

Ownership Concentration in Sweden: Minority Expropriation or Alignment of Interest?

Eliane Tsujimoto^a

Major in Finance

Stockholm School of Economics

Ella Stapelfeldt^b

Major in Finance

Stockholm School of Economics

ABSTRACT

This paper analyzes two important aspects of concentrated ownership structures; control enhancing mechanisms and the determinants of family control. In this way, we contrast two perspectives on concentrated ownership structures; first, that firm value is destroyed due to the expropriation of private benefits of control and second, that the presence of a controlling shareholder can positively affect firm value by aligning the interest of shareholders and management. Our findings on the release of family control and control enhancing mechanisms indicate that there is no evidence of minority expropriation in Sweden. Instead, concentrated ownership seems to destroy value due to lower leverage, less aggressive growth strategies and overinvestment. We also find that family control of firms is determined by the family's desire to gain social status and reputation. Moreover, families employ control enhancing mechanisms in order to maintain control; however, the use seems to be limited by social norms and concerns about reputation.

^a80351@student.hhs.se, ^b80360@student.hhs.se

Tutor: Peter Högfeldt

Chair: Ulf von Lilienfeld-Toal

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Discussants: Kristoffer Fransson and Dirk Raab

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1. Introduction

Most firms around the world are controlled by one large shareholder, usually the state or a family (La Porta et al., 1998, 1999). In the US, where ownership dispersion is the greatest, founding families exercise a significant degree of control over about a third of the 500 largest firms (Villalonga and Amit, 2007). In Continental Europe, where the concentration of ownership has traditionally been stronger, family controlled blocks on average present about 50% of the firms (Mayer et al., 2008). These facts give rise to the following general question: What are the effects of ownership concentration on firm value and performance?

Previous research has given rise to two contrasting perspectives on the effects of concentrated ownership structures, which we refer to as “minority expropriation” and “alignment of interest”. The minority expropriation perspective is based on evidence that ownership concentration leads to the exploitation of minority shareholders. Controlling shareholders, most often families, commonly leverage their controlling positions through the use of control enhancing mechanisms, which allows them to extract private benefits of control at the expense of minority shareholders.

The alignment of interest perspective suggests that there are also potential benefits that arise from concentrated ownership structures. Controlling owners have an incentive to monitor management more closely and thereby reduce the agency conflict between shareholders and management. Moreover, ownership concentration brings more stability to the firm. Controlling owners often have more long term profit horizons than investors in the capital markets, and can therefore maximize long term performance.

The empirical evidence on these contrasting views has indicated that in line with the minority expropriation perspective, control enhancing mechanisms destroy firm value. Moreover, one important form of concentrated ownership structures, family firms, usually perform better than widely held firms, which has been interpreted as evidence of the alignment of interests. However, in Sweden, family control leads to a discount in firm value, which then again could be seen as evidence of minority expropriation. Overall, the generally established view is that minority expropriation dominates the effects of concentrated ownership structures on firm value and performance.

However, there are two issues related to these contrasting views that previous research has not yet resolved. First, it has not been clearly established whether the use of control enhancing mechanisms reduces firm value due to minority expropriation or because of other aspects of concentrated ownership such as less aggressive growth strategies, more conservative capital structures and overinvestment. For instance, evidence on Sweden suggests that controlling owners rarely expropriate minorities (Högfeldt, 2001). Secondly, the empirical research on family firms does not indicate whether family control aims to maximize the expropriation of private benefits or whether families try to maximize social benefits such as reputation and social status. It is therefore the purpose of this paper to consider two specific aspects of concentrated ownership, control enhancing mechanisms and

the determinants of family control, and thereby provide further evidence on the structure and effects of ownership concentration.

We conduct this study, first, by comparing the effects of different control enhancing mechanisms and analyzing their impacts on firm performance, which enables us to determine exactly what drives the effects of concentrated ownership on firm value and performance. We therefore state the following specific question this paper aims to answer:

What are the effects of different control enhancing mechanisms on firm value and performance?

Furthermore, the choice of control enhancing mechanisms can reveal whether controlling owners seek to extract private benefits of control at the expense of minorities or whether firm value is reduced due to other aspects of concentrated ownership structures. Therefore, we state a question that can give more evidence on minority expropriation:

What determines the choice of different control enhancing mechanisms?

Secondly, we build on the existing empirical findings in order to develop and empirically test a framework that analyzes the determinants of family control and what happens following the release of family control. The existing empirical research has usually taken family control as given. However, the recent transition from family control to more dispersed ownership structures (Mayer et al., 2008) presents the opportunity to analyze family control by examining the determinants of the release of control. This analysis, as well as a study of the ex post consequences of the release of control, can provide further evidence on whether families choose to control firms in order to extract private benefits of control or whether they seek to maximize other benefits such as reputation or social status. We therefore state the following question:

What determines the release of family control and what are the consequences of the release of family control?

Our study will focus on one country, Sweden, which brings about the following advantages: The use of control enhancing mechanisms is extremely common in Swedish firms, which makes this an interesting country for the purpose of our study. Moreover, Sweden exhibits highly concentrated ownership structures with a large share of family control. Lastly, by focusing on one single legal regime, we can ensure that our results are not biased by differences in minority shareholder protection.

1.1. Intended Contribution

The contribution of this paper is two-fold. First, we will analyze in more detail the effect of different control enhancing mechanisms on firm value and performance. Previously, only little research has been devoted to how disproportionate ownership structures impact earnings performance. Moreover, to our knowledge, no study on Sweden has yet investigated the effect of different control enhancing mechanisms on firm value and performance.

Secondly, we aim to give further insights into what determines family control. Most of the empirical literature on family firms has analyzed the performance and valuation of family firms by comparing it with non-family firms. However, these studies have taken family control as given. We

are aware of only two papers that have been devoted to this topic: Villalonga and Amit (2008), who examine the determinants of family control and ownership, and Mayer et al. (2008), who examine the determinants of family ownership across different legal frameworks and how ownership and control evolve over time. Our paper will try to analyze family control from a different angle; namely in investigating the determinants of the release of family control and determining what happens following the release of family control. Compared to previous studies our main contributions are therefore:

- 1) We contribute to the study of control enhancing mechanisms by analyzing the effect of different mechanisms on firm value and performance. Furthermore, we analyze what determines the choice of control enhancing mechanisms, a question that has previously only been addressed by Villalonga and Amit (2006).
- 2) We add to the limited research on the determinants of family control by analyzing the release of family control in Sweden.
- 3) We construct an analysis to examine the ex post consequences of the release of family control, which has not been addressed by previous studies.

1.2. Structure of this Paper

We will give an overview of previous empirical findings in Section 2. Section 3 will describe the theoretical framework underlying this study, which will be further developed into our hypotheses in Section 4. Next, we will give a brief overview of the dataset and methodology used in this study and present some descriptive statistics in Section 5. Section 6 provide an overview of the results we obtain from our regression analysis. Finally, we will analyze our results in Section 7 and outline the conclusions of this paper and some suggestions for further research in Section 8.

2. Empirical Background

The empirical research on ownership concentration and control enhancing mechanisms has provided some evidence in favour of the minority expropriation perspective; however, there is also evidence in support of the alignment of interest view. In this section, we first review the effects of different control enhancing mechanisms that are commonly employed by controlling owners and give them excess control. Then, we describe the findings of empirical research on the most important form of concentrated ownership structures, family firms. We present the empirical findings related to the effects of family control on firm value and performance. We also describe the previous research on the determinants of family control (please see Appendix 1 for a definition of family firms). First of all, we summarize the main empirical findings in Table 2.1 below.

Table 2.1 Summary of Previous Empirical Findings

Firm valuation is usually measured by Tobin's Q and firm performance by ROA. The difference between firm valuation and performance can for example be due to minority expropriation. The definition of family control varies across studies, however, it generally indicates that the family controls more than 25% of the votes. Excess control indicates that there is a dispersion between cash flow and voting rights due to the use of control enhancing mechanisms. Dual Class shares and Pyramids indicate the use of these mechanisms.

Authors	Region	Effects on Firm Valuation				Effects on Firm Performance	
		Family Control	Excess Control	Dual Class Shares	Pyramids	Family Control	Excess Control
Villalonga and Amit (2007)	US		Negative	Negative	Positive		
Averstad and Rova (2007)	Sweden	Negative	Mixed			Positive	
Barontini and Caprio (2006)	Continental Europe	Positive	Negative			Positive	Neutral
Erhardt et al (2006)	Germany					Positive	
Favero et al (2006)	Italy	Positive	Positive			Positive	Positive
Maury (2006)	Europe					Positive	
Andersson and Nyberg (2005)	Sweden	Negative	Negative				
Bennedsen and Nielsen (2005)	Europe		Negative	Negative	Negative		Neutral
Klein et al (2005)	Canada	Neutral	Negative				
Gompers et al (2004)	US		Negative				
Villalonga and Amit (2004)	US	Neutral	Negative				
Anderson and Reeb (2003)	US	Positive				Positive	
Cronqvist and Nilsson (2003)	Sweden		Negative				Negative
Claessens et al (2002)	East Asia		Negative				

2.1. The Effect of Control Enhancing Mechanisms

The wide use of control enhancing mechanisms and their effects on firm value have been documented in many studies. Most firms around the world are controlled by a large shareholder, usually the founders and their families, who often entrench themselves using control enhancing instruments such

as dual class shares, pyramidal ownership structures, cross holdings and voting agreements (defined in Section 3.4) (La Porta et al., 1999). In Sweden for example, a large fraction of listed firms is family controlled, and disproportionate ownership structures are extremely common (Högfeldt et al., 2001).

A negative relationship between disproportional ownership structures and firm value has been found by empirical research all around the world (see Table 2.1). In general, agency costs from disproportionate ownership structures reduce firm value by 6-25%, increasing with the vote ownership of the controlling owner (Cronqvist and Nilsson, 2003; Villalonga and Amit, 2004). In Sweden, the value discount due to disproportional ownership structures is 7%, which is relatively high compared to other developed countries (Zingales, 2004). Cronqvist and Nilsson (2003) also find that agency costs due to disproportionate ownership structures tend to be larger for family firms than for other types of controlling shareholders, as families get more involved in the management of the company and will thus find it easier to extract private benefits of control.

On the other hand, the effect of disproportional ownership structures on performance seems to be mixed, with positive, negative or insignificant effects found depending on the country studied (see Table 2.1).

2.2. The Effect of Different Control Enhancing Mechanisms

There is only limited empirical evidence on which of the control enhancing instruments might be driving the negative effect on valuation and whether different types of control enhancing mechanisms could impact value differently. Bennedsen and Nielsen (2005) find that dual-class shares are more costly than pyramidal structures, as they have a significantly stronger negative effect on firm value. Dual class shares reduce firm value by 20% compared to a firm with a proportional ownership structure, whereas pyramidal structures only have a negative effect of about 8% on firm value. Villalonga and Amit (2007) document a negative value effect of dual class shares and a positive value effect of pyramids.

2.3. The Impact of Family Control on Valuation and Performance

Most of the empirical literature related to family firms has measured the effect of family control on firm performance and valuation by comparing family firms with non-family firms. The general empirical finding has been a positive relationship between family control and firm performance (Averstad and Rova, 2007; Barontini and Caprio, 2006; Erhardt et al., 2006; Favero et al., 2006). Family control also has a positive effect on firm valuation if held directly and without the use of control enhancing mechanisms (Barontini and Caprio, 2006; Villalonga and Amit, 2004; Favero et al., 2006). The positive impact of family control on firm value and performance suggests that this form of ownership concentration increases the alignment of interests between management and shareholders. One exception to this finding is the result from studies on Swedish family firms. Averstad and Rova (2007) and Andersson and Nyberg (2005) find that while family control is positively related to performance, it has a negative impact on firm value. These opposing effects were not documented in

any other study and might be explained by the extensive use of dual class shares and an unwillingness of older firms to give up control in order to fund growth (Averstad and Rova, 2007).

On the other hand, when families enhance their controlling position through the use of control enhancing mechanisms, the impact of family control on firm value is negative, as can also be seen from the aforementioned negative effect of control enhancing mechanisms (Villalonga and Amit 2007; Bennedsen and Nielsen, 2005). However, there is also evidence that disproportional ownership structures act as a substitute for minority protections, as the value discount on concentrated ownership is large and significant in countries with good investor protection whereas it seems to be negligible in countries with poorer protection for small shareholders (Bennedsen and Nielsen, 2005).

2.4. The Determinants of Family Control

In general, empirical studies on family firms take family control as given. What explains the determinants of family control has been addressed by only two previous studies. In this relatively new field of research, Villalonga and Amit (2008) and Mayer et al. (2008) have made a first attempt to analyze the determinants of family control and how family control evolves over time. Villalonga and Amit (2008) find that when family control gives the firm a competitive advantage and maximizes firm value, families are likely to hold on to control. In addition, private benefits of control appropriated through the use of control enhancing mechanisms can also explain family control of firms and industries. Mayer et al. (2008), who study both private and listed firms in France, Germany, Italy and the UK, show that family control is common among young private firms across all countries. Usually, family firms quickly evolve into widely held companies. However, families are more likely to hold on to control if they can capture private benefits of control, which is usually the case in countries where investor protection is weak, markets are less developed, the level of corruption is high and political openness low.

2.5. Summary of Empirical Findings

The empirical findings suggest that firm value is reduced when controlling owners leverage their controlling position through the use of control enhancing mechanisms. This evidence indicates that minority shareholders discount firm value as they fear expropriation by the controlling shareholders. Nevertheless, more research is needed on the effects of different control enhancing mechanisms to draw more general conclusions on how disproportionate ownership structures impact firm value and performance.

The empirical evidence on concentrated ownership structures such as family firms indicates that ownership concentration can have positive effects on firm value and performance, as suggested by the alignment of interest perspective. However, when ownership is more concentrated due to the use of control enhancing mechanisms, this does not improve the alignments of interests further.

Research on Swedish family firms has indicated that this form of concentrated ownership structure lowers firm value. The results suggest that family control reduces firm value either because of

minority expropriation or because of other negative effects related to concentrated ownership structures.

3. Theoretical Framework

In this section, we explain in more detail the agency conflicts related to the minority expropriation and alignment of interests perspectives. We describe the theoretical support for the two contrasting views by examining the costs and benefits of control enhancing mechanisms and comparing the effects of dual class shares and pyramidal ownership structures. Furthermore, we outline the theory underlying ownership concentration in Sweden and build a theoretical framework of the determinants of family control.

3.1. Ownership Concentration and Firm Value

As outlined briefly in the introduction, there are two contrasting perspectives on the effects of concentrated ownership structures. These perspectives are related to two important agency conflicts; agency problems between minority shareholders and controlling shareholders (minority expropriation) and agency conflicts between management and shareholders (alignment of interest).

Ownership concentration with one controlling shareholder can cause minority expropriation problems, especially in the case of disproportional ownership structures. Controlling shareholders often leverage their controlling positions through the use of control enhancing mechanisms. This enables them to extract corporate resources, and thus directly lower overall firm value. Moreover, controlling shareholders can also indirectly reduce firm value by engaging in activities that maximize the value of their private benefits of control instead of overall firm value. In general, the smaller the equity stake of the controlling owner, the more value will be destroyed for minority shareholders (Bebchuk et al., 2000).

However, the presence of a controlling shareholder can also reduce agency costs related to the classical principal agent problem as first described by Jensen and Meckling (1976). In a widely held corporation where ownership is separated from control, agency costs arise because of the misalignment of incentives between shareholders and managers. Incomplete contracts and the separation of ownership and control lead to problems of moral hazard, as managers engage in activities that make them better off but destroy shareholder value. A potential solution to this problem could be monitoring through shareholders, which more closely aligns the incentives of management with those of the owners. However, as Shleifer et al. (1986) point out, it might not be optimal for small shareholders in a widely held corporation to monitor the performance of management. The benefits of monitoring are a public good as they accrue to all shareholders, whereas the costs of monitoring accrue only to the monitoring shareholder. This makes it advantageous for each shareholder not to monitor but to free-ride with others. Therefore, there would be no monitoring at all, resulting in even more value destroying actions on behalf of the managers. In this case, the presence of a controlling shareholder who closely monitors management can increase overall value for all shareholders, as interests of management and shareholders are more aligned and overall shareholder value is maximized.

3.2. Benefits and Costs of Control Enhancing Mechanisms

Controlling shareholders often employ control enhancing mechanisms in order to maintain control of their firms and extract private benefits of control. A careful analysis of the theory underlying these mechanisms can give a clearer picture of the extraction of private benefits of control. We will discuss the benefits and costs of control enhancing mechanisms in order to point out the factors that could potentially limit the expropriation of minority shareholders. In order to give a brief overview, Table 3.3 below summarizes the functioning and effects of the most commonly used control enhancing mechanisms.

Table 3.3 Control Enhancing Mechanisms

This table summarizes the effects and functioning of different control enhancing mechanisms. The effects on firm value and performance indicated here are those found by previous studies (Villalonga and Amit, 2007; Bennedsen and Nielsen, 2005)

Mechanism	Functioning	Effect on Value	Effect on Performance
Dual Class Shares	The firm issues more than one type of shares that entitle to different voting rights.	Negative	Negative
Pyramidal Structures	A hierarchical chain establishes an ownership structure where the controlling owner of a firm high up the chain uses his control of this firm to establish control in a firm lower down the chain at a lower capital investment.	Mixed	Mixed
Voting Agreements	Shareholders cede their voting rights to other shareholders or pool their voting rights and make joint decisions.	Mixed	Mixed
Disproportional Board Representation	The board representation of the controlling shareholder exceeds his or her cash flow rights or voting rights.	Negative	Negative
Cross-holdings	A company indirectly holds shares in itself through its own shareholders, thus strengthening the position of the controlling shareholder.	Negative	Negative

By creating a wedge between the cash flow ownership and the voting rights, control enhancing mechanisms allow a shareholder to take control of a corporation without holding the equivalent equity stake. Being entrenched from the pressure of corporate governance mechanisms, controlling owners will find it easier to expropriate private benefits of control (Cronqvist and Nilsson, 2003). In general, private benefits of control can be classified into pecuniary and non-pecuniary benefits. The former include the extraction of corporate resources (self-dealing) and the dilution of minority shareholders' control (dilution). Non-pecuniary benefits do not come at the expense of minority shareholders and include the enjoyment of owning and controlling a company (amenities) and political and reputational aspects (reputation) (Ehrhardt et al., 2003).

Bebchuk et al. (1999) argue that disproportionate ownership structures with a controlling owner can create very large agency costs. Controlling shareholder's incentives are not aligned with those of minority shareholders as they will try to maximize not only the firm value but also their private benefits of control. A controlling shareholder will always try to maximize $[\alpha(V-B) + B]$; where α is the proportion of equity owned in the firm, V is the value of the firm and B is the value of private benefits of control. The smaller the family's proportion of equity owned in the firm (α), the more the family

will try to maximize private benefits of control rather than overall firm value, thus increasing the efficiency loss.

Bebchuk et al. (1999) propose that misaligned incentives can lead to inefficient decision making with regards to investment project, expansion of the firm and transfers of control. First, the controlling owner has an incentive to overinvest in projects with higher benefits of control instead of choosing projects that maximize value for the whole firm. Secondly, controlling owners are more inclined to engage in empire building; expanding the firm to a point that it becomes inefficiently large, but maximizes private benefits of control. Because of the proportionally low equity stake the family has in the firm, the controlling owner does not bear all of the increased risk and costs of expanding the firm, but reaps all the private benefits of control associated with an expansion. Due to this moral hazard, the family will decide to expand the firm more than would be efficient from a minority shareholder's perspective. Lastly, families are less likely to transfer control but seem to hang on to control for too long. The use of control enhancing mechanisms acts as a takeover defence and families can engage in growth strategies and raise capital without giving up the private benefits of control (Cronqvist and Nilsson, 2003).

There are almost no constraints that can limit the agency costs described above. However, one factor that might restrict the expropriation of minority shareholders is reputation (Bebchuk et al., 1999). Unless controlling shareholders establish a reputation for good and efficient management, they will have to pay a price for minority expropriation in form of a discount on firm value. Especially families, who are generally worried about following generations, might want to limit the appropriation of private benefits in order to ensure that the firm can continue to engage in growth strategies through the issuance of stock. A second constrain on minority expropriation brought forward by Bebchuk et al. (1999) is the legal protection of minority shareholders, which limits the scope for families to extract private benefits. Thus, we would expect agency costs to be larger in countries with weak legal protection of minority shareholders.

Despite the many drawbacks of control enhancing mechanisms, disproportionate ownership structures may also benefit minority shareholders through overall shareholder value maximization (Villalonga and Amit, 2004). As the discussion in Section 3.1 describes, ownership concentration can reduce the principal agent conflicts between shareholders and managers. Controlling owners monitor management more closely and thereby reduce opportunistic behaviour by management. Agency costs of misaligned incentives between management and owners will be reduced, increasing shareholder value even for minority shareholders (Bennedsen and Nielsen, 2005). In this way, control enhancing mechanisms can act as a substitute for legal protection for shareholders.

Overall, the discussion of the benefits and costs of control enhancing mechanisms suggests that controlling shareholders will maximize their private benefits of control at the expense of the minority shareholders. Mitigating factors to these agency costs are the alignment of incentives that controlling shareholders bring about as well as reputational concerns.

3.3. The Effects of Dual Class Shares and Pyramids on Firm Value and Performance

In Sweden, dual class shares and pyramidal ownership structures are the most frequently used control enhancing mechanisms (Högfeldt et al., 2001). As these mechanisms have different functions, the theoretical predictions of how dual class shares and pyramids impact firm value and performance should also differ. A closer inspection of the theory underlying these mechanisms can improve our understanding of what drives the value discount on disproportionate ownership structures.

Dual class shares create a disproportional ownership structure as a company issues more than one type of share that entitles to different voting rights, giving superior voting rights to the controlling owner. Dual class shares thereby create a wedge between the percentage of cash flow rights and voting rights and allow a shareholder to gain control of the corporation without holding the proportionate stake in cash flow rights. Families are most likely to use dual class shares followed by corporations and financial institutions (Bennedsen and Nielsen, 2005). Dual class shares serve as pure control enhancing devices, which can make minority shareholders worse off due to the expropriation of private benefits and also lead to more inefficient decision making by the controlling shareholder. However, the more concentrated ownership structure that arises from the use of dual class shares could also have positive effects on value and performance as it brings more stability to the firm and aligns the incentives between management and shareholders.

Pyramidal ownership structures are another control enhancing device that separate control from ownership through a hierarchical chain (Högfeldt et al., 2004). An owner can use his control of a company high up the chain to establish control in a company lower down the chain. The lower down the chain the controlled company is, the smaller the owner's capital investment. The controlling owner has thus access to the entire stock of retained earnings and private benefits of control, but only invests a small proportion of capital (Villalonga and Amit, 2007). Due to the separation of ownership and control, pyramidal ownership structures can create large agency costs between controlling and minority shareholders. The tunnelling theory states that controlling shareholders can expropriate corporate resources at lower levels of the pyramid by "tunnelling" them up to companies where controlling owners have larger cash flow rights (Bebchuk et al., 1999). In Sweden, however, pyramids might have a negative impact on value not because of the appropriation of corporate resources, but because of inefficient decision making and overinvestment (Högfeldt et al., 2004). The design of taxes limits the controlling owner's incentives to expropriate corporate resources but also incentivizes the reinvestment of profits. Lastly, a positive aspect of pyramidal ownership structures is that they do not only create agency costs, but can also support strategic alliances which can benefit the firm (Villalonga and Amit, 2007).

In conclusion, the theory underlying dual class shares and pyramidal ownership structures indicates that both mechanisms increase the agency conflicts between controlling and minority

shareholders who fear expropriation. In the case of Sweden, the negative effect of pyramids seems to be driven by overinvestment instead of minority expropriation.

3.4. The Choice of Control Enhancing Mechanisms

The analysis of benefits and costs of control enhancing mechanisms suggests that these instruments create large agency conflicts and destroy firm value due to minority expropriation. An important question to consider is thus what determines the choice of different control enhancing mechanisms and whether firms employ several mechanisms at the same time.

Legal restrictions are some of the most important determinants of the choice of control enhancing mechanisms, as they limit the use of certain devices (Bebchuk et al., 1999). Consequently, different control enhancing mechanisms should be used across different legal regimes, with a higher use of these instruments in countries with fewer legal restrictions.

Given that the use of all control enhancing mechanisms is permitted legally, the minority expropriation perspective would suggest that the choice of control enhancing mechanisms is driven by the controlling owner's desire to extract private benefits of control. Control enhancing mechanisms should thus be employed in such way that maximizes the controlling owner's extraction of private benefits. However, the use of control enhancing mechanisms implies a certain trade-off for the controlling owners: these mechanisms facilitate the extraction of corporate resources, but on the other hand, they also reduce non-pecuniary benefits of control such as social status and reputation. Therefore, potential limits to the use of these instruments might be political and reputational concerns.

Furthermore, the discussion of the benefits and costs of control enhancing mechanisms above would suggest that when faced with the decision which one of the control enhancing mechanisms to employ, firms would be more inclined to use pyramidal ownership structures than dual class shares, as pyramids can also have a positive effect on firm performance.

On the whole, the choice of these mechanisms can give important insights into what value controlling shareholders seek to maximize. The generally established view has been that controlling shareholders want to maximize private benefits of control. However, in the case of Sweden where social benefits of control play a more important role, minority expropriation could be limited by the desire to gain social status and reputation.

3.5. Ownership and Control in Sweden

Control enhancing mechanisms are not the only aspects of concentrated ownership structures that impact firm value and performance. We will also consider the effects of family control, which represents the most common form of concentrated ownership structures. In this section, we give a brief overview of concentrated ownership structures and also point out certain characteristics of the Swedish market that differ from the general theoretical framework on the effects of ownership concentration and control enhancing mechanisms.

La Porta et al. (1998;1999) suggest that widely held corporations are more common in countries with good legal protection of minority shareholders. On the other hand, in countries with weaker legal protection for minority shareholders, control enhancing mechanisms are used more frequently and companies more commonly have disproportional ownership structures (Grossmann and Hart, 1987). In addition, countries with weak protection of minority shareholders and strong ownership concentration are expected to have less active and less developed financial markets and markets for corporate control. In the case of Sweden, La Porta et al. (1999) find that family firms present the most common form of ownership. Moreover, shareholder protection is weak according to La Porta et al.'s (1998) measures of legal protection.

However, Högfeldt et al. (2001) argue that Sweden presents a puzzling case under this framework. Formally, the use of control enhancing mechanisms is extremely common and the separation of ownership and control is strong. In contrast, financial markets are active and well developed. Moreover, minorities do not seem to be expropriated by controlling owners as investors happily invest in companies with concentrated ownership. Högfeldt et al. (2001) suggest that the controlling owners are most concerned about social benefits of control, social status and reputation, which represent a large part of the total benefits they derive from controlling a firm. The desire to maximize social benefits of control will constrain the expropriation of minority shareholders, as this has a negative effect on the family's reputation. Thus, instead of formal legal protection for minority shareholders, the informal institutional settings and social norms discourage the appropriation of private benefits of control.

3.6. What drives the release of family control?

By analyzing the determinants of family control, we can obtain important insights into the question what value families try to maximize. The generally established view is that family control is determined by the extent that families can expropriate private benefits of control. However, different theoretical predictions might apply to Swedish family firms. As indicated by Högfeldt et al. (2001), families might seek to maximize social benefits such as reputation and social status. According to Villalonga and Amit (2008), there is a third factor that could determine family control; the competitive advantages arising from this form of ownership structure. In the following, we will outline a theoretical framework indicating the factors that influence the family's decision whether to release or maintain control.

The private benefits of control hypothesis refers to the benefits that can be appropriated by the family at the expense of minority shareholders (Villalonga and Amit, 2008). By this argument, firms are more likely to be family controlled when private benefits of control are high and can be easily appropriated. For example, the use of control enhancing mechanisms makes it easier for families to expropriate minority shareholders. On the other hand, in countries with good legal protection for minority investors, family control becomes less optimal due to difficulties of extracting private benefits. At last, a firm must have relatively large free cash flows in order for families to expropriate

private benefits of control. We would thus expect family firms to have lower leverage, as the obligation to repay debt and make interest payments reduces the cash flow available to the family.

However, there is also a trade-off between the maximization of private benefits of control and the family's desire to earn a reputation and social status from controlling a firm. As mentioned before, social norms and the negative public opinion on minority expropriation will discourage the appropriation of private benefits of control (Högfeldt et al., 2001). In some cases, family control will therefore be determined above all by the maximization of social benefits.

The competitive advantage hypothesis follows Demsetz and Lehn's (1985) argument that the structure of corporate ownership varies in ways that are consistent with value maximization. According to this theory, factors that determine the ownership structure include: value-maximizing size, "control potential", "amenity potential" and investment horizons. Family control will to some extent be determined by the value maximizing size or the efficient scale. Family firms are expected to be smaller, as risk aversion and diversification benefits will make it more costly to concentrate ownership of a large firm among few shareholders. Firms are also more likely to be family controlled if they have a lot "control potential", implying that greater alignment of incentives between owners and managers as well as increased monitoring would increase firm value and performance significantly. Demsetz and Lehn (1985) define "amenity potential" as non-pecuniary benefits of control individuals get from working at the firm, such as reputational benefits and business and political connections. Lastly, family firms are expected to have longer profit horizons. In contrast to public investors and external managers, families are willing to sacrifice short term profits for long term value creation. For firms with long payback periods for positive NPV investments, family ownership can create a competitive advantage.

The main difference between the three hypotheses of what determines family control is the group of shareholders for whom value is maximized (Villalonga and Amit, 2008). Retaining control because of competitive advantages or social benefits of control would imply that value is maximized for both the family and minority shareholders. In contrast, value would be destroyed for minority shareholders if family control is determined by the maximization of private benefits of control.

Mayer et al. (2008) give further suggestions on how family control evolves over time and how it differs across countries. They argue that the dynamics of family control are determined by investor protection, the degree of financial development, the level of corruption and degree of trust and the openness of the political system in a country at a given point in time. Usually, young and relatively small firms are often family owned. In countries that are relatively open and have strong financial markets and good investor protection, the ownership structure is expected to quickly evolve into a widely held firm. On the other hand, in countries where investor protection is weaker and markets are less developed, families are more likely to hang on to control in order to extract more private benefits of control.

4. Development of Hypotheses

4.1. Control Enhancing Mechanisms Hypotheses

In line with the minority expropriation view, we would expect disproportional ownership structures to have a negative effect on firm value because of the agency conflict between the controlling and the minority shareholders. However, the use of control enhancing mechanisms can in some cases also serve as a substitute for weak legal protection for minority shareholders (Bennedsen and Nielsen, 2005), as the controlling shareholders monitor management more closely and thus bring about an alignment of interest between shareholders and management. Nonetheless, we would expect the negative value effect due to minority expropriation to dominate.

If disproportional ownership structures have a negative impact on value, this effect could be driven by a lower earnings performance (Villalonga and Amit, 2007). It would thus be interesting to find out if control enhancing instruments also affect earnings performance. According to Bebchuk et al. (1999), disproportionate ownership structures lead to more inefficient decision making which could negatively impact performance. Controlling shareholders will make less efficient decisions with regards to investment projects, firm size and transfers of control because they want to maximize overall firm value as well as their private benefits of control. We therefore formulate our hypotheses as the following:

Hypothesis 1a: Disproportional ownership structures have a negative impact on firm value

Hypothesis 1b: Disproportional ownership structures have a negative impact on firm performance

The negative effect of control enhancing mechanisms on firm value has been documented in many studies; however, there is little evidence on what is driving these results. Some mechanisms such as pyramidal ownership structures serve different purposes than pure control enhancement, which means that their effect on value may also be different. More specifically, the empirical evidence has not clearly established whether the value discount is driven solely by minority expropriation or if there are also other effects that impact firm value and performance.

The theoretical framework and empirical findings of previous studies (Villalonga and Amit, 2007; Bennedsen and Nielsen, 2005) suggest that dual class shares have a stronger negative effect on firm value than pyramids. Dual class shares only serve as a control enhancing device and might thus be negatively regarded by minority shareholders to the extent that they fear expropriation from the controlling shareholder. We also expect dual class shares to lead to more inefficient decision making because of minority expropriation and thus negatively impact performance. In contrast, pyramidal ownership structures can have negative or positive effects on firm value and performance, as they create agency conflicts and overinvestment problems but also have a positive effect on performance due to strategic alliances. Consequently, we state our hypotheses regarding the effect of different control enhancing mechanisms on firm value and performance as follows:

Hypothesis 2a: Dual class shares have a more significant negative effect on firm value than pyramids

Hypothesis 2b: Dual class shares have a more significant negative effect on firm performance than pyramids

As we expect dual class shares and pyramids to have different effects on firm value and performance, an important question to examine is the following: What determines the choice of using a particular control enhancing instrument? The decision of which control enhancing mechanisms to implement can also reveal whether the controlling owners seek to expropriate minority shareholders or whether they simply want to maintain control and derive the social benefits associated with controlling a firm.

In accordance with Villalonga and Amit (2006), we will examine the effects of firm age, the presence of a family CEO and/or chairman of the board (COB) and the use of other control enhancing mechanisms on the probability of a firm employing dual class shares or pyramidal ownership structures. We expect that firm age can predict the use of control enhancing mechanisms, as later generation firms employ disproportional ownership structures more frequently. We also anticipate that a family would want to maintain control of the company if the family is deeply involved in the management of the company and wants to protect its management positions. Thus, the presence of a family CEO and/or COB should increase the likelihood of a firm having a disproportionate ownership structure. On the other hand, we expect family firms to limit the use of control enhancing mechanisms because of their negative effects on reputation. We therefore predict that family firms use different control enhancing mechanisms as substitutes, implying that families use either dual class shares or pyramids, but not both instruments in combination. In contrast, firms that care less about reputation might use several control enhancing mechanisms at the same time, as complements, in order to maximize the extraction of private benefits of control.

In addition to the determinants of control enhancing mechanisms as outlined by Villalonga and Amit (2006), we would also expect founder family firms to use control enhancing mechanisms more frequently, as founder families are usually more involved in the management of the firm and derive greater non-pecuniary benefits from controlling their firm.

Hypothesis 3a: Different control enhancing mechanisms are substitutes for family firms

Hypothesis 3b: The likelihood of a firm to employ control enhancing mechanisms increases in firm age, if there is a family CEO and/or COB present, or if the firm is controlled by the founding family

4.2. Family Control Hypotheses

The theoretical evidence on concentrated ownership structures suggests that there are two main effects of family control, a negative effect on firm value and performance due to the expropriation of minority shareholders and a positive effect due to the closer alignment of management's and shareholders' interests. The empirical evidence has shown that in Sweden, the agency conflict between controlling and minority shareholders dominates, as family control has a negative effect on firm value. By considering the effects of the release of family control, we can determine whether firm characteristics

develop as predicted by the underlying theory, thus giving more support to either the minority expropriation or alignment of interest perspective.

In accordance with the underlying theory, we expect firm value to increase following the release of family control, as agency problems related to minority expropriation are reduced. We would also anticipate performance to decline once the family has released control, as there is less monitoring and agency conflicts between management and shareholders become more significant.

However, we also need to take into account that families more frequently employ control enhancing mechanisms than other firms (Bennedsen and Nielsen, 2005). Therefore, we expect the use of control enhancing mechanisms to decrease following the release of family control. This decline should further increase firm valuation, as firm value is negatively related to the wedge between voting and cash flow rights. Consequently, we state the following hypothesis concerning family control and firm value and performance:

Hypothesis 4: Following the release of control firm value increases, but firm performance and the use of control enhancing mechanisms decrease

We have outlined the determinants of family control in the theoretical framework. If one of the determinants of family control changes significantly over time, this could trigger a release of control as it becomes less optimal for the family to maintain control of the firm. For instance, we would expect families to release control if the firm becomes too large and thus makes it more advantageous for the family to release control and diversify its investments. In the following, we will summarize which determinants of family control are likely to change over time and thus trigger a release of family control.

As previously mentioned, the likelihood of the family to release control increases with the size of the firm. Families can be expected to release control if risk aversion and diversification benefits make it too costly to concentrate the ownership of a large firm among few shareholders. In accordance with the private benefits of control hypothesis stated by Villalonga and Amit (2008), families are also more likely to maintain control when private benefits of control are high and can be easily appropriated, most often through the use of control enhancing mechanisms. Reductions in the use of control enhancing mechanisms, whether due to regulation or pressure from large institutional investors, could lead to a release of control. Moreover, an increase in leverage could also indicate a release of control, as it would reduce the free cash flows families could expropriate. On the other hand, other determinants mentioned by Villalonga and Amit (2008) such as control potential, amenity potential and investment horizons are unlikely to change over time and thus trigger a release of control.

We believe that there are some additional factors that determine the release of control, which were not pointed out by the theories related to this topic. When a family CEO and/or COB is present, families should be less inclined to release control because they want to protect their management positions. Moreover, we also expect that founding families are more inclined to maintain control of

their firms than non-founding families, as they are also more likely to be involved in the management of the firm and derive greater non-pecuniary benefits from controlling the firm, such as an emotional attachment to the firm. The hypotheses related to the release of control are therefore stated as follows:

Hypothesis 5a: Families release control if this form of ownership structure gives them no competitive advantage and if private benefits of control are low and cannot be easily appropriated

Hypothesis 5b: Families are less likely to release control if there is a family CEO or COB

Hypothesis 5c: Founding families are less likely to release control than non-founding families

4.3. Summary of Hypotheses

Our hypotheses on family control and control enhancing mechanisms and their implications in light of the minority expropriation and alignment of interest perspectives are summarized below:

Table 4.1 Summary of Hypotheses

This table summarizes our hypotheses and indicates whether each hypothesis supports the minority expropriation or alignment of interest perspectives.

<i>Hypotheses</i>	<i>Support for the Minority Expropriation vs. Alignment of Interest Perspectives</i>
H1a: Disproportional ownership structures have a negative impact on firm value H1b: Disproportional ownership structures have a negative impact on firm performance	Minority Expropriation leads to a value discount and lower performance due to inefficient decision making and corporate stealing.
H2a: Dual class shares have a stronger negative effect on firm value than pyramids H2b: Dual class shares have a stronger negative effect on firm performance than pyramids	Dual Class shares have a more negative effect as they are a pure control enhancing mechanisms and lead to minority expropriation.
H3a: Different control enhancing mechanisms are substitutes H3b: The likelihood of a firm to employ control enhancing mechanisms increases in firm age, if there is a family CEO and/or COB present, or if the firm is controlled by the founding family	Concerns about social status and reputation limit the expropriation of minority shareholders in Sweden.
H4: After the release of control, firm value increases, performance and the use of control enhancing mechanisms decrease	As controlling shareholders expropriate minorities, firm value is expected to increase. Because there will be less alignment of interest, firm performance should decline.
H5a: Families release control if this form of ownership structure gives them no competitive advantage and private benefits of control are low and not easily appropriated H5b: Families are less likely to release control if there is a family CEO or COB H5c: Founding families are less likely to release control than non-founding families	Maximizing the extraction of private benefits of control seems to be the most important determinant of family control. However, alternative explanations also indicate that non-pecuniary benefits such as reputation and emotional attachment to the firm could be an important factor in the decision to release control.

5. Methodology and Descriptive Analysis

5.1. The Dataset

In our study we use a unique dataset of Swedish family and non-family firms, which includes more than 125 000 observations. The dataset was kindly provided to us by Joen Averstad and Gustaf Rova. The initial source of the data was collected from SIX TRUST, OMX, company websites, previous studies and SIS Ägarservice database. Our dataset spans the time period 1985 to 2005 and consists of 613 companies, 310 family firms and 303 non-family firms. Among the family firms, 176 firms are founder family firms and 134 are non-founder family firms. Family firms are defined as firms where a family controls at least 25% of the votes. Family firms include both founder family firms, where a family member takes the position of the CEO and/or COB, and non founder family firms which have an external CEO and/or COB. Non family firms are usually widely held or controlled by a large institutional owner.

Firms belonging to the financial service industry and Swedish firms mainly listed in other countries (e.g. AstraZeneca) were excluded. The financial service firms have different balance sheet structures and belong to a highly regulated industry. Firms listed in other countries have less clear ownership structures and less data availability.

5.2. Explanatory and Control Variables

In order to make our study more comparable to Averstad and Rova (2007), we use the same definitions for our variables. When testing the effects on firm value and performance, we use Tobin's Q as a proxy for firm value and return on assets (ROA) as a proxy for firm performance. The two variables are defined as follows:

$$\text{Tobin's Q} = \frac{MV(\text{Equity}) + \text{Debt}}{BV(\text{Assets})} \quad (1)$$

$$\text{ROA} = \frac{EBIT}{\text{Total Assets}} \quad (2)$$

In all of our OLS regressions, we also include the control variables summarised and defined in Table 5.1 below.

Table 5.1 Control Variables

Variable Name	Definition
Log Sales	A proxy for firm size that measures the logarithm of annual sales.
Leverage	An indicator of the capital structure that is calculated as Leverage = Total debt/BV(Equity).
Age	Firm age since founding can control for different stages in the life cycle of a firm.
H&M dummy	A dummy variable that takes value 1 if the firm is H&M in order to control for the outperformance of H&M.
Dividend yield	Dividends can be a driver of market value. Dividend yield is calculated as DY = Dividends/BV(Equity).
Cash and Short Term Investments	Cash can affect performance through lower margins. We calculate this measure as (Cash and Short Term investments)/Total Assets.

The explanatory used for testing our hypotheses are explained and summarized in Table 5.2 below.

Table 5.2 Explanatory Variables

Variable Name	Definition
Wedge	Wedge describes the difference between the vote ownership and cash flow ownership of the largest shareholder, measured as Votes – Capital.
Control Enhancing Mechanism	In our sample, control enhancing mechanisms include dual class shares and pyramids. Both mechanisms create a wedge between the control and cash flow rights.
Dual Class Shares	More than one type of shares is issued, entitling the holders to different voting rights.
Pyramids	A hierarchical chain that establishes an ownership structure where the controlling owner of one firm high up the chain establishes control in a firm lower down the chain at a lower capital investment.
Release of Control_{t-j}	Dummy variable that takes value one if the family's control of votes falls below 25% in year t-j.
Blockholding	Dummy variable that takes value 1 if the largest owner has more than 10% of the votes.
Founder Family Firm	Firms where a family controls 25% of the votes and a family CEO and/or chairman of the board is present.
Family CEO and/or COB	A dummy variable that takes value one if a family CEO and/or Chairman of the Board is present.

5.3. Methodology

Our empirical strategy includes both descriptive and regression analysis. The regression analysis is conducted using both OLS regression analysis as well as probit regressions, as explained below.

5.3.1. Methodology for Control Enhancing Mechanisms

In order to estimate the effects of control enhancing mechanisms, we use OLS regression analysis. We are using panel data adjusted for industry and time, which allows us to use pooled OLS regressions instead of Fixed or Random effects. This method is more appropriate for our data, as we have a large number of firm observations, but sometimes only a few years of observations for each firm. When including very few observations for one company, fixed effects regressions will estimate an intercept that almost perfectly explains the variation for this company, making all other coefficients insignificant. However, we will also run fixed effects regressions to test for the robustness of our results. For all OLS regressions, we run the same basic regression including control variables:

$$y_{it} = \alpha_{it} + \beta_1 \ln(\text{Sales})_{it} + \beta_2 \ln(\text{Age})_{it} + \beta_3 \text{Leverage}_{it} + \beta_4 \text{Dividend Yield}_{it} + \beta_5 \text{Cash and ST Investments} / \text{Assets}_{it} + \beta_6 \text{H \& M Dummy}_{it} + \varepsilon_{it} \quad (3)$$

In order to estimate the likelihood of firms employing dual class shares or pyramids, we follow Villalonga and Amit's (2006) technique and estimate a probit model. This model estimates the probability of control enhancing mechanism used as a function of other mechanisms used, family CEO or chairman, founder family firms and firm age.

$$\text{Pr ob}(\text{Dual Class Shares} = 1)_i = \alpha_i + \beta_1 \text{Pyramids}_i + \beta_2 \text{Family CEO / COB}_i + \beta_3 \text{Founder Family Firm} + \beta_4 \ln \text{Age} + \varepsilon_i \quad (4)$$

$$\text{Pr ob}(\text{Pyramids} = 1)_i = \alpha_i + \beta_1 \text{Dual Class Shares}_i + \beta_2 \text{Family CEO / COB}_i + \beta_3 \text{Founder Family Firm}_i + \beta_4 \ln \text{Age} + \varepsilon_i \quad (5)$$

We use a five percent significance level when analyzing the regression results. For some regressions we also carry out F-tests in order to test whether certain variables have the same effect.

5.3.2. Methodology for Release of Control

In order to study the release of family control, we follow a method developed by Zingales et al. (1998). In order to analyze the factors that determine a firm's going public decision, Zingales et al. (1998) estimate the ex ante determinants of the going public decision using a probit model. They also develop a technique that allows them to compare the same firm before and after IPO in order to measure the ex post consequences. The same method of analysis can be applied to the release of family control. As the release of control is a binary outcome variable (taking value one if control was released and value zero if control is maintained), we can estimate the variables that affect the likelihood of a release of control using a probit regression. The probit model takes the following form:

$$\begin{aligned} \text{Pr ob(ReleaseControl} = 1) = & \alpha_t + \beta_1 \text{Dual Class Shares}_t + \beta_2 \text{Pyramids}_t \\ & + \beta_3 \ln \text{Sales}_t + \beta_4 \text{Leverage}_t + \beta_5 \text{Cash and ST Investments} + \beta_6 \text{Family CEO / COB} \\ & + \beta_7 \text{Founder Family Firm} + \beta_8 \text{Blockholding} + \varepsilon_t \end{aligned} \quad (6)$$

At any point in time the sample includes all family firms where families could potentially release control. After a family has released control, the company is dropped from the sample.

In order to study the ex post consequences of the release of control, we use the regression analysis developed by Zingales et al. (1998) to compare firms where a family has released control with firms that remain under family control. The model takes the following form:

$$y_{it} = \alpha_i + \gamma_t + \sum_{j=0}^4 \beta_j \text{Release}_{t-j} + \beta_t \text{time dummies}_t + \varepsilon_{it} \quad (7)$$

In this regression, Release_{t-j} are dummy variables equal to one if the year $t-j$ was the year when control was released. We will run several regressions in order to measure the ex post consequences of different dependent variables y_{it} : ROA, Tobin's Q, Leverage, Sales, Cash and Short Term Investments, Dual Class Shares, Pyramids and Blockholdings. We also estimate the firm specific effect α_i and the calendar year specific effect γ_t . In line with Zingales et al. (1998), we estimate this model using a fixed effects regression and unadjusted variables. The fixed effects regression takes each company before the release of control as a control for itself after the release, as the method adjusts each variable for its mean. In order to test whether there significant ex post consequences of the release of control, we run an F-test testing whether the sum of the release of control dummies is significantly different from zero. Again, we use a five percent level of significance to determine the support for our hypotheses.

5.4. Descriptive Analysis

Examining our dataset, we observe that family firms on average have higher performance, are older, more leveraged and have a higher wedge between cash flow and voting rights. On the other hand, firm valuation and size are lower (see table 5.3).

Table 5.3 Main variables

Statistics of the main variables used in our analysis

	Total			Family Firms			Non Family Firms		
	Mean	Median	St Dev	Mean	Median	St Dev	Mean	Median	St Dev
ROA	5,0%	6,7%	11,5%	6,1%	7,1%	10,0%	3,7%	6,4%	12,8%
Tobins Q	1,65	1,31	1,09	1,59	1,29	0,99	1,72	1,32	1,18
Wedge	0,17	0,15	0,17	0,24	0,23	0,16	0,10	0,03	0,15
Sales (SEKm)	6 818	848	21 598	4 811	746	16 239	8 949	1 027	25 945
Age	46	28	44	49	37	44	42	21	44
Divident Yield (Book Value)	4,4%	3,9%	5,2%	4,5%	4,0%	4,6%	4,4%	3,7%	5,8%
Leverage (Debt/Equity(BV))	61,3%	64,7%	21,1%	62,6%	66,3%	20,4%	59,9%	62,3%	21,7%

Moreover, we notice that family firms make use of more dual class shares than non family firms, and more than one third of the family firms have a family CEO and/or COB (see Table 5.4)

Table 5.4 Use of Dual Class Shares and Pyramids

Percentages of use of dual class shares and pyramids and Percentage of family CEO/COB of the total observations

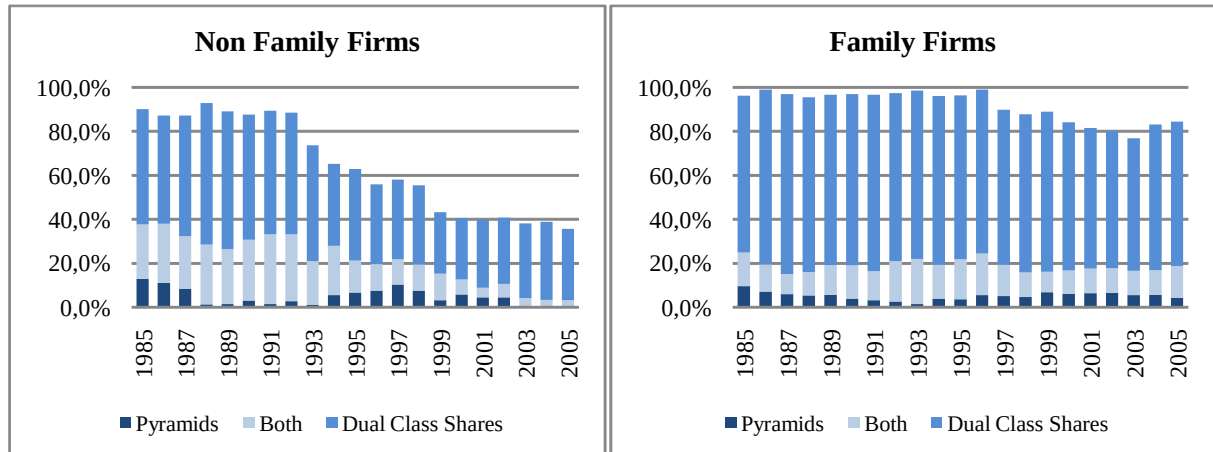
	Total	Family firms	Non Family firms
Dual Class Shares	50,8%	85,6%	54,5%
Pyramids	18,7%	18,6%	18,7%
Family CEO/COB	19,0%	36,9%	0,0%

5.4.1. Descriptive Analysis of the Effect of Control Enhancing Mechanisms

Sweden is one of the few countries that allow the use of dual class shares and pyramids at the same time. As can be seen in figure 5.1 below, the use of control enhancing mechanisms has been extremely high. Since the early 1990's, however, the use of control enhancing mechanisms has declined from 74% to 36% for non-family firms and from 99% to 84% for family firms.

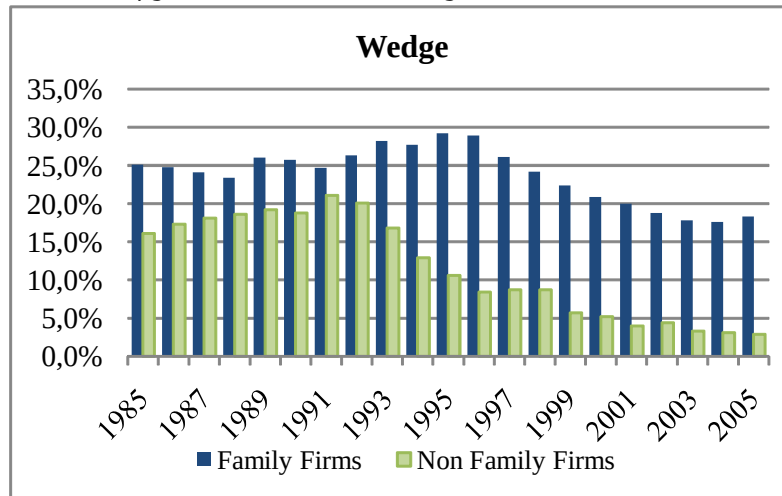
Figure 5.1 The Use of Control Enhancing Mechanisms Over Time

These figures indicate how the use of control enhancing mechanisms has evolved over time, more specifically, we look at the use of pyramids, dual class shares and both. We consider both Non Family Firms and Family Firms.



As we can see in Figure 5.2 below, the wedge between the voting and cash flow ownership of the largest shareholder has been decreasing in line with the decrease in the use of control enhancing mechanisms. The average wedge has decreased from 29% in the early 1990's to 18% in 2005 for family firms. We also notice that the wedge is much lower for non-family firms. For these firms, the wedge has decreased from 21% to only 3% in 2005.

Figure 5.2 The Average Wedge between Voting and Cash Flow Ownership of the Largest Shareholder
This figure indicates how the wedge has evolved over time.



Drawing a comparison between firms that use control enhancing mechanism and those who do not (see table 5.5), we can observe that the firms that use control enhancing mechanism on average have higher performance, are bigger in size, have higher leverage and are typically older. However, they have lower valuations. Comparing founder family firms with non-founder family firms, we can observe a higher average performance and valuation in founder firms. On the other hand, these firms are smaller, younger and have less leverage. We can also see that in comparison to firms with pyramidal ownership structures, firms that use dual class shares have a higher valuation on average and are younger. On the other hand, they also perform worse and are smaller in size.

Table 5.5 Comparison of Firms Characteristics for the Use of Control Enhancing Mechanisms

In this table, we compare the firm characteristics across firms that use control enhancing mechanisms and those that do not. The numbers are in average and we excluded the outliers of the data.

	No use of control enhancing mechanisms	Dual Class Shares	Pyramids	Use control enhancing mechanisms		
				All	Founder Firms	Non founder firms
ROA	1,9%	5,8%	6,8%	6,5%	6,7%	6,1%
Tobin's Q	1,90	1,57	1,49	1,56	1,66	1,43
Sales (SEKm)	1 945	8 019	20 221	5 092	2 883	7 927
Age	37,7	50,4	64,1	50,3	41,1	62,1
Retention Ratio	85,6%	82,2%	75,8%	81,6%	83,4%	78,9%
Dividend Yield (Book Value)	3,5%	4,5%	5,4%	4,6%	4,4%	4,8%
Leverage	58,1%	63,3%	64,4%	63,1%	62,7%	63,6%

5.4.2. Descriptive Analysis of the Release of Control

Our dataset includes 133 cases where families released control of their firms. In contrast, 177 firms maintained their control. We find that firms that release control are typically non-founder family firms with external management. Table 5.6 draws more comparisons between firms that release control and those that do not. We observe that both performance and valuation are on average lower for firms that maintain control. Firms that release control are also bigger in size (as measured in higher sales) and younger. Leverage seems to be the same, whether firms release control or not. Firms that release control more frequently use pyramids, whereas they use dual class shares less often than family firms

that maintain control. At last, firms that release control are typically non founding family firms and have no family CEO or COB.

Table 5.6 Comparison between Firms that Release or Maintain Control (unadjusted data)

In this table, we compare characteristics between firms that release control and firms that do not (during the year that they release the control). We calculated the average using unadjusted data and excluding the outliers.

	Firms that do not release control	Firms that release control		
		All	Founder Firms	Non founder
ROA	6,3%	2,2%	-0,8%	4,1%
Tobin's Q	1,59	1,58	1,78	1,41
Sales (SEKm)	4 745	5 778	1 048	8 302
Retention Ratio	82,3%	90,7%	93,4%	78,2%
Leverage	62,7%	61,6%	60,2%	63,1%
Dual Class Shares	86,8%	68,7%	77,6%	64,0%
Pyramids	18,0%	28,4%	1,72%	44,2%
Age	49,6	42,6	32,9	48,4
Blockholding	44,9%	53,7%	58,6%	52,3%
Family CEO/COB	38,2%	18,7%	43,1%	N/A

Looking more closely at how firm characteristics develop after the family releases control, we can observe the following: performance increases in general, while for Tobin's Q maintains constant over time. More detailed information on the development of firm characteristics can be found in Appendix 2.

6. Empirical Results

This section reports the results of our regression analysis. Complete results are shown in Appendix 3.

6.1. The Effects of Control Enhancing Mechanisms

Hypothesis 1a: Disproportional ownership structures have a negative impact on firm value

Hypothesis 1b: Disproportional ownership structures have a negative impact on firm performance

The results on Hypothesis 1 are reported in Table 6.1. When testing the effects of disproportionate ownership structures on firm value and performance, we expect to find negative and significant coefficients on the variable indicating the use of control enhancing mechanisms. We use two different specifications of disproportionate ownership structures: a dummy variable indicating the use of control enhancing mechanisms and the wedge between vote and cash flow ownership. In line with our expectations, the results of our regressions show that there is a negative and significant relationship between disproportionate ownership structures and firm value. Thus, we do not reject Hypothesis 1a. Contrary to the established view that control enhancing mechanisms lead to minority expropriation, we also find that the impact of control enhancing mechanisms on firm performance is positive. However, the significance depends on which specification for disproportionate ownership structures is used and is only significant for the dummy variable indicating the use of control enhancing mechanisms. Based on these results, we reject Hypothesis 1b as we find no negative relationship between disproportionate ownership structures and firm performance.

In order to test for the robustness of these results, we also run the same regressions on different subsamples, namely family firms and founder family firms. For both the family firm and founder family firm subsample, the results of our regressions show that the effect of disproportionate ownership structures on firm value is clearly negative, in line with our previous results. Interestingly, we find no significant impact of control enhancing mechanisms on firm performance for family firms, which indicates that this effect is mainly driven by non-family firms.

Given the decreasing use of control enhancing mechanisms since 1990's (Figure 5.1 in the descriptive analysis), we also test our hypothesis for two subsamples: 1985-1996 and 1997-2005. We find strong evidence that the negative effect of control enhancing mechanisms is time dependent and only significant for the later subsample.

Table 6.1 Results on the Effect of Control Enhancing Mechanisms

*We first test the impact of disproportionate ownership structures on Tobin's Q using two different specifications; a dummy for control enhancing mechanisms and the wedge between cash flow and voting rights. Then we repeat the same procedure in regressions 6, 7 and 8 to test for the effect on ROA. The regressions also include control variables with are not displayed on this table. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance).*

Dependent Variable	Tobin's Q			ROA		
	2	3	4	6	7	8
Control Enhancing Mechanism	-0.140 (4.50)**		-0.114 (3.25)**	0.008 (2.45)*		0.009 (2.44)*
Wedge		-0.297 (3.50)**	-0.154 (1.62)		0.006 (0.63)	-0.006 (0.56)
Observations	3990	3990	3990	3905	3905	3905
R-squared	0.17	0.17	0.18	0.27	0.27	0.27

6.2. The Effects of Dual Class Shares and Pyramids

Hypothesis 2a: Dual class shares have a more significant negative effect on firm value than pyramids

Hypothesis 2b: Dual class shares have a more significant negative effect on firm performance than pyramids

In order to answer the question whether dual class shares and pyramids have different effects on firm value and performance, we run the regressions reported in Table 6.2. In line with the theory behind dual class shares and pyramids, we would expect a negative coefficient on dual class shares and possibly a positive coefficient on pyramids. The coefficients on these two mechanisms should be significantly different. When testing the effect on firm value, we find strong support for our hypothesis, as the coefficient on dual class shares is negative and significant whereas pyramids seem to have no significant effect. The F-Test we run also indicates that these effects are not the same. Therefore, we do not reject Hypothesis 2a. Considering the impact on firm performance, our results are unique compared to previous studies. We find that dual class shares have a positive but insignificant effect on firm performance, whereas the impact of pyramids is negative and significant. The F-Test indicates strong support that the two effects are not the same. We reject Hypothesis 2b.

In order to test whether these results are robust to the specification of our sample, and to find out what is driving this result, we run the same regressions on a subsample of family firms. We find that dual class shares and pyramids have the same negative and significant effect on value, which contradicts our hypothesis. Pyramids have a more significant negative impact on performance, but the effect of dual class shares is also negative. We therefore conclude that pyramids only have a negative effect on firm value when employed by family firms and dual class shares also only impact firm performance negatively when used by families.

When looking at the subsamples of the two different time periods, we find that during 1985-1996, dual class shares have no significant effect on firm value and performance, whereas pyramids have a positive and significant impact on firm value. This also indicates that the negative effect of dual class share is driven by the later part of the sample.

We also run the same regression with interactions of the wedge and dummies for dual class shares and pyramids. The results we obtain are largely the same, but in contrast to our other results, there is no significant negative effect of pyramids on firm performance.

Table 6.2 Results on the Effect of Different Control Enhancing Mechanisms

We first test the impact of dual class shares and pyramids on Tobin's Q, both individually and at the same time. The F-Test refers to a test whether their values are the same. Then we repeat the same procedure in regressions 13, 14, and 15 to test for the effect on ROA. The regressions also include control variables which are not displayed on this table. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterisks, with * (5% level of significance) and ** (1% level of significance).

Dependent Variable	Tobin's Q			ROA		
Regression	9	10	11	13	14	15
Dual Class Shares	-0.101 (3.44)**		-0.101 (3.44)**	0.005 (1.51)		0.005 (1.51)
Pyramids		0.006 (0.17)	0.006 (0.16)		-0.016 (4.12)**	-0.016 (4.12)**
Observations	3990	3990	3990	3905	3905	3905
R-squared	0.17	0.17	0.17	0.27	0.27	0.27
	F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$			F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$		
	F(1, 3896)			F(1, 3896)		
	p-value			p-value		
	5.22			17.24		
	0.0224			0.0000		

6.3. The Choice of Control Enhancing Mechanisms

Hypothesis 3a: Different control enhancing mechanisms are substitutes for family firms

Hypothesis 3b: Firms are more likely to employ control enhancing mechanisms if there is a family CEO and/or COB present, the firm is controlled by the founding family and is relatively old

The results of the probit regression displayed in table 6.3 give more insights into what determines the choice of different control enhancing mechanisms. From previous evidence and the underlying theory, we would expect to find negative coefficients on pyramids and dual class shares, and positive coefficients on founding families, family CEO and/or COBs and age. Our results give an important insight on how family firms and non-family firms employ control enhancing mechanisms. We can see that family firms use dual class shares or pyramids, but not both in combinations. Non-family firms on the other hand seem to employ both mechanisms at the same time. Given the results on family firms, we do not reject Hypothesis 3a. With regards to the other variables, our results on the subsample of family firms are the same.

In line with our expectations, older firms are more likely to use control enhancing mechanisms. Surprisingly, the presence of a family CEO or COB has a negative but insignificant impact on the probability of control enhancing mechanisms being used. Another interesting result is that founding family firms are also more likely to employ dual class share structures but less likely to have pyramidal ownership structures in place. Overall, we do not reject Hypothesis 3b because we find supportive evidence related to the effects of firm age and founding family firms.

Table 6.3 Results on the Choice of Different Control Enhancing Mechanisms

This table reports results of an unconditional fixed effects probit model related to Hypothesis 3. The statistical significance is indicated by asterisks, with * (5% level of significance) and ** (1% level of significance).

Sample Used	Total Sample		Family Firms	
Dependent Variable	Dual Class	Pyramids	Dual Class	Pyramids
Pyramids	positive**		negative**	
Dual Class Shares		positive**		negative**
Family CEO and/or COB	negative	negative	negative	negative*
Founding Family Firm	positive**	negative**	positive**	negative**
Age	positive**	positive**	positive**	positive**

6.4. The Release of Control

Hypothesis 4: Following the release of control firm value increases, but firm performance and the use of control enhancing mechanisms decrease

In order to analyze the ex post consequences of the release of family control, we run the regressions reported in Table 6.4. Due to the general finding that family control has a negative impact on firm value and a positive impact on firm performance, we expect negative and significant coefficients on the regression with Tobin's Q and positive and significant coefficients on the regressions taking ROA as a dependent variable. Furthermore, dual class shares and pyramids should also indicate negative coefficients. In line with our expectations, our results indicate that following the release of control, the use of control enhancing mechanisms such as dual class shares and pyramids decreases significantly. To our surprise and in contrast to the general empirical evidence, we find no significant change in Tobin's Q and ROA. Furthermore, we also do not see any significant change in the size of the firm after the release of control. In conclusion, we reject Hypothesis 4.

In addition, we find significant evidence related to the development of other firm characteristics. Following the release of control, firm leverage increases significantly while cash and short term investments are significantly lower. There is also an increase in the number of firms with a blockholding; where the largest shareholder controls more than 10% of the votes (see Appendix 3, Table 2.4).

When running the same regressions on a subsample of founder family firms, we find that firm value even decreases following the release of control, a significant contradiction to the underlying theory related to concentrated ownership structures and control enhancing mechanisms. The decline in firm value also seems to be related to the decrease in ROA following the release of founder family control.

Table 6.4 Ex-Post Consequences of the Release of Control

*This table is related to Hypothesis 4. Complete results can be found in Appendix 2. The last column reports the p-value of a F-Test that the sum of all Release of control dummies is equal to zero. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance). We do not report the calendar year dummies and firm specific effects.*

Dependent Variable	Sample Used	Year 0	Year +1	Year +2	Year +3	Year +4	R-squared	p-value
Tobin's Q	All Family Firms 2565	-0.071 (1.04)	0.008 (0.09)	-0.083 (0.99)	-0.148 (1.54)	-0.124 (1.14)	0.11	0.0997
	Founder Family Firms 1378	-0.095 (0.76)	-0.207 (1.31)	-0.228 (1.41)	-0.431 (2.05)*	-0.204 (0.81)	0.13	0.0238*
ROA	All Family Firms 2520	-0.015 (2.05)*	-0.024 (2.57)*	-0.004 (0.49)	-0.006 (0.59)	-0.002 (0.15)	0.10	0.0639
	Founder Family Firms 1347	-0.022 (1.87)	-0.051 (3.29)**	-0.025 (1.64)	-0.035 (1.72)	-0.010 (0.41)	0.12	0.0034**
Dual Class Shares	All Family Firms 2573	0.018 (1.01)	-0.060 (2.70)**	-0.054 (2.39)*	-0.069 (2.70)**	-0.063 (2.17)*	0.05	0.0008**
Pyramids	All Family Firms 2573	0.061 (2.98)**	-0.044 (1.71)	-0.032 (1.25)	-0.113 (3.85)**	-0.087 (2.63)**	0.03	0.0057**

6.5. The Determinants of the Release of Family Control

Hypothesis 5a: Families release control if this form of ownership structure gives them no competitive advantage and private benefits of control are low and cannot be easily appropriated

Hypothesis 5b: Families are less likely to release control if there is a family CEO or COB

Hypothesis 5c: Founding families are less likely to release control than non-founding families

The main determinants of the release of family control are displayed in Table 6.5. Contrary to the competitive advantage hypothesis, our results indicate a negative and significant coefficient on Sales, which implies that the probability of a family releasing control decreases in the size of the firm. We also find strong evidence against the private benefits of control hypothesis. First, the use of pyramidal ownership structures increases the probability of a family releasing control. Second, the use of dual class shares also does not significantly reduce the probability of a release of control. Third, we find that leverage does not determine the release of control. These findings suggest that family control in Sweden is not determined by competitive advantages or by the extent that private benefits of control can be expropriated. We therefore reject Hypothesis 5a.

In line with our expectations, the results indicate a negative and highly significant coefficient on the family CEO and/or COB, indicating that the presence of a family CEO and/or COB reduces the probability that family control is released. We do not reject Hypothesis 5b.

Lastly, we find that both founding families as well as non-founding family firms release control. As expected, we find that non-founding families more often release control than founding family firms. We therefore do not reject hypothesis 5c.

Table 6.5 Ex-Ante Determinants of the Release of Family Control

*This table reports the drivers of the release of family control. A full report of the results on Hypothesis 5 can be found in Appendix 2. Note that in regression 18, the variable pyramids is dropped as no non-founder firm that releases control uses pyramids. Non Founder family firm is also dropped due to collinearity in both regressions 18 and 19. In regression 19 the variable Family CEO/COB is also dropped due to collinearity. The statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance).*

Dependent Variable	Total Sample	Founder Family Firms	Non-founder Family Firms
Regression	17	18	19
Dual Class Shares	negative	negative**	negative
Pyramids	positive**		positive*
Sales	negative**	negative	negative
Age	negative	negative	negative*
Leverage	positive	negative	positive
Cash and Short Term Investments	negative**	negative	negative
Family CEO and/or COB	negative**	negative**	
Non Founder Family Firm	positive**		
Observations	4020	1080	960

6.6. Robustness Tests

Together with our empirical results of the main regressions, we have also presented the results of different subsamples. Our subsample regressions have shown what may be driving our results and whether these results are robust to different definitions of family firms and whether they are consistent over different time periods. In general, the subsample testing indicates that our results are valid.

In order to test the robustness of our empirical strategy, we also run fixed effects regressions on unadjusted data. These regressions give us the same results, but with a lower significance. For example, testing the different effects of dual class shares and pyramids on firm value and performance, we obtain no significant results at all. This may be due to the fact that our sample includes more than 600 companies, but in some cases only observations of less than 5 years for each company. When including very few observations for one company, fixed effects regressions will estimate an intercept that almost perfectly explains the variation for this company, rendering all other coefficients

insignificant. Thus, we do not believe that the low significance of our fixed effects regressions is of great importance.

We also test whether the results of our probit models are robust to the econometric specification. We run the probit models using random effects instead of unconditional fixed effects. These models give use the same economic interpretations, however with lower significance.

Further robustness tests that we have carried out include a Collin test for multicollinearity. We have also corrected standard errors for heteroskedasticity and serial correlation. These tests and corrections all show that our results are valid and that there are no problems of multicollinearity, autocorrelation or heteroskedasticity.

6.7. Summary of the Main Results

As outlined in the introduction, the purpose of this paper has been to empirically test the determinants and effects of different control enhancing mechanisms on firm value and performance, as well as the determinants and effects of the release of family control. We find evidence of a negative relationship between control enhancing mechanisms and firm value, which is in line with previous research. A unique result of our analysis is the positive effect of disproportionate ownership structures on firm performance. Considering the different effects of dual class shares and pyramids, we find that the negative value impact of dual class shares dominates. To our surprise, dual class shares have no negative impact on performance, whereas there is a negative relationship between pyramids and performance. The analysis of the determinants of control enhancing mechanisms indicates that family firms only use control enhancing mechanisms to the extent that they are needed to maintain control of the firm.

We also find that the release of family control has no significant impact on firm value and performance, indicating that family control is determined by other factors than the extraction of private benefits of control. Our results also show that families are more likely to release control of smaller firms and when there is no family CEO or CEO present and the family is not the founding family. In order to give a better overview, we have summarized our empirical findings and regression results in Table 6.6 below.

Table 6.6 Summary of Empirical Findings

Hypothesis	Test Results	Empirical Findings
H1a: Disproportional ownership structures have a negative impact on firm value	Not Rejected	In line with minority expropriation, the effect of disproportional ownership structures on firm value is clearly negative. This also holds true for subsamples of family firms and founding family firms.
H1b: Disproportional ownership structures have a negative impact on firm performance	Rejected	We find a positive impact of disproportionate ownership structures on firm performance. This result is significant depending on the variable used.
H2a: Dual class shares have a stronger negative effect on value than pyramids	Not Rejected	We conclude that dual class shares destroy more value than pyramidal ownership structures. This effect is mainly driven by founding family firms.
H2b: Dual class shares have a negative impact on performance but pyramids have nonnegative impact on performance	Rejected	We find that pyramids have a negative and significant impact on performance, whereas dual class shares have a positive but insignificant effect.
H3a: Different control enhancing mechanisms are substitutes	Not Rejected	We find that control enhancing mechanisms are substitutes for family firms. For non-family firms, they are used in combination.
H3b: The likelihood of a firm to employ control enhancing mechanisms increases in firm age, if there is a family CEO and/or COB present, or if the firm is a founding family firm	Not Rejected	We conclude that founding firms and older firms are more likely to employ control enhancing mechanisms. The presence of a family CEO and/or COB on the other hand has no effect on the use of control enhancing mechanisms.
H4: After the release of control, firm value increases, performance and the use of control enhancing mechanisms decrease	Rejected	We conclude that in general, firm value does not increase and performance does not decrease significantly. However, the use of control enhancing mechanisms declines significantly.
H5a: Families release control if this form of ownership structure gives them no competitive advantage and private benefits of control are low and not easily appropriated	Rejected	We conclude that families are more likely to release control the smaller the firm. Also, the use of dual class shares makes it less likely to release control.
H5b: Families are less likely to release control if there is a family CEO or COB	Not rejected	We find that firms with a family CEO and/or COB are less likely to release control.
H5c: Founding families are less likely to release control than non-founding families	Not rejected	Founding families release control less often.

7. Analysis of the Results

7.1. Analysis of Control Enhancing Mechanisms

In line with the general evidence from previous studies, we find that disproportionate ownership structures have a negative effect on firm value. However, from this evidence alone, we cannot determine with certainty whether the value discount on family firms is due to minority expropriation or other negative effects of control enhancing mechanisms and concentrated ownership structures.

Regarding the effects on firm performance, we find a positive relationship between the use of control enhancing mechanisms and firm performance (when measuring control enhancing mechanisms through a dummy variable). Previous studies have usually found an insignificant effect, except for Favero et al. (2007). Our result contradicts Bebchuk et al. (1999), who argue that disproportionate ownership structures lead to inefficient decision making because controlling owners try to maximize their private benefits of control and expropriate minority shareholders. Given the positive relationship between control enhancing mechanisms and firm performance that we find, we suspect that minority expropriation is not a significant problem. In fact, our finding could be interpreted as evidence that control enhancing mechanisms increase firm performance as they bring more stability to the firm and allow the firm to engage in investment opportunities with longer profit horizons.

7.2. Analysis of Dual Class Shares and Pyramidal Ownership Structures

The results of our analysis suggest that dual class shares have a negative effect on firm value, whereas pyramids do not significantly impact valuation. The findings on firm value are in line with the theory that dual class shares act as a pure control enhancing device whereas pyramids also have benefits such as the support of strategic alliances between different firms (Villalonga and Amit, 2007).

However, an interesting result of our regression analysis is that dual class shares have an insignificant effect on performance, whereas pyramids impact performance negatively. This finding contradicts the theoretical predictions of the cost and benefits analysis of control enhancing mechanisms. We would expect dual class shares to have a negative impact on performance, as they are a pure control enhancing device and lead to more inefficient decision making (Bebchuk, 1999). Pyramids, on the other hand, could also increase performance due to the support of strategic alliances. Our results also contradict previous empirical findings by Bennedsen and Nielsen (2005) and Villalonga and Amit (2007) which show that pyramids have no significant or a positive effect on earnings performance.

We would usually anticipate the value discount on dual class shares to be driven by the maximization of private benefits of control that will lead to inefficient decision making, which in turn also impacts performance negatively. Given our result that the use of dual class shares is not related to poor firm performance, it might be other effects than minority expropriation that can explain their impact on firm value and performance. The value discount could be driven by other characteristics of concentrated ownership structures such as more conservative capital structures and less aggressive investment policies. In fact, this result is also in line with previous evidence on Sweden, which

indicates that controlling owners rarely expropriate minority shareholders (Högfeldt, 2001). Moreover, dual class shares do not necessarily have a negative impact on earnings performance because they also reduce agency conflicts between shareholders and management and lead to more long term earnings maximization due to the concentration of control that they bring about.

Considering our result that pyramids impact performance negatively, we also suspect that this finding might be related to the characteristics of the Swedish market. Högfeldt et al.'s (2004) results on a Swedish study show that pyramidal ownership structures do not lead to corporate stealing but to overinvestment because of tax incentives for reinvestment. This overinvestment problem could thus explain the poor performance related to pyramidal ownership structures.

Another important finding of our regression analysis is that the effect of control enhancing mechanisms seems to be dependent on time. The negative effect of control enhancing mechanisms and dual class shares in particular is driven by the period 1997-2005. This evidence is in line with the Swedish market becoming more open to international investors (Högfeldt et al., 2001), transparency increasing and the investor opinion on control enhancing mechanisms becoming more negative, thus leading to a more significant value discount. Moreover, the subsample testing indicates that pyramids have a positive effect on firm value in the earlier part of the sample, whereas they later seem to have a negative effect on firm performance. This finding coincides with a tax reform in the early 1990's, which gave more incentives to firms to reinvest earnings rather than paying out dividends (Högfeldt et al., 2004). Our findings are thus consistent with the idea that overinvestment due to tax incentives reduces performance and possibly also firm valuation.

Overall, the analysis of our results on control enhancing mechanisms suggests that firm value is lowered due to the use of these instruments. However, the discount in firm value is not necessarily driven by minority expropriation as the generally established view suggests, as we find no negative impact of dual class shares on firm performance. In addition, the negative impact of pyramids on performance seems to be related to the overinvestment problem described by Högfeldt et al. (2004).

7.3. Analysis of the Determinants of Dual Class Shares and Pyramids

The regression results indicate that families do not use different control enhancing mechanisms in combination, which is in line with Villalonga and Amit (2006). However, for non-family firms, dual class shares and pyramids seem to be used as complements. Our interpretation of this result is that family firms are more concerned about their reputation than non-family firms. Families derive social benefits such as social status from controlling their firms (Högfeldt et al., 2001). Their reputation and social status might be hurt as a result of the use of disproportionate ownership structures, which are usually regarded negatively by shareholders and the public in general. This evidence contradicts the generally established view that families expropriate minority shareholders, as families seem to use control enhancing mechanisms only to the extent that they are necessary to maintain control but not in order to maximize the extraction of private benefits.

Our results further indicate that older firms are more likely to employ control enhancing mechanisms. This is in line with the general decrease of the use of control enhancing mechanisms (see Table 5.6) and a more negative public opinion of these instruments. Högfeldt et al. (2001) also point out that Sweden has experienced a fast transition from corporate structures with high ownership concentration to more dispersed ownership. The Swedish market has opened up very quickly in the late 1990's and has seen large inflows of foreign capital. Large and foreign institutional investors do not share the trust in concentrated ownership structures and have also contributed to the change in ownership arrangements, which has reduced the use of control enhancing mechanisms significantly. Old firms that have traditionally been using control enhancing mechanisms may find it easier to maintain these structures, whereas it will be more difficult for younger firms to implement disproportionate ownership structures against shareholder opposition.

We also show that founding family firms are more likely to employ control enhancing instruments. We can interpret this finding as evidence that founding families derive more reputational and social benefits from controlling their firm than non-founding families. They also seem to have more emotional attachment to the firm, which makes them more inclined to use disproportionate ownership structures in order to maintain control.

Lastly, there seems to be no evidence that the presence of a family CEO and/or COB has any effect on the use of control enhancing mechanisms. This finding is in line with Villalonga and Amit (2006). One could expect that a family CEO or COB would try to put in place a disproportionate ownership structure in order to protect his or her management positions. In any case, the causality of this relationship would never be quite clear. It could be the case that a family CEO or COB introduces control enhancing instruments in order to protect his or her management position. On the other hand, it might be more likely for a firm to have a family management if there is a disproportionate ownership structure that allows the family to appoint management positions.

Our analysis of the determinants of control enhancing mechanisms points out that families chose these instruments in order to maintain control rather than to extract private benefits of control. The reluctance of family firms to employ several control enhancing mechanisms in combination also indicates their concern about reputation and other social benefits of control.

7.4. Effects of the Release of Family Control

In contrast to the predictions of the minority expropriation theory, we find no significant change in firm value or performance following the release of family control. The agency conflict between controlling and minority shareholders predicts firm value to increase once a family has released control, as the family would no longer be able to expropriate private benefits of control. As we find no increase in firm value, our results show that in Sweden, the expropriation of minority shareholders is not very common. This finding also supports previous research by Högfeldt et al. (2001) that controlling owners do not expropriate minority shareholders due to concerns over reputation and social status. However, our results do not give any support to the alignment of interest view either.

Following the release of control, performance does not decrease, which implies that agency conflicts between management and shareholders do not significantly worsen. One exception is the case of founder family firms, where performance decreases significantly. This finding could suggest that the involvement of the founder in the firm aligns the interest of management and shareholders. For founder firms, we also find even more evidence in contradiction to the minority expropriation perspective, as the release of control has a significant negative effect on firm value. However, this decrease can be explained by the general empirical evidence that founder family firms create more value and perform better, especially when there is a founder CEO (Averstad and Rova, 2007).

The significant decline in the use of dual class shares and pyramids following the release of control is in line with Bennedsen and Nielsen's (2005) finding that families most often use control enhancing mechanisms. However, given the result that disproportionate ownership structures reduce firm value, it is even more surprising that firm value does not increase after the release of control.

As we find that minority expropriation is not very common in Sweden, there must be other factors that explain the value discount on family firms. Our results on other ex post consequences of the release of control might give some insight into this matter. The regression analysis indicates that following the release of control, leverage increases and cash and short term investments decrease. These findings can be interpreted as evidence that in line with Bebchuk et al. (1999), families overinvest in projects with high private benefits of control. Furthermore, this result also confirms the idea that families are more reluctant to take on high levels of leverage due to risk aversion. Therefore, the evidence suggests that families reduce overall firm value because they do not exploit all value opportunities of the firm's capital structure, are reluctant to take on more debt (which could also possibly finance more aggressive growth strategies) and have overinvestment problems.

On the other hand, one could also interpret the increase in leverage and decrease in cash and short term investments as support for the minority expropriation view. Villalonga and Amit (2008) argue that family firms have lower levels of leverage and more retained cash in order to expropriate private benefits of control. By keeping high levels of cash available at the family's disposal, families can expropriate corporate resources more easily. This would also support Bebchuk et al. (1999) who argue that families are more inclined to expand the firm and retain free cash flows rather than distributing cash to shareholders. However, since our findings on the development of firm value and performance show that controlling shareholders do not extract corporate resources, we would still reject the minority expropriation perspective.

Lastly, the analysis of the release of family control could be subject to a selection bias. We would expect families that have negative information about the firm's prospects to be more inclined to release control. However, then we would also expect firm performance to decrease significantly following the release of control, which is not the result we obtain. Nonetheless, the decrease in value and performance for founder family firms might be explained by this selection bias. Due to the emotional attachment to the firm and the high reputational and political benefits from controlling the

firm, founder families might in general be less inclined to release control and would only do so if they expect the firm's prospects to worsen significantly.

In general, the analysis of ex post consequences of control strongly rejects the view that families extract private benefits of control from minority shareholders. Instead, the value discount on family firms could be explained by a less aggressive capital structure, overinvestment and more conservative growth policies implemented by families.

7.5. Determinants of the Release of Family Control

In contrast to previous findings by Villalonga and Amit (2008), we find that in Sweden, family control can not be explained by the competitive advantage and private benefits of control theories. First, according to the private benefits of control hypothesis, the use of control enhancing mechanisms facilitates the expropriation of private benefits, thus making family control more likely (Villalonga and Amit, 2008). However, our results indicate that the use of control enhancing mechanisms does not lower the probability that family control is released. It follows from this that families do not expropriate private benefits, thus making the use of control enhancing mechanisms irrelevant to their decision whether or not to release control.

Furthermore, we find that firm size lowers the probability of family control being released. This finding also contradicts our expectations, as we would expect families to release control if firms grow too large, increasing the benefits of releasing control and diversifying their investments. Again, the alternative explanation for this result might be that families seek to maximize their social benefits they derive from controlling a firm (Högfeldt et al., 2001). The larger the firm, the greater the social status and reputation of the family will be. A family maximizing social benefits of control would thus choose to maintain control of larger firms but release control of small firms.

In line with our expectations, we also find that the presence of a family CEO or COB makes it less likely for firms to release control. This finding supports the argument that families want to maximize private and non-pecuniary benefits of control. Families want to hold on to their management positions as this increases their social status and gives them private benefits in terms of salaries and pensions.

Another interesting result is that founding family firms release control less often. Again, we believe that this is related to the reputational and social benefits and pride associated with controlling the firm founded by the family. Similar to the reasoning behind the use of control enhancing mechanisms, we expect the emotional attachment to the firm to be higher than for non-founder firms, thus reducing the probability that founder family control is released.

Our analysis of the determinants of the release of family control indicates that families do not seek to maximize the expropriation of private benefits of control. Instead, the evidence suggests that family control is determined by the extent that families can gain social benefits such reputation and social status. Families are more likely to maintain control the larger the firm, thus the larger the social benefits associated with control.

In sum, there are two main conclusions that we can draw from our analysis of control enhancing mechanisms and the release of family control. First, family firms do not seek to expropriate minority shareholders; instead, they aim to maximize their reputation and social status. Secondly, the use of control enhancing mechanisms does not necessarily imply that minorities are expropriated. An alternative explanation for the value discount on family firms could be the more conservative capital structure, less aggressive growth policies and overinvestment.

7.6. Limitations to Our Study

One limitation to our analysis of the effects of dual class shares and pyramidal ownership structures is that we do not explicitly separate the effects of these two mechanisms on the wedge between voting and cash flow rights. As we use dummy variables to indicate the use of each mechanism, we give dual class shares and pyramids the same weight and do not determine how this instrument impacts the overall wedge. Thus, we might give too much weight to the separation of ownership and control that families achieve through the use of pyramids and therefore overstate the negative value and performance effect that pyramids have (Villalonga and Amit, 2007). Previous studies have indicated that when isolating the effect of each mechanism on the wedge between voting and cash flow rights, pyramids have a more positive effect on firm value and performance (Villalonga and Amit, 2007). In fact, when we weigh the dummy for pyramids by the wedge between cash flow and voting rights, we find that pyramids do not have a significantly negative effect on firm performance. However, this method still does not explicitly separate the effects of dual class shares and pyramids.

8. Conclusion

In this study, we have investigated the effects of concentrated ownership on firm value and performance in Sweden. In the light of the two contrasting perspectives on concentrated ownership that have been established from previous research, minority expropriation and alignment of interests, we further investigate two aspects of concentrated ownership structures. By carrying out a careful analysis of disproportionate ownership structures and family firms, we enhance the general understanding of the effects of concentrated ownership on firm value and performance in Sweden.

As promised at outset of this paper, we have performed an analysis of the determinants and effects of control enhancing mechanisms and the release of family control. From this study, we can draw two main interesting conclusions. First, we find that ownership concentration and the use of control enhancing mechanisms do not necessarily imply that minorities are expropriated. This is supported by the evidence that firm value and performance do not change significantly following the release of control, thus implying that families do not expropriate minorities. In addition, family control is not determined by the extent that families can extract private benefits at the expense of minority shareholders, as the decision to release control does not depend on the use of control enhancing mechanisms. As firm value does not seem to be driven by minority expropriation, there must be other causes for the value discount on family firms. One possible explanation could be that concentrated ownership destroys value due to lower leverage, less aggressive growth strategies and overinvestment.

Secondly, our analysis suggests that families seek to maximize social benefits of control as opposed to extracting private benefits of control. For instance, families are more likely to maintain control the larger the firm, thus the larger the social benefits associated with control. Moreover, founding families are less inclined to release control, as their emotional attachment to the firm founded by the family is greater. Likewise, the use of control enhancing mechanisms by family firms seems to be limited by concerns about reputation.

With this thesis, we have contributed to the existing research on concentrated ownership structure and family firms. We present evidence that the value discount on Swedish family firms does not relate to minority expropriation, but can be explained by more conservative financial structures, less aggressive growth policies and overinvestment. At last, we give additional insight into the question what determines family control, which in the case of Sweden are the social benefits such as reputation and social status.

8.1. Suggestions for Further Research

Our study investigates two aspects of the family control that have not been much explored in previous studies. There are various research topics within this area could be scrutinized further. For instance, further studies could analyze the *ex ante* determinants and *ex post* determinants of the release of family control in countries with different legal regimes and social norms than Sweden.

Further analysis of the effects of control enhancing mechanisms could also add to the existing literature. For instance, it would be interesting to find out whether pyramids have a different impact on

firm value and performance in countries where there are tax incentives for the distribution of earnings to shareholders instead of incentives for reinvestments in the firm as in Sweden. Moreover, the impact of dual class shares on firm performance has only been analyzed by two previous studies, Villalonga and Amit (2007) and Bennedsen and Nielsen (2005). Further analysis of the effect of control enhancing mechanisms on firm performance is also needed. At this stage, little evidence has been found in the favour of Bebchuk et al.'s (1999) argument that pure control enhancing devices should lower performance because they lead to more inefficient decision making. Finally, another suggestion for further research would be to analyze the determinants of control enhancing mechanisms, also taking into account other instruments than dual class shares and pyramidal ownership structures, as there is only one previous study that has devoted itself to this issue (Villalonga and Amit, 2006).

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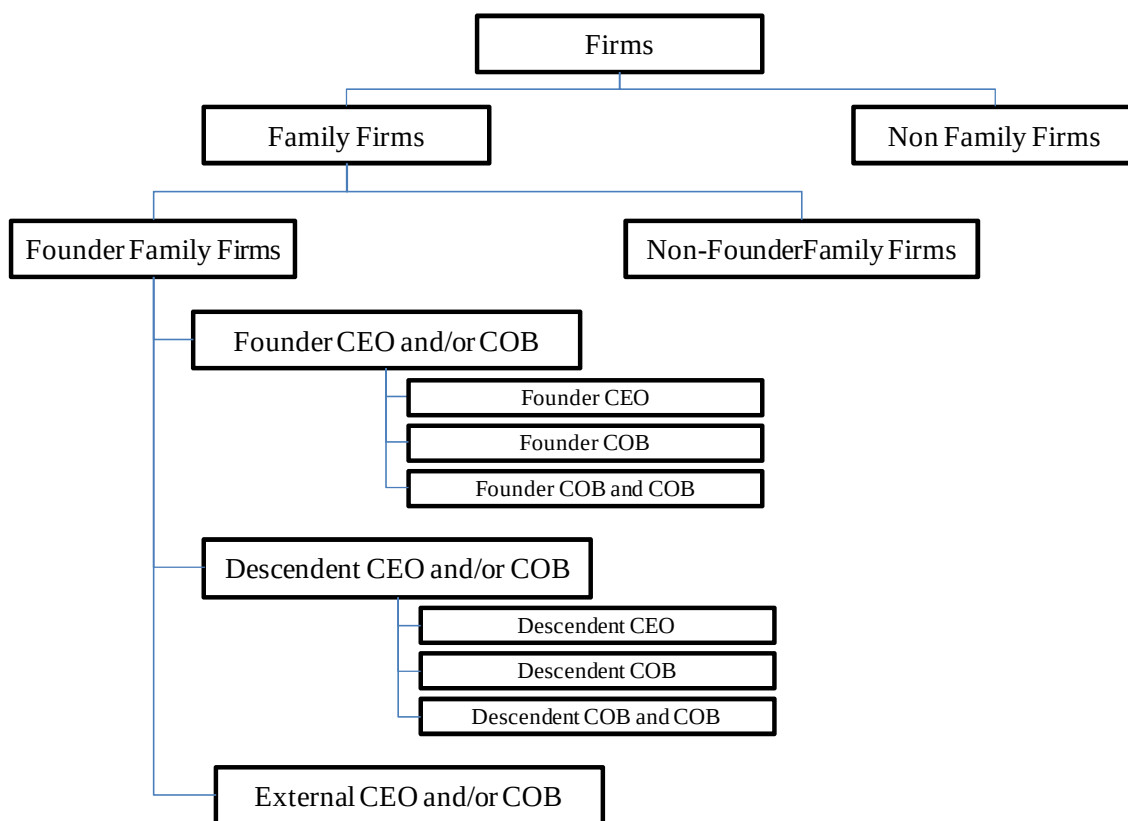
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10. Appendix

10.1. Appendix 1: Definition of family firm

Graph A.1.1 Definition of family firms

The graph below describes the definition of family, founding and non-family firms. Firms are defined as family firms if the family controls at least 25% of the voting rights in the firm.



10.2. Appendix 2: Descriptive Statistics

Table A.1.1 Correlation Matrix of Control, Dependent and Explanatory Variables

Correlations of Control, Dependent and Explanatory Variables																
	Tobin's Q	ROA	Wedge	Dual Class Shares	Pyramids	Block-holding	Release of control	Sales	Age	Dividend Yield	Leverage	Cash and Short Term Investments	Family Firms	Founder Family Firms	Non Founder Family Firms	Family CEO and/or COB
Tobin's Q	1.0000															
ROA	0.2171	1.0000														
Wedge	-0.0361	0.0742	1.0000													
Dual Class Shares	-0.0432	0.0298	0.4046	1.0000												
Pyramids	-0.0159	0.0646	0.3876	0.0187	1.0000											
Blockholding	-0.0096	0.0011	-0.1023	0.0777	0.0797	1.0000										
Release of control	-0.0146	-0.0437	0.0369	-0.0098	0.0519	0.0251	1.0000									
Sales	-0.0735	0.2878	0.0978	0.0469	0.3688	0.0106	-0.0348	1.0000								
Age	-0.0104	0.1699	0.1972	0.1665	0.1386	0.0842	-0.0208	0.2909	1.0000							
Dividend Yield	0.2235	0.4358	0.0680	-0.0157	0.0846	-0.0102	-0.0410	0.2109	0.1366	1.0000						
Leverage	-0.2845	-0.0052	-0.0067	0.0032	0.0033	0.0379	0.0053	0.3446	0.1199	-0.0121	1.0000					
Cash and Short Term Investments	0.2877	-0.0960	-0.0173	0.0461	-0.0211	0.0050	-0.0383	-0.2216	-0.0447	0.0786	-0.4719	1.0000				
Family Firms	-0.0422	0.0690	0.3690	0.3352	-0.0113	-0.0500	0.1736	-0.1176	0.0821	-0.0170	-0.0032	-0.0124	1.0000			
Founder Family Firms	0.0179	0.0582	0.2139	0.3370	-0.2673	-0.0885	0.0207	-0.1437	-0.0339	-0.0258	-0.0297	0.0409	0.5951	1.0000		
Non Founder Family Firms	-0.0676	0.0188	0.2054	0.0375	0.2669	0.0349	0.1806	0.0133	0.1304	0.0073	0.0275	-0.0575	0.5413	-0.3529	1.0000	
Family CEO and/or COB	0.0255	0.0387	0.1384	0.2620	-0.2189	-0.0839	-0.0141	-0.1512	-0.0807	-0.0110	-0.0114	0.0430	0.4657	0.7824	-0.2761	1.0000
Founder CEO and/or COB	0.0106	0.0081	0.0906	0.1862	-0.1598	-0.0300	0.0032	-0.1450	-0.1640	-0.0413	-0.0174	0.0257	0.3581	0.6016	-0.2123	0.7689
Descendent CEO and/or COB	0.0301	0.0529	0.0980	0.1620	-0.1302	-0.0825	-0.0247	-0.0352	0.1010	0.0421	0.0015	0.0390	0.2539	0.4266	-0.1506	0.5452
															-0.0996	1.0000

Table A.1.2 Development of Firm Characteristics Following the Release of Control

This table shows how the different variables perform from the first year that the control is released until the 4th year.

		Year 0	Year + 1	Year + 2	Year + 3	Year + 4
No. Cases	Total	133	86	85	63	48
	Founder Family Firm	57	33	32	18	12
	Non Founder Family Firm	86	55	55	44	35
ROA	Total	2,2%	2,0%	4,1%	4,2%	5,9%
	Founder Family Firm	-0,8%	-1,7%	0,7%	1,1%	1,8%
	Non Founder Family Firm	4,1%	4,0%	5,8%	5,2%	7,2%
Tobin's Q	Total	1,58	1,69	1,63	1,49	1,55
	Founder Family Firm	1,78	1,77	1,75	1,58	1,89
	Non Founder Family Firm	1,41	1,64	1,56	1,45	1,46
Sales (sekM)	Total	5 778	8 652	8 652	9 106	13 447
	Founder Family Firm	1 048	1 556	1 564	2 319	2 046
	Non Founder Family Firm	8 302	13 071	12 228	11 135	16 507
Leverage	Total	61,6%	63,4%	61,7%	63,4%	62,5%
	Founder Family Firm	60,2%	66,3%	62,2%	64,0%	61,1%
	Non Founder Family Firm	63,1%	61,6%	61,8%	63,1%	62,8%

10.3. Appendix 3: Regression Results

Table A.2.1 Pooled OLS Regression Results on Hypothesis 1

This table is related to Hypothesis 1. Regressions 1 and 5 include only control variables. We first test the impact of disproportionate ownership structures on Tobin's Q using two different specifications; a dummy for control enhancing mechanisms and the wedge between cash flow and voting rights. Then we repeat the same procedure in regressions 6, 7 and 8 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q				ROA			
Regression	1	2	3	4	5	6	7	8
Sales	-0.039 (5.16)**	-0.037 (4.87)**	-0.038 (5.03)**	-0.037 (4.85)**	0.010 (12.31)**	0.010 (12.16)**	0.010 (12.27)**	0.010 (12.17)**
Age	-0.003 (0.23)	0.006 (0.44)	0.006 (0.40)	0.009 (0.64)	0.006 (4.33)**	0.006 (3.91)**	0.006 (4.15)**	0.006 (3.95)**
Dividend Yield	3.591 (12.54)**	3.562 (12.46)**	3.622 (12.66)**	3.583 (12.52)**	0.821 (27.58)**	0.823 (27.66)**	0.821 (27.55)**	0.824 (27.66)**
Leverage	-0.633 (6.68)**	-0.648 (6.85)**	-0.646 (6.83)**	-0.652 (6.90)**	-0.092 (8.64)**	-0.091 (8.55)**	-0.092 (8.60)**	-0.091 (8.56)**
Cash & Short Term Investment	1.274 (11.23)**	1.286 (11.35)**	1.263 (11.14)**	1.278 (11.28)**	-0.122 (9.93)**	-0.122 (9.99)**	-0.122 (9.91)**	-0.123 (10.00)**
H&M Dummy	2.235 (11.43)**	2.256 (11.56)**	2.258 (11.56)**	2.264 (11.60)**	0.111 (5.70)**	0.110 (5.64)**	0.111 (5.67)**	0.110 (5.65)**
Control Enhancing Mechanism		-0.140 (4.50)**		-0.114 (3.25)**		0.008 (2.45)*		0.009 (2.44)*
Wedge			-0.297 (3.50)**	-0.154 (1.62)			0.006 (0.63)	-0.006 (0.56)
Constant	-0.062 (3.48)**	0.051 (1.67)	-0.057 (3.16)**	0.033 (1.01)	0.018 (9.73)**	0.012 (3.54)**	0.018 (9.64)**	0.011 (3.13)**
Observations	3990	3990	3990	3990	3905	3905	3905	3905
R-squared	0.17	0.17	0.17	0.18	0.27	0.27	0.27	0.27

Table A.2.2 Pooled OLS Regression Results on Hypothesis 2

This table is related to Hypothesis 2. We first test the impact of each dual class shares and pyramids on Tobin's Q. Then we include both mechanisms and run an F-Test to test whether their values are the same. We also run one regression including the wedge of votes to capital. Then we repeat the same procedure in regressions 13, 14, 15 and 16 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with * (5% level of significance) and ** (1% level of significance)

Dependent Variable	Tobin's Q				ROA			
	9	10	11	12	13	14	15	16
Regression								
Sales	-0.039 (5.07)**	-0.040 (4.87)**	-0.039 (4.78)**	-0.042 (5.09)**	0.010 (12.29)**	0.012 (12.98)**	0.011 (12.96)**	0.012 (13.11)**
Age	0.005 (0.33)	-0.003 (0.23)	0.004 (0.32)	0.009 (0.64)	0.006 (4.02)**	0.006 (4.49)**	0.006 (4.19)**	0.006 (3.94)**
Dividend Yield	3.545 (12.38)**	3.591 (12.53)**	3.545 (12.38)**	3.590 (12.52)**	0.824 (27.63)**	0.820 (27.62)**	0.823 (27.66)**	0.819 (27.50)**
Leverage	-0.631 (6.67)**	-0.631 (6.61)**	-0.629 (6.60)**	-0.628 (6.59)**	-0.092 (8.65)**	-0.098 (9.13)**	-0.098 (9.15)**	-0.098 (9.15)**
Cash & Short Term Investment	1.292 (11.39)**	1.274 (11.22)**	1.292 (11.38)**	1.271 (11.18)**	-0.123 (10.00)**	-0.121 (9.88)**	-0.122 (9.94)**	-0.120 (9.79)**
H&M Dummy	2.259 (11.57)**	2.238 (11.40)**	2.262 (11.53)**	2.296 (11.69)**	0.110 (5.64)**	0.103 (5.26)**	0.102 (5.20)**	0.099 (5.06)**
Dual Class Shares	-0.101 (3.44)**		-0.101 (3.44)**	-0.064 (2.00)*	0.005 (1.51)		0.005 (1.51)	0.002 (0.55)
Pyramids		0.006 (0.17)	0.006 (0.16)	0.050 (1.25)		-0.016 (4.12)**	-0.016 (4.12)**	-0.019 (4.55)**
Wedge				-0.269 (2.65)**				0.021 (1.94)
Constant	0.014 (0.48)	-0.064 (2.98)**	0.012 (0.38)	-0.025 (0.74)	0.015 (4.90)**	0.024 (10.39)**	0.020 (6.13)**	0.023 (6.39)**
Observations	3990	3990	3990	3990	3905	3905	3905	3905
R-squared	0.17	0.17	0.17	0.17	0.27	0.27	0.27	0.27
F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$					F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$			
F(1, 3896) 5.22					F(1, 3896) 17.24			
p-value 0.0224					p-value 0.0000			

Table A.2.3 Unconditional Fixed Effects Probit Regression Results on Hypothesis 3

$$Prob(Dual\ Class\ Shares=1)=\alpha_i + \beta_1 Pyramids + \beta_2 Family\ CEO/COB + \beta_3 Founding\ Family\ Firm + \beta_4 Age + \epsilon_{it}$$

$$Prob(Pyramids=1)=\alpha_i + \beta_1 Dual\ Class\ Shares + \beta_2 Family\ CEO/COB + \beta_3 Founding\ Family\ Firm + \beta_4 Age + \epsilon_{it}$$

This table reports results of an unconditional fixed effects probit model. Z-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance).

Sample Used	Total Sample		Family Firms	
Dependent Variable	Dual Class	Pyramids	Dual Class	Pyramids
Pyramids	0.325 (5.66)**		-0.285 (3.22)**	
Dual Class Shares		0.311 (5.68)**		-0.275 (2.99)**
Family CEO and/or COB	-0.038 (0.24)	-0.314 (1.91)	-0.050 (0.32)	-0.345 (2.09)*
Founding Family Firm	1.601 (11.87)**	-1.199 (9.52)**	1.110 (7.79)**	-1.349 (10.36)**
Age	0.239 (10.97)**	0.184 (7.35)**	0.241 (6.84)**	0.108 (2.85)**
Observations	4041	4041	2080	2080

Table A.2.4 Fixed Effects Regression Results on Hypothesis 4

This table reports the results of Hypothesis 4. For each of the dependent variables listed we use the following specification:

$$y_{it} = \alpha_i + \gamma_t + \sum \beta_j \text{Release}_{i,j} + \beta_{\text{time}} \text{dummy}_{i,t} + \epsilon_{it}$$

where α_i and γ_t are the firm and time specific effects. We use a fixed effects regression in order to take each company before the release of control as a control for itself after the release of control. As we use fixed effects, we run this regression using unadjusted data only. The last column reports the p-value of an F-Test that the sum of all Release of control dummies is equal to zero. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance). We do not report the calendar year dummies and firm specific effects.

Dependent Variable	Sample Used	Year 0	Year +1	Year +2	Year +3	Year +4	R-squared	p-value
Tobin's Q	All Family Firms	-0.071	0.008	-0.083	-0.148	-0.124	0.11	0.0997
	2565	(1.04)	(0.09)	(0.99)	(1.54)	(1.14)		
	Founder Family Firms	-0.095	-0.207	-0.228	-0.431	-0.204	0.13	0.0238*
	1378	(0.76)	(1.31)	(1.41)	(2.05)*	(0.81)		
	Non Founder Family Firms	-0.073	0.139	0.027	-0.032	-0.075	0.11	0.9513
	1345	(1.20)	(1.89)	(0.37)	(0.39)	(0.85)		
ROA	All Family Firms	-0.015	-0.024	-0.004	-0.006	-0.002	0.10	0.0639
	2520	(2.05)*	(2.57)*	(0.49)	(0.59)	(0.15)		
	Founder Family Firms	-0.022	-0.051	-0.025	-0.035	-0.010	0.12	0.0034**
	1347	(1.87)	(3.29)**	(1.64)	(1.72)	(0.41)		
	Non Founder Family Firms	-0.014	-0.015	0.006	0.001	-0.000	0.10	0.4936
	1326	(1.51)	(1.36)	(0.53)	(0.06)	(0.04)		
Leverage	All Family Firms	-0.000	0.030	0.026	0.035	0.015	0.30	0.0042**
	2573	(0.02)	(2.49)*	(2.16)*	(2.49)*	(0.93)		
	Founder Family Firms	0.010	0.069	0.042	0.073	0.031	0.33	0.0006**
	1386	(0.63)	(3.41)**	(2.05)*	(2.73)**	(0.96)		
	Non Founder Family Firms	-0.005	0.016	0.022	0.020	0.010	0.26	0.1578
	1346	(0.42)	(1.06)	(1.50)	(1.23)	(0.56)		
Sales	All Family Firms	0.025	0.055	0.073	0.096	0.024	0.32	0.1625
	2564	(0.49)	(0.85)	(1.12)	(1.31)	(0.29)		
	Founder Family Firms	0.049	0.125	0.099	0.246	0.177	0.30	0.0649
	1380	(0.54)	(1.08)	(0.84)	(1.60)	(0.96)		
	Non Founder Family Firms	-0.026	0.055	0.115	0.068	-0.026	0.35	0.3746
	1343	(0.45)	(0.78)	(1.64)	(0.89)	(0.30)		
Cash & Short Term Investments	All Family Firms	-0.028	-0.010	-0.030	-0.024	-0.015	0.03	0.0009**
	2573	(3.29)**	(0.92)	(2.85)**	(1.99)*	(1.08)		
	Founder Family Firms	-0.062	-0.008	-0.045	-0.051	-0.040	0.04	0.0004**
	1386	(4.48)**	(0.47)	(2.46)*	(2.15)*	(1.39)		
	Non Founder Family Firms	-0.005	-0.014	-0.021	-0.011	-0.005	0.04	0.1059
	1346	(0.55)	(1.21)	(1.80)	(0.86)	(0.37)		
Dual Class Shares	All Family Firms	0.018	-0.060	-0.054	-0.069	-0.063	0.05	0.0008**
	2573	(1.01)	(2.70)**	(2.39)*	(2.70)**	(2.17)*		
	Founder Family Firms	0.042	-0.072	-0.041	-0.079	-0.043	0.07	0.0195*
	1386	(2.11)*	(2.81)**	(1.59)	(2.33)*	(1.06)		
	Non Founder Family Firms	0.010	-0.063	-0.054	-0.071	-0.075	0.05	0.0133*
	1346	(0.34)	(1.85)	(1.59)	(1.91)	(1.82)		
Pyramids	All Family Firms	0.061	-0.044	-0.032	-0.113	-0.087	0.03	0.0057**
	2573	(2.98)**	(1.71)	(1.25)	(3.85)**	(2.63)**		
	Founder Family Firms	-0.028	0.122	0.117	0.040	0.015	0.07	0.0026**
	1386	(1.34)	(4.48)**	(4.23)**	(1.12)	(0.35)		
	Non Founder Family Firms	0.109	-0.158	-0.127	-0.178	-0.123	0.11	0.0000**
	1346	(3.48)**	(4.17)**	(3.37)**	(4.29)**	(2.68)**		
Blockholding	All Family Firms	0.028	0.172	0.146	0.136	0.104	0.05	0.0000**
	2573	(0.78)	(3.88)**	(3.28)**	(2.67)**	(1.80)		
	Founder Family Firms	0.101	0.289	0.228	0.266	0.049	0.05	0.0000**
	1386	(1.98)*	(4.36)**	(3.39)**	(3.04)**	(0.46)		
	Non Founder Family Firms	-0.006	0.087	0.049	0.057	0.111	0.08	0.0857
	1346	(0.13)	(1.51)	(0.86)	(0.90)	(1.59)		

Table A.2.5 Unconditional Fixed Effects Probit Regression Results on Hypothesis 5

This table is related to Hypothesis 5. We test for the probability of release of family control using an unconditional fixed effects probit model. The regression we run is specified as the following:

$$\text{Prob}(\text{Release of Control}=1)=\alpha_i + \beta_1 \text{Dual Class Shares} + \beta_2 \text{Pyramids} + \beta_3 \text{Sales} + \beta_4 \text{Age} + \beta_5 \text{Leverage} + \beta_6 \text{Cash \& ST Inv.} + \beta_7 \text{Blockholding} + \beta_8 \text{Family CEO/COB} + \beta_9 \text{Non Founder Family Firm} + \varepsilon_{it}$$

Note that in regression 18, the variable pyramids is dropped as it predicts the release of control perfectly (for founder family firms, there is no use of pyramids when control was released. However, this does not imply that pyramids are used for every case that control was maintained). Non founder family firm is also dropped due to collinearity in both regressions 18 and 19. In regression 19 the variable Family CEO/COB is also dropped due to collinearity. Z-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Total Sample	Founder Family Firms	Non-founder Family Firms
Regression	17	18	19
Dual Class Shares	-0.071 (0.75)	-1.030 (4.44)**	-0.144 (1.12)
Pyramids	0.522 (4.93)**		0.280 (1.99)*
Sales	-0.089 (3.85)**	-0.026 (0.60)	-0.060 (1.60)
Age	-0.040 (0.97)	-0.109 (1.46)	-0.120 (2.04)*
Leverage	0.084 (0.31)	-0.417 (0.71)	0.140 (0.33)
Cash and Short Term Investments	-0.979 (2.69)**	-1.269 (1.89)	-0.755 (1.29)
Blockholding	0.136 (1.70)	0.273 (1.86)	0.112 (0.94)
Family CEO and/or COB	-0.374 (2.64)**	-0.409 (2.73)**	
Non Founder Family Firm	0.524 (4.14)**		
Observations	4020	1080	960

10.4. Appendix 4: Robustness Tests

Table A.3.1 Fixed Effects Regression Results on Hypothesis 1

This table is related to the robustness test of Hypothesis 1 using unadjusted data and fitting cross-sectional time-series regression models. Regressions 20 and 24 include only control variables. We first test the impact of disproportionate ownership structures on Tobin's Q using two different specifications; a dummy for control enhancing mechanisms and the wedge between cash flow and voting rights. Then we repeat the same procedure in regressions 25, 26 and 27 to test for the effect on ROA. Because we use the fixed effects regression, the H&M Dummy is dropped. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterisks, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q				ROA			
Regression	20	21	22	23	24	25	26	27
Sales	-0.004 (0.17)	-0.009 (0.39)	-0.005 (0.23)	-0.009 (0.38)	0.003 (1.59)	0.003 (1.46)	0.003 (1.59)	0.003 (1.47)
Age	-0.182 (3.81)**	-0.175 (3.66)**	-0.182 (3.81)**	-0.175 (3.65)**	-0.024 (5.33)**	-0.023 (5.23)**	-0.024 (5.33)**	-0.023 (5.22)**
Dividend Yield	4.041 (12.36)**	4.044 (12.37)**	4.034 (12.33)**	4.045 (12.37)**	0.582 (19.24)**	0.582 (19.24)**	0.582 (19.23)**	0.583 (19.24)**
Leverage	-0.226 (2.06)*	-0.223 (2.03)*	-0.229 (2.08)*	-0.222 (2.03)*	-0.143 (12.79)**	-0.143 (12.77)**	-0.143 (12.77)**	-0.143 (12.74)**
Cash and Short Term Investments	0.686 (4.18)**	0.697 (4.25)**	0.686 (4.18)**	0.697 (4.25)**	0.074 (4.56)**	0.075 (4.61)**	0.074 (4.56)**	0.075 (4.61)**
Control Enhancing Mechanism		-0.138 (2.15)*		-0.142 (2.05)*		-0.006 (1.01)		-0.007 (1.11)
Wedge			-0.092 (0.67)	0.021 (0.14)			0.001 (0.07)	0.007 (0.47)
Observations	3977	3977	3977	3977	3890	3890	3890	3890
R-squared	0.06	0.06	0.06	0.06	0.17	0.17	0.17	0.17

Table A.3.2 Pooled OLS Regression Results on Hypothesis 1, Founder Family Firms

This table is related to Hypothesis 1 using only the sample of founder family firms. Regressions 28 and 32 include only control variables. We first test the impact of disproportionate ownership structures on Tobin's Q using two different specifications; a dummy for control enhancing mechanisms and the wedge between cash flow and voting rights. Then we repeat the same procedure in regressions 33, 34 and 35 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterisks, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q				ROA			
Regression	28	29	30	31	32	33	34	35
Sales	-0.001 (0.05)	0.006 (0.38)	0.008 (0.46)	0.011 (0.64)	0.009 (6.00)**	0.009 (6.03)**	0.009 (6.05)**	0.009 (6.05)**
Age	-0.001 (0.03)	0.015 (0.52)	0.011 (0.37)	0.020 (0.71)	0.005 (1.71)	0.005 (1.77)	0.005 (1.79)	0.005 (1.82)
Dividend Yield	3.670 (5.36)**	3.597 (5.31)**	3.604 (5.28)**	3.565 (5.27)**	0.861 (13.57)**	0.861 (13.56)**	0.860 (13.54)**	0.860 (13.54)**
Leverage	-1.304 (6.07)**	-1.287 (6.06)**	-1.357 (6.32)**	-1.321 (6.21)**	-0.137 (6.75)**	-0.137 (6.75)**	-0.139 (6.80)**	-0.139 (6.78)**
Cash and Short Term Investments	0.554 (2.56)*	0.596 (2.78)**	0.589 (2.73)**	0.612 (2.86)**	-0.110 (5.49)**	-0.110 (5.47)**	-0.109 (5.46)**	-0.109 (5.44)**
H&M Dummy	2.173 (9.88)**	2.176 (10.01)**	2.156 (9.84)**	2.165 (9.98)**	0.079 (4.06)**	0.079 (4.06)**	0.078 (4.03)**	0.078 (4.03)**
Control Enhancing Mech. Dummy		-0.683 (5.29)**		-0.613 (4.56)**		-0.008 (0.66)		-0.006 (0.46)
Wedge			-0.647 (3.26)**	-0.390 (1.91)			-0.015 (0.80)	-0.012 (0.64)
Observations	1100	1100	1100	1100	1090	1090	1090	1090
R-squared	0.25	0.27	0.26	0.27	0.28	0.29	0.29	0.29

Table A.3.3 Pooled OLS Regression Results on Hypothesis 1, Family Firms

This table is related to Hypothesis 1 using only the sample of family firms. Regressions 36 and 40 include only control variables. We first test the impact of disproportionate ownership structures on Tobin's Q using two different specifications; a dummy for control enhancing mechanisms and the wedge between cash flow and voting rights. Then we repeat the same procedure in regressions 41, 42 and 43 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q				ROA			
Regression	36	37	38	39	40	41	42	43
Sales	-0.017 (1.63)	-0.011 (1.07)	-0.011 (1.08)	-0.008 (0.82)	0.006 (5.76)**	0.006 (5.69)**	0.006 (5.81)**	0.006 (5.76)**
Age	-0.023 (1.28)	-0.017 (0.95)	-0.014 (0.76)	-0.012 (0.66)	0.005 (2.77)**	0.005 (2.73)**	0.005 (2.85)**	0.005 (2.83)**
Dividend Yield	3.136 (7.54)**	3.095 (7.46)**	3.130 (7.54)**	3.099 (7.48)**	0.829 (19.70)**	0.829 (19.69)**	0.829 (19.69)**	0.829 (19.70)**
Leverage	-0.922 (7.13)**	-0.977 (7.54)**	-0.958 (7.41)**	-0.991 (7.64)**	-0.084 (6.32)**	-0.084 (6.25)**	-0.085 (6.36)**	-0.085 (6.30)**
Cash and Short Term Investments	0.700 (4.65)**	0.726 (4.83)**	0.701 (4.66)**	0.721 (4.80)**	-0.112 (7.23)**	-0.112 (7.23)**	-0.112 (7.23)**	-0.112 (7.25)**
H&M Dummy	2.361 (12.70)**	2.346 (12.66)**	2.353 (12.69)**	2.344 (12.66)**	0.112 (6.26)**	0.112 (6.26)**	0.112 (6.25)**	0.112 (6.25)**
Control Enhancing Mech. Dummy		-0.236 (3.94)**		-0.186 (2.91)**		0.002 (0.24)		0.004 (0.55)
Wedge			-0.390 (3.48)**	-0.269 (2.25)*			-0.009 (0.79)	-0.011 (0.93)
Observations	2060	2060	2060	2060	2035	2035	2035	2035
R-squared	0.21	0.21	0.21	0.21	0.26	0.26	0.26	0.26

Table A.3.4 Pooled OLS Regression Results on Hypothesis 1, 1985-1996

This table is related to Hypothesis 1 using a subsample for the time period 1985-1996. Regressions 44 and 48 include only control variables. We first test the impact of disproportionate ownership structures on Tobin's Q using two different specifications; a dummy for control enhancing mechanisms and the wedge between cash flow and voting rights. Then we repeat the same procedure in regressions 49, 50 and 51 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q				ROA			
Regression	44	45	46	47	48	49	50	51
Sales	-0.026 (3.76)**	-0.026 (3.79)**	-0.026 (3.76)**	-0.026 (3.76)**	0.002 (3.04)**	0.002 (3.10)**	0.002 (3.04)**	0.002 (3.13)**
Age	0.033 (2.93)**	0.034 (3.01)**	0.035 (3.14)**	0.036 (3.15)**	0.003 (2.51)*	0.003 (2.29)*	0.003 (2.61)**	0.003 (2.45)*
Dividend Yield	4.167 (11.50)**	4.162 (11.48)**	4.215 (11.59)**	4.211 (11.56)**	0.750 (18.33)**	0.751 (18.36)**	0.752 (18.33)**	0.757 (18.42)**
Leverage	-0.912 (9.64)**	-0.911 (9.63)**	-0.921 (9.73)**	-0.921 (9.71)**	-0.068 (6.36)**	-0.068 (6.38)**	-0.068 (6.39)**	-0.069 (6.48)**
Cash and Short Term Investments	0.660 (5.37)**	0.669 (5.42)**	0.652 (5.30)**	0.655 (5.29)**	-0.069 (4.97)**	-0.071 (5.09)**	-0.070 (5.00)**	-0.073 (5.20)**
H&M Dummy	1.142 (7.41)**	1.144 (7.42)**	1.146 (7.44)**	1.146 (7.44)**	0.105 (6.05)**	0.105 (6.03)**	0.105 (6.06)**	0.105 (6.05)**
Control Enhancing Mechanisms		-0.030 (0.80)		-0.008 (0.19)		0.006 (1.48)		0.009 (1.96)*
Wedge			-0.108 (1.56)	-0.102 (1.35)			-0.006 (0.79)	-0.013 (1.51)
Observations	1985	1985	1985	1985	1984	1984	1984	1984
R-squared	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20

Table A.3.5 Pooled OLS Regression Results on Hypothesis 1, 1997-2005

*This table is related to Hypothesis 1 using a subsample for the time period 1997-2005. Regressions 52 and 57 include only control variables. We first test the impact of disproportionate ownership structures on Tobin's Q using two different specifications; a dummy for control enhancing mechanisms and the wedge between cash flow and voting rights. Then we repeat the same procedure in regressions 58, 59 and 60 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)*

Dependent Variable	Tobin's Q				ROA			
Regression	52	53	54	56	57	58	59	60
Sales	-0.046 (3.34)**	-0.042 (3.09)**	-0.041 (3.02)**	-0.041 (2.98)**	0.018 (12.14)**	0.018 (12.05)**	0.018 (12.01)**	0.018 (11.99)**
Age	-0.055 (2.05)*	-0.033 (1.20)	-0.035 (1.29)	-0.029 (1.04)	0.010 (3.70)**	0.010 (3.41)**	0.010 (3.48)**	0.010 (3.38)**
Dividend Yield	3.201 (7.69)**	3.158 (7.61)**	3.186 (7.68)**	3.164 (7.63)**	0.803 (19.01)**	0.805 (19.03)**	0.804 (19.02)**	0.805 (19.02)**
Leverage	-0.427 (2.81)**	-0.456 (3.01)**	-0.440 (2.90)**	-0.454 (2.99)**	-0.115 (6.51)**	-0.114 (6.43)**	-0.114 (6.48)**	-0.114 (6.43)**
Cash and Short Term Investments	1.505 (8.37)**	1.509 (8.42)**	1.506 (8.40)**	1.509 (8.42)**	-0.115 (5.94)**	-0.115 (5.93)**	-0.115 (5.94)**	-0.115 (5.93)**
H&M Dummy	4.286 (10.59)**	4.328 (10.72)**	4.371 (10.81)**	4.365 (10.80)**	0.092 (2.49)*	0.091 (2.46)*	0.090 (2.45)*	0.090 (2.45)*
Control Enhancing Mechanisms		-0.188 (3.82)**		-0.122 (1.99)*		0.005 (0.94)		0.004 (0.57)
Wedge			-0.624 (3.74)**	-0.379 (1.82)			0.014 (0.81)	0.007 (0.32)
Observations	2005	2005	2005	2005	1921	1921	1921	1921
R-squared	0.19	0.19	0.19	0.20	0.32	0.32	0.32	0.32

Table A.3.6 Fixed Effects Regression Results on Hypothesis 2

*This table is related to the robustness test of Hypothesis 2 using unadjusted data and fitting cross-sectional time-series regression models. We first test the impact of each dual class shares and pyramids on Tobin's Q. Then we include both mechanisms and run an F-Test to test whether their values are the same. We also run one regression including the wedge of votes to capital. Then we repeat the same procedure in regressions 66, 67 and 68 to test for the effect on ROA. Because we use fixed effects regression, the H&M dummy is dropped. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)*

Dependent Variable	Tobin's Q				ROA			
Regression	61	62	63	64	65	66	67	68
Sales	-0.006 (0.27)	-0.007 (0.29)	-0.009 (0.38)	-0.008 (0.35)	0.003 (1.53)	0.003 (1.47)	0.003 (1.41)	0.003 (1.45)
Age	-0.178 (3.72)**	-0.180 (3.76)**	-0.176 (3.68)**	-0.175 (3.66)**	-0.024 (5.27)**	-0.024 (5.28)**	-0.023 (5.22)**	-0.023 (5.19)**
Dividend Yield	4.037 (12.35)**	3.999 (12.21)**	3.996 (12.20)**	3.996 (12.20)**	0.582 (19.22)**	0.578 (19.08)**	0.578 (19.06)**	0.578 (19.07)**
Leverage	-0.221 (2.01)*	-0.232 (2.11)*	-0.226 (2.06)*	-0.224 (2.04)*	-0.143 (12.75)**	-0.144 (12.83)**	-0.143 (12.80)**	-0.143 (12.75)**
Cash and Short Term Investments	0.698 (4.25)**	0.687 (4.19)**	0.700 (4.26)**	0.701 (4.26)**	0.075 (4.60)**	0.074 (4.58)**	0.075 (4.61)**	0.075 (4.63)**
Dual Class Shares	-0.100 (1.41)		-0.097 (1.37)	-0.109 (1.48)	-0.005 (0.69)		-0.004 (0.66)	-0.007 (0.97)
Pyramids		-0.104 (1.84)	-0.103 (1.81)	-0.118 (1.87)		-0.009 (1.77)	-0.009 (1.75)	-0.012 (2.08)*
Wedge				0.091 (0.57)				0.017 (1.15)
Observations	610	610	610	610	607	607	607	607
R-squared	0.06	0.06	0.06	0.06	0.17	0.17	0.17	0.17

Table A.3.7 Pooled OLS Regression Results on Hypothesis 2, Family Firms

This table is related to the robustness test of Hypothesis 2 using a subsample of only family firms. We first test the impact of each dual class shares and pyramids on Tobin's Q. Then we include both mechanisms and run a F-Test to test whether their values are the same. We also run one regression including the wedge of votes to capital. Then we repeat the same procedure in regressions 74, 75 and 76 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q				ROA			
	69	70	71	72	73	74	75	76
Regression								
Sales	-0.016 (1.54)	-0.006 (0.53)	-0.002 (0.18)	-0.003 (0.25)	0.006 (5.78)**	0.008 (7.11)**	0.008 (7.31)**	0.008 (7.34)**
Age	-0.020 (1.11)	-0.022 (1.25)	-0.018 (1.00)	-0.013 (0.73)	0.005 (2.84)**	0.005 (2.84)**	0.005 (3.03)**	0.005 (2.84)**
Dividend Yield	3.095 (7.43)**	3.133 (7.54)**	3.073 (7.39)**	3.089 (7.43)**	0.827 (19.61)**	0.829 (19.80)**	0.824 (19.66)**	0.823 (19.64)**
Leverage	-0.926 (7.16)**	-0.981 (7.46)**	-1.003 (7.62)**	-1.003 (7.63)**	-0.084 (6.33)**	-0.096 (7.10)**	-0.098 (7.21)**	-0.097 (7.19)**
Cash and Short Term Investments	0.717 (4.75)**	0.696 (4.63)**	0.719 (4.78)**	0.713 (4.74)**	-0.111 (7.14)**	-0.113 (7.38)**	-0.111 (7.21)**	-0.111 (7.17)**
H&M Dummy	2.367 (12.74)**	2.297 (12.25)**	2.290 (12.22)**	2.306 (12.31)**	0.112 (6.28)**	0.100 (5.54)**	0.099 (5.51)**	0.098 (5.45)**
Dual Class Shares	-0.086 (1.78)		-0.123 (2.46)*	-0.082 (1.55)	-0.004 (0.89)		-0.010 (2.04)*	-0.013 (2.41)*
Pyramids		-0.116 (2.44)*	-0.145 (2.98)**	-0.101 (1.90)		-0.021 (4.50)**	-0.024 (4.86)**	-0.027 (5.03)**
Wedge				-0.268 (2.12)*				0.018 (1.42)
Observations	2060	2060	2060	2060	2035	2035	2035	2035
R-squared	0.21	0.21	0.21	0.21	0.26	0.27	0.27	0.27
F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$					F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$			
F(1, 3896)					F(1, 3896)			
p-value					p-value			
0.14					4.82			
0.7074					0.0282			

Table A.3.8 Pooled OLS Regression Results on Hypothesis 2, Founder Family Firms

This table is related to the robustness test of Hypothesis 2 using the subsample of founder family firms. We first test the impact of each dual class shares and pyramids on Tobin's Q. Then we include both mechanisms and run an F-Test to test whether their values are the same. We also run one regression including the wedge of votes to capital. Then we repeat the same procedure in regressions 82, 83 and 84 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q				ROA			
Regression	77	78	79	80	81	82	83	84
Sales	0.006 (0.38)	-0.001 (0.07)	0.005 (0.32)	0.007 (0.44)	0.009 (6.03)**	0.009 (5.45)**	0.009 (5.48)**	0.009 (5.57)**
Age	0.015 (0.52)	-0.001 (0.03)	0.015 (0.53)	0.023 (0.80)	0.005 (1.77)	0.005 (1.78)	0.005 (1.84)	0.005 (2.00)*
Dividend Yield	3.597 (5.31)**	3.677 (5.34)**	3.611 (5.31)**	3.627 (5.34)**	0.861 (13.56)**	0.870 (13.67)**	0.870 (13.66)**	0.871 (13.68)**
Leverage	-1.287 (6.06)**	-1.301 (6.00)**	-1.281 (5.97)**	-1.296 (6.05)**	-0.137 (6.75)**	-0.133 (6.49)**	-0.133 (6.48)**	-0.134 (6.55)**
Cash and Short Term Investments	0.596 (2.78)**	0.556 (2.55)*	0.600 (2.79)**	0.640 (2.96)**	-0.110 (5.47)**	-0.107 (5.30)**	-0.106 (5.27)**	-0.104 (5.16)**
H&M Dummy	2.176 (10.01)**	2.174 (9.87)**	2.178 (10.01)**	2.175 (10.01)**	0.079 (4.06)**	0.080 (4.15)**	0.080 (4.15)**	0.080 (4.13)**
Dual Class Shares	-0.683 (5.29)**		-0.684 (5.29)**	-0.601 (4.46)**	-0.008 (0.66)		-0.009 (0.70)	-0.004 (0.29)
Pyramids		0.017 (0.10)	0.037 (0.22)	0.184 (1.01)		0.025 (1.59)	0.026 (1.60)	0.034 (2.00)*
Wedge				-0.473 (2.15)*				-0.028 (1.35)
Observations	1100	1100	1100	1100	1090	1090	1090	1090
R-squared	0.27	0.25	0.27	0.27	0.29	0.29	0.29	0.29
F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$					F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$			
F(1, 3896)					F(1, 3896)			
p-value					p-value			
11.20					2.81			
0.0008					0.0941			

Table A.3.9 Pooled OLS Regression Results on Hypothesis 2, 1985-1996

This table is related to the robustness test of Hypothesis 2 using a subsample of only family firms. We first test the impact of each dual class shares and pyramids on Tobin's Q. Then we include both mechanisms and run a F-Test to test whether their values are the same. We also run one regression including the wedge of votes to capital. Then we repeat the same procedure in regressions 89 and 90 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterisks, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q			ROA		
Regression	85	86	87	88	89	90
Sales	-0.026 (3.81)**	-0.033 (4.48)**	-0.033 (4.50)**	0.002 (3.01)**	0.003 (3.19)**	0.003 (3.17)**
Age	0.034 (3.01)**	0.030 (2.71)**	0.031 (2.76)**	0.003 (2.55)*	0.003 (2.59)**	0.003 (2.63)**
Dividend Yield	4.156 (11.46)**	4.122 (11.38)**	4.115 (11.35)**	0.749 (18.29)**	0.752 (18.35)**	0.751 (18.32)**
Leverage	-0.908 (9.58)**	-0.877 (9.20)**	-0.875 (9.16)**	-0.068 (6.32)**	-0.069 (6.43)**	-0.069 (6.40)**
Cash and Short Term Investments	0.669 (5.42)**	0.650 (5.30)**	0.657 (5.33)**	-0.069 (4.92)**	-0.069 (4.95)**	-0.068 (4.89)**
H&M Dummy	1.146 (7.43)**	1.185 (7.66)**	1.187 (7.67)**	0.105 (6.06)**	0.103 (5.91)**	0.104 (5.92)**
Dual Class Shares	-0.027 (0.83)		-0.020 (0.61)	-0.002 (0.41)		-0.002 (0.50)
Pyramids		0.080 (2.63)**	0.078 (2.57)*		-0.003 (0.99)	-0.004 (1.02)
Observations	1985	1985	1985	1984	1984	1984
R-squared	0.20	0.20	0.20	0.20	0.20	0.20
	F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$			F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$		
	F(1, 3896)		5.34	F(1, 3896)		0.13
	p-value		0.0210	p-value		0.7233

Table A.3.10 Pooled OLS Regression Results on Hypothesis 2, 1996-2005

This table is related to the robustness test of Hypothesis 2 using a subsample of only family firms. We first test the impact of each dual class shares and pyramids on Tobin's Q. Then we include both mechanisms and run a F-Test to test whether their values are the same. We also run one regression including the wedge of votes to capital. Then we repeat the same procedure in regressions 95 and 96 to test for the effect on ROA. T-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Dependent Variable	Tobin's Q			ROA		
Regression	91	92	93	94	95	96
Sales	-0.044 (3.26)**	-0.037 (2.58)**	-0.037 (2.54)*	0.018 (12.11)**	0.020 (12.64)**	0.020 (12.63)**
Age	-0.036 (1.29)	-0.056 (2.08)*	-0.037 (1.33)	0.010 (3.38)**	0.010 (3.64)**	0.009 (3.30)**
Dividend Yield	3.133 (7.53)**	3.190 (7.67)**	3.124 (7.51)**	0.805 (19.02)**	0.800 (18.98)**	0.802 (19.00)**
Leverage	-0.431 (2.84)**	-0.457 (2.99)**	-0.459 (3.01)**	-0.115 (6.50)**	-0.123 (6.96)**	-0.123 (6.94)**
Cash and Short Term Investments	1.527 (8.50)**	1.506 (8.38)**	1.527 (8.51)**	-0.116 (5.96)**	-0.116 (5.99)**	-0.116 (6.02)**
H&M Dummy	4.333 (10.71)**	4.232 (10.42)**	4.280 (10.55)**	0.090 (2.45)*	0.079 (2.16)*	0.078 (2.11)*
Dual Class Shares	-0.139 (2.87)**		-0.136 (2.81)**	0.004 (0.82)		0.005 (0.94)
Pyramids		-0.122 (1.72)	-0.115 (1.63)		-0.026 (3.53)**	-0.026 (3.55)**
Observations	2005	2005	2005	1921	1921	1921
R-squared	0.19	0.19	0.19	0.32	0.32	0.32
F-test: $\beta_{\text{Dual Class}} = \beta_{\text{Pyramids}}$				F-test:		
F(1, 3896)				F(1, 3896)		
p-value				p-value		
0.06				11.61		
0.8067				0.0007		

Table A.3.11 Random Effects Probit Regression Results on Hypothesis 3

This table reports results of the robustness test for Hypothesis 3 using adjusted data and a random effects probit model. Z-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Sample Used	Total sample		Family Firms	
Dependent Variable	Dual Class	Pyramids	Dual Class	Pyramids
Pyramids	0.376 (2.19)*		-0.581 (1.94)	
Dual Class Shares		0.439 (2.81)**		-0.567 (1.85)
Family CEO and/or COB	-0.090 (0.19)	-0.766 (1.61)	-0.111 (0.24)	-0.896 (1.72)
Founding Family Firms	3.447 (8.22)**	-2.402 (6.58)**	2.565 (5.85)**	-3.133 (7.00)**
Age	0.541 (5.92)**	0.214 (2.69)**	0.470 (3.91)**	0.216 (1.46)
Observations	4022	4022	2069	2069

Table A.3.8 Random Effects Probit Regression Results on Hypothesis 5

This table is related to the Robustness test for Hypothesis 5. We test for the probability of release of family control using random effects instead of unconditional fixed effects. The regression we run is specified as the following:

$$\text{Prob}(\text{Release of Control}=1)=\alpha_i + \beta_1 \text{Dual Class Shares} + \beta_2 \text{Pyramids} + \beta_3 \text{Sales} + \beta_4 \text{Age} + \beta_5 \text{Leverage} + \beta_6 \text{Cash \& ST Inv.} + \beta_7 \text{Blockholding} + \beta_8 \text{Family CEO/COB} + \beta_9 \text{Non founder Family Firm} + \varepsilon_{it}$$

Note that in regression 98, the variable pyramids is dropped as it predicts the release of control perfectly (for founder family firms, there is no use of pyramids when control was released. However, this does not imply that pyramids are used for every case that control was maintained). Non founder family firm is also dropped due to collinearity in both regressions 98 and 99. Z-values are reported in parentheses under each coefficient and the statistical significance is indicated by asterics, with *(5% level of significance) and **(1% level of significance)

Sample Used	Total Sample	Founder Family Firms	Non-Founder Family Firms
Regression	97	98	99
Dual Class Shares	-0.071 (0.73)	-0.402 (2.12)*	-0.083 (0.68)
Pyramids	0.542 (4.95)**		0.433 (3.29)**
Sales	-0.090 (3.72)**	-0.060 (1.57)	-0.091 (2.62)**
Age	-0.042 (0.97)	-0.112 (1.57)	-0.106 (1.82)
Leverage	0.071 (0.26)	-0.352 (0.74)	0.156 (0.38)
Cash and Short Term Investments	-1.011 (2.70)**	-1.268 (2.10)*	-0.742 (1.29)
Blockholding	0.139 (1.68)	0.230 (1.72)	0.096 (0.85)
Family CEO and/or COB	-0.390 (2.66)**	-0.192 (1.42)	-5.752 (0.00)
Non Founder Family Firm	0.564 (4.27)**		
Observations	4020	1380	1337