Performance and Valuation of Swedish Family Firms

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ABSTRACT

We analyse the effect of family control, management and ownership on family firm performance "ROA and ROIC" and value "Tobin's q". We test our hypotheses using 4042 firm observations from more than 600 listed companies in Sweden over the period 1985-2005. We find that family firms trade at a discount compared to other firms, but at the same time they perform better than other firms. We also find that the cash flow ownership is positive for family performance and for non-founder family firm valuation. Descendant management destroys value through lower performance compared to founder and professional management. The opposing effects in family firm valuation and performance have not been found elsewhere to our knowledge. Our results indicate that too low payout ratios compared to industry peers, possible ineffective investments, a high separation of control and ownership and a time effect are the main drivers of these opposing effects. The typical discrepancy family firm is either an older, smaller family firm with low growth and high leverage or a very large, mature and older family firm with low investment options and more financial slack, which in combination with a high separation of votes and cash flow ownership, gives room for possible diversion of company funds.

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1. Introduction

Most countries often have public companies with large controlling owners, typically a family or a private person (La Porta, Lopez-de-Silanes and Shleifer (1999)). Since this is so, an investigation of the effect of the different levels of such control seems interesting. We therefore state this first question:

What is the effect of family control, management and ownership on firm performance and valuation?

This question has recently been given more attention in the international academic literature as more researchers recognize the large number of concentrated firms around the world[1] which contrasts the classical view of the large dispersed firm presented by Berle and Means (1932). Even in the US where ownership dispersion is at it highest, founding families exert a significant degree of control in over a third of the 500 largest corporations and in more than half of all public corporations (Villalonga and Amit (2007)). Our sample shows that in 1990, over 60% of all listed firms in Sweden were controlled by families and today around 45% of all listed firms in Sweden are controlled by families. It is therefore one of the largest and most important identifiable groups in the stock market today and this motivates a thorough investigation of the effect of the family as a controlling owner.

The main focus when analysing control structures are typically the principal-agent and the minority expropriation problems[2]. These are known as the first and second agency problems respectively, and in family firms the main focus is the minority expropriation problem, since the principal and the agent are closer or even the same in these firms. This means that in family firms, the main concern when analysing the control structure is the risk that the controlling family engages in non-value maximizing actions, e.g. diversion of funds, empire building, etc. that produces private benefits to the family but hurts the minority owners of the firm.

Performance and valuation can be measured in different ways, however the most commonly used metrics are return on assets (ROA) and the valuation proxy Tobin's q (see table 2.1. below), defined as the ratio of the market value of the firm's debt and equity (enterprise value) and the replacement cost of its assets, since both these measures can be compared across companies respectively. The focus of family firm research has been mostly on valuation effects and the more limited research on performance has showed some mixed results by country and region. However, the general picture seems to be that family control as such, and founder and professional (outside) management increases performance, whereas excess control via control enhancing mechanisms and descendant management produce both lower valuation and performance[3]. Evidence for this standpoint has been put forward by e.g. Bennedsen et al

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[1] La Porta, Lopez-de-Silanes and Shleifer (1999) showed that only 40% of large firms in a global sample were widely held or controlled by widely held companies.
[2] These problems are discussed in detail in the Theoretical Framework section later in the thesis.
[3] Founder management is referred to when the founder of the firm is active in a management role as either CEO and/or COB, whereas Descendant management is the equivalent when a descendant to the founder is active in the management of the firm.

(2006), Barontini and Caprio (2006) and Ehrhardt et al (2006). In Sweden, there has not been much research on the impact of family control on either performance or valuation. Family firm valuation effects in Sweden have been examined by Andersson and Nyberg (2005), who showed that family firms in general, have a lower valuation than non-family firms and that the relationship with higher family firm ownership is neutral. A short descriptive follow-up study gave interesting signs of a positive effect on performance by family firms (Edenholm and Östlund (2006)), i.e. there are signs of a discrepancy between the valuation and performance of family firms in Sweden. This creates a second interesting question:

Is there opposite effects in performance and valuation of public family firms in Sweden, and what lies behind this phenomenon?

To analyse this question we investigate whether family firms have higher performance in the form of ROA and return on invested capital (ROIC), and lower valuation in the form of Tobin's q, than other listed firms. One example of such a company would be the telecom company Tele2, which in 2005 had a 4% higher ROA than the industry average but a relative valuation discount compared to the industry average of almost 66%.

In performing the analysis we will look at two levels. The first is family ownership as such, and the second is the control structure employed by those companies. Examples of the control structure employed could be a higher level of capital invested, a higher separation of control and ownership through dual class shares and the employment of family or outside managers. We therefore divide our analysis into blocks of family ownership, control and management to produce a clearer picture of the different interacting effects behind the data results. We classify listed firms into three categories; non-family firms (dispersed or institutional ownership), founder family ownership where the founding family is still in control of the company and non-founder family ownership where a person or family unrelated to the founder is in control of the company. This is described in detailed in the methodology section below.

Internationally there have been very few extensive studies looking at both family firm performance and valuation with Barontini and Caprio (2006) as a prominent exception. They looked at family firms in 11 different countries and found that family firms have both better performance and higher valuations than non-family firms i.e. no opposing effects. Their study is well performed, although our dataset is far more extensive focusing on only one country, ensuring a homogeneous dataset. We use their paper as a reference point for our thesis since their study is one of the most interesting of its kind presently.

The institutional setting of Sweden is rather special and makes this kind of study appealing. Sweden has a high usage of control enhancing mechanisms such as dual class shares and pyramid structures[4] which produces a high separation between votes and capital ownership on average, allowing minority

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Professional management is referred to when all top management positions are held by persons unrelated to the founder and his family.

[4] A pyramid structure is present when a person controls less than 100% of a company which in turn controls another company at less than 100%. This is further explained in detail in the appendix.

owners to remain in control of their companies with a low amount of capital invested. Sweden is the only country that is ranked as top three in the categories separation between control and ownership, cross shareholdings and stock pyramids (La Porta et al (1999)). Compared to other firm categories, family firms in particular have been demonstrated to implement additional control devices to a larger extent, which is one reason for the survival of family control over generations (Högfeldt (2004)). This has been encouraged over time by legislation e.g. tax-exempt inter-corporate dividends which have created a foundation for pyramid ownerships in Sweden. This together with the relatively high concentration of ownership and the success of many family firms such as H&M and Kinnevik etc. makes Sweden a very interesting country to perform this kind of study in.

1.1 Purpose and Contribution

The purpose of this thesis is three fold. First, we review current literature on family firm performance and valuation, to see if the possible opposing effects in family firm valuation and performance in Sweden is also recognized abroad. Second, we will perform a descriptive analysis of family firm performance and valuation considering control, management and ownership of Swedish listed firms. Third, we will perform regression analysis to investigate the impact on performance and valuation by families, controlling for the effects of control, management and ownership, and also trying to pinpoint any possible factors behind the results. We should be able to pin down the different and possible opposite effects of both the family firm as such, and the control structure employed by those firms.

Our first contribution is to update and expand the extensive dataset provided by Andersson and Nyberg (2005), which enables us to perform extensive analysis and to further improve the testing ability of the data, which in itself is a very time consuming task. This database is now one of the most complete and most useful datasets on Swedish firm governance and ownership structure. Second, we perform an analysis on both the stability of prior results and, more importantly, we analyse both the performance effects as well as the valuation effects of family firms in Sweden and their control structures. We also try to track down factors behind the found results, especially the opposing results in valuation and performance of family firms. To our knowledge, this has not been done in Sweden before, and internationally the magnitude of our study seems to be of the highest order. It should also be highlighted that we use non-family firms as the reference group of our study, which is not common. We also use ROIC as one of the performance metrics in our analysis, which have to our knowledge, not been used previously in any similar study abroad or in Sweden.

1.2 Family Firm Definition

Since the definition of family firms is vital to our analysis we present the definition at this point.

To ensure comparability with previous research, in particular with Andersson and Nyberg (2005) who have performed one of few Swedish studies related to ours, we adopt the same definition of family

firms. This is displayed below in figure 1.1, and the definition is not contrasting to the definition used by Barontini and Caprio (2006), which is an important reference point for our study. All firms are first divided into two groups of either family firms or non-family firms which typically have a dispersed ownership structure or have an institutional owner and this is the control group for our analysis. The family firms are then divided into founder family firms and non-founder family firms. The latter are characterized by having a family as the controlling shareholder which is not related to the original founder of the firm. One example of such a firm is Electrolux AB which is largely controlled by the Wallenberg family through their investment company Investor AB, although not being the founders of the firm.

Figure 1.1
Definition of Family Firms
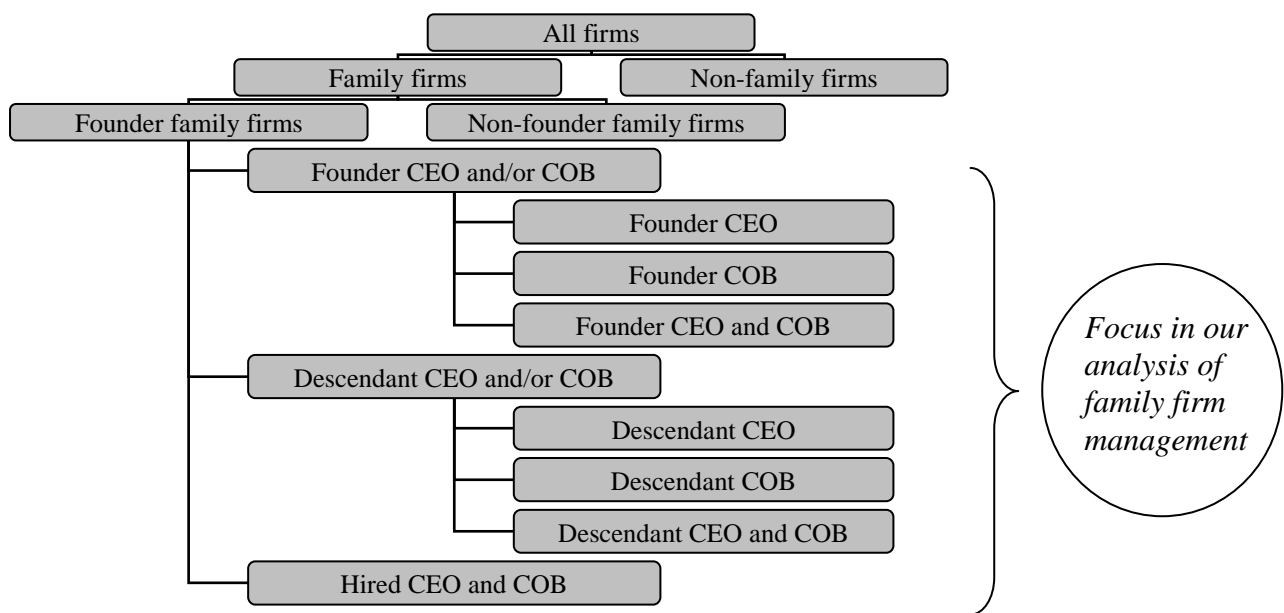
The founder family firms are then split into three different groups according to the management of the firm. Descendant firms are only labelled as such if the founder is not involved at all in the management of the firm, either as chief executive officer (CEO) or chairman of the board (COB). It is only the different types of founder family firms that we define as family firms in our study when analyzing the management side of family firms, since this definition, to leave out non-founder family firms, has been commonly used in previous studies of family firm management. This is important because it improves the comparability of our results as stated above.

The level of control needed for an owner to be classified as a controlling owner is 25% of the votes in our study. In this setting, it is believed that the owner has a significant influence on firm decisions and this is also in line with previous studies (e.g. Cronqvist and Nilsson (2003)), which improves the comparability of the results.

1.3 Outline

We continue our thesis by exploring previous research in the field of family firms and then developing a theoretical framework for our study based on well known theories. These two parts form the basis which we then build our hypotheses on. We then walk through the data we have gathered and the methodology of our analysis. After that, we present our results for both the full sample as well as for three sub-periods and thereafter, we analyse the results thoroughly. We end our thesis with a discussion and suggestions for future research.

2. Previous Research

We divide our literature review into a performance and valuation block. These are then divided into control, management and ownership blocks since this gives a better picture of the different and possibly opposing effects these different control structures have on performance and valuation. If not making such a division, it could be hard to pinpoint what effects that lie behind any difference in family firm performance and valuation compared to non-family firms. We summarize previous findings in table 2.1 below with only a brief further review of the more important prior contributions.

Table 2.1
Previous findings relevant for our study

Previous findings are divided by type and are sorted in chronological and alphabetical order. Metrics used are Return on Assets (ROA), Return on Equity (ROE), Tobin's q and Market to Book ratio (M/B). Control means family control per se, and excess control is the effect of a higher dispersion between votes and capital ownership of the largest owner. Management effects are divided into whether the founder of the firm or a descendant to him is active in a management position or if the firm only employs outside professional managers. Ownership is what effect a higher cash flow ownership stake of the laregst owner has on performance and valuation.

Authors	Region of Study	Metrics	Family Firm Relations Found					
			Control Effects		Management Effects			Ownership Effects
			Control	*Excess control*	*Founder*	*Descendant*	*Hired*	
	Performance							
Adams et al (2007)	US	ROA			+			
Kowalewski et al. (2007)	Poland	ROA	Neutral		Neutral		Neutral	
Barontini & Caprio (2006)	Europe	ROA	+	Neutral	+	Neutral	-	Neutral
Bennedsen et al (2006)	Denmark	ROA				-	+	
Ehrhardt et al (2006)	Germany	ROA	+		-			
Favero et al (2006)	Italy	ROA / ROE	+	+	+	+	+	
Lee (2006)	US	ROA / ROE	+		+			
Maury (2006)	Europe	ROA	+		+	+	Neutral	Mixed
Sraer & Thesmar (2006)	France	ROA / ROE	+		+	+	+	
Zellweger (2006)	Switzerland	ROE	-		-	-		
Bennedsen & Nielsen (2005)	Europe	ROA		Neutral				+
Andersson & Reeb (2003)	US	ROA	+		+	+	-	Mixed
Cronqvist & Nilsson (2003)	Sweden	ROA		-				
Perez-Gonzalez (2002)	US	ROA				-	+	
	Valuation							
Adams et al (2007)	US	Tobin´s q			+			
Amit & Villalonga (2006)	US	Tobin´s q	Neutral	-	+	-	+	+
Barontini & Caprio (2006)	Europe	Tobin´s q	+	-	+	-	Neutral	Neutral
Fahlenbrach (2006)	US	Tobin´s q			+			
Favero et al (2006)	Italy	Tobin´s q	+	+	+	Neutral	Neutral	
Klein et al (2005)	Canada	Tobin´s q	Neutral	-			-	
Andersson & Nyberg (2005)	Sweden	Tobin's q	-	-	+	-	+	Neutral
Bennedsen & Nielsen (2005)	Europe	Tobin´s q		-				Neutral
Gompers et al (2004)	US	Tobin´s q		-				Mixed
Andersson & Reeb (2003)	US	Tobin´s q	+		+	+	-	+
Cronqvist & Nilsson (2003)	Sweden	Tobin´s q		-				
Perez-Gonzalez (2002)	US	M / B				-	+	
Claessens et al (1999)	Asia	Tobin´s q		-				+

This is to ensure readability and clarity of what previous authors have found. In table 2.1 above, we mark the found relationships with family firms, for each author, with either +,-, neutral or mixed standing for positive, negative, neutral or both positive and negative (non-linear) effects.

Many studies of family firms focus on either valuation or performance effects or just providing descriptive data in one of the fields, with many classifying Tobin's q as a performance measure. This is important to account for when comparing results between different studies. Most studies are also based on significantly fewer observation years which make our study more interesting and giving in this context.

2.1 Summary of Previous Research

- There seem to be a positive effect on performance and valuation by family control and an overall negative effect from control enhancing devices such as dual class shares.

- Founders that hold top management positions and family firms with only outside managers seem to be linked to both higher performance and valuation than in family firms with descendants to the founder involved in top management.

- There seem to be a positive non-linear effect of cash-flow ownership on both valuation and performance.

2.2 Performance

We divide this section into three sub-groups consisting of control, management and ownership to separately look at what has been found earlier in these fields in isolation. This is aligned with our overall structure of the thesis.

2.2.1 Control

Overall, most previous studies have found a positive relationship between family control and performance (Barontini and Caprio (2006), Sraer and Thesmar (2006), Andersson and Reeb (2003) etc.). Most studies have also focused on either ROA or ROE as performance metrics. The negative exception is Zellweger (2006) who analysed Swiss family firms. Zellweger (2006) showed that family firms have lower ROE than non-family firms. Possible explanations mentioned are financial slack, lower leverage, conservative accounting practices and a tendency for non-financial business goal, which is in line with the second agency problem (minority expropriation) presented further down in the theoretical section.

Excess control is broadly found to have a negative effect on performance which is logical, since the second agency problem of minority expropriation is present but the incentives for monitoring is not as strong as it would have been if there were no separation between votes and ownership. Barontini and Caprio (2006) show that family firms as the controlling shareholder are more likely to use control enhancing devices such as separation of ownership and votes and that this is negative for performance although the relation is not strong in their study. Gompers et al (2004) find that cash flow ownership is positive and voting ownership is negative for performance. This is explained by underinvestment by entrenched managers and incentives to pursue more aggressive strategies with larger cash flow ownership. In Sweden, Cronqvist and Nilsson (2003) conclude that families are more likely to use control enhancing devices and that this is linked to lower performance. An opposite conclusion were made by Favero et al (2006) who analysed Italian firms 1998-2003 and found that control enhancing devices increased performance, although some endogeneity in the results were indicated.

2.2.2 Management

Overall there seem to be a positive effect on performance by founder and professional management and a negative effect from descendant management. The effect of descendant CEO's has been shown to be particular negative in industries employing highly skilled labour, fast growing industries and for relatively large firms and that the positive effect of external management is due to extremely valuable expert knowledge (Bennedsen et al (2006)). Barontini and Caprio (2006) also find a negative effect of descendant management on performance, and these firms are not statistically distinguishable in performance from non-family firms. Maury (2005) find a positive relation on firm performance from

active family management either founder or descendant, whereas there seem to be no effect from professional management. Zellweger (2006) tracks down increasing levels of financial slack in the second generation of management, and the tolerance time for losses are higher in the third generation and that both these generations face declining performance compared to the founder generation. Sraer and Thesmar (2006) find only positive relations between family management and performance independent of management type. Heir-controlled firms also seem to be employing labour more effectively with e.g. lower wages. Professional managers seem to make more parsimonious use of capital, e.g. paying lower interest rates on debt, using less capital overall, employing more unskilled cheap labour and initiating more profitable acquisitions.

2.2.3 Ownership

To pinpoint the effect of ownership in isolation can be difficult due to the many mixed variables that could cloud the impact on performance. The primarily found relationship between ownership and performance is positive and non-linear, with the positive effect starting to wear off after a middle size ownership stake, approximately 30% (Gompers et al (2004 etc.)). Anderson and Reeb (2003) also show this, and if the ownership stake is over 60%, then family firms perform worse than non-family firms. Maury (2004) find no significant relation between ownership and performance for the full sample but when including only majority owned firms the relationship becomes negative indicating a concave function of ownership on performance. In conclusion, the consensus seem to be that the first agency problem (principal-agent) is more prominent in lower levels of ownership where monitoring is less beneficial and at higher ownership levels, the second agency problem of minority expropriation is more prominent e.g. higher consumption of perks. Barontini and Caprio (2006) find only a weak positive relationship between cash flow ownership and performance.

2.3 Valuation

This section follows the structure outlined above with previous findings grouped into control, management and ownership.

2.3.1 Control

Barontini and Caprio (2006) show that valuation is positively related to family control even after taking into account that families tend to use more control enhancing mechanisms, which they show depresses valuation. Villalonga and Amit (2006) also show that family firms in the US have higher valuations than non-family firms. They furthermore show that control enhancing mechanisms have a negative effect on firm value, even though US law protects minority shareholders better than most other country's legislations and make expropriation less likely. A separation of votes and capital is also shown to be negative for firm value by Claessens et al (1999) studying East Asian firms, concluding that the risk of

minority expropriation is a large problem for public corporations. This finding is further supported by Bennedsen and Nielsen (2005), and that this relationship is inversely related to the level of shareholder protection of the country in question. Accordingly, dual class shares and pyramids replace legal protection in countries with insufficient investor protection. Klein et al (2005) conclude that the ownership type does not affect value, but that strong corporate governance does. Having a high separation of votes and cash-flow ownership is detrimental to firm value according to their study.

2.3.2 Management

Barontini and Caprio (2006), show that founder management is strongly positive for valuation in family firms. The effect persists at the descendant stage if the descendants limit themselves to a non-executive role, but becomes negative if the descendant takes the role as CEO. Villalonga and Amit (2006) find that founder management is positive for valuation and that descendant management decreases valuation. This is explained by that the founder adds special competence to the firm which should not be expected to be transferred to the next generation. Anderson and Reeb (2003) find that founder and professional management increases value, whereas descendant management has no significant effect on value. Fahlenbrach (2006) states that founder manager firms tend to be higher valued than descendant manager firms and that they invest more in R&D, have higher capital expenditures and make more focused mergers and acquisitions.

2.3.3 Ownership

Barontini and Caprio (2006) find no significant relation between the share of cash flow ownership of the largest shareholder and valuation. Villalonga and Amit (2006) find that family ownership is positively related to valuation and that the minority is better off in family firms than in non-family firms. Anderson and Reeb (2003) supports this view and also rejects the possibility that family firms tend to use risk reduction measures, such as corporate diversification, to a larger extent than non-family firms. Claessens et al (1999) also supports that the level of ownership held by the largest shareholder is positively related to firm value.

2.4 Opposing Effects in Performance and Valuation

No author who have analysed both performance and valuation have, to our knowledge, found evidence of opposing effects in performance and valuation, which is rather intuitive (Favero et al (2006), Barontini and Caprio (2006) Bennedsen and Nielsen (2005) etc.). These studies have all reached the same conclusion of a positive impact on both performance and valuation of family firms in different parts of Europe. In light of this, it would be natural to expect that the same relationship holds for Sweden as the Swedish market is not extremely different from the rest of Europe. However, the previous research in Sweden points to a negative effect of family control on valuation (Andersson and Nyberg (2005)), which

makes room for a discrepancy in Sweden and is therefore potentially contrasting to the international results.

2.5 Takeaways of Previous Research

The main takeaways from the previous research are presented in table 2.2 below.

Table 2.2
Summary of previously found effects

The table summarizes previos research and presents the found relationships on average. (+) stands for positive relationship and (-) stands for negative relationship. Control means family control per se, and excess control is the effect of a higher dispersion between votes and capital ownership of the largest owner. Management effects are divided into whether the founder of the firm or a descendant to him is active in a management position or if the firm only employs outside professional managers. Ownership is what effect a higher cash flow ownership stake of the laregst owner has on performance and valuation.

Type of Effect	Control Effects		Management Effects			Ownership Effects
	Control	*Excess control*	*Founder*	*Descendant*	*Hired*	
Performance	+	-	+	-	+	+
Valuation	+	-	+	-	+	+

Family control per se, tends to have a positive effect on both valuation and performance on average. However, family's extensive use of control enhancing mechanisms is detrimental to specifically valuation but also to performance. When either the founder or only outside managers hold top management positions in a family firm, performance and valuation is better than when a descendant to the founder holds top management positions. The effect from a higher capital stake by the controlling family is also positive for both performance and valuation on average, however, the relationship does not seem to be linear.

It is important to have these results in mind when stating our hypotheses and when analysing our results later on, to see if these are similar to the Swedish market situation.

3. Theoretical Framework and Hypotheses

In this section, we first present the relevant theories for our study and then work through the expected impact these will have on our results regarding control, management and ownership as well as the possible opposing effects in valuation and performance. Then we describe and motivate our hypothesis based on the preceding discussion, theories and the previous research outlined above. We conclude the section with a summary of all our stated hypotheses to make it as readable and understandable as possible.

3.1 Central Theories and Problems

There are a number of different problems and concerns related to the specific impact of ownership, control and management of a firm. They have to a large extent been extensively researched and tested in prior studies and they are therefore well documented. The impact can be both positive and negative on firm performance and valuation.

The classical problem in contractual theory, found in many finance text books, is the *principal-agent problem* among dispersed firms (Ross (1973)), which states that it is very hard for a principal to make sure that an agent working under him will maximize the welfare of the principal. This is due to incomplete contracts, which make room for the agent to pursue other actions in addition to those that are value maximizing for the firm and the principal. This phenomenon is typically countered by more effective contractual arrangements, which make the incentives of the agent more aligned with the incentives of the principal, as well as through more monitoring of the agent by the principal. Complete contracts are extremely hard to write, so there is always room for unproductive actions from the agent. This is, as stated above, countered by more monitoring of the agents actions. However, monitoring is costly, and will not be beneficial if the ownership structure is dispersed, since the monitor supplies a public good to all shareholders, and the rent for the monitoring activity will accrue to all owners (free riding) and not only to the monitoring shareholder (Shleifer and Vishny (1986)). This will make monitoring unprofitable and will more likely result in additional value destroying actions from the agent.

Another issue to consider when analyzing family firm ownership, management and control, is the risk of expropriation of the minority by the controlling shareholder. This is widely known as the *minority expropriation problem* and was brought forward by Jensen and Meckling (1976). It takes form as the controlling shareholder divert company funds or engage in non-wealth maximizing actions to produce non-pecuniary benefits to himself such as hiring non-qualified related persons or initiating excessive remuneration packages. This is typically known as the private benefits control. It is beneficial since the controlling shareholder doesn't own 100% of the cash flow rights in the firm and therefore doesn't bear the full cost of the actions taken. The costs are instead divided among all shareholders and the minority, which doesn't receive any of the benefits of the controlling shareholders actions.

If the controlling owner is a widely held entity or an institution, the benefits of control are divided across the independent owners and therefore the incentives to expropriate the minority are lower. However, the incentives to monitor are also lower, enhancing the first agency problem (principal-agent problem). If, on the other hand, the largest owner is a family or an individual, the incentives for expropriation are higher as well as the incentives for monitoring. This will lead to that the second agency problem (minority expropriation) will be more prominent among family firms than in widely held firms (Amit and Villalonga (2004)). The empirical evidence on which agency problem that has the most leverage on performance and valuation is mixed but we believe that the principal-agent problem is the most important resulting in both higher relative performance and valuation of family firms due to their higher ownership concentration.

A different view to the agency theories can be found in the *Stewardship theories* (Lee and O'Neill (2003)). Stewardship theories are more focused on situations where the goals of the managers and the owners are more aligned than what is the case in agency theory (Davis et al. (1997); Schultze et al. (2003)). In a more closely held firm, owners and managers may focus on non-financial goals to protect "family agendas" (Zahra et al. (2004), which may result in poorer firm performance by such companies. This type of theory is less widely spread. However, it might be more suitable in a family firm situation.

Another view is that ownership concentration can be the endogenous outcome of profit-maximizing decisions by current and potential shareholders, and thus it should have no effect on firm value, as argued by Demsetz (1983). Support for this statement has also been shown by Demsetz and Lehn (1985), Himmelberg et al (1999) and Demsetz and Villalonga (2001).

3.2 Hypotheses

3.2.1 The Effect of Family Control on Performance and Value

Family control of a company can mitigate the principal-agent problem and reduce its costs in part due to the fact that the principal and the agent are closer, if not the same (Fama and Jensen (1983)). This also seems to be the general conclusion in previous studies which results are presented in table 2.1 above. Shleifer and Vishny (1997) also argue that large family investors are more effective in solving the agency problem by analyzing the impact executives have on firms. This is contrasted by e.g. Morck et al. (1988) who claim that large concentrated ownership in US corporations is an organizational form that leads to poor firm performance. This conclusion might be more viable in a country with high investor protection such as the US. However, there also exists evidence in favour of family control of US corporations e.g. Anderson and Reeb (2003) and Lee (2006). Something that also have been brought forward in favour of family control is that families monitor and control managers more efficiently through long term relationships among family members and within the family firm (De Angelo and De Angelo (1985)). One counteracting effect from family firm ownership might be that the costs associated with minority

expropriation might be higher, especially in the case of a divergence of control and ownership i.e. if the firm uses control enhancing mechanisms. This has been showed to be negative for both valuation and performance in previous studies (Barontini and Caprio (2006), Gompers et al. (2004) etc.). However, the overall effect of family control seems to be positive for both performance and valuation although opposing effects can be present. As a consequence of the previous discussion, we state the following hypotheses for control and excess control of family firms:

Hypothesis 1: Family firm performance and valuation are not worse than for non-family firms.

Hypothesis 2: Family firm performance and valuation both decrease in the wedge between control rights
and cash flow rights of the largest shareholder.

3.2.2 The Effect of Family Management on Performance and Value

Family management will reduce or even eliminate the principal-agent problem described above, since the principal and agent are the same. However this can also lead to an even greater propensity to exploit the minority by engaging in non-value maximizing actions that enhances the private welfare of the family e.g. through empire building etc. Family management can also incur a cost on the firm through poorer performance if better outside managers are put aside for family management. Multi-generation family firms might also suffer from a lack of entrepreneurial drive that characterizes the first generation of a family firm and it may also have an organization-serving culture that focuses on non-financial goals which both tend to retard firm performance. On the other hand, if the ownership structure is diluted, the firm might exhibit a performance serving culture with less emphasis on family objectives (Westhead and Howorth (2006)). The special knowledge that a founder brings to the firm is, however, generally considered to have a positive impact on the firm (Sraer and Thesmar (2006), Barontini and Caprio (2006), Anderson and Reeb (2003) etc.). Descendant management, on the other hand, is as stated more likely to be negative for the firm since descendants are appointed in competition with external managers that typically could be more appropriate for the position in a financial perspective. If the descendant is appointed on other criteria (nepotism), and non-pecuniary benefits are involved, this is negative for the firm and especially the minority investors who do not share the private benefits of control (Perez-Gonzales (2002). Previous studies also support the view of a negative descendant effect (Ehrhardt et al. (2006) etc.).

This might also create a wedge between valuation and performance if the descendant is not worse than an external manager but is believed to be worse by firm investors. This will depress valuation since investors believe that an external manager would increase performance relative to the descendant manager although this is not the case.

From the theories, previous research and the discussion above, we derive the following hypotheses for the management of family firms.

Hypothesis 3: Founder family firm performance and valuation are not worse for firms with founders as managers (CEO and/or COB), than for family firms with only external managers (CEO and COB).

Hypothesis 4: Founder family firm performance and valuation are worse for firms with descendants as managers (CEO and/or COB,) than for family firms with only external managers (CEO and COB).

3.2.3 The Effect of Family Ownership on Performance and Value

According to the agency theories outlined above, the principal-agent problem will be reduced with higher ownership concentration due to higher incentives for monitoring. The ownership structure can also be the outcome of profit-maximizing actions from current and potential shareholders although this is probably unlikely in the founder-family case since they are the actual founders of the firm. Although, this aspect is important to bear in mind when analysing family firm data, since the decision to remain as owners can be dependent on the performance of the firm. A poorly performing family firm might not be affordable to the family and as a result it is sold and converted to a non-family firm.

According to La Porta et al. (2002), the optimal level of minority expropriation is related to the costs of the actions taken. These consist of legal costs and cost in the form of lower future dividends. The costs are therefore linked directly to the level of ownership and the likelihood of minority expropriation is, therefore, lower the higher the ownership concentration of a controlling shareholder, as well as when the legal protection is high.

As stated above, according to stewardship theories, more outsider ownership in a family firm could imply a shift in focus from family agendas toward performance which can enhance the performance of the firm (Howorth and Westhead (2006)), which is contrasting to the agency theory view. This makes the results harder to analyse but it could be the reason for a non-linear function of cash-flow ownership on performance and valuation.

The theories behind the effect of the ownership level are mixed as well as the recent results from similar studies abroad but we assume that the agency theory is stronger due to the extensive number of previous studies providing the foundation for this theory. Therefore we state the following hypothesis for the ownership level of family firms.

Hypothesis 5: Family firm performance and valuation both increases in the level of cash flow ownership of the largest shareholder.

3.2.4 Theory behind Opposing Effects in Performance and Valuation

A theoretical foundation behind opposing effects in valuation and performance is a bit more complicated than e.g. the plain agency problems described above. However, there are companies that have lower valuation and at the same time perform better than the industry average. One concrete example was presented in the introduction and another such company is the family firm and shipping company Broström AB, which e.g. in 2005 had a Tobin's q of 1.32 compared to the industry average of 1.81 and a ROA of 10.1% compared to the industry average of 6.5%.

What can be the reason for these opposing effects in valuation and performance of family firms? Bennedsen and Nielsen (2005) show that the effect of dual class shares is negative on value but neutral on performance. They also find that the impact on firm value by control enhancing instruments is negatively correlated with the level of investor protection. This suggests that although the overall effect of family control is positive for both valuation and performance, the extensive use of control enhancing instruments by family firms, shown by e.g. Barontini and Caprio (2006), impedes firm value since the risk of minority expropriation increases in the wedge of control ownership and cash-flow ownership. At the same time this does not seem to affect performance at the same extent (Bennedsen and Nielsen (2005)). Another factor in favour of this is that family firms tend to pay lower salaries to employees in exchange for greater job security (Sraer and Thesmar (2006)) and, therefore, increases performance. Another explanation to this could be that family firms do not invest in R&D as much as widely held firms and that they have fewer employees as has been shown by Morck et al. (2000). This should increase current performance but decrease future performance. Other reasons could be that too much capital is kept inside the firm instead of being paid out as dividends, ineffective acquisitions and over-investments, which all could hamper valuation but not affect performance in the same way. Another thing that is important to bear in mind is that family firms might be more unwilling to take on debt to finance growth which typically is positive for relative valuations, but could hamper performance in the short run. This could lead to that family firms have too conservative balance sheet structures relative to peer companies in the industry and subsequently have a discounted valuation for this lack of increased growth.

Although there could be reasons for opposing effects in performance and valuation, most previous studies that have investigated valuation and performance effects, show that the family effect points in the same direction for both measures. Therefore, to remain consistent with our previous hypotheses and based on previous results, even though there are signs of a discrepancy in Sweden, we state the following hypothesis regarding a possible opposing effects in valuation and performance.

Hypothesis 6: There are no opposing effects in the valuation and performance of family firms.

3.3 Summary of Hypotheses

The table below summarizes our stated hypotheses which we will investigate further. We derived our hypotheses through our stated theoretical framework as well as the previous literature and base them on economic theory.

Table 3.1

Summary of Hypothesis, Variables used for Testing and Expected Results

Hypotheses	Main Variables used for Testing	Expected Results
H1: Family firm performance and valuation are not worse than for non-family firms.	Family firm dummy, Founder family firm dummy and Non-Founder family firm dummy.	Positive and significant coefficients.
H2: Family firm performance and valuation both decrease in the wedge between control rights and cash flow rights of the largest shareholder.	Wedge variable, Dual class shares dummy and Pyramid dummy, all interactive with family firm	Negative and significant coefficients.
H3: Founder family firm performance and valuation are not worse for firms with founders as managers (CEO and/or COB), than for family firms with only external managers (CEO and COB).	Founder Management dummy.	Non-negative coefficient.
H4: Founder family firm performance and valuation are worse for firms with descendants as managers (CEO and/or COB), than for family firms with only external managers (CEO and COB).	Descendant Management dummy.	Negative and significant coefficient.
H5: Family firm performance and valuation both increases in the level of cash flow ownership of the largest shareholder.	Cash flow ownership of largest owner interactive with family firm dummies.	Positive and significant coefficients.
H6: There are no opposing effects in the valuation and performance of family firms.	Through hypotheses stated above.	Opposing effects does not exist.

The variables used for testing are quite straight forward, but we will anyway describe them more in depth and how we will perform our analysis in the methodology section below, to avoid misinterpretations. The first hypothesis and the family firm dummies will test what effect the control as such, has on performance and valuation. The second, third, fourth and fifth hypotheses and the respective variables used for testing will disclose, in different dimensions, what effect the control structure employed by the controlling families have on performance and valuation. The sixth hypothesis is based on the results in of the preceding hypotheses.

4. Methodology and Data Description

In this section we will first present our database, and thereafter go through our definitions and assumptions that we have made in our thesis. After that, we go through our method of analysis and present descriptive statistics of the data.

4.1 Database Description

Our starting point of our thesis was an already existing dataset on Swedish firms. Our final dataset is a panel of over 600 Swedish firms consisting of all companies listed on the a-, o- and the attract-40 list or their historical equivalents on the Stockholm stock exchange, between 1985-2005, adding up to 4042 firm year observations in total. Our database consists of a large number of variables used either as dependent or independent variables, or in the construction of those variables, in our analysis. For each company and year we have 21 different accounting variables and another 10 company specific variables including age, ownership and management data etc. In total, this produces a panel data set of 125 302 observations, which form the basis of our study.

Figure 4.1
Total Firm and Family Firm Observations

The percentage of family firms is displayed on the left y-axis, and is shown by the grey bars each year.The total number of observations each year is displayed on the right y-axis, and is shown by the blue line.
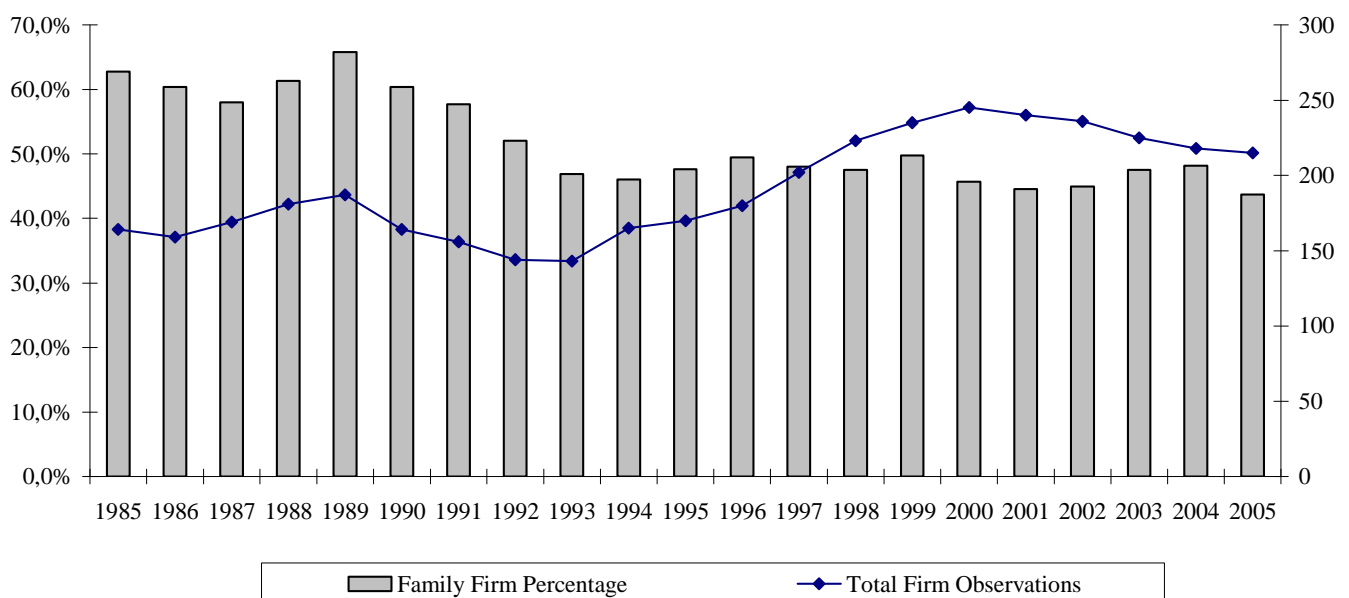
The concentration of observations is gravitating toward the latter part of the time series, which is displayed in table Figure 4.1 above. There also seem to be a shift from family firms toward a higher concentration of widely held firms at the end of the time series. This might have an impact on the results

and a separate analysis of smaller sub-samples might be appropriate to analyse if our results for the entire dataset is stable over time.

We have excluded firms belonging to the financial services industry since it's typically a highly regulated industry and financial firms have rather special balance sheet structures. Additionally, this has also been common practice in previous studies, so this will enhance the comparability of our results. We also choose to exclude firms who have their main listing in other countries, e.g. AstraZeneca and Autoliv, since the ownership structure is less clear for these companies and the availability of data is lower. These firms could also be classified as foreign, and then it becomes even more natural to exclude them from the sample. This concern only a few number of companies and will most likely not affect the results obtained from the remaining dataset.

4.2 Collection of Data

We started by collecting firm listing data from OMX to get a full sample of which companies were listed on the relevant stock lists in our years of interest. We then collected accounting data mainly from the SIX TRUST database with additions made for missing observations via annual reports. We then tracked down firm founders, start years and industry information from company websites or via e-mail or telephone contact with the companies in question. The documentation of control, management and ownership data was done through the books, Owners and Power in Sweden's Listed Companies (Sundin and Sundqvist (1986-2002) and Fristedt and Sundqvist (2003-2006)), with additional use of the SIS Ägarservice database. We collected data on ownership and voting stakes of the largest and second largest owner of each company and year, as well as information on company CEO and COB status. We also adjusted the cash flow ownership stake for the largest owner when pyramidal ownership structures where undertaken[5]. Overall, this was a lengthy procedure since we needed data for 21 years, the number of variables was quite large and missing/incorrect data was not uncommon.

Some data which we couldn't collect are unfortunately missing in the dataset. This was due to either inaccurate historical data in the databases used (typically duplicate accounting numbers), or that the data could not be found, typically no longer existing companies in the early period of the sample. However, the number of missing observations is less than 10 firm years, which should not bias the results.

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[5] We refer to the appendix for a further explanation of how the adjustment is done.

4.3 Main Variables

We include a number of different variables to perform our analysis, either variables used for testing the hypotheses, independent variables or control variables. These are all explained and motivated in detail below.

4.3.1 Dependent Variables

We define a number of different measures to evaluate both the valuation and performance of family firms. We pick different metrics for performance since this measure could be seen in different aspects, and this also improves the validity of our results. The variables are defined and explained in detail in table 4.1 below.

Table 4.1
Explanation of Dependent Variables

EBIT stands for Earnings Before Interest and Taxes. NOPLAT stands for Net Operating Profit Less Adjusted Taxes. IC stands for Invested Capital. EV stands for Enterprise Value. Non-financial debt is defined as the sum of trade payables, other short term liabilities, tax liabilities and advances from customers. The tax rate (T) is the effective tax rate paid by the company for each year = (Taxes on income / Income before taxes).

Dependent Variables	Explanation of Variables
ROA	EBIT / Total Assets
ROIC	NOPLAT / IC $\approx$ (EBIT(1-T))/(Net Debt + Equity) $\approx$ (EBIT(1-T))/(Total assets - Cash&Bank - Short term investments - Non-financial debt)
Tobin's q	EV / (Replacement cost of total assets) $\approx$ (Market capitalization + Book value of debt) / (Total Assets)

ROA is defined by us as operational income (EBIT) divided by total assets, since this is a common definition in other studies. It also gives a good understanding of the operational profitability. It is used by e.g. Anderson and Reeb (2003) and Barontini and Caprio (2006) in their extensive international study of family owned European firms.

We will also use ROIC as a performance metric since this is a primary driver of the valuation of a company (Koller, Goedhardt and Wessels (2005)), and deeply connected with Tobin's q through equations 1-3 below[6].

(1) $$ROIC = \frac{NOPLAT}{IC}$$

(2) $$EV = IC + \sum_{t}^{\infty} \frac{(ROIC_t - WACC)*IC_{t-1}}{(1+WACC)^t}$$

(3) $$Tobin's\ q = \frac{EV}{\mathrm{Re}\,placement\,\cos t(Assets)} \approx \frac{MV(Eq)+D}{BV(Assets)}$$

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[6] WACC stands for the Weighted Average Cost of Capital.

The conclusions from the analysis of ROIC and Tobin's q should therefore be consistent or a contradiction will be found, and future profits will probably deviate from the current profit level. This will be very interesting to analyse, and these two metrics complement each other very well since ROIC is a static one-year metric and Tobin's q is a forward looking metric, which is supposed to take all known information about the future into consideration. This is also a performance measure that has not been analysed before which is interesting and make this part a contribution in itself. Although this is an extremely good measure to use, it is very hard to pinpoint the many different variables included in the calculation of the invested capital (e.g. definition of financial assets) as well as NOPLAT (Net operating profit less adjusted taxes). Different companies also choose to disclose their assets in different ways making it very time consuming to get a perfect dataset of ROIC. Due to these problems, we do not claim to have calculated a perfect ROIC for all companies, but at least a satisfactory proxy is obtained. Some of the observations for the tax liabilities and for the advances of customers have not been reported by the SIX TRUST database which is interpreted as it is either zero or lumped into other short term liabilities, and will therefore not bias our calculations.

For valuation effects, we calculate Tobin's q which is defined as the enterprise value divided by the replacement cost of all assets. This is a good proxy for valuation and has been used extensively in previous research for both valuation and performance analysis. This metric is, however, quite difficult to get data on for the large numbers of companies and firm years we consider. We will therefore turn to a common proxy for this metric; the enterprise market-to-book value. This ratio is defined as the market value of equity and debt divided by the sum of their book values. Given that the company is not in financial distress, or that the debt has a fixed interest rate particularly different from current market interest rates, the approximation that market value of debt equals book value is realistic. We assume this holds for the companies in our sample, which we think is reasonable on average. This is also in line with many previous studies e.g. Barontini and Caprio (2006). With these assumptions stated, we can use the enterprise market-to-book ratio as a proxy for Tobin's q.

4.3.2 Control Variables

We will in all our regressions use the log of Sales and Age, leverage, Dividend yield, Cash and short term investments ratio to total assets and a H&M dummy as control variables, which are all explained below in table 4.2.

Table 4.2
Explanation of Control Variables

Control Variables	Explanation of Variables
Ln(Sales)	The logarithm of total sales.
Ln(Age)	The logarithm of firm age since founding.
Dividend Yield	Dividends divided by the book value of equity.
Leverage	Total debt divided by book value of equity.
Cash&Short Term Investments/Assets	Cash and bank assets plus short term investments divided by total assets.
H&M dummy	A dummy taking the value 1 if the observation is the company H&M and 0 otherwise.

In practically every study of this type the author controls for the size of the company. This can be done by either total Sales or total assets. Since the calculation of Tobin's q, ROA and ROIC involves total assets, we choose to use total sales as a control variable for size, since it should be less correlated with the dependent variables. We include firm age since e.g. young firms typically have poorer current conditions but better future prospects than older firms. This can affect performance and valuation in different ways. We include dividend yield since dividends are a primary driver of market value, and high dividends also demands high performance for financial stability, putting pressure on management. Leverage affects both performance and valuation in theory, and is a commonly used control variable in most other similar studies. Cash and short term investments to assets are not commonly used, but rather only cash to assets. We choose to include this variable since it can affect both performance and valuation through lower margins since the operating margin is typically higher than the return on short term financial assets, and a lot of financial assets could instead be transferred to shareholders via dividends. We include a H&M dummy since this company is constantly both performing and are valued way above industry average, and at the same time is run by a descendant (Stefan Persson).[7] This will create a positive descendant effect which in light of previous research has not been shown before. Since we believe that this is a rare exception, we think it is motivated to exclude the company in our descriptive sample and add a dummy to control for H&M in our regressions. In *addition* to these control variables, we will include variables to test our hypotheses and also other variables, to get a broader perspective of the effects behind the performance and valuation of family firms.

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[7] A further description is provided in the appendix.

4.3.3 Variables Used for Testing of the Hypotheses

As stated earlier in table 3.1, we have chosen to include the variables below to test our hypotheses.

Table 4.3
Explanation of Main Variables used for Testing

Main variables used for testing	Explanation of Variables
Family firm dummy	A dummy variable taking the value 1 if the company is either a Founder family firm or a Non-founder family firm and 0 otherwise.
Founder family firm dummy	A dummy variable taking the value 1 if the company is a Founder family firm and 0 otherwise.
Non-Founder family firm dummy	A dummy variable taking the value 1 if the company is a Non-founder family firm and 0 otherwise.
Wedge	A variable calculating the difference between votes ownership and cash-flow ownership of the largest owner.
Dual class shares dummy	A dummy taking the value 1 if the company uses dual class shares and 0 otherwise.
Pyramid dummy	A dummy taking the value 1 if the largest owner controls the company through pyramid ownership and 0 otherwise.
Founder Management dummy	A dummy taking the value 1 if the founder of a company holds either the position as CEO and/or COB and 0 otherwise.
Descendant Management dummy	A dummy taking the value 1 if a descendant to the founder of a company holds either the position as CEO and/or COB and 0 otherwise.
Cash flow ownership of largest owner	Variable displaying the absolute level of cash-flow ownership of the largest owner.

All these variables are quite straightforward, and the link to the stated hypotheses' are found in table 3.1 above.

4.4 Adjustment for Outliers

To get a good dataset with no distortions, we exclude some outliers with extreme values. We define an observation as an outlier if the ROA and/or ROIC is higher than 50% or lower than -50%, or if Tobin's q is above 10 or below 0.1. The span of allowed observations are quite large due to these limits and the number of excluded observations are quite small with the ROIC limits being the most excluding and the Tobin's q limits the least excluding. After making this adjustment, the mean values of the variables we are analysing do not differ very much from the median values (See tables A.1 and A.11 in the appendix), indicating that influential outliers are excluded. Median values are less sensitive to influential outliers and could be used to make a robustness test of the results obtained thorough the mean value analysis. However, after making this adjustment to the data set, the need for such control should be less crucial. We will anyway report median values of the most important variables in table A.11 in the appendix.

4.5 Industry and Time Adjustment

Performance- and valuation measures must be adjusted for time and industry if the results are not to be biased. This will be the case if no adjustment is made, and e.g. there is a high concentration of family firms in relatively high performing industries, or in industries where there are a lot of R&D and other off-balance sheet items that affects both relative valuation and performance.

Table 4.4
Industry Performance and Valuations

Companies are grouped into industries according to the classification done by Affärsvärlden. "TIME" refers to Telecom, Information, Media and Entertainment. The observations are adjusted for outliers according to the previously stated assumptions.

INDUSTRY ROA	Raw Material	Industrial	Consumer Goods	Healthcare	Real Estate	"TIME"	IT/Telecom Equipm.	Services
Average	4,7%	6,8%	6,9%	-1,4%	6,3%	0,5%	1,5%	6,0%
Median	6,2%	7,2%	8,2%	4,4%	6,3%	4,1%	4,8%	7,7%
Standard Deviation	10,3%	7,6%	11,4%	17,8%	4,4%	16,2%	13,5%	11,2%

INDUSTRY ROIC	Raw Material	Industrial	Consumer Goods	Healthcare	Real Estate	"TIME"	IT/Telecom Equipm.	Services
Average	5,8%	6,3%	6,5%	5,5%	5,9%	5,1%	5,1%	7,5%
Median	6,9%	6,8%	6,8%	6,3%	6,6%	6,6%	7,4%	7,7%
Standard Deviation	11,8%	10,9%	11,9%	13,4%	11,3%	13,7%	14,4%	12,0%

INDUSTRY TOBIN'S Q	Raw Material	Industrial	Consumer Goods	Healthcare	Real Estate	"TIME"	IT/Telecom Equipm.	Services
Average	1,38	1,35	1,62	2,40	1,30	2,21	2,04	1,78
Median	1,23	1,22	1,33	1,86	1,05	1,67	1,58	1,49
Standard Deviation	0,66	0,55	0,95	1,51	0,82	1,52	1,47	0,97

| N (Number of Firm Years) | 391 | 1500 | 426 | 282 | 373 | 566 | 223 | 232 |

An example of the latter would be the pharmaceutical industry, where market-to-book ratios are typically higher than in most other industries mainly due to high R&D spending which is not capitalized on the balance sheet. This is clearly shown in the table 4.4 above, which displays the average, median and standard deviations of ROA, ROIC and Tobin's q for all industries over the entire sample, with adjustment made for outliers. Both average and median performance and valuation differs quite a lot between industries. We, therefore, adjust every observation of the above stated dependent variables with the industry average for that particular year. This alleviates both the bias coming from excess performance in certain industries, as well as the temporal impact of boom or bust periods in any particular year.

Most of the control variables are also adjusted for time and industry, since these values could also be systematically different between industries. We adjust sales, age, dividend yield, cash and short term investments to assets and leverage since also these metrics can be assumed to differ between industries on average.

Companies are sorted into industries according to the industry list provided by Affarsvärlden. We then adjust each observation by either subtracting the industry mean from the observation or taking the relative difference. It is more intuitive to use relative adjustment when looking at Tobin's q but absolute adjustment when looking at ROA and/or ROIC. In our regressions, we only use absolute adjustments to be consistent.

4.6 Method of Analysis

We use both descriptive and regression analysis to analyse the completed database. Our regression analysis is done in multiple versions and specifications to be able to analyse the data completely, which also provides robustness to the results obtained. Since we adjust our observations for time and industry we can use OLS with less risk of having fixed effects biasing the sample. However ordinary OLS can provide other problems, and we therefore use White's heteroscedasticity consistent covariance matrix estimator to handle possible heteroscedasticity which normal OLS does not account for. This is an attractive method since in the absence of heteroscedasticity, these estimations will give approximately the same results and our first graphical tests of the regressions could not rule out heteroscedasticity. We therefore do not need to do any formal testing for heteroscedasticity, which typically is very time-consuming when dealing with a large amount of independent variables.

On the basis of the variables we have gone through above we use the following basic regression model specification in our regression analysis:

$$Y = \alpha + \beta_1 Ln(Sales) + \beta_2 Ln(Age) + \beta_3 Dividend + \beta_4 Cash \& S.T.Inv./Assets$$
$$+ \beta_5 Leverage + D_1(HM) + \varepsilon$$

It is somewhat different from the specification of e.g. Barontini and Caprio (2006), since they control for growth but not financial assets. This could of course hypothetically affect our results in a negative way if the specification is not complete, however, we believe that this basic specification should capture the most important factors for the dependent variables. To the basic regression we use additional variables, specified in table 4.3, to test our hypotheses and to find specific characteristics belonging to family firms.

Since we adjust our dependent variables and some of the independent variables for both time and industry we will avoid fixed effects in our regressions stemming from that it is not the same companies that are present in all sample years. One could also control for this by conducting a fixed effects regression with the company name as the fixed variable. In this type of regression you estimate individual intercepts for all companies, instead of one intercept for the whole sample. We also perform this kind of regression to make our results as reliable and robust as possible. One caveat in making this type of regression though, is that if a company has only one observation, the intercept will explain the dependent variable perfectly, which is not good and creates biased results. With only a few observations per company, this problem becomes smaller, but it is much better if the sample includes only companies with at least a few observations each.[8] We exclude companies with only one or two observations in these regressions, to distort the data as little as possible.

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[8] Approximately five observations should give more accurate results according to Per-Olov Edlund, Associate Professor in the Department of Economic Statistics and Decision Support, Stockholm School of Economics.

We also control our data and our specified regressions for autocorrelation, multicollinearity and normality of the error term, so that our results are true and can be used to draw conclusions that are valid. We also show correlation coefficients for our regressions, in tables A.14 and A.15 in the appendix.

4.7 Descriptive Statistics

In this section, we display the most important descriptive statistics that we have found, and from that, draw inferences on what seem to be extra important to analyse further. Our descriptive statistics are found in full in the appendix and are very extensive and clearly displayed to ensure that a thorough analysis of the data can be made. We choose to enlighten certain variables to be able to analyse the differences in valuation and performance of different management regimes and ownership structures. A summary of the most important variables are found in table 4.5 below.

Table 4.5
Summary Statistics of Firm Characteristics

The total data sample consists of 4042 firm observations from over 600 firms over the period 1985-2005. The data is collected from the SIX TRUST database and financial statements. Cash flow is the percentage of cash flow ownership held by the largest owner. Wedge is the percentage difference between votes ownership and cash flow ownership held by the largest owner. Total Assets and Sales are in million SEK.

Variable	Mean	Median	Std. Deviation
ROA	4,8%	6,5%	27%
ROIC	6,0%	6,4%	1294%
Tobin's q	1,64	1,31	2,74
Tot. Assets	6 945	917	20 857
Sales	6 729	839	21 570
Age	46,9	30	44,8
Debt / Equity	2,81	1,86	8,75
Cash Flow	26,2%	21,8%	19,3%
Wedge	17,2%	15,2%	16,8%
Dual Class Shares	70,4%	1	45,7%
Pyramids	18,8%	0	39,1%
Cash & S.T. Investments/Assets	13,7%	8,7%	15,4%
Dividend Yield	4,5%	4,0%	5,1%

One can see in table 4.5, that most variables tend to have higher averages than median values which indicate existence of outliers in the data set. This is corrected through the above defined adjustments, but it is also important to have this in mind when analysing the data results based on only average values.

When looking at what factors that are important for performance, we find that in particular size (tot. assets) and age seem to be important, which could also be assumed beforehand. This relationship is displayed below in figure 4.2 below, a matrix of the top and bottom 50% of all firms ranked by assets and age, and figures 4.3 and 4.4 with all firms ranked in quartiles of both age and assets with the average ROA and ROIC on the y-axis's. The relationship with Tobin's q is also displayed in figure 4.5 below.

Figure 4.2
Performance Matrix by Size and Age

All firms are divided into one of the four quadrants depending on the relative age and size (Total Assets) compared to the median value of all firms. The average ROA for each quadrant is displayed in the matrix. Larger and older firms are displayed in the top left cornaer in the matrix.

		Assets	
		Larger	**Smaller**
Age	**Older**	7,71%	7,57%
	Younger	6,07%	-0,23%

What is particularly interesting with the matrix above is that when a company is older, then the size of the firm does not seem to have any large effect on performance, while this is not true when the company is young, on average. High performing young companies seem to be those that grow relatively fast, compared to others, which is quite logical.

Figure 4.3
Age and Size impact on ROA

All firms are divided into age and size (Total Assets) quartiles and the average ROA for these quartiles are displayed below.
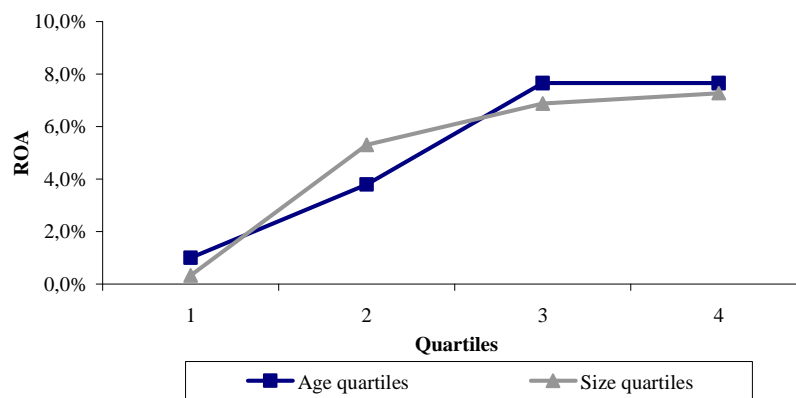

Figure 4.4
Age and Size impact on ROIC

All firms are divided into age and size (Total Assets) quartiles and the average ROIC for these quartiles are displayed below.
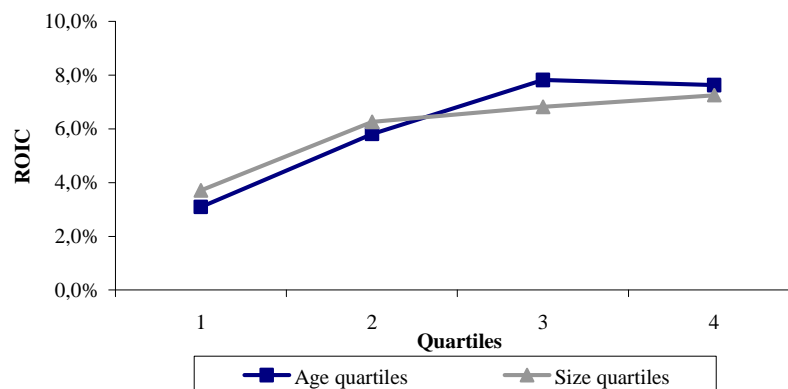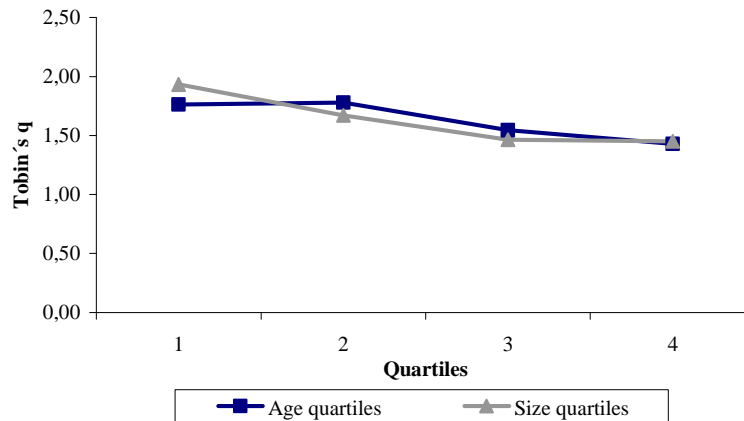
Figure 4.5
Age and Size impact on Tobin´s q

All firms are divided into age and size (Total Assets) quartiles and the average Tobin's q for these quartiles are displayed below.

The relationship with age and size is positive for performance and the relationship with valuation seem to be the opposite which is rather interesting, although the slope of the curves is not extremely steep in the valuation case. Since these two variables seem to have different effects on valuation and performance, it is important to control for these factors in the analysis of the data, especially in the context of hypothesis 1 and 6. We hypothesize that these effects could stem from that older and larger companies that are mature and have good and stable revenues pay out too little to shareholders. In other words, these companies presumably over-invest and get punished by investors in the form of lower relative market valuations.

We expect that the regressions will give us the same results, with highly significant variables at least for the performance results. One should also suspect that both size and age should be highly correlated and it might not be accurate to include both in the same regression since multicollinearity might arise from this. When controlling the level of correlation between these two variables over the entire sample we find a correlation coefficient of 25.7% which is quite high, but not overly so.

To be able to pinpoint reasons for a possible discrepancy in performance and valuation, we constructed table 4.6 below, which groups firms into one of four quadrants based on valuation and performance.

Table 4.6
Matrix of Performance vs. Valuation

All firms are placed in one of four quadrants based on if the firm is above or below the median value of ROA and Tobin's q. These measures are industry and time adjusted to make a comparison across industries possible and high valued and high performing firms are placed in the top left quadrant. The variables are more specifically defined in the appendix and D/E stands for Debt/Equity, RR for Retention Ratio, Blockholdings are a dummy which takes the value 1 if the second largest owner has more than 10% of the votes, Cash flow is the cash flow rights of the largest owner and DY is Dividend Yield based on book value of equity. Total Assets are in Million SEK.
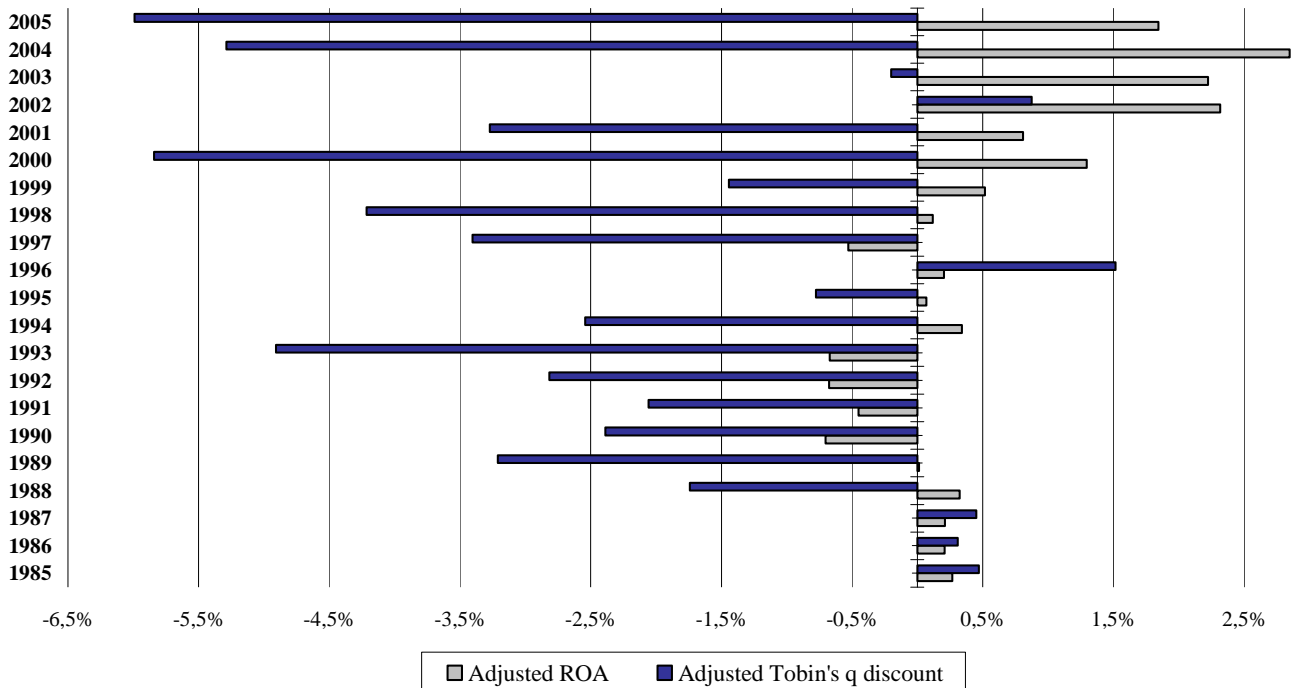
Performance

		High			Low	
		Mean	Median		Mean	Median
High	Age	50,0	39,0	Age	41,2	22,5
	Assets	5680	784	Assets	5717	690
	Cash flow	27,1%	22,6%	Cash flow	26,5%	22,3%
	Wedge	18,6%	15,7%	Wedge	16,8%	14,9%
	DY	6,9%	5,9%	DY	3,3%	2,9%
	Dual class shares	69,2%	100,0%	Dual class shares	72,5%	100,0%
	RR	77,6%	79,9%	RR	86,1%	88,7%
	D/E	2,4	1,5	D/E	3,7	2,2
	Cash&S.T. Inv/Assets	15,7%	10,5%	Cash&S.T. Inv/Assets	16,7%	9,7%
	Blockholdings	47,3%	0,0%	Blockholdings	49,9%	0,0%
	N	1317		N	708	
	Family Firms	52,8%		Family Firms	47,6%	
Valuation		Mean	Median		Mean	Median
Low	Age	51,8	33,0	Age	44,3	25,0
	Assets	9127	1201	Assets	7664	988
	Cash flow	24,5%	20,6%	Cash flow	26,2%	21,8%
	Wedge	16,9%	16,4%	Wedge	16,2%	14,4%
	DY	4,4%	4,1%	DY	2,8%	1,8%
	Dual class shares	68,8%	100,0%	Dual class shares	71,5%	100,0%
	RR	81,0%	84,2%	RR	85,2%	91,6%
	D/E	2,0	1,5	D/E	3,3	2,3
	Cash&S.T. Inv/Assets	12,3%	7,8%	Cash&S.T. Inv/Assets	12,8%	7,9%
	Blockholdings	41,4%	0,0%	Blockholdings	49,8%	0,0%
	N	753		N	1243	
	Family Firms	51,4%		Family Firms	51,4%	

The lower left group (high performance and low valuation), which is the one which should influence a possible discrepancy in valuation and performance (hypothesis 6), seem to have a number of characteristics which can be singled out as possible explanations. They have lower leverage, are older, larger, have fewer block holders, less financial capital and the capital stake of the largest owner are the lowest on average between the four groups. It is interesting since more block holdings and a higher capital stake of the largest shareholder should reduce the second agency problem. It could also be explained by the fact that these firms are older and larger mature firms which tend to invest more ineffectively than the top left group (high performance and high valuation), instead of paying out dividends. This could be a factor for a depressed valuation of these firms since investors might believe that the funds could be invested more profitably outside the firm holding the performance of the firm constant. It is important to control for these factors to see if the regressions will give output that can result in valid conclusions about the data.

When looking at average relative family firm performance and valuation over time, as in figure 4.6 below, we can see that there seem to be no systematic opposing effects between valuation and performance in the earlier years of the sample.

Figure 4.6
Family Firm Performance and Valuation

The bars displays average industry adjusted ROA and Tobin's q each year for family firms. ROA is absolutely adjsuted and Tobin's q is relatively adjusted. To adjust both measures absolutely gives the same pattern, however, doing it this way is more intuitive.

Legend: ☐ Adjusted ROA   ■ Adjusted Tobin's q discount

What is striking is that family firms tend to trade at a significant discount in most years whereas the performance figures are mostly positive or around zero. When looking more closely at the performance figures a business cycle pattern emerges for family firms. Family firms tend to perform relatively better in good years and relatively worse in bad years, e.g. in the recession in the beginning of the 90's, with exception for the post-internet bubble years, where the performance has been maintained at high levels. There also seem to be a shift in the last eight years of observations toward a discrepancy, starting in 1998. The performance of family firms have improved over time, but the discount on valuation have remained or even increased during these years, which is interesting and calls for an investigation of sub-samples in separation. Clearly, there seem to be a time effect behind the possible opposing effects in family firm performance and valuation. Especially the last two years are interesting since the opposing effects seem to be largest in these years. Therefore we will look at the last two years for more clues what could drive the discrepancy.

Table 4.7
Dexcriptive statistics of years 2004-2005

Mean statistics over the years 2004 and 2005. Total asstes are in million SEK, Dividend yield is based on book value of equity, Cash flow rights is the ultimate cash-flow rights held by the largest owner, D/E is debt to equity in book values and Wedge is the difference between votes and cash flow ownership of the largest owner.

TYPE OF CONTROL	N	Total Assets	Age	Dividend yield	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow rights	Wedge	Dual classes	D/E	RR	Adj. ROA	Adj. Tobin's q
Founder-family firms	96	3979	38,1	6,8%	20,9%	7,6%	30,7%	22,2%	95,8%	1,2	67,3%	4,2%	1,02
Non-founder family firms	98	6846	57,8	5,3%	11,3%	11,7%	26,9%	13,9%	62,1%	1,7	74,8%	0,6%	0,87
Other	229	12286	35,0	4,5%	16,7%	14,5%	16,1%	3,2%	37,6%	1,6	81,6%	-2,0%	1,05
Total	423	9011	41,0	5,2%	16,4%	12,3%	21,9%	10,0%	56,1%	1,5	76,8%	0,0%	1,00

By looking at table 4.7 we can see that non-family firms are both higher valued and perform worse than both types of family firms during the last two years in the sample. It is also clear that the large negative effect on valuation stems mostly from non-founder family firms, and the large positive performance effect stems mostly from founder family firms. In the non-founder family firm case, we cannot rule out endogeneity since outside families could have purchased undervalued companies to a large extent during this period. For the founder family firms we see that although they excel in performance, their valuation is not as good as the poorly performing non-family firms. It could be due to that these firms tend to choose a more solid financial structure with less leverage and a higher degree of short term financial assets than other types of firms, i.e. they could probably pay out more funds to the shareholders than what they do. Their investments could also be inefficient or their required rate of return could be higher than other companies, which create a lack of investment options due to that. Therefore they might keep the funds internally as cash or short term investments for future needs. Another possibility is that investors mistrust the controlling family because of the much larger separation of votes and cash flow ownership, and therefore, they demand a premium to hold shares in the company.

### *Table 4.8*
Descriptives on Top 10% Discrepancy Firms

All companies and all family controlled companies are sorted according to the difference between their adjusted ROA and their adjusted Tobin's q. The 10% of firms with the highest difference is then grouped together, for both all firms and only family firms, and mean values for the variables are calculated. Total assets are in Million SEK, Leverage is Debt/Assets, DY is the Dividend Yield based on book value of equity, Cash flow rights is the percentage of ultimante cash flow right in control of the largest owner, Wedge is the difference in votes and capital ownership of the largest owner and Blockholdings are the number of firms that have a secondary owner with more than 10% of all votes in the company. The averages for all firm observations are displayed at the bottom as a reference.

Type of Firm	Adj. ROA	Adj. Tobin´s q	Total Assets	Age	Leverage	DY	Cash & S.T. Investments/Assets	Cash flow rights	Wedge	Block holdings	Family Firms
Top 10% (All Firms)	2,3%	0,55	6349	42,9	53,5%	3,0%	15,2%	24,3%	14,7%	34,8%	55,2%
Top 10% (Family Firms)	2,9%	0,54	3382	49,9	54,9%	3,1%	15,3%	28,4%	21,6%	31,7%	100,0%
All Firms	0,0%	1,00	6 945	46,9	61,9%	4,5%	13,7%	26,2%	17,2%	47,4%	51,9%

An additional thing that needs to be analysed is that over time all types of firms tend to have grown, but particularly founder family firms. This is clear when comparing table 4.7 and table A.1 in the appendix, which illustrates the descriptive statistics for the full sample. Since we know, from figures 4.3 and 4.4 above, that a larger firm tends to have better performance than a smaller firm, the large increase in performance of family firms in recent years can be an effect of this growth.

Another interesting finding is that over time the average age of every firm in the sample seems to have dropped. This is clear from figure 4.7 below where the age distribution over time is displayed.

Figure 4.7
Age distribution of firms over the entire sample
Histograms of the age distribution of firms for every year in the sample, merged into one 3-D chart.
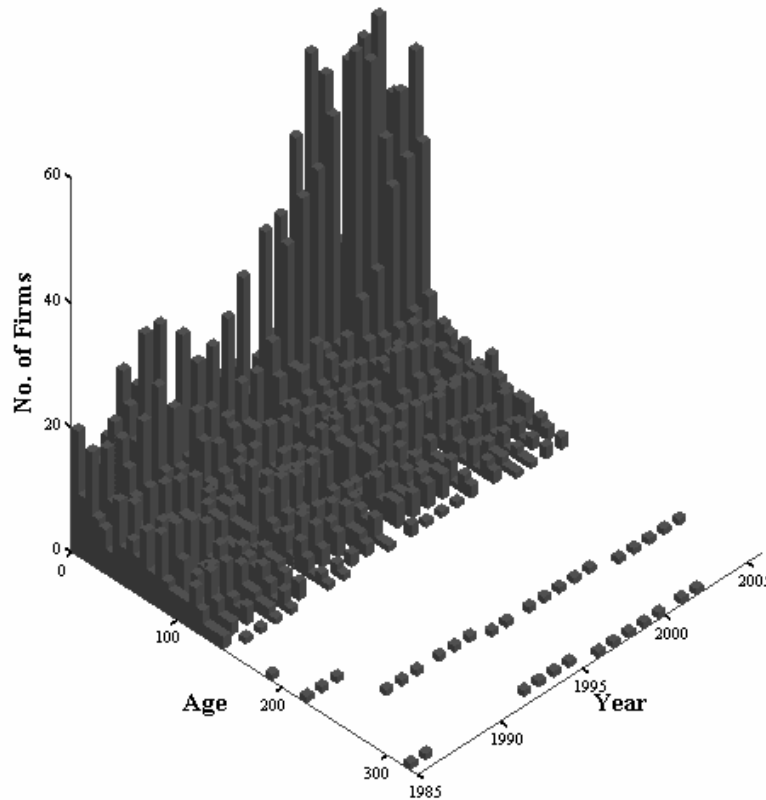
This phenomenon is probably driven by that more firms have decided to go public in recent years, and especially young companies in young industries. This is interesting since age is a positive factor for performance but not for valuation. Comparing table 4.7 above and table A.1 in the appendix we can see that all firm types have dropped in average age in recent years, but non-family firm age tend to have dropped more on average, both relatively speaking and in absolute terms. This is also an interesting factor for the later years' results, of increased opposing effects in valuation and performance of family firms.

What typically seems to affect valuation in many previous studies is the use of control enhancing mechanisms. We therefore divided all firms into different wedge classes depending on the percentage separation of votes and cash flow ownership of the largest owner. The relationship is displayed in figures 4.8 and 4.9 below, which have fitted lines included to enlighten the relationships further.

Figure 4.8
Wedge vs. Performance

All firms are divided into different wedge classes depending on the level of separation of votes and cash flow ownership of the largest owner. The wedge classes are 0%, 0-10%, 10-20%, 20-30%, 30-40% and >40%. The average ROA for these wedge classes are displayed on the y-axis.
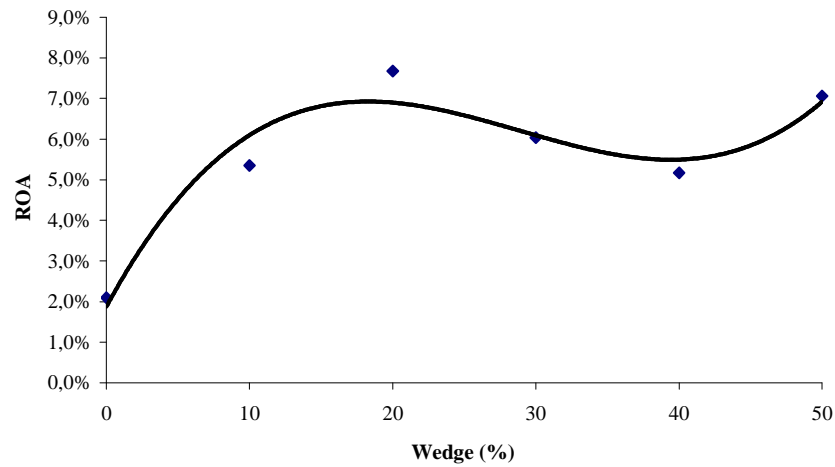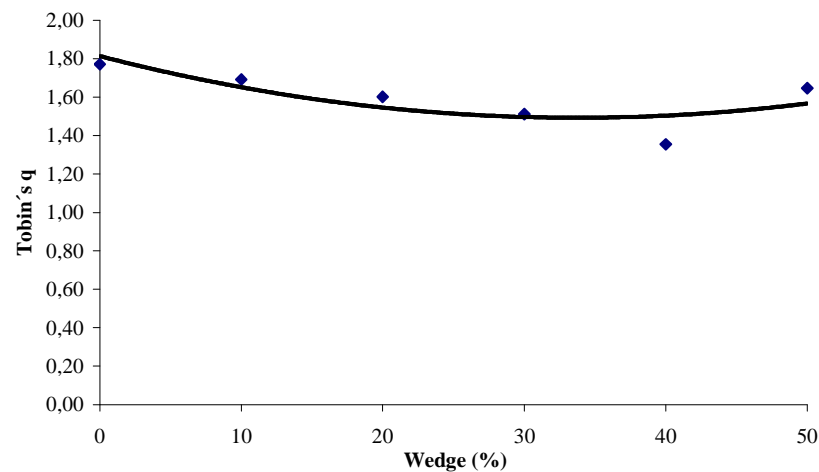

Figure 4.9
Wedge vs. Valuation

All firms are divided into different wedge classes depending on the level of separation of votes and cash flow ownership of the largest owner. The wedge classes are 0%, 0-10%, 10-20%, 20-30%, 30-40% and >40%. The average Tobin's q for these wedge classes are displayed on the y-axis.

One can clearly see from these figures that the relationship with valuation seems to be negative except for the group with a wedge in excess of 40%. This could possible be due to extreme values. The relationship with performance seems to be more unclear, and no linear relationship can be found. These findings are interesting since they point in favour of the 2nd hypothesis in the valuation case. It is also interesting since if the wedge only affects valuation, it could be a factor for the opposing effects in family firm valuation and performance, if families use control enhancing mechanisms to a larger extent. When looking at table A.1 in the appendix, one can see that this is clearly the case and the average wedge is much higher for family firms, than for non-family firms.

4.8 Summary of Preliminary Descriptive Statistics

- The percentage of family firms has decreased over time, possibly due to an overall increase in total firms on the relevant stock listings.

- Size and Age seem to drive performance but not valuation to the same degree. Size seems to be more important at younger firm ages.

- The average age have dropped over time for all types of firms, but especially for non-family firms.

- Discrepancy firms tend to keep more funds inside the firm with lower leverage and more financial slack, and have lower dividend yields than the average firm.

- The opposing effects in family firm performance and valuation seem to be increasing over time.

- Separation of votes and ownership seem to be negative for valuation but not for performance and could be a factor behind the opposing effects in valuation and performance, found in family firms.

5. Main Results

Our main results will include both descriptive and OLS regression results, which we divide into our prior structure of control, management and ownership for a clear presentation of the results. We disclose the relevant data under each category, and full data on regressions and descriptive statistics are found in the appendix.

In our OLS regressions the control variables are significant in almost all specifications. The significant relationships are displayed in table 5.1 below. We also display the implied impact by an increase of one standard deviation on the different control variables.

Table 5.1
Overall Regression Results on Control Variables

All control variables' relationships are displayed in the table. A plus or minus sign indicates a significant positive or negative relation in most or all regression specifications. Under the signs, we display the effect on the industry adjusted dependent variable of an increase in the quantitative control variables (H&M excluded), by 1 standard deviation, based on our control regressions.

Control Variables	ROA	ROIC	Tobin's q
Ln(Sales)	+	+	-
	9,13%	3,76%	-0,557
Ln(Age)	+	+	Insignificant
	1,73%	2,29%	
Dividend Yield	+	+	+
	4.27%	4,44%	0,188
Leverage	Insignificant	Insignificant	-
			-0,027
Cash&Short Term Investments/Assets	-	+	+
	-1,12%	2,55%	0,238
H&M dummy	+	+	+

What is most striking is that short term financial assets have different relationships with ROA and ROIC. This can however be explained by that the calculation of ROA is affected by the amount of financial assets through an increased asset base, but not the calculation of ROIC. It is also interesting to see that size and age have different effects on performance and value, which was predicted earlier. Especially size seem to have the largest economical effect on both performance and valuation, but with opposing effects. An increase of one standard deviation in sales relative to the industry average, lowers the industry adjusted Tobin's q by 56 percentage points on average. The same operation causes the industry adjusted ROA to increase by 9.1 percentage points, on average.

5.1 Control

Hypothesis 1: Family firm performance and valuation is not worse than non-family firms.

The results support the first hypothesis for the performance part, with both higher average adjusted and unadjusted ROIC and ROA for family firms (see table A.1 in the appendix), as well as significant and positive dummy coefficients in the regressions, with results presented in tables 5.2 and 5.3 below.

Table 5.2
Family Firm and Non-Family Firm Differences in Means

*The difference in means is between founder family firms and non-family firms, and between non-founder family firms and non-family firms. All measures are industry and time adjusted., except the wedge. P-values from the t-tests are dislpayed and the significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level.*

DIFFERENCE IN MEAN	ROA	ROIC	Tobin's q	Wedge
Founder Family Firms	1,3%***	0,8%*	-3,6%**	13,3%***
(p-value)	0,001	0,082	0,029	0,000
Non-Founder Family Firms	1,0%**	0,3%	-5,6%***	13,2%***
(p-value)	0,014	0,537	0,001	0,000

The positive performance effect seems to be stronger for founder family firms than for non-founder family firms, since in the ROIC regressions the non-founder family firm dummy is positive but insignificant and the significant coefficients in the ROA regressions are larger for founder family firms than for non-founder family firms. The results in the valuation part however, contradicts the first hypothesis with both lower adjusted and unadjusted Tobin's for family firms with non-founder family firms especially low. These descriptive statistics are also supported by the regressions with highly significant negative dummy coefficients.

Table 5.3
Regression results on Control

*Regression results picked from the full list in the appendix. The significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level and the t-values are reported in parenteses under each coefficient.*

Regression coefficients	ROIC	ROA	Tobin´s q
Family firm dummy	0,013***	0,017***	-0,109***
	(3,491)	(5,960)	(-4,100)
Founder family firm dummy	0,018***	0,024***	-0,091***
	(4,169)	(6,928)	(-2,695)
Non-founder family firm dummy	0,004	0,009***	-0,132***
	(1,019)	(2,628)	(-4,423)
Founder family firm wedge	-0,004	-0,023	-0,999***
	(-0,130)	(-0,873)	(-3,489)
Non-founder family firm wedge	-0,019	-0,015	0,159
	(-1,171)	(-1,083)	(1,441)

The results do not give uniform evidence in favour of the first hypothesis and we therefore have to reject it. However, the results are interesting since they support the view of opposing effects between valuation and performance of family firms, which is opposite to hypothesis 6. According to the regressions, families have a 1.7 % higher industry adjusted ROA, and a 1.3% higher industry adjusted ROIC than non-family

firms. At the same time they trade at an industry adjusted discount of 10.9% on average, compared to non-family firms. The difference in ROA and ROIC can be due to financial assets and liabilities that affect the total asset stock, which is not accounted for in the ROIC calculation.

Between family firms however, there seem to be a rational relation between valuation and performance since founder family firms are both higher valued and have higher performance on average than non-founder family firms. The discrepancy seems only to be between family firms and non-family firms.

Hypothesis 2: Family firm performance and valuation decreases in the wedge between control rights and cash flow rights of the largest shareholder.

For performance, control enhancing mechanisms does not seem to have any linear significant effect which we also can see in Table 5.4 below where family firms in different wedge classes are displayed. However, the effect seems to be positively non-linear with a top performance for companies with a wedge of 10-20%. The regressions also do not show any significant results for performance, although all coefficients are negative. Valuation seems to be strongly negatively effected by the wedge except for the highest wedge class. This could be due to extreme values or it can be due to that the oldest and largest family firms tend to be the ones that employ the largest separation of votes and cash flow ownership. This could be an indication of the previously mentioned overinvestment problem.

Table 5.4
Family Firm Wedge Classes

All family firms are grouped into one of the wedge groups below depending on the level of wedge between votes and cash flow ownership of the largest owner. Average values are displayed in the table. Size is total assets in Million SEK.

FAMILY FIRM WEDGE	N	Tobin´s q	ROA	ROIC	Size	Age
No Wedge	208	1,77	2,1%	3,0%	1631	41
0< to 9.99%	165	1,69	5,3%	5,6%	2483	40
10 to 19.99%	381	1,60	7,7%	8,5%	2421	49
20 to 29.99%	669	1,51	6,0%	6,7%	4718	49
30 to 39.99%	358	1,35	5,2%	6,4%	4213	50
>40%	243	1,65	7,1%	6,0%	7387	66

The regression results on control enhancing mechanisms, displayed in table 5.3, seem to support hypothesis 2 of a negative effect of the wedge on valuation, especially founder family firms which has a large negative coefficient on the wedge variable. However, the results on non-founder family firms are not significant and we cannot draw any strict conclusions on whether their use of control enhancing mechanisms per se, is detrimental to value or not. When looking at the regressions for the full sample in table A.7 in the appendix, we can see that the type of control enhancing mechanism seem to matter for how valuation is affected. Dual class shares have a significant negative effect whereas a wedge created through pyramid ownership has a significant positive effect on valuation for the total sample. Non-founder family firms have a lower dual class share usage on average and at the same time a much higher usage of

pyramid structures than founder family. However, none of these variables seem to have a significant effect on valuation and explain the high discount this type of family firm seems to have in the sample, looking at table A.8 in the appendix. For founder family firms there seem to be an almost one-to-one relationship between the wedge and the discount. In economical terms, an increase in the separation of votes and ownership in these firms by one standard deviation (16.8%), depresses the industry adjusted Tobin's q by 16.8 percentage points, on average.

On the basis on these results we can only accept hypothesis 2 for valuation, since the performance results are insignificant. This result is also sensitive to the type of control enhancing mechanism used.

5.2 Management

Hypothesis 3: Founder family firm performance and valuation are not worse for firms with founders as managers (CEO and/or COB), than for family firms with only external managers (CEO and COB).

Hypothesis 4: Founder family firm performance and valuation are worse for firms with descendants as managers (CEO and/or COB,) than for family firms with only external managers (CEO and COB).

The results on management show that for valuation, descendant management is clearly negative looking at both descriptive statistics and the regressions where the descendant management dummy is negative and significant at the 1% level. Founder management on the other hand, seems to be positive for valuation although the founder management dummy is insignificant in the regressions (see table 5.6). The descriptive results in table 5.5 indicate that family succession of top positions is costly, with an average discount on market value of 6.7% in descendant family firms, compared to professionally managed family firms.

Table 5.5
Family Management and Professional Management Differences in Means

The difference in means is between founder management family firms and family firms with only external managers, and between descendant management family firms and family firms with only external managers. All measures are industry and time adjusted. P-values from the t-tests are dislpayed and the significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level.

DIFFERENCE IN MEAN	ROA	ROIC	Tobin's q
Founder Management	-1,0%	-0,5%	1,4%
(p-value)	0,133	0,588	0,636
Descendant Management	-0,5%	-1,1%	-6,7%**
(p-value)	0,450	0,164	0,031

The performance results are a bit more unclear. The descriptive statistics show that professional management is linked to the highest performance looking at both ROIC and ROA with descendant management firms having higher adjusted ROA but lower adjusted ROIC than founder management firms. This could be due to that founder managed firms carry more financial assets, which is true looking at table A.4 in the appendix, or that descendant managed firms use more accounting measures to improve the result compared to the industry average. However, the regression results give a somewhat different

picture. Founder management has an insignificant positive effect on performance, whereas descendant management gives clearer negative results. The descendant dummy coefficient in the ROIC regression is negative and significant at the 5% level, and the coefficient in the ROA regressions is also negative, but only barely insignificant.

Table 5.6
Regression results on Management

Regression results picked from the full list in the appendix. The significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level and the t-values are reported in parenteses under each coefficient.

Regression coefficients	ROIC	ROA	Tobin´s q
Founder management	0,006	0,003	0,035
	(0,723)	(0,448)	(0,600)
Descendant management	-0,015**	-0,009	-0,132***
	(-2,043)	(-1,536)	(-2,612)

One should also note that professional management firms seem to invest more since their total asset base is larger despite a younger age on average compared to descendant management firms (see table A.4 in the appendix). However, this could be a consequence of more professional management in asset-heavy industries. It could also be so that a larger firm is more difficult to manage and professional management is more critical. Descendants also seem to hang on more to the power of their firms through both higher capital stakes in their firms as well as a higher separation of votes and capital ownership on average than their predecessors (see table A.4 in the appendix).

The founder management results show support in favour of the 3rd hypothesis that founder managed firms are not worse than professionally managed firms, in terms of valuation and performance. However, the regression and descriptive results are a bit conflicting and also not strong in significance. Nonetheless, we cannot reject hypothesis 3.

The results for descendant management show strong support in favour of the 4th hypothesis regarding valuation, and quite strong support for it regarding performance. We therefore cannot reject the 4th hypothesis.

5.3 Ownership

Hypothesis 5: Family firm performance and valuation both increases in the level of cash flow ownership of the largest shareholder.

The largest owner of a family owned firm has a larger capital stake in the firm than a non-family firm on average which is natural. Founder family firms in particular have a much larger capital stake, 37.8% on average, compared to non-family firms, which is clear from tables 5.7 and A.1 in the appendix below.

Table 5.7
Family Firm and Non-Family Firm Differences in Ownership Means

The difference in means is between founder family firms and non-family firms, and between non-founder family firms and non-family firms. P-values from the t-tests are dislpayed and the significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level.

DIFFERENCE IN MEAN	Average Cash Flow Ownership of the Largest Owner
Founder Family Firms	17,8%***
(p-value)	0,000
Non-Founder Family Firms	6,5%***
(p-value)	0,000

From table 5.8 below, we can also see that the effect on performance and valuation from the ultimate cash-flow ownership is a bit unclear for family firms.

Table 5.8
Family Firm Cash Flow Ownership Classes

All family firms are grouped into one of the ownership groups below depending on the level of cash flow ownership of the largest owner. Average values are displayed in the table. Size is total assets in Million SEK.

CASH FLOW RIGHTS FOUNDER FAMILY FIRMS	N	Adj. Tobin´s q	Adj. ROA	Adj. ROIC	Size	Age
0 to 19.99%	198	0,93	-1,2%	0,5%	5046	39,4
20 to 39.99%	405	1,04	1,2%	0,5%	2286	39,9
40 to 59.99%	355	0,96	0,9%	0,0%	1885	40,8
>60%	116	0,98	1,8%	1,8%	926	42,9

CASH FLOW RIGHTS NON-FOUNDER FAMILY FIRMS	N	Adj. Tobin´s q	Adj. ROA	Adj. ROIC	Size	Age
0 to 19.99%	404	0,92	0,7%	0,2%	11237	66,6
20 to 39.99%	353	0,98	0,0%	-0,5%	1773	56,6
40 to 59.99%	105	1,07	0,3%	1,0%	1756	42,3
>60%	88	1,01	0,3%	-0,4%	2087	67,4

Founder family firms tend to have a weak positive relationship between performance and cash flow ownership of the largest owner, whereas the relationship with valuation is more unclear. Non-founder family firms tend to have a positive non-linear relationship between valuation and cash flow ownership of the largest owner, whereas the relationship with performance is less clear in this case. Firm size seems to be negatively correlated with ultimate cash flow ownership of the largest shareholder. This indicates that as the firm grows, the founder need to acquire outside capital to fund the investments for growth and decrease the capital stake in the firm.

The regression results on ownership, displayed in table 5.9 below, show a positive effect from a larger capital stake on performance with stronger results for founder family firms, which were expected when looking at the descriptive statistics above.

Table 5.9
Regression results on Ownership

Regression results picked from the full list in the appendix. CF stands for Cash Flow. The significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level and the t-values are reported in parenteses under each coefficient.

Regression coefficients	ROIC	ROA	Tobin´s q
Founder family firm CF ownership	0,0004*	0,001***	-0,0003
	(1,806)	(3,238)	(-0,203)
Non-founder family firm CF ownership	0,0002	0,0002*	0,003***
	(1,010)	(1,784)	(2,834)

The valuation results show less homogeneity over the two types of family firms, although this depends somewhat on the type of specification. Higher cash flow ownership by the largest owner is significantly

linked with a higher valuation for non-founder family firms but is insignificant for founder family firms. This conclusion could also be drawn when looking at the descriptive statistics above where a cash-flow ownership of above 40% is linked to a higher valuation than the industry mean. This effect of ownership on non-founder family firm valuation seems to be, as stated above, non-linear. In economical terms according to the regressions displayed in table 5.9 above, an increase in the capital stake of one standard deviation (19.3%) of the largest owner increases ROA by ~2% in founder family firms and by ~0,4% in non-founder family firms, compared to the industry average. The same change would increase valuation of non-founder family firms by 6 percentage points compared to the industry average. These figures are not large, i.e. the economical impact of the cash flow ownership of the controlling family is not very large, although the coefficients are significant in the regressions.

We find quite strong evidence that performance increases in the level of cash flow ownership of the largest shareholder but this is only true in the valuation case with non-founder family firms. We therefore cannot reject the 5th hypothesis since the only unclear results is the relation to the valuation of founder family firms.

5.4 Opposing Effects

Hypothesis 6: There are no opposing effects in the valuation and performance of family firms.

Due to the results displayed above and in table 5.10 below, there seem to exist opposing effects in the valuation and performance of family firms.

Table 5.10
Regression Results on Oppising Effects

*Regression results picked from the full list in the appendix. The significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level and the t-values are reported in parenteses under each coefficient.*

Regression coefficients	ROIC	ROA	Tobin´s q
Family firm dummy	0,013***	0,017***	-0,109***
	(3,491)	(5,960)	(-4,100)
Founder family firm dummy	0,018***	0,024***	-0,091***
	(4,169)	(6,928)	(-2,695)
Non-founder family firm dummy	0,004	0,009***	-0,132***
	(1,019)	(2,628)	(-4,423)

Family firms tend to be traded at a discount and still perform better than non-family firms even after controlling for industry and time effects. The descriptive statistics in table A.1 in the appendix also supports this view, as well as the results in table 5.2 above.

On the basis of these results, we therefore have to reject the 6th hypothesis of no opposing effects in family firm valuation and performance.

5.5 Summary of Main Results

We summarize our full sample results in table 5.11, which are quite clear. However, since we include both valuation and performance in our hypotheses, the rejection/accepting decisions are a bit indecisive.

Table 5.11
Summary of Hypotheses, Expected- and Empirical Results Found

Hypotheses	Expected results	Empirical results
H1: Family firm performance and valuation is not worse than non-family firms.	Positive and significant coefficients.	Not Rejected for performance and Rejected for valuation.
H2: Family firm performance and valuation decreases in the wedge between control rights and cash flow rights of the largest shareholder.	Negative and significant coefficients.	Rejected except for valuation of founder family firms.
H3: Family firm performance and valuation is not worse for family firms with founders active as managers (CEO and/or COB) than for family firms with external managers (CEO and COB).	Non-negative and significant coefficient.	Not Rejected.
H4: Family firm performance and valuation is worse for family firms with descendants as active managers (CEO and/or COB) than for family firms with external managers (CEO and COB).	Negative and significant coefficient.	Not Rejected.
H5: Family firm performance and valuation increases in the level of cash flow ownership of the largest shareholder.	Positive and significant coefficients.	Not Rejected exept for valuation of founder family firms.
H6: There is no discrepancy between valuation and performance in family firms.	Discrepancy does not exist.	Rejected.

By summarizing the results above, we can conclude a number of different things about the relationship between family firms and their relative performance and valuations to non-family firms.

- Family firms perform better (1.0-1.3% higher ROA on average) and are valued at a discount (3.6-5.6% lower on average) compared to non-family firms.

- The discounts on valuation are mainly driven by the control structure employed by these companies, e.g. a much higher separation of votes and cash flow ownership on average than non-family firms.

- The family firms with the highest wedge are typically the oldest and largest family firms, whereas the largest family firms tend to have the lowest capital stake invested by the controlling family. I.e., as a family firm grows, the controlling owner needs outside capital to grow, but is unwilling to release his control over the company.

- The appointment of a descendant manager is detrimental to both performance and valuation. We should therefore expect that descendant managers have lower qualifications for management on average, compared to founders or professional managers.

- A higher capital stake by the controlling owner is positive for performance and positive or neutral for valuation, indicating that the incentives of the controlling shareholder and the company gets more aligned with increased capital ownership. This is one driver of the family performance results.

6. Robustness Tests

In this section, we focus on what drives the opposing effects found above in valuation and performance of family firms. We will also go through the effects from size and age more thoroughly and analyze different sub-periods to see if the results are stable over time.

First, we divide our full dataset into three sub-samples to analyse whether the results are stable over time or if there is one period with particular influence on the previously found results. When looking at figure 4.6 above, where the performance and valuation of family firms are displayed year by year, one can see that the results does not seem to be stable over time. This supports an investigation of especially the later part of the sample, since this period seem to be a driver of the opposing effects found in family firm performance and valuation. We divide the data into three periods, the first ranging from 1985 to 1991, the second from 1992 to 1998 and the third ranging between 1999 and 2005. The last period seem to be the most important for the opposing effects in the performance and valuation for family firms, and is therefore the focus of this sub-sample analysis.

6.1 Sub-Sample Control and Ownership

The different types of family firms seem to display somewhat different patterns over time, when looking at table A.3 in the appendix. Founder family firms have performed better or equal than the control group in the first and last period, whereas non-founder family firms have performed better or equal in the second and last period, compared to the control group of non-family firms. The differences are relatively small between the different ownership types in the two earlier periods looking at industry adjusted performance, whereas in the last period between 1999 and 2005, family firms outperform non-family firms to a larger extent. This can also be seen in table 6.1 below, where t-tests are displayed. In relative valuation terms, family firms trades at a discount or at par with non-family firms in all sub-periods. However, the last period show extremely low relative valuations for non-founder family firms, on average. This could be one of the driving factors for the discrepancy found in the full sample analysis. When looking more closely at the last period, absolute valuations for all firms are more than 20% higher on average than in the two preceding periods, but at the same time, ROA is ~75% lower and ROIC is ~33% lower on average, compared to the first two periods. This could probably be an effect of the many new companies that were listed during the internet bubble years and we cannot rule out endogeneity in this case, since it is probable that "entrepreneurs" with young, poorly performing and overvalued companies sold their shareholdings at high prices, and the families with companies with better prospects remained as owners.

Table 6.1
Sub-Sample Differences in Means for Control

*The difference in means is between founder family firms and non-family firms, and between non-founder family firms and non-family firms. All measures are industry and time adjusted. P-values from the t-tests are dislpayed and the significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level.*

DIFFERENCE IN MEAN 1985-1991	ROA	ROIC	Tobin's q
Founder Family Firms	0,4%	-0,4%	-3,6%*
(p-value)	0,294	0,414	0,069
Non-Founder Family Firms	-0,5%	-0,9%*	-2,7%
(p-value)	0,247	0,082	0,193
DIFFERENCE IN MEAN 1992-1998	ROA	ROIC	Tobin's q
Founder Family Firms	-0,4%	-0,6%	-8,7%***
(p-value)	0,426	0,368	0,000
Non-Founder Family Firms	-0,1%	0,1%	-0,1%
(p-value)	0,876	0,841	0,968
DIFFERENCE IN MEAN 1999-2005	ROA	ROIC	Tobin's q
Founder Family Firms	3,4%***	3,1%***	0,8%
(p-value)	0,000	0,003	0,825
Non-Founder Family Firms	2,9%***	1,3%	-12,1%***
(p-value)	0,000	0,161	0,000

Overall we can see from table A.3 in the appendix, that the use of control enhancing mechanisms are much larger in the earlier periods, and that the decrease in both the average wedge and the average use of dual class shares are an effect stemming from non-family firms. Family firms on the other hand seem to have been reluctant to give up power over time, despite some lowering of the average capital stake over time, and have maintained their dual class shares to remain in control of their companies. Even in the last period, the average voting ownership of the family in founder controlled firms is not less than 50%. The average capital stake of the largest owner has decreased over time for all types of firms, and also quite evenly distributed in relative terms.

6.2 Sub-Sample Management

The sub-sample management results are displayed in table A.6 in the appendix. These are quite weak, probably due to a low number of observations in each sub-period, which makes the results less interesting. For valuation the negative descendant effect is present in all three periods with descendant firms trading at a discount between 3.9% and 11% on average, compared to professionally managed family firms. Founder management produce better valuation compared to professional management in the last two periods, but not significantly so. The performance figures show that professional management seems to be better than family management except in the first period. The descriptive statistics in table A.5 in the appendix show much the same pattern as the full sample data. One interesting thing is that during the second period where the Swedish economy were in a recession and also came out of it, all type of management regimes seem to have tightened their outflow of capital with lower dividend yields and leverage ratios, as well as higher retention ratios. Especially founder managed firms seem to have tightened their outflow of capital to the largest extent, having an average retention ratio of 100% during this period.

6.3 Opposing Effects

6.3.1 Sub-Sample Opposing Effects

We find no strong discrepancy in the first two sub-periods of our sample, looking at table 6.1 above, although the results point to such a conclusion for the total sample. The valuation seems to be constantly negative for family firms in all sub-periods, as predicted by figure 4.7 above. The performance does not seem to differ significantly in the first two periods, however, there is a strong positive performance effect for family firms in the last period between 1999 and 2005. In the performance regressions displayed in table A.10 in the appendix, the time dummy for this period is highly significant, whereas it is insignificant in the valuation regression. Including this dummy takes away the positive significant effect on performance from non-founder family firms, but not for founder family firms. This indicates that the time effect from the last period (1999-2005) is driving the positive effect on performance for non-founder family firms, found in the full sample. For founder family firms, the time effect is also positive for this period, but it is not driving the full sample results. The insignificant valuation results for the time dummy also indicate that the negative valuation results of family firms are not particular for this period in isolation.

6.3.2 Drivers of Opposing Effects

In the regressions in table A.10 in the appendix, we can see that the interactive variable between age and sales are highly positive for performance and highly negative for valuation. This means that the largest and oldest companies perform better than other firms, but are simultaneously traded at a discount. I.e. Size and age are together important factors in explaining the found opposing effects, as we previously hypothesized.

When looking more closely at the specific characteristics of the family firms with high industry performance and low industry valuations we construct table 6.2 below. We look more closely at these firms, since the family firms with the strongest opposing effects should affect the results the most.

Table 6.2
Industry and Time Adjusted Descriptives on Top 10% Discrepancy Family Firms

All family controlled companies are sorted according to the difference between their adjusted ROA and their adjusted Tobin's q. The 10% of firms with the highest difference is then grouped together, and mean and median values for the variables are calculated. All descriptive variables are industry and time adjusted and are relative to the industry average, except Dual class shares which is a plain percentage. Total assets are in Million SEK, Leverage is Debt/Assets, DY is the Dividend Yield based on book value of equity, Wedge is the difference in votes and capital ownership of the largest owner and Retention Ratio is (Net Income+Depreciation-Dividends)/(Net Income+Depreciation).

Family Firms	Adj. ROA	Adj. Tobin´s q	Total Assets	Age	Leverage	DY	Cash & S.T. Investments/Assets	Goodwill/ Assets	Retention Ratio	Wedge	Absolute usage of Dual class shares
Average	109,9%	48,9%	218%	220%	120%	108%	74%	98%	100%	212%	90%
Median	108,7%	48,9%	32%	121%	115%	79%	37%	29%	102%	175%	Yes

Table 6.2 displays industry relative accounting measures for the family firms with the highest discrepancy in ROA and Tobin's q. It gives valuable insights into what kind of characteristics the average discrepancy

firm has. Then most striking differences compared to the industry averages are the age, size and wedge of the largest shareholder. In regards to size, the median value is only 32% of the industry average for the full sample, indicating that these firms might have problems with growth. On the other hand, the average value is over two times the industry average indicating extreme values. In regards to both age and the wedge, both median and average values are above industry averages, with extreme values blowing up the average values. The leverage levels are also genuinely higher, and the financial asset levels are lower than the industry averages, indicating that these companies are more risky and less financially stable than industry peers on average. The dividend yield also seems to be lower for most family firms with a high discrepancy in performance and valuation. The percentage usage of dual class shares is also very high, which drives the high average and median wedge levels.

To see if the family firms with the top 10% discrepancy are distributed over industries and time as the full sample distribution, we look at table 6.3 below.

Table 6.3
Industry Belongings of Top 10% Discrepancy Family Firms

All family controlled companies are sorted according to the difference between their adjusted ROA and their adjusted Tobin's q. The 10% of firms with the highest difference, given that adjusted ROA is positve and adjusted Tobin's q is negative, is then grouped together and the percentage of industry belongings are calculated.

Industry	Raw Material	Industrial	Consumer Goods	Healthcare	Real Estate	"TIME"	IT/Telecom Equipm.	Services
N	1	5	2	28	0	11	6	7
Discrepancy Family Firms	1,7%	8,3%	3,3%	46,7%	0,0%	18,3%	10,0%	11,7%
Full Sample % of Family Firms	8,6%	42,1%	12,4%	6,1%	8,7%	12,0%	4,7%	5,4%
Distribution over Time								
1985-1991	0%	0%	0%	7%	0%	0%	0%	0%
1992-1998	0%	20%	0%	21%	0%	36%	0%	43%
1999-2005	100%	80%	100%	71%	0%	64%	100%	57%

We can clearly see from table 6.3 that the extreme values are dominantly distributed to the last sub-period where we also have found the strongest results for the opposing effects. The distribution over industries is also interesting, since especially the healthcare industry seem to host most of the top discrepancy firms. The other over-represented industries are "TIME", IT/Telecom and Services, whereas the other industries are under-represented. One should also mention that ~66% of these family firms are non-founder family firms, which is interesting to know in light of the relative performance and valuation of these firms in the last sub-period. For the founder family firms, the distribution of the different management types are quite evenly distributed; ~25% descendant-, ~25% founder- and ~50% professional management.

All these relations between different family firm types, different management types, as well as the distribution over time, are more or less the same if increasing the sample to the top 20% discrepancy family firms. These relations seem to be robust in light of this finding.

6.4 Fixed Effects Regressions

Our fixed effects regressions are displayed in tables A.12 and A.13 in the appendix. These do unfortunately not give very significant results. What is only clear from these regressions is that founder family firms trade at a discount compared to other firms, and that the cash flow ownership of the largest owner is positive for valuation for all family firms and for performance in founder family firms. However, the usage of a fixed effects regression might be flawed in our case, since we have a lot of companies that have only one or a few years' observations. This can be troublesome as mentioned earlier, since having only one observation for a company will create a perfectly explaining individual intercept for that company. It should therefore be better to have at least around five observations for each company in the sample when estimating this kind of regression. Excluding all companies with less than 5 observations would seriously decrease the magnitude of our data sample and would probably create other problems, since omission of data gives inaccurate results by itself.

We therefore do not weigh these results as high as our ordinary OLS regression results, since we adjust our variables for industry and time, to capture the same effects (fixed) in theory.

6.5 Summary of Robustness Results

- The positive performance effect in family firms is a time effect adhering to the period 1999-2005, whereas the negative valuation effect is more stable over time.
- The opposing effects in performance and valuation that were found for the full sample are due to the increase in family firm performance in the last sub-period.
- The family firms with the largest opposing effects in performance and valuation are dominantly non-founder family firms.
- The different types of management do not seem to influence the likelihood that a founder family firm possesses opposing effects in performance and valuation, relative to other firms.
- Older and larger firms are over-performing and are undervalued at the same time, compared to industry averages.
- The family firms with the highest discrepancy between performance and valuation are older, less financially stable and have a higher separation between votes and ownership than the industry average. Most of them also pay out less capital in dividends and are a lot smaller in size than the industry average. However, there are some very large firms driving up the average size way above the industry average.
- Industries with more immaterial assets, especially healthcare, are overrepresented in the distribution of family firms with the highest discrepancy.

7. Analysis

7.1 Control

Family control is associated with higher performance, especially founder family firms, while at the same time trading at a discount compared to non-family firms. The first effect regarding performance is clearly in line with many previous studies (Barontini and Caprio (2006), Favero et al. (2006), Sraer and Thesmar (2006) etc.), whereas the negative control effect on valuation has not been found in studies abroad, at least to our knowledge. This means that even though the risk of minority expropriation is relatively low in Sweden, minority investors demands a premium for investing in family controlled firms, due to the risk of such actions. Over time the negative effect on valuation seem to be consistent, whereas the relative performance of family firms has increased over time, comparing the different sub-periods. What is interesting is that the absolute level of performance has decreased over time for all companies, however mainly for non-family firms. During 1985-1998 non-family firms had an average ROA of 6.8-7.1%, but as low as -0.4% on average during 1999-2005, which can be seen in table A.3 in the appendix. Family firm performance on the other hand dropped only from an average of around 7% to around 3.7%% in the last period. The same pattern is found when looking at ROIC, although not as strong. Valuation on the other hand has increased in absolute terms for all firm types, which can be an effect from both the depressed stock prices during the Swedish recession in the beginning of the 90's, as well as the blown up stock prices during the internet bubble years around year 2000.

Excess control has only a negative effect on the valuation of founder family firms whereas the effect on non-founder family firms is less clear. The effect is blurred by the finding that the type of control enhancing mechanism used matters for the discovered effect considering all firms. Pyramid firms are found to be associated with higher valuations and dual class shares are found to be related to valuation discounts, which is in line with the findings of Amit and Villalonga (2007). However, when analysing the effect from these different control enhancing mechanisms on different family firms we can see that there is no effect from dual class shares and pyramids on non-founder family firm valuations, whereas for founder family firms, the effect described above is present. The total negative effect on valuation in founder family firms seem to originate from the extensive use of control enhancing mechanisms, since the negative effect disappears when controlling for asymmetric control. This is however not true for non-founder family firms who has a persistent negative relative valuation, despite controlling for asymmetric control. This is interesting because the separation of ownership and control is on average equal comparing both types of family firms. This means that founder family firms are or are perceived to be more likely to use their control over their companies to increase their own welfare or pursuing their own agendas, hurting minority shareholders, whereas non-founder family firms are valued at a discount on other grounds. One

reason could be endogeneity if non-founder family firms acquire companies who are currently undervalued, but have good prospects for the future. The fact that non-founder family firms also trade at a larger discount than founder family firms is supported by the finding that non-family firms on average exerts the lowest relative performance of family firms, however still not worse than non-family firms.

One theory of why family firms trade at a discount compared to non-family firms but at the same time performing better might be that the likelihood of a takeover is lower for a family firm since the family is unwilling to give up control over the company, making the bid premium very small or non-existing in the market.

7.2 Management

Family management seems to have mixed effects on performance and valuation due to the different effects of descendant and founder management. Descendant management has a significant negative effect on both performance and value, although the coefficient is insignificant in the ROIC regressions. Founder management on the other hand, seems to be unrelated to performance and valuation, although having insignificant positive coefficients in all regressions. So we cannot fully say that there is a positive founder management effect, however it is at least non-negative for both performance and valuation. Our performance results are in line with only one previous study regarding founder management (Kowalewski et al (2007)), however , the found negative descendant effect on performance is more in line with previous studies (Bennedsen et al (2006), Ehrhardt et al (2006) etc.).

For the valuation part, our negative descendant results are in line with other studies as well, e.g. Amit and Villalonga (2004) and Perez-Gonzalez (2002). This shows that the average descendant is appointed through nepotism, and not on grounds that he/she is the most appropriate candidate for the job, which is a common consideration in many studies. Family firms suffer in performance due to this and investors consequently demand a premium for investing in such a firm. What is also interesting is that descendant management firms are the oldest on average but much smaller than professional management firms. I.e. descendants perform worse than professionals, and they are also more reluctant to grow the firm, possibly due to averseness to giving up control over the company, which is clear since descendants have the highest voting ownership (66.4%) on average. These findings are displayed in table A.4 in the appendix. It could however also be so that as the family firm grows, the need for professional management increases, and we could therefore not rule out endogeneity for this finding.

The neutral founder effect on valuation seems to be one of a kind, since all other previous studies we know has found a positive relationship, e.g. Favero et al (2006) and Anderson and Reeb (2003). This could be due to that in Sweden, either founders are poorer managers or professional managers are better on average, compared to other countries. The valuation result could also be due to that investors discount the increased probability of a future descendant as a manager, when a founder is holding a top

management position. However, this possibility is not as probable, since the performance results are non-positive. Overall, our founder management results are not in line with Barontini and Caprio (2006), whereas our descendant results are. This is probably due to the apparent relatively poorer performance of founder management firms in Sweden, compared to the firms in their European sample.

7.3 Ownership

Family ownership is found to improve family firm performance valuation, which is not contrasting to previous findings, and in line with both agency problems. The positive performance results are in line with e.g. Bennedsen et al (2005), and the valuation results are in line with e.g. Anderson and Reeb (2003) and Claessens et al (1999).

The higher performance of family firms seem to stem much from the positive effect on performance caused by a larger cash flow ownership, since when controlling for this, the positive family firm effect becomes insignificant (table A.8 in the appendix). The positive effect on non-founder family firm valuation is also interesting since when controlling for this, the total effect from non-founder family control becomes even more negative. This is in line with theory that the incentive for increased management efficiency and the disincentive for a diversion of corporate funds increases as the level of ultimate cash flow ownership increases, since the interests of the controlling owner and the firm converges with higher cash flow ownership. For non-founder family firms this means that the level of cash flow ownership held by the firm are both important for internal effectiveness and incentive alignment (performance), as well as for external signalling to investors (valuation).

For founder family firm valuation on the other hand, the effect from increased cash flow ownership is less clear and depends on the specification used. This might also be due to that the effect seems to be non-linear, which should be in line with Gompers et al (2004). This, in combination with higher average cash flow ownership in founder family firms compared to non-founder family firms, might be the reason for the difference between the two types of family firms, since the positive effect seem to wear off at a middle size capital stake. The non-linear relationship could be explained by that decreasing a large cash flow stake could shift focus away from family agendas into more performance maximizing activities, and therefore increase performance and valuation (Howorth and Westhead (2006)).

Since the founder family valuation results are not positively significant for ownership, we can assume that investors rate the difference in votes and cash flow ownership higher in these firms compared to non-founder family firms, where the ownership relationship is stronger. These valuation results are somewhat contrasting to the non-significant results found by e.g. Barontini and Caprio (2006) and Andersson and Nyberg (2005). The divergence from the latter study indicate that the relationship is either dependent on the type of specification, or that the ownership effects in the years in the beginning of the 21st century are strong, and therefore affects the results for the entire sample.

7.4 Opposing Effects

Family firms are valued at a discount but at the same time performing better than non-family firms. These opposing effects are a new discovery, which has not been seen elsewhere. The valuation discount seem to be much related to the extensive use of dual class shares of founder family firms, whereas this is not true for non-founder family firms. The excess performance seems to be related to the absolute amount of cash flow ownership of the controlling family, but also size and age seem to matter for these opposing effects. The results are in line with theory, since the incentive to be an active owner increases with more cash flow ownership, whereas the likelihood of expropriation increases in the separation of control and cash flow ownership.

Over time the discrepancy seem to have increased in magnitude and becomes significant in the later pert of the data sample. The relative performance of family firms have increased, whereas the relative discount have been quite stable and negative over time, compared to non-family firms. The opposing effects are therefore a new phenomenon, and this time effect is so strong that it drives the results for the full sample. This shift is primarily driven by non-founder family firms, who have experienced both much higher relative performance and a large valuation discount during the latest sub-period.

When looking at what characteristics these top discrepancy firms have, we can see that it seem to be older family firms that has not grown enough, possibly due to an unwillingness of giving up control to fund growth, compared to peers, and they also does not seem to be as financially stable and pays less dividends than industry peers. Prominent is also the very high separation of votes and ownership employed by these firms. It can also be older and larger firms that have a good inflow of capital, but where the minority investors are unsure what the money is used for and that possibly ineffective investments are made. This two-sided picture is due to that the median value of dividend yield and especially size are lower than the industry average, but higher when looking at average values, indicating extreme values. Family firms with opposing effects in performance and valuation also seem to be overrepresented in especially the Healthcare industry, but also in the "TIME", Services and IT/Telecom industries, whereas they are underrepresented in the other industries. A possible reason for why this is so, could be that family firms have less immaterial assets than non-family firms (goodwill/assets) on average (tables 6.2 and A.1), and that companies in these industries typically have a lot of off balance sheet items in possession. Also, since internal R&D and investments are relatively important in these industries and if investors are generally unsure if family firms invest efficiently and use capital in a profit maximation way, they could discounts the market valuation of these firms to a larger extent.

It also does not seem to be age or size per se that drives the discrepancy, but more likely the control structure these companies employ. The older and larger firms are more likely to use control enhancing

mechanisms, and the separation of votes and cash flow ownership is the highest for those firms, which should depress their market values but not affect performance (see table 5.3).

8. Conclusion and Discussion

Our purpose with this thesis was threefold, to review current literature, to perform both a descriptive and a regression analysis controlling for family control, management and ownership, as well as to try to pinpoint effects behind the results. We find that there exists opposing effects in family firm valuation and performance, with the positive performance effects stemming from the later part of the sample, whereas the negative valuation effect is more consistent over the entire sample. These opposing effects have not been found abroad to our knowledge, and Sweden is therefore a unique country in this view.

The results indicate that while family firms perform better on average than non-family firms, investors still demand a premium for the allocation of control to these families. Especially the usage of dual class shares is detrimental to value, as well as the unwillingness to give up control for growth. The excessive usage of these control enhancing mechanisms by family firms, is one driver of the valuation discount, although this effect seem to be stronger for founder family firms than for non-founder family firms. The discount could also stem from a much smaller probability of a takeover, since the family typically is a long term controlling owner. This would minimize the potential bid-premium inherent in the share prices, compared to non-founder family firms, where the likelihood of a takeover typically is much higher.

The typical discrepancy firm seems to be older and more mature than the industry average, and is either very large or very small compared to the industry average. It also does not seem to be as financially stable, has a very high usage of control enhancing mechanisms and typically pays less dividends than the industry average. Taken together, these firms perform well, but investors seem to be worried how the capital is used inside the firm, mistrusting the controlling family and the control structure they employ, and therefore demands a premium for investing in the firm.

We find a non-significant positive founder management effect on both valuation and performance, whereas the descendant effect is significantly negative for both performance and valuation, compared to professional management. This should be driven by that descendant managers are not as competent as their predecessors or outside professional managers, which causes a decrease in performance for such firms. Since the performance is lower, these firms deserve a discount on valuation which is also the case. If this underperformance explains the full valuation discount in descendant management firms is not clear, however, an apparent lack of growth and a reluctance to give up control might be factors for a discount in descendant management firms as well. Descendants do also not seem to be particularly involved in the creation of the opposing effects in family firm performance and valuation.

We find that ownership is positive for valuation of especially non-founder family firms, and also positive for family firm performance. For non-founder families the performance effect is less significant and the effect from ownership on founder family firms on valuation depends somewhat on the type of

specification. This indicate that both agency problems are present in Sweden, since a low ownership level of the controlling owner, makes minority investors demand a premium to invest in the company, and the controlling owner less likely to monitor management.

With this thesis, we have showed that controlling families in Sweden tend to be successful owners when it comes to performance, especially during recent times. However, they seem to be mistrusted by investors since their relatively better performance is conflicting with their relative valuation discounts. This is predominantly driven by the control structure these families employ, and therefore, we cannot reject the application of the theory of minority expropriation by controlling families in Sweden.

9. Future Research

Our findings are interesting and reveal a new phenomenon in regard to the valuation and performance of family firms in Sweden. However, a lot more can be done and our thesis can serve as a starting point for several types of research. E.g., our investigation does not give a full picture of what causes the opposing effects in performance and valuation, but only tracks down important factors for the findings. It could therefore be interesting to pursue such a study more in depth, to really pinpoint what is the driver of these results. One could for example use an opposing effects dummy taking the value 1 if the family firms have relatively high performance and low valuation, and 0 otherwise, as a dependent variable. This should be interesting since it should give a better picture of the effects behind the opposing effects. It would also be interesting to analyse more in depth what role descendants might play in the creation of these opposing effects. One could also try to include non-founder families in the analysis of family management, to see if the found effects are the same in both types of family firms.

Another thing that would be interesting to look at, is to analyse what effect the presumed increased IPO activity in the last part of the sample, has on the results. Could it drive an increase in poor performing overvalued non-family firms, if founders or entrepreneurs exit their potentially overvalued ownerships via the stock exchange, or does it not have any effect at all?

Our extensive database could also be used for other interesting purposes as well, e.g. what drives the release of control in family companies, or what effect does a succession of management have on yearly value and performance.

Finally, our data ranges over 21 years and is therefore a uniquely large dataset, which authors abroad typically do not seem to have readily available. It would therefore be interesting to analyse a similar large dataset on foreign markets to see if the found results exist in other institutional settings as well. Especially interesting would be to see if the shift toward opposing effects in family firm performance and valuation around year 2000 is similar abroad, or if Sweden is a special case.

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11. Appendix

11.1 Description of Dependent Variables Used in the Regressions

Ln(Sales)	The natural logarithm of total revenues.
Ln(Age)	The natural logarithm of the difference between the year of the observation and the year of firm founding.
Dividend yield	Calculated as (Dividend / BV (Equity)).
Cash and S.T. Investments / Assets	Is a number stating the amount of short term financial assets relative to total assets.
Leverage	Calculated as book values of (Debt/Equity).
Wedge	The difference in the vote and cash flow ownership of the largest shareholder.
Cap. Largest owner	The ultimate cash flow rights owned by the largest shareholder.
H&M dummy	A dummy taking the number 1 if the observation is the firm H&M and 0 otherwise.
Block holder	A dummy taking the number 1 if the second largest shareholder owns more than 10% of the votes of the firm and 0 otherwise.
Family firm	A dummy taking the number 1 if the firm is a family firm and 0 otherwise.
Founder family firm	A dummy taking the number 1 if the firm is a founder family firm and 0 otherwise.
Non-founder family firm	A dummy taking the number 1 if the firm is a non-founder family firm and 0 otherwise.
Founder family management	A dummy taking the number 1 if one member in the founder family is either CEO and/or COB of the firm and 0 otherwise.
Founder management	A dummy taking the number 1 if the founder is either CEO and/or COB of the firm and 0 otherwise.
Descendant management	A dummy taking the number 1 if a descendant is either CEO and/or COB of the firm and 0 otherwise.
Dual class shares	A dummy taking the value 1 if the company uses dual class shares and 0 otherwise.
Pyramid	A dummy taking the value 1 if the company is controlled through a pyramid structure and 0 otherwise.
Family time dummy	A dummy taking the value 1 for every family firm observation between 1999 and 2005.
Top quartile (AgeSales) dummy	A dummy taking the value 1 for companies that are in the highest quartiles of both age and sales.

11.2 Calculation of Pyramid Ownership

A pyramid structure is present when a controlling shareholder (Person X), own less than 100% of the capital in a company (company A), which in turn controls another company (company B) with less than 100% of the capital of that company. This means that Person X controls company B with less effective capital invested than if he were to acquire the capital stake owned by company A himself, since the minority of company A provides some of the capital needed for the investment. Since we have a limit of 25% of voting ownership for a shareholder to be classified as a controlling shareholder, both Person X and company A need to have 25% of the votes to be in control of the underlying company. If a chain of this type of ownership structure is present, we assume that the last company in such a chain (company B) will be controlled by the original shareholder (person X) by the level of voting ownership in the last link of the chain. However, the capital ownership in company B of person X is calculated as the product of all capital ownership stakes in the chain.

For example, if person X have 60% of votes and capital in company A, and company A have 40% of votes and capital in company B, we assume that person X controls company B with 40% of the votes, but the capital stake invested is only 24% (0.4*0.6 = 0.24). This implies that through a pyramidal structure, controlling owners can create a wedge between votes and capital in a company, which we need to adjust for. These structures are not very clear when just looking at the first level of ownership and require a thorough investigation of the owners of a company to be revealed.

11.3 Descriptive Statistics

11.3.1 Control and Ownership

Table A.1
Descriptives on Type of Owner

Descriptives sorted by type of control. Founder family firms are firms where the founding family is still in control of the company and non-founder family firms are firms who are controlled by a private person or family which is unrelated to the founder of the firm. Average values are used. Assets is total assets in Million SEK, Leverage is Debt/Assets, Dividend Yield is based on book value of equity, Retention ratio is defined as (Net income+Depreciation-Dividends)/(Net income+Depreciation), Cash flow is the average cash flow ownership held by the largest owner, Wedge is the average separation of votes ownership and cash flow ownership and Blockholdings are the number of firms where the second largest owner controls more than 10% of the votes.

TYPE OF CONTROL	% of Total	Tobin´s q Unadju.	Tobin´s q Adju.	ROA Unadju.	ROA Adju.	ROIC Unadju.	ROIC Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder-family firms	27,5%	1,66	0,99	6,0%	0,7%	6,8%	0,5%	2565	40,4	62,8%	4,2%	83,9%	13,8%	5,4%	37,8%	23,6%	95,8%	2,4%	41,5%
Non-founder family firms	24,3%	1,46	0,97	5,7%	0,4%	6,2%	0,0%	5818	60,3	63,9%	4,8%	78,8%	12,4%	6,7%	26,5%	23,5%	74,2%	37,3%	50,8%
Other	48,1%	1,72	1,02	3,7%	-0,6%	5,5%	-0,3%	10389	43,9	60,4%	4,5%	82,8%	14,2%	7,2%	20,0%	10,3%	55,6%	19,5%	50,4%
Total	100,0%	1,64	1,00	4,8%	0,0%	6,0%	0,0%	6 945	46,9	61,9%	4,5%	82,1%	13,7%	6,6%	26,2%	17,2%	70,4%	18,8%	47,4%

Table A.2
Descriptives on Excess Control

All family firms are grouped into one of the wedge classes below depending on the difference in votes ownership and cash flow ownership of the largest owner. Average values for the variables are then calculated for each group. Size is total assets in Million SEK.

FAMILY FIRM WEDGE	N	Tobin´s q	ROA	ROIC	Size	Age
No wedge	208	1,77	2,1%	3,0%	1631	41
0< to 9.99%	165	1,69	5,3%	5,6%	2483	40
10 to 19.99%	381	1,60	7,7%	8,5%	2421	49
20 to 29.99%	669	1,51	6,0%	6,7%	4718	49
30 to 39.99%	358	1,35	5,2%	6,4%	4213	50
<40%	243	1,65	7,1%	6,0%	7387	66

Table A.3

Sub-Sample Descriptives on Type of Owner

Descriptives sorted by type of control. Founder family firms are firms where the founding family is still in control of the company and non-founder family firms are firms who are controlled by a private person or family which is unrelated to the founder of the firm. Average values are used. Assets is total assets in Million SEK, Leverage is Debt/Assets, Dividend Yield is based on book value of equity, Retention ratio is defined as (Net income+Depreciation-Dividends)/(Net income+Depreciation), Cash flow is the average cash flow ownership held by the largest owner, Wedge is the average separation of votes ownership and cash flow ownership and Blockholdings are the number of firms where the second largest owner controls more than 10% of the votes.

TYPE OF CONTROL 1985-1991	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder-family firms	33,2%	1,42	0,98	7,8%	0,4%	6,3%	0,0%	1973	40,4	78,3%	4,7%	83,8%	10,3%	1,5%	43,3%	23,7%	98,2%	0,8%	47,2%
Non-founder family firms	27,8%	1,35	0,99	6,9%	-0,5%	5,8%	-0,5%	5266	65,4	76,0%	5,2%	79,6%	12,9%	1,8%	30,5%	26,1%	82,0%	40,5%	57,9%
Other	38,9%	1,45	1,02	7,1%	0,0%	6,3%	0,4%	7680	50,0	75,4%	5,4%	82,2%	13,4%	1,5%	23,7%	18,5%	83,4%	32,5%	61,7%
Total	100,0%	1,41	1,00	7,3%	0,0%	6,2%	0,0%	5 107	51,1	76,4%	5,1%	82,0%	12,2%	1,6%	32,1%	22,3%	88,0%	24,2%	55,8%

TYPE OF CONTROL 1992-1998	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder-family firms	25,8%	1,51	0,94	6,3%	-0,3%	7,2%	-0,5%	2539	44,6	59,1%	3,3%	90,3%	11,8%	5,8%	37,3%	25,4%	97,1%	1,6%	38,9%
Non-founder family firms	22,4%	1,46	1,02	6,9%	0,0%	7,9%	0,3%	7150	63,9	59,5%	4,2%	80,9%	11,9%	5,9%	22,2%	29,2%	82,8%	42,7%	56,4%
Other	51,8%	1,59	1,02	6,8%	0,1%	7,6%	0,1%	9601	48,0	59,8%	4,5%	81,7%	11,6%	4,3%	20,7%	11,8%	57,7%	23,0%	53,6%
Total	100,0%	1,54	1,00	6,7%	0,0%	7,5%	0,0%	7 185	50,7	59,6%	4,2%	83,7%	11,7%	5,1%	25,3%	19,2%	73,4%	21,8%	50,2%

TYPE OF CONTROL 1999-2005	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder-family firms	24,5%	2,01	1,03	3,7%	1,9%	6,8%	2,0%	3217	36,8	49,4%	4,4%	78,7%	19,3%	9,1%	32,5%	22,0%	92,1%	4,9%	37,8%
Non-founder family firms	23,2%	1,56	0,90	3,7%	1,4%	5,2%	0,2%	5315	52,7	56,2%	4,7%	76,3%	12,5%	10,5%	26,2%	16,7%	60,7%	30,3%	39,8%
Other	52,4%	1,96	1,03	-0,6%	-1,5%	3,1%	-1,1%	12597	37,1	52,2%	4,0%	84,1%	16,8%	13,0%	17,3%	4,4%	37,8%	9,3%	41,4%
Total	100,0%	1,88	1,00	1,4%	0,0%	4,5%	0,0%	8 107	40,7	52,4%	4,3%	81,0%	16,4%	11,5%	22,7%	11,6%	55,3%	12,6%	39,2%

11.3.2 Management

Table A.4

Descriptives on Type of Management

Descriptives sorted by type of management regime. Average values are used. Assets is total assets in Million SEK, Leverage is Debt/Assets, Dividend Yield is based on book value of equity, Retention ratio is defined as (Net income+Depreciation-Dividends)/(Net income+Depreciation), Cash flow is the average cash flow ownership held by the largest owner, Wedge is the average separation of votes ownership and cash flow ownership and Blockholdings are the number of firms where the second largest owner controls more than 10% of the votes.

TYPE OF MANAGEMENT	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder CEO and/or COB	45,2%	1,88	1,01	5,1%	0,3%	6,5%	0,5%	1473	21,5	60,9%	3,9%	85,7%	16,4%	7,5%	37,6%	21,9%	93,6%	2,5%	44,7%
Descendant CEO and/or COB	22,1%	1,30	0,93	7,2%	0,8%	6,6%	-0,1%	2028	58,7	68,4%	4,9%	79,1%	10,5%	2,1%	41,6%	24,8%	99,2%	0,0%	33,3%
Professional management	31,8%	1,57	1,00	6,6%	1,3%	7,3%	1,0%	4537	55,1	61,8%	4,3%	84,6%	13,6%	4,8%	35,7%	25,4%	96,5%	4,1%	44,0%
Total	100,0%	1,66	0,99	6,0%	0,7%	6,8%	0,5%	2 565	40,4	62,8%	4,2%	83,9%	14,2%	5,4%	37,8%	23,6%	95,8%	2,4%	41,5%

Table A.5

Sub-Sample Descriptives on Type of Management

Descriptives sorted by type of management regime. Average values are used. Assets is total assets in Million SEK, Leverage is Debt/Assets, Dividend Yield is based on book value of equity, Retention ratio is defined as (Net income+Depreciation-Dividends)/(Net income+Depreciation), Cash flow is the average cash flow ownership held by the largest owner, Wedge is the average separation of votes ownership and cash flow ownership and Blockholdings are the number of firms where the second largest owner controls more than 10% of the votes.

TYPE OF MANAGEMENT 1985-1991	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder CEO and/or COB	46,9%	1,54	0,99	8,3%	0,4%	7,0%	0,4%	1179	22,5	77,1%	4,6%	81,5%	9,6%	1,6%	43,9%	21,7%	97,3%	1,6%	46,7%
Descendant CEO and/or COB	23,5%	1,30	0,96	7,6%	0,3%	5,8%	-0,2%	2477	60,7	82,8%	5,3%	81,2%	10,2%	1,0%	48,7%	23,5%	100,0%	0,0%	41,3%
Professional management	29,6%	1,32	1,00	7,3%	0,3%	5,5%	-0,6%	2924	53,2	77,2%	4,5%	89,7%	11,5%	1,7%	37,8%	27,2%	98,2%	0,0%	54,5%
Total	100,0%	1,42	0,98	7,8%	0,4%	6,3%	0,0%	1 973	40,4	78,3%	4,7%	83,8%	10,3%	1,5%	43,3%	23,7%	98,2%	0,8%	47,2%

TYPE OF MANAGEMENT 1992-1998	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder CEO and/or COB	38,2%	1,83	0,97	6,0%	-0,8%	7,8%	-0,2%	1472	20,7	56,8%	3,3%	100,1%	13,3%	10,9%	34,1%	23,5%	95,8%	2,5%	54,2%
Descendant CEO and/or COB	26,4%	1,20	0,89	6,4%	-0,3%	6,4%	-1,2%	1332	57,7	60,3%	3,7%	80,1%	10,1%	1,8%	40,9%	27,0%	100,0%	0,0%	19,3%
Professional management	35,4%	1,42	0,94	6,9%	0,4%	7,4%	0,0%	4718	62,6	60,6%	3,0%	87,3%	12,0%	3,4%	38,0%	26,4%	96,3%	1,9%	38,3%
Total	100,0%	1,52	0,94	6,3%	-0,3%	7,2%	-0,5%	2 539	44,63	59,1%	3,3%	90,3%	11,8%	5,8%	37,3%	25,4%	97,1%	1,6%	38,9%

TYPE OF MANAGEMENT 1999-2005	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder CEO and/or COB	49,2%	2,26	1,06	1,2%	0,9%	4,8%	1,3%	1772	21,1	47,0%	3,5%	80,3%	24,9%	11,3%	33,4%	20,9%	88,4%	3,3%	36,5%
Descendant CEO and/or COB	16,8%	1,45	0,94	7,8%	3,0%	8,1%	1,7%	2295	57,0	57,8%	5,8%	74,6%	11,2%	4,0%	32,0%	23,8%	96,8%	0,0%	40,3%
Professional management	34,0%	1,93	1,05	5,6%	3,0%	9,1%	3,6%	5858	50,2	48,7%	5,2%	77,7%	16,9%	8,7%	31,6%	23,0%	95,1%	9,8%	39,3%
Total	100,0%	2,01	1,03	3,7%	1,9%	6,8%	2,0%	3 217	36,8	49,4%	4,4%	78,7%	19,3%	9,1%	32,5%	22,0%	92,1%	4,9%	37,8%

Table A.6
Sub-Sample Differences in Means for Management

*The difference in means is between founder management family firms and family firms with only external managers, and between descendant management family firms and family firms with only external managers. All measures are industry and time adjusted. P-values from the t-tests are dislpayed and the significance level is denoted by asteriscs at the ***(1%), **(5%) and the *(10%) level.*

DIFFERENCE IN MEAN 1985-1991	ROA	ROIC	Tobin's q
Founder Management	0,1%	0,9%	-0,7%
(p-value)	0,889	0,321	0,782
Descendant Management	0,0%	0,4%	-3,9%*
(p-value)	0,995	0,724	0,078
DIFFERENCE IN MEAN 1992-1998	ROA	ROIC	Tobin's q
Founder Management	-1,2%	-0,1%	3,1%
(p-value)	0,291	0,942	0,485
Descendant Management	-0,7%	-1,2%	-4,6%
(p-value)	0,488	0,313	0,297
DIFFERENCE IN MEAN 1999-2005	ROA	ROIC	Tobin's q
Founder Management	-2,2%	-2,3%	1,1%
(p-value)	0,149	0,242	0,875
Descendant Management	0,0%	-1,9%	-11,0%
(p-value)	0,998	0,305	0,196

11.4 Regression Results

Table A.7
OLS Regressions on Control and Ownership

*All variables are adjusted for time and industry except dummies and the percentage of the wegde and the capital stake of the largest owner. t-values are reported in parenteses under each coefficient and the significance level is denoted by asteriscs at the ***(1%), **(5%) and *(10%) level.*

Dependent variable	ROIC				ROA				Tobin´s q			
Regression specification	1	2	3	4	5	6	7	8	9	10	11	12
Intercept	0,006**	0,007***	0,007*	0,008	0,007***	0,008***	0,003	0,003	-0,031	-0,029	-0,026	-0,039
	(2,280)	(2,759)	(1,666)	(1,367)	(3,424)	(3,659)	(1,069)	(0,758)	(-1,561)	(-1,474)	(-0,875)	(-0,923)
Ln(Sales)	0,007***	0,007***	0,007***	0,007***	0,009***	0,009***	0,010***	0,010***	-0,056***	-0,055***	-0,053***	-0,059***
	(6,018)	(6,091)	(6,310)	(6,009)	(9,661)	(9,804)	(10,158)	(9,838)	(-6,272)	(-6,178)	(-5,862)	(-6,163)
Ln(Age)	0,004**	0,004***	0,005***	0,005***	0,005***	0,005***	0,005***	0,005***	0,002	0,003	0,006	0,009
	(2,405)	(2,733)	(2,942)	(2,856)	(3,413)	(3,786)	(4,054)	(3,976)	(0,159)	(0,249)	(0,479)	(0,733)
Family firm	0,013***				0,017***				-0,109***			
	(3,491)				(5,960)				(-4,100)			
Founder family firm		0,018***	0,018***	0,015***		0,024***	0,020***	0,021***		-0,091***	-0,085**	-0,072*
		(4,169)	(3,595)	(3,067)		(6,928)	(4,930)	(5,241)		(-2,695)	(-2,130)	(-1,850)
Non-founder family firm		0,004	0,005	0,004		0,009***	0,008**	0,008**		-0,132***	-0,120***	-0,145***
		(1,019)	(1,208)	(0,967)		(2,628)	(2,231)	(2,443)		(-4,423)	(-3,799)	(-4,831)
Dividend yield	0,865***	0,866***	0,866***	0,864***	0,833***	0,834***	0,831***	0,830***	3,658***	3,661***	3,664***	3,612***
	(13,741)	(13,726)	(13,694)	(13,613)	(15,494)	(15,549)	(15,414)	(15,408)	(9,172)	(9,188)	(9,186)	(9,019)
Cash & ST.Investments/Assets	0,166***	0,166***	0,167***	0,168***	-0,074***	-0,075***	-0,072***	-0,071***	1,550***	1,547***	1,557***	1,555***
	(7,752)	(7,751)	(7,788)	(7,734)	(-4,268)	(-4,333)	(-4,209)	(-4,112)	(9,391)	(9,377)	(9,471)	(9,378)
Leverage (D/E)	-0,0002	-0,0002	-0,0003	-0,0002	-0,0003	-0,0003	-0,0003	-0,0003	-0,003***	-0,003***	-0,003***	-0,003**
	(-0,466)	(-0,506)	(-0,531)	(-0,487)	(-0,680)	(-0,733)	(-0,730)	(-0,755)	(-2,591)	(-2,611)	(-2,677)	(-2,570)
Wedge			-0,014				-0,008				-0,124	
			(-1,355)				(-0,888)				(-1,433)	
Cap.Largest owner			0,0001	0,0001			0,0003***	0,0003***			0,001	0,002**
			(1,290)	(1,162)			(3,411)	(3,483)			(0,970)	(2,198)
Pyramid				-0,004				-0,004				0,089***
				(-0,897)				(-1,016)				(2,837)
Dual Class Shares				0,001				-0,004				-0,082**
				(0,179)				(-1,190)				(-2,350)
H&M dummy	0,178***	0,172***	0,171***	0,169***	0,117***	0,110***	0,107***	0,106***	2,418***	2,399***	2,394***	2,408***
	(6,043)	(5,797)	(5,800)	(5,719)	(8,589)	(7,906)	(7,787)	(7,689)	(4,506)	(4,466)	(4,467)	(4,482)
Blockholder				-0,004				0,005*				0,012
				(-1,251)				(1,826)				(0,422)
R-Square	0,197	0,198	0,199	0,200	0,261	0,264	0,267	0,268	0,166	0,166	0,167	0,169
F-Statistic	128,10	112,82	90,77	75,68	195,68	173,54	140,98	117,98	112,401	98,48	79,17	66,85
N	3657	3657	3657	3657	3886	3886	3886	3886	3971	3971	3971	3971

Table A.8
OLS Regressions on Family Excess Control and Ownership

*All variables are adjusted for time and industry except dummies. t-values are reported in parenteses under each coefficient and the significance level is denoted by asteriscs at the ***(1%), **(5%) and *(10%) level.*

Dependent variable	ROIC			ROA			Tobin´s q		
Regression specification	13	14	15	16	17	18	19	20	21
Intercept	0,008***	0,008***	0,008***	0,008***	0,009***	0,009***	-0,024	-0,023	-0,025
	(2,879)	(2,958)	(3,158)	(3,878)	(4,015)	(4,306)	(-1,214)	(-1,143)	(-1,223)
Ln(Sales)	0,007***	0,007***	0,008***	0,010***	0,010***	0,010***	-0,052***	-0,051***	-0,054***
	(6,223)	(6,327)	(6,549)	(9,957)	(10,167)	(10,257)	(-5,769)	(-5,539)	(-5,647)
Ln(Age)	0,005***	0,004***	0,004***	0,005***	0,005***	0,005***	0,005	0,004	0,008
	(2,869)	(2,788)	(2,731)	(4,010)	(3,886)	(3,982)	(0,437)	(0,361)	(0,650)
Founder family firm	0,023***	0,005	-0,019	0,036***	0,010	0,011	0,143*	0,161	0,451**
	(2,601)	(0,335)	(-0,660)	(-4,983)	(0,845)	(0,456)	(1,837)	(1,277)	(2,038)
Founder family firm Wedge	-0,023	-0,004		-0,049**	-0,023		-0,980***	-0,999***	
	(-0,765)	(-0,130)		(-2,099)	(-0,873)		(-3,765)	(-3,489)	
Founder family firm CF ownership		0,0004*	0,0005***		0,001***	0,001***		-0,0003	0,003**
		(1,806)	(2,622)		(3,238)	(4,675)		(-0,203)	(1,989)
Founder family firm Pyramid			0,041*			0,039***			0,326*
			(1,698)			(2,763)			(1,940)
Founder family firm Dual Class Shares			0,018			-0,013			-0,680***
			(0,677)			(-0,564)			(-3,112)
Non-founder family firm	0,010*	0,005	0,024**	0,015***	0,007	0,031***	-0,135***	-0,249***	-0,235***
	(1,815)	(0,533)	(2,263)	(4,983)	(0,945)	(3,562)	(-3,282)	(-4,138)	(-3,281)
Non-founder family firm Wedge	-0,026*	-0,019		-0,026**	-0,015		0,012	0,159	
	(-1,877)	(-1,171)		(-2,124)	(-1,083)		(0,131)	(1,441)	
Non-founder family firm CF ownership		0,0002	-0,0001		0,0002*	-0,00003		0,003***	0,003***
		(1,010)	(-0,335)		(1,784)	(-0,221)		(2,834)	(2,883)
Non-founder family firm Pyramid			-0,023***			-0,025***			0,037
			(-3,334)			(-4,243)			(0,735)
Non-founder family firm Dual Class Shares			-0,012			-0,015**			0,021
			(-1,591)			(-2,416)			(0,394)
Dividend yield	0,865***	0,866***	0,868***	0,833***	0,832***	0,834***	3,629***	3,641***	3,674***
	(13,723)	(13,710)	(13,720)	(15,524)	(15,504)	(15,561)	(9,154)	(9,176)	(9,165)
Cash & ST.Investments/Assets	0,166***	0,166***	0,172***	-0,074***	-0,072***	-0,065***	1,553***	1,553***	1,572***
	(7,740)	(7,746)	(7,977)	(-4,301)	(-4,173)	(-3,781)	(9,431)	(9,465)	(9,524)
Leverage (D/E)	-0,0003	-0,0003	-0,0003	-0,0003	-0,0003	-0,0003	-0,003***	-0,003***	-0,003**
	(-0,533)	(-0,531)	(-0,547)	(-0,780)	(-0,774)	(-0,785)	(-2,756)	(-2,747)	(-2,560)
H&M dummy	0,173***	0,170***	0,167***	0,112***	0,106***	0,102***	2,455***	2,454***	2,407***
	(5,846)	(5,753)	(5,679)	(8,158)	(7,811)	(7,558)	(4,604)	(4,605)	(4,497)
R-Square	0,199	0,200	0,203	0,265	0,267	0,271	0,171	0,171	0,174
F-Statistic	90,57	75,82	66,16	139,83	117,73	102,82	81,42	68,19	59,37
N	3657	3657	3657	3886	3886	3886	3971	3971	3971

Table A.9
OLS Regressions on Management

*All variables are adjusted for time and industry except dummies. t-values are reported in parenteses under each coefficient and the significance level is denoted by asteriscs at the ***(1%), **(5%) and *(10%) level.*

Dependent variable	ROIC		ROA		Tobin´s q	
Regression specification	22	23	24	25	26	27
Intercept	0,009***	0,009***	0,011***	0,011***	-0,073***	-0,071***
	(4,308)	(4,401)	(6,378)	(6,452)	(-4,489)	(-4,377)
Ln(Sales)	0,007***	0,006***	0,009***	0,009***	-0,053***	-0,053***
	(6,007)	(5,918)	(9,682)	(9,628)	(-5,983)	(-6,016)
Ln(Age)	0,005***	0,005***	0,006***	0,006***	-0,006	0,00003
	(2,882)	(3,313)	(4,174)	(4,395)	(-0,500)	(0,003)
Founder Family firm	0,018***	0,017***	0,022***	0,022***	-0,027	-0,033
	(3,076)	(2,995)	(4,356)	(4,396)	(-0,638)	(-0,800)
Founder family management	-0,002		-0,001		-0,028	
	(-0,357)		(-0,254)		(-0,564)	
Founder management		0,006		0,003		0,035
		(0,723)		(0,448)		(0,600)
Descendant management		-0,015**		-0,009		-0,132***
		(-2,043)		(-1,536)		(-2,612)
Dividend yield	0,866***	0,868***	0,834***	0,835***	3,662***	3,671***
	(13,703)	(13,748)	(15,516)	(15,546)	(9,141)	(9,163)
Cash & ST.Investments/Assets	0,165***	0,166***	-0,077***	-0,077***	1,571***	1,567***
	(7,717)	(7,773)	(-4,417)	(-4,432)	(9,469)	(9,452)
Leverage (D/E)	-0,0002	-0,0002	-0,0003	-0,0003	-0,003***	-0,003***
	(-0,512)	(-0,492)	(-0,745)	(-0,732)	(-2,633)	(-2,609)
H&M dummy	0,173***	0,185***	0,111***	0,119***	2,397***	2,507***
	(5,804)	(6,239)	(7,934)	(8,308)	(4,462)	(4,671)
R-Square	0,198	0,199	0,262	0,263	0,163	0,164
F-Statistic	112,69	100,96	172,49	153,74	96,19	86,30
N	3657	3657	3886	3886	3971	3971

Table A.10

OLS Regressions on Age, Size and Time Effects

*All variables are adjusted for time and industry except dummies. t-values are reported in parenteses under each coefficient and the significance level is denoted by asteriscs at the ***(1%), **(5%) and *(10%) level. The Ln(AgeSize) variable is an interactive variable between Sales and Age, the Top quartile dummy is a dummy taking the value 1 if the company is in the highest quartiles regarding both age and sales, and the family time dummy is a dummy taking the value 1 if the company is a family firm in the years 1999-2005, and 0 otherwise.*

Dependent variable	ROIC			ROA			Tobin´s q		
Regression specification	28	29	30	31	32	33	34	35	36
Intercept	-0,023***	0,009***	0,007***	-0,037***	0,010***	0,008***	0,151***	-0,037*	-0,029
	(-3,632)	(3,131)	(2,740)	(-6,981)	(4,247)	(3,641)	(3,232)	(-1,713)	(-1,475)
Ln(Sales)		0,007***	0,007***		0,010***	0,009***		-0,058***	-0,056***
		(6,261)	(6,139)		(9,921)	(9,930)		(-6,077)	(-6,221)
Ln(Age)		0,004***	0,004***		0,005***	0,005***		0,003	0,003
		(2,738)	(2,598)		(3,802)	(3,630)		(0,240)	(0,287)
Founder family firm	0,014***	0,018***	0,013***	0,019***	0,024***	0,019***	-0,056***	-0,089***	-0,083***
	(3,269)	(4,104)	(3,100)	(5,540)	(6,840)	(5,781)	(-1,738)	(-2,657)	(-2,662)
Non-founder family firm	0,001	0,004	-0,001	0,005	0,009***	0,004	-0,106***	-0,132***	-0,123***
	(0,279)	(1,069)	(-0,230)	(1,402)	(2,687)	(1,098)	(-3,666)	(-4,445)	(-3,961)
Ln(AgeSize)	0,0003***			0,0004***			-0,002***		
	(4,287)			(7,606)			(-3,050)		
Top quartile (AgeSales) dummy		-0,011**			-0,013***			0,055	
		(-2,477)			(-2,946)			(1,185)	
Family time dummy			0,015**			0,014***			-0,024
			(2,536)			(3,708)			(-0,630)
Dividend yield	0,907***	0,867***	0,863***	0,893***	0,833***	0,830***	3,310***	3,665***	3,668***
	(14,206)	(13,700)	(13,684)	(16,236)	(15,500)	(15,469)	(8,343)	(9,195)	(9,210)
Cash & ST.Investments/Assets	0,151***	0,167***	0,169***	-0,106***	-0,074***	-0,075***	1,743***	1,540***	1,547***
	(6,975)	(7,785)	(7,882)	(-5,869)	(-4,256)	(-4,329)	(10,360)	(9,316)	(9,382)
Leverage (D/E)	-0,0002	-0,0002	-0,0002	-0,0002	-0,0003	-0,0003	-0,004***	-0,003***	-0,003***
	(-0,358)	(-0,516)	(-0,519)	(-0,486)	(-0,746)	(-0,745)	(-2,907)	(-2,597)	(-2,614)
H&M dummy	0,184***	0,177***	0,173***	0,130***	0,114***	0,110***	2,261***	2,379***	2,399***
	(6,197)	(6,117)	(5,884)	(9,245)	(8,537)	(7,951)	(4,250)	(4,364)	(4,452)
R-Square	0,189	0,199	0,200	0,242	0,265	0,266	0,156	0,166	0,166
F-Statistic	121,28	100,65	101,58	176,82	154,98	156,23	104,55	87,64	87,57
N	3657	3657	3657	3886	3886	3886	3971	3971	3971

11.5 Robustness Results

11.5.1 Median Descriptive Statistics

Table A.11

Median Descriptives on Control, Ownership and Management

Descriptives sorted by type of control and type of management regime. Founder family firms are firms where the founding family is still in control of the company and non-founder family firms are firms who are controlled by a private person or family which is unrelated to the founder of the firm. Median values are used. Assets is total assets in Million SEK, Leverage is Debt/Assets, Dividend Yield is based on book value of equity, Retention ratio is defined as (Net income+Depreciation-Dividends)/(Net income+Depreciation), Cash flow is the average cash flow ownership held by the largest owner, Wedge is the average separation of votes ownership and cash flow ownership and Blockholdings are the number of firms where the second largest owner controls more than 10% of the votes.

TYPE OF CONTROL	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder-family firms	27,5%	1,32	0,92	7,1%	0,9%	7,1%	0,3%	589	29,0	66,7%	3,9%	85,2%	7,7%	0,8%	36,9%	23,4%	100,0%	0,0%	0,0%
Non-founder family firms	24,3%	1,27	0,90	6,8%	0,4%	6,9%	0,3%	1080	50,0	66,7%	4,2%	83,4%	9,0%	1,0%	23,1%	23,2%	100,0%	0,0%	100,0%
Other	48,1%	1,32	0,91	6,4%	0,8%	6,5%	0,3%	1367	23,0	63,0%	4,0%	84,9%	9,1%	1,5%	14,5%	3,9%	100,0%	0,0%	100,0%
Total	100,0%	1,30	0,91	6,7%	0,6%	6,8%	0,3%	917	30,0	65,2%	4,0%	84,6%	5,8%	1,1%	21,8%	15,2%	100,0%	0,0%	0,0%

TYPE OF MANAGEMENT	% of Total	Tobin´s q Unadju.	Adju.	ROA Unadju.	Adju.	ROIC Unadju.	Adju.	Assets	Age	Leverage	Dividend yield	Retention Ratio	Cash & S.T. Investments/Assets	Goodwill/ Assets	Cash flow	Wedge	Dual classes	Pyramids	Block holdings
Founder CEO and/or COB	45,2%	1,46	0,91	7,1%	0,8%	7,2%	0,1%	383	17,0	66,2%	3,6%	86,1%	8,1%	1,0%	36,3%	22,5%	100,0%	0,0%	0,0%
Descendant CEO and/or COB	22,1%	1,17	0,90	7,2%	0,7%	6,9%	0,1%	810	57,0	72,1%	4,2%	84,5%	6,3%	0,1%	41,8%	24,3%	100,0%	0,0%	0,0%
Professional management	31,8%	1,28	0,94	7,3%	1,4%	7,5%	0,9%	771	42,0	65,7%	4,1%	84,9%	9,2%	1,5%	33,9%	24,8%	100,0%	0,0%	0,0%
Total	100,0%	1,32	0,92	7,1%	0,9%	7,1%	0,3%	589	29,0	66,7%	3,9%	85,2%	7,7%	0,8%	36,9%	23,4%	100,0%	0,0%	0,0%

11.5.2 Fixed Effects Regressions

Table A.12

Fixed Effects Regressions on Control and Ownership

Dependent variables are adjusted for time and industry. The sample has been adjusted and companies with less than three observations has been excluded to improve the fixed effects regressions. All companies have own and different intercepts since compny name is the fixed factor controlled for. t-values are reported in parenteses under each coefficient and the significance level is denoted by asteriscs at the ***(1%), **(5%) and *(10%) level.

Dependent variable	ROIC		ROA		Tobin´s q	
Regression specification	37	38	39	40	41	42
Intercept						
Ln(Sales)	0,018***	0,018***	0,017***	0,019***	-0,074***	-0,039**
	(6,379)	(6,325)	(8,330)	(8,963)	(-3,945)	(-1,997)
Ln(Age)	-0,013**	-0,012**	-0,004	-0,005	-0,058	-0,057
	(-2,279)	(-2,031)	(-1,030)	(-1,032)	(-1,438)	(-1,388)
Founder family firm	0,008	-0,003	0,008	-0,017	-0,056	-0,347***
	(0,846)	(-0,182)	(1,152)	(-1,215)	(-0,905)	(-2,705)
Non-founder family firm	-0,009	0,004	-0,003	-0,008	-0,060	-0,084
	(-1,504)	(0,287)	(-0,732)	(-0,832)	(-1,450)	(-0,948)
Dividend yield	0,488***	0,354***	0,446***	0,333***	2,491***	-0,978**
	(11,456)	(5,962)	(15,662)	(8,662)	(9,194)	(-2,558)
Cash & ST.Investments/Assets	0,265***	0,278***	0,111***	0,134***	0,705***	0,842***
	(11,506)	(11,883)	(7,346)	(8,662)	(5,142)	(6,097)
Leverage (D/E)	-0,001***	-0,001**	-0,0004***	-0,0004**	0,001	0,0004
	(-2,587)	(-2,494)	(-2,656)	(-2,513)	(0,417)	(0,272)
Founder family firm Wedge		-0,062		-0,010		0,435
		(-1,345)		(-0,283)		(1,393)
Founder family firm CF ownership		0,001**		0,001***		0,006***
		(2,100)		(3,594)		(2,774)
Non-founder family firm Wedge		-0,03		0,00		-0,25
		(-1,219)		(-0,008)		(-1,365)
Non-founder family firm CF ownership		-0,0004		0,0001		0,004*
		(-1,149)		(0,579)		(1,743)
R-Square	0,487	0,473	0,614	0,595	0,549	0,541
F-Statistic	4,81	4,78	5,28	5,04	7,88	8,14
N	3467	3467	3673	3673	3722	3722

Table A.13
Fixed Effects Regressions on Management

Dependent variables are adjusted for time and industry. The sample has been adjusted and companies with less than three observations has been excluded to improve the fixed effects regressions. All companies have own and different intercepts since compny name is the fixed factor controlled for. t-values are reported in parenteses under each coefficient and the significance level is denoted by asteriscs at the ***(1%), **(5%) and *(10%) level.

Dependent variable	ROIC	ROA	Tobin´s q
Regression specification	43	44	45
Intercept			
Ln(Sales)	0,018***	0,017***	-0,072***
	(6,398)	(8,328)	(-3,842)
Ln(Age)	-0,015**	-0,005	-0,059
	(-2,500)	(-1,114)	(-1,458)
Founder family firm	0,001	0,0004	-0,057
	(0,162)	(0,112)	(-1,547)
Founder management	0,003	0,007	0,045
	(0,360)	(0,973)	(0,701)
Descendant management	0,016	0,002	0,166
	(1,080)	(0,187)	(1,619)
Dividend yield	0,492***	0,447***	2,488***
	(11,529)	(15,703)	(9,185)
Cash & ST.Investments/Assets	0,263***	0,110***	0,708***
	(11,429)	(7,301)	(5,165)
Leverage (D/E)	-0,001**	-0,0004***	0,001
	(-2,555)	(-2,640)	(0,413)
R-Square	0,487	0,614	0,550
F-Statistic	4,79	5,27	7,86
N	3467	3673	3722

11.6 Correlations

Table A.14
Control and Ownership Correletions Matrix

Correletion coefficients for regression variables. FF stands for Founder family.

	Sales	Age	Dividend Yield	Cash & ST. Investments /Assets	Leverage (D/E)	Block holder	Founder family firm	Non-founder family firm	FF firm Wedge	FF firm CF ownership	FF firm Pyramid	FF firm Dual Class Shares	Non-FF firm Wedge	Non-FF firm CF ownership	Non-FF firm Pyramid	Non-FF firm Dual Class
Sales	1,00															
Age	0,31	1,00														
Dividend Yield	0,22	0,15	1,00													
Cash & ST.Investments/ Assets	-0,26	-0,07	0,06	1,00												
Leverage (D/E)	0,07	0,03	0,01	-0,02	1,00											
Blockholder	0,03	0,08	-0,01	0,03	0,03	1,00										
Founder family firm	-0,12	-0,03	-0,02	0,03	0,02	-0,08	1,00									
Non-founder family firm	0,01	0,13	0,01	-0,06	-0,02	0,04	-0,35	1,00								
Founder family firm Wedge	-0,05	0,01	-0,01	0,03	0,00	-0,13	0,86	-0,30	1,00							
Founder family firm CF ownership	-0,13	-0,03	-0,02	0,01	0,02	-0,11	0,89	-0,31	0,67	1,00						
Founder family firm Pyramid	0,07	-0,02	-0,04	-0,06	-0,01	-0,05	0,13	-0,05	0,28	0,02	1,00					
Founder family firm Dual Class Shares	-0,10	-0,01	-0,02	0,03	0,02	-0,07	0,97	-0,34	0,88	0,86	0,14	1,00				
Non-founder family firm Wedge	0,07	0,16	0,02	-0,05	-0,03	0,02	-0,25	0,73	-0,22	-0,23	-0,03	-0,25	1,00			
Non-founder family firm CF ownership	-0,07	0,07	-0,02	-0,03	-0,02	-0,08	-0,27	0,77	-0,23	-0,24	-0,04	-0,26	0,36	1,00		
Non-founder family firm Pyramid	0,19	0,12	0,06	-0,02	-0,02	0,09	-0,19	0,56	-0,17	-0,17	-0,03	-0,19	0,66	0,17	1,00	
Non-founder family firm Dual Class Shares	0,03	0,15	0,00	-0,03	-0,03	0,05	-0,29	0,83	-0,25	-0,25	-0,04	-0,28	0,75	0,60	0,42	1,00

Table A.15
Management Correlentions Matrix

Correlention coefficients for regression variables. FF stands for Founder family.

	Sales	Age	Dividend Yield	Cash & ST. Investments/ Assets	Leverage (D/E)	Founder family firm	Founder management	Descendant management
Correlentions of Variables in Management Regressions								
Sales	1,00							
Age	0,31	1,00						
Dividend Yield	0,22	0,15	1,00					
Cash & ST.Investments/ Assets	-0,26	-0,07	0,06	1,00				
Leverage (D/E)	0,07	0,03	0,01	-0,02	1,00			
Founder family firm	-0,12	-0,03	-0,02	0,03	0,02	1,00		
Founder management	-0,14	-0,16	-0,04	0,02	-0,01	0,61	1,00	
Descendant management	-0,02	0,11	0,05	0,03	0,02	0,42	-0,10	1,00