Agency Costs of Controlling Minority Shareholders*

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Abstract: Investigating a panel of 309 publicly traded Swedish firms 1991-1997, this paper estimates the agency costs of *controlling minority* shareholders (CMSs), who are very common outside the US and the UK. A CMS has a control stake of the firm's votes, providing her with discretion over the firm's decisions, while owning only a minority fraction of the firm's equity. We find that family owners in control are almost exclusively CMSs. Besides using dual-class shares, they also implement other control instruments, which facilitate their entrenchment, more often than corporations and financial institutions in control do. After adjusting for firm characteristics and fixed firm effects, an increase in the ownership of votes by a CMS is associated with a significant decrease in Tobin's *q*. The magnitude of the negative effect is up to two times larger for family CMSs than for other CMSs. One explanation for the larger agency costs of family CMSs is that they retain the control of their firms longer than optimal from non-controlling shareholders perspective. Firms controlled by families end up in severe financial distress significantly more often than firms without families in control do, and they are also less likely to be taken over compared to other firms. We provide three real cases illustrating how the agency costs can arise through self-serving behavior by CMSs.

Keywords: Agency costs; Corporate control; Ownership structures; Corporate governance
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1. Introduction

Recent studies suggest that systematic differences between countries in the structure of laws and their enforcement, such as historical origin of their laws, explain cross-country differences in corporate governance (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, or LLSV, 1998; La Porta, Lopez-de-Silanes, and Shleifer, or LLS, 1999). In addition, in most countries publicly traded firms often have large controlling shareholders,[1] thus sharply contrasting with the Berle and Means (1932) image of the widely held corporation, in which ownership is dispersed and control is concentrated in the hands of managers.[2] These large controlling shareholders frequently own much more control rights than cash flow rights, making them -- what we term -- *controlling minority shareholders* (henceforth often referred to as "CMSs"), i.e. owners controlling the firm while owning only a minority of the cash flow rights. Although the existence of CMSs in large, publicly traded firms -- like Fiat in Italy and Ericsson in Sweden -- have been well documented, the valuation consequences of these ownership structures have received little attention.

By using dual class shares or other mechanisms to achieve a deviation from one-share one-vote, and by designing corporate charters to facilitate exercise of control, CMSs can entrench themselves considerably against any pressure from corporate governance mechanisms otherwise in place. As a consequence, CMSs have the power to expropriate other shareholders, and this power is limited only by CMSs financial incentives not to engage in expropriation. If we assume that expropriation is costly (Burkart, Gromb, and Panunzi, 1998), rational CMSs face a trade off between value-enhancing activities and further extraction of private benefits when maximizing their total utility (Bebchuk, Kraakman, and Triantis, 1999;

[1] See e.g. Barca and Becht (2000), Claessens, Djankov, and Lang (1999), LLS (1999), and LLSV (1998).
[2] Holderness et al. (1999) show that ownership of capital is often not dispersed among small shareholders even in the US. For instance, the mean percentage of common stock held by a firm's officers and directors as a group was 21 percent in 1995.

LLSV, 1999). Since the CMS -- by definition -- internalizes only a minority fraction of negative valuation consequences, but enjoys all of the private benefits, this trade-off is in favor of private benefits extraction. The greater the scale of and scope for private benefits extraction the CMS experiences, the greater are the agency costs of CMSs. This suggests that, in many countries around the world, the main agency problem is between CMSs and non-controlling investors, rather than between managers and dispersed small shareholders.

Perhaps therefore, ownership structures with CMSs have come under political pressure and stock market scrutiny in the European Union and in many Asian countries. Worldwide, governments are paying increasing attention towards the poor legal protection of non-CMSs' rights, and there is a trend towards regulation of CMSs. For instance, in the European Union there has been proposals suggesting a prohibition of a deviation from one share-one vote. In 1997, Taiwan's legislature approved a law on mandatory disclosure of stock pyramids and cross-shareholdings (see, e.g., Financial Times, May 9, 1997). However, before dismantling these, hypothesized harmful, structures, a priority for research in corporate governance is to thoroughly investigate the actual agency costs of CMSs. This paper is one of the first attempts to estimate the valuation consequences of CMSs.

We carry out a detailed analysis of the agency costs of CMSs using a panel of 309 publicly traded Swedish firms 1991-1997. We use this large sample of firms within one single country, rather than using cross-country data, for several reasons. First, while LLSV (1999) find that median q in Sweden and other civil law countries is significantly lower than in common law countries, their research design does not allow them to say anything about the variation around this median q among firms within a civil law country. By contrast, we show that there is actually a considerable variation around the average discount, since firms that have adopted certain structures of ownership and control instruments are discounted much more by the market than other firms are. Thus, by avoiding certain structures, this discount can be reduced significantly, also within a civil law country. Furthermore, while LLSV (1998, 1999) study the *potential* a country's legal rules offer for expropriation of non-controlling shareholders, we examine the valuation effects of the governance structure that a particular firm *actually* has adopted. For instance, the anti-director index developed in LLSV (1998) considers only whether the company law or commercial code allows for certain shareholders' rights, and not whether *any* firms in a country implement them in practice.[3] Thus, we take an alternative approach in that all firms in our sample face the same set of legal rules, but show that they have nevertheless adopted drastically different governance structures, and we analyze the valuation effects of the structures firms have de facto adopted.

Second, Sweden is an excellent laboratory since CMSs are very common. One indication of this is Table IV in LLS (1999). Sweden is the only country being a "top-three" country in all three of the categories one-share one-vote,[4] cross-shareholders, and stock pyramids. Bebchuk et al. (1999) argue that the valuation effects should be independent of whether dual class shares, cross-shareholdings, and stock pyramids are used since these control instruments are effectively substitutes when creating a controlling minority structure. Bebchuk et al., La Porta et al., and others often refer to the Swedish case, in particular the well-known Wallenberg family's way of exercising control, when discussing what we term CMSs. Hence, we argue that if one studies valuation effects of CMSs within one country, and thereby holds constant important valuation factors such as taxation and accounting rules, Sweden is a natural choice.

Third, we are able to use an internationally unique source of ownership and control instrument data. Since the 1970s, the *Swedish Securities Register Center* keeps a register of all shareholders owning ≥ 500 shares in Swedish publicly traded firms. Swedish law gives the

[3] For example, although dual-class shares are not prohibited in many countries, many firms nevertheless chose to implement one-share one-vote.
[4] See Bergström and Rydqvist (1990) for an early study of dual-class shares in Sweden.

public unconditional access to the *Public Shareholders' Register*, which form the basis of our source of ownership data; the annual publication "Owners and Power in Sweden's Listed Companies" by *DN Ägarservice* (Sundin and Sundqvist, 1985-2000). Our data thus minimizes the measurement error present in the explanatory variables measuring ownership structure in other studies, thereby eliminating much of the bias in the estimated valuation effects. Section 4 and the Appendix discuss several unique features of our ownership data. One example is that all shares held by family members -- whether or not they have the same last name -- and other closely related owners are grouped into one single record, where any indirect shareholdings through firms and foundations are also taken into account. Another advantage is that the disclosure of the ownership structure guaranteed by Swedish law also eliminates investors' uncertainty about the true ownership structure of a particular firm that they are valuing, thus enabling us to identify valuation effects with great precision.

Furthermore, when examining within-country variation in valuation due to agency costs of controlling owners, it is important to study the corporate control mechanisms that firms have actually chosen to adopt or avoid in their company charters. This paper systematically describes corporate control mechanisms included in firms' corporate charters that facilitate entrenchment by controlling owners. We also have data on publicly known private contracts between large shareholders. These shareholder agreements are legally binding and regulate, for example, how the included coalition members should vote, or how future sales of shares by coalition members should be conducted.

We find that families in control are almost exclusively CMSs. In addition to extensive use of dual-class shares, they implement other control instruments in their corporate charters, which further insulate them from non-CMSs, more often than corporations and financial institutions in control do. After adjusting for firm characteristics and fixed firm effects, an increase in the ownership of votes by a CMSs is associated with an economically and statistically significant decrease in Tobin's q. Such a decrease in q is up to two times larger for firms with family CMS than for firms with financial institutions or corporations in control. The following example illustrates the large valuation effects of family CMSs. Consider a firm with a Tobin's q equal to the median value in our sample (1.095) that have no controlling owners. If the CEO of this firm increases her ownership of votes to the median level of a CEO controlling owner (65.2%), our findings imply a resulting decrease in Tobin's q of about 25%.

How can we explain this magnitude of value destruction? Several papers have focused on the "stealing"-explanation, i.e. outright diversion of the firm's cash flow into the pockets of the controlling owners. While this may be true for developing economies studied in, for example, Johnson et al. (1998), we argue that it cannot be an explanation in developed countries. Sweden, for example, is top-ranked in cross-country analyzes regarding legal enforcement and accounting standards (see, e.g., LLSV, 1998). Still we document significant valuation effects. One explanation for the larger agency costs of family CMSs is that they retain the control of their firms longer than optimal from non-controlling shareholders perspective. We document that family CMSs (i) end up in severe financial distress significantly more often than firms without families in control do, and (ii) are significantly less likely to be taken over compared to other firms. In addition we take an alternative approach and qualitatively describe three representative real cases, which we think illustrates how the significant agency costs can materialize as CMSs strive to maintain their control.

An empirical study related to ours is a paper by Claessens, Djankov, Fan, and Lang (1999). Using a data-set of 2,658 East-Asian corporations in 1996, they find that, for the largest blockholder, higher concentrations of control and deviations of control rights from cash-flow rights are negatively associated with market valuation, especially for family blockholders. Their results complement our findings by showing costs of CMSs in what is mainly emerging markets, where expected agency costs in general should be larger than in a developed market like Sweden.

One important issue when empirically examining the relation between ownership structure and firm valuation is the possibility that the ownership structure is one dimension of the contracts chosen cooperatively by the shareholders to maximize firm value. This argument implies that there should be no exogenous effects of ownership structures on firm value (see Demsetz and Lehn, 1985). Considering this argument, Himmelberg, Hubbard, and Palia (1999) therefore recently re-examined the seminal work by Morck, Shleifer and Vishny (1988) on the relation between managerial ownership and firm performance. When running fixed firm effects regressions, and thereby controlling for unobservable firm heterogeneity in the contracting environment that can cause endogeneity problems if not controlled for, they do not find a relation between a firm's ownership structure and Tobin's *q*.[5] However, using similar panel data techniques we do find a significant association between ownership and Tobin's *q*. We argue that this difference is due to institutional differences. CMSs in Sweden have not been awarded their ownership as a part of a compensation scheme aimed at aligning their interests with those of other shareholders. Instead they optimize their own level of ownership such that the sum of their utility from private benefit extraction and their fraction of the cash flow is maximized, and this is obviously not a sufficient condition for firm value maximization.

The reminder of the paper is organized as follows. Section 2 presents hypotheses regarding costs and benefits of CMSs. The sample is described in Section 3. A characterization of CMSs and a description of the control instruments they use to entrench themselves are presented in Section 4. In Section 5 we formally investigate the relation between firm value and CMSs' degree of control. The frequency of takeovers and severe

[5] Cho (1998) and Aggrawal and Knoeber (1996) also find that insider ownership and firm performance is endogenously determined when employing simultaneous regression methods on US data.

financial distress for firms with different controlling owners are investigated in Section 6. In Section 7 three illustrative cases are presented. Section 8 concludes.

2. Hypotheses

2.1 Costs and benefits of controlling minority shareholders[6]

Bebchuk et al. (1999) argue that an ownership structure with CMSs have the potential to create large agency costs. The structure combines the agency problem of having an insider who owns a minority of the equity controlling the firm (see Jensen and Meckling, 1976), with the agency problem of the firm being controlled by an insider who is insulated from the influence of other shareholders and the market of corporate control (see Stulz, 1988). Bebchuk et al. further show that a CMS structure can distort decisions regarding firm size, choice of projects, and transfers of control. The agency costs can increase, not proportionally, but at a sharply increasing rate, as the CMS's fraction of the company's cash flows decreases.

In a related paper Bebchuk (1999) shows that when there are significant private benefits of control, a controlling owner fearing a control grab by outsiders will strive to maintain her control, regardless of it being efficient or not for other shareholders. When the size of control benefits makes it desirable to maintain a lock on control, a CMSs structure enables the controlling party to maintain such a lock without incurring risk bearing costs or liquidity costs. A controlling minority structure also means that a controlling owner is less likely to relinquish control even if it is efficient, since a majority of the efficiency gains will go to other shareholders whereas the controller will fully internalize the loss of private benefits if relinquishing control. The implications of these arguments are that it is mainly

[6] This section builds upon the assumption of an existing CMS. See Grossman and Hart (1988) for an analysis of differential voting rights in the case where ownership is initially dispersed.

controlling owners who derive large private benefits of control who will be controlling minority shareholders, and that CMSs can exist even if their control over firms are costly. Finally, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999) model how outside shareholders will be expropriated by controlling shareholders in countries with lax minority shareholder protection, and that this expropriation will be more extensive if the controlling party owns less cash flow rights.

The theoretical arguments above support our main hypothesis that CMSs are associated with significant agency costs. There are however opposing arguments. In an environment with low investor protection, concentrated ownership may be the only disciplining factor that limits expropriation by managers. For example, Gomez (2000) models how retaining a controlling share of votes enables managers to gain a reputation for treating non-controlling shareholders well, and therefore can get a higher price when selling shares in the future. Concentrated ownership then provides a guarantee for not expropriating minority shareholders, because of the prospect of selling additional shares for a higher price in the future. Using dual class shares or a pyramidal structure would in this framework make the effect work better since managers can start to sell shares while still retaining control.

An incumbent owner's lock on control could also be beneficial to minority shareholders if a potential acquirer is a "bad raider" in the sense that the raider would produce less cash flow benefits and/or expropriate more than the incumbent owner does. The likelihood of bad raiders should be larger in an environment of lax non-controlling shareholder protection. A CMS structure is beneficial in this case since it enables "good" incumbent owners to retain control with a smaller equity stake.

2.2 Controlling owner identity and agency costs

Due to possible differences in the potential for self-serving behavior and extraction of private benefits, the agency costs of CMSs can differ between different types of owners. For family owners, we distinguish ownership by families that are involved in the operational management of the firm from ownership by families who do not take an active part in their firms' daily operations. By being responsible for the firm's day-to-day management, a CEO continuously accumulates information concerning how to optimally extract private benefits, and furthermore, the CEO can steer the firm's strategy and operations to increase the opportunity for self-serving behavior. Hence, it is reasonable that if a member of the family is the CEO, it is easier for the family CMSs to become entrenched and to extract private benefits, compared to the case where no family member is part of the operational management.

In contrast, large family blockholders without operational control have an incentive to monitor the management and can therefore be beneficial to other shareholders (Shleifer and Vishny, 1986). However, nothing prevents such a family CMS to steer the management towards maximization of its utility rather than maximization of firm value. Another possible cost of large family ownership is that fierce monitoring of the CEO may reduce managerial incentive and non-contractible investments (Burkart, Gromb and Panunzi, 1997). Hence, the actual costs associated with family blockholders in control depends on the trade off between valuable monitoring on the one hand, and potential self-serving behavior and over-monitoring on the other hand. In the empirical analysis we split family ownership into CEO ownership and family block ownership, to control for differences in incentives and the potential for expropriation of non-controlling shareholders.

Besides families, widely held corporations or financial institutions may control firms. These organizations are run by professional managers who are not entrenched through a controlling ownership stake. Therefore, agency problems within these organizations should be limited by the threat of dismissal faced by the managers of these organizations. For this reason, we expect corporations and financial institutions in control to aim more at firm value maximization in the firms they control, for instance by accepting takeover bids if the bidder increases firm value, monitoring management, and improving internal governance instruments (e.g. by introducing compensation packages with options). This could make agency costs of institutional control lower than the agency costs of entrenched family control.

It can be argued that corporations as organizations enjoy various private benefits of control, for example, by making different kinds of deals between parent firm and subsidiary, which may be beneficial to the parent firm but not to the subsidiary's minority shareholders. Therefore, we will also distinguish between controlling ownership by corporations and controlling ownership by financial institutions in the empirical analysis.

3. Sample and firm characteristics

3.1 Sample

Our final sample is an unbalanced panel of 309 Swedish firms traded on the Stockholm Stock Exchange (SSE) during 1991-1997; in total 1,317 firm-year observations. Free entry and exit is allowed. To arrive at the final sample, we have eliminated 62 firm-year observations that are financial institutions, i.e. banks or insurance companies. In addition, we have excluded 55 firm-year observations for which we have incomplete accounting data. Our final sample includes approximately 95% of the Swedish firms publicly traded on the SSE during the time period studied. Data on firms' market value of equity is from December 31. Accounting data is from the end of the fiscal years. This data was collected from the FINLIS database.[7]

[7] FINLIS is a database containing market value of equity and accounting data for firms listed on the Stockholm Stock Exchange from 1979 to 1999. It was originally established and continuously updated by Findata, a commercial corporation. Findata was acquired in 1997 by SIX (Stockholm Information Exchange), who continued to maintain the database up until the end of 1999 when FINLIS was discontinued for commercial reasons.

3.2 Tobin's q and firm characteristics

We use Tobin's *q,* the ratio of market value of total assets to the replacement cost of total assets, to proxy for firm value in our regression models of the relation between firm value and CMS ownership. Tobin's *q* is a measure of the contribution of intangible assets, e.g. growth options and human capital, to the market value of the firm. CMSs can directly affect the firm's intangible assets through their decisions. Therefore, Tobin's *q* captures the expected capitalized value of the CMSs' discretion; i.e. it captures the hypothesized agency costs. Our proxy for firm value is a simple *q* since the replacement cost of total assets and the market value of total debt are approximated by their book values. However, Perfect and Wiles (1994) find that when dealing with *changes* in *q*, the improvement of using advanced algorithms of *q* is very limited. Hence, since we are running fixed firm effects regressions, which is equivalent to using the deviations from the firms' mean values as variables, the use of a simple *q* rather than a more advanced measure should not pose a serious problem. In addition, Swedish accounting standards are internationally in the top position,[8] which suggests that the book values of total assets for Swedish firms reflect the replacement cost of total assets relatively well compared to firms from other countries.[9] For firms with dual-class shares that do not have their high voting shares ("A-shares") traded on the SSE, the stock price of the A-shares is approximated each year by the stock price of the traded low voting shares ("B-shares"), increased with the average premium on traded A-shares for that year (the average premium varies between 2-10% depending on year).

Table 1 contains summary statistics for Tobin's *q* and other important firm characteristics. We observe that median *q* in the sample is around one. The high standard

[8] See the 1990 survey of accounting standards around the world by the Center for International Financial Analysis and Research (CIFAR).
[9] This argument concerns he validity of our measure, i.e. if the ratio measure what we want to measure. However, the quality of the accounting data also implies that the measurement error in the variable itself, the simple *q*, should be low; i.e. the variable is statistically reliable.

deviation of book value of total assets illustrates the large dispersion in company size. The firms in the sample range from multinationals as Volvo, to tiny firms like Havsfrun, which owns and manages only one building in Stockholm. The ratio of capital expenditures to total assets is measured including R&D expenditures when they are reported. The mean and median levels of leverage seem to be in line with the levels of similar measures of financial leverage in the US, UK and Canada, but lower than what has been reported for Japan, Germany, France and Italy (see Table 3 in Rajan and Zingales (1995)). The log of size and the other firm characteristics are used as control variables in the regressions on Tobin's *q*, where we also include the squared term of the log of size to control for non-linear effects. Similar versions of these variables have previously been used as control variables in regressions of ownership on Tobin's *q* by, for example, Himmelberg et al. (1999).

4. Description of controlling minority shareholders

In this section we classify firms by different controlling owner categories, and show to what extent each of the controlling owner categories are *controlling minority shareholders.* We also investigate to what extent the CMSs use other complementary control instruments to further entrench their control.

A benefit of studying controlling owners using Swedish data is that the ownership data is very detailed and accurate. All shareholdings of 500 shares or more in any public firm are registered in public records. These records form the basis for our source of ownership data, the book series "Owners and Power in Sweden's Listed Companies" by Sundin and Sundqvist (1985-1999), which reports the 25 largest owners, ranked by voting rights, for publicly traded firms on the Stockholm Stock Exchange. The useful feature of this book series is that Sundin and Sundqvist group the shares held by relatives, or other closely related owners, into one single record, and also take into account indirect shareholdings through firms and foundations when doing so. This feature enables us to identify the ultimate controlling owners of a firm. See the Appendix for a more thorough description of the ownership data used in this paper.

4.1 Controlling owners

We consider an owner with ≥ 25% of the firm's votes to be a *controlling owner*. Controlling 25% of the votes should be enough for an owner to exert the main influence on the firm's decisions.[10] Note that we do not mean that an owner has full control once she reaches 25% of the votes. In fact, we hypothesize that the actual power and entrenchment of a controlling owner is an increasing function of her vote ownership. For example, although owning 50% of the votes is enough to exert full control in most circumstances, some changes to the corporate charter require a supermajority (typically two-thirds or three-fourths of the votes, but in some cases 90% of the votes). Also, if the controlling owner consists of several allied individuals, the controlling coalition may want to own more votes in total than what is actually needed for control of the firm to hedge against deviations by single coalition members. Furthermore, controlling a surplus of votes today allows dilution tomorrow, which can be important for wealth constrained controlling owners that cannot take part of future equity issues, and it also enables paying with shares when acquiring other firms.

We split the controlling owners into four owner categories as outlined in Section 2.2: CEOs, family blockholders, corporations, and financial institutions. If two or more owner categories each control 25-50% of the voting rights, the largest owner is considered to be the controlling owner. If there is no controlling owner, the firm-year observation is considered to have a dispersed ownership structure.

[10] As a comparison, LLS. (1999) use 20% vote ownership as their definition of a controlling owner.

Family ownership is defined as the fraction of the firm's votes owned (i) directly by the family members; and (ii) indirectly by trusts and other organizations, e.g. corporations, controlled by the family. We use this definition of control to identify the *ultimate owner* of a firm. Henceforth, we use the term family ownership although it sometimes includes only a single individual, or a closely-knit group of individuals who are not relatives. We define CEO ownership as ownership by the CEO and families and individuals affiliated with the CEO. Family blockholder ownership is defined as the total block ownership (≥5% of the votes) by families unaffiliated with the CEO's family. When this category consists of more than one distinct coalition, we assume that the coalitions have aligned interests. However, in most cases the family blockholder category consists of only one family coalition. Corporate ownership is classified as total block ownership by corporations. In a few cases this category also includes ownership by the government, and other public organizations, e.g. labor unions. We group these owners together to limit the number of different owner categories. Controlling ownership by financial institutions is classified as total block ownership by mutual funds, pension funds, insurance companies, and banks.

Panel A of Table 2 reports the number of firm-year observations and the mean (median) of the fraction of votes controlled by owners in each of the controlling owner category. We see that a majority (58.8%) of the 1,317 firm-year observations has one of the family categories as the controlling owner. We also infer that most families and corporate owners in control are actually majority owners in terms of votes, whereas less than half of the financial investors in control own a majority of the votes. As a comparison, Holderness and Sheehan (1988) find that approximately 13% of listed firms in the US have a majority shareholder. See Figures 1a-d for a more detailed description of the distribution of vote ownership within each of the controlling owner categories. Finally, we observe that only 167, or 12.7%, firm-year observations in our sample lack a controlling owner.

Panel B of Table 2 reports the presence of blockholders other than the controlling owner category. We see that in many cases (around 40%) there is no other significant owner than the controlling owner, suggesting that many controlling owners are unlikely to face monitoring by other shareholders. We test for the potential monitoring pressure from these non-controlling blockholders in the regressions by including a dummy variable that is equal to one when non-controlling blockholders are present.

Panel C of Table 2 reports median firm size and firm age for the different categories of controlling owners. We see that CEO owners control the smallest firms, whereas corporate owners control the largest. However, it is interesting to note that the median size of firms controlled by family blockholders is at par with firms controlled by financial institutions or firms without controlling shareholders. Hence, it is not mainly the small firms on the Stockholm Stock Exchange that are family controlled. Turning to firm age, we see that median firm age is the lowest in the group without controlling owners. This result could indicate a trend towards market pressure on owners of newly introduced firms to divest more of their ownership, assuming that newly introduced firms are young firms. But the result is also supportive of Bebchuk's (1999) prediction that dispersed ownership structures are unstable in environments with large private benefits of control, and will not last as time passes.

4.2 Description of the use of dual class shares and other control instruments

In this section we describe the extent to which controlling shareholders in the different categories are *controlling minority shareholders* and implement different control instruments to entrench their control. To our knowledge, this paper is one of the first papers outside the US to obtain complete information on control instruments in order to determine the degree of entrenchment of different shareholder categories.[11] For a comparison, see Field (1999) for a detailed description of the control instruments implemented by a large sample of newly introduced US firms.

Table 3 shows definitions and summary statistics for the control instruments. A vast majority, 75.7%, of the firm-year observations have issued dual-class shares, where most firms have high voting shares with ten votes per share ("A-shares") and low voting shares with one vote per share ("B-shares").[12] If a firm has dual-class shares, there are two control instruments that can be used to restrict a coalition member's sale of high voting shares to a third party, see Table 3. First, the controlling owner can decide to have *non-traded high voting shares,* i.e. the high voting shares are closely held. To take over the firm, an acquirer must thus negotiate directly with the owners of the non-traded A-shares. Among the firm-year observations with dual-class shares, 70.5% have non-traded A-shares. If the high-voting shares are not traded, the controlling owner can in addition put a *right of preemption* amendment in the corporate charter. This amendment means that the owners of non-traded A-shares have the option to buy back non-traded A-shares sold by a coalition member to a third party. Among the firm-year observations with non-traded high voting shares, 35.1% have rights of preemption amendments in their company charters.

Furthermore, 9.0% of the firms-year observations have a *voting restriction* included in their company charters, meaning that no shareholder can vote for more than, typically, 20% of the *number* of shares represented at the general meeting. Thereby it is impossible for shareholders with low voting shares to take over the firm even if the CMS controls less than

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[11] Our unique data, which are collected from the company charters, the commercial database *Affärsdata*, the book series "Owners and Power in Sweden's Listed Companies" (Sundqvist and Sundin, 1991-1999), and firm's web-sites, allows us to identify which companies and owners take use of these control instruments.
[12] Among the firms with dual-class shares, 5.9% have a voting relationship between A-shares and B-shares of 5:1 (31 firm-year observations), 1000:1 (21 firm-year observations), and 100:1 (7 firm-year observations).

50% of the votes since it is sufficient that the CMS owns the high voting shares.[13]

By focusing only on control provisions in the company charters, we would fail to recognize the existence of a legal arrangement between two or several blockholders. Table 3 shows the importance of such *shareholder agreements*. Almost a quarter, or 22.2%, of the firm-year observations have two or more blockholders with a publicly known shareholder agreement between them. A shareholder agreement is possible regardless of the high-voting shares being traded or not and typically regulates how to vote (a voting pact) or restrict a coalition member's sale of high voting shares to a third party (a right of preemption similar to the corporate charter amendment).

Panel A of Table 4 reports the use of dual class shares and the resulting deviation from one share-one vote for the controlling owner categories. The two family categories use dual-class shares more often than the institutional owner categories; 93.5% and 87.7% for the CEO and family blockholder categories, respectively, compared to 66.7% for corporate owners and 55.0% for financial institutions. Only 40.2% of the firm-year observations without controlling owners have dual-class shares. We conclude that controlling families are more often *controlling minority shareholders* than corporations and financial institutions in control. Furthermore, given that a firm has dual class shares, the deviation from one share-on vote is larger for the family categories than for the other two categories, especially the financial institution category.

From Panel B of Table 4, we see that, in general, CEO CMSs seem the most concerned to put a lock on their control. They implement non-traded high voting shares,

[13] Consider the following firm with voting rights to cash flow rights = 10:1. Shareholder A owns the only A-share and shareholder B owns the, say, 20 B-shares. Without a voting restriction, shareholder B wins a control contest. However, with a voting restriction, B can only vote for 20% of the *number* of shares represented at the general meeting ($=0.2 \times 21 = 4.2 \approx 4$). Thus -- if 100% of the total number of shares is represented at the general meeting -- A can use his only A-share to get 10 votes, while B can only vote for 4 of his 20 B-shares. Hence, A has entrenched himself and wins a control contest.

shareholder agreements, and a voting restriction more often than the other controlling owners do. Financial institutions in control seem less inclined to create shareholder agreements or impose a voting restriction. The use of control instruments is much lower for firms in the dispersed owner category, which is evidence of the control motive behind implementing these instruments. Since right of preemption, shareholder agreement and voting restriction all act as entrenchment devices and may be substitutes for each other, we also present the frequency of firm-year observations for which at least one of these three instruments is present. Close to 60% of the firm-year observations with CEOs in control have at least one of these control instruments, compared to 41.8% when family blockholders are in control, 31.4% for firms controlled by corporate owners, and 25% for the financial institution controlling owner category.

To further formalize the analysis, we perform probit regressions on the incidence of firms implementing the control instruments, where we include dummy variables indicating controlling owner category as explanatory variables. We also include the log of firm size (i.e., the book value of total assets) and firm age as control variables. Year dummies for 1992-1997 are also included but not reported in the tables. Panel A of Table 5 presents a probit regression on the use of dual class shares. We see that all controlling owner dummy variables significantly increase the likelihood of firms having dual class shares. In line with the findings in Table 4, the coefficient estimates for the family categories, especially the CEO category, are much larger than for the institutional categories. The differences between the family categories and the institutional categories are significant according to Wald-tests of the pair-wise differences (see Panel B of Table 5). Within the family categories, firms with CEOs in control are the most likely to have dual class shares.

In Table 6 we report the results from running the same probit regression as above on the incidence of non-traded high voting shares, and on an indicator variable for the presence of at least one of right of preemption, shareholder agreement or voting restriction. Panel A displays the regression results, and panel B presents pair-wise tests of whether the coefficient estimates for the controlling owner categories are statistically different from each other. We see that, if a firm has a controlling owner the likelihood of non-traded high voting shares and the other control instruments increases significantly, which confirms the result in Table 4. From panel B, we conclude that the likelihood of non-traded high voting shares increases significantly more if the controlling owner belongs to the CEO or corporate category rather than the family blockholder or financial institution categories. The likelihood of a firm having at least one of a right of preemption, a shareholder agreement or a voting restriction is the largest among CEO controlled firms. Family blockholders in control implement one or more of these instruments significantly more often than the institutional controlling owner categories do. There is no significant difference in the likelihood of these three instruments being implemented between firms with corporations or financial institutions in control.

The above analysis suggests that the two family controlling owner categories derive the largest private benefits of control, since they are almost always CMSs and also have a larger deviation from one share-one vote. Furthermore, family owners more frequently cement their control through the use of complementary control instruments. Hence, we conjecture that it is the family categories that are the most likely to be associated with significant agency costs as their degree of control increases. Among the family categories, CEO owners seem to be the most entrenched, suggesting that they incur the largest agency costs.

5. Evidence on agency costs of controlling minority shareholders

5.1 Method

Himmelberg, Hubbard and Palia (1999) demonstrate that if optimal ownership and firm value both are partly determined by unobserved firm heterogeneity, OLS regressions of firm value on ownership could produce spurious results. They furthermore show that to the extent that this heterogeneity makes firm value endogenous in regressions on ownership, it can be controlled for in a fixed effects regression, assuming the unobserved firm heterogeneity is constant over time. To control for this kind of endogeneity problem, we use a fixed effects regression model on our panel data set. A thorough description of the econometrics behind panel data analysis can be found in, e.g., Baltagi (1995), but a brief description follows below.

Consider the following regression model for our panel data set

$$y_{it} = \alpha + X'_{it}B + Z'_{it}C + e_{it} \qquad i = 1,...,N \qquad t = 1,...,T_i \ , \tag{1}$$

where y_{it} is the dependent variable, α is the intercept, X'_{it} is a 1×K vector of ownership variables, Z'_{it} is a 1×K vector of observable firm characteristics, and e_{it} is the error term, for firm i at time t. We can decompose the error term e_{it} in the following way

$$e_{it} = u_i + v_{it}\,, \tag{2}$$

where u_i is the unobservable firm specific effect and v_{it} is an ordinary white noise term. We then have the following regression model

$$y_{it} = \alpha + X'_{it}B + Z'_{it}C + u_i + v_{it} \qquad i = 1,...,N \qquad t = 1,...,T_i \ . \tag{3}$$

If we assume that u_i is a *fixed firm effect*, we can include a dummy variable for each firm in the sample, and by excluding the intercept term to avoid the dummy variable trap, we get estimates of ($\alpha+u_i$) for each firm. For the fixed firm effects model, correlation between unobserved time-invariant firm heterogeneity and any of the explanatory variables does not pose a problem, since (unlike OLS) the estimates are still BLUE.

We test the fixed effect model specification by using an F-test for the joint significance of all fixed firm effects. Potential correlation between the firm specific effect and the explanatory variables is tested by a Hausman (1978) test under the null hypothesis of zero correlation.

5.2 Results

In this section we investigate the firm value consequences of CMSs by regressing Tobin's q on the ownership variables and a set of control variables. The control variables are: a dummy variable indicating the presence of a blockholder other than the controlling owner, the observable firm characteristics described in Section 3.2, fixed firm effects and year indicators. After adjusting for the control variables, we interpret any negative relationships between Tobin's q and ownership by a certain controlling owner category as agency costs associated with that category. Table 7 presents the results of this analysis.

Regression (1) of Table 7 shows that there is a statistically significant negative relation between Tobin's q and ownership of votes by CEO, family blockholder and corporate controlling owners. The magnitude of the negative effect is the largest for vote ownership by CEO and family blockholder controlling owners, suggesting that family owners are associated with larger agency costs than corporate owners in control. There is no statistical difference in the coefficients associated with vote ownership by CEOs and family blockholders in control, and hence we find no support for the hypothesis that CEO controlling owners are associated with larger agency costs than family blockholders in control. In contrast to the other controlling owner categories, the estimated coefficient for vote ownership by financial institutions in control is not statistically significantly different from zero, indicating that this category does not incur any significant agency costs.

So far the results are consistent with theories predicting large agency costs of CMSs, since families are almost always CMSs with a large deviation from one share-one vote. A CMS has incentive to engage in costly extraction of private benefits, since she receives all of the private benefits but only a minority share of the costs. However, there are some controlling owners who actually own more than 50% of the equity, and thereby have a larger incentive *not* to engage in costly extraction of private benefits. To control for the increased incentives of such an equity stake, we include for each owner category, a variable that is equal to the equity share minus 0.50, if the equity share is larger than 0.50. We control for the incentives of large equity ownership in this way, rather than including the total capital share of the controlling owner, since the total capital share is much more correlated with controlling owner vote ownership. Regression (2) in Table 7 shows the result from this addition. We see that the coefficients associated with all variables for equity ownership above 50% are positive. The positive coefficients indicate that majority equity owners are indeed more aligned with non-controlling owners than CMSs. Further evidence of this is the fact that the negative effects of vote ownership for the different owner categories become larger when these variables are included. The most dramatic change is for vote ownership by controlling financial institutions; the coefficient becomes almost significant at the 5%-level and approaches the magnitude of the coefficient for corporate controlling owners. Also, the coefficient for equity ownership above 50% has a *p*-value of 0.059 for the financial institution controlling owner category, whereas the coefficients for equity ownership above 50% for the other owner categories are insignificant. Thus, the incentive effect of large equity ownership seems to be the greatest for financial institutions in control. The negative effect of vote ownership is still the largest for the family controlling owner categories, confirming the previous conjecture that it is family CMSs that incur the largest agency costs.

The following example illustrates the magnitude of the agency costs. Consider a firm with a Tobin's *q* equal to 1.095, which is the median value in our sample, and the results in regression 2. If the firm goes from zero percent controlling owner vote ownership up to the median level of vote ownership by a CEO controlling owner (65.3%), Tobin's *q* would decrease by 0.274, or 25%, *ceteris paribus*. Using the same calculations for the other controlling owner categories, we get a value decrease of 27% for family blockholders in control, 14.7% for corporate controlling owners, and 9% for the financial institution category. Hence, the results are economically significant.

Looking at the F-tests and Hausman-tests, we see that we can reject the hypothesis that the fixed firm effects are jointly insignificant, and the hypothesis of zero correlation between the independent variables and the unobserved firm heterogeneity. Thus, the fixed effects regression model seem to be the appropriate choice.

In unreported regressions, we test the robustness of our results to the choice of cut-off point for controlling ownership (25%). We re-run the regressions twice, changing this cut-off point to 20% and 30% of the votes, respectively. The results are robust to these changes. We also consider the problem of outliers in Tobin's *q*. McConnell and Servaes (1990) use a *q*-value of six as the cut-off point in determining outliers. We re-estimate the regressions excluding six such firm-year observations, but the results still remain qualitatively the same.

6. Evidence on the likelihood of severe financial distress or takeovers

In this section we provide a partial explanation for the larger agency costs of family CMSs by examining the frequency of firms undergoing severe financial distress or being taken over. We contrast firms controlled by families (i.e., firms controlled by CEOs or family blockholders) with firms without families in control (i.e., firms with corporations or financial institutions in control or firms without a controlling owner). The main argument is that if family CMSs put a high value on control, they may keep this control inefficiently long from non-controlling shareholders' perspective, which could materialize as a greater probability of ending up in severe financial distress, or a lower probability of a takeover, for firms controlled by family CMSs.

As a proxy for a firm undergoing severe financial distress, we use the occurrence of a *debt restructuring*[14] or a *bankruptcy*. An increased risk of a financial distress should have an negative effect on firm value, ceteris paribus. For example, Altman (1984) estimates that indirect and direct bankruptcy costs are frequently greater than 20% of firm value.

Fama and Jensen (1983) argue that organizations without control on agency problems will not survive in a competitive environment. We hypothesize that the probability of severe financial distress, which can be seen as an inverse survival measure, is highest among firms with CMSs. We have shown that a family CMS is entrenched and face virtually no corporate governance pressure. Unconditionally we would expect a family CMS to try to reduce the risk of financial distress, since private benefits are lost in a bankruptcy. However, given that the firm the family controls is experiencing financial difficulties and that the solution to this difficulty calls for a control change, the trade-off will change. If private benefits are large, which our previous results indicate, the family CMS will not give up control as long as she assigns a large enough probability that the firm will survive and she can continue to extract her private benefits in the future. There is thus a possibility that large private benefits may induce the families to maintain control longer than what is ex ante optimal for the non-controlling shareholders, since a control transfer will not occur until the firm is forced to go through a debt restructuring or a bankruptcy (in which control is shifted to the firm's creditors).

Table 8 shows that the estimated unconditional probability of undergoing severe financial distress any given year is 4.1% for firms controlled by a family compared to 1.6% for firms

[14] We use the Gilson, John, and Lang (1990) definition of a debt restructuring, i.e. the firm has undertaken a restructuring of its debt if one of the following conditions is fulfilled: (i) the firm has declared a public default on its debt, (ii) the firm has been stopped from trading on the Stockholm Stock Exchange because of debt re-negotiations with its creditors, or (iii) creditors have been granted an equity interest in the firm as a part of a debt restructuring (common stock or securities convertible into common stock).

controlled by institutions or with a dispersed ownership structure. The difference is statistically significant as indicated by a standard test of the difference between two proportions. This result suggests that an increased risk of severe financial distress can partially explain the higher agency costs of family CMSs. It is noteworthy that for firms which went into bankruptcy, constituting 15 of the 40 instances of severe financial distress in the sample, all but one were controlled by family owners during the five years prior to the year when they filed for bankruptcy.

Next we turn to the issue of takeovers. Target shareholders benefit on average from a takeover (see e.g. Jensen and Ruback (1983) for US evidence, and Rydqvist (1993) for Swedish evidence). Hence, a lower takeover probability could also help to explain the large negative effect on firm value for firms controlled by family CMSs. A family CMS will only relinquish control if she gets compensated for her private benefits. Unless a potential acquirer receives private benefits equal to the private benefits of the incumbent controlling owner, or is more able in running the firm, the price demanded by a family CMS is likely to be too high for a takeover to be worthwhile for the acquirer, resulting in few takeovers of family controlled firms.

Table 8 shows the frequencies of firms being taken over. We conclude that firms controlled by families are taken over significantly less often than firms without families in control. The unconditional probability for a family controlled firm to be taken over any given year is 4.8% compared to 8.5% for other firms. Hence, a lower takeover probability could also be a part of the large agency costs of family CMSs.

7. Cases

In this section we describe three cases illustrating how family CMSs strive to protect and maintain their control in ways that potentially conflict with non-controlling owners' interests. Although none of the cases deal with outright expropriation of non-controlling shareholders, such as stealing, we think they nevertheless show self-serving behavior that could warrant the large agency costs of family CMSs. All three firms featured in the cases are part of our sample and are chosen as representative examples of the behavior by Swedish family CMSs.

<u>Case 1:</u> *Perstorp – How a family CMS use different control instruments to retain control of its firm over time.*

Perstorp is a Swedish chemical and plastic producer with a fixed ownership structure. The Wendt family -- descendents of Wilhelm Wendt who founded Perstorp in the 1880s and now consisting of around 150 family members -- controls Perstorp. Since the IPO on the SSE in 1970, the CEO has not been a member of the Wendt family.[15] Thus, they do not participate actively in the day-to-day management of the firm (and are consequently classified as family blockholders in the empirical analysis). Members of the Wendt family mainly live in a community next to the factory area and the family makes strategic decisions regarding the firm during family gatherings. Seven of the ten directors of the board were from the Wendt family until 1996; thereafter the figure has decreased to four (Dagens Industri, February 10, 1994).

The Wendt family decided, when taking the firm public, to have the high voting shares non-traded. The control of the firm was assured by the use of a right of preemption amendment in the company charter (FinansTidningen, January 12, 1993). Rather than selling shares externally, a family member who wants to sell her A-shares sells them to a holding company ("Stensmöllan AB"), wholly owned by the Wendt family. The control is also further assured through a voting restriction rule in the corporate charter, which says that no single shareholder can vote for more than 20% of the number of shares represented at the annual

[15] The Wendt family's ownership of Perstorp votes is thus classified as Family blockholder ownership.

meeting. For a long time, the Wendt family owned approximately 18.1% of the equity, but controlled the company by holding 60.5% of the votes (Financial Times, February 20, 1990). However, no single family member had control of more than 5.7% of the votes. In 1993, Perstorp introduced a mandatory bid rule (MBR) amendment in their company charter, which is invoked when a single owner controls more than 33.3% of the capital (Dagens Industri, January 12, 1993).

In 1996 the right of preemption was abolished and the A-shares were listed on the SSE. When the largest shareholder, Marie-Louise Wendt, died in 1996, 1.3% of the equity and 5.7% of the votes were to be sold by the estate of the deceased. At that time, it was worth approximately SEK 140 million. Although the Wendt family is one of the richest families in Sweden, no family member could afford to buy this stake since their assets mainly consist of Perstorp shares and property in the village of Perstorp. Therefore it was speculated in the press that listing the A-shares was a convenient solution to this problem (Dagens Nyheter, October 22, 1996; Sydsvenska Dagbladet, October 23, 1996). However, the MBR and the voting restriction still assure that the Wendt family can remain in control of Perstorp. If an acquirer wants to take over the control of Perstorp, she would have to acquire the whole company. To get the Wendt family's acceptance, it is likely that she has to make a very high offer to compensate the Wendt family for private benefits. It is unlikely that there exist many such acquirers.

One example of the difficulties facing a potential acquirer, is the failed hostile bid for a portion of the Wendt family's A-shares in 1998 by the Swedish investment company Custos. Custos, already owning 14.4% of the capital and 8.8% of the votes, had for a long time pushed for structural changes of the firm, which the Wendt family resisted. In the beginning of 1998, Custos then launched a bid for a fourth of the Wendt family's A-shares, which would increase Custos's share of votes to around 22%, in hope of gaining more weight in deciding Perstorp's future strategy (Finanstidningen, January 30, 1998). Although a premium of 30% was offered for the A-shares, not enough family members were induced to deviate from the rest of the family and Custos had to withdraw its bid (Dagens Industri, March 17, 1998).

This case illustrates how even a very large family coalition with wealth constraints can entrench itself over time through adjusting their use of control instruments. It also indicates that private benefits of control can be very large (in this case greater than 30% of the value of the family's equity holdings).

Case 2: Investor and Saab-Scania –A costly corporate control contest where the family CMS remain in control of its firm

In June 1989, Barkmans, an investment company wholly owned by the financier Mr. Sven-Olof Johansson, started to acquire shares in Saab-Scania, the Swedish automotive and aerospace corporation. In the beginning of 1990, Johansson's total ownership was 20.5% of the votes of Saab-Scania. Threatened by his attempt to take over Saab-Scania, the Wallenberg family's vehicle for control, Investor, which is an investment company listed on the Stockholm Stock Exchange, immediately increased its ownership to 33.3% of the votes. The refusal by Barkmans to sell its blockholding in Saab-Scania ignited speculation that Johansson was actually launching a greenmail attack to challenge the Wallenberg family's control of Saab-Scania (Financial Times, September 14, 1989). A few weeks thereafter, Johansson stated "My position in Saab-Scania is not for sale". Peter Wallenberg, the head of Sweden's largest financial dynasty, stated "I can't see him contributing to Saab-Scania with any industrial competence", and the corporate control contest came to an end the following year when Johansson demanded a seat on the board. On April 24, 1990, Investor bought the option to acquire Barkman's Saab-Scania shares for, according to Financial Times (April 26, 1990), the over-valued price of $743 million (takeover premium ≈ 20%). Investor exercised the option in September 1990 and the CEO of one of the Wallenberg family's investment companies stated that "The shares are now in friendly hands". The stock markets reactions to this deal were negative for Investor. The shareholders of Investor had paid one billion dollars to ensure that the Wallenberg family could retain its dominant position against corporate control challenges. Six months later Johansson launched a second greenmail raid against the Wallenberg family. He started to acquire Saab-Scania shares again. This time, Investor had enough of it, and Investor undertook an LBO of Saab-Scania for around \$2.1 billion (takeover premium ≈ 40%). Thus, Saab-Scania became a wholly owned subsidiary of Investor. The deal placed extreme financial pressure on Investor, forcing the firm to make drastic changes in their portfolio of stocks by selling their control stakes in the food processing maker Alfa-Laval and the largest Swedish insurance company, Skandia.

While the 30,000 non-controlling shareholders of Investor had to internalize the family CMS's concern to retain the control of Saab-Scania, the private benefits of including Saab-Scania in Investor's portfolio go entirely to the Wallenberg family. For instance, it is often argued that the acquisition of Saab-Scania was undertaken to increase Investor's cash flows to cross-subsidize other companies within the Wallenberg family's conglomerate (Financial Times, September 1, 1994).

<u>Case 3:</u> *ICB Shipping and Frontline – A costly attempt by family CMSs to block a takeover.*

In September 1997, the Norwegian shipping company Frontline planned to create one of the world's largest tanker fleets by launching a hostile takeover bid for the Swedish competitor ICB Shipping. Frontline offered three shares in Frontline for one share of ICB and were also willing to pay with cash for up to 25% of the shares (cash bid = 115 SEK per share). This amounted to a take over premium of about 20% (see Financial Times, September 2, 1997). Institutions (Swedish and foreign mutual funds, insurance companies, and pension funds) with approximately 40% of the equity in ICB immediately declared that they were positive towards the bid (Direkt, September 1, 1997). However, the board of ICB immediately rejected the takeover offer. The board was dominated by ICB's founders Clarence Dybeck and Björn Andrén, who had a shareholder agreement with other individual owners and thereby controlled 40% of the votes. Urging shareholders to reject the offer, Clarence Dybeck, the chairman of ICB, stated "We will expand on our own" and "Frontline is over-valued while ICB is under-valued".

Two weeks later, Frontline stepped up its pursuit of ICB by offering the cash bid for all shares in ICB. ICB then counter-attacked Frontline by announcing the $310 million acquisition of Greek-owned Astro Tankers. The merger would be paid through a private placement to the owners of Astro Tankers, the Greek shipping family Angelicoussis, who would then own 30% of the votes and equity of ICB. By joining forces with the Angelicoussis family, and including them in the shareholder agreement, the founders of ICB hoped to frustrate Frontline's offer. Frontline responded by instructing their lawyers to seek an injunction against the Astro Tankers deal, which it claimed was illegal. On January 8, 1998, Frontline withdrew its bid for ICB, but continued the legal fight to stop the Astro Tankers deal (Financial Times, January 8, 1998).

During 1998 the share price of ICB plunged, partly due to a decline in the shipping industry's growth prospect, and Frontline purchased more shares in ICB directly on the market (Finanstidningen, September 9, 1998). In March 1999, Frontline had increased its capital share to over 65%, but only controlled a third of the votes. In May, one of the founders, Björn Andrén, suddenly switched sides in the conflict and joined forces with Frontline. Together with Andrén, Frontline would now have the vote majority. However, the former partners of Andrén sued him in court for violating the shareholder agreement, resulting in the court sequestering Andrén's shares (Dagens Industri, July 16, 1999). This sparked new negotiations between Frontline and the Dybeck-Angelicoussis coalition. In late September, a deal was finally announced. Frontline would acquire the rest of the high voting shares for SEK 112.58 per share and offered to pay SEK 72 for each low voting share. At the same time ICB would sell four of its tankers to the Dybeck-Angelicoussis coalition for $189 million (Financial Times, September 23, 1999).

The outcome of the power struggle induced Swedish business press to criticize the original controllers of ICB. For example, Dagens Industri (September 24, 1999) pointed out that the cash price originally offered by Frontline for the low voting shares, SEK 115 per share, was higher than the share price for low voting shares had ever been, either before or after the bid. The newspaper called the entire affair a ”sad example of abuse of power” (see also Affärsvärlden, September 29, 1999, for a similar judgement).

This case illustrates how the non-controlling shareholders miss a significant takeover premium offered to them, due to the incumbent family CMSs' fierce resistance to the deal.

8. Conclusion

Using a panel of 309 publicly traded Swedish firms 1991-97, this paper investigates the agency costs of *controlling minority shareholders* (CMSs), who are very common around the world. The contributions of this paper are four: (i) We show that it is mainly families that are CMSs. They use dual-class shares and other control instruments to become entrenched and to get complete discretion over the firm's decisions, while owning only a small fraction of the firm's equity. (ii) After controlling for firm characteristics and fixed effects, an increase in the ownership of votes by a CMS is associated with a significant decrease in Tobin's q. The negative effect is up to two times as large for family CMSs than for other CMSs. (iii) One explanation for the agency costs of family CMSs is that they maintain the control of their firms too long from non-controlling shareholders perspective. The firms that they control undergo severe financial distress more often than firms with other controlling owners do. The firms controlled by families are also less likely to be taken over compared to firms with corporate owners or financial investors in control. (iv) We provide three concrete cases that show how CMSs engage in self-serving behavior.

The large negative relation we find between Tobin's *q* and family CMS ownership is in stark contrast to the recent study by Himmelberg et al. (1999), who did not find any relationship between insider ownership and firm value using fixed effects regression analysis on a sample of US firms. This difference in results is consistent with recent theories by Bebchuk (1999), Bebchuk et al. (1999), and LLSV (1999), who predict that agency costs are larger when the cost for controlling shareholders to expropriate non-controlling shareholders is low, and when the controlling owners are CMSs. Large owners in the US are much less often CMSs compared to large owners in Sweden. It can also be argued that the costs for large controlling owners to expropriate small shareholders are smaller in Sweden. For example, LLSV's (1998) evidence suggests that the legal protection of non-controlling shareholders' rights is weaker in Sweden than in the US. But not only is non-controlling shareholder protection weaker, Swedish law is also aimed at protecting the CMSs' rights by allowing the various control instruments we describe in this paper. In addition, civil court cases where non-controlling shareholders sue controlling owners are almost unheard of in Sweden (the Frontline and ICB case in this paper being a very rare example). These facts suggest that there is a weak legal barrier in Sweden for CMSs to engage in costly extraction of private benefits, and consequently the market incorporates expected expropriation when valuing firms with CMSs.

It is important to note that a pure re-distribution of utility from non-controlling shareholders to CMSs does not need to be inefficient in a Pareto sense, as long as it does not lead to a distortion in the allocation of resources. However, our evidence suggests that the agency problems between non-CMSs and CMSs increase the cost of capital for firms with

CMSs, which in turn could cause distortions in resource allocation. Regardless, our findings clearly show that ownership structures with CMSs are sub-optimal from the existing non-controlling shareholders' perspectives. If firms with CMSs face a higher cost of capital, a remaining interesting research topic, which we do not address in this paper but hope to address in future work, is to investigate how these structures have been able to survive for so long in so many countries around the world.

Appendix
The Ownership Data

Starting in the 1970s, the *Swedish Securities Register Center* (Värdepappers-centralen, VPC), keeps a register of all shareholders of Swedish firms publicly traded on the Stockholm Stock Exchange. Swedish law gives the public unconditional access to the *Public Shareholders' Register.* All owners with 500 shares or more are included in this register. Therefore, we have internationally unique ownership data in terms of details and accuracy. Since 1985, the ownership data is compiled from this register and published in the book series "Owners and Power in Sweden's Listed Companies" by *DN Ägarservice* (Sundin and Sundqvist (1985-2000)). As of January (sometimes early February) each year, the book series reports the 25 largest owners, ranked by ownership of votes. Thus, for each year t we use Sundin and Sundqvist ($t + 1$) as our source of ownership data, since this ownership data is a good approximation of the ownership of the firm at the end of year t.

An additional unique feature of Sundin and Sundqvist (1985-2000) is that they aggregate all shares held by family members -- whether or not they have the same last name -- and other closely related owners, i.e. co-founders, managers who took part in an MBO, and the like, into one single *sfär*, an ownership sphere. They also take into account indirect shareholdings through unlisted firms and foundations controlled by the family when aggregating these ownership coalitions. When calculating a family's ownership we also take into account its indirect ownership through other public firms they control. We consider a firm to be controlled by a family if it is the largest owner and owns ≥ 25% of the votes. In practice, owning ≥ 25% of a firm's votes is often enough to control a firm. We use this definition of control to identify the ultimate owner of a firm; see La Porta et al. (1998). This implies that a family owning ≥ 25% of votes in firm F_1, which in turn owns ρ% of the votes of firm F_2, is the ultimate owner of the ρ% of firm F_2.

We now consider a sample firm in 1995, Gambro AB. The table below shows that the blockholders in terms of capital and votes 2/13/1995 were (Sundin and Sundqvist (1995); p. 108): Incentive, Crafoord-sfären, i.e. the Crafoord family, and Sparbanks-sfären, i.e. a commercial bank and its subsidiaries. The other owners in the table are financial institutions, i.e. funds (mutual, pension) or insurance companies. In total, there were > 50,000 owners.

Anna-Greta Crafoord, who died in 1994, was the widow of Gambro's founder Holger Crafoord, who founded the firm in 1964 after having invented the fully automatic renal dialysis machine. The Crafoord foundation is fully controlled by the members of the Crafoord family. Margareta Nilsson (her maiden name was Margareta Crafoord), and Birgitta Crafoord are daughters of the founder, and the other members of the Crafoord family are grand children of the founder. Lennart and Margareta Nilsson were family board representatives. Incentive was a closed-end investment company publicly traded on the SSE. In 1995, the Wallenberg family controlled 42.9% of the firm's votes. (The second largest owner of Incentive, Fjärde AP-Fonden -- a Swedish government controlled pension fund -- owned 6.9% of Incentive's votes.) These votes were divided between miscellaneous Wallenberg foundations (7.3%) -- all fully controlled by the members of the Wallenberg family -- and Investor AB (35.6%). Investor AB is another closed-end investment company publicly traded on the SSE. In 1995, the Wallenberg family controlled 41.0% of the firm's votes. (The second largest owner of Investor, Heine Securities Corporation, owned 4.9% of Investor's votes.) These votes were divided between Wallenberg foundations (40.4%) Peter Wallenberg (0.3%), Axel Wallenberg (0.2%), and Marcus Wallenberg (0.2%).

The CEO of Gambro, Berthold Lindqvist, is considered an independent agent, since he is not a member of the Crafoord or Wallenberg families. Therefore, for Gambro we get *CEO blockholdings* = 0%, F*amily blockholdings* = 58.1% + 15.1% = 73.2%, *Corporate blockholdings* = 0%, *Financial institution blockholdings* = 5.6%, since a Swedish commercial bank's, Sparbankerna's, mutual funds control 5.5% of the firm's votes and Robur, a wholly-owned subsidiary of Sparbankerna and Sweden's largest fund management firm, controls 0.1% of the firm's votes. Hence, Gambro is classified as having a *family blockholder* with 73.2% of the votes as a controlling owner.

Gambro AB

Ägare *Owner*	Antal A-aktier *Number of A-shares*	Antal B-shares *Number of B-shares*	Procent andel akt. kap *Percent of capital*	röster *votes*
Incentive	9,024,180	40,741,336	42.2	58.1
Crafoord-sfären	2,922,484	4,883,616	6.6	15.1
varav *of which*				
Crafoordska stiftelsen	2,538,308	0	2.2	11.3
Nilsson Margareta fam	384,088	1,564,408	1.7	2.4
Crafoord Birgitta fam	88	1,100,000	0.9	0.5
Rosenblad Carl & Ebba	0	718,084	0.6	0.3
Crafoord Anna-Greta dödsbo	0	709,120	0.6	0.3
Börjesson Kristoffer	0	426,668	0.4	0.2
Crönge Annika	0	365,336	0.3	0.2
Sparbanks-sfären	0	12,693,296	10.8	5.6
varav *of which*				
Sparbankernas aktiefonder	0	12,499,736	10.6	5.5
Roburs Förs Premiefond AB	0	193,560	0.2	0.1
Fjärde AP-Fonden	0	8,654,876	7.3	3.8
Utländska ägare	0	7,988,418	6.8	3.5
varav *of which*				
Utländska förvaltare	0	7,988,418	6.8	3.5
SPP	0	4,012,684	3.4	1.8
AMF Pensionsförsäkr AB	0	3,447,600	2.9	1.5
Trygg-Hansa Försäkring	0	2,231,677	1.9	1.0
Skandia	0	1,957,056	1.7	0.9
Wasa Försäkring	0	1,918,720	1.6	0.9
SHB-sfären	0	1,495,826	1.3	0.7
varav *of which*				
SHB:s pensionsstiftelse	0	1,112,000	0.9	0.5
SHB:s aktiefonder	0	383,826	0.3	0.2
Föreningsbanken aktiefonder	0	1,191,276	1.0	0.5
Nordbankens aktiefonder	0	944,516	0.8	0.4
Länsförsäkrings-sfären	0	907,479	0.8	0.4
varav *of which*				
Länsförsäkring Liv	0	234,248	0.2	0.1
Dalarnas Försäkringsbolag	0	160,200	0.1	0.1
Länsförsäkring Jönköping	0	140,000	0.1	0.1
Länsförsäkringsbolagens AB	0	100,763	0.1	0.0
Länsförsäkring Sverige	0	72,267	0.1	0.0
Länsförsäkring Älvsborg	0	55,000	0.0	0.0
Länsförsäkring Halland	0	50,000	0.0	0.0
Länsförsäkring Skåne	0	50,000	0.0	0.0
Länsförsäkring Bergslagen	0	45,000	0.0	0.0
Summa 30 ägare *owners*	11,946,664	93,068,376	89.0	94.2
Övriga *others*	0	13,041,176	11.0	5.8
Totalt *total*	11,946,664	106,109,552	100.0	100.0
Röst per aktie *votes per share*	10	1		

Source: Sundin and Sundqvist (1995).

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Table 1. Definitions and summary statistics for Tobin's *q* and other firm characteristics.
The sample consists of 1,317 observations for 309 companies listed on the Stockholm Stock Exchange during the 1991 to 1997 period. The variables were obtained from SIX's FINLIS database, with market value of equity measured as of December 31 each of the years, and with balance sheet items defined as of the end of each fiscal year.

Dependent Variable	Definition	Mean	Median	Std. Dev.
Tobin's *q*	(Market value of equity + Book value of total debt) ÷ Book value of total assets	1.380	1.095	0.860

Firm Characteristics	Definition	Mean	Median	Std. Dev.	Correlation with Tobin's *Q*
Company size (1997 MSEK)	Book value of total assets	7,136	1,412	17,094	-0.037
Leverage	Book value of non-equity liabilities ÷ Book value of total assets	0.579	0.605	0.196	-0.322
Return on assets (ROA)	Earnings before interest, taxes, and depreciation ÷ Book value of total assets	0.099	0.098	0.111	0.092
Sales / total assets	Total sales ÷ Book value of total assets	1.058	1.044	0.772	0.164
CAPEX / total assets	Total capital expenditures (including R&D expenditures) ÷ Book value of total assets	0.125	0.085	0.139	0.045
PPE / total assets	Property, plant, and equipment ÷ Book value of total assets	0.492	0.465	0.260	-0.217

Table 2. Descriptive statistics for different controlling owner categories.

This table reports descriptive statistics for different controlling owner categories. In order for a firm-year observation to be classified as having a controlling owner of a specific identity, the owners of that category need to together control ≥ 25% of the voting rights. If there are two or more owners from different categories that each control ≥ 25% of the voting rights, the firm is classified according to the identity of the largest owner. If there is no controlling owner the firm is classified as having dispersed ownership. CEO ownership is defined as total block ownership (≥ 5% of votes) by the CEO and families and individuals closely affiliated with the CEO. Family blockholder ownership is defined as the total block ownership by families and individuals unaffiliated with the CEO. Corporate ownership is defined as total block ownership by widely held corporations, government agencies, and other public organizations (e.g. labor unions). Ownership by financial institutions is defined as total vote blockholdings by mutual funds, pension funds, and widely held insurance companies and banks. Panel A reports the number of firm-year observations per controlling owner category, and also the average (median) ownership of votes by the respective controlling owner group. Panel B reports the proportion of firm-year observations with at least one blockholder other than the controlling owner. Panel C presents the median company size, measured by the book value of total assets in 1997 SEK, and median firm age for each category of controlling owners.

	Controlling owner (≥ 25% of votes)				
	CEO	Family blockholder	Corporate owner	Financial institution	Dispersed ownership
Panel A:					
Number of firm-year observations (Proportion of total number of observations)	294 (22.3%)	481 (36.5%)	255 (19.4%)	120 (9.1%)	167 (12.7%)
Controlling owner's average (median) ownership of votes	63.7% (65.2%)	59.4% (60.5%)	57.0% (53.3%)	48.8% (42.1%)	N/A
Panel B:					
Proportion of firm-year observations with blockholders other than the controlling owner	57.1%	58.0%	60.8%	58.3%	N/A
Panel C:					
Median company size (MSEK)	507	1,760	3,410	1,585	1,970
Median firm age (Years)	28.5	37.0	32.0	24.0	22.0

Table 3. Definitions and summary statistics for control instruments

This table reports definitions of control instruments and their proportions for the full sample of 1,317 firm-year observations. The data was collected from the book series "Owners and Power in Sweden's Listed Companies" (Sundqvist and Sundin (1991-1999)), the corporations' own company charters or web pages, and the commercial telegram and news-article database *Affärsdata.*

Variable	Definition	*N*	Proportion
Dual-class shares	The firm has issued shares with different voting rights, i.e. there is a deviation from one-share-one-vote: A-shares = high voting shares (10 votes); B-shares = low voting shares (1 vote).	997	75.7%
Non-traded high voting shares (conditional on that the firm has dual-class shares)	The high voting shares are not publicly traded on the Stockholm Stock Exchange, and hence closely held.	703	70.5%
Right of preemption (conditional on that the firm has non-traded high voting shares)	The owners of non-traded high voting shares have the option to buy back non-traded high voting shares sold by a coalition member to a third party. Allowed only if high voting shares are non-traded.	246	35.1%
Shareholder agreement	Large shareholders have a legal agreement between them deciding on how to vote (a voting pact) or restrict a coalition member's sale of (listed) high voting shares to a third party.	290	22.2%
Voting restriction	No shareholder can vote for more than 20% of the *number* of shares represented at the general meeting.	119	9.0%

Table 4. Use of dual class shares and other control instruments.
This table reports the use of dual-class shares, deviation from one share-one vote, and frequency of control instruments for different controlling owner categories. In order for a firm-year observation to be classified as having a controlling owner of a specific identity, the owners of that category need to together control ≥ 25% of the voting rights. If there are two or more owners from different categories that each control ≥ 25% of the voting rights, the firm is classified according to the identity of the largest owner. If there is no controlling owner, the firm is classified as having dispersed ownership. CEO ownership is defined as total block ownership (≥ 5% of votes) by the CEO and families and individuals closely affiliated with the CEO. Family blockholder ownership is defined as the total block ownership by families and individuals unaffiliated with the CEO. Corporate ownership is defined as total block ownership by widely held corporations, government agencies, and other public organizations (e.g. labor unions). Ownership by financial institutions is defined as total vote blockholdings by mutual funds, pension funds, and widely held insurance companies and banks. Panel A reports the deviation from one-share-one vote in the different controlling owner categories by documenting the frequency of dual-class shares, and the average (median) capital-to-votes ratio for observations with dual-class shares. Panel B reports the frequency of various other control instruments. See Table 3 for definitions of the different instruments.

	Controlling owner (≥ 25% of votes)				
	CEO	Family blockholder	Corporate owner	Financial institution	Dispersed ownership
Panel A: Deviation from one share-one vote					
Dual-class shares	93.5%	87.7%	66.7%	55.0%	40.2%
Controlling shareholder's mean (median) votes-to-capital ratio, conditional on that the firm has dual-class shares	2.08 (1.76)	2.22 (1.62)	1.69 (1.45)	1.58 (1.29)	N/A
Panel B: Frequency of control instruments					
Non-traded high voting shares (conditional on that the firm has dual class shares)	92.7%	62.6%	68.2%	69.7%	34.4%
Right of preemption (conditional on that the firm has non-traded high voting shares)	36.5%	40.2%	25.9%	28.3%	18.2%
Shareholder agreement	35.7%	22.9%	20.8%	13.3%	3.6%
Voting restriction	11.9%	8.3%	9.4%	5.0%	8.4%
At least one of right of preemption, shareholder agreement, or voting restriction (calculated for all firm-year observations in a category)	59.5%	41.8%	31.4%	25.0%	13.1%

Table 5. Probit regression for choice of dual class shares

Panel A reports a probit regression for choice of dual class shares on dummy variables for type of controlling owner, log of firm size, and firm age. In order for a firm-year observation to be classified as having a controlling owner of a specific identity, the owners of that category need to together control ≥ 25% of the voting rights. If there are two or more owners from different categories that each control ≥ 25% of the voting rights, the firm is classified according to the identity of the largest owner. If there is no controlling owner, the firm is classified as having dispersed ownership. CEO ownership is defined as total block ownership (≥ 5% of votes) by the CEO and families and individuals closely affiliated with the CEO. Family blockholder ownership is defined as the total block ownership by families and individuals unaffiliated with the CEO. Corporate ownership is defined as total block ownership by widely held corporations, government agencies, and other public organizations (e.g. labor unions). Ownership by financial institutions is defined as total vote blockholdings by mutual funds, pension funds, and widely held insurance companies and banks. Year dummies for 1992-1997 are included, but not reported. *p*-values from double-sided *t*-tests are given in parentheses. Panel B reports *p*-values from Wald-tests of pair-wise differences of the coefficient estimates for the controlling owner dummy variables.

Panel A: Probit regression

Explanatory variables:	Dependent variable: Dual class shares
Dummy variable for CEO controlling owner	1.912 (0.000)
Dummy variable for Family blockholder controlling owner	1.390 (0.000)
Dummy variable for Corporate controlling owner	0.541 (0.000)
Dummy variable for Financial institution controlling owner	0.348 (0.028)
Log (Firm size)	0.063 (0.037)
Firm age	0.007 (0.000)
Constant	1.462 (0.023)
Likelihood Ratio Test Statistic (*p*-value)	329.6 (0.000)
Number of firm-year observations	1,317

Panel B: *p*-values from Wald tests of pair-wise differences of coefficient estimates for controlling owner dummy variables

Controlling owner	CEO	Family blockholder	Corporate owner	Financial institution
CEO	-	0.000	0.000	0.000
Family blockholder	0.000	-	0.000	0.000
Corporate owner	0.000	0.000	-	0.000
Financial institution	0.000	0.000	0.000	-

Table 6. Probit regressions for choice of control instruments

Panel A reports probit regressions for choice of different control instruments on dummy variables for type of controlling owner, log of firm size, and firm age. See Table 4 for definitions of the control instruments. In order for a firm-year observation to be classified as having a controlling owner of a specific identity, the owners of that category need to together control ≥ 25% of the voting rights. If there are two or more owners from different categories that each control ≥ 25% of the voting rights, the firm is classified according to the identity of the largest owner. If there is no controlling owner the firm is classified as having dispersed ownership. CEO ownership is defined as total block ownership (≥ 5% of votes) by the CEO and families and individuals closely affiliated with the CEO. Family blockholder ownership is defined as the total block ownership by families and individuals unaffiliated with the CEO. Corporate ownership is defined as total block ownership by widely held corporations, government agencies, and other public organizations (e.g. labor unions). Ownership by financial institutions is defined as total vote blockholdings by mutual funds, pension funds, and widely held insurance companies and banks. Year dummies for 1992-1997 are included, but not reported. *p*-values from double-sided *t*-tests are given in parentheses. Panel B reports *p*-values from Wald-tests of pair-wise differences of the coefficient estimates for the controlling owner dummy variables.

Panel A: Probit regressions

	Dependent variable:	
Explanatory variable:	Non-traded high voting shares	Indicator for choice of at least one of Right of preemption, Shareholder agreement or Voting restriction
Dummy variable for CEO controlling owner	1.389 (0.000)	1.228 (0.000)
Dummy variable for Family blockholder controlling owner	0.807 (0.000)	0.892 (0.000)
Dummy variable for Corporate controlling owner	1.172 (0.000)	0.657 (0.000)
Dummy variable for Financial institution controlling owner	0.923 (0.000)	0.451 (0.011)
Log (Firm size)	-0.513 (0.000)	-0.136 (0.000)
Firm age	0.003 (0.099)	0.690 (0.000)
Constant	-10.529 (0.000)	1.535 (0.005)
Likelihood Ratio Test Statistic (*p*-value)	392.5 (0.000)	161.18 (0.000)
Number of firm-year observations	997	1,317

Table 6, continued.

Panel B: *p*-values from Wald tests of pair-wise differences of coefficient estimates for controlling owner dummy variables

Non-traded high voting shares

Controlling owner	CEO	Family blockholder	Corporate owner	Financial institution
CEO	-	0.000	0.214	0.037
Family blockholder	0.000	-	0.006	0.550
Corporate owner	0.214	0.006	-	0.241
Financial institution	0.037	0.550	0.241	-

At least one of Right of preemption, Shareholder agreement or Voting restriction

Controlling owner	CEO	Family blockholder	Corporate owner	Financial institution
CEO	-	0.001	0.000	0.000
Family blockholder	0.001	-	0.022	0.013
Corporate owner	0.000	0.022	-	0.171
Financial institution	0.000	0.013	0.171	-

Table 7. Fixed Effects Regression analysis of the relation between Tobin's q and ownership by different controlling owner categories

Fixed firm effects regression analysis of Tobin's q on vote ownership by different categories of controlling owners and other firm characteristics. In order for a firm-year observation to be classified as having a controlling owner of a specific identity, the owners of that category need to together control ≥ 25% of the voting rights. If there are two or more owners from different categories that each control ≥ 25% of the voting rights, the firm is classified according to the identity of the largest owner. If there is no controlling owner, the firm is classified as having dispersed ownership. CEO ownership is defined as total block ownership (≥ 5% of votes) by the CEO and families and individuals closely affiliated with the CEO. Family blockholder ownership is defined as the total block ownership by families and individuals unaffiliated with the CEO. Corporate ownership is defined as total block ownership by widely held corporations, government agencies, and other public organizations (e.g. labor unions). Ownership by financial institutions is defined as total vote blockholdings by mutual funds, pension funds, and widely held insurance companies and banks. For each ownership category the variable capital ownership>50% is equal to equity ownership minus 0.5, conditional on the owner category owning more than 50% of the equity. See Table 1 for definitions of the control variables. Year dummies for 1992-1997 are included in the regressions, but not reported. *P*-values from double-sided *t*-tests are given in parentheses. The estimated standard errors are consistent in the presence of heteroskedasticity. The F-test tests whether the fixed firm effects are jointly significant. The Hausman-test is a Wald-test under the null hypothesis of zero correlation between the regressors and the firm specific effects.

	Dependent variable: Tobin's q	
Explanatory Variable:	(1)	(2)
CEO controlling owner (%votes)	-0.391 (0.018)	-0.420 (0.037)
Family blockholder controlling owner (%votes)	-0.418 (0.001)	-0.442 (0.001)
Corporate controlling owner (%votes)	-0.244 (0.010)	-0.276 (0.009)
Financial institution controlling owner (%votes)	-0.130 (0.148)	-0.202 (0.051)
CEO capital>50%		0.110 (0.843)
Family blockholder capital>50%		0.060 (0.836)
Corporate owner capital>50%		0.125 (0.690)
Financial institution capital>50%		0.459 (0.059)
Dummy variable for presence of non-controlling blockholder	0.037 (0.398)	0.036 (0.411)
Log (Company size)	-1.107 (0.470)	-1.104 (0.478)
$(\text{Log(Company size)})^2$	0.027 (0.434)	0.027 (0.441)
ROA	0.759 (0.224)	0.755 (0.229)
Leverage	.120 (0.686)	0.109 (0.714)

Table 7, continued.

Explanatory Variable:	Dependent variable: Tobin's *q* (1)	(2)
Sales / Total assets	0.159 (0.009)	0.159 (0.008)
PPE / Total assets	-0.311 (0.000)	-0.315 (0.000)
CAPEX / Total assets	-0.994 (0.933)	-0.017 (0.886)
Number of firm-year observations	1,317	1,317
Adjusted R^2	0.713	0.712
F-test; fixed effects vs. pooled OLS (*p*-value)	8.313 (0.000)	8.254 (0.000)
Hausman test; fixed vs. random effects (*p*-value)	82.54 (0.000)	86.69 (0.000)

Table 8. Likelihood of severe financial distress or takeover

The table reports the frequencies of severe financial distress and takeovers split by firms controlled by families (i.e., firms with CEOs or family blockholders in control) and firms not controlled by families (i.e., firms with corporations or financial institutions in control, and firms without controlling owners). Severe financial distress is measured by the occurrence of a debt restructuring or the firm filing for bankruptcy. We use the Gilson, John, and Lang (1990) definition of a debt restructuring, i.e. the firm has undertaken a restructuring of its debt if one of the following conditions is fulfilled: (i) the firm has declared a public default on its debt, (ii) the firm has been stopped from trading on the Stockholm Stock Exchange because of debt re-negotiations with its creditors, or (iii) creditors have been granted an equity interest in the firm as a part of a debt restructuring (common stock or securities convertible into common stock). Takeovers are defined as complete takeovers where the stocks are delisted from the Stockholm Stock Exchange. The frequencies of severe financial distress and takeovers are calculated as a percentage of firm-year observations in each category. The activities are registered during the year following the classification of controlling owner. The proportions can be viewed as estimates of the unconditional probability for a firm in each respective category to end up in severe financial distress or be taken over the year following the ownership classification.

	Family controlled firms	Firms without families in control	*p*-value from test of difference in proportions
Severe financial distress	4.1%	1.6%	0.012
Takeover	4.8%	8.5%	0.007
Number of firm-year observations	765	552	

Figures 1a-d. Histograms of the distribution of vote ownership within different controlling owner categories.

Figure 1a: CEO controlling owner.

Figure 1b: Family blockholder controlling owner.

Figure 1c: Corporate controlling owner.

Figure 1d: Financial institution controlling owner.