Do family firms outperform non-family ones? A panel data analysis of Western European corporations

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Abstract

This paper aims to analyze whether family control contributes to increase the market value of the firm, and to disentangle whether family businesses outperform their non-family counterparts in Western Europe. Interesting results are provided by using the Generalized Method of Moments to estimate our models. We find that family ownership concentration impacts positively on firm value, even when the general blockholder effect is controlled for. The better performance of family firms is mainly due to the presence of family members in the board of directors and the founder influence inside the company. The provided evidence furthermore shows that ownership concentration in the hands of a family can be an internal control mechanism that substitutes for the lack of external protection of minority shareholders' rights. Overall, our results support a positive effect of family control on firm value consistent with the potential benefits associated to family owners.

Keywords: family firm, ownership concentration, firm value.

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1. Introduction

The importance of family firms throughout the world has motivated abundant theoretical and empirical literature, as highlighted in recent studies (Miller, Le Breton-Miller, Lester and Cannella, 2007; Martikainen, Nikkinen and Vähämaa, 2008). In this respect, La Porta, Lopez-de-Silanes and Shleifer (1999) document that family control is the most widespread form of organizational structure except in countries with strong protection of minority shareholders. This finding runs contrary to the Berle and Means' (1932) image of the modern corporation, in which ownership is dispersed among minority investors and control is concentrated in the hands of the managers. When theoretically modelling the evolution of family firms, Bhattacharya and Ravikumar (2001) also stress the predominance of family businesses. They argue the importance of family firms in the initial stages of a country's economic development and their still significant role in all countries as capital markets develop. Additionally, Morck, Wolfenzon and Yeung (2005) highlight the pervasiveness of family firms in most economies, paying special attention to the concentration of corporate control in the hands of very wealthy families and the rarity of ownership dispersion.

With respect to the predominance of family firms in particular regions of the world, control by a family appears to be common among large U.S. companies (Bhattacharya and Ravikumar, 2001; Anderson and Reeb, 2003; Gadhoum, Lang and Young, 2005) as well as among corporations that operate in Western European countries (Franks and Mayer, 2001; Faccio and Lang, 2002). Additionally, several studies document the importance of family firms in the East Asian region (Mok, Lam and Cheung, 1992; Lam, Mok, Cheung and Yam, 1994; Claessens, Djankov and Lang, 2000). Despite the prevalence of family firms in many countries and despite the influence of family owners throughout the world (even in the most developed economies, such as the Western European or the American), the evidence on the effect of family ownership on corporate performance is still scarce. There are, however, some recent papers that provide empirical evidence on this issue, and others that analyze different aspects related to family firms. Nevertheless, their results are inconclusive as to whether family control is beneficial or detrimental to minority shareholders.

On the one hand, there is a stream of literature that points out to potential benefits of family control and supports a positive effect of this type of organizational structure on corporate performance. Specifically, several papers find a positive relationship between both family control and family ownership, and different measures

of corporate performance. In the U.S., McConaughy, Walker, Henderson and Mishra (1998), Anderson and Reeb (2003) and Villalonga and Amit (2006) empirically document that under particular circumstances family ownership and control have a positive impact on firm performance. According to Martikainen, Nikkinen and Vähämaa (2008), this positive effect of family ownership and control is in part due to the higher productivity of U.S. family firms in relation to non-family ones. In line with these results, Maury (2006) and Barontini and Caprio (2006) find that family-controlled companies perform better as compared to non-family corporations in Western Europe, whereas Chang and Shin (2007) provide empirical results against the possibility of wealth expropriation of minority shareholders by controlling families in Korean conglomerates.

On the other hand, several investigations empirically show a negative impact of family control on minority shareholders' wealth, thus contradicting the conclusions reached in the aforementioned studies and questioning the positive effects of ownership concentration in the hands of the family. For example, Miller, Le Breton-Miller, Lester and Cannella (2007) conclude that only "lone founder businesses" perform better than other U.S. public corporations, while "true family businesses" do not show superior market valuations[1]. With respect to Western Europe, Cronqvist and Nilsson (2003) and Barth, Gulbrandsen and Schone (2005) find that family ownership can be detrimental to minority shareholders in Sweden and Norway, respectively. Additionally, Faccio, Lang and Young (2001) conclude that controlling families in East Asian corporations are in a better position to expropriate wealth from minority shareholders than in Western Europe, suggesting that family ownership does not always benefit minority shareholders.

In this scenario of conflicting evidence, it is our main objective to disentangle whether Western European family firms perform differently to their non-family counterparts. In addition to analyzing the impact of ownership concentration on firm value distinguishing between family firms and non-family ones, we will consider the possibility that the different performance of the former with respect to the latter is affected by specific firm-level characteristics, namely the presence of family members in the board of directors and the generation controlling the business. We furthermore

[1] These authors define "lone founder businesses" as those in which an individual is one of the company's founders and is also a manager or a large owner, with no other family members involved; whereas "true family businesses" are those that include multiple family members as major owners or managers.

study the interaction between family control (an internal control mechanism) and the legal system in which companies operate (an external control mechanism) to ascertain whether they complement or substitute each other.

To achieve the objectives of our investigation, we first develop two empirical models that allow us to determine whether there is a stronger positive impact of ownership concentration on firm value in the case of family-controlled corporations. Two additional models are then proposed to analyze whether the better performance of family firms is mainly due to family businesses in which the family actively participates in the company's management and those controlled by the first generation. And, finally, the substitutability between family control and external protection of minority shareholders' rights will be investigated using a fifth empirical model. To test our hypotheses, we use a unique sample of companies from Western Europe for which we were able to obtain valuable data of three different types. First, information related to the market value of the company, needed to calculate the dependent variable of our models. Second, data on the companies' ownership structure, essential to compute the explanatory variables of interest. And third, the composition of the firms' financial statements to calculate a set of control variables that will enter the right-hand side of our models.

With respect to the estimation methodology, our choice has been motivated by the importance of taking into account two important problems that arise when studying the impact of the firm's ownership structure on its market valuation, namely the unobservable heterogeneity and the endogeneity problems. In regard to the former, family firms have several individual characteristics that make them different from other organizational structures. Furthermore, every firm (and especially family firms) has its own specificity that gives rise to a particular behaviour closely linked to the culture of the company, which in family firms is imposed by the owner family. Consequently, the firm's unobservable heterogeneity must enter the models since it could impact on firm value. In regard to the latter, several studies highlight the potential endogeneity of ownership concentration, which may seriously affect the ownership-performance relationship. We thus use the panel data methodology to eliminate the unobservable heterogeneity, and estimate our models by using the Generalized Method of Moments (GMM) to control for endogeneity.

Our study contributes to the existing finance and management literature in several different ways. First, we provide empirical results on the different impact of

family ownership concentration on firm value relative to other organizational forms by using a restrictive definition of family firm that allows us to exclude from this group of corporations the so-called "lone founder businesses". When comparing family firms to other firm categories, we furthermore use several family firm definitions (according to the level of ownership concentration in the hands of the family) and control for the general blockholder effect to assure the consistency and reliability of our results. Second, we contribute to the ongoing debate about the benefits and costs of family control relative to other ownership structures by taking into account the possibility that the different performance of family firms is mainly due to certain types of family-controlled corporations. Third, given that our estimations are performed using a unique sample of corporations representative of the different institutional environments that exist in Western Europe, we can analyze the interrelation between family control (an internal corporate governance mechanism) and legal protection of minority shareholders (an external corporate governance mechanism). And fourth, our estimation method eliminates unobservable heterogeneity and controls for endogeneity of the explanatory variables in a more efficient way than the methodologies used in previous studies that analyze the firm's ownership structure and its impact on corporate performance as well.

By testing our hypotheses, we provide empirical evidence supporting previous literature that argues that family control is beneficial to minority shareholders. Furthermore, we find that the better performance of family firms relative to non-family ones holds when the general blockholder effect is controlled for. However, according to the provided evidence it appears that the superior performance of family-controlled corporations is primarily due to those in which the family is directly represented in the board of directors and those in which the founder influence is still present. Finally, and contrary to the results of previous studies similar to ours, we find that the benefits associated with family control are more important in settings where minority shareholders are weakly protected by the law, which points to a substitution effect between the internal monitoring exercised by the family and the external protection of minority shareholders' rights pursued by the law.

The remainder of the paper is organised as follows. The second section reviews previous literature and empirical evidence related to family control, and presents our hypotheses and models. Section 3 describes the data, and details the family firm definition and the estimation method used in our study. The descriptive analysis and

regression results are discussed in Section 4, whereas Section 5 presents several robustness checks. The last section highlights the main conclusions of the paper.

2. Theory, hypotheses and empirical models

2.1. Do family firms perform differently to non-family ones?

Berle and Means (1932) already suggested the importance of ownership concentration as a means to alleviate the agency problems between owners and managers in the modern corporation. They pointed out to the existence of a positive impact of ownership concentration on corporate performance since dispersion of ownership creates free riding problems and hinders managers' monitoring. A few decades later, Shleifer and Vishny (1986) confirmed the positive relationship between ownership concentration and firm value, which implies that the classic owner-manager problem can be in part resolved by monitoring and control activities on the part of large shareholders. Consistent with a positive impact of ownership concentration on firm performance, Holderness and Sheehan (1988) conclude that firms with majority shareholders do not perform poorly relative to widely held corporations, and show that they survive over time. These findings contradict the hypothesis that ownership concentration in the hands of large shareholders is motivated by wealth expropriation or consumption of corporate resources. In favour of a positive effect of ownership concentration on firm performance, Shleifer and Vishny (1997) mention that large shareholders address the agency problem between owners and managers in that they have a great interest in profit maximization. Moreover, although evidence from all over the world suggests that ownership structure influences firm performance in different ways depending on the country and the blockholder identity, concentrated ownership most often has a positive effect on firm value (Denis and McConnell, 2003). In fact, block ownership helps to mitigate agency costs (Chen and Yur-Austin, 2007), thus contributing to value creation.

In the framework of the aforementioned literature, which suggests that ownership concentration contributes to increase the market value of the firm, our first objective is to empirically analyze whether there is a different impact of ownership concentration on firm value in the case of family firms as compared to other corporations. In this respect, several arguments in favour of a stronger positive relationship between ownership concentration and corporate performance in family businesses have already been proposed by previous theoretical and empirical research.

First, family owners are more interested in firm survival and they often focus on longer horizons than other categories of large shareholders because they worry about the

continuity of their company and contemplate it as an asset to bequeath to the next generation. The extended horizons of family firms may induce them to invest following criteria that maximize the value of the company, thus benefiting minority shareholders (James, 1999; McVey and Draho, 2005). In line with this argument, the sustained presence of family owners in the company and their longer investment horizons relative to managers of widely held corporations are likely to reduce managerial myopia, thus leading to better firm performance (Anderson and Reeb, 2003). Furthermore, Anderson, Mansi and Reeb (2003) suggest that the survival concern and the lack of diversification of family owners may help to alleviate the agency costs between bondholders and shareholders identified by Jensen and Meckling (1976). Likewise, the long-term presence of family members in the company may increase earnings quality (Wang, 2006) and may facilitate superior knowledge of the firm's technology improving firm's productivity (Martikainen, Nikkinen and Vähämaa, 2008).

Second, the reputation concern and the intention to preserve the family name are likely to entail a significant commitment on the part of family owners, which may lead to positive economic consequences as already suggested in previous research. Family ties and reputation can limit managerial self-dealing when family members run the company, thus facilitating firm survival (Denis and Denis, 1994). Moreover, family's reputation may facilitate long-term relationships with other stakeholders, such as customers, suppliers and capital providers (Anderson and Reeb, 2003; McVey and Draho, 2005). Specifically, the reputation concern of family owners allows family firms to have a lower cost of debt financing and to reduce the conflicts of interests between shareholders and bondholders (Anderson, Mansi and Reeb, 2003). Additionally, the reputation concern of family firms may also be a possible explanation for the significant association between founding family ownership and higher earnings quality found by Wang (2006) in U.S. corporations.

Third, agency problems due to the separation of ownership and control (Jensen and Meckling, 1976; Fama and Jensen, 1983) may be resolved in family firms run by members of the owner family (McVey and Draho, 2005). In fact, individual large shareholders usually occupy management positions instead of merely monitoring managers (Holderness and Sheehan, 1988). Furthermore, after confirming that firms with majority owners do not underperform, Denis and Denis (1994) conclude that family management seems to be necessary for concentrated ownership. Additionally, an owner-manager with a significant stake in the company, as in the case of family firms

managed by members of the family, may be beneficial thanks to the alignment of interests between owners and managers (Han and Suk, 1998 ; Lemmon and Lins, 2003). In short, it is possible to state that owner-managers are frequent in family firms and that they may be beneficial as compared to outside managers due to their superior knowledge of the company and their particular interest in increasing firm value.

Previous empirical studies have also investigated the relationship between ownership structure and corporate performance comparing family firms to non-family ones. Nevertheless, the provided results are inconclusive and vary depending on the institutional setting, on the definition of family firm or on the methodology applied.

On the one hand, there are several studies that find a better performance of family firms relative to non-family ones. McConaughy, Walker, Henderson and Mishra (1998) are among the first to show that family firms outperform non-family ones in terms of efficiency and market valuation in the U.S. Consistent with this result, Anderson and Reeb (2003) find that companies with continued founding-family presence exhibit significantly better accounting and market performance measures than non-family firms. Additionally, Martikainen, Nikkinen and Vähämaa (2008) find that family firms are more productive than non-family ones. These authors argue that the more efficient use of labour and capital resources of family firms as compare to non-family ones (and not the differences in the production technologies between them) explains in part the higher profitability and valuation of family firms found in previous investigations. Consistent with the empirical evidence provided in the U.S. case, Maury (2006) and Barontini and Caprio (2006) empirically show that family control leads to higher firm valuations and higher profitability in Western European corporations.

On the other hand, there is also evidence that family firms do not perform better than non-family ones. Miller, Le Breton-Miller, Lester and Cannella (2007) classify family firms into what they name “lone founder businesses” and “true family businesses”, and find that whereas U.S. “lone founder businesses” perform better than other public corporations, “true family businesses” do not show superior market valuations. In the same vein but adopting a less restrictive definition of family firm, Cronqvist and Nilsson (2003) and Barth, Gulbrandsen and Schone (2005) conclude that family ownership is negatively related to corporate performance in Sweden and Norway, respectively. The former provides empirical evidence that Swedish family firms are associated with larger agency costs and lower market values relative to other ownership structures, while the latter concludes that family firms are less productive

than non-family ones in Norway. Moreover, there is also evidence showing that family ownership may be detrimental to minority shareholders when investors' protection is weak (Faccio, Lang and Young, 2001; Lins, 2003).

Considering the aforementioned evidence and consistent with the potential benefits of family firms highlighted in previous literature, we intend to contribute to the ongoing debate about the performance of family firms relative to non-family ones by proposing the following hypothesis:

Hypothesis 1: There is a stronger positive relationship between ownership concentration and value in family firms than in non-family firms.

To test this hypothesis, we have developed the following model:

$$V_{it} = \alpha_0 + (\alpha_1 + \gamma_1 FD_{it})OC_{it} + \phi X_{it} + \varepsilon_{it} \quad (1)$$

where V_{it} is a measure of the firm's value and OC_{it} stands for ownership concentration, as measured by the percentage of votes in the hands of the company's largest shareholder[2]. X_{it} is a vector of control variables that have been usually considered in the literature on ownership structure. Specifically, vector X_{it} includes a set of firm characteristics, such as size, debt, cash flow, age and the stake of the second largest shareholder. Regarding the effect of ownership concentration on firm value, we distinguish between family and non-family firms by interacting the ownership variable with a dummy variable, FD_{it}, which equals one for family firms, and zero otherwise. Consequently, the effect of ownership concentration on value is α_1 for non-family firms (since FD_{it} equals zero), whereas such impact in the family firms' case is measured by $(\alpha_1 + \gamma_1)$[3]. We therefore expect to find that $\hat{\alpha}_1 + \hat{\gamma}_1 > \hat{\alpha}_1$.

We have just argued that the influence of ownership concentration on corporate performance is different when there is a controlling family in the company. Specifically, our first hypothesis posits that there is a stronger positive association between ownership concentration and value in family firms than in non-family corporations. Nevertheless, as will be indicated in the following section, the non-family category in our sample comprises firms with other types of dominant shareholders as well as widely held corporations. Consequently, it could be argued that the different impact of family ownership concentration on value that may result from the estimation of our first model

[2] For a detailed definition of all variables included in the models, see Appendices A, B and C.

[3] A summary of the effects of ownership concentration on firm value for family and non-family firms as defined in each model is provided in Appendix D.

is only capturing the benefits of having a large shareholder in the company suggested in early literature (Berle and Means, 1932; Shleifer and Vishny, 1986; Holderness and Sheehan, 1988), and not necessarily the family influence in which we are interested.

In fact, more recent studies that compare family ownership with other organizational forms highlight the importance of controlling for general blockholder effects when making such a comparison. On the one hand, Maury (2006) includes in the right-hand side of his empirical models a dummy variable that equals one for companies with dispersed ownership in order to control for firms that have no controlling shareholder at the 10 percent cut-off point, which he uses to identify family firms. On the other hand, Andres (2008) extends his initial model by including dummy variables for different blockholder types to determine whether controlling families indeed add value to a firm in a specific way relative to other blockholder categories. Both authors can therefore assure that their respective family control variables are capturing the specific family effect and not a more general blockholder effect.

Taking into account the importance of controlling for general blockholder effects when comparing family control to other ownership structures, and given that our main interest is in the family influence on corporate performance (and not in the beneficial effect associated to other large blockholders in order to reduce the free-rider problem related to ownership dispersion), we formulate the second hypothesis of our study as follows:

Hypothesis 2: The stronger positive impact of ownership concentration on value in family firms holds after controlling for the blockholder effect.

To test our second hypothesis, we have extended the model in (1) as follows:

$$V_{it} = \alpha_0 + (\alpha_1 + \gamma_1 FD_{it} + \delta_1 BE_{it})OC_{it} + \phi X_{it} + \varepsilon_{it} \quad (2)$$

As can be seen in Model (2), we have interacted ownership concentration with a new dummy variable (namely, blockholder effect dummy - BE_{it} -, which equals one if there is a blockholder in the firm, and zero otherwise) to account for the general blockholder effect. As a result, in this model α_1 measures the influence of ownership concentration on firm value for widely held corporations (since BE_{it} equals zero), whereas for non-family firms with a large shareholder the impact of ownership concentration on the dependent variable is captured by $(\alpha_1 + \delta_1)$. Finally, for family firms, this impact is measured by $(\alpha_1 + \gamma_1 + \delta_1)$.

2.2. Is the different performance of family firms moderated by firm-level characteristics?

The aforementioned arguments highlight the benefits of ownership concentration as a corporate governance mechanism and indicate that the identity of large shareholders (and, more precisely, the differentiation between family and non-family firms) may be of great importance in the study of the ownership-performance relationship (Holderness and Sheehan, 1988). In this context and based on the potential benefits of family control, we have initially proposed a stronger positive relationship between ownership concentration and firm value in the case of family firms.

However, the better performance of family-controlled corporations relative to other firm categories is likely to be moderated by specific firm-level characteristics. That is, the differences in corporate performance between family and non-family firms may be primarily attributable to a subset of family businesses. In this respect, previous studies argue that active and passive family involvement in management might influence corporate performance differently (Anderson and Reeb, 2003; Andres, 2008). This argument is in line with the third potential benefit associated to family control mentioned in the previous section, according to which the reduction of the classic owner-manager agency conflict is most prevalent in family firms where members of the controlling family hold management positions. Such reasoning is also consistent with the convergence-of-interest hypothesis formulated in the literature on the relation between insider ownership and corporate performance (see, for instance, Morck, Shleifer and Vishny, 1988; Stulz, 1988; McConnell and Servaes, 1990; Miguel, Pindado and de la Torre, 2004).

Additionally, in the family business literature, Anderson and Reeb (2003) conclude that the better performance of family firms they find in the U.S. is mainly due to corporations in which either the founder or his descendant serves as chief executive officer (CEO). When an outsider occupies this position family firms are not distinguishable from other companies in terms of corporate performance, according to these authors. Similar findings are provided by Maury (2006) and Barontini and Caprio (2006) for the Western European case. The former shows that if a member of the controlling family is CEO, Honorary Chairman, Chairman or Vice Chairman of the company, accounting profitability increases significantly with respect to passive family control. The latter, on their part, find that among the family firms in their sample the worst-performing ones are those in which the family is not present in the board of

directors. They also provide empirical evidence that when family members act as non-executive directors family firms are much better-off than non-family corporations.

In light of these arguments and findings, and taking into account recent research that confirms the importance of family board representation in order to outperform their non-family counterpart (Andres, 2008), we aim to go a step forward in our analysis by proposing that the higher firm value of family-controlled corporations proposed in the two previous hypotheses is to a great extent due to some family businesses. Consequently, the third hypothesis of the study is formulated as follows:

Hypothesis 3: The stronger positive impact of ownership concentration on value in family firms is mainly due to those in which family members are seated in the board of directors.

To test this hypothesis, the following model has been developed:

$$V_{it} = \alpha_0 + (\alpha_1 + \lambda_1 BFD_{it} + \beta_1 NBFD_{it} + \delta_1 BE_{it})OC_{it} + \phi X_{it} + \varepsilon_{it} \quad (3)$$

In this model, our family dummy has been replaced by two other dummies. The first one, BFD_{it} (board family dummy), equals one for family firms in which family members are seated in the board of directors, and zero otherwise. The second one, $NBFD_{it}$ (non-board family dummy), equals one for family firms in which no family member is seated in the board, and zero otherwise. Consequently, now $(\alpha_1 + \lambda_1 + \delta_1)$ measures the effect of ownership concentration on corporate value for family businesses with family presence in the board of directors, while for the remaining family firms this effect is captured by $(\alpha_1 + \beta_1 + \delta_1)$. We thus expect that $(\hat{\alpha}_1 + \hat{\lambda}_1 + \hat{\delta}_1) > (\hat{\alpha}_1 + \hat{\beta}_1 + \hat{\delta}_1)$.

In addition to the family involvement in the firm management, the research on family business has documented the importance of firm age, and alternatively the family generation in charge of the company, as a firm-level characteristic that significantly moderates the relationship between family control and corporate performance. Morck, Shleifer and Vishny (1988) already suggested that firm age should be taken into account when analyzing the ownership-performance relationship. In fact, their empirical evidence supports the idea that the age of the company may play an important role when studying the influence of family ownership on corporate performance, and suggests that the positive relationship between both variables may be attributable to young family corporations.

In short, the reasoning to argue that young family firms perform better than old ones is that ownership concentration in the latter is in the hands of family members that

are either less motivated to effectively monitor the managers or less skilled to run the company. The reason to classify family firms according to firm age and to argue that young family firms and old ones perform differently also relates to recent theoretical and empirical research. Specifically, the inclusion of firm age as a moderating variable in the relationship between family ownership concentration and corporate performance is associated with two recently investigated issues, i.e. the succession decision inside family corporations and the generation of the family controlling or running the firm.

With respect to the first issue, old family firms are more likely to have faced one of the most controversial decisions inside this type of organizations, i.e. the succession decision. If succession is not properly planned, generational transfer of control can result in squabbles and tension among family members (McVey and Draho, 2005), thus affecting negatively firm value. Several studies analyze the impact that the transition to the next generation has on corporate performance of family firms and find significant declines in firm performance surrounding the appointment of family managers as opposed to professional managers (Smith and Amoako-Adu, 1999; Pérez-González, 2006; Bennedsen, Nielsen, Pérez-González and Wolfenzon, 2007; Cucculelli and Micucci, 2008). These results support the idea that young family firms may outperform old ones, in which it is more likely that control has been inherited. The worse performance of old family firms that have gone through family succession may be explained by how managers are appointed in family firms. Management appointments in these firms may be more affected by individual family interests than by other corporate objectives (such as value maximization), leading to a decline in firm value post-succession (Smith and Amoako-Adu, 1999). Therefore, taking into account that family succession may lead to a reduction in the market value of the firm, and considering that inherited control is more likely in old family corporations, it seems reasonable to argue that young family firms are better performers than old family ones.

In relation to the second issue, young and old family firms may perform differently as a result of the generation of the family controlling or managing the company. Family firms controlled or run by the founder may perform differently than those in the hands of second or later generations (Villalonga and Amit, 2006; Barontini and Caprio, 2006). Young family firms are generally founder-run corporations whereas old family firms are more likely to be in the hands of second or later generations (Blanco-Mazagatos, Quevedo-Puente and Castrillo, 2007). Furthermore, while founders that manage young family firms may possess unique valuable skills and experience, as

well as the managerial talent necessary to run the company, succeeding generations in old family corporations may lack such entrepreneurial talent (Anderson and Reeb, 2003; McVey and Draho, 2005).

Consistent with this reasoning, we argue that firm age might play a significant role as a moderating variable in the relationship we are investigating. As in the previous hypothesis, our main objective is to ascertain whether the better performance of family firms is mainly attributable to a subsample of this particular type of corporations. The sorting criterion in this case is the age of the company, or equivalently the generation controlling the family business. In particular, we propose that young family firms (i.e., family firms in which the founder influence is still present) outperform old family corporations (i.e., those in the hands of second or later generations). Nevertheless, given that in the family business context, classifying companies according to firm age is comparable to differentiating between family businesses in which the founder influence is still important and those that have already experienced the complete transition to the next generation (Menéndez-Requejo, 2006), the fourth hypothesis of the study is posed as follows:

Hypothesis 4: The stronger positive impact of ownership concentration on value in family firms is mainly due to those controlled by the first generation.

In this case, we propose the following model:

$$V_{it} = \alpha_0 + (\alpha_1 + \varphi_1 FGFD_{it} + \psi_1 SGFD_{it} + \delta_1 BE_{it})OC_{it} + \phi X_{it} + \varepsilon_{it} \quad (4)$$

Now, as in the previous specification, the family firm sample has been split in two groups. But in this model the splitting criterion is whether the business is controlled either by the first generation ($FGFD_{it}$) or by succeeding generations ($SGFD_{it}$)[4]. As a consequence, $(\alpha_1 + \varphi_1 + \delta_1)$ is the impact of ownership concentration on value for first-generation family firms and $(\alpha_1 + \psi_1 + \delta_1)$ is the impact for family businesses in the hand of second or later generations. Consistent with Hypothesis 4, we expect that $(\hat{\alpha}_1 + \hat{\varphi}_1 + \hat{\delta}_1) > (\hat{\alpha}_1 + \hat{\psi}_1 + \hat{\delta}_1)$.

[4] Based on previous literature (Ward, 1988; Menéndez-Requejo, 2006), we consider that the founder influence is still present in family firms which are less than 30 years old, and classify these family businesses as being controlled by the first generation. Family firms with more than 30 years of existence are considered to have experienced the transition to the next generation and to be in the hands of second or later generations.

2.3. Does family control substitute for the lack of legal protection of minority shareholders?

Up to now, we have focused on whether a particular organizational form such as family control may lead to superior economic performance in terms of market valuation. Based on previous theoretical and empirical literature, we have also suggested that the different performance of family-controlled corporations relative to other ownership structures might be due to specific categories of family firms, namely those in which family members are actively involved in management activities through board representation and family firms in which the founder control is still present. An additional challenge of this study is to empirically investigate the interrelation between an internal or firm-level governance mechanism (i.e., family ownership concentration) and an external or country-level governance mechanism (i.e., legal protection of minority shareholders' rights).

To date, scarce empirical evidence has been provided as to the interaction between internal and external corporate governance mechanisms. Nevertheless, the "Law and Finance" literature initiated by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) suggests that the level of protection of minority shareholders' rights that exists in a region might significantly influence the ownership structure that prevails in that specific region. In particular, La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) propose that in the absence of strong minority shareholder protection, investors increase their stake in the firm, thus leading to a higher level of ownership concentration. Consistent with this argument, Kim, Kitsabunnarat-Chatjuthamard and Nofsinger (2007) find that in Europe, countries with weak minority investor laws have larger owners, whereas the proportion of independent directors in the board is higher in countries with laws that better protect minority shareholders. These findings therefore confirm the importance of analyzing the interrelations between internal and external corporate governance mechanisms. Furthermore, recent studies highlight the important role that internal control mechanisms may play in countries with weak legal protection for minority investors in order to affect corporate value (Dahya, Dimitrov and McConnell, 2008).

Given that our sample comprises companies from the different legal systems identified by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), it is our objective to empirically investigate whether the impact of family ownership concentration on firm value is different depending on the institutional setting in which companies operate.

Based on Shleifer and Vishny (1997) and La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), it is possible to argue that the stronger positive effect of family ownership concentration on firm value argued in previous sections will be mostly due to family firms that operate in countries with weak investor protection. The rationale behind this reasoning is that in this context, blockholder ownership, and hence family ownership concentration as well, is more necessary to counteract the agency problems between owners and managers. A later survey of research on corporate governance systems outside the U.S. and the U.K. by Denis and McConnell (2003) further supports this substitution effect between ownership concentration and minority shareholder protection.

Nevertheless, it can also be argued that when minority investors are weakly protected, dominant shareholders are in a better position to extract benefits of control. Thomsen, Pedersen and Kvist (2006) indeed find that while in the U.S. and the U.K. blockholder ownership has no significant effect on firm performance, in Continental Europe high blockholder ownership is negatively associated with firm value and accounting profitability. In line with this result, Maury (2006) documents that the better performance of family firms with respect to non-family ones he finds for Western European corporations is mainly due to economies with strong shareholder protection.

Consequently, it is not clear whether family ownership concentration and minority shareholder protection laws complement or substitute each other. Nevertheless, considering the potential advantages of family control that motivated our first hypotheses, we propose that family ownership concentration may be an internal corporate governance mechanism that effectively substitutes for the lack of external minority investor protection. The following hypothesis is therefore formulated:

Hypothesis 5: There is a stronger positive relationship between ownership concentration and value in family firms that operate in countries with weak minority shareholder protection.

To test our fifth hypothesis, the following model is proposed:

$$V_{it} = \alpha_0 + (\alpha_1 + \pi_1 SPFD_{it} + \omega_1 WPFD_{it} + \delta_1 BE_{it})OC_{it} + \phi X_{it} + \varepsilon_{it} \quad (5)$$

where $SPFD_{it}$ (strong-protection family dummy) and $WPFD_{it}$ (weak-protection family dummy) are the two dummies of interest. The former equals one for family firms that operate in countries with strong protection of minority shareholders' right, and zero otherwise. The latter equals one for family firms that operate in institutional settings

where minority investors are weakly protected, and zero otherwise. Therefore, the effect of ownership concentration on value for the first subsample of family firms is measured by $(\alpha_1 + \pi_1 + \delta_1)$, while for the second one it is measured by $(\alpha_1 + \omega_1 + \delta_1)$. Hypothesis 5 thus suggests that $(\hat{\alpha}_1 + \hat{\pi}_1 + \hat{\delta}_1) < (\hat{\alpha}_1 + \hat{\omega}_1 + \hat{\delta}_1)$.

3. Data, family firm definition and estimation method

3.1. Data

To test our hypotheses, we need three different types of firm-level data. First, the number of outstanding shares and its market price are needed to calculate the market value of the company (i.e., the dependent variable of our models). Second, we need the distribution of the firm's equity among its shareholders to determine the level of ownership concentration and the identity of the largest shareholder to identify family firms (i.e., ownership data to calculate our variables of interest). And third, the firms' financial statements are needed to calculate a set of control variables that will enter the right-hand side of our models. We have therefore used AMADEUS database as our main source of information. Additionally, some macroeconomic data (such as the growth of capital goods prices, the rate of interest of short term debt and the rate of interest of long term debt) needed to calculate the variables as explained in Appendices A and C have been extracted from the *Main Economic Indicators* published by the Organisation for Economic Cooperation and Development (OECD).

The main reason for choosing AMADEUS as our main source of information is that it is a database containing comprehensive data on market valuation, shareholding and financial statements of companies that operate in European countries. The AMADEUS database is published by Bureau van Dijk Electronic Publishing (BvDEP), one of the world's leading electronic publishers of business information. BvDEP collects data from over 30 specialized information providers to ensure that AMADEUS contains the best available information. Moreover, BvDEP has developed a uniform format that maximises the availability of financial items across the different countries' filing regulations balanced with a realistic representation of company accounts. The format is applied to all companies, thus allowing our cross-country empirical investigation. In addition to containing standardised annual accounts, AMADEUS provides a unique ownership data set, which we need to test our hypotheses.

Specifically, we have extracted the firm-level information from the "TOP 1.5 million module" of AMADEUS, which comprises the largest 1.5 million corporations

that operate in the Eastern and Western European regions. Nevertheless, we have restricted our analysis to Western European corporations. Furthermore, to have a representative sample of listed companies that operate in Western Europe, we have focused on countries whose institutional environment is classified in La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998). We thus ensure that the different legal systems identified by these authors are represented in our sample. In fact, the corporations included in the study operate in common-law countries (United Kingdom), French-civil-law countries (France, Greece, Netherlands, and Spain), German-civil-law countries (Germany and Switzerland) and Scandinavian countries (Finland and Sweden)[5]. This fact helps us to better generalize our research results, as opposed to the weak applicability of the empirical evidence from the U.S. pointed out by Cucculelli and Micucci (2008).

The time period of our study is also restricted by the type of information needed to test the hypotheses proposed in Section 2. Particularly, our study period ranges from 2000 to 2006 since these are the years for which we were able to obtain sufficient ownership data from AMADEUS. Finally, our methodology imposes an additional restriction to control for unobservable heterogeneity and endogeneity; that is, we need information for at least four consecutive years per company in order to test for the absence of second-order serial correlation, as Arellano and Bond (1991) point out. We need to test for the second-order serial correlation because our estimation method, the Generalized Method of Moments (GMM), is based on this assumption. Therefore, our final sample is an unbalanced panel comprising 834 companies (4,729 observations) for which the information is available for at least four consecutive years between 2000 and 2006.

3.2. Family firm definition

We consider a company as being family-controlled if the largest shareholder is a family or a member of the founding family with at least 10, 20 or 25 percent of the company's voting rights (depending on the family firm definition). On the one hand, previous literature has extensively used the 10 and 20 percent criteria to identify companies with a controlling shareholder (Faccio and Lang, 2002; Maury, 2006; Dahya, Dimitrov and McConnell, 2008; among others). On the other hand, the 25 percent cut-off point is in

[5]Other countries from Western Europe contemplated in La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) (namely Austria, Belgium, Denmark, Ireland, Italy, Portugal and Norway) are not considered in our analysis, because there is not enough data to comply with our strong information requirements.

line with the official definition of family business recently adopted by the GEEF (European Group of Owner Managed and Family Enterprises) and the Board of the Family Business Network[6].

To identify corporations in which a family is the largest owner, we adopt the following procedure. First, using the information provided by AMADEUS database we identify the firms in which the largest shareholder is "*an individual or a family*". From these companies, in some cases AMADEUS asserts that the largest shareholder is a family, whereas in other cases only the name of an individual is provided. We classify the former as family-controlled as long as the family owns at least 10 percent (alternatively 20 and 25 percent) of the company's voting rights. Second, when according to AMADEUS the largest owner is just an individual, we investigate whether there is another individual with the same family name either in the board of directors or with a stake in the company (i.e., among the firm's shareholders). In these cases, we can assure that two members of the same family are involved in the company, and therefore consider it as being family-controlled. The voting rights criterion (that is, the 10, 20 or 25 percent cut-off points, respectively) must also be fulfilled by this group of corporations in which the largest owner is an individual to be included in the family firm sample.

By adopting this definition of family firm, we avoid the risk of classifying as family-controlled companies which are owned and run by an entrepreneur (i.e., those named as "lone founder businesses" by Miller, Le Breton-Miller, Lester and Cannella, 2007). Moreover, by requiring a certain level of ownership concentration in the hands of the largest shareholder, we assure that the family has effective control of the company.

Table 1 presents the distribution of the whole sample classifying corporations according to their ownership structure and to the legal origin in which they operate. Moreover, the 10, 20 and 25 percent cut-off points are used in Panels A, B and C, respectively to make the classification into family and non-family firms. As shown in the table, we differentiate between family and non-family corporations; and we also divide this latter group in firms controlled by an individual (which previous studies have included in the family firm group), companies with other controlling shareholder (namely, the state, a financial institution, an industrial company or other) and finally widely held corporations.

[6] The official definition of family business was adopted on the 27th of March 2008 by the GEEF and on the 7th of April 2008 by the Board of the Family Business Network.

When we use the 10 percent cut-off point definition, about 15 percent of the sample is classified in the family firm group. Although this proportion might seem low in comparison with the evidence provided in previous investigations, it is not surprising given that we are adopting a more restrictive definition, which allows us to avoid the risk of considering as family firms "entrepreneur-controlled" corporations, which according to recent literature are not "true family businesses" (Miller, Le Breton-Miller, Lester and Cannella, 2007). As we move from the 10 to the 20 and 25 percent cut-off point definitions the proportion of family-controlled firm-year observations decreases to 12 and 10 percent approximately. Simultaneously, the proportion of widely held firm-year observations rises from about 20 to 54 and 65 percent, respectively.

If we focus on the legal origin criterion, it can be argued that the sample is representative of the different institutional environments that exist in Western Europe. Of the whole sample, 38 percent of the firms operate in common-law countries, and more precisely in the United Kingdom. The civil-law countries have been sorted into French-, German- and Scandinavian-origin regions, following La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998). Around 30 percent of the corporations are included in the first group (which comprises Spain, France, Greece and the Netherlands); the second comprises 19 percent of the firms (which operate either in Switzerland or in Germany); and finally, the Scandinavian-origin region (and more precisely, Finland and Sweden) constitutes around 14 percent of the whole sample. If we consider the importance that capital markets have in each of these regions, we can conclude that all legal systems are correctly represented. The structure of the sample, by number of companies and number of observations per industry, is provided in Table 2.

3.3. Estimation method

We used the panel data methodology to estimate our models. This choice was motivated by the importance of considering two significant problems that arise when studying the impact of a firm's ownership structure on its market valuation, namely the unobservable heterogeneity and the endogeneity problems. First, unlike cross-sectional analysis, panel data allows us to control for individual heterogeneity. This issue is very important in our analysis since every firm, and especially family ones, has its own specificity (Lee, 2004; McVey and Draho, 2005) that gives rise to a particular behaviour closely linked to the culture of the company, which in family firms is imposed by the owner family. Therefore, to eliminate the risk of obtaining biased results, we have controlled for such heterogeneity by modelling it as an individual effect, η_i, which is then eliminated by

taking first differences of the variables. Consequently, the error term in our models, ε_{it}, has been split into four different components. The first one is the aforementioned individual or firm-specific effect, η_i. The second one, d_t, measures the temporal or time-specific effect with the corresponding time dummy variables, so that we can control for the effect of macroeconomic variables on firm value. The third component, c_i, consists of country dummy variables included to control for country-specific effects. Finally, v_{it} is the random disturbance.

The second issue motivating the use of our estimation method is the endogeneity problem. The potential endogeneity of our main explanatory variable (i.e., ownership concentration) may seriously affect the ownership-performance relationship. In fact, ownership concentration may have no observable effect on firm performance due to the endogeneity of ownership structure (Demsetz, 1983; Demsetz and Lehn, 1985; Demsetz and Villalonga, 2001). Furthermore, as Anderson and Reeb (2003) indicate, it is not clear whether family ownership improves corporate performance, or if superior performance leads families to maintain their stake in the company. In fact, family owners can anticipate more easily the company's future prospects and retain ties to only those firms with positive outlooks. Consequently, endogeneity may be a problem that has to be controlled for in our models. Hence, to avoid this problem our models have been estimated by using the Generalized Method of Moments (GMM), which allows us to control for problems of endogeneity by using instruments. To be exact, we have used all the right-hand-side variables in the models lagged from t-2 to t-7 as instruments for the equations in differences, and t-2 for the equations in levels as Blundell and Bond (1998) suggest when deriving the system estimator used in our paper.

Finally, we checked for the potential misspecification of the models. First, we used the Hansen *J* statistic of over-identifying restrictions in order to test for the absence of correlation between the instruments and the error term. The instruments used were valid as can be seen in Tables 7 to 12. Second, we used the m_2 statistic, developed by Arellano and Bond (1991), in order to test for the lack of second-order serial correlation in the first-difference residual. There was not a problem of second-order serial correlation in our models, as shown in Tables 7 to 12 (see m_2). Third, Tables 7 to 12 provide good results for the following three Wald tests: z_1 is a test of the joint significance of the reported coefficients; z_2 is a test of the joint significance of the time

dummy variables; and z_3 is a test of the joint significance of the country dummy variables.

4. Results

4.1. Summary statistics

Panels A and B of Table 3 provide the summary statistics of the variables used in the analyses as well as the correlations between them. It is noteworthy that the average level of ownership concentration in the full sample is 25 percent, which is relatively high, particularly given that our sample comprises only listed corporations. In terms of total assets, the firms are large, as can be seen in the table. Another important feature of the sample is that the mean age of the companies is 30 years[7], which is the cut-off point suggested in previous literature to differentiate between family firms controlled by first and successive generations (Ward, 1988; Menéndez-Requejo, 2006).

With respect to the correlation between the variables, the only interesting issues highlighted in Panel B of Table 3 are the following. On the one hand, as expected, there is a high correlation between all performance variables (namely, firm value, industry-adjusted firm value, Tobin's *Q* and industry-adjusted Tobin's *Q*). On the other hand, the negative correlation between ownership concentration and the antidirector rights index (which is a measure of the protection of minority shareholders' rights) is consistent with the substitutability of internal and external control mechanisms proposed in our fifth hypothesis.

4.2. Descriptive analysis

As a preliminary analysis of the different performance of family firms in comparison to other firm categories, we have performed several difference of means tests for each of our performance variables and for each of the cut-off points used to identify the family firms in our sample.

As can be seen in Panel A of Table 4, family and non-family firms are not statistically different from each other in terms of corporate value (see the (II) - (III) *t*-statistic). This means that there is not a different performance between family-controlled corporations and their non-family counterparts when the 10 percent ownership concentration level is used to define our family firm sample (except in the case of the adjusted-*Q* measure).

[7] This age is equivalent to the mean value of 3.40 of the AGE_{it} variable (whose calculation is provided in Appendix C), reported in Panel A of Table 3 (note that *ln(30)=3.40*).

As highlighted in Panels B and C of Table 4, as we increase the ownership concentration level (from 10 to 20 and 25 percent, respectively) to identify the family firms in our sample, it appears that companies controlled by a family significantly outperform the rest of corporations. Moreover, the better performance of family firms with respect to non-family corporations is more pronounced when industry-adjusted firm value measures are used in the comparison (see Panel B of Table 4, in which the difference of means test for the industry-adjusted value is statistically significant while it is not for the unadjusted value measure). This indicates that industry effects must be accounted for in the estimation of our empirical models.

Table 5 presents the difference of means tests for the remaining firm-level characteristics that will be considered in the multivariate analyses different from firm performance. We have again performed the comparisons by using the different family firm definitions according to the cut-off point used (i.e., 10, 20 or 25 percent). Nevertheless, the results remain unchanged whatever level of ownership concentration is used. The most interesting findings of this table are the following. First, family firms seem so have a higher level of ownership concentration, which is not surprising given that the non-family firm group includes widely held corporations. Second, in terms of size and debt, family-controlled corporations are statistically smaller and have higher levels of debt. Third, family and non-family firms are not statistically different from each other when it comes to cash flow (only for the 10 percent cut-off point do family firms show a statistically lower level of cash flow – see the (II) - (III) *t*-statistic in Panel A –). Fourth, in terms of age we do not find any difference between family and non-family firms. Finally, it seems that the second largest shareholder in family firms owns a larger stake in the company than second largest investors in non-family businesses.

Returning again to the comparison between family and non-family firms in terms of corporate performance, in Table 6, we have split the family firm sample in groups according to the firm-level characteristics that motivated Hypotheses 3 and 4 (i.e., whether or not the family is present in the board of directors, and the generation controlling the firm), as well as the legal system in which companies operate (in terms of the level of minority investors' protection), which is related to Hypothesis 5. Although no univariate analyses have been performed in this case to compare the mean values, the averages of the performance variables provided are strongly suggestive that family firms that differ in term of the abovementioned criteria have different performance. As can be seen in the table, family firms in which the family is

represented in the board, those controlled by the first generation and those family businesses operating in countries where minority shareholders are weakly protected[8] are the ones that show higher values and, consequently, always outperform non-family firms.

Overall, the descriptive analyses provided in Tables 4 and 6 are consistent with the hypotheses proposed in Section 2. Nonetheless, we must be very cautious given that in these comparisons other important factors which might influence firm value significantly are not being controlled for. Consequently, in the next section we have run several regressions which allow us to control for such effects. Moreover, by using the estimation method previously specified, we are also solving some important econometrical issues in a more efficient way than previous studies.

4.3. Regression results

In this section, the results of estimating the empirical models developed in Section 2 are presented. We will comment the coefficients obtained by using the 10 percent cut-off point to classify corporations in family and non-family ones. Nevertheless, in general, the results obtained by using the 20 and 25 percent cut-off points are the same. First, by estimating Models (1) and (2), we are able to learn whether family firms are indeed better performers than other corporations. Second, the estimation of Models (3) and (4) provides evidence on whether the proposed better performance of family-controlled corporations is mainly due to certain family firms. And third, by estimating Model (5), we ascertain the substitution effect between family control and external protection of minority shareholders' rights.

4.3.1. Do family firms perform differently to non-family ones?

As can be seen in Column I of Table 7, the positive effect of ownership concentration on value is stronger for family firms ($\hat{\alpha}_1 + \hat{\gamma}_1 = 0.56 + 1.41 = 1.97$, statistically significant, see t_1) than for non-family ones ($\hat{\alpha}_1 = 0.56$). The results by using the 20 and 25 percent cut-off points corroborate this finding (see Columns III and V of Table 7). This means that the impact of ownership concentration on firm performance is stronger when the firm's dominant shareholder is a family. Such finding is consistent with our first hypothesis and is in line with the argument that controlling families effectively monitor management activities. Additionally, when they are directly involved in the

[8] Only when we use the 25 percent cut-off point definition, do family firms that operate in highly protective settings outperform family firms from countries with a weak legal protection of minority shareholders' rights.

firm's management they contribute to solve the classic agency conflict between owners and managers. This result is consistent with previous empirical evidence from the U.S. (McConaughy, Walker, Henderson and Mishra, 1998; Anderson and Reeb, 2003) and from Western Europe (Maury, 2006; Barontini and Caprio, 2006). Moreover, the stronger effect of ownership concentration on firm value when the largest shareholder is a family may be explained by the potential benefits that characterize family owners, pointed out in Section 2. That is, the extended horizons, the reputation concern and the better knowledge of the company on the part of controlling families are likely explanations for the better performance of family firms relative to non-family ones.

However, an important concern to account for is whether the stronger positive impact of ownership concentration on firm value in the case of family firms is due to the general blockholder effect and not necessarily to the specific family effect. Such concern arises because in the non-family sample we are including numerous widely held corporations, in addition to companies with a level of ownership concentration similar to the one of the family firm sample. To control for such effect, we extend Model (1) and develop Model (2). The estimated coefficients of this model are presented in Columns II, IV and VI of Table 7 and show that the better performance of family firms is not explained by the aforementioned general blockholder effect. The regression results show that the interaction term between the blockholder effect dummy and the ownership concentration variable is non-significant when either the 10 or the 25 percent level is used to define blockholder influence, whereas the interaction term is positive and significant when the 20 percent cut-off point is used. Regarding the impact of ownership concentration on value for family and non-family firms, we find a stronger relationship between both variables for family businesses ($\hat{\alpha}_1 + \hat{\gamma}_1 + \hat{\delta}_1 = \hat{\alpha}_1 + \hat{\gamma}_1 = 0.81 + 1.46 = 2.27$, statistically significant, see t_2; $\hat{\delta}_1$ statistically non-significant) than for non-family firms ($\hat{\alpha}_1 = 0.81$) when we use the 10 percent cut-off point definition. Similar results are obtained by using the 20 and 25 percent cut-off points (see Columns IV and VI of Table 7). This finding lends support to our second hypothesis and suggests that the potential benefits associated to family control exceed its potential costs regardless of the blockholder effect, thus confirming previous empirical results from the Western European region (Maury, 2006; Andres, 2008).

4.3.2. Is the different performance of family firms moderated by firm-level characteristics?

Although we have just shown that family firms generally outperform non-family ones, it is important to consider the possibility that the superior performance of family businesses suggested by the estimated coefficients of Models (1) and (2) is mainly attributable to certain family firms (Anderson and Reeb, 2003; Andres, 2008). In this line of reasoning, Hypotheses 3 and 4 propose that family firms where family members are seated in the board of directors and those run by the first generation are expected to be the best performers. The estimated coefficients in Table 8 confirm these two hypotheses. As shown in Columns I, the positive impact of ownership concentration on value for family businesses with family representation in the board ($\hat{\alpha}_1 + \hat{\lambda}_1 + \hat{\delta}_1 = \hat{\alpha}_1 + \hat{\lambda}_1 = 0.77 + 1.12 = 1.89$, statistically significant, see t_1; $\hat{\delta}_1$ statistically non-significant) is stronger than that for the remaining family firms ($\hat{\alpha}_1 + \hat{\beta}_1 + \hat{\delta}_1 = \hat{\alpha}_1 = 0.77$, statistically significant, see t_2; $\hat{\beta}_1$ and $\hat{\delta}_1$ statistically non-significant). The estimated coefficients by using the 20 and 25 percent cut-off points confirm this result. This finding supports Hypothesis 3 and suggests that the convergence-of-interest hypothesis proposed by prior studies that relate insider ownership to firm performance (Morck, Shleifer and Vishny, 1988; Stulz, 1988; McConnell and Servaes, 1990; Miguel, Pindado and de la Torre, 2004; among others) particularly applies to family firms where family members serve as directors in the board. Furthermore, in line with previous family business papers, we show that active family involvement in the firm management is positive in term of corporate performance (Anderson and Reeb, 2003; Maury, 2006; Barontini and Caprio, 2006; Andres, 2008).

With respect to a different performance between founder-led family corporations and those in the hands of second and later generations, the results presented in Column II of Table 8 indicate that the founder effect plays an important role in Western European family firm. As can be seen in this column, family firms run by the first generation ($\hat{\alpha}_1 + \hat{\varphi}_1 + \hat{\delta}_1 = \hat{\alpha}_1 + \hat{\varphi}_1 = 0.69 + 1.92 = 2.61$, statistically significant, see t_3; $\hat{\delta}_1$ statistically non-significant) outperform family firms controlled by second and successive generations ($\hat{\alpha}_1 + \hat{\psi}_1 + \hat{\delta}_1 = \hat{\alpha}_1 + \hat{\psi}_1 = 0.69 + 0.88 = 1.57$, statistically significant, see t_4; $\hat{\delta}_1$ statistically non-significant). Moreover, both types of family

businesses outperform non-family firms, according to the estimated coefficients presented in Column II of Table 8. These finding also hold when the 20 and 25 percent cut-off points are used to define family control (see Columns IV and VI of Table 8). In the light of these results, we can assert that the generation plays an important moderating role in our study and that it is first-generation family businesses, the ones that best perform in the sample. This may be due to the fact that family members from the first generation either are more motivated to effectively monitor the managers or bring more valuable managerial skills to the company than family members from succeeding generations. This argument is consistent with previous literature that finds that the better performance of family firms relative to non-family ones is to a large extent attributable to young family corporations and founder-led family firms (Anderson and Reeb, 2003, Villalonga and Amit, 2006; Barontini and Caprio, 2006).

4.3.3. Does family control substitute for the lack of legal protection of minority shareholders?

Table 9 shows the results of estimating Model (5) for the different family firm definitions. As highlighted in Column I, the positive relationship between ownership concentration and corporate value is stronger for family firms that operate in countries with weak protection of minority shareholders' rights ($\hat{\alpha}_1 + \hat{\omega}_1 + \hat{\delta}_1 = \hat{\alpha}_1 + \hat{\omega}_1 = 0.95 + 1.48 = 2.43$, statistically significant, see t_2; $\hat{\delta}_1$ statistically non-significant) than for those that operate in settings where minority investors are strongly protected ($\hat{\alpha}_1 + \hat{\pi}_1 + \hat{\delta}_1 = \hat{\alpha}_1 + \hat{\pi}_1 = 0.95 + 0.91 = 1.86$, statistically significant, see t_1; $\hat{\delta}_1$ statistically non-significant). Similar results are obtained for the 20 and 25 percent cut-off points. This finding suggests a substitution effect between family control (an internal corporate governance mechanism) and legal protection of minority investors (an external corporate governance mechanism), as proposed by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998). This result thus contradicts the empirical evidence provided by Maury (2006) and suggests that family control can act as a mechanism that aligns the interests of controlling and minority shareholders in institutional environments where minority shareholders' rights are weakly protected.

5. Robustness checks

As a further robustness check and to allow for a better comparison with previous empirical studies similar to ours, we have estimated all our models using an alternative

proxy for the firm's market value (namely, industry-adjusted Tobin's *Q*) and excluding financial companies from the sample.

The results from the estimation of the models by using the industry-adjusted Tobin's *Q* measure as a dependent variable are provided in Tables 10 to 12. Again, each model has been estimated for each family firm definition (depending on the cut-off point used in the classification procedure). As highlighted in the tables, our empirical results hold when industry-adjusted Tobin's *Q* is used as a measure of the market value of the firm.

With respect to the presence of financial companies in the sample, an important concern of our findings is that they might be exclusively due to this type of corporations. Consequently, the six models proposed in Section 2 were estimated after excluding companies whose primary SIC code is in the interval 6000-6999. It should be noted that in this case the models have been estimated with 658 companies and 3,788 observations. Nevertheless, the important issue is that the main findings discussed in the previous section remain unchanged when the aforementioned companies are not included in the regression analyses[9].

As a consequence, we can conclude that our empirical results are highly consistent and reliable. In fact, our findings not only hold for different minimum levels of ownership concentration in the hands of family owners and when a powerful econometrical methodology is utilized in the estimation of the models, but also when an alternative measure of firm value is used as a dependent variable and after excluding financial companies from the sample.

6. Conclusions

This paper examines how family control impacts on the market value of a firm in an effort to shed light on the issue of whether family firms are really superior performers as compared to non-family corporations. To achieve this aim, the analysis of the relationship between family ownership concentration and firm value proceeded in three steps. First, we estimate two value models that allow us to study whether ownership concentration has a different influence on performance when there is a controlling family in the company, even after controlling for the general blockholder effect. Second, the possibility that the different performance of family businesses is moderated by specific firm-level characteristics, such as an active family involvement in

[9] The results of this additional analysis are not reported in order to conserve space, but will be provided by the authors upon request.

management and the generation controlling the company, is investigated. And third, we propose that family control and external legal protection of minority shareholders may substitute each other.

We show that ownership concentration has a stronger positive effect on firm value in family firms than in widely held corporations and companies with another type of dominant shareholder. This is probably because of the potential benefits associated to family owners, such as their long-term horizons and their reputation concern. These characteristics along with a better knowledge of the company are likely to induce family owners to invest following value maximization rules. However, although family businesses generally outperform, it is family firms with family members seated in the board of directors and those controlled by the first generation, the ones that exhibit superior market valuations. Regarding the institutional environment in which companies operate, family control is particularly beneficial in countries with weak legal protection of minority investors. This suggests that ownership concentration in the hands of a family can substitute for the lack of external protection of minority shareholders' rights.

To sum up, we can assert that family firms generally outperform non-family corporations and, as a result, family ownership may be beneficial to minority shareholders. This is mainly due to the particular interest of family owners in maximizing the market value of the company in the long-term.

Appendices

Appendix A: Definition of performance variables used in the analyses

Variable	Definition
Firm value	$V_{it} = MVE_{it} / K_{it}$ where MVE_{it} and K_{it} denote the market value of equity and the replacement value of total assets, respectively. The replacement value of total assets is obtained as follows: $K_{it} = RF_{it} + (TA_{it} - BF_{it})$ with RF_{it} being the replacement value of tangible fixed assets, TA_{it} the book value of total assets and BF_{it} the book value of tangible fixed assets. The latter two have been obtained from the firm's balance sheet and the first one has been calculated according to the proposal by Perfect and Wiles (1994): $RF_{it} = RF_{it-1}\left[\frac{1+\phi_t}{1+\delta_{it}}\right] + I_{it}$ for $t > t_0$ and $RF_{it_0} = BF_{it_0}$, where t_0 is the first year of the chosen period, in our case 2000. On the other hand, $\delta_{it} = BD_{it} / BF_{it}$ and $\phi_t = (GCGP_t - GCGP_{t-1}) / GCGP_{t-1}$, with BD_{it} being the book depreciation expense of the firm in year t and $GCGP_t$ the growth of capital goods prices extracted from the *Main Economic Indicators*, published by the Organization for Economic Cooperation and Development (OECD).
Industry-adjusted firm value	IAV_{it} is calculated by subtracting the industry median V from the firm's V_{it}. Industry medians are computed at the most precise SIC level for which there is a minimum of five companies.
Tobin's Q	$Q_{it} = (MVE_{it} + MVD_{it}) / K_{it}$ where: $MVD_{it} = MVLTD_{it} + BVSTD_{it}$ is the market value of debt.
Industry-adjusted Tobin's Q	IAQ_{it} is calculated by subtracting the industry median Q from the firm's Q_{it}. Industry medians are computed at the most precise SIC level for which there is a minimum of five companies.

Appendix B: Definition of ownership variables used in the analyses

Variable	Definition
Ownership concentration	OC_{it} is the percentage of common shares held by the largest shareholder of the firm.
Family dummy	FD_{it} is a dummy variable that equals one if the largest shareholder is an individual or a family with at least 10, 20 or 25 percent of the votes (we use three different family firm definitions depending on the ownership concentration level); additionally, when the largest shareholder is just an individual, for the company to be considered as family-controlled, we require that another individual with the same family name either is in the board of directors or has a stake in the firm. Otherwise, the variable takes the value of zero.
Blockholder effect dummy	BE_{it} is a dummy variable that equals one if there is a shareholder in the firm with at least 10, 20 or 25 percent of the votes (depending on the family firm definition), and zero otherwise.
Board family dummy	BFD_{it} is a dummy variable that equals one for family firms in which there is a family member in the board of directors, and zero otherwise.
Non-board family dummy	$NBFD_{it}$ is a dummy variable that equals one for family firms in which there is no family member in the board of directors, and zero otherwise.
First-generation family dummy	$FGFD_{it}$ is a dummy variable that equals one for family firms in which the founder effect is still present (based on previous literature (Ward, 1988; Menéndez-Requejo, 2006), we consider that the founder effect is still present in family firms which are less than 30 years old), and zero otherwise.
Succeeding-generation family dummy	$SGFD_{it}$ is a dummy variable that equals one for family firms in which the founder effect is no longer present, and zero otherwise.
Strong-protection family dummy	$SPFD_{it}$ is a dummy variable that equals one for family firms that operate in countries with an antidirector rights index above the sample median, and zero otherwise.
Weak-protection family dummy	$WPFD_{it}$ is a dummy variable that equals one for family firms that operate in countries with an antidirector rights index equal to or below the sample median, and zero otherwise.

Appendix C: Definition of other variables used in the analyses

Variable	Definition
Size	$SIZE_{it} = Ln(K_{it})$.
Debt ratio	$DEBT_{it} = \frac{MVLTD_{it}}{MVLTD_{it} + MVE_{it}}$ where $MVLTD_{it}$ is the market value of long term debt obtained from the following formula: $MVLTD_{it} = \left[\frac{1+l_{it}}{1+i_l}\right] BVLTD_{it}$ where $BVLTD_{it}$ is the book value of the long term debt, i_l is the rate of interest of the long term debt reported in the *OECD-Main Economic Indicators* and l_{it} is the average cost of long term debt that is defined as $l_{it} = (IPLTD_{it} / BVLTD_{it})$, where $IPLTD_{it}$ is the interest payable on the long term debt, which has been obtained by distributing the interest payable between the short and long term debt depending on the interest rates. That is: $IPLTD_{it} = \frac{i_l BVLTD_{it}}{i_s BVSTD_{it} + i_l BVLTD_{it}} IP_{it}$ where IP_{it} is the interest payable, i_s is the rate of interest of the short term debt, also reported in the *OECD-Main Economic Indicators*, and $BVSTD_{it}$ is the book value of the short term debt.
Cash flow	$CF_{it} = (NP_{it} + BD_{it}) / K_{it}$ where NP_{it} and BD_{it} denote the net profit and the book depreciation expense of the firm corresponding to year t, respectively.
Age	$AGE_{it} = Ln(YEAR_{it} - INC_i)$ where $YEAR_{it}$ is the corresponding period of time and INC_i is the date of incorporation of the firm.
Stake of the second largest shareholder	SOC_{it} is the percentage of common shares held by the second largest shareholder of the firm.
Antidirector rights	AR_{it} is the antidirector rights index developed by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998).

Appendix D: Effect of ownership concentration on firm value

Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Subsample					
Non-family firms	α_1				
Widely held		α_1	α_1	α_1	α_1
Non-family large owner		$\alpha_1+\delta_1$	$\alpha_1+\delta_1$	$\alpha_1+\delta_1$	$\alpha_1+\delta_1$
Family firms	$\boldsymbol{\alpha_1+\gamma_1}$	$\boldsymbol{\alpha_1+\gamma_1+\delta_1}$			
Family presence in the board			$\boldsymbol{\alpha_1+\lambda_1+\delta_1}$		
Not family presence in the board			$\boldsymbol{\alpha_1+\beta_1+\delta_1}$		
First generation				$\boldsymbol{\alpha_1+\varphi_1+\delta_1}$	
Succeeding generations				$\boldsymbol{\alpha_1+\psi_1+\delta_1}$	
Strong protection setting					$\boldsymbol{\alpha_1+\pi_1+\delta_1}$
Weak protection setting					$\boldsymbol{\alpha_1+\omega_1+\delta_1}$

The sums of coefficients in bold are those for which a linear restriction test has been performed. The t-statistics of the corresponding linear restriction test are reported in previous tables in which the regression results are presented.

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Tables

Table 1: Distribution of the sample by legal origin and ownership structure

Panel A: 10 percent cut-off point definition							
Ownership	**Family**	**Non-family**	*Ind.*	*Other block.*	*Wid. held*	**Total**	**Total**
Legal origin	**Obs. (%)**	**Obs. (%)**	*Obs. (%)*	*Obs. (%)*	*Obs. (%)*	**Obs. (%)**	**Firms (%)**
English (GB)	72 (1.52)	1,820 (38.49)	*73 (1.54)*	*1,149 (24.30)*	*598 (12.65)*	1,892 (40.01)	318 (38.13)
French (ES, FR, GR, NL)	378 (7.99)	1,009 (21.34)	*126 (2.67)*	*698 (14.76)*	*185 (3.91)*	1,387 (29.33)	247 (29.62)
German (CH, DE)	181 (3.83)	637 (13.47)	*150 (3.17)*	*404 (8.54)*	*83 (1.76)*	818 (17.30)	156 (18.70)
Scandinavian (FI, SE)	67 (1.42)	565 (11.94)	*40 (0.85)*	*424 (8.96)*	*101 (2.13)*	632 (13.36)	113 (13.55)
Total	**698 (14.76)**	**4,031 (85.24)**	*389 (8.23)*	*2,675 (56.56)*	*967 (20.45)*	**4,729 (100)**	**834 (100)**
Panel B: 20 percent cut-off point definition							
Ownership	**Family**	**Non-family**	*Ind.*	*Other block.*	*Wid. held*	**Total**	**Total**
Legal origin	**Obs. (%)**	**Obs. (%)**	*Obs. (%)*	*Obs. (%)*	*Obs. (%)*	**Obs. (%)**	**Firms (%)**
English (GB)	44 (0.93)	1,848 (39.08)	*38 (0.80)*	*294 (6.22)*	*1,516 (32.06)*	1,892 (40.01)	318 (38.13)
French (ES, FR, GR, NL)	326 (6.89)	1,061 (22.44)	*105 (2.22)*	*450 (9.52)*	*506 (10.70)*	1,387 (29.33)	247 (29.62)
German (CH, DE)	145 (3.07)	673 (14.23)	*118 (2.50)*	*301 (6.36)*	*254 (5.37)*	818 (17.30)	156 (18.70)
Scandinavian (FI, SE)	42 (0.89)	590 (12.47)	*21 (0.44)*	*279 (5.90)*	*290 (6.13)*	632 (13.36)	113 (13.55)
Total	**557 (11.78)**	**4,172 (88.22)**	*282 (5.96)*	*1,324 (28.00)*	*2,566 (54.26)*	**4,729 (100)**	**834 (100)**
Panel C: 25 percent cut-off point definition							
Ownership	**Family**	**Non-family**	*Ind.*	*Other block.*	*Wid. held*	**Total**	**Total**
Legal origin	**Obs. (%)**	**Obs. (%)**	*Obs. (%)*	*Obs. (%)*	*Obs. (%)*	**Obs. (%)**	**Firms (%)**
English (GB)	31 (0.66)	1,861 (39.35)	*29 (0.61)*	*147 (3.11)*	*1,685 (35.63)*	1,892 (40.01)	318 (38.13)
French (ES, FR, GR, NL)	265 (5.60)	1,122 (23.73)	*95 (2.01)*	*350 (7.40)*	*677 (14.32)*	1,387 (29.33)	247 (29.62)
German (CH, DE)	138 (2.92)	680 (14.38)	*100 (2.11)*	*249 (5.27)*	*331 (7.00)*	818 (17.30)	156 (18.70)
Scandinavian (FI, SE)	33 (0.70)	599 (12.66)	*13 (0.27)*	*228 (4.82)*	*358 (7.57)*	632 (13.36)	113 (13.55)
Total	**467 (9.88)**	**4,262 (90.12)**	*237 (5.00)*	*974 (20.60)*	*3,051 (64.52)*	**4,729 (100)**	**834 (100)**

Data was extracted for companies for which information was available for at least four consecutive years between 2000 and 2006. The family firm sample includes all family-controlled corporations according to the family firm definition explained in Section 3.2. Non-family firms have been divided in three groups: companies controlled by an individual, firms controlled by other types of blockholders (different from families and individuals) and widely-held corporations. The English-origin setting includes the United Kingdom; the French-origin environment comprises Spain, France, Greece and the Netherlands; the German region includes firms from Switzerland and Germany; and the Scandinavian-origin setting comprises Finland and Sweden.

Table 2: Distribution of the sample by industry

SIC Code	Industry description	No. Obs.	% Obs.	No. Firms	% Firms
01	Agricultural production - crops	7	0.15	1	0.12
02	Agricultural production - livestock	4	0.08	1	0.12
07	Agricultural services	22	0.47	4	0.48
08	Forestry	9	0.19	2	0.24
09	Fishing, hunting and trapping	13	0.27	3	0.36
10	Metal mining	22	0.47	3	0.36
12	Coal mining	8	0.17	2	0.24
13	Oil and gas extraction	58	1.23	10	1.20
14	Nonmetallic minerals, except fuels	31	0.66	6	0.72
15	General building contractors	205	4.33	33	3.96
16	Heavy construction, except buildings	27	0.57	5	0.60
17	Special trade contractors	21	0.44	4	0.48
20	Food and kindred products	231	4.88	38	4.56
21	Tobacco products	5	0.11	1	0.12
22	Textile mill products	70	1.48	12	1.44
23	Apparel and other textile products	48	1.02	8	0.96
24	Lumber and wood products	43	0.91	7	0.84
25	Furniture and fixture	26	0.55	4	0.48
26	Paper and allied products	102	2.16	18	2.16
27	Printing and publishing	103	2.18	18	2.16
28	Chemicals and allied products	185	3.91	31	3.72
29	Petroleum and coal products	23	0.49	4	0.48
30	Rubber and misc. plastics products	70	1.48	12	1.44
31	Leather and leather products	4	0.08	1	0.12
32	Stone, clay, and glass products	56	1.18	10	1.20
33	Primary metal industries	59	1.25	11	1.32
34	Fabricated metal products	118	2.50	20	2.40
35	Industrial machinery and equipment	207	4.38	35	4.20
36	Electronic and other electronic equipment	184	3.89	32	3.84
37	Transportation equipment	94	1.99	15	1.80
38	Instruments and related products	82	1.73	14	1.68
39	Miscellaneous manufacturing industries	25	0.53	4	0.48
41	Local and interurban passenger transit	40	0.85	7	0.84
42	Trucking and warehousing	45	0.95	8	0.96
43	United States postal service	11	0.23	2	0.24
44	Water transportation	56	1.18	9	1.08
45	Transportation by air	40	0.85	7	0.84
47	Transportation services	25	0.53	4	0.48
48	Communications	59	1.25	11	1.32
49	Electric, gas, and sanitary services	97	2.05	18	2.16
50	Wholesale trade - durable goods	212	4.48	36	4.32
51	Wholesale trade - nondurable goods	135	2.85	23	2.76
52	Building materials and garden supplies	14	0.30	2	0.24
53	General merchandise stores	27	0.57	5	0.60
54	Food stores	14	0.30	2	0.24
55	Automotive dealers and service stations	5	0.11	1	0.12
56	Apparel and accessory stores	28	0.59	6	0.72
58	Eating and drinking places	48	1.02	9	1.08
59	Miscellaneous retail	42	0.89	7	0.84

Table 2 (continued)

SIC Code	Industry description	No. Obs.	% Obs.	No. Firms	% Firms
60	Depository institutions	5	0.11	1	0.12
61	Nondepository credit institutions	70	1.48	13	1.56
63	Insurance carriers	4	0.08	1	0.12
65	Real state	203	4.29	37	4.44
67	Holding and other investment offices	659	13.94	124	14.87
70	Hotels and other lodging places	59	1.25	10	1.20
72	Personal services	5	0.11	4	0.48
73	Business services	333	7.04	63	7.55
75	Auto repair, services and parking	17	0.36	3	0.36
78	Motion pictures	16	0.34	3	0.36
79	Amusement and recreation services	36	0.76	7	0.84
80	Health services	18	0.38	4	0.48
82	Educational services	14	0.30	2	0.24
83	Social services	7	0.15	1	0.12
87	Engineering and management services	203	4.29	35	4.20
	Total	**4,729**	**100**	**834**	**100**

Number and percentage of observations and firms by primary two-digit SIC code. This industry classification has been used to compute the industry-adjusted performance measures. In one of the robustness checks, companies whose primary SIC code is included in the interval 6000-6999 (i.e., financial companies) have been excluded from the regression analyses.

Table 3: Summary statistics for the full sample

Panel A: Summary statistics

	Median	Mean	Standard deviation	Minimum	Maximum
V_{it}	0.58	0.81	0.83	0.01	11.83
IAV_{it}	-0.02	0.18	0.82	-0.95	11.07
Q_{it}	0.71	0.93	0.82	0.04	11.83
IAQ_{it}	-0.03	0.18	0.80	-0.97	10.95
OC_{it}	0.18	0.25	0.19	0.00	0.98
$SIZE_{it}$	12.57	12.81	1.89	9.28	19.15
$DEBT_{it}$	0.05	0.08	0.10	0.00	0.82
CF_{it}	0.08	0.07	0.09	-0.91	0.78
AGE_{it}	3.43	3.40	0.99	0.69	6.44
SOC_{it}	0.09	0.11	0.08	0.00	0.50
AR_{it}	3.00	3.40	1.48	1.00	5.00

Panel B: Correlation matrix

	V_{it}	IAV_{it}	Q_{it}	IAQ_{it}	OC_{it}	$SIZE_{it}$	$DEBT_{it}$	CF_{it}	AGE_{it}	SOC_{it}	AR_{it}
V_{it}	1.000										
IAV_{it}	0.987	1.000									
Q_{it}	0.994	0.982	1.000								
IAQ_{it}	0.980	0.994	0.987	1.000							
OC_{it}	-0.013	0.002	0.005	0.017	1.000						
$SIZE_{it}$	-0.054	-0.027	-0.065	-0.035	-0.200	1.000					
$DEBT_{it}$	-0.394	-0.372	-0.372	-0.352	0.108	0.087	1.000				
CF_{it}	0.306	0.316	0.287	0.295	0.019	0.088	-0.234	1.000			
AGE_{it}	-0.174	-0.145	-0.174	-0.149	0.026	0.160	0.070	-0.008	1.000		
SOC_{it}	-0.027	-0.029	-0.018	-0.021	0.190	-0.177	0.032	-0.037	-0.048	1.000	
AR_{it}	0.074	0.054	0.054	0.038	-0.460	0.105	-0.166	-0.004	-0.073	-0.195	1.000

V_{it} is the firm's value, whereas IAV_{it} is the industry-adjusted market value of the firm, Q_{it} and IAQ_{it} denote Tobin's Q and industry-adjusted Tobin's Q, respectively, OC_{it} stands for ownership concentration, $SIZE_{it}$ is the firm's size, $DEBT_{it}$ is the debt ratio, CF_{it} denotes cash flow, AGE_{it} is the firm's age, SOC_{it} is the stake of the second largest shareholder and AR_{it} is the antidirector rights index developed by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998).

Table 4: Descriptive analysis of performance variables

Panel A: Difference of means tests using the 10 percent cut-off point				
	All firms	**Family**	**Nonfamily**	**t-statistic**
	(I)	(II)	(III)	(II) - (III)
No. Obs.	4,729	698	4,031	
V_{it}	0.81	0.81	0.81	0.03
IAV_{it}	0.18	0.21	0.18	1.01
Q_{it}	0.93	0.96	0.92	1.10
IAQ_{it}	0.18	0.23	0.17	1.97**
Panel B: Difference of means tests using the 20 percent cut-off point				
	All firms	**Family**	**Nonfamily**	**t-statistic**
	(I)	(II)	(III)	(II) - (III)
No. Obs.	4,729	557	4,172	
V_{it}	0.81	0.85	0.80	1.17
IAV_{it}	0.18	0.25	0.17	2.12**
Q_{it}	0.93	1.01	0.92	2.46*
IAQ_{it}	0.18	0.28	0.16	3.28*
Panel C: Difference of means tests using the 25 percent cut-off point				
	All firms	**Family**	**Nonfamily**	**t-statistic**
	(I)	(II)	(III)	(II) - (III)
No. Obs.	4,729	467	4,262	
V_{it}	0.81	0.91	0.80	2.63*
IAV_{it}	0.18	0.31	0.17	3.56*
Q_{it}	0.93	1.06	0.92	3.66*
IAQ_{it}	0.18	0.33	0.16	4.43*

V_{it} is the firm's value, whereas IAV_{it} is the industry-adjusted market value of the firm, Q_{it} and IAQ_{it} denote Tobin's Q and industry-adjusted Tobin's Q, respectively. *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively.

Table 5: Descriptive analysis of other firm characteristics

Panel A: Difference of means tests using the 10 percent cut-off point				
	All firms	**Family**	**Nonfamily**	**t-statistic**
	(I)	(II)	(III)	(II) - (III)
No. Obs.	4,729	698	4,031	
OC_{it}	0.25	0.37	0.22	19.51*
$SIZE_{it}$	12.81	11.95	12.96	-13.25*
$DEBT_{it}$	0.08	0.09	0.08	4.21*
CF_{it}	0.07	0.07	0.08	-1.49***
AGE_{it}	3.40	3.36	3.41	-1.12
SOC_{it}	0.11	0.14	0.10	12.34*
Panel B: Difference of means tests using the 20 percent cut-off point				
	All firms	**Family**	**Nonfamily**	**t-statistic**
	(I)	(II)	(III)	(II) - (III)
No. Obs.	4,729	557	4,172	
OC_{it}	0.25	0.43	0.22	25.43*
$SIZE_{it}$	12.81	11.87	12.94	-12.72*
$DEBT_{it}$	0.08	0.09	0.08	3.76*
CF_{it}	0.07	0.07	0.07	0.76
AGE_{it}	3.40	3.41	3.40	0.28
SOC_{it}	0.11	0.15	0.10	13.34*
Panel C: Difference of means tests using the 25 percent cut-off point				
	All firms	**Family**	**Nonfamily**	**t-statistic**
	(I)	(II)	(III)	(II) - (III)
No. Obs.	4,729	467	4,262	
OC_{it}	0.25	0.46	0.22	28.43*
$SIZE_{it}$	12.81	11.78	12.92	-12.60*
$DEBT_{it}$	0.08	0.09	0.08	2.87*
CF_{it}	0.07	0.07	0.07	0.09
AGE_{it}	3.40	3.38	3.40	-0.46
SOC_{it}	0.11	0.15	0.10	11.95*

OC_{it} stands for ownership concentration, $SIZE_{it}$ is the firm's size, $DEBT_{it}$ is the debt ratio, CF_{it} denotes cash flow, AGE_{it} is the firm's age and SOC_{it} is the stake of the second largest shareholder. *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively.

Table 6: Performance by group of firms

Panel A: 10 percent cut-off point definition								
	Family firms	**Family in the board**	**Family not in board**	**1st Gen. FFs**	**2nd Gen. FFs**	**FFs in high-AR countries**	**FFs in low-AR countries**	**Non-FFs**
No. Obs.	698	592	106	366	332	119	579	4031
V_{it}	0.81	0.85	0.57	0.98	0.62	0.76	0.82	0.81
IAV_{it}	0.21	0.25	-0.00	0.36	0.05	0.13	0.23	0.18
Q_{it}	0.96	1.01	0.69	1.13	0.78	0.90	0.97	0.92
IAQ_{it}	0.23	0.27	-0.01	0.37	0.08	0.13	0.25	0.17
Panel B: 20 percent cut-off point definition								
	Family firms	**Family in the board**	**Family not in board**	**1st Gen. FFs**	**2nd Gen. FFs**	**FFs in high-AR countries**	**FFs in low-AR countries**	**Non-fam. firms**
No. Obs.	557	485	72	285	272	71	486	4172
V_{it}	0.85	0.89	0.56	1.06	0.62	0.80	0.85	0.80
IAV_{it}	0.25	0.29	0.01	0.45	0.05	0.17	0.27	0.17
Q_{it}	1.01	1.06	0.70	1.23	0.78	0.95	1.02	0.92
IAQ_{it}	0.28	0.32	0.01	0.47	0.08	0.18	0.30	0.16
Panel C: 25 percent cut-off point definition								
	Family firms	**Family in the board**	**Family not in board**	**1st Gen. FFs**	**2nd Gen. FFs**	**FFs in high-AR countries**	**FFs in low-AR countries**	**Non-fam. firms**
No. Obs.	467	405	62	252	215	43	424	4262
V_{it}	0.91	0.96	0.52	1.11	0.67	1.06	0.89	0.80
IAV_{it}	0.31	0.36	-0.04	0.49	0.10	0.45	0.30	0.17
Q_{it}	1.06	1.12	0.66	1.27	0.82	1.16	1.05	0.92
IAQ_{it}	0.33	0.39	-0.03	0.51	0.13	0.42	0.32	0.16

V_{it} is the firm's value, whereas IAV_{it} is the industry-adjusted market value of the firm, Q_{it} and IAQ_{it} denote Tobin's Q and industry-adjusted Tobin's Q, respectively. The family firm sample has been divided according to three different criteria: the presence of family members in the board of directors, the family generation controlling the company and the institutional environment in which the company operates.

Table 7: Family control and firm value

Dep. var.:	**10%**		**20%**		**25%**	
IAV_{it}	**I**	**II**	**III**	**IV**	**V**	**VI**
Constant	0.25	0.07	0.02	0.18	0.30	0.47***
	(0.31)	(0.28)	(0.27)	(0.29)	(0.29)	(0.29)
OC_{it}	0.56*	0.81**	0.50*	-0.34	0.47*	0.69*
	(0.12)	(0.39)	(0.13)	(0.31)	(0.12)	(0.22)
$FD_{it}OC_{it}$	1.41*	1.46*	1.60*	1.37*	1.27*	1.40*
	(0.27)	(0.27)	(0.27)	(0.26)	(0.31)	(0.32)
$BE_{it}OC_{it}$		-0.28		0.66*		-0.12
		(0.31)		(0.24)		(0.19)
$SIZE_{it}$	0.02	0.04***	0.04**	0.03	0.01	0.00
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
$DEBT_{it}$	-1.49*	-1.71*	-1.59*	-1.70*	-1.53*	-1.75*
	(0.14)	(0.14)	(0.14)	(0.13)	(0.14)	(0.13)
CF_{it}	1.15*	1.32*	1.24*	1.14*	1.31*	0.83*
	(0.16)	(0.11)	(0.16)	(0.19)	(0.14)	(0.16)
AGE_{it}	-0.08*	-0.09*	-0.10*	-0.08*	-0.08*	-0.08*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
SOC_{it}	-1.60*	-1.66*	-1.49*	-1.55*	-1.31*	-1.75*
	(0.19)	(0.21)	(0.17)	(0.19)	(0.17)	(0.19)
t_1	7.34		8.31		5.86	
t_2		7.31		6.38		6.57
z_1	45.22 (7)	83.18 (8)	49.87 (7)	49.40 (8)	46.57 (7)	50.58 (8)
z_2	81.64 (5)	71.38 (5)	73.15 (5)	76.46 (5)	80.11 (5)	58.50 (5)
z_3	13.83 (9)	11.53 (9)	12.55 (9)	12.97 (9)	11.57 (9)	13.64 (9)
m_1	-0.91	-0.99	-0.95	-0.93	-0.93	-0.89
m_2	-0.40	-0.34	-0.35	-0.39	-0.31	-0.53
Hansen	211.71	239.92	214.96	226.35	214.01	237.07
	(182)	(207)	(182)	(207)	(182)	(207)
N	4,729	4,729	4,729	4,729	4,729	4,729

The regressions are performed by using the sample described in Table 1. FD_{it} equals one for family firms and zero otherwise, and BE_{it} equals one when there is a large shareholder in the firm at the corresponding cut-off point and zero otherwise. The remaining variables are defined in Table 3. The rest of the information needed to read this table is: i) Heteroskedasticity consistent asymptotic standard error in parentheses. ii) *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively; iii) t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\gamma_1=0$; t_2 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\gamma_1+\delta_1=0$; iv) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_2 is a Wald test of the joint significance of the time dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_3 is a Wald test of the joint significance of the country dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; v) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; vi) Hansen is a test of the over-identifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term, degrees of freedom in parentheses.

Table 8: Family control and firm value considering specific firm-level characteristics

Dep. var.:	**10%**		**20%**		**25%**	
IAV_{it}	**I**	**II**	**III**	**IV**	**V**	**VI**
Constant	0.34	-0.05	0.31	-0.20	0.23	0.59**
	(0.22)	(0.27)	(0.22)	(0.28)	(0.17)	(0.28)
OC_{it}	0.77**	0.69***	-0.82*	-0.49***	0.56*	0.44**
	(0.36)	(0.38)	(0.24)	(0.29)	(0.20)	(0.19)
$BFD_{it}OC_{it}$	1.12*		1.45*		1.19*	
	(0.26)		(0.27)		(0.30)	
$NBFD_{it}OC_{it}$	0.26		-0.01		0.07	
	(0.16)		(0.14)		(0.17)	
$FGFD_{it}OC_{it}$		1.92*		1.67*		1.38*
		(0.31)		(0.29)		(0.33)
$SGFD_{it}OC_{it}$		0.88*		0.78*		0.78*
		(0.19)		(0.18)		(0.17)
$BE_{it}OC_{it}$	-0.33	-0.14	0.98*	0.83*	-0.10	0.09
	(0.29)	(0.30)	(0.21)	(0.24)	(0.17)	(0.17)
$SIZE_{it}$	0.02	0.05**	0.03	0.06*	0.02	-0.00
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)
$DEBT_{it}$	-1.55*	-1.70*	-1.50*	-1.61*	-1.62*	-1.61*
	(0.13)	(0.13)	(0.13)	(0.13)	(0.12)	(0.12)
CF_{it}	1.23*	1.29*	1.37*	1.10*	1.00*	1.00*
	(0.11)	(0.12)	(0.15)	(0.18)	(0.14)	(0.15)
AGE_{it}	-0.09*	-0.08*	-0.08*	-0.07*	-0.07*	-0.07*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
SOC_{it}	-1.50*	-1.78*	-1.56*	-1.56*	-1.22*	-1.76*
	(0.15)	(0.19)	(0.15)	(0.20)	(0.18)	(0.18)
t_1	6.03		6.21		5.59	
t_2	4.72		1.38		3.71	
t_3		7.83		6.47		6.00
t_4		7.20		5.99		7.50
z_1	46.67 (9)	79.62 (9)	51.55 (9)	33.67 (9)	36.98 (9)	49.68 (9)
z_2	85.69 (5)	85.32 (5)	116.17 (5)	118.01 (5)	74.49 (5)	96.58 (5)
z_3	13.33 (9)	11.97 (9)	15.97 (9)	13.43 (9)	14.74 (9)	14.19 (9)
m_1	-0.91	-1.00	-0.99	-0.92	-0.83	-0.91
m_2	-0.32	-0.25	-0.31	-0.30	-0.37	-0.38
Hansen	260.01	259.26	246.38	255.50	244.87	272.01
	(225)	(225)	(225)	(225)	(225)	(225)
N	4,729	4,729	4,729	4,729	4,729	4,729

The regressions are performed by using the sample described in Table 1. BFD_{it} equals one for family firms in which family members are seated in the board of directors and zero otherwise, $NBFD_{it}$ equals one for family firms in which there are no family members seated in the board and zero otherwise, $FGFD_{it}$ equals one for family firms in which the founder effect is still present and zero otherwise, $SGFD_{it}$ equals one for family firms controlled by second or later generations and zero otherwise, and BE_{it} equals one when there is a large shareholder in the firm at the corresponding cut-off point and zero otherwise. The remaining variables are defined in Table 3. The rest of the information needed to read this table is: i) Heteroskedasticity consistent asymptotic standard error in parentheses. ii) *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively; iii) t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\lambda_1+\delta_1=0$; t_2 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\beta_1+\delta_1=0$; t_3 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\varphi_1+\delta_1=0$; t_4 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\psi_1+\delta_1=0$; iv) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_2 is a Wald test of the joint significance of the time dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_3 is a Wald test of the joint significance of the country dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; v) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; vi) Hansen is a test of the over-identifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term, degrees of freedom in parentheses.

Table 9: Family control and firm value considering the institutional environment

Dep. var.:	**10%**	**20%**	**25%**
IAV_{it}	**I**	**II**	**III**
Constant	0.08	-0.33	0.36
	(0.19)	(0.22)	(0.26)
OC_{it}	0.95**	-0.20	0.38**
	(0.38)	(0.19)	(0.19)
$SPFD_{it}OC_{it}$	0.91*	0.71***	0.80**
	(0.13)	(0.42)	(0.39)
$WPFD_{it}OC_{it}$	1.48*	1.61*	1.90*
	(0.26)	(0.26)	(0.29)
$BE_{it}OC_{it}$	-0.48	0.57*	0.02
	(0.31)	(0.16)	(0.16)
$SIZE_{it}$	0.04**	0.08*	0.02
	(0.01)	(0.02)	(0.02)
$DEBT_{it}$	-1.66*	-1.81*	-1.85*
	(0.14)	(0.13)	(0.12)
CF_{it}	1.29*	1.33*	0.88*
	(0.10)	(0.11)	(0.15)
AGE_{it}	-0.09*	-0.10*	-0.09*
	(0.02)	(0.01)	(0.01)
SOC_{it}	-1.47*	-1.66*	-1.75*
	(0.17)	(0.20)	(0.17)
t_1	11.18	2.75	3.09
t_2	7.66	7.85	8.09
z_1	135.90 (9)	223.18 (9)	61.47 (9)
z_2	70.97 (5)	93.41 (5)	129.35 (5)
z_3	17.15 (9)	13.75 (9)	15.42 (9)
m_1	-0.94	-1.00	-0.91
m_2	-0.33	-0.38	-0.55
Hansen	245.47	247.92	255.64
	(225)	(223)	(222)
N	4,729	4,729	4,729

The regressions are performed by using the sample described in Table 1. $SPFD_{it}$ equals one for family firms that operate in countries with strong protection of minority shareholders' rights and zero otherwise, $WPFD_{it}$ equals one for family firms that operate in countries with weak legal protection of minority investors and zero otherwise, and BE_{it} equals one when there is a large shareholder in the firm at the corresponding cut-off point and zero otherwise. The remaining variables are defined in Table 3. The rest of the information needed to read this table is: i) Heteroskedasticity consistent asymptotic standard error in parentheses. ii) *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively; iii) t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\pi_1+\delta_1=0$; t_2 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\omega_1+\delta_1=0$; iv) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_2 is a Wald test of the joint significance of the time dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_3 is a Wald test of the joint significance of the country dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; v) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; vi) Hansen is a test of the over-identifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term, degrees of freedom in parentheses.

Table 10: Family control and firm value (*IAQ_{it} as dependent variable*)

Dep. var.:	**10%**		**20%**		**25%**	
IAQ_{it}	**I**	**II**	**III**	**IV**	**V**	**VI**
Constant	0.13	0.15	0.12	0.03	0.23	0.18
	(0.31)	(0.30)	(0.30)	(0.29)	(0.31)	(0.29)
OC_{it}	0.60*	1.35*	0.56*	-0.09	0.59*	0.61*
	(0.12)	(0.40)	(0.12)	(0.24)	(0.12)	(0.21)
$FD_{it}OC_{it}$	1.51*	1.72*	1.63*	1.65*	1.43*	1.59*
	(0.28)	(0.27)	(0.29)	(0.27)	(0.32)	(0.30)
$BE_{it}OC_{it}$		-0.75**		0.53*		-0.08
		(0.32)		(0.20)		(0.18)
$SIZE_{it}$	0.02	0.04	0.03	0.04***	0.02	0.02
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
$DEBT_{it}$	-1.42*	-1.66*	-1.49*	-1.52*	-1.44*	-1.54*
	(0.14)	(0.13)	(0.14)	(0.13)	(0.14)	(0.13)
CF_{it}	0.97*	0.95*	1.00*	0.83*	1.02*	0.66*
	(0.17)	(0.15)	(0.17)	(0.19)	(0.17)	(0.15)
AGE_{it}	-0.09*	-0.11*	-0.09*	-0.09*	-0.08*	-0.08*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
SOC_{it}	-1.23*	-1.58*	-1.27*	-1.46*	-1.24*	-1.39*
	(0.19)	(0.18)	(0.19)	(0.21)	(0.18)	(0.20)
t_1	7.76		7.93		6.67	
t_2		8.40		7.86		7.16
z_1	35.98 (7)	66.47 (8)	37.44 (7)	32.44 (8)	35.53 (7)	33.01 (8)
z_2	86.38 (5)	92.98 (5)	85.83 (5)	120.34 (5)	88.16 (5)	80.54 (5)
z_3	13.76 (9)	10.46 (9)	12.92 (9)	10.65 (9)	11.34 (9)	8.61 (9)
m_1	-0.83	-0.88	-0.87	-0.85	-0.86	-0.79
m_2	-0.58	-0.56	-0.57	-0.64	-0.54	-0.64
Hansen	214.73	246.62	213.20	226.16	215.34	229.68
	(182)	(207)	(182)	(207)	(182)	(207)
N	4,729	4,729	4,729	4,729	4,729	4,729

The regressions are performed by using the sample described in Table 1. FD_{it} equals one for family firms and zero otherwise, and BE_{it} equals one when there is a large shareholder in the firm at the corresponding cut-off point and zero otherwise. The remaining variables are defined in Table 3. The rest of the information needed to read this table is: i) Heteroskedasticity consistent asymptotic standard error in parentheses. ii) *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively; iii) t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\gamma_1=0$; t_2 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\gamma_1+\delta_1=0$; iv) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_2 is a Wald test of the joint significance of the time dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_3 is a Wald test of the joint significance of the country dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; v) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; vi) Hansen is a test of the over-identifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term, degrees of freedom in parentheses.

Table 11: Family control and firm value considering specific firm-level characteristics (*IAQ_{it} as dependent variable*)

Dep. var.:	**10%**		**20%**		**25%**	
IAQ_{it}	**I**	**II**	**III**	**IV**	**V**	**VI**
Constant	0.24	-0.10	0.23	-0.28	0.17	0.37
	(0.22)	(0.29)	(0.22)	(0.28)	(0.23)	(0.28)
OC_{it}	1.16*	1.31*	-0.30	-0.04	0.61*	0.71*
	(0.39)	(0.39)	(0.22)	(0.23)	(0.19)	(0.20)
$BFD_{it}OC_{it}$	1.58*		1.75*		1.41*	
	(0.26)		(0.27)		(0.29)	
$NBFD_{it}OC_{it}$	0.42*		0.04		0.25	
	(0.15)		(0.13)		(0.19)	
$FGFD_{it}OC_{it}$		2.24*		1.94*		1.58*
		(0.31)		(0.30)		(0.30)
$SGFD_{it}OC_{it}$		0.98*		0.78*		0.77*
		(0.19)		(0.18)		(0.17)
$BE_{it}OC_{it}$	-0.67**	-0.71**	0.66*	0.51*	-0.04	-0.13
	(0.31)	(0.32)	(0.18)	(0.19)	(0.17)	(0.17)
$SIZE_{it}$	0.03***	0.05**	0.03	0.06*	0.02	0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
$DEBT_{it}$	-1.56*	-1.62*	-1.40*	-1.44*	-1.45*	-1.45*
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.11)
CF_{it}	1.10*	0.94*	1.00*	0.85*	0.75*	0.71*
	(0.13)	(0.14)	(0.18)	(0.18)	(0.14)	(0.16)
AGE_{it}	-0.10*	-0.09*	-0.08*	-0.07*	-0.07*	-0.07*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
SOC_{it}	-1.61*	-1.71*	-1.64*	-1.58*	-1.37*	-1.59*
	(0.16)	(0.17)	(0.17)	(0.19)	(0.17)	(0.15)
t_1	8.02		7.98		6.89	
t_2	6.16		3.59		4.80	
t_3		9.06		8.07		7.41
t_4		7.92		7.11		8.14
z_1	66.05 (9)	63.28 (9)	42.30 (9)	30.78 (9)	34.54 (9)	45.32 (9)
z_2	121.02 (5)	128.16 (5)	194.91 (5)	128.27 (5)	98.68 (5)	92.94 (5)
z_3	11.00 (9)	10.52 (9)	12.66 (9)	10.12 (9)	8.77 (9)	8.93 (9)
m_1	-0.92	-0.91	-0.92	-0.87	-0.80	-0.82
m_2	-0.54	-0.46	-0.62	-0.54	-0.59	-0.53
Hansen	274.29	268.53	254.37	258.11	244.75	264.98
	(225)	(225)	(225)	(225)	(225)	(225)
N	4,729	4,729	4,729	4,729	4,729	4,729

The regressions are performed by using the sample described in Table 1. BFD_{it} equals one for family firms in which family members are seated in the board of directors and zero otherwise, $NBFD_{it}$ equals one for family firms in which there are no family members seated in the board and zero otherwise, $FGFD_{it}$ equals one for family firms in which the founder effect is still present and zero otherwise, $SGFD_{it}$ equals one for family firms controlled by second or later generations and zero otherwise, and BE_{it} equals one when there is a large shareholder in the firm at the corresponding cut-off point and zero otherwise. The remaining variables are defined in Table 3. The rest of the information needed to read this table is: i) Heteroskedasticity consistent asymptotic standard error in parentheses. ii) *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively; iii) t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\lambda_1+\delta_1=0$; t_2 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\beta_1+\delta_1=0$; t_3 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\varphi_1+\delta_1=0$; t_4 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\psi_1+\delta_1=0$; iv) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_2 is a Wald test of the joint significance of the time dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_3 is a Wald test of the joint significance of the country dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; v) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; vi) Hansen is a test of the over-identifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term, degrees of freedom in parentheses.

Table 12: Family control and firm value considering the institutional environment (IAQ_{it} *as dependent variable*)

Dep. var.:	**10%**	**20%**	**25%**
IAQ_{it}	**I**	**II**	**III**
Constant	-0.01	-0.20	0.25
	(0.20)	(0.20)	(0.19)
OC_{it}	1.36*	0.01	0.55*
	(0.37)	(0.21)	(0.20)
$SPFD_{it}OC_{it}$	0.97*	0.68***	0.89**
	(0.13)	(0.40)	(0.40)
$WPFD_{it}OC_{it}$	1.73*	1.81*	1.68*
	(0.27)	(0.27)	(0.30)
$BE_{it}OC_{it}$	-0.76*	0.45*	-0.04
	(0.29)	(0.16)	(0.17)
$SIZE_{it}$	0.05*	0.07*	0.02
	(0.02)	(0.01)	(0.01)
$DEBT_{it}$	-1.65*	-1.66*	-1.54*
	(0.13)	(0.12)	(0.13)
CF_{it}	1.10*	1.13*	0.66*
	(0.12)	(0.13)	(0.15)
AGE_{it}	-0.11*	-0.11*	-0.08*
	(0.01)	(0.01)	(0.01)
SOC_{it}	-1.50*	-1.60*	-1.48*
	(0.16)	(0.17)	(0.15)
t_1	13.57	3.06	3.49
t_2	8.71	8.78	7.70
z_1	236.44 (9)	147.82 (9)	41.31 (9)
z_2	94.16 (5)	97.01 (5)	74.26 (5)
z_3	15.31 (9)	13.40 (9)	9.87 (9)
m_1	-0.91	-0.94	-0.80
m_2	-0.53	-0.60	-0.66
Hansen	254.15	244.61	236.93
	(225)	(223)	(222)
N	4,729	4,729	4,729

The regressions are performed by using the sample described in Table 1. $SPFD_{it}$ equals one for family firms that operate in countries with strong protection of minority shareholders' rights and zero otherwise, $WPFD_{it}$ equals one for family firms that operate in countries with weak legal protection of minority investors and zero otherwise, and BE_{it} equals one when there is a large shareholder in the firm at the corresponding cut-off point and zero otherwise. The remaining variables are defined in Table 3. The rest of the information needed to read this table is: i) Heteroskedasticity consistent asymptotic standard error in parentheses. ii) *, ** and *** indicate significance at the 1%, 5% and 10% level, respectively; iii) t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\pi_1+\delta_1=0$; t_2 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\alpha_1+\omega_1+\delta_1=0$; iv) z_1 is a Wald test of the joint significance of the reported coefficients, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_2 is a Wald test of the joint significance of the time dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; z_3 is a Wald test of the joint significance of the country dummies, asymptotically distributed as χ^2 under the null of no relationship, degrees of freedom in parentheses; v) m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; vi) Hansen is a test of the over-identifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term, degrees of freedom in parentheses.