms respond best to busniess environmental changes, thus are less dependent on the macroenvironment and less susceptible to negative cycles.

Altogether, theory suggests that family firms outperform non-family firms during times of macroeconomic downturn due to singular abilities. There is plenty of evidence for the superior performance of family firms versus non-family firms or the market as a whole – but then again no conclusive proof of family firms being superior during financial recession. This is interesting, since both logic and theory dictates that the family impact ought to be of importance in times of economic uncertainty.

2.4 Ownership Structures

An important element when studying family firms is the close examination and understanding of the different types of ownership structures that characterises family firms. Even though the research field of family firms is relatively unexplored, it has grown a lot in complexity over the years. Again, a study is not simply conducted by picking a sample of family firms from any given list; every study has its own definition and any altering of it will have an impact on the result (Habbershon & Williams, 1999; Villalonga & Amit, 2006). To give the reader a more concrete understanding of the sometimes-advanced ownership structures, a few examples of Swedish family ownership structures are demonstrated in sections 2.4.1 and 2.4.2.

2.4.1 Dual-Class Shares

Dual-class stock (also known as dual equity) means that a company applies an equity structure that divides their shares into two or more different classes, often named A-shares and B-shares. Most firms, especially in Sweden, apply a system where the high voting A-shares typically translate to one share being equal to one vote, – whereas the low voting B-shares typically translates to 1/10 of a vote (Holmén, 2005).

However, since our aim is to investigate the impact of family *control*, the *voting percentages* carried through either A- or B-class shares are of particular interest to us. Again, the distribution is very company specific and it is of great importance that one recognizes whether a company apply a dual-share system in order to obtain a reliable firm sample.

In tables 2.1 and 2.2 are two examples of ownership structure in two of the largest family firms in Sweden.

Largest block holders	Amount of shares	% of votes	% of capital
Fam Persson AB	623 849 332	69,71	37,69
Lottie Tham	88 080 400	2,59	5,32
Alecta	64 840 000	1,90	3,92
Swedbank	45 988 720	1,35	1,91

Table 2.1*: H&M largest block holders. Source: H&M annual report 2011* (Hennes & Mauritz AB, 2012)

As demonstrated in table 2.1, the main owner of H&M, Fam Persson AB, possesses the vast majority of votes in the firm (69,71 %). Yet, their portion of the cash flow rights is 37,69 %, which in this study still classifies as a family firm, but translates to almost twice its proportion in votes. That is to say, initially one could be misled through only observing the percentage of cash flow rights, as it is not clear how this translates to amount of votes. Nevertheless, by manually looking through the company annual reports, the correct percentage of votes are displayed – even though the distribution of dual class shares is not specified.

Largest block holders	% of capital	% of votes	Total shares	A-shares	B-shares
FAM AB	12,9	29,0	58 850 000	19 050 000	39 800 000
Alecta	2,1	3,7	9 566 552	2 191 404	7 374 148
Harris Ass.	5,1	2,9	23 019 148	0	23 019 148
Skandia Liv	0,6	2,7	2 649 243	2 084 821	564 422
AFA Försäk.	1,6	2,5	7 165 971	1 378 300	5 787 671

Table 2.2*: SKF AB largest block holders. Source: SKF annual report 2013.* (SKF AB, 2014)

In table 2.2**,** one may be able to recognize a similar pitfall, as most of the software that provide company data present the ownership structure as percentage of capital. Initially then, the researcher may fail to classify SFK AB as a family firm. However, a more thorough observation of annual reports clearly states the opposite, since the 12,9 % that Fam AB holds will translate into 29,0 % of votes. The table also illustrates the potency of A-shares, since Harris Associates Fonder holds the second largest amount of shares in total only through their B-shares. Yet, their missing of A-shares leaves them with merely 2,9 percentages of votes – which is one tenth of Fam AB's voting percentage.

Again, the information that is provided is very company specific. For instance, SFK AB gives a clear overview of the distribution of dual-shares, whereas H&M chose not to specify it. In other words, conducting a study on this subject is challenging and attention to detail is essential in order to obtain reliable results (Anderson & Reeb, 2003).

2.4.2 Pyramidal Holdings

In large parts of the world, complex ownership structures can often be illustrated through the shape of a pyramid – therefore referred to as pyramidal holdings or *pyramidal ownership structures.* The firms involved in these types of business groups are controlled through a chain of companies – a hierarchy of sort. Let us pretend that firm *A* holds a large part of firm *B*'s shares, which in turn holds a large proportion of firm *C*'s shares. The ultimate owner of the pyramid, who controls firm *A* and is therefore also in control of firms *B* and *C*, is often a wealthy family (La Porta, et al., 1999; Riyanto & Toolsema, 2008).

As one may expect, pyramidal ownership structures are not particularly rare in Sweden and also occur frequently through this research. Since this paper is limited to the largest public companies in Sweden, the presence of the most notable families or "*family-spheres*" ought to be recognized and thoroughly studied. By obtaining good insight of the largest ownership spheres on the market, the feasibility of the research should be greatly enhanced (Sund & Ljungström, 2011). Figure 2.2 displays a simplified illustration of the Wallenberg sphere in Sweden.
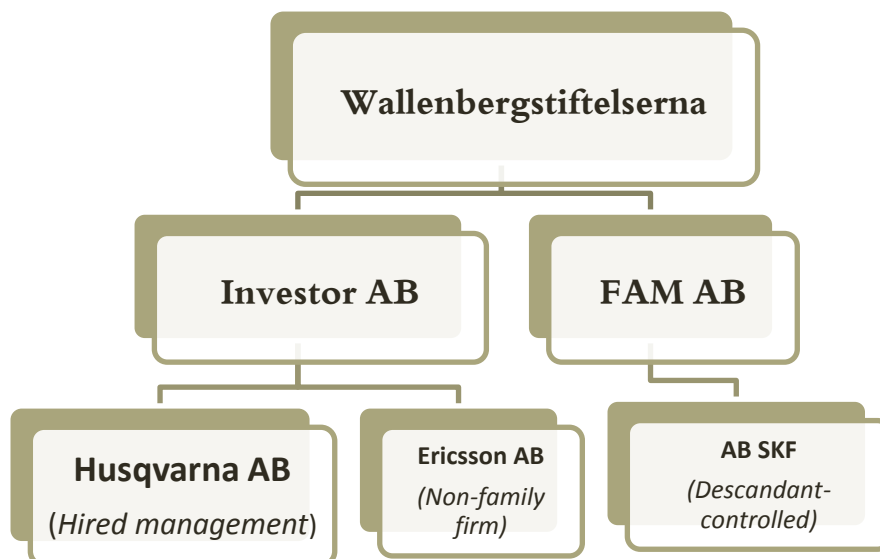

Figure 2.2: Pyramidal holdings illustrated through the Wallenberg sphere. ***Source:*** (Wallenbergstiftelserna, 2015)

As can be seen in figure 2.2, the Wallenberg foundation (Wallenbergstiftelserna) in Sweden is a collection name for the foundations created through the years by members of the

Wallenberg family. The sphere controls two major investment companies, Foundation Asset Management AB (FAM AB) and Investor AB. These firms hold a large amount of shares in several publicly listed Swedish companies, a few of which can be seen above, in what has turned out to be a pyramidal shape.

Remember that our definition of a *family firm* involves a concentration of 25 % of voting shares tied to the family, either directly or through a pyramidal structure such as this one. In other words, the firms in the lower levels of the pyramid should by no means be directly classified as *family firms.* For instance, Investor AB holds an average of 21,50 % of votes in Ericsson AB during our time period and is therefore not to be defined as a family firm. Here, it is important to know that investment and holding companies are excluded from the sample, thus no classification of Investor AB or FAM AB. The data sample and its limitations will be discussed more thoroughly in the fourth chapter. In addition, a more thorough discussion of our chosen family firm definition will be given in the beginning of the third chapter.

Altogether, as exemplified in sections 2.4.1 & 2.4.2, family firms can implement a range of corporate governance mechanisms in order to exercise comprehensive control over the firm. On a relatively small market, such as Sweden, the scholar is able to get an improved understanding about the common structures and relations within the *family spheres,* which ought to enhance the credibility of the research.

2.5 Elements of Macroeconomic Recession

Allow us to turn back the time to many decades ago – more specifically to the year of 1936. John Maynard Keynes published '*The General Theory of Employment, Interest, and Money'* in which he sought to demonstrate the inadequate balance between total production and demand. He argued that the lack of balance and passive financial politics would result in prolonged periods of low productivity and high unemployment, or what we today refer to as a macroeconomic recession. If these elements would be perceived as accurate, logic dictates that firms ought to experience lower performance during times of recession. These are the underlying arguments that make the foundation of our thesis, which will further investigate if family firms have a higher degree of resistance to such negative downturns.

Still, one may ask the question: Why should family firm performance differ particularly in times of economic recession? First, market recessions trigger a unique company behaviour that is likely to differ between family firms and non-family firms (Kashmiri & Mahajan, 2013). Secondly, - and this is the central argument throughout the thesis - family executives are keener on implementing longer investment horizons that ought to last over market cycles (Brokaw, 1992; Maury, 2006; Donckels & Frohlich, 1991; Ward, 1997). Given this perspective, we expect family firms to have adopted a unique resilience towards macroeconomic downturn and thus outperform non-family firms under such circumstances.

On the other hand, and perhaps more importantly, studies point to some unique family firm abilities that are, as Ward (1988) phrases it, 'unquantifiable'. The working environment is said to foster a family-oriented and friendly workplace, as well as maintaining great employee care (Habbershon & Williams, 1999 ;Ward, 1988). Accordingly so, we find great relevance in conducting a study of family firms and more specifically during times of financial crisis.

2.5.1 The Recent Recession and the Eurozone Crisis

On September 15, 2008, the American bank *Lehman Brothers* went into bankruptcy. That would turn out to be the ignition of what is often referred to as the largest global recession since the Great Depression of the 1930s (Fernando, et al., 2012). Shortly thereafter, the recession reached Europe and Sweden. In early 2009, the Swedish Central Bank (Sveriges Riksbank) highlighted how Sweden, as a small open economy would remain highly dependent on global economic circumstances and that tough years were waiting ahead for the Swedish companies (Öberg, vice Governor of the Swedish Central Bank, 2009).
In 2010 however, the Swedish industry had started recovering and as illustrated in figure 2.3 below, the country's total unemployment had decreased almost an entire percentage unit during the year (SCB, 2011). And so, in the spring of 2011 the Governor of the Swedish Central Bank assessed the recession to be over (Sveriges Riksbank, 2012). Interestingly though, the statement was made during the breakout of what today is more commonly referred to as the *Eurozone crisis*. The Governor, Stefan Ingves, explained that the purchasing power of the Swedish Crown would remain strong enough to leave Sweden out of the steeping Eurozone economies.

"The modern financial crisis is over"

- Stefan Ingves, *Governor of Sveriges Riksbank*

March 2011

Today, four years later, one could argue that the recession in Sweden was not at all over, but merely on a temporary pause. Once again, the recent turns of events are fairly simple to identify in figure 2.3. As the Eurozone crisis stroke hard on many European countries, Sweden managed to momentarily avoid any major market downturn.
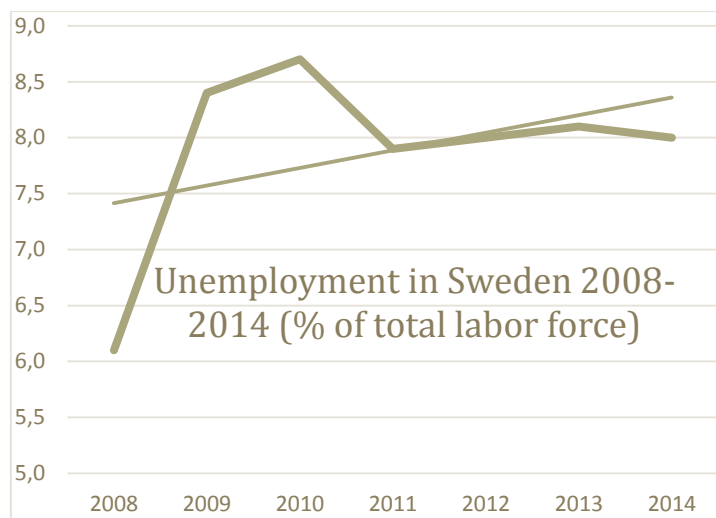
Figure 2.3: Unemployment in Sweden 2008-2014 including trend line.
Source: Statistiska Centralbyrån (2015)

Admittedly, levels of total unemployment do not necessarily mirror all elements of a given cycle, but one could still identify how the Swedish market is struggling to reach the same low level of unemployment as they had before the recession of 2008.

In summary, it is important to understand that any research under extreme market conditions, such as these, require additional wariness when analysing the results. Every cycle is unique and its impact on the results cannot be approached in any general fashion. The above-mentioned points will be taken into consideration when we analyse the results of our sample period later on in this thesis.

Chapter III – Theoretical framework

The third chapter will present the reader with the theoretical background that serves as the foundation for this research. We start by discussing the family firm definition and then highlight some of the most renowned family firm studies. The chapter ends by formulating the empirical hypotheses that we will test for in this thesis.

3.1 Defining the Family Firm

In order to conduct a study on this subject, the first matter at hand is to define: *what is a family firm?* The interpretation has varied over the last decades of family research and it appears that there is still no precise or superior definition of the family firm. According to Habbershon & Williams (1999) most research papers during the end of the 20th century chose their own takes on the definition of "family business" - each of which offered a slightly different nuance. Even though many studies provided a clear definition of the family firm, it was often unclear whether all firms outside the definition were classified as non-family firms and if the family firms enjoyed the same family advantages. As a consequence of this lack of clarity, the family research field has suffered from a credibility gap and has been target for academic criticism. By the same token, many family businesses have experienced frustration, as they wonder why they have not experienced the presumable advantages of other family firms.

Often through previous research, a *family firm* is defined as a company where the "founder or a member of his or her family by either blood or marriage is an officer, director, or block holder, either individually or as a group" (Villalonga & Amit, 2006, p. 389). Villalonga & Amit uses this definition for the main purpose of their article and later compare the results with further restrictions regarding the classification of *family firms*. These restrictions include "a threshold of 20 % of the votes, being the largest shareholder or vote holder, having family officers or directors, or being in second or later generations" (Villalonga & Amit 2006, p.389). It is easy to see the problem of conducting research without the use of such restrictions. For instance, a company where the founder is still in charge is in no strict definition a *family firm*, since the company is perhaps not destined to pass on to his or her heirs. Further, one can question the validity of any given results if the family does not have the majority of voting shares and thereby the family's influence on company results.

Andres (2009) uses a more numerical definition. He simply uses two criteria that can define a family firm: (1) the founder or a relative of the founder holds more than 25 % of the total amount of voting shares, *or* (2) the founding family has a representative on the executive or the supervisory board if they do not meet the 25 % of voting shares requirement in (1). He also states that the process of identifying the firms that are to be included in the sample varies in difficulty. The firms that still have an active founder are easily identified due to the strong connection the founder has with the firm's identity and the fact that they are usually relatively young firms. Problems occur when the family connection is harder to identify due to a longer presence in the firm. These problems can include surname changes or distant family members serving as board members. Andres explains that this will have to be checked manually through examination of annual statements, anniversary publications and other publicly available sources of information.

Similarly, other studies (Anderson & Reeb, 2003; Andres, 2008) break down the *family firm* variable into subcategories in order to examine how family control affects performance. A common division is illustrated in table 3.1.

A) **Founder-controlled firm** – the founder still acts in the top-management team (TMT) or on the board of directors.
B) **Descendant-controlled firm** – the founder is no longer active within the TMT or the board of directors, but has passed on the control to one of his or her descendants.
C) **Hired management** – the firm is still categorized as a family firm but members of the family are no longer involved in the management or on the board of directors.

Table 3.1: Family firms' subcategories. *Source: Andres (2008)*

Andre's definition of a *family firm* is rather narrow and restrictive compared to similar studies (Anderson & Reeb, 2003; Villalonga & Amit, 2006). Then again, it is a matter of interpretation and different studies often uses their own definition. La Porta *et al* (1999) defines the family firm as a firm where a family possesses at least 20 % of the shares while Böhren (2011) requires no less than 50 %. As mentioned earlier, the ultimate categorization on the definition of *family firm* is of big importance, as Villalonga & Amit (2006) concluded that their results were dependent on how they altered the definition.

This study will apply the definition by Andres (2009) to define the *family firm* by the two criteria regarding shares held. In short, this means that if the founder or a close relative to the founder holds 25 % or more of the voting shares **and/or** the founding family have a representative in the enterprise top management or board of directors, the firm will be classified as a *family firm*. Still, family owners may be hard to identify as they can "hide" in pyramids or complex dual-share structures (as discussed in 2.4). Therefore, if an institution holds 25 % or more of the voting shares in a company and the institution itself is controlled according to Andres (2009) criteria (1) or (2), the company will be defined as a *family firm* as well. This percentage should be high enough to ensure that the block holder can shut out minorities and also supply strong incentive to monitor the management and enhance their capability to exercise power over them.

We have also divided the family firms into subcategories in accordance with if they are (A) founder-controlled, (B) descendant-controlled or (C) professionally managed. However, we have found that our sample, which consists of 62 family firms, had a too low frequency of hired management definitions (C) to draw any empirical conclusions. Therefore, we merged category (B) and (C) into 'non-founder family firms' - simply in order to examine the effect of founder control.

3.2 Previous Research

This section presents previous findings that we believe are relevant for our study. As there appears to be no conclusive evidence regarding family firm performance under macroeconomic difficulty, we will combine regular empirical findings of family firms with established theories of how they ought to perform during times of financial crisis. A summary of previous family firm studies can be found in table 3.2 below.

Authors	Region of study	Company type and window	Metrics	Results	Evidence of family control	
					Founder	*Non-founder control*
Adams et al (2007)	US	Public 1992-1999	ROA/TQ	+/+	+	
Anderson & Reeb (2003)	US	Public 1992-1999	ROA/TQ	+/+	+	
Andres (2008)	Germany	Public 2003-2007	ROA/TQ	+/+	+	-
Barontini & Caprio (2006)	Europe	Public 1999-2001	ROA/TQ	+/0	+	0
Bennedsen et al (2007)	Denmark	Public & Private 1994-2002	ROA	0	-	+
Bennedsen & Nielsen (2005)	Europe	Public 1996-1998	ROA/TQ	0/-		
Cronqvist & Nilsson (2003)	Sweden	Public 1991-1997	ROA/TQ	-/-		
Erhardt et al (2006)	Germany	Public 1987-2003	ROA	+	0	0
Kashmiri & Mahajan (2013)	US	Public 2000-2009	TQ	+	+	0
Lee (2006)	US	Public 1992-2002	ROA/ROE	+/0	+	0
Maury (2006)	Europe	Public 2002-2003	ROA	+	+	-
Panunzi et al (2006)	Italy	Public 1998-2003	ROA/ROE/TQ	+/+/+	+	0
Sraer & Thesmar (2006)	France	Public 1994-2000	ROA/ROE	+/+	+	+
Villalonga & Amit (2006)	US	Public 1994-2000	TQ	+	+	-

Table 3.2: Previous empirical evidence of family firm performance

The previous findings are sorted into alphabetical order and the metrics used are Return on Asset (ROA), Tobin's Q (TQ) and Return on Equity (ROE). The results are then illustrated through three different symbols (+, - and 0), which clarifies whether the variable showed positive, negative or neutral impact on performance metrics.

In the three columns marked as *Evidence of Family Control* we note the found relationships between control and performance, given that such evidence was presented by that particular study.

Overall, there appears to be a joint positive impact on performance by family firms. However, worth noting is the fact that the only recognized Swedish study on the matter indicates

negative performance results (Cronqvist & Nilsson, 2003). Also notable is the fact that the *founder* category appears to have a concerted positive impact on family firm performance, whereas other family control categories present rather mixed findings.

3.3 Swedish Family Firms

Let us recall how we earlier determined Sweden as one of the more interesting markets in the world regarding family ownership. La Porta (1999) described Sweden as having the highest frequency of dual-shares and second highest frequency of pyramidal structures. Bebchuk *et al* (2000) argues that only South Africa competes with Sweden regarding these frequencies. On the other hand, many companies in Sweden are by our definition *family firms*, but most of them are private companies (IKEA is perhaps the most acquainted example of this).

Nonetheless, Sweden is a relatively small market in comparison to where many other studies of family firms are conducted (United States, U.K, Germany, Japan etc.) and so the number of prominent families in Sweden is rather small, but they have significant impact on the market. Lundberg, Stenbeck, Rausing, Axel Johnson and Persson are a few examples of notable family names on the Swedish stock exchange (Holmén, 2005).

In the last decade, two studies were made that addressed the impact of family ownership in publicly traded Swedish companies. These studies were quite different in their approach to the subject and so the results were rather mixed as well. Cronqvist and Nilsson (2003) studied 309 Swedish listed firms between 1991 and 1997 and found that firms with controlling minority family shareholders performed worse in terms of return on asset (ROA) and Tobin's Q. Regardless of these results, professors at Jönköpings International Business School found different evidence. In 2007, Bjuggren *et al* displayed how family controlled firms have a positive impact on performance, measured through *marginal q,* which is a slightly different approximation of Tobin's Q. A few years later, Bjuggren & Palmgren (2010) continued their studies of Swedish family firms, this time by measuring investment performance. Once more, earlier research supported the view of family firms performing better than other firms. Then again, there is still an urge to find out whether the renowned family performance is applicable in an economic recession – which can be assumed to inquire for other abilities than normal market circumstances do.

3.4 The Family Impact

One may suggest that theories about family firms are indeed nothing but theories, whereas in practice the firm behaviour is company specific regardless of ownership. The concrete question remains to be answered: Are family firms really different from other business organisations? As we established earlier, family owners favour their decision-making autonomy and the continued viability of the firm rather than achieving targeted growth or realizing excessive return for the shareholders. As a consequence, their risk behaviour is determined mainly by their incentive of remaining viable as well as their desire for strategic and managerial autonomy (Poutziouris, et al., 2006). Additionally, the family's desire of protecting their control of the firm as well as their reputation is another key factor regarding the risk aversion of family firms. Given these points, family owners do not exercise the same attitude towards the firm's aggregate risk as the common diversified shareholders do. Their investment risk is closely linked to the company's aggregate risk, meaning any increase in probability of default is tied to a potential loss of their personal wealth. Hence, the risk aversion attitude of family owners is closer to that of managers than the neutral and diversified shareholder. (Nagar, et al., 2000).

As a result of this, there is a similarity in the interests of managers (related to the owner's family or not) and the family shareholders, a relationship that opposes the *alignment of interests* theory, formulated by Jensen and Meckling (1976). In this case, managers do not align their interest with those of the shareholders, but instead the reverse. Benjamin Maury (2006) found that family controlled firms outperform non-family ones by a significant degree, suggesting the low agency conflicts between managers and shareholders as a valid reason for this.

On the other hand, the arguments of long term-orientation and stability in family firms appear to be the most central arguments in earlier research (Anderson & Reeb, 2003; Casson, 1999; Danco, 1975; Holmén & Högfeldt, 2005; Lee, 2006; Villalonga & Amit, 2006). In addition to this, Villalonga & Amit (2006) adds evidence of how family firms run a more stable company culture through consistent management goals, resulting in an increased resilience to market fluctuations. Miguel Angel Gallo is a former chairman of the *Family Business Chair* where he specialized in the outcome of family firm ownership structure. In 1995, he concluded in *The*

Family Business Review that family firms are less connected to the global markets, an argument for why family firms are less affected by stressful macroeconomic circumstances.

But before the formulation of our first hypotheses regarding family firm performance, it is important to define the *performance* itself that we ought to expect. In order to obtain results that are comparable to previous research, we will apply the two most common performance metrics: Return on Asset and Tobin's Q. These metrics, however, have a quite different take on firm performance. Return on Asset is commonly argued to measure the operating performance of a firm, whilst Tobin's Q is an approximation of firm market value.[1] Therefore, all of our hypotheses will have a two-folded approach in order to distinguish the family variable's effect on both operating performance and market performance.

Ultimately, in line with previous research and family business theory, we formulate our first two hypotheses:

HYPOTHESIS 1

H1a: Family firms perform better than non-family firms during economic recession in terms of operating performance.

H1b**:** Family firms perform better than non-family firms during economic recession in terms of market performance.

3.5 The 'Founder Effect'

As mentioned, founder-controlled firms seem to experience the most of family firm advantages, often referred to as the *founder effect*. Earlier research point out that when a descendant takes over the firm, firm market value is destroyed (Villalonga & Amit, 2006). Overall, indications of previous research clearly suggest an overall consistency regarding founding family firm's superior performance above other family firms (see table 3.2).

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[1] A more thorough variable discussion will be provided in the fourth chapter.

However, despite the fact that research implies that value is destroyed in a descendant-controlled firm or a family firm with hired management, there is still reason to believe that Sweden may provide an extraordinary case. Swedish publicly listed family firms are mainly structured through a small number of large spheres (e.g. figure 2.2) and so the firms in these spheres are often old, thus fairly familiar to changing market conditions. For obvious reasons, an older firm has proven its survivability through earlier cycles and the older (often descendant-controlled) family firms ought to enjoy a high degree of resistance to changing markets. Still, as mentioned, most of previous research suggests that the founding family firms are superior: but interestingly so, only through prosperous macroeconomic periods.

There are however a few theories regarding the superior performance of founding family firms in comparison to other family firms, e.g. stated by J.L Ward (1988). More accurately, his theories point to the drawbacks when succeeding top positions within a family firm. His first theory is that of the *weak successor,* pointing at the inability to cope with the doubts and pressures when succeeding a very successful person prior to you. The unwillingness to disappoint others often affects decision-making and risk taking. The second factor is the *sibling successor conflict.* Just as the name indicates, the unique partnership of succeeding siblings can be a very costly process if serious disagreement occurs, often resulting in one part buying out the other at a tremendous cost of capital and growth potential. This also aligns with the third and final factor of *disparate family goals* – a factor that basically underlines the difficulty of reconciling the needs, values and goals of different family members of the succeeding generation (Ward, 1988).

As mentioned, prior research indicates that an early life-stage listed family firm enjoys great benefits of entrepreneurial abilities and therefore can outperform the market in early years (Anderson & Reeb, 2003). However, in order to distinguish the founder effect in family firms from the general age effect on all firms, we will also investigate how firm age affects performance. That is to say, that age can be argued to have a positive impact on firms during recession due to the increased experience and endurance in the firm, but is quite contradictory to the theories of the founder effect. Kashmiri & Mahajan (2013) suggests that performance of public firms in the U.S market was positively driven by firm age during the most recent recession. This is an argument that appears quite logical. But altogether, to state that founding family firms *simultaneously* perform better *together* with old firms is rather contradicting, and

we therefore aim to test the arguments through two different hypotheses. Hypothesis 2a-b will test the previous empirics of how *founding* family firms perform better during regular market conditions, whilst 3a-b will test if old firms experience an advantageous performance through rough market cycles. Combining these two results ought to provide us with enough information to distinguish if founder control in family firm is ultimately advantageous in a market recession.

HYPOTHESIS 2

H2a: Family firms with an active founder perform better than other family firms in terms of operating performance during recession.

H2b: Family firms with an active founder perform better than other family firms in terms of market performance during recession.

HYPOTHESIS 3

H3a: Firm age has a positive impact on overall operating performance during recession.

H3b: Firm age has a positive impact on overall market performance during recession.

3.6 Separation of Ownership and Control

Lastly, in order for this thesis to draw equitable conclusions, we must address the question: Does family ownership *per se* affect the firm performance or is it mainly depending on the ownership concentration, regardless of who the owner is? Berle and Means (1932) suggested that concentrated ownership ought to have a positive effect on firm value due to equivalent interest of managers and shareholders, a theory further developed by Fama & Jensen many years later. In *The Journal of Law and Economics*, they investigate what organizational form that ought to survive through covering costs in a highly competitive market while reaching targeted levels of demand. Their initial assumption is that a company with separated risk-bearers (i.e. major claimants of residuals) and controllers (i.e. decision managers) need to control agency problems to a larger extent than those firms who have smaller separation of

risk and control. They concluded, that an organizational form ought to survive when both agency costs and efficiency advantages of concentrated ownership results in the delivery of a product at a lower price than other ownership structures (Fama & Jensen, 1983).

As illustrated earlier in the second chapter, firms can exercise governance mechanisms, such as dual-class shares, in order to enhance ownership control. In other words, the voting ownership (control) does not necessarily mirror the capital ownership (cash flow rights), as demonstrated in table 2.1 and 2.2. That ownership separation is sometimes referred to as ownership *wedge*, which marks the difference between voting ownership and ordinary cash flow rights. Ownership enhancing mechanisms have displayed slightly mixed effects on firm performance. Panunzi *et al* (2006) established that enhanced voting ownership had a positive impact on firm performance, whereas Cronqvist & Nilsson (2003) established the direct opposite. However, Cronqvist & Nilsson also concluded that such control mechanisms are particularly common in family firms – similar to earlier mentioned theories by La Porta *et al*.

Since *wedge* ultimately is connected to excessive firm control, this means that *wedge* also ought to capture the drivers of firm performance. We believe this is intriguing, since such argument is very similar to that of superior family firm performance. We already established how family owners inherently possess incentives of connecting company prosperity to family wealth – which ought to be advantageous in a recession. By the same token, non-family firms also ought to enjoy a positive effect of a committed owner. After all, a founder CEO of a family firm can have zero ownership in a firm and it still classifies as a *family firm*, whilst an institution may hold 40 % of votes in another firm and indeed be very committed to firm achievements.

We believe this is a central critique against family firm performance research that we want to provide against in this study. Even though there is no doubt that family firms possess blood related incentives that other firms are unable to replicate, one should not ignore the fact that 'regular' voting owners also can possess a strong sense of solidarity with the firm. However, since family firms are keener on implementing control enhancement of ownership, the presence of ownership *wedge* ought to be very frequent in family firms. Still, it is a numerical measure of ownership commitment and not a classification of ownership type, like the family firm variable.

As we argue that firms ought to benefit from ownership commitment in a recession, we believe that *wedge* should have a positive impact on firm performance. In short, to properly analyse the family firm performance, we formulate our last two hypotheses:

HYPOTHESIS 4

H4a: Enhanced ownership voting control has a positive impact on overall firm operating performance during recession.

H4b: Enhanced ownership voting control has a positive impact on overall firm market performance during recession.

3.7 Summary of Theoretical Foundation

Hypothesis	Supporting Theory	Supporting Evidence
H1a: Family firms perform better than non-family firms during recession in terms of operating performance. H1b: Family firms perform better than non-family firms during economic recession in terms of market performance	(Brokaw & Murphy, 1992), (Donckels & Frohlich, 1991), (Ward, 1988), (Habbershon & Williams, 1999)	(Anderson & Reeb, 2003), (Maury, 2006), (Sraer & Thesmar, 2007), (Panunzi, et al., 2006)
H2a: Family firms with an active founder perform better than other family firms in terms of operating performance during recession. H2b: Family firms with an active founder perform better than other family firms in terms of market performance during recession.	(Ward, 1997)	(Anderson & Reeb, 2003), (Villalonga & Amit, 2006), (Barontini & Caprio, 2006)
H3a: Firm age has a positive impact on overall operating performance during recession. H3b: Firm age has a positive impact on overall market performance during recession.		(Anderson & Reeb, 2003), (Kashmiri & Mahajan, 2013)
H4a: Enhanced ownership voting control has a positive impact on overall firm operating performance during recession. H4b: Enhanced ownership voting control has a positive impact on overall firm market performance.	(Berle & Means, 1932), (Fama & Jensen, 1983)	(Panunzi, et al., 2006), (Barontini & Caprio, 2006)

Table 3.5: *Summary of theoretical foundation*

Chapter IV – Methodology

This chapter will provide the reader with an understanding of the empirical methodology applied in this thesis. The first section will discuss the process of constructing the sample for the study, as well as present the different variables that are investigated. The section ends with a closer understanding of the estimation techniques used on the dataset.

4.1 Research Approach

This thesis aims to conduct a study regarding the performance and endurance of Swedish family firms during stressful macroeconomic circumstances; hence a deductive approach to the research (Patel & Davidsson, 1991). We will use a combination of descriptive statistics together with regression analysis to get a thorough understanding of the results. The reason for this combining approach is that our sample period is relatively unexplored and we therefore put additional weight into to the descriptive analysis in order to observe trends in the dataset.

Our panel data regressions will be made in multiple specifications in order to draw adequate conclusions and improve the robustness of the study results. A complete methodology guide will be provided later in this chapter.

Since key-metrics and performance measures are purely numeric, the collected data is solely quantitative. Correspondingly, the data is objective and interpretations ought to be quite straightforward.

4.2 Constructing the Dataset

As mentioned in the previous section, this research is conducted through a quantitative approach. This section provides a walk-through of the data collected as well as a presentation of the method applied to accomplish the research approach.

4.2.1 Sample Overview

The sample of this study consists of Swedish publicly listed companies during the time period of 2009 to 2013. The firms are traded on the Stockholm Stock Exchange, or more specifically

on the large-, mid- and small-cap lists. Since the purpose of this study is to evaluate firms' resistance to the latest economic crisis, any company that was initially listed later than 2009 will not be taken into consideration. Identically, any firm that has been unlisted or seized to exist during the time period has been excluded as well. Even though one could argue that these firms would be contributing to the thesis, their frequency is close to zero and their absence will not jeopardize the final result.

Firms acting in the financial sector (banks, insurance companies, holding companies etc.) have also been subtracted from the sample. The reason for this is that these institutes often operate directly from legislation to maintain certain levels of financial ratios, thus potentially resulting in biased results. Likewise, medical research companies were cut from the sample, as their performance measures are highly dependent on success through research and therefore incomparable with the rest of the sample.

Altogether, the final sample was equal to 139 firms including 62 family firms, resulting in a total of 695 observations for each variable over five years, given that no observations are missing. A more detailed list of observations will be provided in table 5.1.

4.2.2 Sources of Data

All data used to conduct this study is *secondary* and collected through two software programmes. *Thomson DataStream* was used for total sales and market capitalization. All other accounting data was collected through *Thomson Reuters Eikon.* In the few cases where these databases provided insufficient data, proxies were carried out manually through the companies' annual reports. In addition, the annual reports provided us with information regarding firm ownership structure and management. A complete variable list will be provided later in this chapter.

4.3 Criticism of Methodology

As mentioned earlier, a central critique that all studies of family ownership have to endure is the question of comparability to previous research, mainly because of various altering in the family firm classification. This study also has a rather unique approach, by applying the family firm definition of Andres (2009) and largely the methodology of Anderson & Reeb

(2003). Under such circumstances, one may suggest that the study follows an inadequate pattern and that the results will not be comparable to previous research. The reason for our research approach is fairly simple. Even though Anderson & Reeb uses a 5 % ownership mark for the family firm definition, such demarcation would be inferior to replicate on the Swedish market because of its large number of family owners involved. By such classification in our thesis, there would be relatively few non-family firms left to compare our results to. Likewise, we believe that this type of study on the Swedish market relies on a greater degree of advanced implementation. Earlier scholars of family business often use ready-made and easily feasible information, such as the S&P 500 (Anderson & Reeb, 2003), Fortune-500 (Villalonga & Amit, 2006) or FTSE 100 (Poutziouris, et al., 2006). All data of this study had to be manually conducted and therefore adds an edge to the scientific contribution.

4.4 Validity and Reliability

Regardless of the field of study, it is of great importance to evaluate the methodology in order to establish credible results that can contribute to the scientific development in the research field. Eriksson & Wiedersheim-Paul (2014) describes two main aspects that every scholar should consider: *validity* and *reliability*. The first refers to the ability of the methodology to measure what it is supposed to measure and the latter stresses the importance of the methodology to supply reliable and trustworthy results. I.e., a study is reliable if the methodology provides the same result every time it is applied.

Normally, when referring to *validity* in a research, the central argument is to prove how well the methodology solely serves the purpose of the thesis. We argue that our methodology is valid in the sense that it is influenced by renowned and reliable previous research and established theories of family firms, performance and recessions. In addition, scholars sometimes refer to two different distinctions of validity: *internal* and *external* (Lundahl & Skärvad, 1999).

To achieve *internal* validity, there has to be a causal relationship between the sample and the variables. Our thesis has addressed this matter by only including firms who ought to be affected in a similar manner by the market recession (see 4.2.1 – *Sample Overview*). In addition, all firms are traded on the Swedish large-, mid- and small-cap lists and most variables have been adjusted for time and industry (see 4.7 – *Industry and Time Adjustments*).

External validity refers to the extent of which results can be generalized and applied to other situations. We argue that our thesis addresses this issue to a high degree, since additional hypotheses have been carefully formulated just in order to draw valid conclusions of our main inquiry, which is to investigate family firm performance during economic recession.

In addition to this, we have also performed necessary data validity diagnostic tests (normal distribution of residuals, heteroscedasticity and multicollinearity) to further strengthen the validity of the research. These tests are presented and discussed in section 5.4.

To achieve *reliability* in a study, data has to be collected in a consistent way over similar samples, meaning that any scholar should be able to follow the outlined steps in order to replicate the study results. We argue that the software databases that are applied to this study are widely used by academics in the field of finance and therefore of high reliability. However, since we have applied Andres' (2009) family firm criteria *manually* on each firm by investigating the ownership structure, there is still a possibility of data error. As already pointed out, there is no given list of family firms and the estimation technique is not straightforward by any means. Family firms can sometimes appear to 'hide' in complicated ownership structures, distant relatives or surname changes. The exactitude is therefore mainly relying on the author to perform thorough investigation of the company history and ownership background.

Regardless of this critique, we judge that our estimations are thorough and that possible errors ought to have a marginal impact on the results.

4.5 The Variables

Since the research method of this study is influenced by Anderson & Reeb (2003), many of their variables have been directly duplicated into this study. However, a few variable changes were made in order to suite our take on the subject matter; among others the merge of non-founder controlled family firms. All variables are explained and motivated through the following sections below.

4.5.1 Dependent Variables

We use two metrics to measure performance in our study: *Return on Asset (ROA)* and *Tobin's Q (TQ)*. The two variables are defined in in table 4.1 below.

Dependent Variables	Description of Variables
Return on asset (ROA)	Pre-tax net income / Total assets
Tobin's Q (TQ)	(Market capitalization + Book value of debt) / Total assets

Table 4.1: Description of dependent variables

As briefly discussed in the previous chapter, these two variables have a quite different approach to firm performance. ROA is defined as pre-tax[2] net income divided by total assets, whereas TQ, a common proxy of firm value, is defined as market capitalization and book value of debt divided by total assets. These dependent variables are implied through plenty of family firm studies that the make the foundation of our theoretical background (Anderson & Reeb, 2003; Villalonga & Amit, 2006; Barontini & Caprio, 2006; Andres, 2008; Kashmiri & Mahajan, 2013) and both of them are therefore relevant for us in order to obtain comparable results. Nevertheless, these variables are not bound to follow any eqvuivalent pattern, as they are determined by different factors. Since ROA is based on a firms profitability relative to its size, it can be described as a pure operational metric. Tobin's Q, on the other hand, reflects how the market values the company and is a commonly used metric in both valuation *and* performance research. Its exact definition, however, has been subject for minor altering by different scholars. A common definition of Tobin's Q is 'enterprise value divided by the replacement cost of all assets'. One could argue that this is a good proxy for valuation, but the metric is quite difficult to manually conduct over many observations. This thesis therefore turn to a more common proxy of Tobin's Q, which is much a like a market-to-book value. The ratio is defined as market value of debt and equity divided by total company book values. Conversely, given that the debt has a fixed interest rate not very different from market interest rates, our estimation of debt market value being equal to book value of debt is quite realistic.

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[2] As all Swedish firms have the same fixed tax-rate, the calculations will not be biased over the sample.

We believe that these assumptions, on average, are applicable to our sample. They are also much in line with previous conducted similar resarch, e.g. Barontini & Caprio (2006).

Ultimately, this study will measure performance through a two-folded dimension: Operational performance (ROA) and Market performance (TQ), as noted in the hypotheses.

4.5.2 Control Variables

In all of our regressions we will use five control variables, all of which are described in table 4.2

Control Variable	*Description*
LN (Sales)	The natural logarithm of total sales
LN (Age)	The natural logarithm of firm age
LTD / Tot. Assets	Long-term debt divided by total assets.
Div. Yield.	Dividend divided by the book-value of equity
Unaffiliated block holders	The sum of unaffiliated block holders that hold at least 5 % of votes.

Table 4.2: Description of control variables

In almost every study of this type there is a control for *company size*, often by the use of total assets or total sales. Since our dependent variables are calculated by using total assets, we chose to use total sales to control for size, which ought to be less correlated. We also chose to include *firm age* as a control variable since one could argue there are both advantages and disadvantages depending on every life-stage of a company, e.g. for a young firm that enjoy entrepreneurial benefits but suffers from market inexperience. *Long-term debt* or leverage is also commonly used in other similar performance studies and the argument that it ought to explain a part of performance and valuation seems rather straightforward. We also control for dividend since the signalling effects of dividend ought to be a driver of firm market value and high performance.

Further, much in line with Anderson & Reeb, we include a variable called *unaffiliated block holders* that ought to have an influence on both firm performance and family control. This variable is calculated as the sum of voting percentage from block holders that hold more than

5 % of votes and have no close ties to other block holders, directors or managers. To collect this data, we use annual report statements for three years of the time period: 2009, 2011 and 2013 to capture the change in the variable. Note that this variable is not to be confused with our research variable *wedge*, which measures the difference in voting rights and cash flow rights.

4.5.3 Variables Used for Testing of the Hypotheses

The following table (4.3) provides a list of the variables that will be used to test for our hypotheses. The table introduces each variable with a brief description, its connected hypothesis and the expected outcome.

Research Variable	Description	Hypothesis and Expected Sign
Family Firm	A dummy variable indicating family firm classification	H1a-b: Positive impact on operation- and market performance.
Founder Active	A dummy variable indicating control through a founding family member	H2a-b: Most positive impact on operation- and market performance among family firms
Non-Founder	A dummy variable indicating control through a descendant family member or a hired management	H2a-b: Less positive impact on operation- and market performance than the active founder variable.
Age Dummy	A dummy variable that indicates if the firm was founded at least 50 years before the time period	H3a-b: Positive impact on operation- and market performance on all firms.
Wedge	The difference in voting ownership and cash flow ownership of the largest owner.	H4a-b: Positive impact on operation- and market performance on all firms.

Table 4.3: Description of research variables

The *family firm* variable is rather straightforward: the variable takes on the value one if the firm classifies as a family firm and zero if the definition criteria are not met (for family firm definition, see chapter 3 – 'defining the family firm'). In addition, we investigate the *founder*

effect by dividing all family firms into two dummy variable subcategories. *Founder active* is a dummy variable that will take the value of one if the founder of the family firm is still acting in the TMT or on the board of directors. Likewise, if the company had multiple founders, the presence of any of these founders will suffice to reach the criterion. If a family firm have acquired a significant number of shares in another firm and that firm thus qualifies as a family firm as well, the founder of the acquiring firm is accounted for in the dummy variable. The next classification, *non-founder*, takes on the value one if there is no founder present in the family firm. Instead a *descendant*, heir or closely related family member to the founder is acting in the TMT or on the board of directors. A *non-founder* classification could also indicate a *hired management*, i.e. the family does not enjoy any direct managerial power over the firm, but the firm still qualifies as a family firm through their voting ownership. As mentioned earlier though, these two non-founder subcategories have been merged together in this thesis due to the low amount of *hired management* family firms.

Further, to get a better understanding of the *founder effect*, we test for firm age by applying the same dummy variable as Anderson & Reeb (2003), which will take on the value one of the firm is at least 50 years old. We argue that this time frame ought to be long (short) enough to be comparable to the *founder effect*. Lastly, we calculate firm *wedge* by subtracting the voting ownership by the cash flow rights of the largest owner in every company. Just as our *unaffiliated block holder* variable, the change in *wedge* was estimated through three annual reports of all firms: 2009, 2011 and 2013.

4.6 Adjustment for Outliers

In order to get a reliable and standardized dataset, we chose to exclude some outliers in the sample, i.e. extreme values. The observations we defined as outliers had a ROA value higher than 50 % or lower than -50 %, or a Tobin's Q above 10 or below 0.1.

4.7 Industry and Time Adjustment

In a performance study, adjusting for time and industry can mitigate any biased results. Such bias could be the result of, e.g. high concentration of family firms in a relatively well

performing industry. Also, adjusting for time is of particular importance for this study, since the recession ultimately strikes different industries at different times and at different strength.

Industry ROA	*Raw Materials*	*Industrial*	*Consumer Goods*	*Consumer Service*	*Technology & Telecom*
Average	3,5 %	6,1 %	6,3 %	7,4 %	7,7 %
Median	3,3 %	7,2 %	4,9 %	7,1 %	8,6 %
Standard Deviation	11,7 %	11,2 %	9,6 %	13,5 %	13,9 %

Industry TQ	*Raw Materials*	*Industrial*	*Consumer Goods*	*Consumer Service*	*Technology & Telecom*
Average	0,93	1,27	0,94	1,43	1,47
Median	0,58	0,91	0,75	0,95	0,94
Standard deviation	1,02	1,46	0,78	1,44	1,51
N (number of firm years)	**60**	**295**	**80**	**110**	**150**

Table 4.4: *Industry Performance according to NASDAQ industry classification, adjusted for outliers.*

Table 4.4 demonstrates the average value, median value and standard deviations of ROA and Tobin's Q for the industries included the sample, adjusted for outliers. As one can identify, the performance differs between industries and we therefore adjust every observation of ROA and Tobin's Q with the industry average for that particular year. This ought to mitigate both the bias of temporal macroeconomic swings in any particular year, as well as the excess performance of any given industry.

All firms in the sample have been sorted into industries according to the industry list provided by Nasdaq OMX Nordic. Due to the low firm frequency in the telecom industry, these observations were merged together with those of the technology industry. Next, every observation has been subtracted with the yearly industry means or estimated with its relative difference to the industry mean.

In addition to the dependent variables, total sales, dividend yield and long-term debt were also adjusted as they can be assumed to also systematically differ through industries and years on average.

4.8 Method of Analysis

Again, we aim to analyse our results through both descriptive statistics and regression analysis. Standard regression models are commonly used through performance research, e.g. Anderson & Reeb (2003), Villalonga *et al* (2006) and Kashmiri & Mahajan (2013). Therefore, the regression analysis applied in this study will be a panel data regression model (ordinary least squares), more specifically influenced by the ones of Anderson & Reeb (2003) and Villalonga *et al* (2006).

In accordance with the variables explained and defined earlier, we specify the following basic regression model:

$$\gamma = \alpha + \beta_1 Ln(Sales) + \beta_2 Ln(Age) + \beta_3 DivYield + \beta_4 Longterm\ Debt + \beta_5 Unaffiliated\ Block\ holders$$

This specification is quite different from previous research conducted in the research field, but then again the aim of our study is not exactly the same as e.g. Anderson & Reeb. Ultimately, most studies apply their own take on the basic regression specification and we argue that our specification ought to capture the majority of the dependant variable elements in a recession. In addition to this basic specification, we will include more variables in different regressions to test for our hypotheses, all of which are defined in earlier table 4.3.

4.9 Ordinary Least Squares Methodology Assumptions

For an ordinary least squares (OLS) methodology to be applicable, a few assumptions regarding the dataset have to be fulfilled.

Brooks (2014) lists *five* criteria that have to be met in order for OLS modelling to be appropriate. In this section, you find a comprehensive definition of these criteria and how we control for them.

I. $E(u_t)$

The first criterion implies that the average error term in the regression has to be zero. We will prevent for this by including an intercept in all of our regressions.

II. $Var(u_t) = \sigma^2 < \infty$

The second criterion refers to how the error term must have constant variance, often referred to as *homoscedasticity*. If this condition is violated, estimators may yield false interpretations, also known as *heteroscedasticity*. We perform Breusch-Pagan tests on the regressions to check for heteroscedasticity. If the p-value of the f-test is significant at a 5 % level we apply White's covariance matrix to correct for the heteroscedasticity. These tests are attached in the appendix (A.1) at the end of the thesis.

III. $Cov(u_j, u_j) = 0$

Brooks' third criterion refers to *autocorrelation* in the regression, e.g. a phenomena where residuals in the regression are dependent on each other. In such an event, the beta coefficient becomes inefficient, which may result in false interpretations. However, testing for autocorrelation by using Breusch-Godfrey tests is mainly applicable on time-series data and not commonly used on panel data. Further, using a data series with a relatively short time window, such as ours, makes it difficult to observe autocorrelation trends in the variables. For these reasons we do not investigate autocorrelation in our dataset.

IV. $Cov(u_j, x_j) = 0$

The fourth criterion refers to *endogeneity* in the data. This means, that independent variables are correlated with the error term – indicating that estimators are determined within the

regression instead of outside of it. There is no way of entirely solving the endogeneity problem, but there are potential ways of adjusting for it. Still, the general understanding from our previous research suggests that high levels of endogeneity is not common in this type of research and we will therefore not adjust the data for endogeneity. We will, however, discuss the potential of endogeneity issues when theory indicates that such could exist.

V. **($U_t \sim N(0, \sigma^2)$)**

The last criterion implies that residuals have to be normally distributed. We illustrate the normality distribution of our basic regression specification in the appendix (A.2) and attach the Jarque-Bera tests to check the normality distribution.

Chapter V – Main Results

In this chapter, we present the reader with the most important empirical findings of the thesis. First, we present and analyse the descriptive statistics, followed by a presentation of the OLS regression results. The chapter is rounded up with a discussion regarding the robustness of the results.

5.1 Descriptive Statistics

This section aims to display and analyse the most essential descriptive statistics. Some of the most important firm characteristics are highlighted in table 5.1 (all firms) and 5.2 (only family firms).

Variable	Mean	Median	Standard Deviation	Observations
ROA	6,4 %	6,8 %	12 %	690
Tobin's Q	1,27	0,88	1,38	693
Sales	14 319	2001	36 652	692
Total Assets	15 191	1595	44 940	695
Age	55	36	51	695
LTD/Total Assets	12,46 %	8,15 %	13,8 %	693
Wedge	8,61 %	0 %	13,1 %	680
Dividend Yield	3,44	2,6	4,47	691
Unaffiliated holdings	13,5 %	11,8 %	11,5 %	695
Number of firms = 139			*Maximum observations = 695*	

Table 5.1: *Summary of firm characteristics. All firms included. Sales and total assets are displayed in millions of SEK (MSEK).*

As noted in table 5.1, our data is *unbalanced*. This means, that individual firms have missing observations over periods of time and that a fixed-effects regression would retain certain drawbacks. Our specification, however, is not a fixed-effects model. This will be further discussed later in this chapter (5.5.2).

Through table 5.1, one can identify that most variables appear to have higher mean values than median values, implying the presence of outliers in the sample. This has been adjusted

by the earlier mentioned approach, but is still of good importance to keep in mind whilst analysing the results. Before analysing any further, let us introduce another similar table – but this time only including the classified family firms:

Variable	Mean	Median	Standard Deviation	Observations
ROA	8,33 %	8,45 %	11,7 %	310
Tobin's Q	1,43	1,0	1,59	310
Sales	11 969	1680	23 606	310
Total Assets	10 418	2000	18 458	310
Age	55,9	37	51,6	310
LTD/Total Assets	13,4 %	9,5 %	13,4 %	308
Wedge	15 %	16,5 %	14,8 %	295
Dividend Yield	3,66	3,19	3,5	310
Unaffiliated holdings	10 %	6,96 %	10,7 %	310
Number of firms = 62			*Maximum observations = 310*	

Table 5.2: *Summary of firm characteristics, family firms only. Sales and total assets are displayed in millions of SEK (MSEK).*

Here, we have our first indications of what characterizes the family firms in our sample. One can almost immediately recognize that family firms signal higher levels of performance through these statistics, both in ROA and Tobin's Q. Of course, these numbers only serve as a suggestion of what we may expect in our regressions and one should not draw too distinct inferences from these statistics.

Further, the values of *wedge* and *unaffiliated holdings* indicate that our assumptions regarding family firm's governance mechanisms can be perceived as accurate. Family firms appear to be keener on translating shares into more powerful voting rights than regular block holders, a practice that can be confirmed by looking at the difference in *wedge*. In addition, the unaffiliated holdings appear to be lesser in family firms, which also assent to the families' excessive control in comparison to other owners. Figure 5.1 illustrates the exponential relation between average ROA and firm wedge.
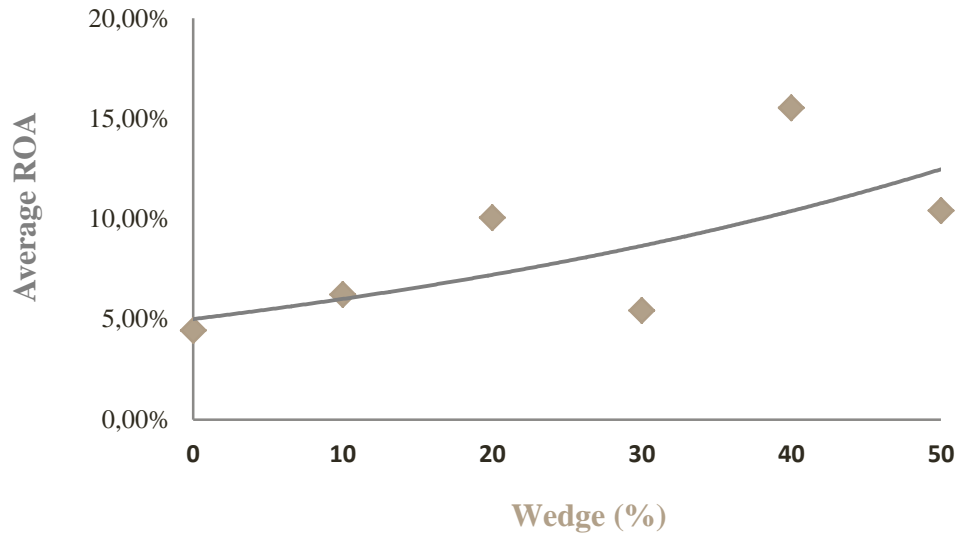
Figure 5.1: *Average ROA illustrated in ten percentage magnitudes of ownership wedge.*

The figure displays the average ROA through different wedge levels. Zero or negative wedge are displayed to the far left and wedge values of fifty percentage or more are displayed to the far right. Much in line with expectations, there appears to be an overall positive relationship between wedge and operating performance. However, this is not exclusive for family firms and for that reason we must be extra deliberate when we analyse the final results. That is to say, even though it is obvious that family firms ought to have a higher wedge, our research may not be able to completely address whether high performance origins from the involved family or the excessive control *per se*. Still, the relationship is fluctuating, indicating that there may be elements within the wedge that are not explained in our data. A similar figure is drawn for Tobin's Q in figure 5.2.
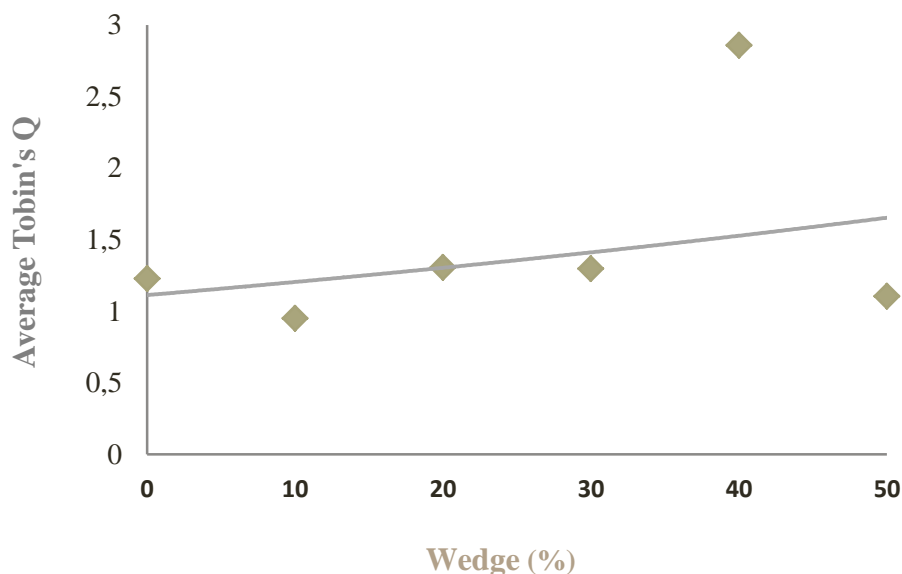
Figure 5.2: *Average TQ illustrated in ten percentage magnitudes of ownership wedge.*

The relationship illustrated in figure 5.2 is slightly different to that than in figure 5.1. First, even though the 40 % wedge segment appears to have extraordinary TQ values, one must understand that observations in this segment are quite few. Secondly, as we discussed earlier, *Tobin's Q* appears to have different performance drivers than *Return on Asset,* which is also suggested by these two figures. Also, since we believe that *wedge* ought to enhance performance in recessions, logic dictates that we can expect different results regarding operating- and market performance in our regression.

In table 5.3, we briefly examine the average statistics of our family firm subcategories.

	Founder	Non-Founder
ROA	8,5 %	5,2 %
Tobin's Q	1,48	1,37
Age	34,8	83,2

Table 5.3: *Average ROA, TQ and age according to family firm subcategories.*

Much in line with previous research, the founder subcategory appears to be better than other family firms in terms of performance. However, as already highlighted, the relative difference in Tobin's Q is rather narrow compared to ROA, and we therefore do not expect that the

regression will display a distinct *founder effect* in terms of market performance. Furthermore, just as expected, there is a significant age difference among family firms and this makes the contradicting age hypothesis very interesting. The value of 34,8 also indicates that our age dummy (50 years) is a suitable classification in order to analyse the *founder effect*. Still, 35 years is a rather high mean value for firms with an active founder, indicating that our sample is heavily characterised by large firms. This is not surprising since our sample consists of the largest publicly listed firms in Sweden and logic dictates that large sized firms also ought to be older than small ones.

As explained in the previous chapter, the firms in our sample are collected through the Stockholm Stock Exchange lists, divided into market capitalization segments called *large*, *mid* and *small*. Their respective performance metrics are displayed in the tables below.

Yearly Average ROA

	2009	2010	2011	2012	2013
■ Large Cap	7,58%	12,34%	13,08%	11,15%	10,74%
■ Mid Cap	6,13%	9,55%	10,46%	8,93%	8,79%
■ Small Cap	2,15%	2,29%	4,64%	2,83%	0,88%
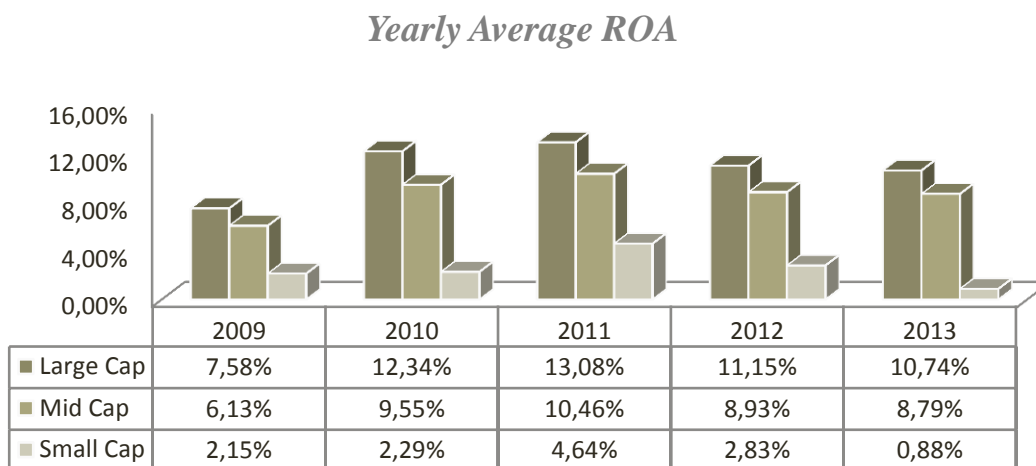
Figure 5.3: *Yearly average ROA according to public list categories. All firms included.*

Yearly Average TQ

	2009	2010	2011	2012	2013
■ Large Cap	1,26	1,79	1,55	1,92	1,91
■ Mid Cap	1,17	1,46	1,08	1,18	1,42
■ Small Cap	1,19	1,19	0,84	0,87	1,08
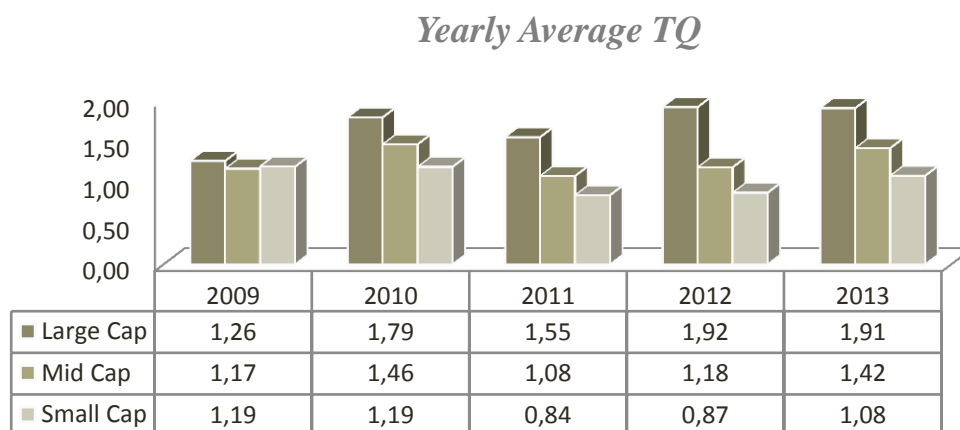
Figure 5.4: *Yearly average TQ according to public list categories. All firms included.*

These figures clearly illustrate how larger public companies carry an edge in performance. This, we argue, is quite logical in a recession. On that note, we can confirm that 2009 was the most inferior year in terms of performance – also predicted in our cycle discussion earlier. However, these results are quite interesting for other reasons. For instance, as stated in tables 5.1 and 5.2, family firms are smaller on average in terms of *total sales* and *total assets* but their performance is suggested to be superior. This could signal of the importance of the renowned *founder effect* - the theory of how young family firms in early years enjoy unique advantages in the presence of the company founder. For obvious reasons, family firms with an active founder are not as old as other family firms on average, and likewise are the largest public companies often quite old. An improved understanding is given in figures 5.5 and 5.6, which displays average ROA of all firms *and* family firms in a matrix of size (total sales) and age.

	Larger	Smaller
Older	8,98 %	5,4 %
Younger	6,64 %	4,18 %

Figure 5.5: *Average ROA in a quadrant matrix of size and age. All firms included.*

	Larger	Smaller
Older	9,82 %	10,0 %
Younger	8,66 %	5, 67 %

Figure 5.6: *Average ROA in a quadrant matrix of size and age. Only family firms included.*

In the figures above, all family firms are divided into one of the four quadrants depending on their above- or below values of median size and age. We note in figure 5.5 that performance of all firms on average appear to be highly driven by firm size and firm age. Again, one would argue that this is rather logical in a recession – which ought to inquire resilience and experience. Yet, family firms do not appear to be driven by the same attributes. Among the older family firms, the size of the company does not indicate any particular benefit at all, and the age gap among larger companies is not as momentous as for all firms in the sample. Again, these indications suggest the positive presence of the *founder effect* in family firms. On the other hand, there is a large performance gap among smaller family firms in terms of

age – suggesting that the founder effect may not be as functional among smaller family firms in a recession. Again, logic dictates that small firms suffer through recessions and that this perhaps, as a consequence, mitigates the founder effect in small family firms. After all, previous evidence of the superior performance of founder family firms was only conducted during stable macroeconomic periods.

Similar to the two previous figures, figure 5.7 and 5.8 display the same matrices – but this time by measuring average Tobin's Q.

	Larger	Smaller
Older	1,09	0,90
Younger	1,59	1,48

Figure 5.7: *Average TQ in quadrant matrix of size and age. All firms included.*

	Larger	Smaller
Older	1,34	1,21
Younger	2,09	1,32

Figure 5.8: *Average TQ in quadrant matrix of size and age. Only family firms included.*

In the two figures above, we recognize a somewhat different pattern for average TQ compared to the earlier average ROA. The main disparity is the indication of how young and small firms appear to have higher market values than the older and small ones. As discussed earlier, it is important for us to distinguish the more operative metric, ROA, from the more valuation-based metric, Tobin's Q. The indication in figure 5.8 could therefore logically suggest that the market values the potential of small and young firms.

Altogether, the statistics suggests that family firms outperform the sample on average in terms of ROA and Tobin's Q. Again, even though one may be tempted to draw conclusions from these statistics, it is important to remember that they are merely indications of what we may expect in our regression analysis.

5.2 Summary of Descriptive Statistics

➢ At first glance, family firms appear to enjoy superior performance through market recession, both in operating terms (ROA) and market terms (TQ). However, the values of these metrics seems to be affected by different drivers and their outcome in the regression may therefore be different.

➢ Strong control incentives (wedge) seem to have a positive effect on both ROA and TQ in a recession, even if their patterns are slightly different. It is not clear whether strong performance origins from the family firm or the strong control itself.

➢ The positive impact of the *founder effect* may be mitigated in our regression analysis, since the key performance drivers in a recession appears to stem from size and age.

5.3 OLS Regression Results

This section will present the outcome of our OLS regressions. Most variables are adjusted for time and industry in accordance to earlier explanation.

	Return on Asset				Tobin's Q			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Variables				*Regression Coefficients*				
Intercept	-0,014	-0,024	-0,026	-0,005	0,344	0,425	-0,247	0,374
	(0,676)	(0,518)	(0,00)***	(0,854)	(0,395)	(0,526)	(0,116)	(0,369)
Family Firm	0,043				0,279			
	(0,024)**				(0,352)			
Founder		0,052				0,065		
		(0,005)***				(0,679)		
Non-Founder		0,032				0,446		
		(0,044)**				(0,048)**		
Age Dummy			-0,016				-0,188	
			(0,225)				(0,088)*	
Wedge				0,12				0,058
				(0,001)***				(0,215)
LTD/Total ass.	-0,083	-0,083	-0,77	-0,074	-1,039	-1,046	-1,039	0,94
	(0,081)*	(0,077)*	(0,076)*	(0,09)*	(0,003)***	(0,002)***	(0,005)***	(0,028)**
Div. Yield	0,003	0,003	0,003	0,003	0,01	0,01	0,01	0,01
	(0,119)	(0,12)	(0,109)	(0,144)	(0,133)	(0,116)	(0,101)	(0,13)
Ln(Sales)	0,022	0,023	0,022	0,022	0,105	0,10	0,102	0,10
	(0,00)***	(0,00)***	(0,00)***	(0,00)***	(0,264)	(0,30)	(0,305)	(0,296)
Ln(Age)	-0,007	-0,005		-0,008	-0,165	-0,183		-0,138
	(0,207)	(0,436)		(0,198)	(0,079)*	(0,231)		(0,16)
Unaffiliated Block holders	0,108	0,116	0,069	0,098	-0,585	-0,614	-0,693	-0,724
	(0,008)***	(0,027)**	(0,006)***	(0,00)***	(0,026)**	(0,019)**	(0,00)***	(0,00)***
Adj. R-square	0,485	0,484	0,479	0,482	0,72	0,719	0,72	0,718

Observations: 695

Regression table 5.1: Performance regressions according to hypotheses. Significance levels are displayed in the following fashion:

*** = 1 % significance level
** = 5 % significance level
* = 10 % significance level

Regression table 5.1 displays four regression specifications in a two-folded dependent variable approach, making for a total of eight regression outcomes. We detect positive significance on many important research variables for operational performance, but not as many in terms of market performance. Also notable is that we have a relatively high r-square,

which translates into a high explanation degree in the regression. This value is higher than in most of the previous research, e.g. Anderson & Reeb, which could depend on the fact that our sample is relatively small and that our time window is rather short.

The regression also suggests that size (natural log of sales) have a distinct positive impact on operational performance in a recession, whereas TQ results are more tentative, which we also expected after analysing the descriptive statistics. Lastly, note that the control variable *LN(Age)* is excluded from our *Age Dummy* regression due to their obvious correlation.

5.4 Validity Tests

In order to strengthen the validity of these results, we have performed a number of validity tests. These tests are based on previous discussions in the fourth chapter (4.4 and 4.9) and suggested by Brooks (2014).

5.4.1 Heteroscedasticity

As previously mentioned, to be able to use the ordinary least squares regression model, the residuals must have constant variance and a violation of this criterion is called heteroscedasticity. The risk of heteroscedasticity increases with the inclusion of extreme values. To mitigate such risk, we have used the natural logarithm of sales and age, similar to previous research. Further, we have found heteroscedasticity in all of our regressions and have corrected for this by applying White's covariance matrix, which according to Brooks (2014) ought to mitigate the heteroscedasticity issue.

5.4.2 Multicollinearity

Further, we investigate whether our independent variables are highly correlated with each other, often referred to as *multicollinearity*. If such correlation exist, there is a risk that the explanation degree is upwardly biased, which could ultimately result in false conclusions regarding generated results. However, multicollinearity requires two or more variables to have a high positive or negative correlation. As displayed in our correlation matrix in the appendix (A.4), our dataset does not appear to suffer from this issue. Even if one could note

that our two age variables are correlated at -0,848, these variables will not be included in the same regression. This applies for any highly correlated variables that are not included in the same regression.

5.4.3 Normal Distribution

Last, in studies such as this one, it is justified to examine the normality distribution of residuals in the regression. Again, if this criterion does not hold true, the risk of drawing false conclusions increases. We have concluded that none of our regressions have entirely normally distributed residuals, which is quite expected seeing that Anderson & Reeb (2003), who have 2713 observations, do not produce complete normality distribution either. However, we have adjusted for this by eliminating outliers in accordance with discussions in 4.6, as well as converting total sales and firm age into logarithm values. Admittedly, one could also remedy the effect by including more firms in the sample or extending the sample period. However, including more firms is not possible since there are no more listed companies that meet our limitations during the sample period. Nor can we extend our time span, as this would minimize the recession impact, which is the primary target of investigation in our thesis.

Histograms of our normality distributions can be found in the appendix (A.2). We argue that the histograms illustrate a sufficient normal distribution of residuals, even if the attached Jarque-Bera test, which shows high significance, points to the opposite. Still, we deem that our residuals are normally distributed enough for the methodology to serve the thesis purpose.

5.5 Robustness Analysis

This section will address the robustness of our results. We will do so by first examining how results would have differed, should we have chosen to limit the study to a single stock exchange. Such restrictions would have narrowed down conclusions, but also decreased our sample drastically. Second, we will run our regression by applying fixed effects (cross-sectional and period). A common third robustness step is to investigate whether results are robust over time or not. However, seeing that our sample does not span over a large period of time we will not investigate this.

5.5.1 Sub-sample Analysis

We divide the sample into three sub-samples in accordance to their respective public listing; large- mid and small market capitalization. Yet, one could argue that our current regression specification captures the size-effect by the inclusion of a control variable (the natural log of sales). Still, we argue that these listings are characterized by other factors than size. For instance, large-cap is closely supervised by other market participants, whereas mid- and small-cap may only by monitored by closely connected stakeholders. Moreover, we believe that a pure numerical measure (such as sales or assets) is not perfectly mirrored in the classification of stock exchange, since investors tend to generalize the segments in which the companies are traded. This will substantially be considered when we observe the sub-sample results of *Tobin's Q* below, since ROA is a more accounting based measure.

	Return on Asset	**Tobin's Q**
	Large Cap	
Founder Family Firms	-0,05	0,8
P-value	(0,0568)*	(0,122)
Other Family Firms	-0,01	0,213
P-value	(0,254)	(0,49)
	Mid Cap	
Founder Family Firms	0,0639	0,499
P-Value	(0,000)***	(0,001)***
Other Family Firms	0,049	0,412
P-Value	(0,004)***	(0,014)**
	Small Cap	
Founder Family Firms	0,061	0,069
P-Value	(0,001)***	(0,54)
Other Family Firms	-0,029	-0,276
P-Value	(0,32)	(0,131)

Table 5.4: Sub-sample regression of adjusted ROA and adjusted TQ.

As table 5.4 indicates, the results are not robust across the three stock exchanges. What appears the most striking is that the presence of the company founder in family firms does not

seem to affect firms that are listed on the large-cap list. This could appear surprising, since our descriptive statistics provided a rather apparent trend of good performance in the large-cap section. It is important to understand though, that the large-cap list is influenced by other factors than mere size. The firms that are traded in this segment are heavily monitored, under high media pressure and are expected to follow certain CSR-standards[3]. That would suggest that even though their operating- and market performances are good, the firms are still very equal and any particular family or founder effect may be hard to distinguish. Instead, the regression suggests that the *founder effect* is narrowed to the smaller list and especially *mid-cap*. In that regression, both sub-categories of family firms manage to outperform other firms by a highly significant degree in terms of both ROA *and* Tobin's Q. In fact, the family has a momentous positive effect on Tobin's Q in the mid-cap segment. A possible explanation for this could be that the mid-cap list is large enough for investors to overlook an increased probability of default, but also small enough for strong family ties to remain within the business.

While these observations are indeed interesting, it is not our main area of study in this thesis. The sub-sample analysis reveals how family firm theory is difficult to apply on a large and diversified sample. Even though one should be cautious of drawing too voluminous conclusions of this, it is still useful to consider when we analyse the results of the whole sample.

5.5.2 Fixed Effects Regressions

This thesis will not apply a fixed effects model in the regression to analyse the data. The reason for this is that we adjust our dependent variables for both time and industry and therefore avoid fixed effects stemming from firms that are not present over the entire time period. In addition, our sample period is five years with annual changes in the variable, which makes the fixed effects model troublesome to use due to potential lag in the variables. If this study had investigated a longer period of time, we would have considered using a fixed effects model. Still, we perform a fixed effects regression that is located in the appendix (A.3). It is important to remember that in fixed effect regressions, intercepts will be measured

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[3] CSR = Corporate Social Responsibility

for individual companies instead of one intercept for the entire sample. A general pitfall in such regressions is that if a firm has only one or few observations, the results will be biased since the intercept explains the dependent variable to a nearly perfect extent. Even though we have excluded firms with only one or two observations, we still have an unbalanced dataset (see tables 5.1 and 5.2). This implies, that a fixed effects model would bias our results. Further, we can conclude that our fixed effect regression did not yield very significant results regarding family firm performance. However, we do not value these results as much as our ordinary regression results, since we have already (theoretically) captured the fixed effects by adjusting variables for time and industry.

Chapter VI – Analysis

The sixth chapter will analyse the results of the methodology we have applied on the dataset. The chapter will discuss and reflect on each hypothesis in turn with help from the results and previous research. The chapter ends with a brief summary of the thesis hypotheses and their achievements on results.

6.1 Family Firm Performance

From our regression results, we find that family firms perform 4,3 % better in terms of operating performance during economic recession. The market value of family firms does not provide any significant results, even though our descriptive statistics indicated good performance.

Family Firms	Expected Impact	Actual Impact
ROA	+	+
TQ	+	Insignificant

Table 6.1: Family firms' performance according to expectations and actual results.

The first general understanding from these results is that they are quite in line with previous research on the subject. Again, we must stress the fact that *ROA* and *Tobin's Q* have a very different approach to performance. ROA is mainly an accounting based performance measure, reflecting on investment decisions and firm operations. Tobin's Q, on the other hand, which is an approximation of firm market value, rather views how investors and the market values the company. In other words: a firm can directly affect its operating performance, but has limited influence in how the market values the company. Even though our initial expectation was that family firms produce higher TQ, this supposition was softened by the descriptive statistics, which displayed rather shifting findings. Altogether, Tobin's Q displays generally insignificant results throughout our regression. Nevertheless, ROA and TQ have displayed different results in similar studies before (Barontini & Caprio, 2006; Lee, 2006), but at this point the insignificance of TQ may be a consequence of the unstable market conditions of our sample period. One could argue that the operative advantage (ROA) stems from leadership

and management – qualities that are unaffected by cycles. Investors, however, may value other factors that are more firm specific. This would imply a difficulty for the regression analysis to find a significant nexus, especially during such a short time period of high market uncertainty.

Additionally, one should not ignore the fact that Cronqvist & Nilsson (2003) found that Swedish family firms performed worse than non-family firms. Even though we find no such evidence, it is quite striking how a renowned Swedish family firm study shows negative evidence, whilst in most other Western countries, *TQ* appears to be positive in its relation to family firms. This is interesting, since we established that the family ownership in Sweden is very frequent and research therefore requires a rather strict family firm classification such as ours. By the same token, Villalonga (2006) pointed out how results shifted drastically by the altering of family firm classification. This could suggest that our narrow family firm classification is perhaps more likely to produce different results relative to foreign studies on the same subject. A reason for this could be that minority shareholders demand a premium in order to invest in family controlled firms that are defined through such high ownership, since the family may be unwilling to give up control over the company. That would imply that family firm TQ values are not as distinguishable as in previous research with a less strict classification, e.g. the 5 % classification of Anderson & Reeb (2003).

Regardless of this, we have found that family firms outperform non-family firms in terms of operating performance. This advantageous performance could stem from earlier theories of how family firms put in that *extra* effort in order for the firm to remain viable in times of economic recession, suggested by Brokaw & Murphy (1992). Another interpretation of beneficial operations is that the family understands the business and that family members view themselves as stewards of the firm. Altogether, we believe it is interesting that the competitive advantages that are highlighted in previous studies are applicable to our sample period as well. Notable though is that size (sales) displays a highly positive impact on operating performance, which further strengthens that our sample period may inquire other performance drivers, since earlier studies point to no such obvious relationship.

6.2 Founder Performance

Our findings show that the *founder effect* is present and has a positive effect on operational firm performance. This was suggested in our descriptive section as well and is therefore quite expected. Altogether, family firms (regardless of control) outperform non-family firms, but with an active founder they perform at their best. Our main suggestion is much in line previous research: positive performance stem from the entrepreneurial abilities and work mentality of the company founder. What is interesting in our study though, is that these founder skills appear to be present in recessional times as well, even though one could suggest that such abilities could be mitigated by other factors. This, we argue, suggests that the founder effect is also observable through rough market conditions. The presence of the founder during high market uncertainty can send a signal of unity throughout the entire organization, increasing the morale of both managers and employees.

Again, however, we find no support regarding founder effect on firm market performance. Still, theory suggests that young, entrepreneurial firms should be valued at a higher multiple due to their future earnings potential, especially with an active founder. However, a possible reason for the insignificant results may be that we only include relatively large firms that have already gone public. Our descriptive section suggested that size and age were drivers of market valuation during recession and that this could dampen the founder effect on our sample as a whole. Logic further suggests that competitive advantages in a recession mainly stems from the access to capital markets and managerial experience. Altogether, we do not rule out that the founder effect is affecting market performance of some companies in our sample, since our descriptive statistics displayed interesting trends. However, the results are too inconclusive to draw any general inference regarding the *founder effect* and market performance in Swedish public firms.

6.2.1 Firm Age

Our age variable does not yield significant results and we therefore reject the hypotheses of how age boosts firm performance in a recession. This is similar to the results of Panunzi *et al*, who found no significant relationship between firm age and performance. Anderson & Reeb found positive results in both young and old firms, although their classification was based

purely on family firms. As discussed earlier though, we find it preferable to include *all firms* in our age variable to find out if the age factor is universally important across firms. However, by rejection of this hypothesis we can further strengthen the impact of the founder effect. That is to say, there is no conclusive result indicating that low firm age alone is enough to account for the positives that the founder effect has on firm performance. Then again, this may only be feasible on our time period and sample.

6.3 Wedge

The regression displays that ownership wedge has a highly significant, positive impact on operating performance. This result was much in line with previous research (Panunzi et al, 2006) as well as our descriptive section and is therefore not altogether surprising. Admittedly though, this variable has the potential of being endogenous. The reason for this is, that profitable firms may be reluctant to give away voting rights, whilst simultaneously voting rights *per se* can create profit. Such endogeneity problem is more commonly referred to as *simultaneity*, suggesting that the dependant variable and at least one of the independent variables may affect each other. Cronqvist & Nilsson (2003) concluded that Swedish family firms are 1,5 - 2 times more likely to apply control-enhancing mechanisms that create wedge. This is supported in our data, as 72 % of wedge observations stem from family ownership. Ultimately, since family firms enjoy advantageous operating performance, the question remains: Does good performance stem from family control or the excessive voting rights themselves? Our methodology is limited in this approach, and so we cannot make any conclusions regarding the positive force of family firm performance. Also, the recession that we investigate is relatively unexplored with few studies on how firms in general were affected. Perhaps future research will suggest that strong ownership mechanisms were a successful strategy for navigating the recession. We do not wish to make any such a statement, but can put forth an indication from the Swedish market that ownership wedge definitely played its part in creating positive operating results in public firms.

Again, however, we find no such evidence regarding market performance and so we reject the hypothesis that performance ought to be increased by enhanced voting rights. One could of course argue how Sweden again provides an interesting case, especially as Cronqvist & Nilsson (2003) display evidence of how wedge has negative impact on firm value. Our

inconclusive results regarding TQ could, as already explained, be due to several different factors, such as; use of a different sample, other market conditions or slightly different methodology. Furthermore, as mentioned, there is reason to believe that family firms inherently possess incentives of protecting their control. Therefore, in line with Porter's theory of shorter investment horizons (1992), logic suggests that investors look for more firm specific attributes in a recession. Such intuition would imply that TQ has very firm- and market specific determinants, which could be the main reason for why our market performance metric yield altogether less significant results than ROA.

6.4 Summary of Analysis

After analysing the results, we arrive at the following hypothesis conclusions:

Hypothesis	Status
H1a: Family firms perform better than non-family firms during recession in terms of operating performance.	Not Rejected
H1b: Family firms perform better than non-family firms during economic recession in terms of market performance	Rejected
H2a: Family firms with an active founder perform better than other family firms in terms of operating performance during recession.	Not Rejected
H2b: Family firms with an active founder perform better than other family firms in terms of market performance during recession.	Rejected
H3a: Firm age has a positive impact on overall operating performance during recession.	Rejected
H3b: Firm age has a positive impact on overall market performance during recession.	Rejected
H4a: Enhanced ownership voting control has a positive impact on overall firm operating performance during recession.	Not Rejected
H4b: Enhanced ownership voting control has a positive impact on overall firm market performance during recession.	Rejected

Table 6.2: *Summary of hypothesis conclusions*

Chapter VII – Conclusion

The seventh and final chapter of this thesis will briefly conclude and discuss the findings of the study. The chapter ends with propositions of further research in the family business research field.

7.1 Concluding Analysis

This section aims to conclude the analyses made in the previous chapter. Again, we stress the fact that in family firm studies, the results are dependent on the criteria of which we chose to classify family firms. The reader should therefore be careful if trying to link our evidence to a different sample or an alternative methodology.

Nevertheless, we conclude that by our classification and time period, family firms possess operative advantages in terms of performance. Still, we take great caution in this statement since there are a few underlying uncertainty factors. For instance, we find that enhanced voting rights have a very strong impact on operations as well, but with a potential for endogeneity. This implies that we cannot directly support earlier theories behind the family advantages, since we are not convinced that it is the family itself that drives the performance. In addition, one should be cautious of drawing too universal inferences of these empirics, since our study together with supportive evidence are substantially based on a Western economic framework. For instance, Faccio *et al* (2001) reported that family ownership in East Asian industries mainly *hampers* firm performance. Further, Faccio suggested that the problems faced by these family firms were mainly related to the political and regulatory market environment.

In sum though, our results imply that in regulated and transparent markets, public family firms possess an advantage in terms of operating performance.

Moreover, our evidence implies that *the founder effect* has a positive impact on firm operating performance. This, we argue, is more conclusive, since the process of identifying such firms include finding the name of founder through corporate statements and cross checking through annual statements, which means that we can be relatively certain that the observations are valid. However, our sub-sample revealed that the robustness of the founder effect was not equally significant across lists, which suggests that firm size has an important effect on firm

performance during recession. Regarding firm market performance, however, we do not manage to distinguish any family advantage or founder effect.

7.2 Further Research

The family business research field is still in a development process, since there has been no definite consensus among scholars of the family firm classification. Henceforth, the field has suffered a lot of critique regarding its credibility. We argue, that in line with business globalization, family firm research ultimately ought to become more comparable and therefore minimize the credibility gap. In addition, as investment horizons are shifting and market conditions are still uncertain, extended research of family ownership ought to be contributing for corporate governance theory. However, in contrast to our thesis and previous research, future research should try to single out the factors that contribute to the success of family firms. The positive results that are accumulated from family ownership and management are difficult to observe as a pure metric, but another type of methodology may be able to distinguish the unique characteristics that translate into good performance, possibly with the use of survey data. A starting frame of reference could be to thoroughly investigate the characteristics highlighted by Habbershon & Williams (1999) and illustrated in figure 2.1.

In like manner, it appears to be a consensus regarding how active company founders have a positive impact on firm performance and future research could therefore focus on explaining *why* founder firms are presented as superior. Such research could be approached empirically by checking for demographic background or other differentiating factors that could explain the founder success.

Furthermore, there appears to a general research gap regarding public firm performance of the recent recession. Since all cycles have their unique characteristics, they are important subjects of study in their own right. This thesis shed some light on how firms managed to endure through this period thus far. Yet, it is still not obvious whether our time window was sufficient to cover the full extent of the recession. Therefore, a valid point of future research would be to extend the window in order to completely capture and distinguish the effects of this recession.

We also argue that our inconclusive market performance results ought to be an interesting point of departure for future research. As suggested, in a peculiar time period such as ours, the market seeks for other drivers of firm value, or perhaps the Swedish market pays no particular consideration of family firms. Future research could therefore try to deepen the understanding of how the Swedish market values different types of ownership. Our evidence indicates that strong ownership incentives have a positive effect on firm operations, regardless of ownership type. As Sweden provides a high frequency of family firms and the majority of these apply a separation of control and cash flow rights, future research should seek to separate the family impact from the control rights.

On a final note, we argue that our evidence ought to be of good contribution for future research of family firms. The global markets have changed a lot since most of the previous studies regarding family firms, which were substantially conducted around the beginning of the 21st century. In line with globalisation and closing market gaps, we believe that future cycles will be even more uniform on a global level. This means that future research ought to be even more comparable, as the differences across markets are decreasing.

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Appendices

A.1 Heteroscedasticity Tests

ROA – Family Firm (dummy)

Dependent Variable: RESID01^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:11
Sample: 2009 2013
Periods included: 5
Cross-sections included: 139
Total panel (unbalanced) observations: 681

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	-0.001794	0.009147	-0.196161	0.8445
ADJUSTED_DIV_YIELD	0.000148	0.000266	0.554932	0.5791
ADJUSTED__LN_SALES	-0.001818	0.000712	-2.555611	0.0108
LN_AGE	-0.002222	0.001327	-1.674919	0.0944
UNAFFILIATED_BLOCKHOLDIN	-0.029648	0.010304	-2.877280	0.0041
FAMILY_FIRM	-0.006454	0.002385	-2.705894	0.0070
C	0.028204	0.005269	5.352475	0.0000

R-squared	0.042017	Mean dependent var	0.013214
Adjusted R-squared	0.033489	S.D. dependent var	0.030142
S.E. of regression	0.029633	Akaike info criterion	-4.189615
Sum squared resid	0.591859	Schwarz criterion	-4.143117
Log likelihood	1433.564	Hannan-Quinn criter.	-4.171618
F-statistic	4.926970	Durbin-Watson stat	1.205748
Prob(F-statistic)	0.000060		

Tobin's Q – Family Firm (dummy)

Dependent Variable: RESID02^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:20
Sample: 2009 2013
Periods included: 5
Cross-sections included: 139
Total panel (unbalanced) observations: 686

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	1.037862	0.417729	2.484534	0.0132
ADJUSTED_DIV_YIELD	-0.028702	0.012158	-2.360688	0.0185
ADJUSTED__LN_SALES	-0.093563	0.032320	-2.894923	0.0039
LN_AGE	-0.143007	0.060560	-2.361396	0.0185
UNAFFILIATED_BLOCKHOLDIN	-1.029501	0.469378	-2.193332	0.0286
FAMILY_FIRM	-0.034674	0.108434	-0.319769	0.7492
C	1.392261	0.240048	5.799936	0.0000

R-squared	0.054432	Mean dependent var	0.715598
Adjusted R-squared	0.046076	S.D. dependent var	1.385729
S.E. of regression	1.353428	Akaike info criterion	3.453310

Sum squared resid	1243.770	Schwarz criterion	3.499543
Log likelihood	-1177.485	Hannan-Quinn criter.	3.471198
F-statistic	6.514443	Durbin-Watson stat	0.705427
Prob(F-statistic)	0.000001		

ROA – Founder or Non-Founder

Dependent Variable: RESID03^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:23
Sample: 2009 2013
Periods included: 5
Cross-sections included: 139
Total panel (unbalanced) observations: 681

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	-0.000715	0.009140	-0.078192	0.9377
ADJUSTED_DIV_YIELD	0.000154	0.000266	0.580225	0.5620
ADJUSTED__LN_SALES	-0.001978	0.000723	-2.735643	0.0064
LN_AGE	-0.002664	0.001356	-1.964401	0.0499
UNAFFILIATED_BLOCKHOLDIN	-0.032600	0.010418	-3.129234	0.0018
FOUNDER_CEO	-0.009020	0.002913	-3.096068	0.0020
NON_FOUNDER_CEO	-0.003431	0.003123	-1.098443	0.2724
C	0.030272	0.005428	5.576705	0.0000

R-squared	0.044774	Mean dependent var	0.013201
Adjusted R-squared	0.034839	S.D. dependent var	0.030071
S.E. of regression	0.029542	Akaike info criterion	-4.194317
Sum squared resid	0.587355	Schwarz criterion	-4.141177
Log likelihood	1436.165	Hannan-Quinn criter.	-4.173749
F-statistic	4.506501	Durbin-Watson stat	1.221400
Prob(F-statistic)	0.000064		

TQ – Founder or Non-Founder

Dependent Variable: RESID04^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:25
Sample: 2009 2013
Periods included: 5
Cross-sections included: 139
Total panel (unbalanced) observations: 686

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	1.012127	0.418665	2.417509	0.0159
ADJUSTED_DIV_YIELD	-0.029323	0.012174	-2.408687	0.0163
ADJUSTED__LN_SALES	-0.086516	0.032897	-2.629889	0.0087
LN_AGE	-0.130974	0.062085	-2.109594	0.0353
UNAFFILIATED_BLOCKHOLDIN	-0.889254	0.475765	-1.869104	0.0620
FOUNDER_CEO	0.053465	0.132765	0.402706	0.6873
NON_FOUNDER_CEO	-0.126803	0.142397	-0.890487	0.3735
C	1.323394	0.247876	5.338926	0.0000

R-squared	0.055629	Mean dependent var	0.713980

Adjusted R-squared	0.045879	S.D. dependent var	1.385493
S.E. of regression	1.353338	Akaike info criterion	3.454618
Sum squared resid	1241.773	Schwarz criterion	3.507457
Log likelihood	-1176.934	Hannan-Quinn criter.	3.475062
F-statistic	5.705435	Durbin-Watson stat	0.694740
Prob(F-statistic)	0.000002		

ROA – Age (dummy)

Dependent Variable: RESID05^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:28
Sample: 2009 2013
Periods included: 5
Cross-sections included: 139
Total panel (unbalanced) observations: 681

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	-0.005514	0.009190	-0.600073	0.5487
ADJUSTED_DIV_YIELD	0.000141	0.000268	0.526314	0.5988
ADJUSTED__LN_SALES	-0.002063	0.000717	-2.876456	0.0041
UNAFFILIATED_BLOCKHOLDIN	-0.022278	0.009950	-2.238963	0.0255
AGE_DUMMY	-0.002434	0.002532	-0.961202	0.3368
C	0.017684	0.002061	8.581347	0.0000

R-squared	0.031065	Mean dependent var	0.013571
Adjusted R-squared	0.023887	S.D. dependent var	0.030157
S.E. of regression	0.029794	Akaike info criterion	-4.180235
Sum squared resid	0.599193	Schwarz criterion	-4.140380
Log likelihood	1429.370	Hannan-Quinn criter.	-4.164809
F-statistic	4.328184	Durbin-Watson stat	1.197018
Prob(F-statistic)	0.000696		

TQ – Age (dummy)

Dependent Variable: RESID06^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:30
Sample: 2009 2013
Periods included: 5
Cross-sections included: 139
Total panel (unbalanced) observations: 686

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	0.968949	0.400033	2.422172	0.0157
ADJUSTED_DIV_YIELD	-0.024790	0.011646	-2.128697	0.0336
ADJUSTED__LN_SALES	-0.084965	0.031080	-2.733754	0.0064
UNAFFILIATED_BLOCKHOLDIN	-0.925738	0.432557	-2.140150	0.0327
AGE_DUMMY	-0.302111	0.110190	-2.741727	0.0063
C	0.974115	0.089307	10.90752	0.0000

R-squared	0.055554	Mean dependent var	0.715204
Adjusted R-squared	0.048610	S.D. dependent var	1.329884
S.E. of regression	1.297159	Akaike info criterion	3.366938
Sum squared resid	1144.182	Schwarz criterion	3.406566

Log likelihood	-1148.860	Hannan-Quinn criter.	3.382271
F-statistic	7.999827	Durbin-Watson stat	0.752788
Prob(F-statistic)	0.000000		

ROA – Wedge

Dependent Variable: RESID07^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:32
Sample: 2009 2013
Periods included: 5
Cross-sections included: 136
Total panel (unbalanced) observations: 666

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	-0.006020	0.009242	-0.651363	0.5150
ADJUSTED_DIV_YIELD	0.000234	0.000270	0.867526	0.3860
ADJUSTED__LN_SALES	-0.001674	0.000717	-2.333394	0.0199
LN_AGE	-0.002105	0.001337	-1.573848	0.1160
UNAFFILIATED_BLOCKHOLDIN	-0.031686	0.010782	-2.938665	0.0034
WEDGE	-0.021362	0.009329	-2.289740	0.0224
C	0.027426	0.005253	5.221555	0.0000

R-squared	0.040139	Mean dependent var	0.013591
Adjusted R-squared	0.031400	S.D. dependent var	0.030217
S.E. of regression	0.029739	Akaike info criterion	-4.182290
Sum squared resid	0.582808	Schwarz criterion	-4.134979
Log likelihood	1399.702	Hannan-Quinn criter.	-4.163959
F-statistic	4.592958	Durbin-Watson stat	1.244943
Prob(F-statistic)	0.000140		

TQ – Wedge

Dependent Variable: RESID08^2
Method: Panel Least Squares
Date: 05/15/15   Time: 15:33
Sample: 2009 2013
Periods included: 5
Cross-sections included: 136
Total panel (unbalanced) observations: 671

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADJUSTED_LTD_TOT_ASS	0.830684	0.417368	1.990292	0.0470
ADJUSTED_DIV_YIELD	-0.025022	0.012175	-2.055220	0.0402
ADJUSTED__LN_SALES	-0.086932	0.032230	-2.697234	0.0072
LN_AGE	-0.121506	0.060363	-2.012898	0.0445
UNAFFILIATED_BLOCKHOLDIN	-1.250763	0.485714	-2.575102	0.0102
WEDGE	-0.077511	0.420463	-0.184348	0.8538
C	1.342649	0.236718	5.671936	0.0000

R-squared	0.049615	Mean dependent var	0.723627
Adjusted R-squared	0.041027	S.D. dependent var	1.371600
S.E. of regression	1.343169	Akaike info criterion	3.438318
Sum squared resid	1197.924	Schwarz criterion	3.485354
Log likelihood	-1146.556	Hannan-Quinn criter.	3.456536

F-statistic	5.777343	Durbin-Watson stat	0.744754
Prob(F-statistic)	0.000007		

A.2 Normal Distribution Tests

Adjusted ROA
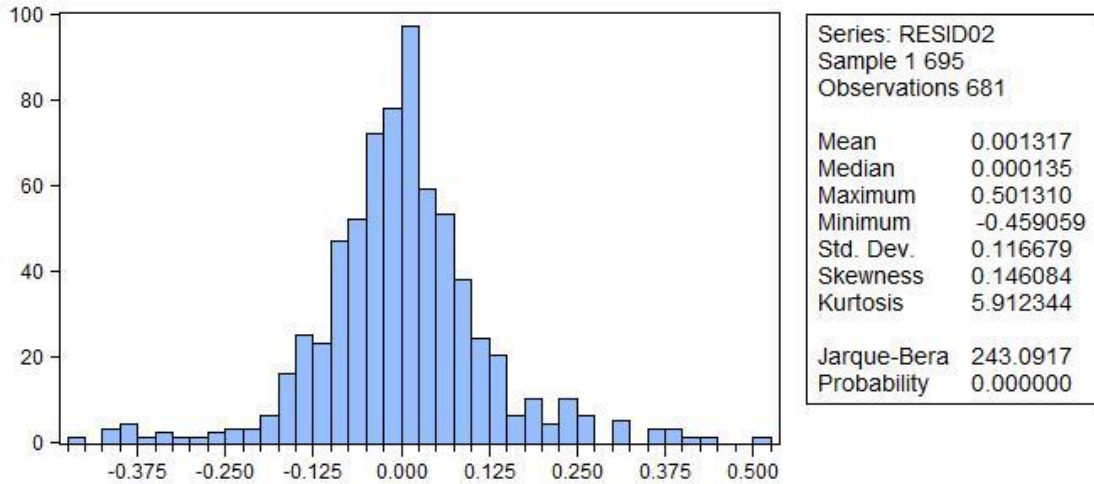
Adjusted Tobin's Q
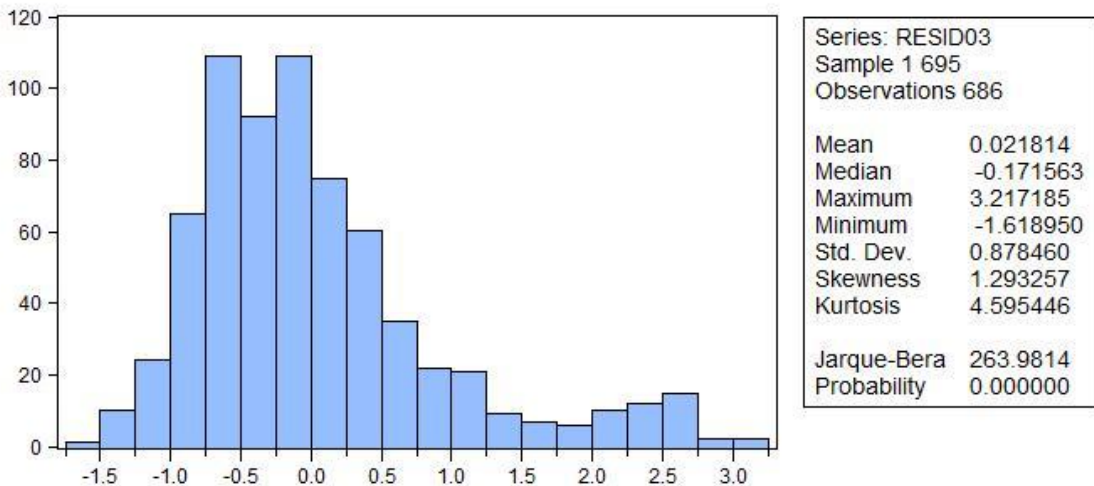
A.3 Fixed Effects Regressions

	Return on Asset				Tobin's Q			
	1	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Variables	*Regression Coefficients*							
Intercept	0,303	-0,024	0,001	0,297	-0,259	-0,219	-0,247	-0,236
	(0,345)	(0,518)	(0,989)	(0,349)	(0,847)	(0,871)	(0,116)	(0,861)
Family Firm	-0,0254				0,137			
	(0,183)				(0,072)*			
Founder		-0,099				-0,241		
		(0,001)***				(0,144)		
Non Founder		-0,025				0,14		
		(0,20)				(0,068)*		
Age Dummy			0,036				0,016	
			(0,323)				(0,225)	
Wedge				-0,115				-0,254
				(0,374)				(0,611)
LTD/Total ass.	-0,054	-0,051	-0,034	-0,053	-1,639	-1,626	-1,641	-1,563
	(0,446)	(0,471)	(0,535)	(0,464)	(0,001)***	(0,001)***	(0,001)***	(0,001)***
Div. Yield	0,001	0,001	0,001	0,001	0,001	0,001	-0,001	0,002
	(0,944)	(0,948)	(0,977)	(0,959)	(0,785)	(0,78)	(0,807)	(0,748)
Ln(Sales)	-0,002	-0,002	-0,006	-0,004	0,085	0,083	0,085	0,08
	(0,92)	(0,91)	(0,788)	(0,858)	(0,453)	(0,461)	(0,454)	(0,482)
Ln(Age)	-0,075	-0,072		-0,073	0,039	0,053		-0,031
	(0,396)	(0,415)		(0,403)	(0,917)	(0,887)		(0,934)
Unaffiliated Block holders	0,098	0,092	-0,095	-0,108	-0.414	-0,386	-0,399	-0,45
	(0,097)	(0,299)	(0,28)	(0,209)	(0,149)	(0,179)	(0,163)	(0,128)
Cross-section fixed								
Period Fixed								
Adj. R-square	0,556	0,484	0,555	0,556	0,72	0,719	0,786	0,785

A.4 Correlation Matrix

Correlation Probability	1	2	3	4	5	6	7	8	9	10	11
TQ	1.000										

ROA	0.411	1.000									
	0.000	-----									
LTD / TOT ASS	-0.171	-0.060	1.000								
	0.000	0.122	-----								
DIV YIELD	-0.128	0.063	0.085	1.000							
	0.001	0.103	0.028	-----							
(LN)SALES	-0.134	0.218	0.287	0.139	1.000						
	0.001	0.000	0.000	0.000	-----						
(LN)AGE	-0.157	0.067	0.076	0.113	0.406	1.000					
	0.000	0.084	0.049	0.003	0.000	-----					
UNAFFILIATED BLOCKHOLDIN	-0.138	-0.034	0.026	0.036	0.023	0.011	1.000				
	0.000	0.387	0.502	0.350	0.547	0.769	-----				
FAMILY FIRM	0.097	0.143	0.062	0.042	0.027	0.044	-0.290	1.000			
	0.013	0.000	0.112	0.278	0.480	0.257	0.000	-----			
FOUNDER CEO	0.066	0.063	0.032	0.020	-0.196	-0.200	-0.326	0.651	1.000		
	0.091	0.105	0.411	0.600	0.000	0.000	0.000	0.000	-----		
NON FOUNDER CEO	0.050	0.112	0.043	0.031	0.250	0.276	-0.009	0.550	-0.276	1.000	
	0.196	0.004	0.269	0.426	0.000	0.000	0.827	0.000	0.000	-----	
WEDGE	0.011	0.113	0.016	0.097	0.068	0.072	-0.322	0.421	0.418	0.073	1.000