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Family control, expropriation, and investor protection: A panel data analysis of Western European corporations

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ABSTRACT

We investigate whether the value impact of family control in Western European firms depends on country-level investor protection. To this aim, we account for ownership–value nonlinearities. Supporting that the risk of expropriation increases with high ownership concentration, we find an inverted U-shape relation between family control and firm value. Family firms incur a value discount when family equity holdings exceed approximately 50%. The nonlinear effect of family control is attributable to family firms from a strongly protective environment. When investor protection is weak, family control has a positive impact on firm value regardless of the ownership concentration level.

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1. Introduction

Given the benefits and costs of the family business model, previous finance literature investigates whether family and non-family firms differ from each other in terms of firm performance (e.g., Anderson and Reeb, 2003; Andres, 2008; Villalonga and Amit, 2006). Some studies also provide evidence on the consequences that different types of family control (e.g., active vs. passive, founding vs. non-founding) might have for corporate performance (e.g., Bennedsen et al., 2007). Despite these efforts and although it is widely accepted that family firms are the most prevalent organizational form around the world (e.g., Claessens et al., 2000; Faccio and Lang, 2002; La Porta et al., 1999; Morck et al., 2005), thus far there is no empirical evidence on how the effect of family control on firm value depends on country-level institutional characteristics such as investor protection.

In this scenario, our objective is to investigate whether the value premium or value discount experienced by family firms as compared to their non-family counterparts depends on the level of shareholder protection that exists in a country. This issue is of particular interest because investor protection is a governance dimension that is beyond family's control. And therefore it could mitigate expropriation of minority investors' wealth by the controlling family, which is probably the most severe agency cost in family firms (e.g., Claessens et al., 2002; Masulis et al., 2011). Although retaining family control can be optimal where minority investors' rights are not well protected (Burkart et al., 2003), by the same token it can be negative for minority outside investors, whose wealth can be more easily expropriated. To disentangle whether investor protection curbs the risk of expropriation in

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family firms, we examine how the shareholder protection rules interact with family control among Western European corporations to determine firm value.

Western Europe is the perfect "laboratory" for our study because Western European countries share the same cultural background and are governed within the framework established by supra-national institutions, which ensures some degree of homogeneity in terms of economic objectives. But at the same time, there is substantial heterogeneity across countries along the investor protection dimension, which makes this region especially suitable for our analyses. Additionally, although family control is prevalent among Western European corporations (Faccio and Lang, 2002), the evolution of family ownership depends on country-level factors (Franks et al., 2012).

To investigate the impact of investor protection on the relation between family control and firm value, we need to control for the three possible sources of endogeneity (Wooldridge, 2010). First, we alleviate endogeneity concerns driven by unobservable heterogeneity that remains constant over time and may affect both ownership structure and firm value (Bloom and van Reenen, 2007; Mura, 2007) by using a panel data estimator. Second, we address the reverse causality problem using suitable lagged values of the explanatory variables as instruments following the approach proposed by Blundell and Bond (1998) when deriving the system generalized method of moments (GMM). As Wintoki et al. (2012) highlight, an important aspect of the GMM method is that it enables us to overcome the difficulty of finding external factors or natural experiments by relying on a set of "internal" instruments contained within the panel itself. And third, we mitigate the problem of measurement error in our main explanatory variable (i.e., the family nature of a business) using several ownership concentration thresholds in all our analyses to identify family firms.

To test our hypotheses, we focus on how ownership concentration affects firm value consistent with previous seminal research (Demsetz and Lehn, 1985). We then interact ownership concentration with a family dummy to disentangle the performance difference of family firms. Our initial results support the beneficial effect of family control for firm performance in Western Europe. But this effect might depend on the size of the family stake in the company. For this reason, we estimate a nonlinear relation and confirm that ownership concentration and firm value are nonlinearly related regardless of owner type. Nevertheless, the ability and incentives of controlling families to expropriate may depend on how strong minority investors' rights are protected by the law. Therefore, we extend the nonlinear specification including two-way interaction terms that let us divide family firms in two categories depending on whether they operate in strongly or in weakly protective countries. Our findings confirm an inverted U-shape between family control and firm value in more protective environments. When investor protection is weak, family control impacts positively on firm value regardless of the ownership concentration level.

We contribute to the corporate finance and governance literature by examining the interaction between family control and the legal system in an effort to disentangle how investor protection rules influence the risk of expropriation by controlling families. In this respect, our study provides new empirical evidence on the relevance of considering the institutional environment when analyzing the implications of family control for firm performance. The main conclusion of the paper is that country-level investor protection shapes the relation between family control and firm value. Specifically, the different performance of family firms depends on the level of family control and on the strength of minority shareholder protection afforded by the law.

Our study helps clarify the evolution of family ownership documented by Franks et al. (2012). These authors show that a country's level of shareholder protection is a factor that explains to what extent family ownership constitutes the predominant organizational form. Our empirical evidence suggests that investor protection determines the prevalence of family firms indirectly by affecting the family effect on firm performance. The beneficial effect of family control for firms' market valuations in weakly protective environments partly explains the survival of the family business model in this scenario.

In addition to complementing the recent study by Franks et al. (2012), our paper is closely related to other research. La Porta et al. (2002) and Lins (2003) investigate the impact of ownership structure and investor protection on firm valuation. More recently, Laeven and Levine (2008) study the relation between firm valuation and ownership dispersion across multiple owners. Unlike these previous studies, our emphasis is on family control, which is the most prevalent ownership type in Western Europe. Moreover, although La Porta et al. (2002) analyze the interaction effect of a firm's ownership structure and investor protection on firm value, they do not find any significant joint impact. Compared to Lins (2003), who analyzes managerial entrenchment, we investigate shareholder expropriation, which is the predominant agency problem in regions with concentrated ownership structures. Our work also differs from Laeven and Levine's (2008) investigation in that their main focus is on ownership dispersion and not on owner identity. A significant difference of our approach is that we examine how investor protection affects expropriation incentives of a specific shareholder type (controlling families) accounting for the widely supported nonlinearities between the ownership structure and firm value.

The remainder of the paper is organized as follows. The next section reviews the previous theoretical and empirical literature related to family control, and presents our hypotheses. Section 3 describes the data and details the family firm definition used in the study. Section 4 discusses the choice of the estimation method. Section 5 presents some descriptive analyses as well as the empirical approach adopted and the regression results obtained. Section 6 includes several robustness checks that reinforce our findings. The last section highlights the main conclusions.

2. Literature review and hypothesis development

Earlier studies suggest that the monitoring role of large investors can in part resolve the classic owner–manager problem, which would lead to a positive impact from ownership concentration on firm performance (see, e.g., Jensen and Meckling, 1976). Contrary to this view, Demsetz (1983) argues that there should be no significant relation between ownership structure and performance because the former should be influenced by the profit-maximizing behavior of shareholders. This argument proposes that a firm's ownership structure could be endogenously determined, among other factors, by corporate performance.

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Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) find that in the United States ownership structure has no significant effect on performance, thus supporting the endogeneity argument. Despite these results, the evidence from around the world suggests that ownership structure influences firm performance in different ways depending on the country and the shareholder's identity, and that concentrated ownership most often has a positive effect on firm value (Denis and McConnell, 2003).

However, the accumulation of control in the hands of powerful families can lead to a new agency conflict between the controlling family and minority investors (e.g., Villalonga and Amit, 2006, 2009). As Burkart et al. (2003) point out, one of the theories of family ownership is the possibility of expropriation of minority investors that comes with control. This agency problem arises when controlling families act in their own best interest at the expense of other investors. The concern over expropriation of small (non-family) investors by large controlling (family) shareholders is significant even in an economy with high investor protection such as the United States (e.g., Villalonga and Amit, 2009). Therefore, this problem may be reflected in market value discounts for family firms (Bennedsen and Nielsen, 2010; Masulis et al., 2011).

Regarding the effect of family control on firm performance, the empirical evidence provided is mixed. On the one hand, previous studies support that family firms perform better than non-family firms in the United States (e.g., Anderson and Reeb, 2003) and in Western Europe (e.g., Andres, 2008; Maury, 2006). The potential benefits of the family business model such as its long-term orientation, and family owners' concerns for survival (e.g., Anderson and Reeb, 2003; Villalonga and Amit, 2009) and for the family's reputation (e.g., Chen et al., 2010) explain the superior performance of family firms. Supporting the benefits of family control, recent studies document lower investment–cash flow sensitivities and higher dividend payments in family firms (e.g., Andres, 2011; Pindado et al., 2011, 2012).

On the other hand, family control can be harmful for firm performance when the interests of the largest shareholder are not as closely aligned with the interests of the minority outside investors (e.g., Claessens et al., 2002), and when dilution of family ownership and control leads to the tunneling of resources out of the firm (e.g., Bertrand et al., 2008). Regarding some European evidence, Cronqvist and Nilsson (2003) show that Swedish family firms are associated with larger agency costs and lower market values relative to other ownership structures. And Bennedsen and Nielsen (2010) report that the value discount associated with disproportional ownership structures in Europe is higher in family firms. These findings cast doubt on the bright side of the family business model, which might be outweighed by the expropriation risk. Because firms that experience greater expropriation of resources are more likely to exhibit worse performance (Joh, 2003), we propose:

Hypothesis 1. (Expropriation): Family firms incur a value discount due to the risk that controlling families expropriate minority shareholders' wealth.

When examining the relation between ownership structure and performance, it is important to take into account that the incentives of equity holders change as their stakes in the company increase (e.g., McConnell and Servaes, 1990; Morck et al., 1988). For smaller shareholdings, large owners are unable to expropriate the minority investors' wealth because they lack enough control over the firm's decision making; hence, they focus on supervising the decisions made by managers. However, when the largest owner has accumulated enough control, the owner's ability to influence firm policies in his or her own best interest increases; and, as a consequence, the risk of expropriation is aggravated. As a result of these two opposing impacts, an argument can be made that the effect of ownership concentration on firm value follows a quadratic functional form (see, e.g., Miguel et al., 2004).

The nonlinearity of ownership concentration in the hands of large shareholders and firm performance is especially applicable to family control because this organizational form is associated with potential benefits and costs. In particular, the risk of expropriation attributable to family control is more likely to arise when the family's stake in the firm is too high, increasing firm performance at first as family ownership concentration rises and then decreasing after reaching a certain level of family control. In this vein, Anderson and Reeb (2003) argue that controlling families have both the incentive and the ability to take actions that benefit themselves at the expense of firm performance when their stake in the company is substantial. High levels of family ownership can be associated with less efficient investment decisions due to family firms' risk aversion (Anderson et al., 2012) that lead to a reduction in the market value of the company (Cronqvist and Nilsson, 2003).

In the United States and focusing on the S&P 500 firms, Anderson and Reeb (2003) show that there is a breakpoint beyond which the positive effect of family ownership on firm performance disappears. According to these authors, the breakpoint is reached when families own about one third of the company. This conclusion is consistent with the view that the family's risk aversion, which is more likely to arise when the family invests a large proportion of its wealth in the company, can induce the controlling family to pursue value preservation rather than value maximization (e.g., McVey and Draho, 2005). The empirical evidence that expropriation or tunneling activities by the founder's sons are stronger when their ownership is higher (Bertrand et al., 2008) also supports a non-monotonic relation between family control and performance.

The proposition that ownership concentration in the hands of the family helps to resolve the owner–manager agency conflict while at the same time creating conflicts of interests between controlling and minority investors suggests that there might be an optimal level of ownership concentration that balances both concerns. Therefore, we test:

Hypothesis 2. (Nonlinearity): Family control leads to value creation when the ownership concentration is low but results in a value discount when the ownership concentration exceeds the optimal level.

The main challenge for this study is to disentangle whether the expected negative effect of family control on firm value, partly driven by the expropriation incentives of controlling families, depends on the extent to which the rights of minority shareholders

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are protected by the law. The law and finance literature suggests that the level of protection of the minority investors' rights that exists in a country can significantly influence the ownership structure that prevails (La Porta et al., 1998). Denis and McConnell's (2003) survey of research on corporate governance systems concludes that, outside of the United States, the degree of ownership concentration depends on minority shareholder protection. In a similar vein, Masulis et al. (2011) show that the limited availability of capital at a country level is a reason for the formation of family business groups. And Franks et al. (2012) document that in countries with strong investor protection, developed financial markets, and active markets for corporate control, family firms evolve into widely held firms as they age. In countries with the opposite characteristics, family control is very persistent over time.

La Porta et al. (2002) provide some direct evidence on the effects of external and internal governance on firm value. Their findings confirm that firms with higher ownership concentration and that operate in countries with better protection for minority shareholders exhibit higher valuations, but they do not find any significant joint effect. Lins (2003) complements these results by reporting that the negative effect from excess control and the positive effect of non-management blockholders' presence on firm value are more pronounced in countries with weaker protection. More recently, Laeven and Levine (2008) confirm that strong shareholder protection laws mitigate the negative effect of ownership dispersion on firm valuation. But the negative relation between firm value and the dispersion of cash-flow rights is stronger when large shareholders are of different types.

Given these results, it is necessary to test whether the legal system at a country level, as captured by the protection of minority investors' rights afforded by the law, influences the risk of expropriation by controlling families. This issue is of particular interest in light of Burkart et al.'s (2003) model. These authors support the view that in weakly protective environments family control can be more prevalent. But this does not imply that family control is necessarily an efficient outcome. Moreover, as Bertrand and Schoar (2006) suggest, it is important to understand the interactions between family values and country-level formal institutions. If minority shareholders' protection indeed curbs the probability of expropriation by large controlling families, the relation between family control and firm value will depend on the institutional environment in which the company operates. Consequently, we expect:

Hypothesis 3. (Investor protection): The country-level protection of minority shareholders' rights shapes the relation between family control and firm value by hampering expropriation.

3. Data description

3.1. Data sources

Our main source of information is the *Amadeus* database, from which we obtain balance sheets, income statements, market data, and information on the ownership structure of firms. In addition, we extract some macroeconomic data needed to calculate the variables as explained in Section 5.2 from the *Main Economic Indicators* published by the OECD. The level of protection of minority shareholders' rights in the sample countries (as captured by the antidirector rights index) is obtained from the work by Spamann (2010), who revises the original antidirector rights index of La Porta et al. (1998). To get a representative sample of listed firms that operate in Western Europe, we focus on countries whose institutional environment is classified in La Porta et al. (1998). We thus ensure that the different legal systems identified by these authors are represented in our sample.

Our study period ranges from 1999 to 2006. Additionally, the method we use imposes an additional restriction to control for two of the sources of endogeneity: unobservable heterogeneity and reverse causality. That is, we need information for at least four consecutive years per company to test for the absence of second-order serial correlation, as Arellano and Bond (1991) point out. Following previous studies on the family firm performance (Anderson and Reeb, 2003; Villalonga and Amit, 2006), financial companies and regulated utilities are excluded from the analyses. Therefore, our final sample is an unbalanced panel that consists of 802 publicly listed firms (4560 observations). Using an unbalanced panel for a long time period (eight years) is the best way to solve the survivorship bias caused by the fact that some firms might be delisted (e.g., firms that file for bankruptcy, firms that are acquired, etc.) and, consequently, removed from the database.

3.2. Family firm definition

We consider a firm 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% of the firm's voting rights. The finance literature extensively uses the 10% and 20% thresholds to identify firms with a controlling shareholder (e.g., Claessens et al., 2000; Faccio and Lang, 2002). The 25% cutoff point is in line with the official definition of a family business adopted by the European Group of Owner Managed and Family Enterprises (GEEF, by its name in French), and the Board of the Family Business Network. We use all of these alternative ownership concentration levels when defining family control to mitigate any concern over measurement error that may affect the variables of interest to test our hypotheses.

To identify firms in which a family is the largest owner, we proceed as follows. First, we identify the firm-year observations in which the largest shareholder is *an individual or a family*. From these firms, in some cases *Amadeus* asserts that the largest

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shareholder is a family, but 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% (alternatively 20% and 25%) of the firm's voting rights. As Faccio et al. (2011) point out, we focus on voting rights because the control of voting rights captures more power in the firm's decision making.[1] Second, when the largest owner is just an individual, we investigate whether another family member is on the board of directors or has a stake in the firm. Complying with this condition means that at least two members of the same family are involved in the firm and therefore we consider these firms as being family controlled. This group of firms must also fulfill the voting rights threshold to be added to the family firm sample.

By adopting this definition of family firm, we avoid the risk of classifying as family controlled firms that are owned and run by an entrepreneur (see, e.g., Miller et al., 2007). Our definition of family firm is closer to the more restrictive criterion proposed by Bloom and van Reenen (2007) to classify firms as family controlled. The adoption of our restrictive family firm definition reduces the possibility that our results are driven by the founder effect (e.g., Adams et al., 2009; Fahlenbrach, 2009). Moreover, requiring a minimum level of ownership concentration in the hands of the largest shareholder is appropriate to delineate between controlling shareholders and diffuse ownership firms in countries such as Western European ones, where large control stakes are common (Anderson et al., 2009).

Table 1 presents the distribution of the whole sample that classifies firms according to their ownership structure and to the legal system in which they operate. The 10%, 20%, and 25% cutoff points are used in Panels A, B, and C, respectively, to make the classification of family and non-family firms. As the table shows, we differentiate between family and non-family firms, and we also divide this latter group into firms controlled by an individual, firms with another controlling shareholder (i.e., the state, a financial institution, an industrial company, or other), and widely held firms. When we use the 10% cutoff point definition, about 15% 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. As we move from the 10% to the 20% and 25% cutoff point definitions the proportion of family-controlled firm-year observations decreases to 12% and 10% approximately.

Focusing on the legal system, the full sample is representative of the different institutional environments that exist in Western Europe (see last column of Table 1). Of the whole sample, 37.91% of the firms operate in a common law country, the United Kingdom. The civil law countries are divided into French, German, and Scandinavian legal origins, following La Porta et al. (1998). The first group includes 29.68% of all firms and comprises Spain, France, Greece, and the Netherlands. The second comprises 19.20% of the firms, which operate either in Switzerland or in Germany. And third, the Scandinavian-origin region (Finland and Sweden) constitutes 13.22% of the whole sample.[2]

4. Estimation method

We use the panel data methodology in the estimation process to control for endogeneity. Both unobservable heterogeneity and reverse causality motivate this choice. First, panel data allow us to control for individual heterogeneity by modeling it as an individual effect. By taking this effect out of the error term, we reduce the risk of obtaining biased results due to correlation between the error term and the explanatory variables. Therefore, the error term in our models, ε_{it}, is split into four different components: (i) the abovementioned firm-specific effect; (ii) the time-specific effect captured with time dummy variables to control for the impact of macroeconomic factors on firm value and to alleviate the problem of cross-sectional correlation (Petersen, 2009); (iii) the country dummy variables added to control for the country-specific effects; and (iv) the random disturbance.[3]

The second issue that motivates the use of our estimation method is the endogeneity attributable to the reverse causality problem (e.g., Adams et al., 2009). This source of endogeneity might be a serious concern when trying to disentangle the effect of ownership concentration on performance. In fact, ownership concentration can have no observable effect on firm performance due to the endogeneity of the ownership structure (e.g., 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 firm performance, or if superior performance leads families to maintain their stakes in the company. Consequently, we are compelled to control for the reverse causality problem in our models. To address this issue, we estimate the models by using the GMM because it is an instrumental variable estimator that embeds all other instrumental variable methods as special cases.

Given the ability of the system GMM to account for the endogeneity of all time-varying explanatory variables (Ammann et al., 2011; Bloom and van Reenen, 2007) and considering that the stationarity assumption holds in our setting, the system GMM estimator can be regarded as the most appropriate method in a setting like ours (Wintoki et al., 2012). As occurs in most corporate finance studies, most of the variables included in the right-hand side of our models might suffer from the reverse

[1] Regarding the possible existence of different share classes, as explained in the *Amadeus* user guide, the ownership database tracks control rather than patrimonial relations. Therefore, in companies with voting and non-voting shares, the percentages recorded are those that refer to the voting category.

[2] Other countries from Western Europe contemplated in La Porta et al. (1998) (namely, Austria, Belgium, Denmark, Ireland, Italy, Portugal, and Norway) are not considered in our analysis because there is not enough data in the *Amadeus* database to comply with our information requirements.

[3] Following previous studies (e.g., Villalonga and Amit, 2006) and to avoid adding too many dummies to the models, we control for industry effects by using an industry-adjusted value measure as the dependent variable.

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

Panel A: 10% cutoff point definition

Ownership	Family	Non-fam.	*Ind.*	*Other*	*Wid. held*	Total	Total
Legal origin	Obs. (%)	Obs. (%)	*Obs. (%)*	*Obs. (%)*	*Obs. (%)*	Obs. (%)	Firms (%)
English	72	1743	*69*	*1113*	*561*	1815	304
	(1.58)	(38.22)	*(1.51)*	*(24.41)*	*(12.30)*	(39.80)	(37.91)
French	374	966	*126*	*662*	*178*	1340	238
	(8.20)	(21.18)	*(2.76)*	*(14.52)*	*(3.90)*	(29.39)	(29.68)
German	181	627	*150*	*394*	*83*	808	154
	(3.97)	(13.75)	*(3.29)*	*(8.64)*	*(1.82)*	(17.72)	(19.20)
Scandinavian	56	541	*39*	*406*	*96*	597	106
	(1.23)	(11.86)	*(0.86)*	*(8.90)*	*(2.11)*	(13.09)	(13.22)
Total	683	3877	*384*	*2575*	*918*	4560	802
	(14.98)	(85.02)	*(8.42)*	*(56.47)*	*(20.13)*	(100)	(100)

Panel B: 20% cutoff point definition

Ownership	Family	Non-fam.	*Ind.*	*Other*	*Wid. held*	Total	Total
Legal origin	Obs. (%)	Obs. (%)	*Obs. (%)*	*Obs. (%)*	*Obs. (%)*	Obs. (%)	Firms (%)
English	44	1771	*34*	*271*	*1466*	1815	304
	(0.96)	(38.84)	*(0.75)*	*(5.94)*	*(32.15)*	(39.80)	(37.91)
French	322	1018	*105*	*421*	*492*	1340	238
	(7.06)	(22.32)	*(2.30)*	*(9.23)*	*(10.79)*	(29.39)	(29.68)
German	145	663	*118*	*291*	*254*	808	154
	(3.18)	(14.54)	*(2.59)*	*(6.38)*	*(5.57)*	(17.72)	(19.20)
Scandinavian	38	559	*20*	*265*	*274*	597	106
	(0.83)	(12.26)	*(0.44)*	*(5.81)*	*(6.01)*	(13.09)	(13.22)
Total	549	4011	*277*	*1248*	*2486*	4560	802
	(12.04)	(87.96)	*(6.07)*	*(27.37)*	*(54.52)*	(100)	(100)

Panel C: 25% cutoff point definition

Ownership	Family	Non-fam.	*Ind.*	*Other*	*Wid. held*	Total	Total
Legal origin	Obs. (%)	Obs. (%)	*Obs. (%)*	*Obs. (%)*	*Obs. (%)*	Obs. (%)	Firms (%)
English	31	1784	*25*	*130*	*1629*	1815	304
	(0.68)	(39.12)	*(0.55)*	*(2.85)*	*(35.72)*	(39.80)	(37.91)
French	261	1079	*95*	*330*	*654*	1340	238
	(5.72)	(23.66)	*(2.08)*	*(7.24)*	*(14.34)*	(29.39)	(29.68)
German	138	670	*100*	*239*	*331*	808	154
	(3.03)	(14.69)	*(2.19)*	*(5.24)*	*(7.26)*	(17.72)	(19.20)
Scandinavian	29	568	*13*	*217*	*338*	597	106
	(0.64)	(12.46)	*(0.29)*	*(4.76)*	*(7.41)*	(13.09)	(13.22)
Total	459	4101	*233*	*916*	*2952*	4560	802
	(10.07)	(89.93)	*(5.11)*	*(20.09)*	*(64.74)*	(100)	(100)

The family firm sample includes all family-controlled firms according to the family firm definition explained in Section 3.2. Non-family firms have been divided into three groups (in italics): firms controlled by an individual, firms controlled by other types of blockholders (different from families and individuals), and widely held firms. The English legal family includes the United Kingdom; the French legal family comprises Spain, France, Greece, and the Netherlands; the German legal family includes firms from Switzerland and Germany; and the Scandinavian legal family comprises Finland and Sweden. In the first six columns, percentages are computed over the total number of observations. In the last column, percentages are computed over the total number of firms.

causality problem. It is extremely complicated, if not impossible, to find valid external instruments that comply with the conditions that are required for any instrument. Therefore, we use the GMM, which relies on a set of "internal" instruments (i.e., the lags of the explanatory variables), thus eliminating the need for external instrumental variables (Wintoki et al., 2012). Specifically, as Blundell and Bond (1998) suggest when deriving the system estimator used in this paper, we use all the right-hand-side variables in the models lagged from $t-2$ to $t-7$ as instruments for the equations in differences, and only one instrument for the equations in levels. Moreover, we use the Hansen J statistic of overidentifying restrictions to test for the absence of correlation between the instruments and the error term and find that the instruments we use are valid in all of the models.

The other test used to check for the potential misspecification of the models is the m_2 statistic, developed by Arellano and Bond (1991), which enables us to test for the lack of second-order serial correlation in the first-difference residual. We find no such problem in our models. Additionally, we obtain 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 dummies.

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Table 2
Summary statistics for the full sample.

Panel A: Summary statistics

	Median	Mean	Standard deviation	Minimum	Maximum
IAV_{it}	−0.024	0.190	0.831	−0.950	11.075
IAQ_{it}	−0.029	0.183	0.817	−0.966	10.947
OC_{it}	0.177	0.246	0.189	0.003	0.980
$SIZE_{it}$	12.545	12.767	1.863	9.277	19.154
$DEBT_{it}$	0.047	0.077	0.097	0.000	0.821
CF_{it}	0.079	0.075	0.089	−0.912	0.781
AGE_{it}	3.434	3.405	0.986	0.693	6.443
2nd $SHAREH_{it}$	0.091	0.106	0.079	0.000	0.500
$ADRI_{it}$	4.000	4.362	0.869	3.000	6.000

Panel B: Correlation matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IAV_{it}	(1)	1.000								
IAQ_{it}	(2)	0.994***	1.000							
OC_{it}	(3)	−0.000	0.016	1.000						
$SIZE_{it}$	(4)	−0.025*	−0.034**	−0.200***	1.000					
$DEBT_{it}$	(5)	−0.374***	−0.353***	0.124***	0.095***	1.000				
CF_{it}	(6)	0.317***	0.297***	0.018	0.090***	−0.240***	1.000			
AGE_{it}	(7)	−0.150***	−0.154***	0.020	0.175***	0.085***	−0.008	1.000		
2nd $SHAREH_{it}$	(8)	−0.033**	−0.024	0.185***	−0.175***	0.036**	−0.042***	−0.061***	1.000	
$ADRI_{it}$	(9)	−0.013	−0.024	−0.385***	0.200***	−0.115***	0.003	0.026*	−0.143***	1.000

The sample comprises 802 listed firms (4560 observations) for which data are available for at least four consecutive years between 1999 and 2006 in the *Amadeus* database. The IAV_{it} denotes industry-adjusted value, IAQ_{it} is industry-adjusted Tobin's *q*, OC_{it} stands for ownership concentration, $SIZE_{it}$ is the firm size, $DEBT_{it}$ is the leverage of the company, CF_{it} denotes cash flow, AGE_{it} stands for firm age, 2nd $SHAREH_{it}$ is the stake of the second largest shareholder in the company, and $ADRI_{it}$ is the antidirector rights index obtained from Spamann (2010). The ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

5. Results

5.1. Descriptive analysis

Panels A and B of Table 2 provide the summary statistics for the variables used in the analyses as well as the correlations between them. Panel B reports a high correlation between the two alternative performance measures. Additionally, the negative correlation between ownership concentration and the antidirector rights index is consistent with a higher degree of ownership dispersion in countries with stronger investor protection (Burkart et al., 2003).

We include a preliminary analysis of the differences that exist between family firms and other firm categories in Table 3. As Panel A shows, family and non-family firms are not statistically different from each other in terms of firm value (see the *t*-statistic). This result means that there is not a performance difference between family-controlled firms and their non-family counterparts when the 10% ownership concentration level is used to define our family firm sample (except in the case of the adjusted-*q* measure). Panels B and C of Table 3 highlight that when we increase the ownership concentration level to classify firms as family controlled, family firms appear to significantly outperform the rest of the firms. Table 3 also presents the differences in the means tests for the remaining firm-level characteristics that are considered in the regression analyses. There are five findings worth noting.

First, family firms seem to have a higher level of ownership concentration, which is not surprising given that the non-family firm group includes widely held firms. Second, in terms of size and debt, family-controlled firms 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% cutoff point do family firms exhibit a statistically lower level of cash flow (see the *t*-statistic in Panel A). Fourth, in terms of age, we do not find any difference between family and non-family firms. And fifth, it seems that the second largest shareholder in the family firms owns a larger stake in the firm than the second largest shareholder in the non-family firms.

5.2. Regression analysis

To test the expropriation hypothesis (Hypothesis 1), we propose the following model:

$$IAV_{it} = \alpha_0 + (\alpha_1 + \gamma_1 FD_{it})OC_{it} + \delta X_{it} + \varepsilon_{it}, \quad (1)$$

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Table 3
Descriptive analysis of performance variables and other firm characteristics.

Panel A: Difference of means tests using the 10% cutoff point

	All firms	Family	Non-fam.	*t*-statistic
No. Obs.	4560	683	3877	
IAV_{it}	0.190	0.217	0.185	0.91
IAQ_{it}	0.183	0.236	0.174	1.81*
OC_{it}	0.246	0.369	0.224	19.17***
$SIZE_{it}$	12.767	11.965	12.909	−12.40***
$DEBT_{it}$	0.077	0.091	0.074	4.05***
CF_{it}	0.075	0.069	0.076	−1.75*
AGE_{it}	3.405	3.365	3.412	−1.14
2nd $SHAREH_{it}$	0.106	0.140	0.100	12.51***

Panel B: Difference of means tests using the 20% cutoff point

	All firms	Family	Non-fam.	*t*-statistic
No. Obs.	4560	549	4011	
IAV_{it}	0.190	0.251	0.181	1.84*
IAQ_{it}	0.183	0.279	0.170	2.93***
OC_{it}	0.246	0.422	0.222	24.82***
$SIZE_{it}$	12.767	11.867	12.890	−12.26***
$DEBT_{it}$	0.077	0.094	0.074	4.41***
CF_{it}	0.075	0.071	0.075	−0.86
AGE_{it}	3.405	3.411	3.404	0.15
2nd $SHAREH_{it}$	0.106	0.148	0.101	13.50***

Panel C: Difference of means tests using the 25% cutoff point

	All firms	Family	Non-fam.	*t*-statistic
No. Obs.	4560	459	4101	
IAV_{it}	0.190	0.310	0.176	3.28***
IAQ_{it}	0.183	0.331	0.167	4.08***
OC_{it}	0.246	0.461	0.222	27.79***
$SIZE_{it}$	12.767	11.778	12.878	−12.19***
$DEBT_{it}$	0.077	0.092	0.075	3.46***
CF_{it}	0.075	0.074	0.075	−0.02
AGE_{it}	3.405	3.379	3.408	−0.61
2nd $SHAREH_{it}$	0.106	0.148	0.102	12.14***

For a definition of the variables, see Table 2. The firm-year observations are classified either as family or non-family according to the family firm definition explained in Section 3.2. The *t*-statistic is the difference of the means test under the null hypothesis H_0: $\text{mean}_{\text{family}} - \text{mean}_{\text{non-family}} = 0$. The ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

in which IAV_{it} is the industry-adjusted firm value and OC_{it} stands for ownership concentration and is measured as the percentage of votes held by the largest shareholder of the company.[4] We focus on the largest shareholder's control because this dimension of ownership structure is what enables the controlling owner, and in our particular case the family, to influence the firm's decision making and extract resources from the firm. The X_{it} is a vector of control variables 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.[5] Regarding the effect of ownership concentration on firm value, we distinguish between family and non-family firms by interacting the ownership variable with a family dummy (FD_{it}) that equals one for family firms (as defined in Section 3.2) and zero otherwise. The effect of ownership concentration on the value is α_1 for non-family firms (since FD_{it} equals zero), and any impact in the family firms' case is measured by $(\alpha_1 + \gamma_1)$. Consequently, this specification enables us to capture the differential impact of family ownership on firm value. We expect $\hat{\alpha}_1 > \hat{\alpha}_1 + \hat{\gamma}_1$ to confirm the expropriation hypothesis.

Next, we comment on the coefficients obtained by using the 10% ownership concentration threshold. The results of estimating Eq. (1), which are in Table 4 (column 1), show that the positive effect of ownership concentration on value is stronger for family firms ($\hat{\alpha}_1 + \hat{\gamma}_1 = 0.684 + 1.349 = 2.033$ is statistically significant, see t_1) than for non-family firms ($\hat{\alpha}_1 = 0.684$). Therefore, the positive impact of the largest owner's control on firm performance is stronger when the firm's dominant shareholder is a family. Contrary to the expropriation hypothesis, the results disclose that family-controlled firms in Western Europe enjoy a valuation

[4] We calculate industry-adjusted value by subtracting the industry median value from firm value. Firm value is the market value of equity over the replacement value of total assets (obtained as in Pindado et al., 2011) and industry medians are computed at the most precise SIC level in which there is a minimum of five firms.

[5] Firm size is the natural logarithm of the replacement value of total assets; debt and cash flow are defined as in Pindado et al. (2011); age is the natural logarithm of the difference between the current time period and the date of incorporation of the business; and the stake of the second largest shareholder is the percentage of votes held by the second largest shareholder of the company.

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Table 4
Family control and firm value: expropriation, nonlinearity, and investor protection.

Dep. var.: IAV_{it}	(1)	(2)	(3)
α_0 Constant	0.162 (0.290)	0.015 (0.250)	−0.272 (0.203)
α_1 OC_{it}	0.684*** (0.137)	1.668*** (0.228)	1.771*** (0.204)
γ_1 $FD_{it} * OC_{it}$	1.349*** (0.281)	1.733*** (0.447)	
α_2 OC^2_{it}		−1.269*** (0.329)	−1.564*** (0.281)
γ_2 $FD_{it} * OC^2_{it}$		−2.057*** (0.584)	
π_1 STRONG PROT. $FD_{it} * OC_{it}$			4.359*** (0.252)
λ_2 STRONG PROT. $FD_{it} * OC^2_{it}$			−5.351*** (0.374)
ω_1 WEAK PROT. $FD_{it} * OC_{it}$			−0.309 (0.309)
β_2 WEAK PROT. $FD_{it} * OC^2_{it}$			2.559*** (0.475)
δ_1 $SIZE_{it}$	0.026 (0.024)	0.031 (0.021)	0.057*** (0.018)
δ_2 $DEBT_{it}$	−1.592*** (0.138)	−1.730*** (0.120)	−1.730*** (0.102)
δ_3 CF_{it}	1.119*** (0.171)	1.113*** (0.164)	1.205*** (0.125)
δ_4 AGE_{it}	−0.079*** (0.018)	−0.073*** (0.017)	−0.084*** (0.016)
δ_5 2nd $SHAREH_{it}$	−1.597*** (0.234)	−1.727*** (0.190)	−1.742*** (0.140)
IP_{NF}, IP_F, CP		66%, 51%, 84%	
IP_{NF}, IP_{SPF}			57%, 44%
t_1–H_0: $\alpha_1 + \gamma_1 = 0$	7.55	8.12	
t_2–H_0: $\alpha_2 + \gamma_2 = 0$		−6.43	
t_3–H_0: $\alpha_1 + \pi_1 = 0$			26.06
t_4–H_0: $\alpha_2 + \lambda_2 = 0$			−22.74
t_5–H_0: $\alpha_2 + \beta_2 = 0$			2.38
z_1	45.87 (7)	65.16 (9)	252.09 (11)
z_2	131.80 (5)	99.99 (5)	173.14 (5)
z_3	16.25 (9)	13.31 (9)	14.42 (9)
m_2	−0.42	−0.53	−0.59
Hansen	218.66 (182)	251.46 (225)	305.46 (261)

This table has the GMM regressions results from the empirical models (1), (2), and (4), in which the dependent variable is industry-adjusted value (IAV_{it}). The results are based on the 10% cutoff point definition of family firm (see Section 3.2). The sample comprises 802 firms (4560 observations). The rest of the information needed to read this table is: (i) heteroskedasticity consistent asymptotic standard error is in parentheses; (ii) the ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively; (iii) z_1 is a Wald test of the joint significance of the reported coefficients; z_2 is a Wald test of the joint significance of the time dummies; and z_3 is a Wald test of the joint significance of the country dummies (all Wald tests are asymptotically distributed as χ^2 under the null of no relation, degrees of freedom in parentheses); (iv) m_2 is a serial correlation test of second order using residuals in first differences, asymptotically distributed as N(0,1) under the null of no serial correlation; (v) 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; and (vi) the computation of the inflection points (IP), and the cutoff point (CP) is explained in Figs. 1 and 2.

premium. This evidence seems consistent with prior research that concludes that family firms generally outperform (see, e.g., Anderson and Reeb, 2003; Andres, 2008; Maury, 2006). However, the use of a restrictive family firm definition avoids that our results are explained by the founder effect.

The lack of support for the expropriation hypothesis when estimating Eq. (1) might be attributable to the use of a misspecified empirical model. The reason is that large investors (in our case, the controlling family) might be unable to extract resources from the firm if they do not accumulate enough control. This rationale calls for a nonlinear specification. Therefore, we propose the following model to test the nonlinearity hypothesis (Hypothesis 2) and disentangle when controlling families are able to expropriate minority investors' wealth:

$$IAV_{it} = \alpha_0 + (\alpha_1 + \gamma_1 FD_{it})OC_{it} + (\alpha_2 + \gamma_2 FD_{it})OC^2{}_{it} + \delta X_{it} + \varepsilon_{it}, \quad (2)$$

in which the family dummy interacts with the ownership concentration as well as with the square of this variable. In this case, we expect $(\hat{\alpha}_1 + \hat{\gamma}_1) > 0$ and $(\hat{\alpha}_2 + \hat{\gamma}_2) < 0$ to find support for a nonlinear impact from family control on firm value and confirm that expropriation is more likely when family control exceeds a certain threshold.

Table 4 (column 2) provides the regression results for Eq. (2). The estimated coefficients on ownership concentration and its square are positive and negative, respectively (i.e., $\hat{\alpha}_1 = 1.668 > 0$ and $\hat{\alpha}_2 = -1.269 < 0$). This means that, overall, the relation between ownership concentration and firm value is nonlinear for non-family firms. However, our main interest is in the nonlinear relation between corporate control and performance in the family firms' case. The results show that the linear and quadratic impacts of family control on firm value are positive and negative, respectively ($\hat{\alpha}_1 + \hat{\gamma}_1 = 1.668 + 1.733 = 3.401$ is statistically significant, see t_1; and $\hat{\alpha}_2 + \hat{\gamma}_2 = -1.269 - 2.057 = -3.326$ is statistically significant, see t_2). The negative effect of family control on the firm's market valuation beyond a certain level of ownership concentration highlights that the probability of expropriation by controlling families in Western Europe is higher when they accumulate excessive power. It seems that the balance between the benefits (monitoring) and costs (expropriation) of the family business model changes as family's control over the firm's assets increases.

To determine the ownership interval for which the risk of expropriation by controlling families is higher, we now derive the optimal level of ownership concentration at which the market value of the company is maximized. Specifically, we compute the breakpoints at which the relation between ownership concentration and value turns from positive to negative for both family and

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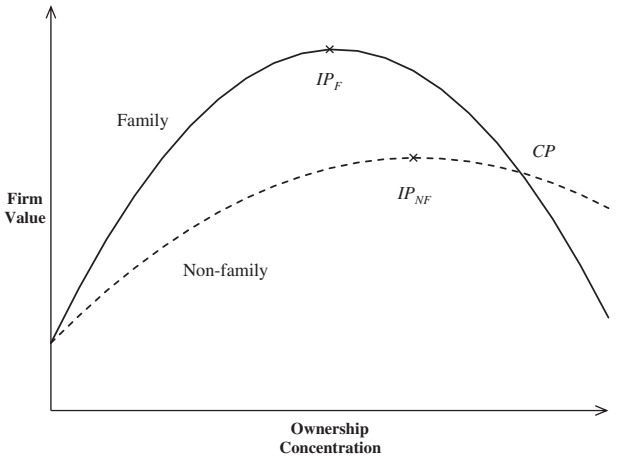

Fig. 1. Quadratic ownership–value relation in family vs. non-family firms. This figure shows the inverted U-shaped relation between ownership concentration and firm value for family firms in comparison with their non-family counterparts. The graphic representation is based on the quadratic specification in Eq. (2). The derivation of the points of interest is based on this specification and is explained in detail in Section 5.2. The $IP_{NF} = -(\alpha_1)/2(\alpha_2)$ and $IP_F = -(\alpha_1 + \gamma_1)/2(\alpha_2 + \gamma_2)$ are the inflection points at which the relation between ownership concentration and value turns from positive to negative for non-family and family firms, respectively. These points represent the level of ownership concentration at which the market value of the company is maximized depending on whether the firm is family controlled or not. The $CP = -(\gamma_1)/(\gamma_2)$ is the cutoff point (i.e., the level of ownership concentration) up to which family firms exhibit superior performance.

non-family firms because our empirical approach enables us to delineate between the monitoring and expropriation phenomena for each type of company. We compute that the inflection points at which the ownership concentration begins to impact negatively on value are $IP_F = -(\alpha_1 + \gamma_1)/2(\alpha_2 + \gamma_2)$ and $IP_{NF} = -(\alpha_1)/2(\alpha_2)$ for family and non-family firms, respectively.

The bottom of Table 4 (column 2) shows that the optimal level of ownership concentration that maximizes family business value is 51%. For non-family firms, the level is 66%. These ownership concentration levels clearly contrast with the inflection point found by Anderson and Reeb (2003) for U.S. family firms, which is about 30%. Therefore, controlling families in Western Europe need to own about half of the company to maximize firm value, but in the United States the market value of family firms is maximized when families control one third of the firm assets. Such a difference is consistent with the higher level of ownership concentration in Western European firms compared to their U.S. counterparts. The importance of multiple large shareholders in Western Europe (see, e.g., Laeven and Levine, 2008) suggests that families need to own larger stakes in their firms to effectively control decision-making processes. The higher degree of ownership dispersion among minority investors in the United States indicates that in the United States families have effective control of the company with a lower ownership concentration level.

Given that the relation between ownership concentration and firm value is also nonlinear in the non-family firms' case, we need to calculate the level of ownership concentration up to which the family firm exhibits superior performance. Note that at this level, the market value of family and non-family firms equal each other; that is, $IAV^F_{it} = IAV^{NF}_{it}$. If we now substitute the

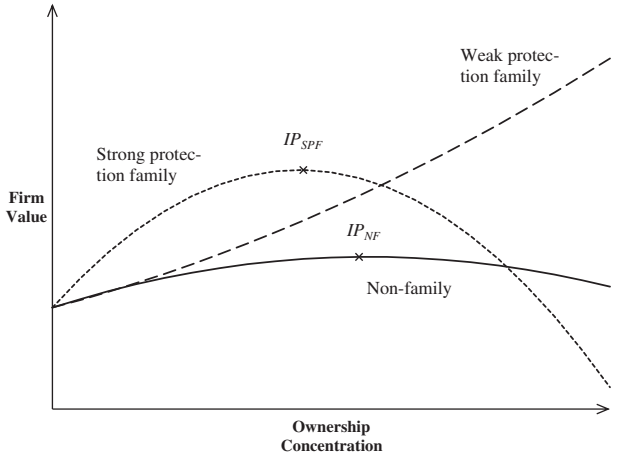

Fig. 2. Ownership–value relation in family firms depending on country-level investor protection. This figure shows the relation between ownership concentration and firm value for family firms depending on the degree of minority investor protection that exists in the institutional environment in which they operate. The graphic representation is based on the quadratic specification in Eq. (4). The $IP_{NF} = -(\alpha_1)/2(\alpha_2)$ and $IP_{SPF} = -(\alpha_1 + \pi_1)/2(\alpha_2 + \lambda_2)$ are the inflection points at which the relation between ownership concentration and value turns from positive to negative for non-family firms and for family firms from strongly protective countries, respectively.

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industry-adjusted value of both firm types with the right-hand side of Eq. (2) considering that FD_{it} equals zero for non-family firms and assuming that δX_{it} does not differ across firm categories, we obtain the following expression[6]:

$$(\alpha_1+\gamma_1)OC_{it}+(\alpha_2+\gamma_2)OC^2{}_{it}=\alpha_1 OC_{it}+\alpha_2 OC^2{}_{it}. \tag{3}$$

Rearranging terms, the ownership concentration level that equals the value of family and non-family companies can be expressed as $OC_{it}^{IAV^F=IAV^{NF}}=-(\gamma_1)/(\gamma_2)$. This quotient of coefficients is the level of ownership concentration up to which family firms outperform their non-family counterparts. Therefore, based on the results presented in Table 4 (column 2), we conclude that family firms are associated with higher market valuations up to an ownership concentration level of about 84%. Consistent with the regression results from the estimation of Eq. (1), we confirm that overall family firms outperform their non-family counterparts. Despite the risk of expropriation faced by minority investors in family firms, we corroborate the superiority of these firms in terms of firm value. Fig. 1 describes graphically the relation between ownership concentration and value for family and non-family firms suggested by the results from estimating Eq. (2).

The main objective of our research is to clarify whether the value impact of family control depends on the legal system in which companies operate. To this aim, we investigate how country-level investor protection interacts with family control to determine firm value. This analysis enables us to disentangle whether investor protection rules are effective at hampering the controlling family's incentives to expropriate. To test the investor protection hypothesis (Hypothesis 3), we extend the nonlinear specification in Eq. (2) as follows:

$$\begin{aligned} IAV_{it}=\alpha_0&+(\alpha_1+\pi_1\ \ STRONG\ \ PROT.FD_{it}+\omega_1\ \ WEAK\ \ PROT.FD_{it})OC_{it}\\ &+(\alpha_2+\lambda_2\ \ STRONG\ \ PROT.FD_{it}+\beta_2\ \ WEAK\ \ PROT.FD_{it})OC^2{}_{it}+\delta X_{it}+\varepsilon_{it}, \end{aligned} \tag{4}$$

in which the strong protection family dummy ($STRONG\ PROT.\ FD_{it}$) and weak protection family dummy ($WEAK\ PROT.\ FD_{it}$) are the two dummies of interest. The former equals one for family firms that operate in countries with an antidirector rights index above the sample median (i.e., those in which minority shareholders' rights are more strongly protected) and zero otherwise. The latter equals one for family firms that operate in countries with an antidirector rights index equal to or below the sample median (i.e., those in which minority shareholders' rights are less strongly protected) and zero otherwise. We use the median value of the corrected antidirector rights index (Spamann, 2010) in the family firm sample to build the two new dummies that we include in Eq. (4).[7] This splitting criterion allows us to get a balanced distribution of the sample and to have enough family firm observations in both subsamples. Therefore, the linear effect of ownership concentration on firm value for the subsample of family firms that operate in the more protective environments is measured by $(\alpha_1+\pi_1)$ and for family firms from countries where investor protection is weaker it is measured by $(\alpha_1+\omega_1)$; the impact of the quadratic term for both of the subsamples is $(\alpha_2+\lambda_2)$ and $(\alpha_2+\beta_2)$, respectively. Consistent with our third hypothesis, we expect $(\hat{\alpha}_1+\hat{\pi}_1)>(\hat{\alpha}_1+\hat{\omega}_1)$ and $\left(\hat{\alpha}_2+\hat{\lambda}_2\right)<\left(\hat{\alpha}_2+\hat{\beta}_2\right)$.

Our approach provides new insights into the corporate finance and governance literature by simultaneously accounting for the ownership–value nonlinearity and the interaction effect of investor protection. The results presented in Table 4 (column 3) confirm a nonlinear relation between ownership concentration and firm value for family firms that operate in an environment where the minority investors' protection is strong ($\hat{\alpha}_1+\hat{\pi}_1=1.771+4.359=6.130>0$ is statistically significant, see t_3; and $\hat{\alpha}_2+\hat{\lambda}_2=-1.564-5.351=-6.915<0$ is statistically significant, see t_4). In contrast, such nonlinearity between the ownership structure and performance does not apply to family firms from countries where the minority investors' rights are weakly protected ($\hat{\alpha}_1+\hat{\omega}_1=\hat{\alpha}_1=1.771>0$ is statistically significant, $\hat{\omega}_1$ is statistically non-significant; and $\hat{\alpha}_2+\hat{\beta}_2=-1.564+2.559=0.995>0$ is statistically significant, see t_5). In this latter case, the relation between family control and performance is always positive. Fig. 2 shows the effect of ownership concentration on firm value for each firm category.

These results are particularly interesting because they confirm that the implications of family control for firm value depend on the institutional environment. The nonlinear effect of family control on performance in countries with stronger investor protection is in line with the findings obtained for U.S. family firms (Anderson and Reeb, 2003). For lower levels of family control, both the law and the monitoring exerted by the controlling family reduce expropriation incentives, and the market value of family firms increases. Conversely, when families accumulate too much control, family firms experience a value discount despite the protection afforded to minority investors by the law. Our empirical evidence suggests that family control is not always the optimal solution in well-developed capital markets with strong investor protection. Indeed, as Burkart et al. (2003) show when modeling succession decisions in family firms, the best arrangement in this institutional framework is a widely held professionally managed firm. Moreover, given that in countries with strong investor protection and developed capital markets family firms are expected to evolve into widely held companies over time (Franks et al., 2012), the persistence and strengthening of family control could be a sign of family entrenchment. Therefore, when family control is too tight, family firms are penalized by the market.

The positive relation between family control and firm value in European countries with weaker shareholder protection highlights that in this type of environment ownership concentration can overcome the lack of investor protection (Denis and McConnell, 2003). In line with the empirical evidence obtained by Lins (2003), our findings suggest that an internal governance

[6] We must be cautious when interpreting the result of this analysis given that it is based on the assumption that δX_{it} is equal for family and non-family firms. Although the effect of the control variables on firm value may be similar across firm categories, our descriptive analysis shows that family and non-family firms differ from each other along some dimensions (see Section 5.1).

[7] Specifically, we use the 2005 values of the corrected antidirector rights index (Spamann, 2010) in our regression analyses.

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Table 5
Family control and firm value: expropriation, nonlinearity, and investor protection (20% and 25% cutoff point definitions).

Panel A: Regression results using the 20% cutoff point

Dep. var.: IAV_{it}	(1)	(2)	(3)
α_0 Constant	0.146 (0.289)	0.049 (0.260)	−0.068 (0.220)
α_1 OC_{it}	0.644*** (0.136)	1.205*** (0.263)	1.056*** (0.239)
γ_1 $FD_{it} * OC_{it}$	1.461*** (0.290)	2.434*** (0.448)	
α_2 OC^2_{it}		−0.825** (0.348)	−0.821*** (0.309)
γ_2 $FD_{it} * OC^2_{it}$		−3.035*** (0.598)	
π_1 STRONG PROT. $FD_{it} * OC_{it}$			4.899*** (0.224)
λ_2 STRONG PROT. $FD_{it} * OC^2_{it}$			−6.012*** (0.348)
ω_1 WEAK PROT. $FD_{it} * OC_{it}$			0.325 (0.281)
β_2 WEAK PROT. $FD_{it} * OC^2_{it}$			1.532*** (0.415)
δ_1 $SIZE_{it}$	0.029 (0.023)	0.036* (0.021)	0.051*** (0.018)
δ_2 $DEBT_{it}$	−1.645*** (0.139)	−1.841*** (0.122)	−1.907*** (0.104)
δ_3 CF_{it}	1.100*** (0.169)	1.147*** (0.159)	1.250*** (0.109)
δ_4 AGE_{it}	−0.083*** (0.018)	−0.081*** (0.016)	−0.083*** (0.016)
δ_5 2nd $SHAREH_{it}$	−1.635*** (0.231)	−1.757*** (0.185)	−1.840*** (0.141)
IP_{NF}, IP_F, CP		73%, 47%, 80%	
IP_{NF}, IP_{SPF}			64%, 44%
z_1	46.56 (7)	76.34 (9)	281.18 (11)
m_2	−0.40	−0.55	−0.57
Hansen	218.27 (182)	243.63 (225)	296.98 (261)

Panel B: Regression results using the 25% cutoff point

Dep. var.: IAV_{it}	(1)	(2)	(3)
α_0 Constant	0.349 (0.283)	0.111 (0.249)	−0.005 (0.176)
α_1 OC_{it}	0.648*** (0.134)	1.553*** (0.227)	1.391*** (0.210)
γ_1 $FD_{it} * OC_{it}$	1.205*** (0.325)	2.190*** (0.482)	
α_2 OC^2_{it}		−1.124*** (0.319)	−1.238*** (0.280)
γ_2 $FD_{it} * OC^2_{it}$		−2.860*** (0.659)	
π_1 STRONG PROT. $FD_{it} * OC_{it}$			4.745*** (0.317)
λ_2 STRONG PROT. $FD_{it} * OC^2_{it}$			−5.696*** (0.447)
ω_1 WEAK PROT. $FD_{it} * OC_{it}$			−0.666*** (0.206)
β_2 WEAK PROT. $FD_{it} * OC^2_{it}$			3.120*** (0.362)
δ_1 $SIZE_{it}$	0.012 (0.024)	0.023 (0.021)	0.042*** (0.014)
δ_2 $DEBT_{it}$	−1.583*** (0.141)	−1.777*** (0.123)	−1.900*** (0.095)
δ_3 CF_{it}	1.195*** (0.174)	1.149*** (0.159)	1.278*** (0.104)
δ_4 AGE_{it}	−0.082*** (0.018)	−0.072*** (0.016)	−0.083*** (0.014)
δ_5 2nd $SHAREH_{it}$	−1.449*** (0.225)	−1.624*** (0.178)	−1.704*** (0.124)
IP_{NF}, IP_F, CP		69%, 47%, 77%	
IP_{NF}, IP_{SPF}			56%, 44%
z_1	45.07 (7)	63.78 (9)	271.75 (11)
m_2	−0.34	−0.48	−0.50
Hansen	218.20 (182)	242.71 (225)	297.77 (261)

This table has the GMM regressions results from the empirical models (1), (2), and (4), in which the dependent variable is industry-adjusted value (IAV_{it}). The results are based on the 20% and 25% cutoff point definitions of family firm (see Section 3.2). The sample comprises 802 firms (4560 observations). To save space, the table does not report the results of the linear restriction tests and of the Wald tests on the joint significance of the time and country dummies (the complete table is available from the authors on request). For the rest of the information needed to read this table, see Table 4.

mechanism such as family control may act as a substitute for missing institutional governance mechanisms. However, our results seem contrary to Claessens et al. (2002), who conclude that family firms are associated with expropriation problems in East Asia, where minority shareholders are weakly protected by the law. Although some Western European nations may exhibit a level of investor protection comparable to the degree of protection that exists in East Asian economies, there are noteworthy differences across the two regions that explain the opposite results.

One difference that should be taken into account is that, as Faccio et al. (2001) point out, in Western Europe other alternative governance mechanisms such as the monitoring by capital markets help reduce the probability of expropriation thanks to the more transparent structures of European family business groups as compared to Asian corporations. In particular, Faccio et al. show that to alleviate expropriation concerns European group-affiliated corporations, which are mainly family controlled, pay higher dividends than their Asians counterparts. Another important difference is the higher accumulation of corporate assets in the hands of a few wealthy families in East Asia (Claessens et al., 2000) than in Western Europe (Faccio and Lang, 2002), which facilitates the persistence of relatively weak and corruption-prone institutions in the former region (Morck et al., 2005). Indeed, the quality of governance institutions is overall higher in Western European countries than in East Asian economies as the Worldwide Governance Indicators (WGI) highlight.[8]

[8] The WGI project is sponsored by the World Bank and considers the following six governance dimensions: voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption (see Kaufmann et al., 2010). The scores of each country in each dimension can be obtained from: http://info.worldbank.org/governance/wgi/index.aspx#home.

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With respect to the control variables included in all the models (see Table 4), we find a positive relation between cash flow and value ($\hat{\delta}_3>0$), which can be interpreted in terms of less underinvestment and less risk of bankruptcy because firms can finance their investment projects internally as Mura (2007) argues. The effects of debt, age, and the stake of the second largest shareholder on firm performance are negative ($\hat{\delta}_2<0$, $\hat{\delta}_4<0$, and $\hat{\delta}_5<0$). The financial distress costs explain the negative impact of debt on firm value. Regarding the age of the company and the stake of the second largest shareholder, a negative association between both variables and value is in line with Anderson and Reeb's (2003) results. Furthermore, the impact of firm size on value is positive ($\hat{\delta}_1>0$), but only statistically significant in some of the estimated models. The positive effect of the firm's size on performance is consistent with the economies of scale argument. The lack of significance of this control variable in some models can be due to the nature of our sample, which consists of large publicly listed firms.

As previously indicated, we have performed all analyses of the study, including the multivariate analyses presented in this section, using different ownership concentration thresholds to delineate family control. This strategy enables us to address the measurement error problem that may affect the family variable. To save space, Section 5.2 focuses on the results obtained using the 10% threshold, and Table 4 only reports the estimated coefficients for the 10% cutoff point definition of the family firm. Panels A and B of Table 5 show that the regression results based on the 20% and 25% cutoff points are qualitatively the same as the ones discussed in this section. Therefore, our results are robust to the use of different ownership concentration thresholds to define family control.

6. Robustness checks

This section presents several extensions to check the validity and reliability of our results. First, we use an alternative measure of investor protection to test the third hypothesis of the study. Second, we discuss the possibility of deviations between cash flow and voting rights, and extend our models to control for the effect of control-enhancing mechanisms on corporate performance. And third, we rerun our empirical specifications taking into account the entrepreneur effect on firm value.[9] The empirical evidence from these robustness tests is discussed in detail in the following sections. Moreover, to allow for a better comparison between family and non-family firms, we rerun our regression analyses after removing from the sample non-family firms from sectors that do not include any family company. And following prior research, we also reestimate all models using industry-adjusted Tobin's q as an alternative measure of the firm's market value.[10] The results from these two additional robustness checks corroborate our initial conclusions and are not reported in the paper for the sake of brevity but are available from the authors on request.

6.1. An alternative measure of investor protection

Regarding the measure of investor protection used in the previous regressions, Spamann (2010) takes the composition of the original antidirector rights index of La Porta et al. (1998) as given and revise the index to improve the accuracy of the values that it takes for each country. The antidirector rights index comprises six components, of which three are related with shareholder voting and the other three with minority investor protection. Despite Spamann's (2010) effort to obtain a more reliable and more clearly defined antidirector rights index, the corrected index has its own limitations. Therefore, to check the robustness of our results on how the law shapes the relation between family control and firm value, we rerun our analyses using the World Bank's index of investor protection obtained from the "Doing Business" report. This index captures the strength of minority shareholder protection against directors' misuse of corporate assets for personal gain and covers three dimensions of investor protections: transparency of related-party transactions, liability for self-dealing, and shareholders' ability to sue officers and directors for misconduct.

When we use the World Bank's index to estimate our final empirical model, the results are exactly the same as the ones reported in Table 4 (column 3). The reason is that, as explained in Section 5.2, the level of shareholder protection is just used to split the family firm sample in two subsamples: that is, family firms from strong and from weak protection regions. And both indices lead to the same classification result. The main concern when dividing countries in two categories based on the level of investor protection is that it is questionable in which group countries with an intermediate level of shareholder protection should be included. To address this concern, we estimate Eq. (4) after excluding such countries from the sample. In this case, the two measures of investor protection lead to the exclusion of different countries. Therefore, Panel A of Table 6 presents the results obtained when we use Spamann's (2010) index as the classification criterion (column 1) as well as the results from the estimation of Eq. (4) using the World Bank's measure (column 2). Overall, the empirical evidence corroborates our initial conclusions regardless of the index used to capture the level of protection afforded to minority shareholders by the law.

6.2. The use of control-enhancing mechanisms

Focusing on family control to test our hypotheses is most appropriate in our research because the control of voting rights enables us to capture decision making within the company (Faccio et al., 2011). However, some studies differentiate between

[9] To save space, we only report and comment on the results of the robustness tests based on the 10% cutoff point definition of family firm. The findings obtained using the 20% and 25% thresholds are qualitatively the same and are available from the authors on request.

[10] Industry-adjusted Tobin's q is calculated by subtracting the industry median q from the firm's q, where the firm's q is obtained as in Pindado et al. (2011) and industry medians are computed at the most precise SIC level in which there is a minimum of five firms.

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Table 6
Family control and firm value: expropriation, nonlinearity, and investor protection (robustness tests).

Panel A: An alternative measure of investor protection

Dep. var.: IAV_{it}	(1)	(2)
α_0 Constant	−0.327** (0.148)	−0.452** (0.202)
α_1 OC_{it}	1.639*** (0.212)	1.772*** (0.244)
α_2 OC^2_{it}	−1.417*** (0.315)	−1.471*** (0.292)
π_1 STRONG PROT. $FD_{it} * OC_{it}$	0.932* (0.537)	3.549*** (0.309)
λ_2 STRONG PROT. $FD_{it} * OC^2_{it}$	−0.653 (0.728)	−3.284*** (0.542)
ω_1 WEAK PROT. $FD_{it} * OC_{it}$	−0.365 (0.272)	−0.491 (0.321)
β_2 WEAK PROT. $FD_{it} * OC^2_{it}$	2.158*** (0.448)	2.680*** (0.475)
z_1	233.63 (11)	275.17 (11)
m_2	−1.09	−0.49
Hansen	248.20 (258)	284.61 (261)

Panel B: The use of control-enhancing mechanisms

Dep. var.: IAV_{it}	(1)	(2)	(3)
α_0 Constant	0.470 (0.287)	0.013 (0.219)	−0.103 (0.187)
α_1 OC_{it}	0.289** (0.145)	1.078*** (0.276)	1.083*** (0.237)
γ_1 FD_{it}*OC_{it}	1.234*** (0.304)	2.083*** (0.432)	
α_2 OC^2_{it}		−1.208*** (0.331)	−1.262*** (0.302)
γ_2 $FD_{it} * OC^2_{it}$		−2.063*** (0.556)	
π_1 STRONG PROT. $FD_{it} * OC_{it}$			4.097*** (0.240)
λ_2 STRONG PROT. $FD_{it} * OC^2_{it}$			−4.544*** (0.366)
ω_1 WEAK PROT. $FD_{it} * OC_{it}$			−0.420* (0.242)
β_2 WEAK PROT. $FD_{it} * OC^2_{it}$			2.179*** (0.377)
δ_1 $PYRAMID_c$	0.521** (0.260)	0.616*** (0.224)	0.574*** (0.163)
δ_2 DUAL $SHARES_c$	−0.829*** (0.208)	−0.874*** (0.178)	−0.790*** (0.111)
δ_3 OTHER $MECHANISMS_c$	−1.281*** (0.291)	−1.432*** (0.274)	−1.340*** (0.238)
z_1	55.66 (10)	43.70 (12)	187.33 (14)
m_2	−0.59	−0.79	−0.77
Hansen	211.47 (182)	232.81 (225)	280.52 (261)

Panel C: The entrepreneur effect on firm performance

Dep. var.: IAV_{it}	(1)	(2)	(3)
α_0 Constant	0.175 (0.284)	−0.154 (0.259)	−0.390* (0.206)
α_1 OC_{it}	0.557*** (0.131)	1.687*** (0.228)	1.783*** (0.205)
γ_1 $FD_{it} * OC_{it}$	1.247*** (0.260)	1.813*** (0.440)	
α_2 OC^2_{it}		−1.302*** (0.318)	−1.541*** (0.276)
γ_2 $FD_{it} * OC^2_{it}$		−2.231*** (0.592)	
π_1 STRONG PROT. $FD_{it} * OC_{it}$			4.317*** (0.263)
λ_2 STRONG PROT. $FD_{it} * OC^2_{it}$			−5.369*** (0.389)
ω_1 WEAK PROT. $FD_{it} * OC_{it}$			−0.159 (0.294)
β_2 WEAK PROT. $FD_{it} * OC^2_{it}$			2.190*** (0.455)
δ_1 ENTREPRENEUR $DUM._{it}$	0.053*** (0.012)	0.048*** (0.012)	0.046*** (0.011)
z_1	44.09 (8)	74.03 (10)	271.41 (12)
m_2	−0.35	−0.48	−0.53
Hansen	216.55 (204)	250.31 (247)	303.39 (283)

Panel A of this table presents the GMM regressions results from Eq. (4) and Panels B and C have the GMM regressions results from the empirical models (1), (2), and (4). The dependent variable is industry-adjusted value (IAV_{it}). The results are based on the 10% cutoff point definition of family firm (see Section 3.2). To save space, the table does not report the estimated coefficients on the control variables, the results of the linear restriction tests, and the results of the Wald tests on the joint significance of the time and country dummies (the complete table is available from the authors on request). For the rest of the information needed to read this table, see Table 4.

voting and cash flow rights and the wedge between them, as deviations of ownership from control may facilitate managerial entrenchment and expropriation (Claessens et al., 2002; Lins, 2003). These deviations are attributable to the use of control-enhancing mechanisms, such as pyramidal structures or different classes of shares (Claessens et al., 2000; Faccio and Lang, 2002). Unfortunately, we are unable to compute the wedge between voting and cash flow rights. Nevertheless, we believe that our conclusions are not very much affected by this limitation in the data for the following reasons. On the one hand, as Faccio and Lang (2002) highlight, despite the use of control-enhancing mechanisms in Western European corporations, overall the discrepancies between ownership and control are only substantial in a few countries.[11] On the other hand, the empirical evidence obtained by Cronqvist and Nilsson (2003) for the Swedish case indicates that it is the accumulation of voting power by large shareholders, and not the controlling owner's excess votes, that has a negative impact on firm value.

[11] The average ratio of cash flow to voting rights in Europe is 0.868, which suggests little deviations from proportionality between ownership and control across European corporations (Faccio and Lang, 2002).

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Notwithstanding these arguments, the different predominance of control-enhancing mechanisms across Western European countries (European Commission, 2007) could affect our results. Consequently, we reestimate our empirical specifications accounting for the proportion of companies in each country that employ any of the most prevalent control-enhancing devices.[12] Specifically, we control for the percentage of companies that use pyramidal structures, different classes of shares, and other control-enhancing devices. The data needed to define these variables are extracted from the European Commission (2007) report. The empirical evidence corroborates our initial results, as can be seen in Panel B of Table 6. Moreover, regarding the impact of each control-enhancing device on firm performance, our findings are consistent with the view that, as least in developed nations, not all mechanisms affect firm value negatively (Villalonga and Amit, 2009). We confirm that the market penalizes the use of different classes of shares, whereas resorting to pyramidal structures has beneficial effects in terms of corporate performance.

6.3. The entrepreneur effect on firm performance

Prior research suggests that the value premium enjoyed by family firms is mainly attributable to lone founder family businesses and entrepreneur-controlled corporations (Miller et al., 2007). This conclusion means that our restrictive family firm definition may bias our results against the possibility of finding a positive relation between family control and performance. Contrary to this argument, our empirical evidence indicates that family firms outperform their non-family counterparts in Western Europe. Nevertheless, a strand of research considers that firms run by entrepreneurs are also family firms and highlights the important role of the founder for the business (e.g., Adams et al., 2009). Therefore, to control for the effect of this type of owner on firm value, we perform our regression analyses including an additional control variable in the right-hand side of the models: an entrepreneur dummy. This dummy variable equals one for firms in which the largest shareholder is just an individual with no other relative involved in the company and zero otherwise. As Panel C of Table 6 shows, our main results remain unchanged after controlling for the founder effect. Additionally, the positive estimated coefficient on the entrepreneur dummy variable confirms the beneficial effect of this owner type for the business.

In their investigation on how U.S. family firms differ from their non-family counterparts in terms of market valuation, Villalonga and Amit (2006) analyze different combinations of family ownership, control, and management. These authors conclude that family ownership creates value when the founder is still active in management and especially if no control-enhancing mechanisms are used. Conversely, when a descendant runs the company, firm value is destroyed. Despite our additional analyses on the use of control-enhancing devices and on the entrepreneur effect, the main results of the study refer to one specific dimension of family firms: namely, family control. Consequently, subsequent research could explore whether the role of investor protection as an external governance mechanism aimed at alleviating expropriation by controlling shareholders is contingent on other family business dimensions.

7. Conclusions

In this paper, we shed light on how the value premium or value discount attributable to family control depends on country-level investor protection. Contrary to the expropriation hypothesis, this study shows that ownership concentration has a stronger positive effect on firm value in family firms than in non-family firms. The potential benefits associated with controlling families such as their long-term horizons and their reputation concerns explain this result. To better identify when expropriation in family firms is more likely, we analyze nonlinearities between family control and firm value. The evidence confirms that beyond a certain level of ownership concentration, the expropriation risk associated with family control increases. Given that the relation between family control and performance follows an inverted U-shape, we compute the optimal level of family control at which firm value is maximized. The breakpoint is reached when Western European families own about half of the company, which contrasts with prior evidence from the S&P 500 family firms. Most important, the shape of the ownership–value relation in family firms' case depends on the level of investor protection. Specifically, the quadratic impact of family control on firm value in Western Europe is driven by family firms from countries with stronger investor protection. This means that in this scenario family firms experience a value discount when family control is too tight. The family influence on performance in countries where minority investors are weakly protected is positive regardless of the level of ownership concentration.

Overall, family firms outperform non-family firms and, as a consequence, family control is beneficial to minority shareholders in Western Europe. However, if families in this region own approximately more than 50% of equity holdings, family firms experience a value discount partly due to the expropriation risk. The main conclusions of the study as regards the interaction between the legal system and families' incentives to expropriate can be summarized as follows. First, the joint effect of country-level investor protection and ownership concentration enable family firms to enjoy a valuation premium up to a certain level of family control. Second, when controlling families in countries where investors are strongly protected accumulate too much power, family firms experience a value discount. In this institutional context, in which family firms are expected to evolve into widely held companies, an excessive concentration of control in the hands of the family may be interpreted as a sign of entrenchment. Third, in European countries with weaker investor protection, family control acts as a substitute for the lack of external protection. The more transparent structures of Western European family firms as compared to their counterparts from

[12] Switzerland is excluded from these regression analyses because the European Commission (2007) report does not provide the data that we need for this country.

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other weakly protective environments and the overall higher quality of governance institutions in Europe relative to other regions contribute to explain the positive value impact of family control.

The empirical evidence provided is especially noteworthy in a context in which the Anglo-Saxon model of ownership structure and the incentives that drive corporate decision making in widely held firms have been called into question. Our findings highlight that family firms, due to their own peculiarities, are in a good position to play a leading role at any stage of the economic cycle and particularly in a downturn caused to a great extent by short-termism in capital markets. Nevertheless, an excessive accumulation of control in the hands of the family when investors are already protected by the law may not be an optimal solution due to the risk of entrenchment. Given that family businesses account for a high percentage of the gross domestic product in all economies and that they represent a large proportion of the private sector employment around the world, governments and regulators should implement the necessary rules to avoid expropriation by powerful family shareholders. Moreover, policy makers could promote the creation and development of family firms as a way to foster a country's economic growth. But they should simultaneously put in place measures aimed at avoiding that a large proportion of the corporate sector ends up in the hands of a few wealthy families as this economic landscape may hinder competition and the creation of new businesses.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.jempfin.2013.10.006.

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