OWNERSHIP STRUCTURE AND PERFORMANCE IN LARGE SPANISH COMPANIES. EMPIRICAL EVIDENCE IN THE CONTEXT OF AN ENDOGENOUS RELATION

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Abstract

The aim of this paper is to study the relationship between ownership structure and firm value. This relationship is analyzed taking into account not only the endogenous character of ownership but also the peculiarities of the Spanish corporate system. For this purpose, we select a balanced panel of 101 companies quoted in the Madrid exchange market from 1991 through 1997. We have applied econometric panel data techniques (generalized method of moments, gmm), which allows us to control the endogeneity problem through instruments. Our results confirm the positive effect of ownership concentration on firm market value. This relationship is robust to the inclusion of variables regarding the nature of the main shareholder, firm industry and time. Furthermore, we present some evidence about the relationship between the type of control (majority and minority) and a firm's market value.

Keywords: ownership structure, corporate performance, endogenous variable, generalized method of moments (gmm).

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1. Introduction

The relation between ownership structure and firm value is one of the most interesting issues in corporate finance. It is the subject of continuous debate since the original paper of Berle and Means (1932). In recent years the discussion has centred on an assessment of the relative advantages and drawbacks of concentrated ownership structure as opposed to the separation between management and ownership. It is reasonable to think, on the one hand, that concentrated ownership prevents certain problems emerging out of a divergence of interests. However, on the other hand, it is also logical to assume that, on certain occasions, specialisation may prove necessary for management to have the capacity to handle complex organisational structures, diversify risk among shareholders and obtain large enough funds to acquire specific assets.Indeed, there is no shortage of proposals which consider ownership concentration to be a monitoring mechanism, endowed with incentives to reconcile the interests of shareholders and management alike, and thus a determining factor in the value maximization. Such papers include, for example, Jensen (1986), Stiglitz (1985) and Shleifer and Vishny (1986), who foresee the possibility of concentrating ownership in the hands of a limited number of shareholders so as to monitor the behaviour of management and prevent inefficient use of resources. Positing the question thus, the benefits emerging from control over management favour the existence of a positive relation between ownership concentration and firm value[1]. Over-concentration of ownership may, however, prove to be an obstacle to exploiting growth opportunities as well as discouraging innovation and management initiative (Burkart et al., 1997; Hill and Snell, 1988), when such situations require greater specialisation both in management and provision of capital and risk taking. Further, it should not be forgotten that in corporate systems with a high ownership concentration, minority shareholders may suffer risk expropriation of wealth from majority shareholders (Shleifer and Vishny, 1997). Such expropriation merely aggravates the agency problem and reduces the firm's market value[2].

Recently, Demsetz and Villalonga (2001) intensify the controversy, evoking the former's

[1] The aim is to avoid the *free-rider* problem which emerges in highly disperse shareholder structures, due to the imbalance existing between the effort required to control management behaviour and the benefits such monitoring entails (Jensen, 1986; Stiglitz, 1985).

[2] Shleifer and Vishny (1997) state that in certain countries the main agency problem arises from the conflict of interests between majority owners, who exercise control, and minority shareholders, rather than any conflict between ownership and management.

analysis (Demsetz, 1983) with fresh studies and approaches, although in the same vein: "the structure of ownership is the endogenous result of various decisions reflecting shareholders' influence and stock movement in the market". In other words, no systematic relation should exist between changes in ownership and company efficiency. Underlying their analysis is a question which has shaped research into the issue of ownership structure in recent years, endogeneity. After modelling ownership structure as an endogenous variable and assessing two aspects of this structure, concentration of shareholdings and percentage of shares owned by management for a sample of American companies, Demsetz and Villalonga (2001) find evidence to support endogeneity of ownership but not its influence on value.

In this context, our paper aims to verify common hypotheses concerning ownership structure in Spanish companies, bearing in mind its potential endogenous nature as well as the specific corporate system in which firms operate, far removed from the Anglo-American system. As is well known, the Spanish corporate system is characterised by high ownership concentration, the presence of dominant shareholders and active financial intermediaries, and weak external control mechanisms. Taking these factors into account, our research follows on from previous studies, such as those of Galve and Salas (1993), Azofra, Rodríguez and Vallelado (1995), Andrés, Azofra and Rodríguez (2000) and Miguel, Pindado and Torre (2004), assessing the relation between ownership structure and firm value in a Spanish setting. To one degree or another, all of these studies reflect a certain linkage between ownership and value, the hypothesis of efficient supervision being the dominant factor to emerge. Yet, given the importance of endogeneity, these analyses should be re-appraised in this context so as to review their conclusions and determine, if indeed this is the case, the causality of the relation. The sole exception is the paper by Miguel *et al* (2004) that explicitly takes into account the endogenous nature of the corporate ownership.

For our research we used a balanced panel of 101 non-financial Spanish firms quoted on the capital market between 1991-1997 (707 observations) as well as the econometric method provided by the Generalized Method of Moments (GMM). This estimation technique is particularly suitable as it includes instruments to monitor endogeneity of variables, avoid non-observable permanent heterogeneity arising from the specific characteristics of firms and analyse response processes over time. The results obtained bear out the positive effect of ownership concentration on firm value, a relation which holds after the inclusion of variables reflecting the nature of the largest shareholders, the industry or time. We also evidence the effect of various kinds of monitoring (minority and majority) on firm value.

The study is structured as follows. Section 2 discusses the endogenous nature of ownership structure. Section 3 reviews the theoretical and empirical literature on ownership and value from the perspective of endogeneity (exogeneity) and posits the hypotheses to be verified. Section 4 describes the sample of firms and the methodological approach adopted. Section 5 offers the main empirical results to emerge and, finally, section 6 rounds off the paper with the main conclusions.

2. Endogeneity and Ownership Structure

Analyses dealing with ownership structure may be split into two main blocks; those which consider ownership as a dependent variable or one which may be explained by a series of factors, and those which see it as a basic variable that affects the firm value. Within this second group, there is a certain discrepancy as to whether ownership is an exogenous or endogenous variable.

From the theoretical standpoint, exogeneity of ownership structure means that ownership is determined "outside" the firm (Goergen, 1998, pages. 9-10). In other words, it is a factor which is external or outside the nature of the enterprise. Yet, ownership structure has traditionally been justified in terms of a series of factors within the firm itself, inherent to the area of industry or sector in which it operates –such as size, the regulatory climate, risk, the degree of financial leverage …- (Bergström and Rydqvist, 1990; Leech and Leahy, 1991; Rodríguez, 1997 and Crespí, 1998). The endogenous nature of ownership structure therefore seems to closely reflect the influence that certain aspects of the firm exercise over it.

If the endogenous nature of ownership structure is accepted, in the sense that it is not determined randomly, we should bear in mind the impact of causality when analysing any relations which might be established between ownership and other aspects of the firm and, between these and firm value.

Much of the controversy to have emerged in recent years surrounding the endogenous or exogenous treatment of ownership structure is closely related to the arguments, yet to be totally confirmed in their extremes, put forward by Demsetz (1983): "*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*". For Demsetz, a firm's ownership structure, whether concentrated or disperse, should maximise its value. Therefore, no systematic and generalised relation ought to exist between differences in ownership and variations in firm

performance. Nearly twenty years on, Demsetz and Villalonga (2001) maintain the same idea. In the intervening period, numerous empirical proposals have emerged, which we now examine, highlighting their main conclusions.

3. The relation between ownership structure and firm value. A survey of empirical evidence

A review of the empirical evidence on the influence of ownership structure on firm performance reflects the existence of two "groups" of papers dependent on the endogenous or exogenous nature assumed and which differ in: i) the treatment of endogeneity, ii) the evaluation techniques used for empirical analysis and, most importantly, iii) the conclusions to emerge (Demsetz and Villalonga, 2001).

3.1. Considering ownership as an exogenous variable

The first group of studies considers ownership structure as an exogenous variable, and does not therefore contemplate that both *insiders* and *outsiders* may effectively impact or manipulate firm ownership and control mechanisms (Goergen, 1998, page 22).

Amongst the empirical studies providing evidence for the relation existing between value and ownership, without considering endogeneity, prominent are the papers of Shleifer and Vishny (1986), Morck, Shleifer and Vishny (1988), Agrawall and Mandelker (1990), McConnell and Servaes (1990) and Leech and Leahy (1991). For the case of Spain, the studies of Galve and Salas (1993), Azofra, et al. (1995) and Andrés et al. (2000) merit particular attention.

Many of these papers, undertaken mainly in an Anglo-American environment, focus on the relation between the fraction of shares owned by management and firm value (Morck et al., 1988; McConnell and Servaes, 1990; Leech and Leahy, 1991). Their conclusions differ considerably as there is, for instance, no agreement vis-à-vis any lineal or non-lineal relation between management shareholdings and firm performance. Nor is there any consensus amongst authors proposing a non-lineal relation as to what fraction of shares owned by management may have a positive or negative impact on a firm value (Morck et al. 1988; McConnell and Servaes, 1990) [3].

Others assume the fraction of shares owned by a corporation's largest shareholders to be a representative element of ownership structure. The studies of Shleifer and Vishny (1986) and Agrawall and Mandelker (1990) underscore the positive relation between concentration and performance, such that an increase on the largest shareholders' fraction of shares is reflected in an improvement in value, or the works of Morck, Nakamura and Shivdasani (2000) and Gedajlovic and Shapiro (1998) who, focusing on a non-lineal relation between ownership concentration and value, find diverging and contradictory evidence depending on the corporate system in which the relation is analysed. For the case of Spain, evidence to support the monitoring effect of ownership concentration may be found in Galve and Salas (1993) and Azofra et al. (1995) and as an obstacle to maximising growth opportunities in Andrés et al.(2000).

Almost all of the papers cited employ transversal analyses and use least square regression techniques. Yet if, as recent literature would seem to suggest, the exogeneity hypothesis is not valid, explanatory variables would be correlated with the residual error term and estimators would not be consistent, meaning that such relations would require verification.

3.2. Ownership as an endogenous variable

In recent years a growing number of studies have considered ownership structure to be an endogenous variable, and have assessed the relation between ownership structure and firm performance. This not only provides an analysis of the causality of ownership on firm value but also speculates as to the determining factors in different kinds of ownership. To a large degree, this has become possible due to the development of various techniques which facilitate endogenous treatment of the variables involved in estimation. Such is the case of the simultaneous equations method, using transversal data, and the Generalised Method of Moments, with a panel of data.

Prominent amongst papers addressing a certain level of endogeneity in ownership structure are those of Demsetz and Lehn (1985), Hermalin and Weisbach (1988), Loderer and Martin (1997), Cho (1998), Goergen (1998), Demsetz and Villalonga (2001) and Miguel *et al*. (2004). As a representative

[3] For example, Morck et al. (1988) assess the relation between firm performance and management ownership, using lineal regression in sections, and find evidence of a significant non-monotonic relation: Tobin's Q initially increases at a management participation level of between 0% and 5%, falls between 5% and 25% and finally increases gradually as management ownership exceeds 25% of capital. The interpretation of these findings is consistent with the effects of the convergence of interests and "collusion" between shareholders and management although, as the authors themselves confess, the choice of these cut-off points has no specific theoretical basis. It is also interesting to highlight that studies which have repeated this particular work (using at times even the same sample) have evidenced different effects or indeed no impact of management ownership on firm value.

variable of ownership, most use some measure of the fraction of shares owned by management or the board of directors. The emerging results are quite contradictory, in the sense that when estimating regression in sections, similar to the approach advocated by Morck et al. (1988), significant non-monotonic relations are observed between management ownership and performance (Hermalin and Weisbach, 1988). However, when simultaneous equation systems are proposed in which both the measure of performance as well as ownership are endogenous, the conclusion is that ownership structure fails when predicting value, although the opposite is not the case (Loderer and Martin, 1997; Cho, 1998; Demsetz and Villalonga, 2001).

In addition to the explicit consideration of endogeneity, this disparity in results concerning the ownership - performance relation may be explained by the way in which firm performance is measured and the representative variable of ownership structure being used (Demsetz and Villalonga, 2001). A review of the literature, again addressing the Anglo-American setting, reflects that for both endogenous and exogenous treatment of ownership, Tobin's Q is used, and occasionally, return on equity. As regards *ownership structure,* the use of two factors is also worthy of note, the fraction of shares owned by management and the fraction of shares owned by the largest shareholders[3].

In short, numerous alternative evaluation proposals yielding a diversity of outcomes is how we may sum up a review of the literature. Whilst no consensus appears to have been reached as to the relation between ownership structure and firm value, clear progress does seem to have been made in the empirical literature. The first reflects the need to consider the endogenous nature of ownership structure. The second, a consequence of the previous one, refers to the use of techniques enabling us to tackle endogeneity and address an assessment of analysis processes over time. The third and last deals with the analysis of the corporate system where firms operate, whether in terms of the level of concentration or degree of minority shareholder protection (Laporta et al., 1999). As regards the theoretical setting, proposals are much clearer: the initial hypothesis of monitoring and reduction of divergence of interests (Berle and Means, 1932; Jensen and Meckling, 1976; Jensen, 1986; Stigliz, 1985; Shleifer and Vishny, 1986; Morck et al., 1988) defending the positive relation between ownership and firm performance[4], the specialisation hypothesis (Burkart et al., 1997) advocating just the opposite, and the null hypothesis of the absence of any linkage between ownership and performance (Demsetz and Lehn, 1985; Demsetz and Villalonga, 2001).

The aim of our paper is to verify the validity of these hypotheses for the case of Spain, bearing in mind the progress made in the empirical literature (consideration of endogeneity, longitudinal econometric techniques) and framing the analysis within the specific case of the Spanish corporate system, namely, contemplating the existence of majority shareholder blocks, groups of relevant shareholders, the effective presence of financial intermediaries and a restrictive regulatory corporate control market. We therefore focus our attention on the involvement of main shareholders, on the nature of the largest shareholder and on the use of techniques that enable us to tackle endogeneity. In the following section we will examine the empirical analysis.

4. Methodological Issues: Sample, Variables And Methodology

4.1. Sample

The sample used in our analysis comprises a panel of 101 non-financial firms listed on the Spanish stock market between 1991-1997. The selection criteria for the sample over the whole of the firms listed is defined in terms of the frequency with which the stocks are traded, so as to ensure a minimum level of efficiency in investors' valuations. With this goal in mind we chose all non-financial firms most commonly traded on the stock market during the period assessed. The combination of the 101 firms and the seven periods studied provides a balanced panel with 707 observations which can be analysed using panel data methodology. These firms account for a little over half the number listed on the Spanish stock market, and around 80 per cent of total stock market capitalisation together with nearly 66 per cent of the value of all company assets. Information was gathered from the Business Register at the Spanish Securities and Exchange Commision (CNMV) and the Madrid Stock Exchange.

[3] The interaction that may exist between these two factors should not be overlooked, as they need not necessarily be disjoint groups. One of the main shareholders might, for instance, be a director or one of the managers might be representing someone with a high degree of ownership, in which case their interests would be more closely aligned with those of outside investors than of management.

[4] Within this generic hypothesis there would also be the possibility of the expropriation of wealth of minority by majority shareholders (Shleifer and Vishny, 1986) and which would entail a negative relation for high concentration percentages.

Table 1. Distribution by industry sector and firm size

	Num	Assets			Capitalisation		
	%	Mean	Median	Variation coefficient	Mean	Median	Variation coefficient
Food	13.58%	55,438	31,802	1.1902	41,197	17,099	1.6420
Construction and Materials	23.46%	70,967	43,500	1.1636	51,546	26,916	1.2985
Real estate	9.88%	45,333	15,564	1.1927	21,453	6,430	1.7381
Transport and Communications	11.11%	527,422	42,794	2.3531	284,549	38,157	2.5317
Commerce	3.70%	109,397	26,986	1.2641	135,936	17,343	1.3649
Electricity	16.05%	613,886	256,317	1.2561	351,476	154,934	1.5608
Chemical and Energy	11.11%	217,743	23,280	1.9717	186,157	12,067	2.1980
Other services	4.94%	10,033	6,166	0.7304	12,990	4,263	1.6449
Metal-Mechanics	6.17%	20,066	22,045	0.7242	10,220	6,291	1.2139
Mining-Iron and steel	9.88%	37,556	27,553	0.9975	28,884	7,076	1.8313
Automobiles & Parts	3.70%	139,731	153,775	0.5589	37,735	32,063	0.7329
Textile and Paper	11.11%	26,240	13,240	1.0681	10,972	7,353	1.1313

Table 2. Mean of ownership structure and Q

Year	*C1 (%)*	*AJ (%)*	*Q*
1991	*38.26*	*9.76*	*1.13*
1992	*41.84*	*10.54*	*0.96*
1993	*42.54*	*9.64*	*1.19*
1994	*44.34*	*10.05*	*1.25*
1995	*45.29*	*11.04*	*1.20*
1996	*46.43*	*9.01*	*1.33*
1997	*44.59*	*8.50*	*1.59*

Table 1 offers an overview of the nature of the firms that make up the sample under analysis. In accordance with the nature of the firms quoted, the companies selected belong to twelve differing industries and may be considered medium and large companies within the Spanish business context. There is, however, a high degree of heterogeneity as regards mean size and company turnover, as a result of which the size bias over the whole of the sample is less than expected. Table 1 also highlights the different weight of the industries in terms of the number and size of traded firms. Worthy of note is the high proportion of sectors such as construction and materials, electricity companies and food in comparison to the commerce, services and automobiles industries.

4.2. Variables

Variables may be classified into three groups: company valuation by the market, ownership structure and control variables.

For company valuation by the market, we used Tobin's Q or one of its versions as is common in this type of study (Morck et al., 1988; McConnell and Servaes, 1990; Cho, 1998; Demsetz and Villalonga, 2001; Azofra et al. 1995; Andrés et al. 2000; Miguel et al., 2004). We use the financial Q or quotient between the market value of the firm and its accounting value[5].

With regard to the variables related to ownership structure, two measures are considered, reflecting two key aspects of ownership, the fraction of shares owned by the largest shareholder (C1) and the fraction of shares owned by the directors (AJ)[6]. Table 2 sums up the mean values achieved by these variables during each of the periods analysed.

Differences immediately emerge between the two variables representative of ownership structure, not only in terms of absolute values – ownership concentration reaches much higher values than board participation -, but also as to their evolution over time –increasing for concentration and slightly decreasing for board participation. As regards the

[5] Chung and Pruitt (1994) compare the financial Q values with Linderberger and Ross' (1981) Tobin Q values, the results showing that the financial Q accounts for at least 96.6% of Tobin's Q.

[6] As regards the latter variable, the ideal situation would be to analyse the percentage of social capital in the hands of the board. However, firms do not provide this information although it is not too speculative to assume that they have many determining factors in common.

evolution of the financial Q, greater variations are seen in keeping with cyclical variations in the economy.

In order to delve more deeply into the differences characterising the two factors representative of ownership structure in our country, we performed a breakdown of ownership into sections (table 3). It can thus be seen the fraction of shares owned by the board is below 5% in 67.33% of companies, whereas ownership concentration in the hands of the largest shareholder is above 50% in 38.61% of firms. This reveals the high ownership concentration of Spanish firms.

Table 3. Breakdown of C1 and AJ by sections

	% of Companies	
Participation	According to C1	According to AJ
> 50 %	38.61%	0.99%
25 % - 50 %	33.66%	13.86%
10 % - 25 %	21.78%	9.90%
5 % - 10 %	4.95%	7.92%
< 5 %	0.99%	67.33%

Bearing in mind the previously cited percentages, it is clear that the ownership structure of Spanish firms falls clearly within the European or continental model, in which ownership concentration is the mechanism to reduce agency problems. Yet, as pointed out, ownership concentration has its drawbacks as well as its advantages. One advantage is that it leads to more effective control over the discretional nature of the management although, on the other hand, specialisation between management and ownership is lost, which is especially required when growth opportunities emerge. Moreover, we should not overlook the risk of establishing agreements between majority shareholders and the managers so as to expropriate minority shareholders' wealth.

To analyse the impact of ownership concentration on value more closely, we divide the fraction of shares owned by the largest shareholder, C1, into three variables. The first, CON1, includes concentration values up to 20%, such that if the level of concentration, represented by C1, is below this limit, the CON1 variable is equal to C1, and if higher takes the value 20%. The second, CON2 takes the value 0 if C1 is below 20%, is equal to 30% if above 50%, and if between 20 and 50%, will be equal to C1 less 20%. Finally, the third variable, CON3, takes the value 0 if C1 is below 50% and in another case will be equal to C1 less 50 %. In other words, CON1 reflects minority concentration levels in all observations, and will thus have a negative impact on the firm's value; and CON2 and CON3, majority concentration levels, leading to the expectation of a positive relation with company value, particularly for the higher concentration level (CON3).

Finally, we included three control variables– size of the firm, level of financial leverage and risk- which might significantly impact company value and ownership structure. The size of the company is approached by the natural logarithm of book value of assets (LNTA), since the inclusion of the variable in absolute terms might lead to heteroskedasticity and spurious correlation problems. Degree of financial leverage (LEV) –an alternative approach to monitor board behaviour but at the same time one which may hinder maximisation of investment opportunities- is calculated as the quotient between the book value of debt and the book value of equity. Finally, as a representative measure of risk we include the beta of the industry (INDBETA).

Industrial allocation of companies is performed through a set of 12 dummies. We also introduced various control groups within the firm through a set of dummy variables which enable their classification into 5 groups depending on the nature of the largest shareholder –financial entities, goverment, families and private individuals, multinationals and other domestic firms. Differentiating the largest shareholders is important as control may vary depending on experience in monitoring and incentives for those involved. Although these variables were not mentioned in the theoretical discussion of the study, their inclusion for the case of Spain may prove relevant as the corporate system is highly concentrated in terms of share ownership, whereas firms in the Anglo-American system tend to maintain diffuse ownership, where corporate groups are not so relevant. Table 4 reflects the values adopted by these variables in the sample set through their basic statistics.

Table 4. Descriptive statistics

	Mean	Median	Standard Dev.	Max	*Min*
Q	1.2375	1.0457	0.7515	8.6270	0.2164
C1 (%)	43.3298	39.865	26.6794	99.2000	0.0110
AJ (%)	9.8437	0.897	17.1680	89.8480	0
LEV	0.9078	0.5239	2.1550	35.5000	1.587E-05
LNTA	10.5800	10.4016	1.6137	15.2592	7.5923
INDBETA	0.9689	0.9950	0.1615	1.2900	0.4700
CON1 (%)	17.9901	20.000	4.1595	20.000	0.0110
CON2 (%)	16.8936	19.800	12.8274	30.000	0.0000
CON3 (%)	8.4130	0.000	14.4032	49.200	0.0000

4.3. Econometric Methodology

Having defined the sample and the variables used in the analysis, we briefly describe the econometric methodology employed, which is closely linked to having a panel of observations for seven one-year periods. The estimation approach used is the Generalised Method of Moments (GMM) which, on the one hand, enables the inclusion of instruments to control endogeneity of variables and, on the other, avoids constant non-observable heterogeneity arising out of the specific features of each firm which remain over time and which, in general, are difficult to observe and include in econometric models. Moreover, the dynamics of the panel enables an examination of the response processes over time and an observation of the variation of the dependent variable in the face of changes in its own determining factors over the time horizon considered.

Estimation was performed using the DPD98 (Dynamic Panel Data) program developed by Arellano and Bond (1998). To test the validity of the model specification we used the Sargan statistic of over-identification of restrictions, which analyses the absence of correlation between instruments and the error term. We also included statistics m_1 and m_2, to verify the absence of first and second order serial correlation in the first difference residuals, respectively. In addition to these specification contrasts we included in the estimation four Wald contrasts, one (z_1) of joint significance of the coefficients presented; together with three more (z_2, z_3 and z_4) for individual and joint significance of the dummy variables included.

The model proposed to analyse the relation posited includes the value of the firm as a dependent variable. Among the independent variables we include: i) the fraction of shares owned by the largest shareholder (C1) specifically considering its endogenous nature ii) the fraction of shares owned by the directors (AJ), also endogenous and iii) the previously defined control variables (LEV, INDBETA and LNTA). With regard to the variables which may entail problems of endogeneity, shareholder concentration and board participation, instead of using their current values, we use an instrumental variable estimator, the Generalized Method of Moments, and to remove the individual impact of each firm the variables are transformed into first differences.

It should be remembered that for the estimation of these equations the error term is broken down into three components: individual impact, η_i, to control unobservable heterogeneity, time effect, d_t, to control the impact of macroeconomic variables in firm behaviour and, finally, random disturbance itself, v_{it}. Therefore, in analytical terms, the expression to be verified is the following:

$$Q_{it}=\beta_0+\beta_1 C1_{it}+\beta_2 AJ_{it}+\beta_3 LEV_{it}+\beta_4 INDBETA_{it}+\beta_5 LNTA_{it}+d_t+\eta_i+\upsilon_{it}$$

The previous model is subsequently re-estimated replacing the continuous variable C1 with the three concentration variables which require the shareholders participation sections. In this case, the analytical expression adopts the following form,

$$Q_{it}=\beta_0+\beta_1 CON1_{it}+\beta_2 CON2_{it}+\beta_3 CON3_{it}+\beta_4 AJ_{it}+\beta_5 LEV_{it}+\beta_6 INDBETA_{it}+\beta_7 LNTA_{it}+d_t+\eta_i+\upsilon_{it}$$

where the sub-index *i* refers to the various firms included in the sample and the sub-index *t* to the temporal dimension.

5. Results

We begin this section with a few comments concerning some results obtained, although not reported, using the method of Ordinaty Least Squares for each of the periods analysed. As pointed out previously, this approach does not allow specific consideration of the endogeneity of variables, although in order to overcome this restriction we performed our analysis using both current values as well as historical data of potentially endogenous variables. Results do not allow us to verify the hypotheses put forward in any of the cases, as there is no unanimity as to the sign of the concentration coefficients for all the periods, in addition to which these do not even represent a significant variable in many of the cases. Results obtained using the Generalised Method of Moments for the initially proposed model are shown in table 5. The first column reflects the estimation including

the time variables, the second column includes time and industrial variables, and the third includes time variables and the nature of the largest shareholder. In all of them we report the significance of the coefficients (p-value), the serial correlation tests (m_1 and m_2), the Sargan instrument test and the Wald test for the joint significance of the set of variables (z_i). The results achieved in the estimation evidence a positive, systematic and significant relation between ownership concentration and firm value. This relation remains after screening for industrial allocation of firms (B) and for the nature of the main shareholder (C). Both the individual and joint significance tests are highly significant; the Sargan test does not discard the validity of the instruments used; and the correlation tests point to the absence of first and second order serial correlation.

Given that the ownership concentration variable was instrumented, the results provide evidence to favour the benefits to emerge from monitoring on management.

In the setting of a concentrated corporative system such as the Spanish one, ownership concentration emerges as a key mechanism to alleviate agency problems in organisations.

Table 5. GMM Estimation. Corporate Ownership and value

Estimations are performed for 101 firms with a total of 707 observations. The table details the estimated coefficients; the Sargan statistic which verifies the over-identification of restrictions; m_1 and m_2 statistics which compare the absence of first and second order serial correlation relation in the regression residuals; the Wald joint significance tests for all the explanatory variables (z_1) together with a further three (z_2, z_3, z_4) for individual and joint significance of the dummy variables included; and the p-value corresponding to the Student t statistic. The estimated model responds to the following expression:

$$Q_{it}=\beta_0+\beta_1 C1_{it}+\beta_2 AJ_{it}+\beta_3 LEV_{it}+\beta_4 INDBETA_{it}+\beta_5 LNTA_{it}+d_t+\eta_i+\upsilon_{it}$$

Column (A) refers to the inclusion of time dummies, (B) to time and industrial dummies and (C) to time dummies and the nature of the main shareholder.

		(A)		(B)		(C)	
Dependent Variable: Q		Coef. p-value		Coef. p-value		Coef. p-value	
CONSTANT		-0.179 (0.000)	***	-0.190 (0.000)	***	-0.178 (0.000)	***
C1		0.516 (0.002)	***	0.674 (0.019)	**	0.527 (0.022)	**
AJ		0.541 (0.023)	**	0.184 (0.277)		0.485 (0.097)	*
LEV		0.006 (0.071)	*	0.006 (0.103)	*	0.006 (0.056)	*
INDBETA		0.110 (0.261)		0.097 (0.317)		0.105 (0.275)	
LNTA		-0.009 (0.908)		-0.033 (0.697)		-0.020 (0.794)	
TIME		YES		YES		YES	
INDUSTRY				YES			
MAIN SHAREHOLDER						YES	
SARGAN TEST		28.913 (0.417)		25.102 (0.622)		24.048 (0.679)	
Wald Test of join significance	z_1	17.955 (0.003)	***	10.652 (0.059)	**	12.496 (0.012)	**
Wald Test Time Dums	z_2	159.093 (0.000)	***	83.859 (0.000)	***	61.607 (0.000)	***
Wald Test Industry / Nature Largest Shareholder Dums	z_3			18.942 (0.008)	***	11.490 (0.022)	**
Wald Test Both Dums	z_4			159.767 (0.000)	***	163.173 (0.000)	***
First-order serial correlation	m_1	0.140 (0.888)		0.155 (0.908)		0.121 (0.904)	
Second-order serial correlation	m_2	-0.980 (0.327)		-0.980 (0.327)		-0.897 (0.370)	

*** denotes signification at the 1%; ** at 5%; and * at 10% level

The three estimations also point to a similar causality relation in the other endogenous variable representative of ownership structure, director participation in capital (AJ), although its significance is not sufficient in the estimation with industrial variables.

Even with the caution in previous robustness, the resulting relation is totally coherent with the initial outcome, in the sense that participation in ownership provides directors with the incentive to undertake close monitoring and exercise control over management. The joint interpretation of the previous results provides evidence to support the kind of governance characteristic of non-financial Spanish companies: in general terms the relevant control mechanism is concentrated shareholdership and/or partially, the supervision by the board of director.

One further aspect which merits attention is the positive relation between financial leverage and value. As may be inferred from the literature (McConnell and Servaes, 1995; Andrés et al., 2000), the impact of debt on company value may differ when growth opportunities are present or absent, such that a positive impact is to be expected when faced with a lack of profitable investment opportunities, and a negative impact in the contrary case[7]. In the light of the estimations we have undertaken it can be seen that the positive relation between debt and value is upheld even in the case of alternative model specifications, a fact which supports debt as an additional disciplinary mechanism in the Spanish corporate system.

The previous model is re-estimated replacing the continuous variable C1 with the three concentration variables. The estimated coefficients and the various significance and validity tests are shown table 6. As already pointed out, the expected relations were a negative realtion between minority control (CON1) and value (Q), and a positive linkage between majority control (CON2 and, particularly, CON3) and value (Q).

In view of the emerging results, the hypotheses proposed are fully confirmed with regard to minority control (CON1) and partially in the case of majority control (CON3 when industry and time variables are included and CON 2 when only time variable is included). In the final column, when shareholder profile is included, the majority control variable ceases to be significant and is replaced, in full agreement with previous results, by participation of the directors in capital (AJ).

Once again, individual and joint significance tests prove highly significant. The Sargan test does not reject the validity of the instruments used and the correlation tests confirm the absence of first and second order serial correlation. These results again highlight the importance of ownership structure as a control mechanism for management, whether in continuous terms or in specific sections: greater (less) shareholder control leads to greater (less) efficiency.As regards the remaining variables, the positive and significant relation between debt and value is maintained and, therefore, the disciplinary nature of debt. Moreover, and for this estimation, the industrial beta proves to be a significant variable, displaying a beneficial effect on company value.

In short, after having considered the endogenous nature of ownership structure, having used a highly suitable econometric tool and employed a panel of data, the evidence gathered in our stydy supports the view of ownership structure as a key monitoring mechanism in Spanish firms which is also partially complemented with the disciplinary nature of debt. The evidence collected, after overcoming the shortcomings of previous papers addressing the Spanish case, confirm and underscore the findings of said papers, and do not allow us to upscale the conclusions to emerge from Demsetz and Villalonga (2001) to a Spanish context. Since the issue of endogeneity has specifically been addressed and the econometric technique employed vastly improved, explanations must be sought in the nature of the Spanish corporate system itself. If transferring analytical approaches from one context to another is always a risky business, in this case it proves to be unwise. We will always be left with the doubt, constantly updated with new theories, of the hazards involved in this new situation to maximise the benefits of specialisation, particularly in a competitive environment witnessing the ceaseless globalisation of business.

6. Conclusions

Our aim throughout the present study has been to analyse the relation between ownership structure and the value of Spanish firms, bearing in mind its endogenous nature as well as the idiosyncrasies of the corporate system in which firms operate. The most reasonable doubts as to the exogenous nature of ownership structure would seem to advise an explicit consideration of the possible interdependencies which might exist between ownership and value, through the use of vastly improved estimation techniques. Further, the differences existing between Anglo-American type corporate systems –which most studies address- and the continental model, which includes the case of Spain, make it difficult to achieve any unanimous consensus as to the approaches and conclusions obtained.

Applying these considerations – together with the commonly posited theoretical arguments when analysing the relation between ownership and value- to the empirical field was performed using a panel of 101 Spanish companies quoted on the Spanish capital market between 1991-1997. Econometric estimation is based on the Generalised Method of Moments, enabling us to monitor the

[7] When faced with a lack of profitable investment opportunities, debt may act as a control mechanism to minimise the over-investment problems common to such situations (Jensen, 1986), whereas when such opportunities do exist, the impact of debt on value leads firms to reject valuable growth opportunities, in line with the hypothesis of under-investment proposed by Myers (1977) and Jensen and Meckling (1976). Empirical evidence for the Spanish case may be found in Andrés et al. (2000). These authors bear in mind the presence or absence of profitable investment opportunities so as to compare obstacles to specialisation emerging from highly concentrated structures and which are particularly relevant in environments displaying growth opportunities. The results obtained highlight the positive, disciplinary effect of debt on the value of concentrated structure when faced with a lack of growth opportunities.

endogeneity of the variables, avoid non-observable heterogeneity arising from the specific nature of each firm and analyse response processes over time. The empirical evidence obtained leads to two main groups of findings. One the one hand, the results bear out the endogenous nature of ownership structure, highlight the need to replace conventional estimation techniques –mainly based on transversal analyses and least squares- with more robust procedures such as GMM, and bring into question certain previous research papers which failed to take account of the interrelations of these aspects. Further, the findings underscore the need to consider ownership structure as a key control mechanism in Spanish firms, and endow it with considerable importance when it comes to solving conflicts of interest emerging between managers and shareholders, and thus vital importance in the creation of value. In addition, this effect is partially complemented with the disciplinary nature of debt.

Although nowadays a certain consensus is gradually being reached with regard to the need to consider the endogenous nature of ownership structure, once endogeneity has specifically been included in the analysis, the conclusions to emerge differ from those of other similar studies addressing the Anglo-American environment (Demsetz and Villalonga, 2001) and provide empirical support for papers dealing with the Spanish setting (Galve and Salas, 1993; Azofra et al., 1995; Miguel et al., 2004).

Thus, the differing findings to emerge from the various studies addressing one system or another, force us to consider that institutional differences among countries play a crucial role, and that the specific nature of corporate systems is fundamental in the relation between ownership and value.

Table 6. GMM Estimation. Value and structure of ownership Regression on firm value. Concentration in sections

Estimations are performed for 101 firms with a total of 707 observations. The table details the estimated coefficients; the Sargan statistic which verifies the over-identification of restrictions; m_1 and m_2 statistics which compare the absence of first and second order serial correlation relation in the regression residuals; the Wald joint significance tests for all the explanatory variables (z_1) together with a further three (z_2, z_3, z_4) for individual and joint significance of the dummy variables included; and the p-value corresponding to the Student t statistic. The estimated model responds to the following expression:

$$Q_{it}=\beta_0+\beta_1 CON1_{it}+\beta_2 CON2_{it}+\beta_3 CON3_{it}+\beta_4 AJ_{it}+\beta_5 LEV_{it}+\beta_6 INDBETA_{it}+\beta_7 LNTA_{it}+d_t+\eta_i+\upsilon_{it}$$

Column (A) refers to the inclusion of time dummies, (B) to time and industrial dummies and (C) to time dummies and the nature of the main shareholder.

	(A)		(B)		(C)	
Dependent Variable:Q	Coef. p-value		Coef. p-value		Coef. p-value	
CONSTANT	-0.164 (0.000)	***	-0.199 (0.000)	***	-0.153 (0.000)	***
CON1	-1.828 (0.007)	***	-2.3026 (0.003)	***	-2.448 (0.000)	***
CON2	0.535 (0.077)	*	0.077 (0.834)		0.298 (0.373)	
CON3	0.310 (0.395)		0.870 (0.040)	**	0.336 (0.396)	
AJ	0.148 (0.327)		-0.045052 (0.815)		0.247 (0.097)	*
LEV	0.005 (0.045)	**	0.004 (0.081)	*	0.006 (0.018)	**
INDBETA	0.150 (0.014)	**	0.169 (0.002)	***	0.146 (0.011)	**
LNTA	-0.024 (0.581)		-0.052 (0.317)		-0.022 (0.644)	
TIME	YES		YES		YES	
INDUSTRY			YES			
MAIN SHAREHOLDER					YES	
SARGAN TEST	53.633 (0.565)		54.461 (0.533)		49.128 (0.730)	
Wald Test of join significance	21.428 (0.003)	***	22.519 (0.002)	***	31.465 (0.000)	***
Wald Test Time Dums	540.810 (0.000)	***	327.800 (0.000)	***	410.031 (0.000)	***
Wald Test Industry / Nature Largest Shareholder Dums			59.644 (0.000)	***	12.387 (0.015)	***
Wald Test Both Dums			768.102 (0.000)	***	603.996 (0.000)	***
First-order serial correlation	-0.119 (0.905)		-0.400 (0.689)		-0.253 (0.800)	
Second-order serial correlation	-0.751 (0.453)		-0.736 (0.462)		0.271 (0.471)	

*** denotes signification at the 1%; ** at 5%; and * at 10% level

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