

Large shareholders and firm value: an international analysis

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ABSTRACT

This study examines the relation between blockholdings and firm value and how this relation changes across investor protection regimes for 20883 observations in 37 countries from 2006 to 2009. This study finds the U shaped relation between firm value and the control rights of blockholdings. The U shaped relation provides evidence supported for the entrenchment effect when control rights of blockholdings are not high enough. This study also finds that firms in high investor protection countries are associated with higher value than in low investor protection countries for firms with very large blockholdings. Meanwhile for firms with lower blockholdings, firms in high investor protection countries are associated with lower value than in low investor protection countries.

Keywords: ownership concentration, blockholders, Tobin's Q, firm value

Classification Codes:G32, G34

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1. Introduction

Large shareholders have both the power and incentive to expropriate minority shareholders, but they also play a role in monitoring the entrenchment of management or in leading management (Shleifer and Vishny, 1997). Thus, the relationship between firm value and large shareholders is expected to be complex. La Porta, Lopez de Silanes, Shleifer, and Vishny (2002) present a theoretical model and empirical tests that support the hypothesis that greater ownership by the controlling shareholder¹ is associated with higher firm value. Their argument is based on the work of Burkart, Gromb, and Panunzi (1998), who state that expropriation is costly and thus that higher levels of ownership determine the alignment between a firm's wealth and that of its shareholders. Holderness and Sheehan (1988) also claim that the ownership interest of majority shareholders (owning at least half of the common stocks) "internalises most of the wealth effects of their management decisions" (p. 318); thus, their incentive to expropriate wealth should be lower. However, the expropriation of minority rights by large shareholders depends not only on incentives but also on the power to extract private benefits. Thus, we hypothesize that the relationship between a firm's value and its blockholdings should result from the interaction of both the incentives and power to extract private benefits of control. Although the theory is not able to unambiguously predict the relationship between firm value and large shareholders, this paper will provide empirical test using both linear and non-linear model.

Morck, Shleifer, and Vishny (1988) find that the convergence of interest between managerial ownership and firm value holds only when managerial ownership exceeds a certain threshold (greater than 25%). In the 5% to 25% control range, greater managerial ownership is associated with lower firm valuation. Morck et al. (1988) examine the relationship between

¹ The sample used by La Porta et al. (2002) includes only firms with controlling shareholders at a 10% cutoff level.

managerial ownership and Q in the US market, and our hypothesis is similar. At a low level of ownership, the incentive for expropriation is high because the alignment between the benefits of large shareholders and firm wealth is low and because the power of these large shareholders to expropriate is also low. Thus, the degree of expropriation of minority shareholders by a large shareholder should be low, as this practice is constrained by the power of a large shareholder. However, by increasing the level of ownership to a medium level, the power to expropriate should be higher, as large shareholders have more control rights to extract private benefits. At this level of ownership, the incentive to expropriate is still high because the alignment between a firm's wealth and blockholders' benefits remains low, and as a result, expropriation is likely to be greater.

However, when the ownership of shareholders increases, large shareholders are able to completely control their firms, avoid hostile control activities, and appoint and remove directors. In short, the shareholders lead these firms (Holderness and Sheehan, 1988), and as a result, their incentive to extract private benefits decreases (La Porta et al., 2002). Thus, because large shareholders have a strong alignment with firm value, their expropriation is lower when their ownership is greater². This issue is more complicated with large minority or medium-sized shareholders when the alignment of benefits is low.

Several international studies examine the expropriation of blockholdings and firm value (e.g., La Porta et al., 2002; Claessens, Djankov, Fan, and Lang, 2002; Lins, 2003)³. Studying firms across countries allows researchers to examine the effect of investor protection on the relationship between firm value and large shareholders. For example, La Porta et al. (2002), who study the 20 largest firms in 27 wealthy countries, find that ownership of the ultimate

² In this study, we use control rights rather than ownership, although control rights are expected to be positively related to ownership.

³ Moreover, although research on the relationship between ownership concentration and firm value is quite voluminous, most of these works focus on the US and several other individual countries. See Appendix 3 for a summary of selective papers examining the relationship between firm value and ownership.

control is positively associated with firm value. The authors also find that firms in countries with high investor protection are associated with higher value than firms in countries with low investor protection. Although these authors do not find direct evidence of a stronger association between higher value and blockholdings in countries with strong investor protection relative to countries with low investor protection, their findings support the hypothesis that strong investor protection can restrain the expropriation of minority shareholders by large shareholders. Lins (2003) studies this issue in 18 emerging countries and finds that firm value is lower when the voting rights of management exceed the cash flow rights. Furthermore, he reports that the control rights of non-management blockholders at a cutoff of 5% have a positive relationship with firm performance. Indeed, Lins (2003) finds evidence that the positive relationship between non-management blockholdings and firm value is higher in countries with low investor protection, and the results indicate that blockholders compensate for missing institutional mechanisms in such countries.

However, these studies support the convergence of interest between blockholdings⁴ and firm value, while entrenchment effects may occur when shareholders are large but not extremely large. Furthermore, the results for the relationship between investor protection, firm value, and blockholdings are mixed. Unfortunately, these papers have small samples that either focus on large firms (e.g., La Porta et al., 2002) or focus on a subset of countries (such as Claessens et al., 2002; Lins, 2003). This paper fills these gaps in the literature with a sample from 37 countries, including 20,883 firm-year observations for the period from 2006 to 2009. Ownership data are obtained from the ORBIS database, whereas Tobin's Q and other firm characteristics are collected from the Worldscope and Datastream databases. First, we investigate the relationship between blockholdings and firm performance using the control rights of the largest blockholder and the control rights of all blockholders at a 5% cutoff. Our

⁴ La Porta et al. (2002) and Claessens et al. (2002) use the cash flow rights of the ultimate owner or the largest shareholder, whereas Lins (2003) uses the control rights of blockholders.

tests for these relationships are both linear and non-linear⁵. In addition, we use dummy variables in different tests to conduct additional examinations. We then test the relationship between firm performance and different types of shareholders. Finally, we examine the interactions among firm value, blockholdings, and investor protection across countries. We use the anti-self-dealing index and anti-director rights index (ADRI) used by Djankov, La Porta, Lopez de Silanes, and Shleifer (2008) as proxies for investor protection. A country with an anti-self-dealing index of less than 0.5 or an ADRI of less than 4 is classified as a country with low investor protection, and all other countries are considered to have strong investor protection. In addition, we add both linear and non-linear interactions to investigate the effects of institutional mechanisms on the relationship between blockholdings and firm value.

First, we find a U-shaped relationship between firm value and the control rights of both the largest blockholder and the total blockholdings at a 5% cutoff level. For example, Tobin's Q is negatively related to the control rights of the largest shareholder, but when the control rights of the largest shareholder are beyond 45%⁶, increasing control rights are associated with higher firm value. We still find a U-shaped relationship when we test the relationship between ownership and firm performance for two sub-samples that consist of US firms and non-US firms and for firms in developed and emerging countries. The U-shaped relationship may be interpreted similarly when we use a dummy variable in which firms are divided into widely held firms, firms with at least one ultimate owner controlling between 25% and 50% of control rights, and firms with an ultimate shareholder controlling no less than 50% of voting rights. When we use this dummy variable, the second group of firms has the lowest firm value, and widely held firms and firms with an ultimate shareholder controlling at least

⁵ For the non-linear tests, we also add a quadratic term, a cubic term, and a quartic term; the cubic term and quartic term are largely insignificant, and the results are not highly consistent across equations and variables.

⁶ The respective focus point for total blockholdings is approximately 65%.

50% of the voting rights have higher performance. Although we find that blockholding is negatively associated with firm performance using a linear test, the U-shaped relationship is found to be more consistent and stronger than the negative relationship. Furthermore, we test the relationship between different types of blockholders and firm performance and discern consistent evidence of the U-shaped relationship.

Second, we find that firms in countries with high investor protection have higher value than those in countries with low investor protection. This result holds for a sample of all firms or for firms with blockholders only⁷. This result is consistent with the findings of La Porta et al. (2002). We find that the relationship between investor protection and firm value is not consistent with the level of control rights of blockholders. In fact, we find that when the control rights of blockholders decrease to the focus point of the U-shaped curve, the relationship between firm value and blockholdings is more negative in countries with high investor protection than in those with low investor protection. This finding supports the hypothesis of Lins (2003) that large shareholders act as a partial substitute for the lack of strong institutional mechanisms to protect investors. However, for the control rights of the blockholders that are in the second half of the U-shaped curve, the positive relationship between blockholdings and firms value is also higher in countries with high investor protection than in those with low protection. This finding supports the claim of La Porta et al. (2002) that better institutional mechanisms are able to reduce the private control benefits extracted by blockholders.

Our study offers contributions to the existing debate regarding the relationship between blockholdings and firm performance. The U-shaped relationship between firm value and blockholdings can reflect the interactions between the power and incentives of large

⁷ The sample used by La Porta et al. (2002) covers only firms that have an ultimate owner at the 10% cutoff level. To render comparative results, we also exclude widely held firms at 5% or 10% cutoff levels in our sample, and the results remain qualitatively unchanged.

shareholders with respect to firm performance. Other international studies (see, e.g., La Porta et al., 2002; Claessens et al., 2002; Lins, 2003) find that the greater ownership of the largest shareholder is related to higher valuation, whereas our result shows that this positive relationship holds only when the blockholdings exceed a certain threshold. For blockholdings under this threshold, when the alignment between large shareholders and firm value is low, higher blockholdings are associated with greater power to extract private benefits, and higher blockholdings are thus associated with lower firm value. The possession of substantial power with few incentives to abuse it is associated with a negative relationship between blockholdings and firm value for a range of low- to –medium-level control rights. Our findings are similar to the argument of Morck et al. (1988) that the “entrenchment hypothesis suggests that market valuation can be adversely affected for some range of high ownership stakes”; however, Morck et al. (1988) argue for the relationship among management, ownership, and firm value, and their study focuses on the US market. Moreover, our results more adequately explain the role of majority shareholders in enhancing firm value. Meanwhile, Holderness and Sheehan (1988) find that the value of firms with majority shareholders is not significantly different from that of other firms, whereas our results confirm this finding but show that firms with majority shareholders or firms with large blocks of control rights have higher value than firms with blockholdings with low control rights (e.g., from 25.01% to 50%) but slightly lower value than widely held firms at the 25% cutoff⁸.

Finally, although firms in countries with high investor protection are associated with higher value than those in countries with low protection, the association between investor protection

⁸ The 25% cutoff is the available threshold in our ownership data. The U-shaped relationship likely reflects the role of the majority owner in enhancing a firm’s value more accurately. Information on the control rights of the ultimate owner in our sample is missing for many firms; thus, we use dummy variables instead.

and greater alignment or entrenchment of blockholders is not straightforward⁹. To our knowledge, this study is the first attempt to examine the non-linear relationship among investor protection, blockholdings, and firm value. The literature continues to debate whether high levels of investor protection are able to restrain expropriation by large shareholders (La Porta et al., 2002) or whether blockholders can play a monitoring role by substituting for the weak institutional mechanisms in emerging countries (Lins, 2003), and our findings offer new evidence for the relationship among investor protection, blockholdings, and firm value. With linear regression, we also obtain results similar to those of La Porta et al. (2002): the control rights of the largest shareholder are not more significantly associated with higher valuation in countries with high investor protection than in those with low investor protection. Thus, by adding non-linear interaction terms, we are able to provide more explanations for the effect of institutional mechanisms on the relationship between blockholdings and firm value.

The structure of the remainder of this paper is organized as follows. Section 2 contains both the data sources and the construction of ownership concentration. The empirical results that examine the relationship between ownership concentration and firm performance are presented in Section 3. Section 4 contains the empirical results for the relationship among investor protection, blockholdings, and firm performance, and Section 5 presents the robustness test. Finally, Section 6 concludes the paper.

2. Data sources and methodology

2.1 Data sources

⁹ Using linear regressions of the relationship among investor protection, blockholdings, and firm value, we find weak evidence supporting the hypothesis of Lins (2003), who propose that blockholders are associated with lower value in countries with high investor protection than in those with low investor protection. However, the results are not highly robust and may be less consistent than the results from non-linear analysis.

Our study examines the relationship between firm performance and ownership concentration across 37 countries. Firm performance is measured by Tobin's Q as the ratio of a firm's market value to the replacement cost of its total assets. We collect these data from *Worldscope* and *Datastream*. We also obtain the control variables, including firm size, age, long-term debt, capital expenditures to tangible assets, price volatility, idiosyncratic risks, and other information, from this source. Data pertaining to investor protection are obtained from the work of Djankov et al. (2008). We select only non-financial firms (SIC codes 6000-6999 are excluded from the samples).

For the ownership data, we use information from the ORBIS database. The sample includes 20,883 firm-year observations. First, we collect the information regarding the ultimate owners of all firms that are available for the year 2009. We assume that the ultimate owners are stable for the period from 2006 to 2009. A firm is defined as either widely held or controlled by the ultimate owner. The ultimate owner is an entity that controls a firm directly or indirectly at the thresholds of 25% or 50% for the largest shareholder. The approach to identify the ultimate owner in the ORBIS database is similar to the method used by La Porta, Lopez de Silanes, and Shleifer (1999) or the approach employed in other papers, such as those of Claessens, Djankov, and Lang (2000) or Faccio and Lang (2002).

Second, we are able to obtain information regarding the control rights and types of shareholders for a large proportion of firms from this database. In several cases, the holding is not identified but is described by initials such as MO (majority owned) or NG (negligence). We replace these initials with the percentage of holdings¹⁰. Although ORBIS cannot provide information on all of the shareholders in every firm, data are likely available for most large

¹⁰ When the stake of a shareholder is described by the following initials, we replace it with the appropriate number as follows: MO, majority owned, is replaced by "75%"; JO, jointly owned, is replaced by "50%"; NG, negligence, is replaced by "0%"; CQPI,----, is replaced by "50.01%"; BR, branch, is replaced by "5.01%"; and if the holding of a shareholder is wholly owned (WO), then we delete the firm from the sample, as this firm should not be considered a publicly traded company.

shareholders. Most country-level regulators require firms to provide information regarding their large shareholders, typically at a 5% cutoff, and ORBIS may collect information on all blockholdings through its extensive information sources. According to ORBIS, information is provided by more than 40 different information providers, all of which are experts in their regions or disciplines, such as company financial reports, market research, country reports, and many other reports and data. Although information on owners from ORBIS is extensive, with more than 34 million active and archived links, the database is not able to provide information on all shareholders for a total of 100% holdings for any firm. Rather, the database provides detailed information on any available shareholders that with direct or total control rights in each firm. This database divides firms into four main types using a BVD indicator¹¹: A, B, C, and D. The *BVD Independence Indicator* is given to each firm to

¹¹ According to the ORBIS guidebook, a firm with indicator A is any company with known recorded shareholders, such that none of them have more than 25% direct or total ownership. Indicator B is attached to firms that have one or more shareholders with a direct or total ownership percentage above 25% but with no shareholders that have more than 50% ownership. The C and D indicators are given to a company when a source indicates that the company has a total ownership and direct ownership greater than 50%, respectively. The U indicator is given to any firm that has not identified its independence with respect to its shareholders. Furthermore, the degree of reliability of the indicator is also attached to each firm. For example, the A indicator is divided into three subcategories: A-, A, and A+. In the handbook of the ORBIS database, the definitions of the degree of reliability of the indicators are as follows.

In the A category, firms are further qualified as A+, A, or A-:

- +: Companies with six or more identified shareholders (of any type) whose ownership percentage is known
- : As above, but includes companies with four or five identified shareholders
- : As above, but includes companies with one to three identified shareholders

The logic behind these qualifiers is that the probability of having missed an ownership percentage over 25% is the lowest when the greatest number of shareholders is known, and hence, the company's degree of independence is more certain.

The qualification **A+** is also attributed to **A** companies in which the summation of direct ownership links (*all categories of shareholders are included*), which are all under 25%, is at least 75.01%. Indeed, this category indicates that the company surely does not qualify under Independence Indicator **B** (because it cannot have an unknown shareholder with 25.01% or higher ownership). BvD gives an **A-** notation to a company that is mentioned by a source (*Annual Report, Private Communication or Information Provider*) as being the Ultimate Owner of another company, even when its shareholders are not mentioned.

The further qualification as **B+**, **B** and **B-** is assigned according to the same criteria, which are related to the number of recorded shareholders as for indicator A.

Moreover, the qualification **B+** is attributed to **B** companies in which the summation of direct ownership percentages (*all categories of shareholders are included*) is at least 50.01%. Indeed, this category indicates that the company

characterize the degree of independence of a company with respect to its shareholders. In many firms, information on only a few large shareholders is provided. Thus, if we calculate the total blockholdings, the variable may be underestimated due to the absence of other blockholders. Another bias is that the cross holdings among shareholders may cause overestimation of the total blockholdings. To reduce this bias, we exclude firms with Indicators of A-, A, B- and B because information on some blockholders may be not provided in these firms. Furthermore, we select only firms whose total shareholdings of any firm exceed 50% and are less than 97%. From this sub-sample, we exclude three types of shareholders: “public,” “unnamed private shareholders, aggregated,” and “other unnamed shareholders, aggregated,” which are considered unable to exert control over a company. We then add the holdings of all blockholders at the threshold of 5% to calculate the variable denoting blockholdings.

2.2 Variables

2.2.1 Ownership variables

Empirical research uses different measures to investigate the relationship between ownership structure and firm performance. The primary study of Demsetz and Lehn (1985) uses alternative measures, including the percentages of the five largest and 20 largest shareholders and the Herfindahl as a proxy for ownership concentration in the US market. In addition, most papers use managerial or insider ownership as measures (e.g., Morck et al. 1988; McConnell and Servaes, 1990; Hermalin and Weisbach, 1988; Loderer and Martin, 1997; Cho, 1998) to capture the agency conflict between managements and other shareholders and between insiders and outsiders. Other papers use measures based on the presence or

surely does not qualify under Independent Indicator C (because it cannot have an unknown shareholder with at least 50.01%).

The qualification C+ is attributed to C companies in which the summation of direct ownership percentage (all categories of shareholders are included) is at least 50.01%. Indeed, this category signifies that the company surely does not qualify under Independent Indicator D (because it cannot have an unknown direct shareholder with at least 50.01%).

dispersion of blockholders (Konijn, Kräussl, and Lucas, 2011), the largest shareholder (Claessens et al., 2002), and the controlling shareholder (La Porta et al., 2002; Lins, 2003; Wiwattanakantang, 2001). Demsetz and Villalonga (2001) argue that the holdings of the five largest shareholders are considered a measure to control professional management, whereas management's holding represents the ability of professional management to ignore shareholders.

In this study, we use the control rights of the largest shareholder and the total blockholdings, in which a blockholder is defined as a shareholder with at least 5% control rights. Similar to the measure of the percentage of the five largest shareholders used by Demsetz and Lehn (1985) and Demsetz and Villalonga (2001), our variables measure both the ability to control the professional management in a firm and the agency conflict between large shareholders and minority shareholders. However, because blockholders are not homogeneous in terms of their incentives and power, we divide large shareholders into different groups: families and individuals, financial companies (banks, insurance companies, and financial companies), funds (pension fund/mutual fund/trusts), ventures (private equity firms and venture capital), corporations, states, and other entity types. We then examine the relationship between firm value and each type of shareholder¹².

In addition to the continuous variables, we also use dummy variables to further test the relationship between blockholders and Tobin's Q. Firms are classified into widely held firms and firms with blockholders, which are defined at the thresholds of 5%, 25%, and 50%. Specifically, we use dummy variables for three groups of firms: widely held firms, firms with blockholders with more than 25% control rights, and firms with blockholders with more than

¹² The types of blockholdings for the continuous variables are based on the first level of shareholders. Although pyramidal and cross-holding ownership is quite popular throughout the world (e.g., La Porta et al., 1999; Claessens et al., 2000; Faccio et al., 2002; Carney and Child, In press), our variables are not able to fully capture the effects of different types of shareholders on firm value. We also test the types of ultimate owners, but the control rights of the ultimate owners in many firms are missing, and the cutoffs of the ultimate owners are only 25% and 50%. Thus, we use dummy variables instead.

50% control rights. Similar to the continuous variables, we also test the relationship between firms that have a specified type of blockholder (families/financial institutions/corporations/states) and firm performance. The types of blockholders are based on the type of the ultimate owner rather than the type of the largest immediate blockholder, and the type of ultimate owner is traced from the largest blockholder. All variable definitions are explained in Appendix A.

2.2.3 Summary statistics of the variables

Table 1 provides summary statistics of Tobin's Q and the ownership variables, including the control rights of the largest shareholder, total blockholdings, and the dummy variables for firms with blockholdings and widely held firms at the 5%, 25% and 50% cutoff levels by countries for 20,883 firm-year observations. The average of the total blockholdings and the holdings of the largest shareholder of the entire sample are 57% and 32%, respectively. On average, firms in countries with low levels of investor protection have higher total blockholdings (62%) than in other countries, and the holdings of the largest shareholder (38%) are also higher on average than firms in countries with high investor protection (49% and 24%, respectively). This result is consistent with most current research findings that firms in countries with high investor protection are more diffused than their counterparts. Similar to the continuous ownership variables, the dummy variables show that firms in countries with low investor protection are generally more diffused than those in countries with high investor protection. These results are consistent with the findings of other current studies (e.g., La Porta et al., 1999; Claessens et al., 2000; Faccio and Lang, 2002; Carney and Child, In press).

The average Tobin's Q by country ranges from 1.13 to 1.90, and the average for the entire sample is 1.59. The mean value of Q for countries with low investor protection is 1.39, whereas the corresponding number for countries with high investor protection is 1.71. Thus,

firms in countries with high investor protection are associated with more diffused ownership and higher valuation in the preliminary analysis.

3. Model Specification and Empirical Results

3.1 Firm performance and blockholding

3.1.1 Continuous variables

We firstly investigate the relationship between firm performance and ownership concentration using the control rights of the largest blockholder and the total blockholdings at a 5% cutoff level for the period from 2006 to 2009. These two variables reflect the interaction between the ability of blockholders to control professional managers and the ability of blockholders to extract private benefits from small shareholders. Although the blockholders can reduce the entrenchment of management by monitoring the activities of management, the blockholders can also extract a corporation's wealth at the expense of minority shareholders.

We use both OLS regression and 2SLS regression to examine the relationship between ownership concentration and firm performance. The model for the OLS regression is as follows:

$$Q_{i,t} = \beta Ownership_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (1)$$

$$Q_{i,t} = \beta Ownership_{i,t} + \gamma Ownership_{i,t}^2 + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t}$$

(2)

where Q_t is the Tobin's Q of a firm in year t; $Ownership_{t-1}$ represents the ownership concentration variables, which consist of either the total blockholdings (TotBlock) or the holdings of the largest shareholder (LarBlock); $x_{i,t}$ denotes firm characteristics, such as firm size, firm age, sales growth, long-term debt, capital expenditure, and the annualized monthly

volatility of the stock price; + λ_t : year fixed effects; $\delta_{k(i)}$: industry fixed effects; and $c_{j(i)}$: country fixed effects.

Table 2 provides the results from the OLS regression. We find that blockholdings are significantly related to Tobin's Q for both variables.

For the linear relationship between Q and firm value for the entire sample, OLS regression reveals that the relationship between the largest blockholders or the total blockholdings and firm performance is negative (-0.071 or -0.275, respectively). We test the non-linear relationship between firm value and ownership concentration by adding the squared value of the control rights of the largest blockholder or all blockholders, and we find a U-shaped relationship. These results are consistent for both measures, including the total blockholdings and the holdings of the largest shareholder. The curve slopes downward until the control rights of the largest blockholder reach approximately 45%, and the curve then slopes upward. Moreover, the shape of the curve is similar when we use the total blockholdings as a measure of ownership concentration, although the turning point is higher, at approximately 65%.

Using the AIC and BIC (a report is available upon request) to choose between the linear model and the non-linear model, we find that the non-linear model is preferred for both total blockholdings and the holdings of the largest shareholder variables, as the AIC and BIC of this model are smaller than those in the linear model. In addition, we find that the non-linear model is more consistent among the sub-samples and variables. The non-linear relationship is expected to be more appropriate because greater ownership implies greater power for a large shareholder to extract private benefits, but the shareholder should have no more incentive to obtain greater control rights if it has obtained 50% of the voting rights. Indeed, greater ownership (or higher levels of control rights) implies a stronger alignment of benefits between the large shareholders and firm wealth. Our findings are comparable to those of

Morck et al. (1988), who presents arguments regarding the relationship among management, ownership, and firm performance. Morck et al. (1988) argue as follows:

“Even if we believe that, on average, more ownership allows deeper entrenchment, diminishing returns might set in well before 50% ownership is reached. Further increases in the stake would not then entail a penalty in terms of market valuation” (p. 294).

Other papers (La Porta et al., 2002; Claessens et al., 2002; Lins, 2003) also find that the holdings of the largest shareholder are positively related to firm performance in the world in general and in emerging countries in particular. Indeed, the findings of a U-shaped relationship between blockholdings and firm value in our paper are partly similar to these studies given the proposition that greater control rights for blockholders implies a stronger alignment benefits between large shareholders and firms or minority shareholders¹³.

Furthermore, the well-known inverted U-shaped relationship between insider ownership and performance (McConnell and Servaes, 1990) or between family ownership and firm performance (Anderson and Reeb, 2003) cannot explain the incentive of shareholders to have fractional holdings that exceed 50%.

Although we do not exclude the holdings of managers and CEOs from these two measures, the results are not biased by these holdings. Demsetz and Villalonga (2001) provide evidence from their sample indicating that few professional managers or CEOs hold sufficient shares or rights to be considered blockholders. In our sample, the percentage of firms whose largest shareholders are managers or CEOs is small (i.e., less than 1%). We also perform a regression with a dummy variable (a report is available upon request) that equals 1 if the

¹³ As the samples used by Lins (2003) and La Porta et al. (2002) exclude widely held firms at the 5% and 10% levels of ownership, respectively, we also run a linear regression by excluding widely held firms from our sample. If we exclude widely held firms with the minimum cutoff of 15%, then we find a positive relationship between the control rights of the largest shareholder and firm value.

largest shareholder is a CEO or manager, and we find that the relationship is negative but not significant.

3.1.2 Dummy variables

We use other variables to examine the effect of ownership concentration on firm performance by investigating how firm performance varies with the level of control by the largest shareholder at the thresholds of 5%, 25%, and 50%. The following alternative dummy variables represent ownership concentration:

$$Q_{i,t} = \beta Block525_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (3)$$

$$Q_{i,t} = \beta Block2550_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (4)$$

$$Q_{i,t} = \beta Block50_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (5)$$

$$Q_{i,t} = \beta Block525_{i,t} + \alpha Block2550_{i,t} + \gamma Block50_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (6)$$

where $+ Block525_{i,t}$ is a dummy variable that equals 1 if a firm has a blockholder with control rights of at least 5% to 25% and equals 0 otherwise; $+ Block2550_{i,t}$ is a dummy variable that equals 1 if a firm has a blockholder with control rights of more than 25% but no greater than 50% and equals 0 otherwise; $+ Block50_{i,t}$ is a dummy variable that equals 1 if a firm has a blockholder with control rights of more than 50% and equals 0 otherwise; $+ x_{i,t}$ denotes firm characteristics, such as firm size, firm age, sales growth, long-term debt, capital expenditure, and the annualized monthly volatility of the stock price; $+ \lambda_t$: year fixed effects; $\delta_{k(i)}$: industry fixed effects; and $c_{j(i)}$: country fixed effects.

Table 3 shows that the coefficient of $d525$ is positive. Thus, firms that have blockholders with levels of ownership between 5% and 25% have higher Tobin's Q than all other firms. Moreover, the coefficients of $Block2550$ (for a firm with a blockholder with control rights

from more than 25% to 50%) are significantly negative, and the coefficient of *Block50* (for a firm with a blockholder with control rights greater than 50%) is negative but not significant. In column (4), when we add all three dummy variables together, the firms with blockholders at any cutoffs are negative and significant. These results are consistent with the continuous variables in that blockholdings are found to be negatively related to Tobin's Q. The firms with blockholders that hold 25.01% to 50% have the lowest value, and this result is consistent with the U-shaped relationship between blockholdings and firm performance. In addition, we perform further tests (the results will be reported upon request) by comparing the firm performance of firms with no blockholders that have control rights greater than 25% (the first group), firms with blockholders that have control rights from 25.01% to 50% (the second group), and firms with majority shareholders who have more than 50% control rights (the third group). We find that the second group has the lowest value in terms of firm performance. The values of Q of both the first and third groups are significantly higher than the corresponding value of the second group.

Our finding that the value of firms with majority (exceeding 50% control rights) shareholders is not significantly different from other firms is consistent with the results presented by Holderness and Sheehan (1988), who find that firm performance is not significantly different between firms with majority (greater than 50% control rights) shareholders and other firms. However, by dividing other firms into two groups, namely, firms with blockholders that have control rights of 25.01% to 50% and widely held firms (no blockholder at a 25% cutoff), we find that firms with majority shareholders have higher values of Tobin's Q compared with firms that are controlled by blockholders (25.01% to 50%).

Whereas other papers (La Porta et al., 2002; Claessens et al., 2002; Lins et al., 2003) also find that the holdings of the largest blockholder or the ultimate owner are positively related to firm performance in the world or in emerging countries, we find that the largest shareholders

are associated with higher values of Q only when these shareholders reach a certain level of control rights. In our sample, when we exclude the firms that have the largest shareholders with control rights of less than 15% and perform an OLS regression, we find a positive and significant relationship between Q and the control rights of the largest shareholder. However, with a non-linear test, the cutoff level in our sample is approximately 45% for the control rights of the largest shareholder.

3.2. Do all types of large shareholders have a similar effect on firm value?

3.2.1 Continuous variables

In the previous sub-sections, we find a U-shaped relationship between the ownership continuous variables and firm performance, and we find that firms with both a GUO and control rights from 25.01% to 50% have lower firm value compared with widely held firms at a 25% cutoff and firms with GUOs that have control rights exceeding 50%. However, these statistics ignore the identities of large shareholders, and different types of shareholders are claimed to have different incentives and power in a firm's operations. The goal of this sub-section is first to investigate whether the ownership concentration of a specified type of blockholder has a similar relationship with firm performance. We modify the model specifications in equations (1) to (6) using the total ownership variables and the dummy variables that are calculated or identified based on the types of shareholders (families and individuals, financial institutions, corporations, and states). For example, we calculate the total family blockholdings at a 5% cutoff to obtain the total variable for the family type of large shareholders.

Table 4 shows the results for the continuous variables for different types of shareholders. From columns (1) to (8), we use linear and non-linear tests separately for four firm groups with different types of largest shareholders (families and individuals, financial institutions,

corporations, and states), and in columns (9) and (10), we test for all firm groups together. We find that all firm groups, except firms with a state shareholder, have a U-shaped relationship with Tobin's Q. In addition, the negative relationship holds only for family firms and corporation-owned firms at a 10% level of significance. However, our classification of the types of large shareholders are based on the immediate shareholders and thus do not fully capture all types of large shareholders, especially industrial companies and financial institutions.

3.2.2 Dummy variables

In addition, we perform tests using dummy variables for firm groups according to the types of ultimate owners. The types of shareholders in the continuous variables are based on immediate shareholders, although the pyramidal structure and cross-holdings are quite popular in the world (La Porta et al., 1999; Claessens et al., 2000; Faccio and Lang, 2002). Thus, we further analyze the relationships between firms owned by different types of shareholders using data pertaining to the ultimate owners. The ultimate owners are traced from the largest shareholder by finding the owner in the chain of ownership at the threshold of 25% until the final owner is a family, an individual, or a widely held firm. This approach, which is used in the ORBIS database, is derived from the method used by La Porta et al. (1999) (see also Claessens et al., 2000; Faccio and Lang, 2002), but the cutoff in ORBIS is 25%, whereas the cited papers use cutoffs of 10% or 20%. However, because information on control rights is not available for a large proportion of firms, we use a dummy variable instead.

$$Q_{i,t} = \beta DFamily_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (7)$$

$$Q_{i,t} = \beta DFinancial_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (8)$$

$$Q_{i,t} = \beta DCorporation_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (9)$$

$$Q_{i,t} = \beta DState_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (10)$$

$$Q_{i,t} = \beta Family_{i,t} + \alpha DFinancial_{i,t} + \gamma DCorporation_{i,t} + \mu DState_{i,t} + \phi x_{i,t} + \lambda_t + \delta_{k(i)} + c_{j(i)} + \varepsilon_{i,t} \quad (11)$$

where $+DFamily_i$ is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with a family as the ultimate owner at 25.01% to 50%, equal to 2 for firms with a family as the ultimate owner of more than 50% of the firm, and equal to 3 for firms with other types of ultimate owners; $+DFinancial_i$ is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with a financial institution as the ultimate owner at 25.01% to 50%, equal to 2 for firms with a financial institution as the ultimate owner of more than 50% of the firm, and equal to 3 for firms with other types of ultimate owners; $+DCorporation_i$ is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with a corporation as the ultimate owner at 25.01% to 50%, equal to 2 for firms with a corporation as the ultimate owner of more than 50% of the firm, and equal to 3 for firms with other types of ultimate owners; $+DState_{i,t}$ is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with a state as the ultimate owner at 25.01% to 50%, equal to 2 for firms with a state as the ultimate owner of more than 50% of the firm, and equal to 3 for firms with other types of ultimate owners; $+x_{i,t}$ denotes firm characteristics, such as firm size, firm age, sales growth, long-term debt, capital expenditure, and the annualized monthly volatility of the stock price; $+ \lambda_t$: year fixed effects; $\delta_{k(i)}$: industry fixed effects; and $c_{j(i)}$: country fixed effects.

Similar to the tests of the continuous variables, which are based on the largest shareholder types in the previous part, Table 5 shows that firms with families or widely held corporations as owners with 25.01% to 50% control rights have lower firm value than firms that have no blockholder at a 25% cutoff. The coefficients of firms that are controlled by financial

institutions (25.01% to 50%) or the state are also negative, although they are not significant. In addition, we find that except for state-owned firms, firms with majority shareholders generally have higher value than firms with medium-large shareholders (with control rights from 25.01% to 50%). For example, the coefficient of firms that are controlled by other firms with control rights from 25.01% to 50% is negative (-0.095), and the coefficient of family-controlled firms with control rights of more than 50% is also negative (-0.065). Because the cutoff level for each type of ownership is approximately 40% to 50%, the dummy variables are not able to fully reflect the U-shaped relationship between control rights and Tobin's Q. However, the finding that firms with majority shareholders generally have higher value than firms with medium to large shareholders still supports the U-shaped relationship found in the previous sub-section.

4. Investor protection, firm performance, and blockholdings

La Porta et al. (2002) provide evidence that firms have higher value in countries with high levels of investor protection than in those with low investor protection. Although these authors do not find that ownership is associated with higher firm value in countries with high investor protection, their findings support the hypothesis of the expropriation of minority shareholders by large shareholders. In contrast, Lins (2003) finds that in countries with low protection, the non-management control rights of the largest shareholder are more positively related to firm value than in countries with high investor protection. As a result, Lins (2003) supports the hypothesis of the monitoring of the benefits of large shareholders in countries with weak investor protection rather than the expropriation effect of large shareholders that is supported by La Porta et al. (2002).

La Porta et al. (2002) focus on large firms only, whereas Lins (2003) examines the above relationship in emerging countries. With a sample of 37 countries, including 11 emerging countries and 28 developed countries, we have a wide range of investor protection levels at

which to examine the relationship among firm performance, Tobin's Q, and ownership concentration. We examine the relationship among investor protection, firm performance, and blockholdings by adding a term of interaction between blockholdings and investor protection. We divide the sample into two groups: countries with low investor protection and countries with high investor protection. We then compare whether the relationship between firm value and blockholding differs between these two groups. The anti-self-dealing index or the revised anti-director rights index by Djankov et al. (2008) is used to define countries with low or high levels of investor protection. Higher values on these indices (the anti-self-dealing index ranges from 0 to 1, and the ADRI ranges from 0 to 6) are associated with greater protection for shareholders. When the anti-self-dealing index is equal to or greater than 0.5 or the RADRI is greater than 3.5, the country is considered to have a high level of investor protection; otherwise, it is designated as having low investor protection.

Table 6 presents the results of OLS regressions for the relationship among investor protection, blockholdings, and Tobin's Q. In column (1), we test the relationship between investor protection and Tobin's Q and exclude any ownership variable. The coefficient of *high* (which is equal to 1 for countries with high investor protection) is positive and significant. In columns (2) to (9), we add interaction variables between blockholdings and investor protection, and we find that firms in countries with high investor protection still have significantly higher firm value than in those with low investor protection. This result is consistent with La Porta et al. (2002), who find that firms in countries with high investor protection have higher firm performance than those in countries with low investor protection¹⁴.

Our main focus in this section is to examine the relationship between blockholdings and Tobin's Q across investor protection regimes. Columns (2) to (9) indicate that for linear

¹⁴ We also perform additional tests by excluding firms with no blockholdings at 5% or 10%, as the sample used by La Porta et al. (2002) includes only firms that have an ultimate owner at 10%. The results remain qualitatively similar.

regressions, the interaction terms are not consistent across variables. The interaction term with total blockholdings is significantly negative, whereas the interaction term with the largest blockholder is not significant. However, with a non-linear relationship, all interaction terms are significant. The U-shaped relationship between blockholdings and firm value holds for both countries with low investor protection and those with high investor protection. For the first half of the U-shaped relationship, there is a negative relationship between blockholdings and Q; in fact, the relationship is even more negative for countries with high investor protection. This result provides evidence that large shareholders in countries with high investor protection are associated with lower firm value than those in countries with low investor protection. Thus, this result is consistent with the hypothesis of Lins (2003) that large shareholders act as a partial substitute for the lack of strong institutional mechanisms to protect investors.

In contrast, the second half of the U-shaped relationship shows that when there is a positive relationship between blockholdings and Q, the positive relationship is stronger in countries with low levels of investor protection. This result supports the hypothesis that the expropriation of minority shareholders by large shareholders is stronger in countries with weak investor protection. We further divide the blockholdings into different types, including families, financial institutions, industrial companies, and states, and we test the relationship between the various types of blockholdings and Tobin's Q across investor protection regimes¹⁵. Table 7 indicates that for the total blockholdings, the relationships among Tobin's Q, investor protection, and different types of blockholdings are generally consistent with the results for the entire sample in that the relationship between firm value and investor protection is reversed between the first and second half of the U-shaped relationship. Most

¹⁵ We do not test the effect of investor protection levels on blockholdings using dummy variables, as a dummy variable would be unable to reflect the U-shaped relationship, unlike the continuous variables.

coefficients of the interaction terms are significant and consistent with the expected signs¹⁶, except for the state-owned firms.

Thus, countries with high investor protection are generally associated with higher firm value than countries with low investor protection. However, the effects of institutional mechanisms on blockholdings are more complex than the hypothesis that investor protections are able to reduce private control benefits or the hypothesis that blockholders perform the function of substituting for shareholder protection mechanisms.

5. Additional analysis

5.1 Two-stage least-squares regression

Endogeneity is a challenging issue in studying the relationship between ownership structure and firm performance. Many studies ignore this problem, other papers acknowledge the endogenous ownership issue, and some even attempt to address this issue. Endogenous ownership is a major determinant of the effect of ownership structure on firm value (Demsetz and Villalonga, 2001). The pioneering empirical study of the endogeneity problem is the work of Demsetz and Lehn (1985). In addition, a number of studies control for endogenous ownership (Hermalin and Weisbach, 1988; Loderer and Martin, 1997; Cho, 1998; Himmelberg, Hubbard, and Palia, 1999; Demsetz and Villalonga, 2001; Villalonga and Amit, 2006; Masulis, Pham, and Zein, 2011; Aggarwal, Erel, Ferreira, and Matos, 2010).

Many of these papers obtain different results when controlling for endogeneity. For example, Cho (1998) confirms the non-monotonic relationship found by Morck et al. (1988), but when he employs a three-equation model, he finds that Q affects ownership structure but that ownership structure does not affect Q. Minguez-Vera and Martin-Ugedo (2007) find no

¹⁶ The expected signs indicate that for the negative relationship between blockholdings and firm value in the first U-shaped curve, the relationship is more negative in countries with low investor protection than in those with high investor protection. However, for the positive relationship between blockholdings and firm value in the second U-shaped curve, the relationship is more positive in countries with high investor protection than in those with low investor protection.

relationship between the ownership of the largest shareholders and firm performance in Spain, but endogenous treatment reveals a positive relationship between ownership concentration and firm performance. Demsetz and Villalonga (2001) find a significantly positive relationship between ownership concentration and performance in OLS regressions but find no relationship when endogenous treatment is used.

Although the methodology to address this problem is heterogeneous and although 2SLS is one of the most popular methods, finding appropriate instruments that are related to ownership structure but not to firm performance is a demanding task. Most of the papers that address this issue use one or more firm characteristic variables, and the lag values of ownership are also used as instruments. Hermalin and Weisbach (1988) use the lag values of managerial ownership and board composition as instruments in their two-stage least-squares regression. Loderer and Martin (1997) employ a simultaneous equation model and use Q , the log of sales, daily standard deviation, and the variance of stock returns as instruments. Cho (1998) uses three equations for regression in which insider ownership depends on Q , investment, and control variables; Q depends on insider ownership, investment, and control variables; and investment depends on Q , insider ownership, and instruments. Demsetz and Villalonga (2001) use firm size, market risk, and firm-specific risk as instrument variables. Villalonga and Amit (2006) use fixed and random effects panel models and a treatment effect model to address the endogeneity issue.

In this paper, we use 2SLS regression to control for endogenous ownership structure. Similar to Himmelberg et al. (1999), Villalonga and Amit (2006), and Masulis et al. (2010), we use firm-specific risks as the instruments. For non-linear regressions, we use the square value of firm-specific risk as the instrument for the square value of the ownership variable¹⁷. For

¹⁷ According to McFadden (1999), the method of instrumental variables in non-linear models, particularly for models that are non-linear in the variables only, have this feature: if the instrument is uncorrelated with the error term (e), then any non-linear transformation of the instrument (z) will be uncorrelated with the error term (e). This method is a

2SLS, which is used to control for the endogenous ownership variable, we have two regression equations. In the first equation, we regress the lagged ownership concentration variable on the instruments, including the idiosyncratic risk, and the industry, country, and year dummies to obtain a fitted value of the ownership concentration variable. In the second equation, we run a regression of Tobin's Q on both the obtained fitted value of the ownership concentration variable and the control variables. These control variables include the industry, country, and year dummy variables, and the firm characteristic variables are the same as in the OLS regression.

Our results provide evidence that ownership concentration is a function of firm value. However, the question of whether and how firm value affects ownership concentration is unresolved. Demsetz and Villalonga (2001) argue that firm performance affects ownership concentration as much as ownership concentration affects firm value. The first argument is that insiders, who have better information, vary their holdings based on their expectations regarding future performance. Management compensation with stock options is another venue through which firm performance can affect ownership structure.

We find that in the OLS and first-stage equation in 2SLS in which the total blockholdings and the holdings of the largest shareholder are the dependent variables, idiosyncratic risk and other control variables act as independent variables. The lag of Q is negatively related to both ownership variables, and this relationship is significant. Our results are largely similar to the results of Demsetz and Villalonga (2001), who argue that the negative relationship between Q and ownership concentration shows that management people or insiders "choose to hold fewer shares when firms seem to be doing well, perhaps selling shares during good times in the expectation that today's good performance will be followed by poorer performance."

"practical thing to do and will often give a more precise IV estimator than if one just uses the raw instruments". However, this method does not generally yield the most efficient IV estimator.

However, Table 7 shows that after controlling for endogeneity, we still find a significant relationship between ownership concentration and firm performance that is even stronger than in the previous results that did not account for endogeneity. Indeed, Demsetz and Villalonga (2001) find that the coefficients of ownership concentration in the Q equation are no longer significant. Our findings provide evidence that Q and ownership concentration affect one another.

5.2 Firm fixed effects and propensity score matching

An additional test that we employ to mitigate the endogeneity issue involves employing regressions with firm fixed effects. These regressions provide results that are not driven by omitting firm characteristic variables in case these variables are related to the ownership variables. Table 9 shows the U-shaped results from the regressions with firm fixed effects generally remain the same, except that the coefficient of the control rights of the largest shareholder in the non-linear case is still negative but not significant¹⁸. In addition, the sign of the coefficient of the largest shareholder in the linear case is still positive but becomes significant at the 5% level.

We also perform additional testing using the propensity scoring method. First, we estimate the first-stage equation in which b_{it}^* is an indicator that equals one if a firm has a blockholder. We then obtain the propensity scores from this model, obtain the distribution of propensity scores for the set of companies that have a blockholder, and calculate the score that marks the lower 10% cutoff. We then re-run the models using a sample that excludes any non-blockholder-backed companies whose propensity scores are below this 10% cutoff. Table 10 shows the results of the propensity scores matching and the U-shaped relationship. This

¹⁸ However, the use of a regression with firm fixed effects cannot eliminate the endogenous issue related to the causal relationship between blockholdings and firm value.

additional test gives us with greater confidence that sample selection issues do not affect our results.

5.3 Sub-samples: developed and emerging countries or US firms and non-US firms¹⁹

We also divide the sample into two sub-samples that include developed countries and emerging countries. Table 14 presents the OLS and 2SLS regressions. Our results are largely consistent with the results for the entire sample. We continue to find the U-shaped relationship between ownership concentration and firm value. However, with the OLS and linear regression restricted to emerging countries, the holding of the largest shareholder is revealed to be positively related to Q, which is consistent with the findings of Lins (2003). This result again provides evidence that the U-shaped relationship between ownership concentration and Tobin's Q is more robust than the linear relationship.

Furthermore, we test the association between blockholdings and firm performance for sub-samples of US and non-US firms. We find that the relationship for US firms is almost qualitatively similar to that for non-US firms. For the linear relationship in the OLS regression, the results are not consistent between the two samples. The holdings of the largest shareholder are not linearly related to firm performance in either sample. The total blockholdings for US firms are significantly and negatively related to firm value, whereas this relationship is negative but not significant for non-US firms. When we test the non-linear relationship between firm value and ownership concentration, we obtain results that are more consistent between the two samples. U-shaped relationships are found for both US and non-US firms.

5.4 An alternative model specification

¹⁹ We do not tabulate the results in this paper but will provide them upon request.

We also use the sample of ownership variables for the years from 2006 to 2008 and Tobin's Q for the years from 2007 to 2009 to run regressions of the lagged value of ownership with Tobin's Q. Table 11 shows that the U-shaped relationship holds consistently across equations. However, it may be argued that using a lagged (one-year) value of the ownership variables to eliminate the endogenous issue is inadequate, as the relationship between blockholdings and firm value is likely to be more complex than expected. Large shareholders vary their holdings based on firm performance, which is evaluated on the basis of several years of performance, and they determine the expected future firm performance based on this evaluation. Thus, although we conduct this test for a robustness check, we continue to base the main empirical tests for interpretation on the regressions.

6. Conclusion

We use a sample of 20,883 firm-year observations for the period from 2006 to 2009 in 37 countries to examine the relationship between blockholders and firm value and to determine how this relationship varies across investor protection regimes. We find a U-shaped relationship between blockholdings and firm value. Our results indicate that blockholding is negatively related to firm value up to a certain level of control rights, after which blockholding is then positively related to firm performance. This finding could be explained as follows: up to this focus point, higher blockholdings imply lower firm value because the alignment of benefits between a firm and its blockholders remains low, whereas the power to expropriate is higher. When the holdings of blockholders are low, it is more difficult for them to manipulate the activities of firms. However, when their control rights increase, which typically occurs by means of increasing cash flow rights, the power of blockholders increases. However, beyond the focus point of the U-shaped curve, the alignment between blockholders and firms is much higher, as there is less incentive for blockholders to obtain private benefits from the loss of the entire company. Our findings provide further evidence

for the hypothesis of an alignment incentive between large shareholders and firm value (La Porta et al., 2002; Claessens et al., 2002; Lins, 2003), but only after a certain level of control is attained. If large shareholders exceed a certain level of control, then we add additional evidence for the complex interactions between the incentives and power of blockholders and firm performance.

Furthermore, we find that although firms in countries with high investor protection are associated with higher value than firms in countries with low investor protection, the relationship among blockholdings, firm value, and investor protection is not monotonic. We find that in countries with high levels of protection, the relationship between blockholdings and firm value is more negative (in the first half of the U-shaped curve), whereas the relationship is more positive (in the second half of the U-shaped curve) in these countries than in those with low investor protection. For the more negative relationship, the result is consistent with the “substitution” hypothesis in Lins (2003), and the finding of the stronger positive relationship is consistent with the “expropriation” hypothesis in La Porta et al. (2002). However, although our study examines different types of blockholders and finds consistent results, the classification of various types of continuous variables is based on the first level of shareholders. Thus, the relationship between types of blockholders and firm value and the manner in which this relationship varies across investor protection regimes still require further study.

Acknowledgements

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Table 1: Tobin's Q and ownership variables

Country	Nfirms	Q	Control rights of		Firms with blocks at		
			LarBlock	TotBlock	5-25%	25.01-50%	Over 50%
Argentina	45	1.13	63.27	70.30	0.02	0.07	0.91
Australia	976	1.78	26.11	63.15	0.58	0.28	0.14
Austria	135	1.39	41.51	58.50	0.25	0.25	0.49
Belgium	178	1.49	38.76	57.28	0.28	0.39	0.33
Brazil	27	1.40	66.04	70.52	0.15	0.04	0.81
Canada	487	1.52	36.63	55.48	0.45	0.27	0.28
Chile	82	1.37	56.81	68.28	0.10	0.20	0.71
Denmark	176	1.89	34.32	60.94	0.31	0.34	0.35
Finland	262	1.66	24.08	47.31	0.58	0.25	0.15
France	1112	1.46	40.75	62.91	0.26	0.37	0.37
Germany	1064	1.49	39.70	59.06	0.27	0.30	0.40
Greece	458	1.25	41.44	67.22	0.18	0.48	0.34
High	12930	1.71	24.25	49.12	0.65	0.19	0.14
Hong Kong	110	1.22	47.44	69.13	0.09	0.31	0.60
India	802	1.80	35.40	57.01	0.39	0.28	0.32
Ireland	60	1.70	21.29	50.02	0.78	0.10	0.12
Israel	84	1.86	39.18	55.83	0.30	0.31	0.38
Italy	295	1.35	43.09	61.75	0.18	0.34	0.48
Japan	1174	1.25	50.42	61.80	0.23	0.20	0.56
Low	7953	1.39	37.75	62.42	0.32	0.34	0.34
Malaysia	656	1.29	38.11	61.67	0.25	0.47	0.29
Mexico	60	1.68	50.88	55.84	0.17	0.15	0.67
Netherland	212	1.57	27.71	61.25	0.60	0.19	0.21
New Zealand	129	1.42	34.97	58.98	0.42	0.24	0.33
Norway	226	1.51	33.18	64.42	0.30	0.40	0.31
Pakistan	59	1.90	57.92	68.00	0.17	0.17	0.66
Philippines	156	1.33	50.16	78.14	0.04	0.52	0.44
Portugal	77	1.25	39.51	67.53	0.30	0.26	0.44
Singapore	565	1.35	40.38	62.36	0.28	0.38	0.35
South Africa	345	1.62	32.32	57.48	0.48	0.32	0.18
South Korea	1139	1.18	20.10	66.89	0.57	0.40	0.02
Spain	116	1.79	27.63	68.65	0.58	0.16	0.26
Sweden	384	1.60	28.32	52.56	0.48	0.35	0.16
Taiwan	1150	1.63	22.43	42.69	0.66	0.29	0.04
Thailand	95	1.21	44.63	59.18	0.13	0.48	0.37
Turkey	180	1.28	53.19	68.15	0.03	0.41	0.56
UK	1774	1.59	18.94	54.32	0.75	0.20	0.05
US	6033	1.83	19.11	41.86	0.78	0.11	0.09
Low	7953	1.39	37.75	62.42	0.32	0.34	0.34
High	12930	1.71	24.25	49.12	0.65	0.19	0.14
All	20883	1.59	29.39	54.19	0.52	0.25	0.22

Note: This table shows the average of Tobin's Q and the ownership variables by countries and by groups of countries for the period from 2006 to 2009. The ownership variables include continuous variables that are *TotBlock* (the total control rights of all blockholders at a 5% cutoff); *LarBlock* (the control rights of the largest blockholder at a 5% cutoff); and the proportion of firms that have at least one block with control rights from 5% to 25%, 25.01% to 50%, and greater than 50%. *High* includes countries with high investor protection (whose

anti-self-dealing index is not less than 0.5), and *Low* includes the remaining countries. NFirms is the number of firms covered in each country.

Table 2: Tobin's Q and the continuous ownership variable

Variable	Largest blockholder		Total blockholdings	
	(1)	(2)	(3)	(4)
LarBlock	-0.071** (-1.98)	-0.792*** (-6.21)		
LarBlock ²		0.880*** (5.89)		
TotBlock			-0.275*** (-8.58)	-1.401*** (-11.51)
TotBlock ²				1.084*** (9.59)
SalesGrowth	-0.000 (-0.09)	-0.000 (-0.11)	-0.000 (-0.04)	-0.000 (-0.09)
CapExNs	0.003 (0.41)	0.003 (0.39)	0.003 (0.37)	0.003 (0.38)
Leverage	-0.480*** (-11.33)	-0.470*** (-11.11)	-0.464*** (-10.96)	-0.452*** (-10.69)
Size	0.003 (0.67)	0.000 (0.03)	-0.004 (-0.87)	-0.009** (-2.06)
Age	-0.008*** (-11.18)	-0.008*** (-11.39)	-0.008*** (-11.61)	-0.008*** (-11.67)
CapExPpe	0.018*** (3.88)	0.018*** (3.84)	0.017*** (3.71)	0.017*** (3.61)
Volatility	0.014 (0.60)	0.019 (0.83)	0.017 (0.75)	0.022 (0.93)
Constant	1.514*** (9.71)	1.634*** (10.40)	1.752*** (11.22)	2.067*** (12.98)
Obs.	20,883	20,883	20,883	20,883
AdjRsq	14.7	14.9	15.0	15.4

Note: This table shows the results of the OLS regressions that examine the relationship between ownership concentration and Tobin's Q for the 2006-2009 period. *TotBlock* is the total control rights of all blockholders at a 5% cutoff, and *LarBlock* is the control rights of the largest blockholder at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 3: Tobin's Q and ownership dummy variables

Variable	Block (5-25%) (1)	Block (25.01-50%) (2)	Block (over 50%) (3)	All (4)
Block525	0.057*** (3.72)			-0.273*** (-4.24)
Block2550		-0.071*** (-4.47)		-0.359*** (-5.46)
Block50			-0.011 (-0.60)	-0.320*** (-4.84)
SalesGrowth	-0.000 (-0.09)	-0.000 (-0.07)	-0.000 (-0.08)	-0.000 (-0.09)
CapExNs	0.003 (0.39)	0.003 (0.42)	0.003 (0.42)	0.003 (0.39)
Leverage	-0.477*** (-11.27)	-0.476*** (-11.24)	-0.481*** (-11.36)	-0.471*** (-11.12)
Size	0.002 (0.48)	0.003 (0.65)	0.004 (0.95)	-0.000 (-0.01)
Age	-0.008*** (-11.18)	-0.008*** (-11.22)	-0.008*** (-11.10)	-0.008*** (-11.33)
CapExPpe	0.018*** (3.83)	0.018*** (3.84)	0.018*** (3.90)	0.017*** (3.80)
Volatility	0.015 (0.64)	0.017 (0.72)	0.013 (0.57)	0.017 (0.74)
Constant	1.755*** (9.15)	1.755*** (9.15)	1.746*** (9.05)	2.107*** (10.29)
Obs.	20,883	20,883	20,883	20,883
AdjRsqr	14.8	14.8	14.7	14.9

Note: This table shows the results of the OLS regressions that examine the effect of the ownership dummy variables on Tobin's Q. *Blocks525* (*Blocks2550*, *Blocks50*) is a dummy variable that is equal to one if a firm has at least one blockholder with control rights from 5.01% to 25% (and 25.01% to 50% or greater than 50%, respectively) and equals 0 otherwise. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 4: Tobin's Q and different types of continuous ownership

Panel A: Tobin's Q and the largest shareholders by types

Variable	Family		Financial		Corporation		State		All types	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FamilyLar	-0.310**	-0.051							-0.849***	-0.098*
	(-2.47)	(-1.07)							(-5.23)	(-1.79)
FamilyLar ²	0.491**								1.071***	
	(2.23)								(4.36)	
FinancialLar			-0.033	-0.014					-0.693***	-0.067
			(-0.29)	(-0.31)					(-4.23)	(-1.28)
FinancialLar ²			0.033						0.750***	
			(0.18)						(3.42)	
CorpLar					-0.280***	-0.036			-0.725***	-0.067*
					(-2.77)	(-1.16)			(-5.40)	(-1.79)
CorpLar ²					0.373**				0.797***	
					(2.54)				(4.72)	
StateLar							0.374	0.245*	-0.180	0.200
							(0.98)	(1.92)	(-0.46)	(1.54)
StateLar ²							-0.199		0.333	
							(-0.36)		(0.59)	
SalesGrowth	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(-0.07)	(-0.08)	(-0.08)	(-0.08)	(-0.05)	(-0.07)	(-0.07)	(-0.07)	(-0.09)	(-0.08)
CapExNs	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.003	0.003
	(0.41)	(0.42)	(0.43)	(0.43)	(0.41)	(0.42)	(0.45)	(0.45)	(0.35)	(0.43)
Leverage	-0.482***	-0.481***	-0.481***	-0.481***	-0.478***	-0.481***	-0.477***	-0.477***	-0.469***	-0.475***

	(-11.38)	(-11.35)	(-11.35)	(-11.35)	(-11.27)	(-11.37)	(-11.26)	(-11.26)	(-11.05)	(-11.21)
Size	0.002	0.003	0.004	0.004	0.004	0.004	0.003	0.003	-0.001	0.002
	(0.59)	(0.79)	(1.03)	(1.02)	(1.07)	(0.96)	(0.81)	(0.83)	(-0.18)	(0.35)
Age	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***
	(-11.11)	(-11.13)	(-11.09)	(-11.10)	(-11.13)	(-11.10)	(-11.02)	(-11.02)	(-11.29)	(-11.11)
CapExPpe	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***
	(3.89)	(3.89)	(3.90)	(3.90)	(3.92)	(3.90)	(3.91)	(3.91)	(3.86)	(3.88)
Volatility	0.015	0.015	0.014	0.014	0.014	0.013	0.013	0.013	0.017	0.014
	(0.63)	(0.64)	(0.58)	(0.58)	(0.58)	(0.55)	(0.57)	(0.57)	(0.72)	(0.61)
Constant	1.473***	1.463***	1.449***	1.451***	1.460***	1.470***	1.461***	1.461***	1.639***	1.532***
	(9.63)	(9.56)	(9.48)	(9.51)	(9.51)	(9.58)	(9.58)	(9.57)	(10.42)	(9.80)
Obs.	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883
AdjRsqr (%)	14.8	14.7	14.7	14.7	14.8	14.7	14.7	14.7	14.9	14.8

Panel B: Tobin's Q and total blockholdings by types

Variable	Family		Financial		Corporation		State		All types	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FamilyTot	-0.590*** (-5.79)	-0.156*** (-4.28)							-0.816*** (-7.63)	-0.351*** (-7.93)
FamilyTot ²	0.686*** (4.56)								0.679*** (4.46)	
FinancialTot			-0.192** (-2.13)	-0.086*** (-2.75)					-0.483*** (-4.84)	-0.267*** (-7.00)
FinancialTot ²			0.153 (1.25)						0.277** (2.18)	
CorpTot					-0.387*** (-4.16)	-0.067** (-2.32)			-0.599*** (-6.14)	-0.251*** (-6.91)
CorpTot ²					0.460*** (3.62)				0.449*** (3.48)	
StateTot							0.576** (2.08)	0.294** (2.53)	0.400 (1.44)	0.123 (1.04)
StateTot ²							-0.481 (-1.12)		-0.536 (-1.25)	
SalesGrowth	-0.000 (-0.05)	-0.000 (-0.07)	-0.000 (-0.07)	-0.000 (-0.07)	-0.000 (-0.06)	-0.000 (-0.07)	-0.000 (-0.07)	-0.000 (-0.07)	-0.000 (-0.00)	-0.000 (-0.03)
CapExNs	0.003 (0.39)	0.003 (0.40)	0.004 (0.44)	0.003 (0.43)	0.004 (0.47)	0.003 (0.43)	0.004 (0.47)	0.004 (0.47)	0.003 (0.43)	0.003 (0.38)
Leverage	-0.478*** (-11.31)	-0.478*** (-11.30)	-0.477*** (-11.27)	-0.477*** (-11.25)	-0.475*** (-11.23)	-0.480*** (-11.35)	-0.476*** (-11.23)	-0.476*** (-11.23)	-0.451*** (-10.65)	-0.456*** (-10.75)

Size	-0.003 (-0.63)	-0.001 (-0.16)	0.005 (1.23)	0.005 (1.14)	0.004 (0.93)	0.004 (0.88)	0.003 (0.64)	0.003 (0.70)	-0.010** (-2.32)	-0.008* (-1.77)
Age	-0.008*** (-11.20)	-0.008*** (-11.26)	-0.008*** (-11.11)	-0.008*** (-11.14)	-0.008*** (-11.14)	-0.008*** (-11.11)	-0.008*** (-11.03)	-0.008*** (-11.00)	-0.008*** (-11.60)	-0.008*** (-11.58)
CapExPpe	0.018*** (3.85)	0.018*** (3.84)	0.018*** (3.88)	0.018*** (3.88)	0.018*** (3.87)	0.018*** (3.90)	0.018*** (3.91)	0.018*** (3.91)	0.017*** (3.64)	0.017*** (3.70)
Volatility	0.018 (0.77)	0.020 (0.85)	0.012 (0.52)	0.013 (0.54)	0.014 (0.60)	0.012 (0.53)	0.013 (0.58)	0.013 (0.57)	0.020 (0.84)	0.020 (0.86)
Constant	1.547*** (10.09)	1.519*** (9.91)	1.451*** (9.51)	1.457*** (9.56)	1.487*** (9.69)	1.491*** (9.71)	1.472*** (9.64)	1.468*** (9.62)	1.848*** (11.77)	1.793*** (11.43)
Obs.	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883
AdjRsq (%)	14.9	14.8	14.8	14.8	14.8	14.8	14.8	14.8	15.3	15.1

Note: These table panels show the results of the OLS regression between Tobin's Q and ownership by types. *FamilyLar* and *FamilyTot* (*FinancialLar* and *FinancialTot*, *CorpLar* and *CorpTot*, and *StateLar* and *StateTot*) are the controls of the largest shareholder as families (financial institutions, industrial companies, and states, respectively) and the total blockholdings of families (financial institutions, industrial companies, and states, respectively) at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 5: Tobin's Q and ownership dummies by types

Variable	DFamily (1)	DFinancial (2)	DCorporation (3)	DState (4)
Family2550	-0.095*** (-3.97)			
Family50	-0.065** (-2.18)			
OtherUO	-0.069*** (-3.98)			
Financial2550		-0.073 (-1.23)		
Financial50		-0.005 (-0.09)		
OtherUO		-0.076*** (-4.90)		
Corp2550			-0.065* (-1.70)	
Corp50			0.013 (0.39)	
OtherUO			-0.087*** (-5.38)	
State2550				-0.036 (-0.48)
State50				0.116* (1.68)
OtherUO				-0.079*** (-5.11)
SalesGrowth	-0.000 (-0.10)	-0.000 (-0.10)	-0.000 (-0.10)	-0.000 (-0.10)
CapExNs	0.003 (0.37)	0.003 (0.38)	0.003 (0.40)	0.003 (0.38)
Leverage	-0.476*** (-11.23)	-0.476*** (-11.24)	-0.471*** (-11.11)	-0.469*** (-11.07)
Size	0.001 (0.17)	0.001 (0.21)	0.001 (0.17)	-0.000 (-0.05)
Age	-0.008*** (-11.25)	-0.008*** (-11.22)	-0.008*** (-11.28)	-0.008*** (-11.19)
CapExPpe	0.017*** (3.79)	0.017*** (3.79)	0.017*** (3.81)	0.018*** (3.81)
Volatility	0.016 (0.68)	0.016 (0.68)	0.018 (0.77)	0.015 (0.65)
Constant	1.562*** (10.13)	1.554*** (10.05)	1.546*** (10.00)	1.575*** (10.20)

Obs.	20,883	20,883	20,883	20,883
AdjRsq (%)	14.8	14.8	14.9	14.9

Note: This table shows the results of the OLS regression between Tobin's Q and the ownership dummies by types. *DFamily* is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms that have a family as the ultimate owner at a level of ownership of 25.01% to 50% (*Family2550*), equal to 2 for firms that have a family as the ultimate owner at a level of ownership greater than 50% (*Family50*), and equal to 3 for firms with other types of ultimate owners (*OtherUO*). *DFinancial* is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms that have a financial ultimate owner at 25.01% to 50% (*Financial2550*), equal to 2 for firms that have a financial ultimate owner greater than 50% (*Financial50*), and equal to 3 for firms with other types of ultimate owners (*OtherUO*). *DCorp* is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms that have a corporation as the ultimate owner at 25.01% to 50% (*Corp2550*), equal to 2 for firms that have a corporation as the ultimate owner greater 50% (*Corp50*), and equal to 3 for firms with other types of ultimate owners (*OtherUO*). *DState* is a dummy variable that is equal to 0 for widely held firms, equal to 1 for firms that have the state as the ultimate owner at 25.01% to 50% (*State2550*), equal to 2 for firms that have the state as the ultimate owner greater than 50% (*State50*), and equal to 3 for firms with other types of ultimate owners (*OtherUO*). The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 6: Blockholdings, firm value, and investor protection

Variable	None	Total blockholdings				Largest blockholder			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
High	0.453** (2.41)	0.424** (2.27)	0.743*** (3.72)	0.419** (2.24)	0.603*** (3.15)	0.460** (2.45)	0.494** (2.54)	0.447** (2.38)	0.440** (2.29)
TotBlock		-1.401*** (-11.51)	-0.605*** (-2.80)	-0.275*** (-8.58)	-0.090* (-1.74)				
TotBlock ²		1.084*** (9.59)	0.457** (2.41)						
High* TotBlock			-1.113*** (-4.29)		-0.289*** (-4.51)				
High* TotBlock ²			0.887*** (3.75)						
LarBlock						-0.792*** (-6.21)	-0.486** (-2.52)	-0.071** (-1.98)	-0.077 (-1.48)
LarBlock ²						0.880*** (5.89)	0.464** (2.18)		
High* LarBlock							-0.665*** (-2.59)		0.011 (0.16)
High* LarBlock ²							0.941*** (3.12)		
SalesGrowth	-0.000 (-0.07)	-0.000 (-0.09)	-0.000 (-0.09)	-0.000 (-0.04)	-0.000 (-0.03)	-0.000 (-0.11)	-0.000 (-0.10)	-0.000 (-0.09)	-0.000 (-0.08)
CapExNs	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003

	(0.43)	(0.38)	(0.38)	(0.37)	(0.36)	(0.39)	(0.39)	(0.41)	(0.41)
Leverage	-0.481***	-0.452***	-0.450***	-0.464***	-0.461***	-0.470***	-0.470***	-0.480***	-0.480***
	(-11.36)	(-10.69)	(-10.67)	(-10.96)	(-10.89)	(-11.11)	(-11.11)	(-11.33)	(-11.33)
Size	0.004	-0.009**	-0.008**	-0.004	-0.003	0.000	-0.001	0.003	0.003
	(1.02)	(-2.06)	(-1.99)	(-0.87)	(-0.80)	(0.03)	(-0.13)	(0.67)	(0.67)
Age	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***	-0.008***
	(-11.10)	(-11.67)	(-11.62)	(-11.61)	(-11.66)	(-11.39)	(-11.25)	(-11.18)	(-11.17)
CapExPpe	0.018***	0.017***	0.017***	0.017***	0.017***	0.018***	0.017***	0.018***	0.018***
	(3.90)	(3.61)	(3.68)	(3.71)	(3.77)	(3.84)	(3.78)	(3.88)	(3.88)
Volatility	0.014	0.022	0.027	0.017	0.023	0.019	0.020	0.014	0.014
	(0.58)	(0.93)	(1.17)	(0.75)	(1.00)	(0.83)	(0.86)	(0.60)	(0.59)
Constant	1.449***	2.067***	1.825***	1.752***	1.622***	1.634***	1.625***	1.514***	1.518***
	(9.51)	(12.98)	(10.87)	(11.22)	(10.21)	(10.40)	(10.12)	(9.71)	(9.62)
Obs.	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883	20,883
AdjRsq (%)	14.7	15.4	15.5	15.0	15.1	14.9	14.9	14.7	14.7

Note: This table contains the results of an OLS that examines the relationship among blockholdings, firm value, and investor protection for the 2006-2009 period. *High* is a dummy variable that equals 1 for firms in countries with high investor protection (whose anti-self-dealing index is not less than 0.5) and 0 otherwise. *TotBlock* is the total control rights of all blockholders at a 5% cutoff. *LarBlock* is the control rights of the largest blockholder at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 7: Blockholdings by types, firm value, and investor protection

Variable	Total blockholdings		Largest blockholder (Lar)	
	(1)	(2)	(3)	(4)
High	0.595*** (3.10)	0.556*** (2.90)	0.536*** (2.77)	0.480** (2.52)
Family	-0.422*** (-2.59)	-0.158** (-2.45)	-0.716*** (-2.96)	-0.055 (-0.70)
Family ²	0.359* (1.69)		0.969*** (2.77)	
High* Family	-0.675*** (-3.15)	-0.324*** (-3.88)	-0.296 (-0.92)	-0.099 (-0.94)
High* Family ²	0.619** (1.97)		0.227 (0.46)	
Financial	0.153 (0.96)	0.009 (0.14)	-0.375 (-1.50)	-0.030 (-0.39)
Financial ²	-0.229 (-1.11)		0.363 (1.13)	
High* Financial	-1.020*** (-4.99)	-0.416*** (-5.24)	-0.602* (-1.81)	-0.077 (-0.74)
High* Financial ²	0.843*** (3.22)		0.747* (1.67)	
Corp	-0.292** (-2.03)	-0.143*** (-2.64)	-0.428** (-2.21)	-0.113** (-2.10)
Corp ²	0.185 (1.04)		0.321 (1.40)	
High* Corp	-0.600*** (-3.04)	-0.128* (-1.77)	-0.733*** (-2.69)	0.104 (1.40)
High* Corp ²	0.664** (2.53)		1.226*** (3.55)	
State	0.508 (1.42)	0.380** (2.52)	-0.398 (-0.79)	0.272 (1.62)
State ²	-0.247 (-0.43)		0.899 (1.22)	
High* State	-0.201 (-0.35)	-0.507** (-2.08)	0.531 (0.65)	-0.186 (-0.70)
High* State ²	-0.563 (-0.65)		-1.297 (-1.13)	
SalesGrowth	0.000 (0.02)	-0.000 (-0.02)	-0.000 (-0.08)	-0.000 (-0.09)
CapExNs	0.004 (0.47)	0.003 (0.36)	0.003 (0.33)	0.003 (0.44)
Leverage	-0.445*** (-10.50)	-0.453*** (-10.68)	-0.468*** (-11.02)	-0.477*** (-11.23)

Size	-0.012*** (-2.64)	-0.008* (-1.81)	-0.002 (-0.35)	0.001 (0.28)
Age	-0.008*** (-11.44)	-0.008*** (-11.54)	-0.008*** (-11.13)	-0.008*** (-11.02)
CapExPpe	0.017*** (3.67)	0.017*** (3.77)	0.017*** (3.79)	0.018*** (3.88)
Volatility	0.020 (0.87)	0.025 (1.07)	0.018 (0.77)	0.016 (0.67)
Constant	1.759*** (11.03)	1.696*** (10.66)	1.650*** (10.29)	1.549*** (9.80)
Obs.	20,883	20,883	20,883	20,883
AdjRsq (%)	15.5	15.2	15.0	14.8

Note: This table contains the results of an OLS that examines the relationship among blockholdings by types, firm value, and investor protection for the 2006-2009 period. *High* is a dummy variable that equals 1 for firms in countries with high investor protection (whose anti-self-dealing index is not less than 0.5) and 0 otherwise. *FamilyTot* and *FamilyLar* (*FinancialTot* and *FinancialLar*, *CorpTot* and *CorpLar*, and *StateTot* and *StateLar*) are the total blockholdings and the control of the largest shareholders as families (financial institutions, industrial companies, and states, respectively) at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 8: Regressions with 2SLS

Variable	Total blockholdings		Largest blockholder	
	(1)	(2)	(3)	(4)
TotBlock	-6.986*** (-3.74)	-1.015 (-0.90)		
TotBlock ²	9.095*** (3.02)			
LarBlock			-5.235*** (-3.74)	-0.761 (-0.90)
LarBlock ²			9.724*** (3.02)	
SalesGrowth	-0.000 (-1.27)	0.000 (0.14)	0.000 (0.21)	-0.000 (-0.33)
CapExNs	0.008 (0.94)	0.002 (0.20)	0.007 (0.83)	0.002 (0.23)
Leverage	-0.537*** (-3.89)	-0.422*** (-3.36)	-0.428*** (-4.13)	-0.472*** (-4.55)
Size	0.033 (0.75)	-0.025 (-0.77)	0.028 (1.13)	-0.011 (-0.63)
Age	-0.005** (-1.97)	-0.010*** (-5.71)	-0.007*** (-5.37)	-0.009*** (-8.36)
CapExPpe	0.022** (2.14)	0.014 (1.50)	0.020** (2.20)	0.017* (1.88)
Volatility	0.020 (0.54)	0.029 (0.79)	0.062 (1.53)	0.020 (0.54)
Constant	1.377 (0.95)	2.578** (2.08)	0.281 (0.24)	2.156*** (2.78)
Obs.	20,716	20,716	20,716	20,716
AdjRsq (%)	14.9	14.8	14.9	14.8

Note: This table contains the results of 2SLS regressions that examine the effect of ownership concentration on Tobin's Q for the 2006-2009 period. Equations 1 to 4 are 2SLS regressions in which idiosyncratic risk (*IdioRisk*) and the squared value of idiosyncratic risk are used as instruments for the ownership variables. *TotBlock* is the total control rights of all blockholders at a 5% cutoff; *LarBlock* is the control rights of the largest blockholder at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 9: Regression with firm fixed effects

Variable	Total blockholdings		Largest blockholder	
	(1)	(2)	(3)	(4)
TotBlock	-0.448*** (-3.52)	-0.096** (-2.52)		
TotBlock ²	0.335*** (2.90)			
LarBlock			-0.287 (-1.58)	0.134** (1.97)
LarBlock ²			0.546** (2.50)	
SalesGrowth	0.000 (0.59)	0.000 (0.59)	0.000 (0.55)	0.000 (0.54)
CapExNs	-0.003 (-0.28)	-0.003 (-0.30)	-0.003 (-0.33)	-0.003 (-0.32)
Leverage	-0.318*** (-3.92)	-0.318*** (-3.92)	-0.322*** (-3.98)	-0.325*** (-4.01)
Size	-0.564*** (-22.49)	-0.563*** (-22.47)	-0.560*** (-22.32)	-0.561*** (-22.35)
Age	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)
CapExPpe	0.011*** (2.86)	0.011*** (2.88)	0.011*** (2.92)	0.011*** (2.95)
Volatility	0.108*** (4.50)	0.108*** (4.50)	0.107*** (4.48)	0.107*** (4.46)
Constant	9.216*** (21.19)	9.135*** (21.04)	9.052*** (20.82)	9.011*** (20.74)
Obs.	20,883	20,883	20,883	20,883
AdjRsqr(%)	8.52	8.52	8.52	8.52

Note: This table contains the results of OLS with firm fixed effects. *TotBlock* is the total control rights of all blockholders at a 5% cutoff; *LarBlock* is the control rights of the largest blockholder at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 10: Propensity score

	(1)	(2)	(3)	(4)
	all	all	all	all
Variable	q	q	q	q
TotBlock	-0.261*** (-8.05)	-1.368*** (-10.78)		
TotBlock ²		1.055*** (9.03)		
LarBlock			-0.060* (-1.67)	-0.718*** (-5.55)
LarBlock ²				0.799*** (5.29)
SalesGrowth	-0.000 (-0.04)	-0.000 (-0.09)	-0.000 (-0.09)	-0.000 (-0.11)
CapExNs	0.003 (0.37)	0.003 (0.37)	0.003 (0.41)	0.003 (0.39)
Leverage	-0.457*** (-10.78)	-0.447*** (-10.56)	-0.471*** (-11.11)	-0.463*** (-10.93)
Size	-0.005 (-1.13)	-0.009** (-2.13)	0.001 (0.26)	-0.001 (-0.25)
Age	-0.008*** (-11.57)	-0.008*** (-11.54)	-0.008*** (-11.18)	-0.008*** (-11.35)
CapExPpe	0.017*** (3.70)	0.016*** (3.60)	0.018*** (3.87)	0.018*** (3.83)
Volatility	0.020 (0.84)	0.023 (1.01)	0.016 (0.71)	0.021 (0.91)
Constant	1.753*** (11.22)	2.056*** (12.89)	1.527*** (9.79)	1.632*** (10.39)
Obs.	20,761	20,761	20,761	20,761
AdjRsq (%)	14.9	15.2	14.6	14.8

Note: This table contains the results of OLS with propensity score matching. *TotBlock* is the total control rights of all blockholders at a 5% cutoff; *LarBlock* is the control rights of the largest blockholder at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Table 11: Lagged ownership

	(1)	(2)	(3)	(4)
Variable	all afterq	all afterq	all afterq	all afterq
TotBlock	-0.164*** (-4.34)	-0.818*** (-5.71)		
TotBlock ²		0.638*** (4.73)		
LarBlock			-0.027 (-0.61)	-0.454*** (-2.90)
LarBlock ²				0.530*** (2.85)
SalesGrowth	-0.000 (-0.02)	-0.000 (-0.07)	-0.000 (-0.02)	-0.000 (-0.03)
CapExNs	-0.007 (-0.64)	-0.007 (-0.62)	-0.007 (-0.61)	-0.007 (-0.60)
Leverage	-0.168*** (-3.36)	-0.161*** (-3.23)	-0.178*** (-3.56)	-0.173*** (-3.46)
Size	0.010** (1.97)	0.007 (1.40)	0.014*** (2.80)	0.013** (2.49)
Age	-0.005*** (-5.39)	-0.005*** (-5.39)	-0.004*** (-5.18)	-0.005*** (-5.28)
CapExPpe	0.017** (2.15)	0.016** (2.06)	0.017** (2.17)	0.017** (2.17)
Volatility	-0.071** (-2.27)	-0.069** (-2.22)	-0.072** (-2.29)	-0.070** (-2.23)
Constant	1.247*** (6.67)	1.415*** (7.44)	1.089*** (5.83)	1.147*** (6.11)
Obs.	11,262	11,262	11,262	11,262
AdjRsqr (%)	9.7	9.9	9.5	9.6

Note: This table contains the results of OLS regressions that use a lagged value of the ownership variables and control variables on Tobin's Q. The ownership variables are based on the period from 2006 to 2008, whereas Tobin's Q is based on the period from 2007 to 2009. *TotBlock* is the total control rights of all blockholders at a 5% cutoff; *LarBlock* is the control rights of the largest blockholder at a 5% cutoff. The firm-level control variables include firm size (*Size*), firm age (*Age*), sales growth (*SalesGrowth*), the ratio of capital expenditures to sales (*CapExNs*), the ratio of long-term debt to total assets (*Leverage*), the ratio of capital expenditures to tangible assets (*CapExPpe*), and stock price volatility (*Volatility*). All equations also include country, year, and industry dummies. t-values are reported in parentheses.

Appendix 1: Definitions of the variables

Variable	Acronym	Definition	Data Source
A. Ownership Variables			
Largest block ownership	<i>LarBlock</i>	Control rights of the largest blockholder	ORBIS
Total block ownership	<i>TotBlock</i>	Total control rights of all blockholders	ORBIS
Blockholder dummy (5-25%)	<i>Block525</i>	Dummy variable that equals 1 if the firm has at least one block with control rights from 5% to 25%	ORBIS
Blockholder dummy (25.01-50%)	<i>Block2550</i>	Dummy variable that equals 1 if the firm has at least one block with control rights from 25.01% to 50%	ORBIS
Blockholder dummy (50.01%+)	<i>Block50</i>	Dummy variable that equals 1 if the firm has at least one block with control rights greater than 50%	ORBIS
Largest family block ownership	<i>FamilyLar</i>	Control rights of the largest blockholder as a family	ORBIS
Total family block ownership	<i>FamilyTot</i>	Total control rights of all family blockholders	ORBIS
Largest financial block ownership	<i>FinancialLar</i>	Control rights of the largest blockholder as a financial institution	ORBIS
Total financial block ownership	<i>FinancialTot</i>	Total control rights of all financial institution blockholders	ORBIS
Largest corporation block ownership	<i>CorpLar</i>	Control rights of the largest blockholder as a corporation (industrial company)	ORBIS
Total corporation block ownership	<i>CorpTot</i>	Total control rights of all corporation blockholders	ORBIS
Largest state block ownership	<i>StateLar</i>	Control rights of the largest blockholder as the state	ORBIS
Total state block ownership	<i>StateTot</i>	Total control rights of all state blockholders	ORBIS
Family blockholder dummy	<i>DFamily</i>	Dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with a family as the ultimate owner at 25.01% to 50%, equal to 2 for firms with a family as the ultimate owner greater than 50%, and equal to 3 for firms with other types of ultimate owners.	ORBIS
Financial blockholder dummy	<i>DFinancial</i>	Dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with a financial ultimate owner at 25.01% to 50%, equal to 2 for firms with a financial ultimate owner greater than 50%, and equal to 3 for firms with other types of ultimate owners.	ORBIS
Corporation blockholder dummy	<i>DCorporation</i>	Dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with a corporation as the ultimate owner at 25.01% to 50%, equal to 2 for firms with a corporation as the ultimate owner greater than 50%, and equal to 3 for firms with other types of ultimate owners.	ORBIS
State blockholder dummy	<i>Dstate</i>	Dummy variable that is equal to 0 for widely held firms, equal to 1 for firms with the state as the ultimate owner at 25.01% to 50%, equal to 2 for firms with the state as the ultimate owner	ORBIS

greater than 50%, and equal to 3 for firms with other types of ultimate owners.

B. Tobin's Q and Control Variables

Firm value	Q	Tobin's Q, which is the ratio of market value to the book value of total assets	
Firm size	<i>Size</i>	Log of total assets denominated in US dollars.	Worldscope
Firm age	<i>Age</i>	Log of the number of years since incorporation	Worldscope
Capital expenditure to sales	<i>CapExNs</i>	Ratio of capital expenditures to sales	Worldscope
Capital expenditure to tangible assets	<i>CapExPpe</i>	Ratio of capital expenditures to the sum of property, plants, and equipment	Worldscope
Sales growth	<i>SalesGrowth</i>	This variable is the sales growth measured by an increase in sales relative to the previous year	Worldscope
Long-term debt	<i>Leverage</i>	Ratio of long-term debt to total assets	
Volatility	<i>Volatility</i>	An annualized monthly standard deviation of the stock price of a firm	Worldscope
Idiosyncratic risk	<i>IdioRisk</i>	Idiosyncratic risk of a firm, measured by the method used in Jin and Myer (2006).	Worldscope

C. Other Variables

Anti-self-dealing index	<i>Anti-self-dealing</i>	Anti-self-dealing index in Djankov et al. (2008)	Djankov et al. (2008)
Anti-director rights index	<i>ADRI</i>	Revised anti-director index in Djankov et al. (2008)	Djankov et al. (2008)

Appendix 2: Mean values of the control variables

Country	Obs.	Size	Age	SalesGrowth	CapExNs	CapExPpe	Lev	Volatility	IdioRisk
Argentina	45	13.10	13.53	0.35	0.12	0.16	0.12	0.39	0.09
Australia	976	11.84	12.02	8.85	0.31	0.38	0.15	0.55	0.32
Austria	135	13.48	14.47	0.17	0.08	0.27	0.16	0.41	0.17
Belgium	178	13.15	16.21	0.38	0.11	0.28	0.17	0.38	0.15
Brazil	27	13.65	15.41	0.11	0.07	0.16	0.17	0.55	0.19
Canada	487	13.50	17.46	0.30	0.22	0.20	0.16	0.52	0.25
Chile	82	13.72	16.88	0.10	0.12	0.14	0.18	0.30	0.07
Denmark	176	12.76	19.02	0.17	0.16	0.36	0.15	0.40	0.15
Finland	262	13.08	12.31	0.16	0.05	0.35	0.15	0.36	0.11
France	1112	12.93	13.21	0.20	0.07	0.93	0.13	0.40	0.16
Germany	1064	12.49	13.60	0.38	0.08	0.40	0.12	0.43	0.16
Greece	458	12.23	11.34	1.28	0.11	0.35	0.16	0.50	0.19
Hong Kong	110	13.98	18.11	1.29	0.14	0.21	0.10	0.51	0.22
India	802	12.72	14.20	0.22	0.20	0.31	0.17	0.64	0.20
Ireland	60	14.20	18.78	0.08	0.07	0.23	0.17	0.41	0.15
Israel	84	13.45	12.57	0.06	0.08	0.28	0.18	0.46	0.24
Italy	295	13.82	11.29	0.18	0.14	0.26	0.16	0.37	0.12
Japan	1174	12.97	16.04	0.15	0.05	0.22	0.08	0.40	0.16
Malaysia	656	11.88	12.55	0.82	0.09	0.18	0.10	0.44	0.25
Mexico	60	14.75	12.97	0.16	0.09	0.17	0.19	0.38	0.15
Netherland	212	13.69	19.70	0.17	0.08	0.30	0.16	0.42	0.15
New Zealand	129	11.99	12.33	1.63	0.81	0.22	0.19	0.39	0.13
Norway	226	13.12	12.85	0.33	0.24	0.35	0.24	0.45	0.17
Pakistan	59	12.69	14.95	0.94	0.11	0.23	0.11	0.42	0.14
Philippines	156	11.82	14.33	2.79	0.13	0.19	0.09	0.51	0.29
Portugal	77	13.85	14.10	0.15	0.14	0.19	0.27	0.40	0.15
Singapore	565	11.62	10.04	0.43	0.11	0.36	0.08	0.61	0.38
South Africa	345	12.46	15.60	0.19	0.09	0.32	0.10	0.51	0.26
South Korea	1139	12.73	14.10	0.12	0.09	0.22	0.09	0.58	0.22
Spain	116	14.23	14.44	0.31	0.15	0.20	0.21	0.29	0.08
Sweden	384	12.86	12.97	0.15	0.05	0.30	0.15	0.46	0.17
Taiwan	1150	11.99	8.74	0.09	0.10	0.19	0.07	0.49	0.17
Thailand	95	12.73	14.11	0.04	0.41	0.66	0.11	0.39	0.12
Turkey	180	13.09	16.16	0.15	0.09	0.19	0.10	0.53	0.17
UK	1774	12.68	18.89	3.34	0.08	0.28	0.14	0.45	0.21
US	6033	13.63	18.41	0.22	0.10	0.26	0.19	0.47	0.28
All	20883	12.94	15.35	0.96	0.12	0.31	0.15	0.47	0.22

Note: This table presents the average firm characteristics by country for the four years from 2006 to 2009. *Size* is the firm size, which is measured by the natural log of the book value of the total assets of a firm. *Age* is the firm age as measured by the natural log of the years since incorporation. *SalesGrowth* is the sales growth as measured by an increase in sales relative to the previous year. *CapExNs* is the ratio of capital expenditures to sales. *Lev* is the long-term debt, which is a fraction of the book value of total assets. *CapExPpe* is the ratio of capital expenditures to tangible assets (property, plants, and equipment). *Volatility* is the annualized

monthly standard deviation of the stock price of a firm. *IdioRisk* is the idiosyncratic risk of a firm, which is measured by the method used in Jin and Myer (2006).

Appendix 3: A summary of selective studies examining firm value and ownership

Demsetz and Lehn (1985) offer the main empirical study examining the effect of ownership concentration on firm performance, and they find no significant relationship between these two factors for a sample of 511 firms in 1981. After this pioneering study, many empirical studies explore the connection between blockholdings and Tobin's Q for both US firms and non-US firms. Although research on the relationship between ownership concentration and firm value is quite voluminous, most of these works focus on the US and other individual countries, and the results are mixed.

Several papers report that firm performance is a function of ownership concentration in the US or in other individual countries (for the US, see Morck et al., 1988; McConnell and Servaes, 1990; Hermalin and Weisbach, 1988; for Japan, see Kang and Shivdasani, 1995; for Germany, see Gorton and Schmid, 2000; for the UK, see Short and Keasey, 1999; or for Spain, see Miguez et al., 2007). Morck et al. (1988) examine the relationship between management holdings of shares and Tobin's Q of 371 Fortune 500 firms in 1980 and find that this relationship is non-monotonic and positive for a quantity of holdings between 0% and 5%, negative for holdings between 5% and 25%, and positive for holdings greater than 25%. McConnell and Servaes (1990) find a curvilinear relationship between insider ownership and Q for two samples of more than 1,000 Compustat firms in 1976 and 1986, but they find no significant relationship between blockholders and Q. Hermalin and Weisbach (1988) find a significant non-monotonic relationship between firm value and managerial ownership for panel data that cover a five-year period. In addition, several non-US studies find a significant positive relationship between ownership concentration and firm value in countries such as Japan (Kang and Shivdasani, 1995) and Germany (Gorton and Schmid, 2000). Other studies find that managerial ownership has a non-linear relationship with firm performance in countries such as the UK (Short and Keasey, 1999) or Spain (Miguel et al., 2001). Recently,

several studies report a significant relationship between firm performance and family-owned firms (Anderson and Reeb 2008, Masulis et al. 2011), between firm performance and foreign institutional blockholders (Aggarwal et al. 2010), and between performance and multi-blockholders (Konijn et al. 2011).

However, many other papers claim that ownership structure has no effect on firm performance or on accounting profitability. Holderness and Sheehan (1988) find that firm performance or the accounting rate of profit between diffusely held firms and majority-owned firms (greater than 50%) are not significantly different. In addition, Mehran (1995) finds no relationship between firm performance and blockholdings or between firm performance and types of blockholders (individual, institutional, or corporate). Holderness, Kroszner, and Sheehan (1999) replicate the study of Morck et al. (1988) and find that the piecewise linear pattern generally holds. Claessens et al. (2000) study Czech firms and find that managerial equity holdings have no effect on firm value. Himmelberg et al. (1999) conclude that changes in ownership holdings do not significantly affect firm performance when controlling for endogeneity and firm characteristics. Demsetz and Villalonga (2001) claim that there is no systematic relationship between ownership concentration and firm value. Furthermore, some papers find reverse causation between ownership concentration and firm performance. Loderer and Martin (1997) report that insider ownership does not affect Tobin's Q and that Q is actually a negative predictor of insider ownership. Similarly, Cho (1998) runs a regression of a system of three equations and finds that although Q has an effect on ownership structure, this structure has no significant relationship with Q.