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working papers

Private benefits extraction in closely-held corporations:

The case for multiple large shareholders*

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Abstract

This paper investigates how multiple large shareholders share control and extract private benefits in closely-held corporations. We find that ownership structures with multiple large shareholders are common and very stable. Moreover, they seem to be, to a large extent, exogenously given. The structure of the controlling group of shareholders has a very significant impact on performance. Performance improves as the control group's ownership stake increases and, for a given ownership stake, as the number of members increases. The economic significance of the effects indicates that minority expropriation is a very important problem in closely-held firms.

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1 Introduction

Traditionally the corporate finance literature dealing with the problem of the concentration of ownership has compared a dispersed ownership structure where no shareholder has a significant stake with a concentrated ownership structure were a large shareholder effectively controls the firm [1]. The concentration of ownership is seen as a mixed blessing. The controlling shareholder can monitor managers, thus solving the agency problem between atomistic shareholders and managers. However, if there are private benefits from control, the minority shareholders will now be expropriated by the controlling shareholder who will divert funds towards the generation of private benefits, taking a disproportionate amount of the corporations ongoing earnings[2].

However, many companies have multiple large shareholders. In some cases we observe a single controlling shareholder, who owns more than 50% of the voting shares, accompanied by smaller but significant shareholders. In other cases there are multiple controlling shareholders, each of whom holds a fraction of shares smaller than that necessary for control, while at the same time, taken together, their fractions are enough to control the company. Although they can be observed among listed companies, these forms of ownership structure are specially prevalent in closely-held corporations[3].

Still, very little is know about how large shareholders interact and share

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[1] Among the seminal contributions in this literature we find Berle and Means (1932); Jensen and Meckling (1976); Grossman and Hart, (1980); Sheleifer and Vishny (1986) and Burkart et al. (1997).

[2] Barclay et al.(1993), Barclay and Holderness (1989) and Zingales (1994) measure private benefits indirectly by showing that large blocks of ownership that confer voting rights sell at a premium. Interestingly, Barclay et al. (1989) find that the premium is not only paid for blocks large enough to confer control but also for smaller blocks representing 25% of the equity of a firm. This suggests that benefits of control are divisible and can be shared by several large shareholders.

[3] Becht and Mayer (2002) find that more than 25% of listed European companies have more than one large shareholder. Gomes and Novaes (2001) report that 57.2% of closely-held corporations with sales above 10 million dollars in the US have more than one large shareholder.

power among themselves. Only very recently have a few theoretical papers started to study how controlling groups are formed when there are multiple large shareholders (Zwiebel, 1995; Bennedsen and Wolfenzon, 2000) and which are the effects that the composition of the controlling group (i.e. the number of members of the controlling group and the concentration of their respective stakes) may have both on how monitoring is conducted (Pagano and Röell, 1998) and on the level of private benefit extraction (Bennedsen and Wolfenzon, 2000; Gomes and Novaes, 2001).

Empirical evidence validating the theoretical predictions that emerge form these papers is very limited. Volpin (2002) finds that the market value of Italian listed firms is higher for companies with a voting syndicate than for companies with a single large shareholder. Faccio et al. (2001) compare the dividend policies of listed companies across different countries and find that European companies pay higher dividends when they have multiple large shareholders.. Lehman and Weigand (2000) show that the presence of a second large shareholder improves the profitability of German listed companies. These three papers only test whether the presence of multiple large shareholders can affect performance. Maury and Pajuste (2003) go one step further by testing whether the stake and type of the shareholders are important. Using a sample of Finish listed firms they find that firm value is positively affected by the presence of a third large shareholder when the other two have comparable stakes and incentives to collude. All these papers focus on listed firms. However, as Bennedsen and Wolfenzon (2000) argue the presence and power of multiple large shareholders is expected to be much more important in closely-held corporations, characterized by the absence of a liquid resale market for their shares and limited external control mechanisms. This is, to our knowledge, the first paper that studies how the structure of controlling groups formed by multiple large shareholders affects the performance of closely-held firms.

This paper uses detailed ownership data from Spain to examine how mul-

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tiple large shareholders share control and extract private benefits in closely-held corporations. The sample consists of a total number of 20313 firm-year observations from Spanish firms during the period 1993 to 2000.

The data give a comprehensive picture of ownership of Spanish firms, including a sub-sample of listed firms (1% of the firms). Moreover, the data set is representative of a country where ownership structure is concentrated in both in listed and non-listed firms and legal protection for minority shareholders is weak, which is the common case in Continental Europe (La Porta et al. 1999).

We find that ownership structures with multiple large shareholders represent 37.5% of the total and that they are very stable. For each observation we identify the controlling group as the group of shareholders that are more likely to form a coalition with enough votes to control the decisions of the firm. Each controlling group is characterized by its stake and by its number of members. We first study whether these ownership structures are exogenously given or consciously chosen taking into account firm characteristics. We are unable to explain the choice of the ownership structures and interpret this as evidence that, to a large extent, they are exogenously given.

The main result in the paper is that the structure of the controlling group has a very significant impact on performance. Performance improves as the control group's ownership stake increases and, for a given ownership stake, as the number of members increases. We find evidence of the existence of both, bargaining among controlling shareholders to share private benefits, and monitoring by non-controlling shareholders to reduce the private benefits of the controlling group. The economic significance of the effects indicates that minority expropriation is a much more important and widespread problem in closely-held firms than in listed firms.

The remainder of the paper is organized as follows. Section 2 reviews the theoretical literature about multiple large shareholders. The data and variables are presented in Section 3. Section 4 discusses the determinants of

the ownership structure. The results are presented in Section 5 and Section 6 deals with robustness checks. Section 7 concludes.

2 Overview of the theoretical literature on multiple large shareholders.

While the presence of a majority shareholder is common in many firms, the traditional literature on concentrated ownership can not explain satisfactorily the cases where we observe the co-existence of multiple large shareholders in a firm. Here we briefly review the predictions of the theoretical models that have considered ownership structures with several large shareholders.

Pagano and Roël (1998) consider a setting in which the manager in control is a large shareholder who is monitored by other large shareholders. In this case having two or more large shareholders monitoring the manager results in free-riding in monitoring but this free-riding enhances value because it reduces excessive monitoring by a very large shareholder. Therefore, according to Pagano and Roël (1998), an ownership structure with several large shareholders is a commitment device that allows shareholders to commit to an optimal monitoring intensity. The intuition behind this result is similar to that in Burkart, Gromb and Panunzi (1997), where the reduction in the size of the ownership stake of the unique large shareholder reduces his incentives to monitor, preserving managerial initiative. A trade-off between control and initiative emerges contingent on the outside ownership concentration.

Gomes and Novaes (2001), Bennedsen and Wolfenzon (2000) and Zwiebel (1995) consider a setting in which the firm is controlled by a group of large shareholders that together hold the majority of the voting rights.

In Gomes and Novaes (2001) the controlling group, which is formed by all the large shareholders, will only approve a project if all the members of the group benefit from the project. For a given ownership stake of the controlling group, increasing the number of shareholders has two effects. The "*bargaining*

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effect", which implies that private benefit taking and rent extraction will be less likely, since all the members of the control group have to agree on the preferred project. And the "*disagreement effect*", which implies that the approval of positive net present value projects also becomes more difficult because of the necessary agreement of all the members of the controlling group. Gomes and Novaes (2001) show the "*bargaining effect*" dominates when there are few shareholders and the "*disagreement effect*" dominates when the number of shareholders increases. Also, for a given number of shareholders in the controlling group increasing the total ownership stake makes both effects stronger.

In Bennedsen and Wolfenzon (2000) the controlling group will not include all the large shareholders but will be the result of a coalition formation game where the different large shareholders form coalitions that compete to seize the control of the firm. Many different coalitions can have sufficient voting power to control the firm. *Ex-ante* the optimal coalition is the one with the largest ownership stake because of an "*alignment effect*". The greater the ownership stake of the controlling coalition the more the coalition internalizes the cost of dilution. However, *ex-post*, the preferred coalition will be the one with the smallest ownership stake necessary to win control. This is the "*coalition formation effect*": given that private benefits come at the expense of all the non-controlling shareholders, the coalition with the lowest possible ownership stake will have the largest minority group whom to expropriate.

Zwiebel (1995) assumes that the control benefits will be divided among the different blockholders depending on the relative size of their respective blocks. Therefore, if one block is much larger than the rest the probability that the small blockholders can share in the private benefits is reduced. In equilibrium the investors allocate their money across firms trying to maximize their benefits of control. Zwiebel shows that there will exist a threshold size beyond which the largest blockholder will not be challenged by other investors. Therefore in equilibrium there are two types of firms: firms with

only one large blockholder, where the size of the block is beyond the threshold, and firms with several medium size blocks, where the size of the largest block is below the threshold.

Finally, Bloch and Hege (2001) present a model that considers both the monitoring and the private benefit sharing problems arising from ownership structures with multiple large shareholders. In their model there are two large shareholders that compete for control. The shareholders differ in their capacity to define the company's strategy and in their ability to monitor the manager. Only the shareholder who wins the control contest defines the strategy but both shareholders perform a monitoring role. In order to win control the two large shareholders compete for the votes of the minority by committing to reduce their private benefits. The model is very rich and different equilibria can be attained depending on the heterogeneity in the monitoring costs and capacity to define strategy of the two competing shareholders. The authors conclude that minority expropriation will be lower in companies where control is more contestable, i.e. companies where the difference in the stakes and the abilities of the large shareholders is smaller.

3 Data and methodology

3.1 Sample

To test the empirical predictions arising form the different theoretical models we use the 1996 through 2000 SABE databases. These databases, available from Bureau Van Dick, provide for each year the ownership structure, balance sheets and income statements for over 190000 Spanish firms that deposit their financial statements in the Registro Mercantil (95% of all Spanish companies). All Spanish firms are forced by law to deposit their annual financial statements in this public register. However, the law does not establish a penalty for not doing it unless the company goes bankrupt. This implies that not all firms, especially the smaller ones, comply with this obligation,

and that the quality of the information provided varies very much from firm to firm. The initial sample has 553595 firm-year observations. We restrict the sample using three criteria: we eliminate firms that do not report the ownership structure, those that do not present detailed financial statements, and those that are not corporations (cooperatives, partnerships, and proprietorship). Moreover, these three criteria have to be satisfied for at least three of the four available years. We are left with an incomplete panel with a total of 5288 different firms and 20313 firm-year observations.

This database has three main advantages. First, it contains a very complete description of the ownership structure of the firms. We have the names and ownership stakes of the shareholders that account for at least 50% of the shares for 90% of the observations. This allows us to classify the shareholders into three main types, family, corporation, and other (including financial institutions, state and cooperatives). Ownership by families is aggregated to include family members with the same surname. Families are assumed to act collectively. Second, the sample is representative of the total population of firms in the economy: only 1% of the firms are listed in the Madrid Stock Exchange, 13.5% are close corporations and the remaining 85.5% are open non-listed firms. The presence of a sub-sample of listed firms allows us to use market data alongside accounting profit measures of firm performance. Third, we believe that Spain offers a very interesting case study, given the dominance of concentrated ownership both in listed and non-listed firms and the evidence of weak legal protection for minority shareholders (La Porta et al. 1999).

3.2   Variables definition and descriptive statistics

Table 1 provides a description of the variables used in the study and their summary statistics are shown in Table 2.

[Insert Tables 1 and 2 about here]

3.2.1 Ownership structure variables

The first group of variables refers to the ownership structure. Following Bennedsen and Wolfenzon (2000) we assume that there will be a controlling group that will effectively control firm decisions. Not all the large shareholders will be part of the controlling group. Among all the possible coalitions that have a total stake large enough to control the firm, the one that will prevail will have the minimum possible stake necessary to win control (hereafter the minimum stake group). For each firm-year observation we find the minimum stake group and compute its total ownership stake and the number of members of the group assuming that a stake in excess of 50% is necessary to win control.

Most previous empirical studies of the impact of ownership concentration on firm performance have used the total ownership stake of the 5 largest shareholders as the relevant measure of ownership concentration, assuming that control is shared equally among this group of shareholders[4]. To facilitate the comparison of our results with the results of these previous studies and to test whether the large shareholders do form control coalitions, we also use a second definition of the controlling group as the group of the five largest shareholders (hereafter five largest group). Again, for this alternative definition of controlling group we compute the total ownership stake and the number of members (which may be lower than five).

Although the ownership stake of the controlling group is a continuous variable throughout the study we will use three dummy variables, *0-50%*, *50-60%* and *60-100%*, that take the value of one if the ownership stake of the control group is lower or equal to 50%, between 50 and 60% and higher than 60% respectively. Controlling groups with a 50 to 60% ownership stake are of particular interest because they have full control with relatively low cash-flow rights and, thus, are the most likely to extract private benefits. Our assumption that more than 50% is necessary to win control is not necessary

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[4]Among them, Demsetz and Villalonga (2003) and Demsetz and Lehn (1985).

valid for large firms, which could be controlled with a lower stake. Moreover, the ultimate shareholders will be different and will have lower cash flow rights if there are pyramidal ownership structures or dual-class shares. However, this works in our favor, since it makes it less likely that we find evidence of expropriation for the 50 to 60% group[5]. The interaction of the *50-60%* dummy with the dummies reflecting the number of members of the controlling group will allow us to test the *"bargaining"* and *"disagreement"* effects of Gomes and Novaes (2001).

We construct two more ownership variables. *Second* is a dummy variable that takes the value one if the second shareholder has an ownership stake larger than 10%. We will use this variable to test whether large shareholders that are not in the controlling coalition do effectively monitor the controlling group and reduce private benefit taking, as suggested by Pagano and Roël (1998). *Contestability* measures the relative difference in the stakes of the two largest owners. A high value of this variable indicates that the identity of the largest owner can easily change and less private benefit extraction should be expected.

[Insert Table 3 about here]

Table 3 describes the ownership structure of our sample. The results for the minimum stake group reflect that, as could be expected, ownership structure is very concentrated. In 88.8% the group of large shareholders has an ownership stake greater than 50%. Interestingly multiple large shareholders structures are common, 37.5% of the firms have multiple large shareholders (firms with two or more members in the controlling group and firms with only one controlling shareholder accompanied by a significant second shareholder).

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[5]If there are pyramidal structures or dual-class shares (which is unlikely for closely-held firms), expropriation will occur even for ownership stakes between 60 and 100%, because ultimate cash flow rights would be lower than that. If the firm can be controlled with a stake lower than 50% we would expect to find more expropriation for firms where the controlling group has an ownership stake lower than 50%.

We find two types of firms with multiple large shareholders. The first type, with 19.9% of the firms, has a controlling group with two or more members, none of whom by itself has a majority stake. The second type, with 17.6% of the firms, has a first shareholder who controls the firm, owning more than 50% of the shares, but is accompanied by (at least) a second large non-controlling shareholder. Pagano and Roëll (1998) and Bloch and Hege (2001) predict that the presence of these non-controlling shareholders adds value because they have the role of monitoring the controlling one. Moreover, this distribution of firms according to their ownership structure is inconsistent with Zwiebel's (1995) model. According to Zwiebel firms should fall into one of two categories: firms with a single controlling shareholder possibly accompanied by small non-controlling shareholders (53.9% in our sample) and firms with no single controlling shareholder and multiple large shareholders with similar stakes (19.9% in our sample). The existence of firms with a single controlling shareholder accompanied by other large non-controlling shareholders (17.6%) is not predicted by Zwiebel's (1995) equilibrium model, based solely on minority expropriation considerations.

[Insert Table 4 about here]

The ownership structure is very stable. Table 4 shows the percentage of firms that change category within three years. Even after three years only 16.18% of the firms experiment an important change in ownership. It is also worth noticing that firms where the controlling group has an ownership stake in the 50-60% range are most likely to change towards a more concentrated ownership structure. It is tempting to interpret this as evidence of the inefficiency of this type of ownership structures, however the result may simply be due to the small ownership range that we are considering.

3.2.2 Performance variables

We will use return on assets (ROA) as our measure of performance. Gilson and Gordon (2003) argue that the main source of private benefit extraction

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are usually the direct dealings of the controlling shareholders with the controlled firm, such as unfair transfer pricing, transfer of assets from the controlled corporation to the controlling shareholder, the use of the controlled firm's assets as collateral for a controlling shareholder debt, etc. Thus minority expropriation problems are likely to be reflected either in lower revenues, excessive production costs or in the inefficient employment of assets. These things will result in a reduction in margins or asset rotation and, in turn, lower margins and/or lower asset rotation will be reflected in a lower ROA. To control for industry and year fixed effects we will use the difference with respect to median ROA by 4-digit sector and year. For the sub-sample of listed firms we will also use Tobin's Q.

3.2.3 Control variables

In order to study the effects that ownership structure may have on performance, we need to control for firm characteristics that may have a simultaneous effect on both ownership structure and performance, since, otherwise, we may be identifying only a spurious correlation. The use of panel data allows us to control for firm characteristics that are stable in time but we still need to control for changing firm characteristics. In particular, we need to control for changing firm characteristics that can affect the likelihood of private benefit extraction, because the different theoretical models predict that firms where private benefit extraction is likely to be important should chose a differentiated ownership structure.

As the cost of monitoring increases, the non-controlling shareholders have less incentives to monitor and the likelihood of expropriation increases. As proxies for the cost of monitoring we use firm's *size*, (measured as the log of assets), *age* and assets' *intangibility* (the ratio of intangible assets over total assets). We expect larger firms and firms with more intangible assets to be more difficult to monitor. The relationship between age and the cost of monitoring is expected to be negative: younger firms should be more difficult

to monitor since there are no past records of performance.

If the rents available for distribution among shareholders are large, expropriation is more tempting and less likely to be detected. Therefore, we expect firms with large rents to be more likely to suffer minority expropriation problems. *Leverage*, and product market competition (measured by the *Herfindhal* index of sales) reduce the rents that can be expropriated, while *growth* opportunities (measured by the 4-digit industry growth in sales) increase them.

4   Determinants of the controlling group's structure

We first investigate whether the structure of the controlling group is consciously chosen by the initial owners. If this were the case we would expect that firms whose characteristics make them more likely to suffer expropriation problems to chose a larger controlling group with a larger joint stake (Gomes and Novaes, 2001; Bennedsen and Wolfenzon, 2000).

Notice that if the composition of the controlling group is chosen in awareness of its consequences for performance, then performance and the structure of the controlling group should be unrelated. However, there are reasons to think that the composition of the controlling group is (partially) pre-determined by exogenous factors. Bebchuk and Roe (1999) argue that potential changes in the ownership structure that could improve performance are likely to be blocked by the parties that have the incentives and power to impede them. In our case the incumbent controlling shareholders both have the power and the incentives to prevent those changes. To the extent that the ownership structure is given exogenously we would still expect it to have significant effects on performance.

We examine the relationship between control group composition and firm characteristics by estimating a multinomial logit model for the probability

of choosing a particular controlling group's structure. Our explanatory variables are the control variables, defined in the previous section, that make private benefit extraction more or less likely: *size, age, intangibility, leverage, Herfindhal* and *growth*. This last variable also proxies for the importance of disagreement costs, because deadlocks in decision making are more costly for firms with growth opportunities.

[Insert Table 5 about here]

The results indicate that, as we expected, larger firms, younger firms, unlisted firms whose shares are not liquid and firms operating in concentrated industries are less likely to have controlling groups with, potentially dangerous, small ownership stakes. Assets intangibility and sector's growth do not seem to be important determinants of the ownership structure. Finally, we find no significant differences between the probability of having a controlling group with a stake lower than 50% and between 50 and 60%[6].

Overall these results confirm our expectations. Firms with different characteristics adjust, to a certain extent, the composition for their controlling groups so as to prevent minority expropriation problems. However, the low R^2 indicates that we can explain only a very small fraction of the cross-section variability in the composition of the controlling group. As we expected the composition of the controlling group is, to a large extent, pre-determined by the initial conditions and by exogenous factors such as the wealth, risk-aversion and/or liquidity needs of the initial owners.

5   Performance effects of the controlling group's structure

We now examine the relation between the structure of the controlling group and performance. The results from the previous section indicate that there

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[6]Breaking up the 50 to 60% group into three groups depending on the number of members (1, 2 and 3 or more) produces similar results for the three groups.

are exogenous factors that largely determine the composition of the controlling group. This means that the effects of lower controlling stakes and smaller controlling groups are not totally compensated by firm characteristics that reduce the likelihood of expropriation. Therefore, we expect the composition of the controlling group to have a significant effect on the degree of minority expropriation that will be reflected in performance.

We estimate regressions of performance, measured by ROA on the ownership stake and number of members of the controlling group. We also include the variables that proxy for the likelihood of expropriation as control variables. We use two different specifications for the controlling group: the minimum stake group and the five largest shareholders group.

The panel structure of our data allows us to exploit the time variability of the sample to control for potential unobservable heterogeneity and spurious correlation problems that may be present in this regression model. We proceed in the following way. First we estimated a simple regression model with the variables in levels and estimate heterocedasticity robust White standard errors. If there are some unobservable firm characteristics that are correlated both with the ownership structure and the performance of the firm (e.g. management quality), the coefficient estimates in this regression are biased. To correct for this potential problem we reestimated our model with the variables in first differences, i.e. we estimated a fixed effects model. Hausman tests indicate whether the coefficients in the simple regression model were in fact biased. When this is the case we report fixed effects results, otherwise we report the more efficient simple regression results.

The results for the minimum stake group and five largest shareholders group are presented in Tables 6(a) and 6(b) respectively. They are quite similar and our comments will refer to the minimum stake group specification.

[Insert Tables 6(a) and 6(b) about here]

There are 3 different specifications in each table. The dependent variable is always the difference in ROA with respect to the 4-digit industry-year

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median. The ownership structure is captured by the dummies indicating the ownership stake and number of members of the controlling group[7].

The coefficient for the *0-50%* dummy is always negative and significant indicating that companies with low ownership concentration perform worst than companies with ownership concentration in the *60-100%* range. This may be due either to agency problems or to minority expropriation problems, since both result in private benefit extraction either by the manager or by the large shareholders.

The coefficient on the *0-50%* dummy is not significant in the first specification. However it becomes negative and both, statistically and economically, significant when we interact it with the *1M* dummy in the second specification.. If a firm in the *60-100%* range has an adjusted ROA of 5%, a similar firm with one controlling shareholder with an ownership stake in the 50 to 60% range will have an adjusted ROA of only 3,8% (5%-1.2%). The coefficient on the *0-50%*1M* dummy being larger in absolute value than the coefficient on the *0-50%* dummy clearly indicates that controlling shareholders use their power to expropriate minority shareholders. Interestingly, firms with a controlling group with an ownership stake in the 50 to 60% range but more than one member do not perform worst that the control group of firms in the 60 to 100% range. Therefore, the presence of multiple controlling shareholders reduces expropriation. This provides support for the existence of the *"bargaining"* effect predicted by Bennedsen and Wolfenzon (2000) and Gomes and Novaes (2001). We do not find evidence of the existence of the *"disagreement"* effects predicted by Gomes and Novaes (2001), since performance does not deteriorate for firms with 3 or more controlling shareholders. This may be due to the fact that there are very few firms with more than four controlling shareholders, and disagreement problems may appear only for larger groups.

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[7]An alternative specification with countinuous variables within each range produces similar results but the coefficients for the dummy variables are easier to interpret.

In the third specification we find that minority expropriation is especially severe when there are no significant shareholders other than the single controlling shareholder, i.e. when *0-50%*1M*(1-second)* takes the value one. This indicates that non-controlling shareholders play a monitoring role that can make private benefit extraction more costly for the controlling shareholder, as hypothesized by Pagano and Röel (1998). In this specification we also introduce the *contestability* variable suggested by Block and Hedge (2001), which has a positive and significant effect on performance. The similarity in the stakes of the first and second shareholders is likely to enhance both the bargaining power (if the second shareholder is in the controlling group) and the monitoring incentives (if he is not) of the second shareholder. This results in a reduction of private benefit extraction.

Finally, most of the control variables are significant indicating that, *ceteris paribus*, larger, younger and less indebted firms perform better than other firms in their industry. A high value of *intangibility* has a negative effect on performance, which may reflect a low collateral value of assets and difficulties for accessing the credit market. It is difficult to interpret the positive coefficient on the *Herfindahl* value, which may be due to large differences in ROA among firms in concentrated industries.

The extend of the minority expropriation problem that we have identified may depend on firm characteristics that can make private benefit extraction more likely such as the size of the firm, the difficulties for trading shares, the ownership status of the CEO and the identity of the largest shareholder. In order to capture the potential differences we break our sample according to the proposed characteristics and reestimate our model for each sub-sample. The results are reported in Tables 7(a), 7(b), 7(c) and 7(d).[8]

[Insert Table 7(a) about here]

Table 7(a) shows the results depending on the size of the firm. Both small

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[8]We only report the results for the controlling group defined as the minimum stake group. Results for the 5 largest shareholders group are very similar.

and medium size firms seem to have important minority expropriation problems, with a negative and significant coefficient on the *50-60%*1M* dummy. For medium firms the coefficient on the *0-50%* dummy is also negative, indicating that these firms may be controlled with a stake lower than 50% or that medium firms without controlling groups may suffer agency costs. However, we find no effects for the size of the controlling stake in the largest firms. This is surprising, since one would expect large firms, which are more difficult to monitor, to be more likely to suffer agency and minority expropriation problems. The reason for this may be that there are very few firms in the reference range (firms with a controlling group with a 60 to 100% stake). Nevertheless we still find the positive effects of having multiple controlling shareholders.

[Insert Table 7(b) about here]

In Table 7(b) we report the results depending on the trading restrictions that the shareholders face. In close corporations trading is restricted to incumbent shareholders and a shareholder can only sell his stake to an outsider with the agreement of the other shareholders. The reduced liquidity of the shares makes minority shareholders more vulnerable to expropriation. Open firms are an intermediate case where the shares can be freely traded, but since they are not listed in the stock exchange, transaction costs are likely to be large. For listed firms shares can be freely traded on the stock exchange. Moreover, the strict information requirements that listed firms have to comply with and the public scrutiny to which they are subject, make them less likely to suffer from minority expropriation problems. This is reflected in the estimation results. Minority expropriation is much more severe in close firms than in open firms, and we find no evidence of minority expropriation for listed firms.

[Insert Table 7(c) about here]

Table 7(c) reports the results depending on the CEO's ownership status.

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We would expect that, when there is one controlling shareholder with an intermediate ownership stake who is also the CEO, expropriation should be more severe, since he can effectively control the day-to-day decisions of the firm. We would also expect that if the CEO is not the largest shareholder, but has an ownership stake in the company, his bargaining power vis-a-vis other large shareholders may reduce minority expropriation. This is consistent with the results that indicate important minority expropriation problems for both, firms where the CEO owns no shares and for firms where the CEO is the largest owner, but not for firms where the CEO has a non-controlling ownership stake. It is also worth noticing that firms where the CEO owns no shares perform significantly worst than other firms (with a large, negative and significant intercept), which could indicate the lack of incentives that the CEO has to improve performance.

The results for the identity of the largest shareholder appear in Table 7(d). Gilson and Gordon (2003) suggest that controlling shareholders can be classified in two groups: those whose only connection to the firm is through its shareholdings and those who also have operational ties to the firm, say as a customer or supplier. The former have fewer direct means to extract private benefits than the later. Taking into account this distinction one would expect that firms controlled by other firms, who are likely to have commercial ties with it, are more likely to suffer minority expropriation than firms controlled by families. This is confirmed by the results in Table 7(d), where the coefficient on the *0-50%*1M*(1-second)* dummy is negative but not significant for families but is very large and significant for firms. The results for other types of shareholders are difficult to interpret. This is a diverse group with the state as the most frequent owner, followed by financial institutions. The large and negative intercept indicates that these firms perform much worst than other firms, which may be the reason why the state or the financial institution became or remain as large shareholders.

6   Robustness checks

6.1   Results for listed firms

The main focus of this paper is to investigate how multiple large shareholders share control and extract private benefits in closely-held corporations, where minority expropriation problems are most likely to be severe. ROA is the obvious measure of performance for these firms. However our sample contains a small sub-sample of listed firms. For these firms we have market data and we can use Tobin's Q as the measure of performance. As Demsetz and Villalonga (2003) point out there are no clear a priori reasons why we should prefer one measure of performance over the other. ROA is affected by accounting practices which may hide expropriation, but Tobin's Q will also be subject to accounting problems if investors use past performance information to infer the future. Moreover, Tobins' Q is forward-looking, reflecting expectations of private benefit extraction, while ROA, being backward-looking, should reflect effective minority expropriation. Nevertheless it is interesting to test the robustness of our results using both measures.

[Insert Table 8 about here]

Table 8 reports the estimation results for the sample of listed firms using Tobin's Q as the dependent variable. These results can be compared to the results reported in Table 7(b) where, using ROA as the dependent variable, we found no evidence of expropriation for listed firms. The results for the minimum stake group in Table 8 indicate that companies where the large shareholders own less than 50% perform better than other firms. This is probably due to the fact that firms with a diluted ownership structure, where expropriation is most unlikely to occur, are included in the 0 to 50% range. The second interesting result is that for a controlling stake between 50 and 60%, firms with three of more shareholders in the controlling group perform better, which confirms that multiple large shareholders may prevent minority expropriation.

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We do not find any results when we define the controlling group as the group of the five largest shareholders, which could indicate that, as predicted by Bennedsen and Wolfenzon (2000), large shareholders do in fact form coalitions in order to control the firm, and that this has to be taken into account when studying the effects of the ownership structure on firm performance.

6.2   Reverse causality

When we defined our control variables we explained that the use of panel data allows us to control for spurious correlation. A second potential econometric problem that may arise in the estimation of the relationship between ownership structure and performance is the reverse causality problem, i.e. rather than identifying the effect of ownership on performance we may be identifying the effect of performance on the ownership structure. Himmelberg et al. (1999) and Demsetz and Villalonga (2003) claim that insiders superior information about future performance creates an incentive for varying their stakes.

This problem could be solved by introducing instruments in our estimations, i.e. variables correlated with the current ownership structure but not with current performance. The obvious candidates are lagged values of the ownership variables, but they are not good instruments for our sample because ownership structures are very stable. However, it is very unlikely that reverse causality may be a mayor problem for our sample of closely-held firms. First, ownership structures are very stable, while the within firm variability of ROA is large. Second, the results in Section 3 indicate that ownership structures are, to a large extent, pre-determined by the initial conditions and by exogenous factors. Finally, the absence of a liquid market in which shares may be traded makes it very unlikely that large shareholders can trade on the basis of short or medium term expectations about earnings.

7 Conclusions

In this paper we evaluate empirically the role of concentrated ownership structures with multiple large shareholders for a sample of closely-held Spanish firms for the years 1996 through 2000. We test the empirical predictions of the different theoretical models that try to explain the existence, the functioning and the consequences of this type of ownership structures.

We capture the complexity of the ownership structure using two variables: the ownership stake and the number of members of the controlling group. The controlling group is defined alternatively as the minimum stake coalition of large shareholders that can effectively control the firm and as the group of the five largest shareholders. We find that ownership structures with multiple large shareholders are common (37.5% of the sample) and that ownership structures are very stable (with only 16.18% of the firms experiencing important changes in ownership over a three year period). We investigate whether firms whose characteristics make them more likely to suffer minority expropriation problems choose different ownership structures. Our results indicate that firms with higher monitoring costs and / or larger rents, as measured by firm size, age, listing status and by the industry's Herfindhal index of sales concentration are more likely to have a controlling group with a larger stake. However, these variables can only explain a small part of the cross sectional variability in ownership structures.

When we study the effects of ownership structure on performance we find evidence of private benefits extraction by controlling groups with intermediate ownership stakes, i.e. ownership stakes large enough to confer control of the decisions of the firm but too small to force the controlling shareholders to internalize the costs of expropriation. The presence of more than one controlling shareholder substantially decreases private benefit extraction. We interpret this as evidence of the bargaining for private benefits that occurs among the large shareholders that are forced to share control. The presence of large shareholders outside the controlling group also has a positive

effect on performance, which we attribute to the monitoring role that they can perform. These bargaining and monitoring effects are stronger when the stakes of the first and second shareholders are of similar size, i.e. when the ownership structure is more contestable.

Moreover, minority expropriation is more pronounced when (i) the liquidity of the shares is restricted, (ii) the CEO does not own shares or the CEO is the controlling shareholder and (iii) the largest shareholder is a firm that may have commercial ties with the controlled firm.

Overall our results indicate that, when studying the impact of ownership on performance, it is important to take into account the structure of the controlling coalitions that large shareholders will form, in terms of their ownership stake and number of members. Finally, the economic significance of the results indicates that minority expropriation in closely-held firms is an important and widespread problem that has not yet received enough attention from empirical researchers, who have mainly focused on studying the problems of listed firms.

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Table 1
Variables' definitions

Controlling group:	
Minimum stake group	Coalition formed by the shareholders whose joint ownership stake is the minimum stake larger than 50%.
5 Largest group	Group formed by the 5 largest shareholders.
Ownership stake of controlling group:	
0-50%	Dummy variable that is 1 if the ownership stake of the controlling group is lower or equal to 50%, 0 otherwise.
50-60%	Dummy variable that is 1 if the ownership stake of the controlling group is in the 50-60% range, 0 otherwise.
60-100%	Dummy variable that is 1 if the ownership stake of the controlling group is larger or equal to 60%, 0 otherwise.
Number of members of the controlling group:	
1M	Dummy variable that is 1 if the number of members of the controlling group is 1, 0 otherwise.
2M	Dummy variable that is 1 if the number of members of the controlling group is 2, 0 otherwise.
3M	Dummy variable that is 1 if the number of members of the controlling group is 3 or more, 0 otherwise.
Additional ownership variables:	
Second	Dummy variable that is 1 if the second largest shareholder has an ownership stake larger than 10%.
Contestability	Ratio of 1 minus the % joint ownership stake of the two largest shareholders divided by 100 times the difference in their stakes.
Performance variables:	
ROA	4 digit industry and year adjusted return on assets computed as the ratio of EBITDA over book value of assets.
Tobin's Q	Year-end market value of equity plus book value of debt over book value of total assets.
Control variables:	
Size	Logarithm of total assets.
Age	Years since foundation.
Intangibility	Intangible assets over total assets.
Listed	Dummy variable that is 1 if the firm is listed in the Madrid Stock Exchange, 0 otherwise.
Leverage	Total book value of liabilities over total assets.
Herfindahl	4 digit industry Herfindahl index of sales concetration.
Growth	4 digit industry % chage in sales year-on-year.

Table 2

Summary statistics

Variable	Observations	Mean	St.dev.	Min	Median	Max
Ownership stake:						
Minimum stake group%	20313	79.00	26.59	0.01	94	100
5 largest group	20313	86.86	25.98	0.01	100	100
Number of members:						
Minimum stake group%	18041	1.36	1.22	1	1	10
5 largest group	20313	1.83	1.17	1	1	5
Contestability	20313	0.05	0.14	0	0	0.99
ROA%	20313	9.50	13.25	-365.20	8.23	170.55
ROA% (adjusted)	20313	0.37	12.69	-372.65	-0.44	158.07
Tobin's Q	211	2.03	3.08	0.18	1.21	25.08
Assets (thousands of euros)	20313	23100	13700	1.77	7853	7830000
Size (log of assets)	20313	15.98	1.16	7.47	15.87	22.78
Age	20313	19.27	13.80	0	16	112
Intangibility%	20313	11.19	18.62	0	2.19	100
Listed	20313	0.003	0.05	0	0	1
Leverage%	20313	53.62	75.06	0	56.82	9791.475
Herfindahl	20313	0.17	0.25	0.001	0.06	1
Growth%	20313	12.38	80.68	-27.06	10.62	6629.82

Table 3

Prevalence of multiple large shareholders

Control group defined as minimum stake group			
	Ownership stake		
	0-50%	50-60%	60-100%
	11.2%	17.8%	71%
Number of members			
1 (no significant second)	8.6%	2.6%	51.3%
1 (significant second)		6.2%	11.2%
2	1.9%	5.5%	7.7%
3 or more	0.7%	3.5%	0.6%

Control group defined as 5 largest shareholders group			
	Ownership stake		
	0-50%	50-60%	60-100%
	11.2%	3.4%	85.4%
Number of members			
1	8.6%	2.3%	43.7%
2	1.9%	0.54%	22.4%
3 or more	0.7%	0.56%	19.3%

% of firms in each cathegory. We consider the second shareholder
as significant if his ownership stake is equal or larger than 10%.

Table 4

Stability of ownership structure

Control group defined as minimum stake group			
	Ownership stake year t		
	0-50%	50-60%	60-100%
	9%	24%	67%
Ownership stake year t+3			
0-50%	70%	5%	2%
50-60%	10%	55%	2%
60-100%	20%	40%	96%
Control group defined as 5 largest shareholders group			
	Ownership stake year t		
	0-50%	50-60%	60-100%
	9%	3%	88%
Ownership stake year t+3			
0-50%	69%	3%	3%
50-60%	3%	40%	1%
60-100%	28%	57%	96%

% of firms moving from one cathegory to the other.

Table 5

Determinants of ownership structure

		Model 1				Model 2	
		Minimum stake				5 Largest	
		Multinomial Logit				Multinomial Logit	
State:	0-50%	50-60%	60-100%	0-50%	50-60%	60-100%
Size	-0.008 (0.003)***	-0.025 (0.004)***	0.034 (0.004)***	-0.008 (0.003)***	-0.009 (0.002)***	0.0178 (0.003)***
Age	0.023 (0.003)***	0.010 (0.005)*	-0.033 (0.006)***	0.022 (0.003)***	0.001 (0.002)	-0.024 (0.004)***
Intangibility	-0.0002 (0.0004)	0.0006 (0.0005)	-0.0004 (0.0006)	-0.0002 (0.0004)	0.0002 (0.0002)	0.0002 (0.0005)
Listed	-0.001 (0.049)	0.427 (0.103)***	-0.426 (0.091)***	0.042 (0.058)	0.151 (0.100)	-0.194 (0.112)*
Leverage	-0.002 (0.004)	-0.002 (0.004)	0.004 (0.006)	-0.003 (0.005)	-0.004 (0.003)	0.007 (0.006)
Herfindahl	-0.003 (0.0007)***	-0.003 (0.0008)***	0.006 (0.0009)***	-0.003 (0.0007)***	-0.001 (0.0004)***	0.004 (0.0008)***
Growth	0.0004 (0.001)	-0.004 (0.007)	0.004 (0.006)	-0.0001 (0.0004)	-0.001 (0.003)	0.001 (0.002)
Frequency	0.11	0.18	0.71	0.11	0.04	0.85
Log-likelihood		-15991.2			-9955.4	
Pseudo-R^2		0.013			0.012	
χ^2		160.38***			134.33***	
Number of obs.		20313			20313	

Quasi-elasticities at the sample median, indicating the percentage point change in the probability of the state upon a 1% increase in the explanatory variable. Model 1 defines controlling group as the minimum stake group, while Model 2 defines the controlling group as the 5 largest shareholdersgroup. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. Standard errors in parentheses.

Table 6 (a)
Minimum stake controlling group and ROA

	Model 1		Model 2		Model 3	
Controlling group:	Minimum stake		Minimum stake		Minimum stake	
Regression type:	Fixed effects		Fixed effects		Fixed effects	
Dependent variable:	ROA		ROA		ROA	
0-50%	-0.94	(0.39)**	-0.82	(0.39)**	-1.08	(0.41)***
50-60%	-0.52	(0.32)				
50-60%*1M			-1.20	(0.42)***		
50-60%*1M*(1-Second)					-2.31	(0.66)***
50-60%*1M*Second					-0.85	(0.46)*
50-60%*2M			-0.28	(0.46)	-0.52	(0.48)
50-60%*3M			0.40	(0.52)	0.06	(0.55)
Contestability					1.80	(0.77)**
Size	0.91	(0.21)***	0.91	(0.21)***	0.92	(0.21)***
Age	-0.24	(0.04)***	-0.24	(0.04)***	-0.23	(0.04)***
Intangibility	-0.02	(0.008)***	-0.02	(0.008)***	-0.02	(0.008)***
Listed	-7.53	(5.14)	-7.82	(5.14)	-8.00	(5.14)
Leverage	-0.036	(0.001)***	-0.03	(0.001)***	-0.03	(0.001)***
Herfindahl	1.68	(0.29)***	1.68	(0.29)***	1.65	(0.29)***
Growth	0.007	(0.014)	0.007	(0.01)	0.008	(0.01)
Intercept	-7.53	(3.21)**	-7.63	(3.21)**	-7.87	(3.22)**
R^2	0.114		0.114		0.115	
F-value	215.18***		176.74***		150.40***	
Hausman	176.63***		186.02***		199.76***	
Number of obs.	20313		20313		20313	

Controlling group defined as the minimum stake group. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. Standard errors in parentheses.

Table 6 (b)

5 largest shareholders controlling group and ROA

	Model 1		Model 2		Model 3	
Controlling group:	5 Largest		5 Largest		5 Largest	
Regression type:	Fixed effects		Fixed effects		Fixed effects	
Dependent variable:	ROA		ROA		ROA	
0-50%	-0.78	(0.36)**	-0.71	(0.36)*	-0.90	(0.37)*
50-60%	-1.34	(0.51)**				
50-60%*1M			-2.16	(0.66)***	-2.15	(0.66)***
50-60%*1M*(1-Second)						
50-60%*1M*Second						
50-60%*2M			-0.43	(1.12)	-0.54	(1.12)
50-60%*3M			1.17	(1.11)	-0.06	(1.12)
Contestability					1.79	(0.73)***
Size	0.91	(0.21)***	0.91	(0.21)***	0.92	(0.21)***
Age	-0.23	(0.04)***	-0.23	(0.04)***	-0.22	(0.04)***
Intangibility	-0.02	(0.008)***	-0.02	(0.008)***	-0.02	(0.008)***
Listed	-7.66	(5.14)	-7.63	(5.14)	-7.92	(0.14)
Leverage	-0.03	(0.001)***	-0.03	(0.001)***	-0.03	(0.001)***
Herfindahl	1.66	(0.29)***	1.65	(0.29)***	1.65	(0.29)***
Growth	0.008	(0.014)	0.008	(0.01)	0.009	(0.01)
Intercept	-7.72	(3.21)**	-7.74	(3.21)**	-8.14	(3.21)**
R^2	0.114		0.114		0.115	
F-value	215.66***		176.84***		162.66***	
Hausman	186.91***		196.27***		196.92***	
Number of obs.	20313		20313		20313	

Controlling group defined as the 5 largest shareholders group. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. Standard errors in parentheses.

Table 7 (a)

Minimum stake controlling group and ROA by firm's size

	Model 1		Model 2		Model 3	
Sub-sample:	Small firms		Medium firms		Large firms	
Controlling group:	Minimum stake		Minimum stake		Minimum stake	
Regression type:	Fixed effects		Fixed effects		Fixed effects	
Dependent variable:	ROA		ROA		ROA	
0-50%	-1.11	(0.84)	-1.28	(0.57)**	-0.93	(1.17)
50-60%*1M*(1-Second)	-2.38	(1.21)**	-1.92	(0.95)**	-0.92	(2.42)
50-60%*1M*Second	-1.17	(0.84)	-0.89	(0.67)	1.65	(1.66)
50-60%*2M	-1.35	(0.94)	-0.62	(0.68)	3.53	(1.75)**
50-60%*3M	-0.91	(1.10)	-0.64	(0.75)	3.32	(1.97)*
Contestability	1.92	(1.60)	2.21	(1.02)**	0.45	(2.51)
Size	2.49	(0.51)***	0.14	(0.35)	-0.78	(0.61)
Age	-0.38	(0.11)***	-0.15	(0.07)**	-0.03	(0.08)
Intangibility	-0.03	(0.01)**	-0.02	(0.01)*	0.05	(0.03)*
Listed			-9.49	(6.73)	-5.05	(6.56)
Leverage	-0.03	(0.01)***	-0.05	(0.01)***	-0.11	(0.01)***
Herfindahl	1.84	(0.65)***	1.42	(0.40)***	2.83	(0.74)***
Growth	0.02	(0.03)	0.01	(0.02)	0.09	(0.04)**
Intercept	-28.55	(7.27)***	3.76	(5.30)	17.90	(10.36)*
R^2	0.015		0.017		0.097	
F-value	5.47***		9.44***		12.21***	
Hausman	79.56***		17.63***		27.83***	
Number of obs.	6448		10176		2204	

Small firms have less than 50 workers and total assets bellow 10 million euros. Large firms have more than 250 workers or assets above 100 million euros. Controlling group defined as the minimum stake group. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. Standard errors in parentheses.

Table 7 (b)

Minimum stake controlling group and ROA by firm's type

	Model 1		Model 2		Model 3	
Sub-sample:	Closed firms		Open firms		Listed firms	
Controlling group:	Minimum stake		Minimum stake		Minimum stake	
Regression type:	Fixed effects		Fixed effects		Fixed effects	
Dependent variable:	ROA		ROA		ROA	
0-50%	-2.13	(1.72)	-1.03	(0.42)**	-1.03	(2.71)
50-60%*1M*(1-Second)	-8.83	(2.36)***	-1.49	(0.69)**	-1.13	(3.18)
50-60%*1M*Second	0.62	(1.66)	-1.03	(0.48)**	-2.11	(6.18)
50-60%*2M	-0.85	(1.74)	-0.54	(0.50)	1.70	(2.90)
50-60%*3M	0.02	(2.55)	0.10	(0.56)	-2.40	(2.56)
Contestability	0.27	(2.88)	1.96	(0.80)**	-2.20	(2.41)
Size	2.15	(0.64)***	0.73	(0.23)***	0.16	(1.26)
Age	-0.69	(0.21)***	-0.20	(0.05)***	0.07	(0.36)
Intangibility	-0.08	(0.02)***	-0.01	(0.01)	-0.07	(0.09)
Leverage	-0.04	(0.01)***	-0.04	(0.00)***	-0.07	(0.05)
Herfindahl	2.52	(0.91)**	1.61	(0.31)***	1.74	(2.28)
Growth	0.03	(0.06)	0.01	(0.02)	-0.04	(0.06)
Intercept	-20.38	(8.89)**	-5.60	(3.47)	1.45	(22.34)
R^2	0.03		0.13		0.10	
F-value	5.08***		168.12***		0.99	
Hausman	48.54***		177.73***		22.79**	
Number of obs.	2754		17338		211	

Controlling group defined as the minimum stake group. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. Standard errors in parentheses.

Table 7 (c)

Minimum stake controlling group and ROA by CEO's ownership status

	Model 1		Model 2		Model 3	
Sub-sample:	CEO is largest shareholder		CEO owns some shares		CEO owns no shares	
Controlling group:	Minimum stake		Minimum stake		Minimum stake	
Regression type:	Fixed effects		OLS		Fixed effects	
Dependent variable:	ROA		ROA		ROA	
0-50%	-1.58	(1.24)	-1.70	(2.16)	-1.30	(0.57)**
50-60%*1M*(1-Second)	-2.34	(1.20)*	-0.77	(3.97)	-2.24	(0.91)**
50-60%*1M*Second	0.19	(1.29)	0.01	(1.16)	-1.62	(0.74)**
50-60%*2M	0.61	(1.74)	−2.34	(1.24)*	-0.60	(0.80)
50-60%*3M	3.34	(3.22)	−1.51	(1.30)	0.22	(0.87)
Contestability	2.72	(4.42)	-1.70	(3.11)	1.27	(1.18)
Size	0.33	(0.52)	1.03	(0.42)**	1.61	(0.28)***
Age	0.40	(0.17)***	0.002	(0.03)***	-0.21	(0.06)***
Intangibility	-0.02	(0.02)	0.003	(0.02)	-0.02	(0.01)
Listed			-12.97	(10.22)	-7.18	(6.24)
Leverage	-0.05	(0.01)***	-0.15	(0.01)***	-0.04	(0.00)***
Herfindahl	1.43	(0.54)**	2.69	(0.94)***	1.75	(0.40)***
Growth	0.10	(0.05)*	0.03	(0.05)	0.00	(0.02)
Intercept	-10.75	(8.37)	-7.05	(6.58)	-19.44	(4.35)***
R^2	0.02		0.17		0.15	
F-value / χ^2	5.02***		186.49		128.75***	
Hausman	30.12***		17.47		192.87***	
Number of obs.	4065		848		14027	

Controlling group defined as the minimum stake group. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. Standard errors in parentheses.

Table 7 (d)

Minimum stake controlling group and ROA by largest shareholder's type

	Model 1		Model 2		Model 3	
Sub-sample:	Family		Firm		Other	
Controlling group:	Minimum stake		Minimum stake		Minimum stake	
Regression type:	Fixed effects		Fixed effects		OLS	
Dependent variable:	ROA		ROA		ROA	
0-50%	-1.78	(0.01)**	-0.86	(0.21)	9.86	(4.73)*
50-60%*1M*(1-Second)	-1.00	(0.30)	-3.65	(0.00)***	1.03	(5.49)
50-60%*1M*Second	-0.37	(0.49)	-2.81	(0.00)***	4.07	(3.90)
50-60%*2M	-0.69	(0.22)	-0.64	(0.51)	2.27	(5.59)
50-60%*3M	-0.11	(0.87)	0.72	(0.51)	2.63	(6.47)
Contestability	2.41	(0.02)**	0.98	(0.49)	4.37	(10.50)
Size	0.99	(0.00)***	1.17	(0.00)***	2.01	(1.06)*
Age	-0.32	(0.00)***	-0.11	(0.13)	-0.15	(0.10)
Intangibility	0.00	(0.88)	-0.04	(0.00)***	-0.07	(0.06)
Listed	-5.44	(0.40)	-9.09	(0.33)	0.50	(12.94)
Leverage	-0.06	(0.00)***	-0.04	(0.00)***	-0.05	(0.03)*
Herfindahl	1.93	(0.00)***	1.58	(0.00)***	0.39	(3.03)
Growth	0.04	(0.03)**	0.00	(0.90)	-0.001	(0.003)
Intercept	-6.42	(0.14)	-13.73	(0.00)***	-36.12	(16.91)**
R^2	0.04		0.17		0.01	
F-value /χ^2	17.78***		115.97***		14.08	
Hausman	164.63***		104.96***		11.80	
Number of obs.	8584		10718		639	

Controlling group defined as the minimum stake group. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. Standard errors in parentheses.

Table 8

Multiple controlling shareholders and market values

	Model 1		Model 2	
	Minimum stake		5 Largest	
Controlling group:	Minimum stake		5 Largest	
Regression type:	Fixed effects		Fixed effects	
Dependent variable:	Tobin's Q		Tobin's Q	
0-50%	0.85	$(0.39)^{**}$	0.08	(0.26)
50-60%*1M			-0.47	(0.62)
50-60%*1M*(1-Second)	0.04	(0.46)		
50-60%*1M*Second	0.58	(0.91)		
50-60%*2M	0.22	(0.42)	0.09	(0.81)
50-60%*3M	0.83	$(0.37)^{**}$	-0.16	(0.30)
Contestability	0.05	(0.35)	0.08	(0.37)
Size	-2.02	$(0.18)^{***}$	-2.05	$(0.19)^{***}$
Age	0.10	$(0.05)^{*}$	0.08	(0.05)
Intangibility	-0.03	$(0.01)^{***}$	-0.03	$(0.01)^{**}$
Leverage	0.04	$(0.006)^{***}$	0.04	$(0.007)^{***}$
Herfindahl	-0.48	(0.33)	-0.49	(0.35)
Growth	0.01	(0.008)	0.01	(0.008)
Intercept	36.15	$(3.29)^{***}$	38.10	$(3.25)^{***}$
R^2	0.61		0.58	
F-value	14.24^{***}		13.78^{***}	
Hausman	136.37^{***}		146.80^{***}	
Number of obs.	211		211	

Model 1 defines controlling group as the minimum stake group, while
Model 2 defines the controlling group asthe 5 largest shareholders
group. *, **, *** denote significance at the 10%, 5% and 1% levels
respectively. Standard errors in parentheses.