

**THE ROLE OF LARGE SHAREHOLDERS IN FIRM PROFITABILITY: EVIDENCE
FROM SPANISH LISTED FIRMS***

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Abstract:

Our paper aims to contribute to the corporate governance literature mechanisms by studying the determinants of ownership held by the large shareholders and whether they enhance firms' profitability. For a sample of Spanish listed companies within the period 2003-2008, we find that firms' performance, risk and industry help explain differences in the percentage of shares held by the largest/ultimate owner of listed firms. Besides, after controlling for the endogeneity of ownership structure, the results do not seem to support a significant effect of the holdings of the largest shareholder on firms' profitability, but they do suggest that the presence of a second large shareholder may limit the private benefits of control of the largest shareholder and enhance firm profitability.

Key words:

Ownership concentration; large shareholders; determinants; profitability; corporate governance

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1. INTRODUCTION

Corporate governance has been an important issue in the management and financial literature for the three last decades. The relationship between a firm ownership structure and its performance has been an extensively studied topic, but analyses of the influence of firms' ownership structure on firm performance have been confined mainly to the U.S. with much attention paid to managerial ownership or the stakes held by just the first shareholder or by the sum of all blockholders.

From a theoretical point of view, a firm's ownership concentration may influence positively or negatively firm performance. A large body of literature, following Berle and Means (1932) who contend that diffuse ownership yields significant power in the hands of managers whose interests may not coincide with those of the shareholders, consider that a high ownership concentration improves managerial monitoring, decreases agency costs and increases firm performance. However, another body of literature stresses the costs of concentrated ownership structures. Large shareholdings may increase the owners' risk and reduce firms' liquidity. Besides, large shareholders may obtain private benefits of control and expropriate wealth from minority shareholders and their control may be sometimes too severe, reducing managers' initiatives and incentives.

The empirical literature regarding the influence of firms' ownership concentration on firm performance is non-conclusive. For example, earlier studies for the U.S. market, such as those of Shleifer and Vishny (1986) and Mork *et al.* (1988) report a positive relationship between firms' ownership concentration and firms' value, whereas Holderness and Sheehan (1988) conclude that firms with majority shareholders do not under perform widely held firms.

Nevertheless, following Coase (1937) and Demsetz (1983), who state that a firm's ownership structure is the outcome of the bargaining among economic agents, any association between a firm's ownership structure and its performance should be spurious. The results of Demsetz and Lehn (1985), Himmelberg *et al.* (1999) and Demsetz and Villalonga (2001) also for the U.S. market support this argument. But this lack of relationship between a firm' ownership concentration and its performance once the endogeneity of ownership has been considered, does not seem to be the case in other markets. For instance, the studies that analyse this relationship after taking into account the endogeneity of ownership for the Spanish market do seem to support the existence of a positive and significant relationship between company ownership concentration and firm value (De Miguel *et al.*, 2004; Alonso-Bonis and De Andrés-Alonso, 2007; Mínguez-Vera and Martín-Ugedo, 2007). Similar results

are also reported for other Continental European countries, for instance, for Greece (Kapopoulos and Lazaretou, 2007) or Italy (Perrini *et al.*, 2008).

Thus, there seems to exist a different empirical evidence for the U.S and Continental Western European economies. These differences might be due to the different institutional settings. As suggested by a large body of literature, corporate rules can shape choice between ownership structures that have and do not have a controlling shareholder (La Porta *et al.*, 1998; Roe, 2000). High concentration of control rights and high diffusion of pyramidal structures, high premium of voting shares and of control block transactions, legal origin and social democracy are all indicators that are recognized as being signal of low investor protection and high benefits of control (see respectively Bebchuck, 1999; Bennedsen and Wolfenzon, 2000; La Porta *et al.*, 2000; Roe, 2000; Nenova, 2003; Dyck and Zingales, 2004) that may influence the firms' ownership structures and concentration and the relationship between ownership concentration and firm performance. Additionally, other factors such as the time period, variables and the methodology used may be also important to understand the ownership-performance relationship.

Our study aims to contribute to this corporate governance literature. First, we add empirical evidence to the debate on the effects of the possible monitoring provided by large shareholdings to firm performance in a large Western European Continental economy. Spain represents a good laboratory to study these issues. It represents an example of a French civil law country that suffered a Civil War during the twentieth century, an economy that ranks 93 among the 183 countries in that which relates to investor protection (Doing Business, 2010), with listed firms presenting a high concentration of control rights, high diffusion of pyramidal structures, all signals of high private benefits of control. Second, in comparison with previous studies of the Spanish market we analyse the determinants of ownership concentration¹, and the period of time used is more updated and the sample is larger². Besides, we consider the industry effect and additional control variables, such as the monitoring role play by a significant second shareholder or firm age. In addition, in the majority of previous studies, both in Spain and international studies, the most frequently performance proxy used is firm value while we use firm profitability. As suggested by Sanchez-Ballesta and García-Meca (2007) the performance proxy seems to moderate the relation between performance and ownership concentration, so it could be useful using other performance proxies in order to corroborate the previous empirical findings. It is also worth noting that we consider the influence of the identity of the ultimate owner on

¹ Only Mínguez-Vera and Martín-Ugedo (2007) using a panel data analyse ownership concentration' determinants. But in comparison with them the period of time considered (2003-2008) is larger and more updated, the sample is also larger and we considered additional factors that might explain the ownership concentration, such as firm leverage or the identity of the largest shareholder/owner.

² Except in comparison with De Miguel *et al.* (2004).

firm' profitability, one aspect that is not frequently studied in previous studies, and that we consider separately the possible influence of the second largest shareholder.

Our results suggest the importance of considering the endogeneity of ownership when analysing the relationship between ownership concentration and firm performance and that the presence of a second large shareholder may moderate private benefits of control of the largest shareholder enhancing firm profitability.

The paper is organized as follows: section 2 refers to the potential determinants of firm' ownership concentration. Section 3 analyses, from a theoretical point of view, the possible relations between firm ownership concentration and performance. Section 4 presents the sample selection, methodology and the variables used in the study. The results of the analyses are discussed in section 5, and section 6 presents the main conclusions of the paper.

2. DETERMINANTS OF FIRMS' OWNERSHIP CONCENTRATION

Corporate rules shape ownership structures. The legal origin perspective (La Porta *et al.*, 1997) proposes that legal rules protecting investors vary systematically among legal traditions or origins, with the laws of common law countries being more protective of outside investors than laws of civil law and particularly French civil law countries. Accordingly, La Porta *et al.* (1998) find that civil law countries have firms with higher ownership concentration. This legal origin perspective has been criticised by authors that contend that legal origins are merely proxy for other factors such as culture, history or politics, influencing legal rules and outcomes. Within the political perspective, Roe (2000) contends that "the means that align managers with diffuse stockholders are weaker in continental social democracies and public firms have higher managerial agency costs and large block shareholding has persisted as shareholder's best remaining way to control those costs". Thus, in Western Continental European French civil law origin economies, such as Spain, France or Italy, we observe high ownership concentration among listed firms (Faccio and Lang, 2002), a different picture to that shown by U.S. or U.K. firms (La Porta *et al.*, 1998).

But besides the institutional setting, several other factors may determine a firm's ownership concentration. As Demsetz (1983) states "the ownership structure of firms is the endogenous result of competitive selection in which the advantages and disadvantages in costs are balanced to achieve a balanced organisation in the firm". Accordingly, Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) show that a firm's ownership concentration is related to the characteristics of the firm, for example, firm's size, risk and the degree of industry regulation. Among the variables that may determine a firm' ownership concentration, we refer specifically to its performance, size, risk, leverage, industry and identity of the ultimate owner.

Firms' *performance*, as proxy of the firms' future prospects, may influence firms' ownership concentration. On the one hand, it could be argued that shareholders may be willing to increase their holdings in less profitable firms in order to control management and undertake restructuring. Consequently, a negative relationship between firms' profitability and ownership concentration ratios should be expected. On the other hand, investors may be keener to increase their equity holdings in well performing firms (Grosfeld and Hashi, 2007). Considering this last argument, firm previous performance and profitability should be positively related to its ownership concentration.

Ownership concentration could also be related to firms' *size*. Wealth limitations and risk aversion may derive in lower degrees of ownership concentration (due to the cost and risk of acquiring large portions of equity of larger firms). Besides, usually, the larger the firm, the smaller the percentage of the firm's stocks needed to obtain a certain degree of control. Consequently, widely held ownership structures should be expected among larger firms. Nevertheless, firm size may also be considered as a proxy for managerial discretion (Himmelberg *et al.*, 1999) and it could be argued that larger firms should present higher ownership concentration ratios to monitor managers.

Firms' *risk* may also influence firms' ownership concentration. Managers from firms that operate in less risky environments, characterised, for example, by stable prices and technology, may be monitored more easily while in noisier environments managerial behaviours figure more prominently in the firm fortunes and become more difficult to monitor. As a consequence, noisier environments should be associated with higher ownership concentration ratios (Demsetz and Lehn, 1985). Nevertheless, it could be also argued that risk adverse large shareholders could be more reluctant to invest in more risky firms and consequently, less risky firms would show higher ownership concentration ratios.

Firms' *leverage* may play a significant role on firm ownership concentration. On the one hand, more leveraged firms are riskier and may require monitoring by large shareholders³, but on the other hand, as Jensen (1986) argues leverage may mitigate the agency cost of free cash flow. Thus, highly leveraged firms would not need the monitoring exercised by large shareholders, and consequently, ownership concentration should be lower in highly leveraged firms. However, debt may just be considered as a complementary monitoring device. If this is the case, higher ownership concentration ratios would be accompanied by highly leverage ratios (Grosfeld and Hashi, 2007).

Another determinant of firms' ownership concentration may be *industry regulation*. Different types of activities require different levels of firms' monitoring and regulation constrains and the lower levels of

³ Nevertheless, it can be also argued that risk-adverse owners may prefer avoiding excess concentration in highly leveraged firms (Stulz, 1988).

uncertainty of regulated industries may reduce the need for shareholders' monitoring deriving in a reduction of ownership concentration⁴ (Demsetz and Lehn, 1985).

The degree of ownership concentration may depend on the *type or identity of the large shareholders*: a corporation may have different motivations than a financial institution, the State or a family to acquire stakes in a firm; foreign owners may be more willing and capable to acquire larger stakes of a firm in order to control the company (Grosfeld and Hashi, 2007). The possible influence of family ownership on firm performance has also inspired a large body of both theoretical and empirical evidence.

3. OWNERSHIP STRUCTURE AND CORPORATE PERFORMANCE: THEORY AND EVIDENCE

Concentrated ownership is commonly considered a corporate governance mechanism. Back in 1932 Berle and Means already suggested the importance of ownership concentration to alleviate the agency problems between shareholders and managers. Dispersed ownership increases the principal-agent problem decreasing, consequently, firms' performance. On the contrary, large shareholders, whose wealth depends on firms' performance, may have more incentives and power to support the cost of monitoring managers and ensure that their resources are not diverted (Grossman and Hart, 1980). However, high ownership levels may also impose a tight control on managerial initiatives and incentives (Aghion and Tirole, 1997; Burkat *et al.*, 1997), limit large shareholders' wealth diversification, reduce their tolerance towards risk (Demsetz and Lehn, 1985; Admati *et al.*, 1994; Bolton and Von Thadden, 1998; Heinrich, 2000), lower stock liquidity (Holmstrom and Tirole, 1993) and increase shareholders' private benefits of control that allow majority shareholders to expropriate minority (Shleifer and Vishny, 1997; La Porta *et al.*, 1998).

The empirical evidence regarding the relationship between ownership concentration and firm performance is mixed (see Table 1 of the Appendix). Without considering the endogeneity of ownership structure, some studies report a significant influence of large shareholdings on firm performance. For instance, for the U.S., Morck *et al.* (1988) report a significant non-monotonic relationship between managerial ownership and firm value, Barclay *et al.* (1993) find a strong relation between the stocks owned by affiliated with management and the market to book value, and Holderness *et al.* (1999) find a positive relationship between managerial ownership and value. In the case of Anglo-Saxon European countries, the results by Leech and Leahy (1991) for U.K. also suggest that the ownership held by the largest shareholders derives in higher firm's valuation and profitability

⁴ However, as pointed out by Demsetz and Lehn (1985) there are also problems of amenity consumption by management in regulated settings as the cost-plus price-setting regulation reduces the incentive to hold down costs and dulls competition. If this is the case, regulated firms would be expected to need a higher monitoring and thus would present higher ownership concentration ratios, but according to these authors, the tendency of Regulatory Commissions to adjust prices towards levels that leave profits rates unchanged reduces the shareholders' desire to monitor management.

and Short and Keasy (1999) report a cubic relationship between managerial ownership and firm performance. For former a former socialist country, Hungary, Earle *et al.* (2005) find that only when concentration is measured as the largest shareholder (not as the sum of the shares owned by all large shareholder) there is a positive effect on corporate performance. On the contrary, Holderness and Sheehan (1988), for the U.S., find no significant difference in market to book value ratios for a paired sample of majority-owned and diffuse held firms. McConnell and Servaes (1990) report also no significant effect of the shares held by the largest shareholder on q ratio, although they find a positive effect of insiders' ownership⁵.

These studies, mainly from the 1980s and 1990s, do not consider the firm's ownership structure as endogenous. Following Demsetz (1983) a firm's ownership structure, whether concentrated or disperse, should maximise its value and no systematic and generalised relation ought to exist between differences in ownership and variations in firm's value. Thus, firm's optimal ownership level is likely to vary depending on firms' characteristics. Actually, some factors that determine firm performance, such as firm's size and industry could also have a significant effect on the firms' ownership structure, and companies should undergo rapid and drastic changes in their ownership structures in response to their profitability. Accordingly, Loderer and Martin (1997), Cho (1998), Himmelberg *et al.* (1999), Demsetz and Villalonga (2001) and Palia (2001) for the U.S. market do not find that firms' ownership influence firms' performance⁶. The empirical evidence concerning this issue for Spain where corporations have large shareholders who are active in corporate governance (Faccio and Lang, 2002) and where the main conflict of interest lies between large shareholders and minority shareholders, seem to be nevertheless different. De Miguel *et al.* (2004), Alonso-Bonis and De Andrés-Alonso (2007) and Mínguez-Vera and Martín-Ugedo (2007) report a positive relationship between firms' ownership concentration and value even after taking account of the endogeneity of firms' ownership (similarly to other European civil law countries). The results by Kapopoulos and Lazaretou (2007) and Perrini *et al.* (2008) for Greece and Italy, similar institutional contexts, also lead to similar conclusions⁷.

However, not only the level of ownership concentration may matter but also the owner identity, or whether there exists just one large shareholder.

⁵ For Spain, considering ownership as an exogenous variable, Galve and Salas (1993) and Azofra *et al.* (1995) report a positive relationship between ownership concentration and firm value, and Fernández *et al.* (1998) report a non linear managerial ownership and firm value.

⁶ The meta-analysis about the relationship between ownership structure and firm performance made by Sanchez-Ballesta and García-Meca (2007) also suggest that for the overall ownership concentration/firm performance relation is no significant. Furthermore, their findings show that the governance system, the measure of performance and the control for endogeneity moderate the effect of ownership on firm performance.

⁷ Pedersen and Thomsen (2003) for a sample of European countries, included Spain, show that ownership concentration has a positive effect on firm value when the largest shareholder is a financial institution or a corporation but no effect exists when a family is the largest shareholder.

The owner identity, whether non-financial companies, institutional investors, financial companies, families or the State, determines its preferences and goals, while the amount of shares held by a large shareholder determines its power and incentives to enforce its goals. This issue has not been considered in most of studies, with the exception of few papers (McConnell and Servaes, 1990 or Pedersen and Thomsen, 2003).

Non financial companies sometimes hold shares in other companies as part of cross-ownership or company group structures as holding shares of other firms may facilitate their access to valuable technology and other specific resources. Thus, non financial companies with business ties with the companies that they participate in may be considered as insider-owners, being their cost of profit diversion smaller and should derive in increases in firms' performance (Pedersen and Thomsen, 2003).

For *institutional investors*, those that represent different types of institutions like financial institutions, insurance companies or mutual funds, Pound (1988) proposes three hypotheses on the relation between institutional ownership and firm performance: efficient monitoring, conflict of interest, and strategic alignment. Li *et al.* (2006) and Bhattacharya and Graham (2007) show that their attitudes and roles may be attributed to their nature and legal status and Jara-Bertin *et al.* (2009) report that their influence on firm value varies depending on the legal and institutional framework. For civil law countries, institutional ownership initially decreases firm value, but, after a threshold, it enhances firm value, while in common law countries, low institutional ownership enhances firm value and when it becomes high, firm performance may be harmed.

A large body of literature has analysed the role of financial institutions and more specifically of banks on firm performance. Banks and other financial institutions may value the security of their loans and may have a long term horizon and may help firms' decision making without having the purpose of taking firm's control. But banks may also value other business relations with the company as much as their owner interest and their presence may decrease firm value. The empirical evidence suggests that the ownership share of dominant financial institutions is associated with an increase in market valuation (Cable, 1985; Hoshi *et al.*, 1990; Thomsen and Pedersen, 2000; Casasola and Tribó, 2004) or with a positive effect on productivity (Nickel *et al.*, 1997), as also happens with other institutional investors (McConnell and Servaes, 1990; Chaganti and Damanpour, 1991; Acker and Athnassakos, 2003).

The identity of the ultimate owner may also be a family firm or an individual. In *family firms*, especially in those in which family members play a dual role as managers and owners, the marginal cost of profit diversion should be small and therefore ownership stakes should have a positive effect on firm performance. But, family risk aversion or the possibility to expropriate minority shareholders

may derive in a negative effect of family ownership on firm performance. The empirical evidence regarding the influence of family ownership on firm performance is not conclusive. For instance, for the U.S., some studies report, that family ownership leads to higher firm value (Anderson and Reeb, 2003), while others, such as Villalonga and Amit (2006) document that family ownership creates value only when the founder serves as CEO of the family firm or as Chairman with a hired CEO. Other studies, for example for Canada, report that family ownership reduces firms' efficiency (Morck *et al.*, 2000). For Western Europe, the results are also mixed. Barontini and Caprio (2006) find that family control does not hamper firm performance, while Maury (2006) reports that active family control is associated with higher profitability, whereas passive family control does not affect profitability. For Spain, Galve and Salas (1993) conclude that family ownership does not result in larger profitability ratios due to their sub-optimal size, and Sacristán-Navarro and Gómez-Ansón (2006) report that family firms perform similarly to non family firms except when the founder holds the post of CEO.

The State should also be considered as a different type of large shareholder. Governments have a tendency to distort managerial objectives in order to satisfy political objectives, especially excess employment, thus, it may reduce firm performance. When control rights pass from the State to private investors, the objectives of the firms and managerial incentives are redefined and, consequently, firm performance should increase (Boycko *et al.*, 1996).

If large shareholders may incur in opportunistic behaviour, the role played by a second largest shareholder that may monitor the largest one should be considered. A second shareholder may contest the control of the dominant largest shareholder, reducing the potential for expropriation and enhancing firm performance. This issue has not been frequently studied, but the results of Lehman and Wiegand (2000) for German listed firms or of López de Foronda *et al.* (2007) for a sample of European firms support the idea of a positive effect on performance of other large shareholders.

In addition to the largest shareholder's stakes other variables should be considered in order to explain firms' performance. Following Mork *et al.* (1988) and McConnell and Servaes (1995) it is necessary to control for the impact of growth on the firm performance. Debt may play a positive role in mitigating managerial-stockholder conflicts by the threat of bankruptcy supervision and bondholders monitoring, but distort investment decisions for agency conflicts between shareholders and bondholders (Jensen and Meckling, 1976; Parrino and Weisbach, 1999). There also exists a "size effect" on firm performance. High output raises entry barriers through economies of scale and market power since larger companies have a greater capacity for financing expansion by internally generated funds, they are able to raise finance more easily and there is a better secondary market in their shares (Leech and Leahy, 1991) but they suffer from the monitoring and agency cost (Himmelberg *et al.*, 1999). Finally, firm age allows for life-cycle effects, that is, profits of older firms may be enhanced by productivity gains resulting from learning by doing or by reputation effects leading to increased

demand. On the other hand, older firms may be bureaucratic and less dynamic, their technology dated or their management may have developed discretion over the objectives pursued (Mueller, 1972).

4. SAMPLE SELECTION, VARIABLES AND METHODOLOGY USED IN THE STUDY

4.1. Sample selection

The initial database used for the analysis comprises the whole population of firms listed on the Spanish Stock Exchange over the years 2003-2008. From this initial sample, we excluded financial companies (SIC codes 6000-6999) ending up with an unbalanced panel of 807 firm-year observations, representing data from 135 non-financial publicly firms. Sample firms show a widespread industry distribution. As Table 1 reports, firms belong mainly to the construction industry (16.36% - SIC code 15), and to the communication and electric, gas & sanitary services industries (6.69% and 6.57%- SIC Codes 48 and 49, respectively).

Our data collection process has been manual and has involved two steps. Firstly, we gathered all the information about the firms' ownership structure, and secondly, we gathered their economic and financial information. We obtained ownership and corporate governance data individually from the Annual Corporate Governance Report that each firm fills in the Spanish Supervisory Agency -CNMV- over the period 2002-2008⁸. Companies for which we found no Corporate Governance Report in a year (due to the fact that they have been excluded from the quoted market in any of the sample's years -30 firms-) or no economic information have been found in any other database were excluded from the sample. Financial information for each company and each year was obtained from different data sources: SABI database, the Madrid Stock Exchange and the Spanish Supervisory Agency -CNMV-.

⁸ It is necessary to mention that although the period of study is 2003-2008 the necessity of lagged values for the first aim of the paper explains the fact of obtaining also information for year 2002.

Table 1: Sample

The sample consists of 135 publicly traded non-financial firms and 807 firm-year observations.

Industry (SIC Codes)	Number of observations	Percentage of observations
1	6	0.74%
2	6	0.74%
12	18	2.23%
13	18	2.23%
14	6	0.74%
15	132	16.36%
16	30	3.72%
17	6	0.74%
20	60	7.73%
21	6	0.74%
22	24	2.97%
23	12	1.49%
24	6	0.74%
26	41	5.08%
27	12	1.49%
28	36	4.46%
31	6	0.74%
32	24	2.97%
33	36	4.46%
34	6	0.74%
35	18	2.23%
36	18	2.23%
37	6	0.74%
38	12	1.49%
39	6	0.74%
41	11	1.36%
42	12	1.49%
45	6	0.74%
46	6	0.74%
48	54	6.69%
49	53	6.57%
50	12	1.49%
51	12	1.49%
58	6	0.74%
70	12	1.49%
72	6	0.74%
73	24	2.97%
87	42	5.20%
Total	807	100%

Source: Own elaboration

4.2. Variables and methodology

The empirical analysis comprises two phases. First, we analyse the determinants of the ownership held by the largest ultimate shareholder as proxy of ownership concentration. Following the standard methodology employed by La Porta *et al.* (1999), Claessens *et al.* (2000), Claessens *et al.* (2002) and Faccio and Lang (2002) we identified the ultimate owner of the firm. While direct ownership involves shares registered in the shareholder's name, indirect ownership involves shares held by entities that the ultimate shareholder controls. Since the large shareholders of corporations are sometimes corporations

themselves, we identified the large shareholders in these corporations. Table 2 shows the dependent and independent variables used in this analysis. We use as proxy of ownership concentration, the percentage of common shares held by the largest shareholder of the firm, FSH, (McConnell and Servaes, 1990; Leech and Leahy, 1991; López de Foronda *et al.*, 2007 or Mínguez-Vera and Martín-Ugedo, 2007 also employ this measure)⁹, and following, Demsetz and Lehn (1985), Leech and Leahy (1991), Holderness *et al.* (1999), Demsetz and Villalonga (2001) or Hu and Izumida (2008) we also apply a logistic transformation to FSH, using the formula $\log [FSH / (100 - FSH)]$ to convert a bounded variable into an unbounded one (LFSH) (Table 2).

Table 2: Variables of the study

Variables	Description
Dependent variables	
FSH	The percentage of common shares held by either directly or indirectly the largest/ultimate shareholder
LFSH	Logistic transformation to FSH
ROA	Firm' return on assets, that is, operating profit divided by total assets
Explanatory variables	
ROA	Firm' return on assets
SIZE	Logarithm of the firm total sales
RISK	Firm' risk measured as betai
LEV	Firm' total leverage, that is, book value of total debt to book value
NFINAN	Dummy variable that equals one if the ultimate owner is a non financial company and zero otherwise
FINAN	Dummy variable that equals one if the ultimate owner is a financial company and zero otherwise
FAM	Dummy variable that equals one if the ultimate owner is a family or individual and zero otherwise
FUND	Dummy variable that equals one if the ultimate owner is a mutual fund and/or other financial company and zero otherwise
STATE	Dummy variable that equals one if the ultimate owner is a State and zero otherwise
FOR	Dummy variable that equals one if the ultimate owner is a foreign firm and zero otherwise
OC	Firm ownership concentration (FSH, LFSH)
OC ²	Squared firm ownership concentration
SSH	Dummy variable that equals one if exists a second significant shareholder and zero otherwise. A second significant shareholder exists if he/she owns shares over a threshold of 10%
GROWTH	Variation in firm sales related to the previous year
AGE	Natural logarithm of $(Year_{it} - INC_i)$ where $Year_{it}$ is the corresponding period of time and INC_i is the date of incorporation of the firm

⁹ Although other measures of ownership concentration such as the three or five largest shareholders have been used in the literature, in economies with highly concentrated ownership structure, as it is the Spanish case, the share of the largest shareholder is commonly a used measure. We have also performed all the analyses instead of with FSH with the variable Cash Flow rights of the ultimate owner, as a proxy of the ultimate owner's stake, but as results did not change significantly, we do not report them.

The explanatory variables related to the ownership concentration determinants include firm' performance, size, risk and leverage, as well as a set of dummies representing the firms' sector at two-digit Standard Industrial Classification (SIC) codes level. The industry variables aim to control for the spurious correlation between ownership and performance through industry effects. We also included in the analysis dummies variables representing the identity of the ultimate largest owner. We defined the following types of ultimate owners: non-financial firms, pension and mutual funds and other financial companies (insurance companies, for example), financial firms and families and individuals, State (Table 2). Additionally, we defined an additional category: foreign firms as it was difficult to follow the ownership chains to identify ultimate owners outside Spain. Considering the potential endogeneity of ownership concentration, we use lagged explanatory variables when we study the determinants of the percentage of shares held by the largest ultimate owner. Thus, all variables that refer to performance, size, risk, leverage and "type of the largest shareholder" are one year-lagged.

As it is customary in panel data analyses we estimate both fixed effects and random effects models. The fixed effects specification assumes that company-specific effects are fixed parameters to be estimated, whereas the random effects model assumes that companies constitute a random sample. To identify which model is preferable we run the Hausman test to determine whether the unobservable heterogeneity is correlated with the explanatory variables (Hausman, 1978). When the Hausman test turns out to be significant we focus on the fixed effects model, whereas we stress the random effect model if the test turns out to be not significant. Additionally, we corrected the estimations for heteroskedasticity problems. Consequently, the estimated model with all the variables included could be represented as follows¹⁰:

$$OC_{it} = a_0 + \beta_1 PERFORMANC_{it-1} + \beta_2 SIZE_{it-1} + \beta_3 RISK_{it-1} + \beta_4 LEV_{it-1} + \beta_5 NFINAN_{it-1} + \beta_6 FINAN_{it-1} + \beta_7 FAM_{it-1} + \beta_8 FUND_{it-1} + \beta_9 STATE_{it-1} + \beta_{10} FOR_{it-1} + DINDUSTRY + \gamma_i + \mu_{it}$$

where OC denotes the shares held by the largest shareholders (ownership concentration), Performance is measured by the ratio Return on Assets (ROA), SIZE is defined as the natural logarithm of the firm's sales¹¹, RISK is the firm risk measured as firm beta, LEV is firm's leverage defined as the book value of total debt to book value of assets, NFINAN is a dummy variable that equals one if the ultimate owner is a non financial company and zero otherwise, FINAN is a dummy variable that equals one if the ultimate owner is a financial company (banks, savings banks) and zero otherwise,

¹⁰ We also repeated the estimations using the GMM models to study the firm ownership concentration determinants. However, as the number of final observations dropped significantly and as in some cases the models did not fit the necessary assumptions of GMM models, we decided not to use this methodology. Besides, with the methodology proposed we are able to compare our results with those obtained by Mínguez-Vera and Martín-Ugedo (2007).

¹¹ Alternatively, we considered total assets and growth as proxies for firm size and performance or future opportunities, respectively. The results did not vary significantly.

FAM is a dummy variable that equals one if the ultimate owner is an individual or family and zero otherwise, FUND is a dummy variable that equals one if the ultimate owner is a mutual fund and/or other financial companies and zero otherwise, STATE is a dummy variable that equals one if the ultimate owner is the State and zero otherwise, FOR is a dummy variable that equals one if the ultimate owner is a foreign company and zero otherwise, DINDUSTRY denotes dummies variables related to the firms' industry and γ_i is the firm's effect, that we assume constant for the firm i along the period t and μ_i is the error term.

Next, we test the relationship between a firm's ownership structure and its performance. When doing this, a possible approach is to conduct a regression analysis of firm performance on selected variables representing the firm's ownership structure. However, if a firm's ownership is endogenous, some of the unobserved determinants of firm's performance may also explain the firm's ownership, leading to a spurious relation between a firm's ownership and its performance. In order to correct for the endogeneity of the firms' ownership structures we use the Generalized Method of Moments (GMM) drawn up for dynamic panel data models by Arellano and Bond (1991)¹². The panel estimator uses internal instruments, that is, instruments that are based on lagged values of the explanatory variables. This methodology allows to correct the econometric issues that are relevant in this study: (a) the presence of unobservable individual effects (company effects), which are eliminated by taking first differences for all the variables; and (b) the possible endogeneity in the independent variables (particularly the ownership variables). The consistency of GMM estimates depends on the validity of the instruments and on the absence of second-order serial autocorrelation in the residuals. Consequently, in order to test the validity of the models specifications we used the Hansen statistic of over-identifying restrictions to test for the absence of correlation between the instruments and the error term. We also included statistics m_2 to verify the lack of second-order serial correlation in the first-difference residuals¹³. In addition to these specification contrasts, we included in the estimation the following Wald tests: one of joint significance of the reported coefficients (z_1) and the second of joint significance of time dummy variables (z_2).

The model proposed to analyse the relationship between performance and ownership structure, similarly to McConnell and Servaes (1990) and Hu and Izumida (2008) includes the firm profitability, ROA ratio, as dependent variable. This variable reflects the short term profitability of the firm's operations and is not sensitive to the tax effects. We consider firms' ROA after its adjustment to the corresponding industry, i.e., we subtract from the value shown by each firm each year from the firm's

¹² De Miguel *et al.* (2004) and Alonso-Bonis and De Andres-Alonso (2007) for Spain also use this methodology.

¹³ This imposes an additional restriction to our model: the necessity of having a sufficient number of periods to test for the second order correlation, as Arellano and Bond (1991) pointed out; specifically at least four consecutive years per company in order to be able to estimate the m_2 .

industry median for the same year¹⁴. Among the independent variables we include the different proxies of ownership concentration mentioned before and their square terms considering that several authors, also for Spanish firms, provide evidence of nonlinearities in the ownership-performance relationship (see, Mork *et al.*, 1988; McConnell and Servaes, 1990; Cho *et al.*, 1998; De Miguel *et al.*, 2004; Hu and Izumida, 2008). As control variables we include a dummy variable representing the existence of a second large shareholder (SSH) (see López de Foronda *et al.*, 2007; Perrini *et al.*, 2008), firms' growth (GROWTH) (increase on sales from previous year, see Short and Keasey, 1999; Pedersen and Thomsen, 2003; Perrini *et al.*, 2008), the level of financial leverage (LEV) (book value of total debt divided by total assets, see Holderness *et al.*, 1999; Demsetz and Villalonga, 2001; Hu and Izumida, 2008), the size of the firm (SIZE) (natural logarithmic of total sales, see Leech and Leahy, 1991; Himmelberg *et al.*, 1999; Short and Keasy, 1999) and the firm age as the number of years since its foundation (AGE) (see Leech and Leahy, 1991) (Table 2)¹⁵.

Thus, the following panel data dynamic model is estimated as follows:

$$ROA_{it} = a_0 + \beta_1 OC + \beta_2 OC^2_{it} + \beta_3 SSH_{it} + \beta_4 GROWTH_{it} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \gamma_i + \mu_{it}$$

Table 3 provides the descriptive statistics (mean, median, maximum, minimum and standard deviation) of the variables included in the study. The mean ownership stake held by the largest shareholder is 36.145 percent. The mean firm's lagged size in terms of total sales amounts to 2,125.530 thousand Euros, although the sample is very asymmetric (with a maximum value of 5.64+07 thousand Euros and a minimum value of 23 thousand Euros). The mean level of firm lagged risk amounts to 0.662, and that figure for ROA amounts to 0.061. The largest lagged ultimate owner is mainly a family or individual (59.25% percent of the cases) followed by a non-financial company (11.54 percent) (Table 3, Panel A). Regarding the explanatory variables of firm profitability, the mean value of firm's growth is 0.297 and of firm's leverage is 0.569. 41.60% of firms have a significant second large shareholder different from the largest one. Variables that were used in the first stage with lagged values present similar figures without lagged values for the second stage model (Table 3, Panel B).

¹⁴ In those sectors for which we did not information for more than one firm ROA ratio is not adjusted to its industry median value. We also run the models without adjusting firms' ROA to their industry median value and the results did not vary. Thus, similarly to Short and Keasey (1999) for the U.K., our results do not support the existence of an industry effect.

¹⁵ Initially, we considered another control variable related to the firm's risk measured as firm beta. However, as it was mentioned previously, due to the number of total observations was reduced significantly (data constraints) and considering that in no model this variable turn out to be significant we dropped it as a large sample size let us to obtain more robust estimations. In addition, some previous studies like Palia (2001), De Miguel *et al.* (2004) or Kapopoulos and Lazaretou (2007) do not also include this control variable.

Table 3: Summary Statistics

Variables	Mean	Median	Maximum	Minimum	Stand. Dev.
Panel A: Determinants of largest shareholder holdings					
Dependent variable					
FSH n: 730	36.145	28.706	99.334	0	24.405
Explanatory variables (lagged values)					
ROA n: 747	0.061	0.057	0.843	-1.074	0.110
SIZE n:747	2,125,530	2,885,550	5.64+07	23	6,054,594
RISK n: 505	0.662	0.65	2.19	-0.27	0.419
LEV n:479	0.555	0.612	2.436	2.37-06	0.243
Other explanatory variables (lagged values)					
UO identity		Observations (percentage)			
NFINAN		11.54%			
		(83)			
FINAN		8.07%			
		(58)			
FAM		59.25%			
		(426)			
FUND		2.36%			
		(17)			
STATE		0.83%			
		(6)			
FOR		9.32%			
		(67)			
Panel B: Determinants of firm performance					
Dependent variable					
ROA n: 746	0.007	0.001	0.798	-1.117	0.113
Explanatory variables					
FSH n: 730	36.145	28.706	99.334	0	24.405
GROWTH n:744	0.297	0.026	66.434	-1	2.799
LEV n:751	0.569	0.587	2.436	0.011	0.253
SIZE n:748	2,356,485	311,383	5.79+07	23	6,595,866
AGE n:808	46.591	40	116	3	26.922
Other explanatory variables					
SSH		41.60%			
		(302)			
UO identity					
NFINAN		10.78%			
		(79)			
FINAN		6.97%			
		(51)			
FAM		60.71%			
		(445)			
FUND		2.19%			
		(16)			
STATE		0.82%			
		(6)			
FOR		8.19%			
		(60)			

The variables' bivariate correlations are presented in Table 4. All the proxies for firms' ownership (FSH, LFSH and SSH) are positively related with ROA. More profitable firms show higher ownership

concentration ratios. In addition, variables SIZE, RISK and LEV are negatively correlated to the percentage of shares held by the largest shareholder. In larger, more riskier and leveraged firms the largest shareholders tend to own lower shares. Interestingly, the percentage of shares held by the second largest shareholder is not related to firms' leverage or size.

Firms' profitability is positively correlated with firms' size (SIZE). Thus, larger firms seem to show larger levels of profitability. On the contrary, there is a negative correlation between the ratio firms' return on assets and leverage (LEV), indicating that the larger the level of financial leverage the lower the firm's profitability (ROA) (Table 4)¹⁶.

Table 4: Correlation matrix for the dependent and explanatory variables

Panel A: Determinants of ownership concentration							
Variables	FSH	LFSH	ROA	SIZE	RISK		
LFSH	0.964*** (0.000)						
ROA	0.085** (0.021)	0.081** (0.031)					
SIZE	-0.120*** (0.000)	-0.121*** (0.000)	0.290*** (0.000)				
RISK	-0.110** (0.013)	-0.135*** (0.002)	0.051 (0.255)	0.342*** (0.000)			
LEV	-0.071* (0.054)	-0.072* (0.053)	-0.128*** (0.000)	0.397*** (0.000)	0.168*** (0.000)		

Panel B: Performance and ownership concentration							
Variables	ROA	FSH	LFSH	SSH	GROWTH	LEV	SIZE
FSH	0.063* (0.073)						
LFSH	0.064* (0.085)	0.964*** (0.000)					
SSH	0.071* (0.057)	0.096*** (0.009)	0.052 (0.157)				
GROWTH	0.008 (0.822)	0.005 (0.883)	0.003 (0.935)	0.028 (0.445)			
LEV	-0.083** (0.015)	-0.061* (0.096)	-0.067* (0.071)	-0.043 (0.241)	-0.016 (0.645)		
SIZE	0.227*** (0.000)	-0.114*** (0.002)	-0.117* (0.000)	-0.053 (0.155)	-0.044 (0.229)	0.403*** (0.000)	
AGE	0.013 (0.711)	0.130*** (0.000)	0.090** (0.015)	0.105*** (0.004)	0.022 (0.541)	0.177 (0.000)	0.111* (0.002)

(P-value)

* Statistically significant at a 10% level ** Statistically significant at a 5% level *** Statistically significant at a 1% level

5. RESULTS

5.1. Determinants of the ownership held by the largest/ultimate owner

¹⁶ It is worth mentioning, however, that although some variables show statistically significant correlations, when applying variance inflation factors (VIFs), we find no evidence of multicollinearity problems as it was suggested by Kleinbaum *et al.* (1998), no VIF is above to 10.

The results related to the determinants of the percentage of shares held by the largest shareholder, after choosing the correct model (fixed or random) are reported Table 5¹⁷. Firm performance (ROA) is positively and significantly related to the ownership held by the largest ultimate owner (models 1 and 3). Thus, similarly to Perrini *et al.* (2008) for Italy or Kapopoulus and Lazaretou (2007) for Greece, also Western Continental economies, our results suggest that firm's performance is a positive predictor of firm's ownership structure¹⁸.

We also find that firm's risk, RISK, influences negatively and significantly the percentage of shares held by the largest shareholder. This negative relationship between firm's risk (beta) and ownership concentration is opposite of the relationship reported by Demsetz and Lehn (1985). However, Leech and Leahy (1991) for the U.K. and Mínguez-Vera and Martín-Ugedo (2007) for the Spanish case also report a negative relation between the stakes of the largest shareholder and firm's beta. A possible explanation for this behaviour may be that risk adverse large shareholders could be more reluctant to invest in more risky firms.

In addition, similarly to Holderness *et al.* (1999), Demsetz and Villalonga (2001) and Perrini *et al.* (2008), and as suggested by Demsetz and Lehn (1985), firm's size (SIZE) presents a negative coefficient that turns out to be significant at a 10 per cent in models 3 and 4. Firm's leverage (LEV) presents non-significant coefficients. Thus, contrary to Demsetz and Villalonga (2001) and Hu and Izumida (2008), we are not able to conclude that firms' leverage influence significantly on firms' ownership¹⁹. Besides, similarly to Cho *et al.* (1998) in all models there is a significant influence of the firm's industry on ownership²⁰.

¹⁷ In all models the random effect models seem to be more suitable. Nevertheless, it is necessary to mention that considering the fixed effect models the results are similar.

¹⁸ However, the results of Hu and Izumida (2008) for Japanese listed firms suggest that corporate performance does not influence contemporary and subsequent ownership concentration ratios. The results of Loderer and Martin (1997) suggest that better acquisitions performances encourage larger stockholdings while q tobin ratio discourage them.

¹⁹ Firm's leverage only seems to influence in a positive and significant way firm ownership when variable RISK is excluded from the models.

²⁰ We repeated the models including instead of the dummies related to the firms' industries, a dummy variable that takes value one if a firm belongs to a regulated industry (electricity, energy, telecommunications, transportation) and zero otherwise (SECTOR). The results did not vary significantly and the variable SECTOR turns out to have a positive and significant coefficient suggesting that regulated firms show higher levels of ownership held by the largest shareholder. In addition, similarly to Perrini *et al.* (2008), we repeated the estimations considering jointly as explanatory variables firms' performance and growth. The results do not change and variable GROWTH presents a positive although not significant coefficient.

Table 5: Determinants of the largest ultimate owner ownership

Sample consists of 135 publicly traded, non-financial firms from 2003-2008 listed in Spanish Stock Exchanges. In models 1 and 2 the dependent variable is FSH and in models 3 and 4 is LFSH. ROA is firm return on assets. SIZE is the natural logarithm of book total sales. RISK is firm betai lagged. LEV is the relation of the book value of total debt over the book value of total assets. NFINAN is a dummy variable that equals one if the ultimate owner is a non financial company. FINAN is a dummy variable that equals one if the ultimate owner is a financial company. FAM is a dummy variable that equals one if the ultimate owner is a family or individual. FUND is a dummy variable that equals one if the ultimate owner is a mutual fund or other financial companies. STATE is a dummy variable that equals one if the ultimate owner is a State. FOR is a dummy variable that equals one if the ultimate owner is a foreign firm. All explanatory variables are lagged one year.

Variables	FSH		LFSH	
	1	2	3	4
ROA	18.790** (0.017)	19.623** (0.017)	0.842** (0.022)	0.911** (0.025)
SIZE	-1.770 (0.168)	-1.507 (0.206)	-0.119* (0.063)	-0.106* (0.068)
RISK	-6.019*** (0.001)	-6.229*** (0.001)	-0.255* (0.064)	-0.287** (0.050)
LEV	4.593 (0.316)	4.985 (0.279)	0.424 (0.178)	0.437 (0.136)
Sector effect	Yes	Yes	Yes	Yes
Type of largest owner		UO		UO
NFINAN		11.724 (0.105)		0.649 (0.245)
FINAN		4.542 (0.535)		0.337 (0.565)
FAM		7.682 (0.130)		0.473 (0.266)
FUND		5.856 (0.294)		0.370 (0.395)
STATE		-17.979 (0.417)		-1.162 (0.558)
FOR		5.685 (0.294)		0.357 (0.396)
Wald Chi-squared	122.13***	119.48***	120.11***	127.25***
R-squared	0.186	0.261	0.178	0.263
Hausman	37.52	8.56	16.44	43.56
No. observations	387	387	387	387
No. groups	75	75	75	75

(p-value)

* Statistically significant at a 10% level

** Statistically significant at a 5% level

*** Statistically significant at a 1% level

When we introduce in all the models as explanatory variables the different proxies for the identity of the largest owner, the results do not change (models 2 and 4). The shares held by the largest shareholder are also determined by firm's profitability and risk. In addition, none of the dummies related to the identity of the largest ultimate owner turn out to be significant suggesting that the nature of the largest shareholder do not seem to affect firms' ownership structure.

In a nutshell, our results reveal that the shares held by the largest shareholder are strongly determined by the firms' past performance and by some of their intrinsic characteristics such as risk and industry.

5.2. Influence of large shareholders' holdings on firm profitability

5.2.1. Results considering firm specific effects (but no endogeneity)

After analysing the main determinants of the shares held by the largest shareholder, we relate to the main results about the relationship between ownership structure and firms' profitability. Firstly, we refer to the results obtained from a static panel data analyses. By employing this methodology we avoid possible problems caused by the correlation between non-observable firms' characteristics and the individual variables but do not correct for endogeneity issues. The results, after choosing the correct model (fixed or random) are reported in Table 6. Columns (2) and (4) refer to the quadratic terms of the different proxies of the ownership held by the ultimate largest shareholder.

The percentage of ownership in hands of the ultimate largest owner turn out to affect positively and significantly firm's ROA (models 1 and 3). When we consider the possible non-linearity of ownership reported by previous studies we find that variable OC continues influencing positively and significantly firm profitability and that the square term OC^2 presents a negative coefficient in models 2 and 4, although it is not statistically significant. Therefore, contrary to De Miguel *et al.* (2004) that report a non-linear relationship between ownership concentration and firm value for Spanish listed firms, our results do not support the existence of such non-linear relationship.

Regarding the control variables, the existence of a second significant shareholder (SSH) does affect positively firm performance. These results are in line with those reported by Lehman and Weigand (2000) which suggest that the presence of a strong second large shareholder enhances firm profitability in German listed companies. For European countries, López de Foronda *et al.* (2007) find that in civil-law countries, the second large shareholder plays a critical role in contesting the control of the dominant shareholder, reducing the extraction of private benefits by the largest shareholder and improving firm performance whereas in common-law countries, capital structure and managerial ownership are the most effective mechanisms of control. Our results point to the same direction. In addition, we find a negative and significant influence of leverage (LEV) on firms' profitability, as previously was reported by Kapopoulos and Lazaretou (2007) for Greece or Hu and Izumida (2008) for Japan²¹. This negative effect may be explained through managerial opportunism as managers may obtain funds from outside firm's investors without investing in profitable projects, or it could be interpreted as the agency costs derived from the conflicts of interest between bondholders and shareholders (Hu and Izumida, 2008). Besides, similarly to Leech and Leahy (1991), De Miguel *et al.* (2004), Loderer and Martin (1997) or Mínguez-Vera and Martín-Ugedo (2007) we also find a negative association between firms' size (SIZE) and profitability. This negative relation supports the argument

²¹ Other authors such as McConnell and Servaes (1990) or De Miguel *et al.* (2004) suggest the opposite: a positive relationship between debt and firm value.

that larger firms are likely to face more acute agency and asymmetric-information problems (De Miguel *et al.*, 2004) or the life-cycle and scale effects (Leech and Leahy, 1991).

Table 6: Determinants of firm performance (Fixed and random effect models)

Sample consists of 135 publicly traded, non-financial firms from 2003-2008 listed in Spanish Stock Exchanges. In all the models the dependent variable is ROA, that is, the firm's operating profit divided by the total assets. OC is firm ownership concentration (in models 1 and 2 measured as FSH and in models 3 and 4 as LFSH). OC² is the squared of firm ownership concentration. SSH is a dummy variable that adopts value one if there is a significant second shareholder. GROWTH is the variation in sales related to the previous year. LEV is the relation of the book value of total debt over the book value of total assets. SIZE is the natural logarithm of book total sales. AGE is the Natural logarithm of (Year_{it} - INC_i) where Year_{it} is the corresponding period of time and INC_i is the date of incorporation of the firm. NFINAN is a dummy variable that equals one if the ultimate owner is a non financial company. FINAN is a dummy variable that equals one if the ultimate owner is a financial company. FAM is a dummy variable that equals one if the ultimate owner is a family or individual. FUND is a dummy variable that equals one if the ultimate owner is a mutual fund and/or other financial company. STATE is a dummy variable that equals one if the ultimate owner is a State. FOR is a dummy variable that equals one if the ultimate owner is a foreign firm. There are also dummies for each year (from 2003-2008).

Variable	FSH		LFSH		5
	1	2	3	4	
OC	0.001*** (0.000)	0.002** (0.008)	0.015*** (0.001)	0.015*** (0.002)	
OC ²		-1.11-05 (0.114)		-0.003 (0.103)	
NFINAN					0.003 (0.893)
FINAN					-0.024 (0.251)
FAM					-0.074*** (0.000)
FUND					-0.025** (0.046)
STATE					[a]
FOR					0.021 (0.256)
SHH	0.031** (0.032)	0.028** (0.004)	0.030*** (0.004)	0.027*** (0.007)	0.034*** (0.007)
GROWTH	1.09-04 (0.752)	1.33-04 (0.707)	1.18-04 (0.732)	1.30-04 (0.708)	3.48-04 (0.438)
LEV	-0.138** (0.026)	-0.135** (0.027)	-0.135* (0.027)	-0.133** (0.027)	-0.145** (0.012)
SIZE	-0.016*** (0.006)	-0.015*** (0.008)	-0.015*** (0.007)	-0.015*** (0.008)	-0.008 (0.427)
AGE	0.005 (0.596)	0.004 (0.627)	0.003 (0.719)	0.003 (0.741)	0.014 (0.673)
Annual effect	Yes	Yes	Yes	Yes	
Wald Chi-squared	23.93**	23.89**	20.54**	20.33*	
F					2.06**
R-squared	0.136	0.137	0.133	0.136	0.112
Hausman	7.37	2.25	7.50	4.28	80.21***
No. observations	610	610	610	610	610
No. groups ^[b]	107	107	107	107	107

(p-value)

[a] Variable State is dropped in the model [b] We have use the same sample as by the GMM model to be comparable

* Statistically significant at a 10% level ** Statistically significant at a 5% level *** Statistically significant at a 1% level

5.2.2. Results considering the endogeneity of ownership

Next, we repeat all the estimations correcting for the possible endogeneity of the ownership held by the largest shareholder. As it has been commented before, this method of estimation uses as instruments lagged values of explanatory variables in order to solve the problem of the endogeneity. In particular, we consider as endogenous variables the identity of the largest shareholder, ownership held by the second large shareholder, and firms' growth, leverage and size, only firm's age is considered as exogenous.

As reported in Table 7 (models 1 to 4), the results after taking into account the endogeneity issues differ from those reported previously. These results suggest the necessity of considering an adequate methodology in the analyses. Actually, in these estimations no relationship between the ownership held by the largest shareholder and profitability is found. When we consider the possible non-linearity of the amount of shares held by the largest shareholder, the estimations continue showing a non-significant coefficient of both the linear and the square term.

Concerning the control variables, as reported in Table 6, the presence of a second significant shareholder (SSH) enhances firms' profitability. Besides, firms' growth also does affect positively but in a very small percentage firm ROA (only at a 10 per cent level of significance in models 3 and 4). Short and Keasey (1999) for the U.K. and Pedersen and Thomsen (2003) for a sample of European countries also report a positive and significant relation between firms' growth and performance. Besides, firm leverage (LEV) continues influencing negatively firm profitability but firm size does not seem to influence significantly firm performance as neither does variable AGE²².

Summing up, after considering the endogeneity of the ownership held by the largest shareholder, the results show that the percentage of shares of the largest owner does not affect significantly firms' profitability. Other factors such as the existence of a second significant shareholder that may monitor the largest one or firm leverage do explain firm profitability.

The insignificant relationship between the percentage of shares held by the largest shareholder and performance appears to contradict previous results for the Spanish market, but as Sanchez-Ballesta and García-Meca (2007) suggest in their meta analysis the findings for the overall ownership concentration/firm performance suggest no significant relationship although some factors such as legal system, the control of endogeneity or the performance proxy seem to moderate the relationship.

²² In all models (1 to 4) z_2 is not statistically significant suggesting that there is not annual effect. In model 4 m_2 turns out to be significant with a p-value (0.096). Alternatively, we consider firm value, measure as market value of equity plus book value of debt to book value of assets, as dependent variable. No models turned out to be significant and they did not meet the necessary conditions of GMM models (m_2 is significant or z_1 is not). Something similar occurred when return of equity (ROE) is considered as proxy for firm performance. Nevertheless, we must point out that in none of the estimations the variables representing ownership concentration turned out to be significant.

Table 7: Determinants of firm performance (GMM model)

Sample consists of 135 publicly traded, non-financial firms from 2003-2008 listed in Spanish Stock Exchanges. In all the models the dependant variable is ROA, that is, the firm's operating profit divided by the total assets. OC is firm ownership concentration. OC² is the squared of firm ownership concentration. SSH is a dummy variable that adopts value one if there is a significant second shareholder. GROWTH is the variation in sales related to the previous year. LEV is the relation of the book value of total debt over the book value of total assets. SIZE is the natural logarithm of book total sales. AGE is the Natural logarithm of (Year_{it} - INC_i) where Year_{it} is the corresponding period of time and INC_i is the date of incorporation of the firm. NFINAN is a dummy variable that equals one if the ultimate owner is a non financial company. FINAN is a dummy variable that equals one if the ultimate owner is a financial company. FAM is a dummy variable that equals one if the ultimate owner is a family or individual. FUND is a dummy variable that equals one if the ultimate owner is a mutual fund and/or other financial company. STATE is a dummy variable that equals one if the ultimate owner is a State. FOR is a dummy variable that equals one if the ultimate owner is a foreign firm. There are also dummies for each year (from 2003-2008).

Variable	FSH		LFSH		5
	1	2	3	4	
OC	8.29-05 (0.948)	0.003 (0.285)	-0.002 (0.903)	-0.007 (0.675)	
OC2		-3.19-05 (0.148)		-0.004 (0.222)	
NFINAN					0.015 (0.637)
FINAN					-0.020 (0.536)
FAM					-0.070** (0.024)
FUND					-0.011 (0.855)
STATE					[a]
FOR					0.009 (0.667)
SHH	0.042** (0.050)	0.044** (0.050)	0.047* (0.070)	0.043* (0.059)	0.042* (0.079)
GROWTH	5.84-04 (0.117)	6.83-04 (0.143)	6.53-04* (0.072)	6.81-04* (0.059)	5.98-04* (0.086)
LEV	-0.192* (0.084)	-0.210** (0.026)	-0.206** (0.045)	-0.206** (0.036)	-0.205* (0.088)
SIZE	-0.013 (0.301)	-0.021 (0.104)	-0.021 (0.133)	-0.023* (0.081)	-0.014 (0.182)
AGE	0.050 (0.363)	0.069 (0.160)	0.056 (0.212)	0.064 (0.151)	0.039 (0.285)
Z ₁	16.31 (6)**	18.17 (7)**	20.07 (6)***	20.08 (7)***	24.70 (10)**
Z ₂	5.64 (5)	5.98(5)	5.41 (5)	9.11 (5)	10.01 (5)*
m ₂	-1.64	-1.65	-1.61	-1.66*	-1.67*
Hansen	60.55 (65)	77.44 (78)	61.03 (65)	78.89 (78)	52.76 (52)
No. observations	503	503	503	503	503
No. groups	107	107	107	107	107

Z₁ is a Wald test for the reported coefficients of the explanatory variables, asymptotically distributed as χ^2 under the null of no relationship for all the explanatory variables (degree of freedom in parentheses). Z₂ is a Wald test of the joint significance of the time dummies, asymptotically distributed as χ^2 under the null of no relationship (degree of freedom in parentheses). m₂ is the second order serial correlation relation in the regression residuals, asymptotically distributed as N(0, 1) under the null of no serial correlation. 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 (degree of freedom in parentheses).

(p-value)

[a] Variable State is dropped in the model

* Statistically significant at a 10% level ** Statistically significant at a 5% level *** Statistically significant at a 1% level

5.2.3. Influence of the identity of main shareholder on firm performance

We additionally test if there is any relationship between the identity of the largest owner and firm profitability. As Column 5 of Table 7 shows, if the ultimate owner is a family seem to influence negatively and significantly firm ROA. A similar result is also shown in the fixed effect versus random effect model (Table 6, column 5). Perrini *et al.* (2008) for Italy found a negative but not significant coefficient for the family variable. None of the other categories of the identity influence significantly firm performance. Thus, for instance, contrary to Pedersen and Thomsen (2003) or Perrini *et al.* (2008), but similarly to Loderer and Martin (1997) or Short and Keasey (1999) we find that institutional investors have no effect on the firm performance. We repeated the estimations considering a variable related to all the institutional investors (financial firm, mutual funds and other financial companies) plus non financial firm, family firm and state and the results did not vary significantly²³.

As it was showed in Models 1 to 4 (Table 7) the presence of a significant second shareholder, firm leverage and size also seem to be considered when explaining firm performance²⁴.

6. CONCLUSIONS

Our study constitutes one additional step in the understanding of the role played by large shareholders in firms' performance. The majority of previous studies that analyse the influence of firms' ownership structure on firm performance have been confined mainly to the U.S. with much attention paid to managerial ownership or the stakes hold by blockholders but not to the percentage of shares hold by the largest ultimate owner and the monitoring role play by the second shareholder.

Firstly, our paper aims to analyse the determinants of the percentage of shares by the largest/ ultimate owner for a comprehensive sample of Spanish non-financial firms listed on the Spanish Stock Exchange over the period 2003-2008. The results of these analyses reveal that firms' performance as well as some intrinsic characteristic such as risk and industry should be considered. Secondly, by examining the relationship between the percentage of shares hold by the largest ultimate owner and firm profitability, this paper shows that ownership structure is not associated with higher firm performance. Once the endogeneity was taken into account no effect on firm profitability of the shares hold by the largest ultimate owner is shown; besides, these models report a negative effect of firm leverage and confirm a positive effect on firm performance of having a second large shareholder. Our findings are not consistent with the idea that greater monitoring provided by concentrated ownership leads to stronger firm performance and they differ to some extent from others studies that also control

²³ We also considered jointly the effect of the ownership concentration and the dummies related to the ultimate owner identity and the results did not vary significantly.

²⁴ It is necessary to mention that in model 5 m_2 is significant, suggesting a second order correlation in residual error, but the significance level is only $p = 0.094$.

for the endogeneity for the Spanish market. Regarding ownership concentration, De Miguel *et al.* (2004), Alonso-Bonis and De Andrés-Alonso (2007) and Mínguez-Vera and Martín-Ugedo (2007) report a significant relationship between firm ownership and value compared to other studies. At an international level, our results support the ones reported for the U.S. by Himmelberg *et al.* (1999) or Demsetz and Villalonga (2001), but differ from those obtained by Kapopoulos and Lazaretou (2007) or Perrini *et al.* (2008) for Greece and Italy, respectively. Different definitions of ownership structure or the definition of performance may explain, at least partially, these differences.

Future research should be conducted in order to discover why our results are different in comparison with previous studies in a similar institutional setting. We have already used the GMM as methodology to control the endogeneity of ownership structure (similarly to De Miguel *et al.* (2004) or Alonso-Bonis and De Andrés-Alonso (2007)) but it could be useful to corroborate our results using, for example, a panel data analyses with two-stage least squares regressions (Mínguez-Vera and Martín-Ugedo, 2007; Perrini *et al.*, 2008). Besides, it could be interesting to repeat the estimations considering not only the ownership concentration in hands of the largest shareholders but also in hand of those with significant stakes in firms' capital.

Finally, regarding the identity of the largest owner more research is needed because perhaps the influence may be different if instead of using dummy variables we consider the percentage of shares owned by the different typologies. Finally, as our findings suggest a positive and significant effect of having a second shareholder future, new studies should explore the identity of the large shareholders of listed firms, specifically the identity of the other second largest shareholder if it exists, and analyse the impact of different shareholder's combinations on firm performance.

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Appendix

Table 1: Empirical studies related to the effect of ownership concentration on firm performance

	Sample	Methodology	Control endogeneity	Performance proxy	Definition performance	Results
Mork <i>et al.</i> (1988)	371 Fortune 500 firms. 1980. USA	Cross sectional analyses	No	Value	Actual market value of common stock and estimated market value of preferred stock and debt / replacement cost of firm plant and inventories	Significant non-monotonic relationship between managerial ownership and firm value
McConnell and Servaes (1990)	1173 firms in 1976 and 1093 in 1986. Compusat	Cross sectional analyses	No (only control the fact that value and ownership structure are industry-specific)	Value and ROA	<ul style="list-style-type: none"> Market value of common equity + estimated market value of debt and preferred stocks / replacement value assets Earnings before depreciation, interest and taxes / replacement value of assets 	Positive relation for insider ownership that diminishes so as the ownership becomes more important; positive but no significant effect of first shareholder or total blockholders on performance
Leech and Leahy (1991)	325 firms. The Times 1000 largest industrial firms. 1983-1985. UK	Pooled OLS	No	Value, ROE	<ul style="list-style-type: none"> Historical market value divided by ordinary share capital Return of shareholders' capital 	Ownership-control by the largest shareholders implies higher firm valuation, profit margin, ROE as well as higher growth rates of sales and net assets.
Loderer and Martin (1997)	867 acquisitions listed on Compusat. 1978-1988	Simultaneous equation model. Pooled OLS	Yes	<ul style="list-style-type: none"> Cumulative abnormal return Value 	Market value of equity plus book value of long term debt / book value of assets	Insider ownership does not encourage better acquisitions or value, but better acquisitions performance encourages larger stockholdings while higher Q ratios discourage them.
Cho (1998)	326 manufacturing Fortune 500 firms. 1991. USA	Simultaneous equation model. Cross sectional analyses	Yes	Value	Q tobin	Significant non-monotonic relationship between insider ownership and firm value; but using a system of three equations he finds that performance affects ownership structure but no vice-versa
Himmelberg <i>et al.</i> (1999)	600 firms. 1982-1984. Compusat	Fixed effect panel data model, instrumental variables	Yes	Value	Market value of common equity + market value of preferred stock + book value total liabilities / book value total assets	A large fraction of cross sectional variation in managerial ownership is explained by unobserved firm heterogeneity. Changes in managerial ownership do not affect firm performance
Holderness <i>et al.</i> (1999)	1419 publicly traded firms in 1935 and 4202 in 1995, respectively. USA.	Cross sectional analyses	No	Value	Market value / book value of assets	Both in 1935 and 1995 significant positive relationship between firm performance and managerial ownership (0-5% range of holdings); for 1935 there is also a negative and statistically relation for board ownership between 5 and 25%

Table 1: Empirical studies related to the effect of ownership concentration on firm performance

	Sample	Methodology	Control endogeneity	Performance proxy	Definition performance	Results
Palia and Lichtenberg (1999)	255 firms. 1982-1993. USA	Panel data. Lagged values	Yes	Productivity	Total output / total input	Managerial ownership changes are positively related to changes in productivity
Short and Keasy (1999)	225 firms. 1988-1992. UK	OLS and panel data analyses	No	ROE, value	<ul style="list-style-type: none"> • Profits attributable to shareholders divides by shareholders equity and reserves • Market value of equity divided by the book value of equity 	There is a significant cubic relationship between firm performance and managerial ownership. Management become entrenched at higher levels of ownership than in USA
Demsetz and Villalonga (2001)	223 firms. 1976-1980. USA	Two-stage least squares regressions (cross-sectional analyses)	Yes	Value	Market value of common stock + book value of preferred stock and debt / book value total assets	No statistically significant relationship between ownership structure (blockholder and managerial) and performance (value). No evidence that variations across firms in observed ownership structures result in systematic variations in observed firm performance
Palia (2001)	361 firms, 3260 observations, 1981-1993. USA	Panel Data Analyses	Yes	Value	Market value of equity minus book value of equity plus book value of assets / book value of assets	No significant effect of CEO compensation (shares and proportion of shares outstanding in options) on firm value
Pedersen and Thomsen (2003)	214 European firms. 1991. 1992-1995	Two-stage least squares regressions	Yes	Value	Market to book value	Ownership concentration has a positive effect on firm value when the largest shareholder is a financial institution or another corporation, no effect exists with family firms and negative effect if the largest shareholder is the government
De Miguel <i>et al.</i> (2004)	135 firms. 1990-1999. Spain	Panel Data Analyses. (GMM)	Yes	Value	Market value of equity divided by the replacement value of total assets	Significant non-monotonic relation between ownership concentration (blockholder and insider) and performance
Earle <i>et al.</i> (2005)	1996-200. Hungary	Panel Data Analyses	No	Return on equity and operating efficiency	<ul style="list-style-type: none"> • Before-tax income / value of equity • Real sales to average number of employees 	Positive and significant effect of the largest shareholding on corporate performance
Alonso-Bonis and De Andres-Alonso (2007)	101 firms. 1991-1997. Spain	Panel Data Analyses. (GMM)	Yes	Value	Market value of equity divided by the replacement value of total assets	Positive and significant effect of ownership concentration (blockholder and insider) on firm value

Table 1: Empirical studies related to the effect of ownership concentration on firm performance

	Sample	Methodology	Control endogeneity	Performance proxy	Definition performance	Results
Kapopoulos and Lazaretou (2007)	175 firms. Year 2000. Greece	Two-stage least squares regressions. Cross sectional	Yes	Value and accounting profit rate	<ul style="list-style-type: none"> • Market value of common stock + book value debt / book value total assets • Income to book value of equity 	Positive and significant relationship between ownership concentration and performance. Furthermore, higher firm profitability requires a less diffused ownership.
Lopez de Foronda <i>et al.</i> (2007)	1,216 firms. 1997-2000. 15 European countries	Panel Data Analyses (GMM)	Yes	Value	Market to book value	In civil law countries, there is a non-linear relationship between ownership concentration and firm performance, that is, higher ownership concentration facilitates the expropriation wealth from small shareholders by large dominant shareholders. Second shareholder plays an important role in contesting the control of the dominant largest shareholder
Minguez-Vera and Martín-Ugedo (2007)	95 firms. 1998-2000. Spain	Two-stage least squares regressions. Panel Data analyses.	Yes	Value	Market value of common stock + book value debt / book value total assets	Positive effect of ownership concentration (main shareholder) on firm value, but no evidence of the opposite relationship
Hu and Izumida (2008)	715 firms. 1980-2005. Japan	Two-stage least squares regressions. Panel Data analyses.	Yes	Value and ROA	<ul style="list-style-type: none"> • Market value of common stock + book value of preferred stock and debt / book value total assets • Earnings before interest and income tax / total assets 	Ownership concentration (blockholders) has a statistically significant effect on corporate performance; but changes in performance are not accompanied by changes in concentration ownership
Perrini <i>et al.</i> (2008)	297 firms. 2000-2003. Italy	Two-stage least squares regressions. Panel Data analyses.	Yes	Value	Market value total assets / book value total assets	Ownership concentration of 5 largest shareholders has a positive and significant impact on performance; managerial ownership only is beneficial in non-concentrated firms. Firm valuation is a positive predictor of ownership structure