

## **Corporate governance and performance during plummeting and soaring financial markets**

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### **ABSTRACT**

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The objective of this study is to investigate the relationship between stock market performance and ownership structure during plummeting and soaring financial markets in a Continental-European setting. Our results demonstrate the importance of ownership concentration, the presence of multiple blockholders and the type of ownership to explain stock market performance in periods of stock market turbulence. In addition, we find that the results for extreme down markets are fundamentally different from the up-market results. While ownership concentration is valued positively during down market periods, it is valued negatively during up market periods. Furthermore, the presence of multiple blockholders only influences the stock price during down market periods. Finally, firms controlled by financial institutions lose less value during down markets, while firms controlled by non-founding families lose more value, compared to widely held firms, during down market periods. No significant relationship is found during up market periods.

### **KEYWORDS**

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Ownership concentration, stock price performance, multiple blockholders, type of ownership.

## **1. Introduction**

In nearly 200 years of recorded stock-market history, no calendar decade has seen such a dismal performance as the 2000s. Stock markets worldwide have experienced severe shocks, causing extreme losses and gains in very short periods of time. For example, as a result of the internet bubble bursting, the S&P500 lost 15 percent over the period of 10 days in July 2002, while other mayor stock market indexes suffered similar losses. This study looks at extreme up and down market periods over the last decade to understand how investors value the ownership structure during periods of market turmoil.

The ownership structure is one of the main dimensions of corporate governance. Shareholder structures are quite diverse across countries, with dispersed ownership being much more frequent in US and UK listed firms, compared to Continental Europe, where controlled ownership is prevalent (La Porta, López-de-Silanes, Shleifer and Vishny, 1999). Faccio and Lang (2002) report in a study of 5232 publicly traded corporations in 13 Western European countries that only 36.93 percent were widely held firms. In addition, cross-country studies of La Porta et al. (1999) point out that ownership of large companies in rich economies is typically concentrated; that control is often exercised through pyramidal groups with a holding company at the top controlling one or more subsidiaries; and that the controlling shareholders are often actively involved in company management and sit on the board of directors. We refer to Enriques and Volpin (2007) for a detailed description of the differences in the ownership structure of companies in the main economies of continental Europe with comparisons to the United States and the United Kingdom. The differences in ownership structure have two obvious consequences for corporate governance, as surveyed in Morck, Wolfenzon, and Yeung (2005). On the one hand, dominant shareholders have both the incentive and the power to discipline management. On the other hand, concentrated ownership can create conditions for a new problem, because the interests of controlling and minority shareholders are not aligned. Since ownership control can have both positive and negative properties, empirical evidence is of paramount importance for judging about its final effect and for orienting regulations that could hamper the persistence of large controlling shareholders.

Previous literature has extensively focused on the relationship between ownership structure and firm performance. However, far less attention has been paid to the influence of ownership structure on stock price performance, i.e. the shareholder valuation of the ownership structure. Thomsen, Pedersen and Kvist (2006) argue that if the exchange price

of a firm's stock measures its value for minority investors, the impact of blockholder ownership on this stock value reflects the net costs or the benefits of large owners from a minority investor viewpoint. As explained by Dyck and Zingales (2004, p. 52), the potential extraction of private benefits by controlling shareholders “reduces what minority shareholders are willing to pay for shares, lowering the value of all companies where such behavior represents a real possibility. And by raising the cost of finance, it limits the ability of such firms to fund attractive investment projects.” The few studies available on the relationship between stock price performance and the ownership structure have focused on the East-Asia crises (Baek et al., 2004; Mitton, 2002). Overall, their findings suggest that differences in the ownership structure play an important role in determining changes in firm value during periods of financial crisis.

The objective of this study is to investigate the relationship between stock market performance and ownership structure during plummeting and soaring financial markets in a Continental-European setting. This setting is interesting to investigate the influence of ownership structure on stock price performance because of its institutional contrast with Anglo-American economies. While Continental European institutional characteristics include high concentration of ownership, weak investor rights, fewer market-oriented rules for disclosure, weaker managerial incentives and greater supply of debt, the United Kingdom and United States are characterized by dispersed ownership where markets for corporate control, legal regulation, and contractual incentives are key governance mechanisms. In addition, to obtain greater insight into the valuation of the ownership structure from a (minority) shareholders perspective, it is crucial to have sufficient diversity in terms of ownership structure in the sample, a condition fulfilled in most continental Europe stock markets.

A common critique of the ownership-performance literature is that corporate ownership is an endogenous variable rather than an exogenous influence on firm profitability (Demsetz and Lehn, 1985). Ownership is likely to be endogenous when shareholders have sufficient information about the future performance variability of the companies in which they invest, and when they can adjust the size of their shareholdings at no cost. Ownership in Continental European firms is relatively stable, in part due to the fact that the restructuring of ownership is costly and difficult since the stock market is relatively less developed. In these markets, ownership can be treated as an exogenous variable, as investors can neither acquire nor divest controlling blocks without incurring significant

costs, and must therefore seek to maximize the performance of corporations given the block of shares they own in them (Stiglitz, 1994). In other words, the Continental European context allows us to sidestep the endogeneity critique of the ownership literature. In addition, using a given set of measures for ownership structure immediately before the crisis to explain posterior changes in the stock prices, while controlling for changes during the considered period, largely eliminates any spurious causality.

Our results demonstrate the importance of ownership concentration, the presence of multiple blockholders and the type of ownership to explain stock market performance. In addition, the results for extreme down markets are fundamentally different from the up market results. While ownership concentration is valued positively during down market periods, it is valued negatively during up market periods. Furthermore, the presence of multiple blockholders only influences the stock price during down market periods. Finally, firms controlled by financial institutions lose less value during down markets, while firms controlled by non-founding families lose more value, compared to widely held firms, during down market periods. No significant relationship is found during up market periods.

This study builds on prior research in several ways. First, unlike most existing research, which usually studies just one aspect of ownership structure, we focus on several dimensions of the ownership structure: ownership concentration, multiple blockholders and type of ownership. Second, rather than focussing on periods of market crisis, we analyse the stock market performance not only during extreme down market periods, but also look at extreme up market periods. Third, this is one of the first papers to investigate the importance of ownership structure from an investor's perspective using data from a Continental European stock market.

In the next section, we revise the prior literature and develop our hypotheses. Then, we discuss our sample and data collection, followed by an overview of our methodology and variable specification. The final two sections discuss our results and provide a final conclusion.

## **2. Prior literature and hypotheses development**

Shareholder structures are quite diverse across countries, with dispersed ownership being much more frequent in US and UK listed firms, compared to Continental Europe, where controlled ownership is prevalent (La Porta, et al., 1999). An important weakness of dispersed ownership is that dispersed owners lack both the means and the motive to address managerial agency problems. In the presence of information asymmetry and interest misalignment between the owner/ principal and the manager/agent, problems associated with managerial opportunism are important (Fama and Jensen, 1983; Jensen and Meckling, 1976). Berle and Means (1932) suggest that ownership concentration should have a positive effect on firm value because it alleviates the conflict of interests between owners and managers. Ownership concentration mitigates this conflict by bringing about greater alignment of incentives (if ownership is concentrated in the hands of managers themselves) or improved monitoring (if it is concentrated in the hands of outside shareholders). However, Demsetz (1983) argues that ownership concentration is the endogenous outcome of profit-maximizing decisions by current and potential shareholders, so that as a result, it should have no effect on firm value.

In a company with a large shareholder and a fringe of small shareholders (as modeled by Shleifer and Vishny, 1986), the classic owner-manager conflict (i.e. agency problem I) is mitigated due to the large shareholder's greater incentives to monitor the manager. However, a second type of conflict appears (i.e. agency problem II) as the large shareholder may use its controlling position in the firm to extract private benefits at the expense of the small shareholders. The empirical corporate governance literature offers no unequivocal answer to the costs and benefits of concentrated ownership. Some scholars have found a positive association with corporate performance (LaPorta, López-de-Silanes, Shleifer, and Vishny, 2000), others a negative association (Loderer and Martin, 1997), and still others a curvilinear relationship (Morck, Shleifer, & Vishny, 1988), and Demsetz and Lehn (1985), Himmelberg et al. (1999), and Demsetz and Villalonga (2001) provide evidence in support of Demsetz's arguments of no difference. Theoretically compelling arguments can be furnished in favor of each finding.

Although previous studies (e.g. Johnson et al. 2000; Laporta et al. 2002) have used cross-country analysis to demonstrate the importance of corporate governance characteristics in determining firm value, few researchers have investigated the importance of corporate governance for investors during periods of stock market turmoil. Having a wealthy,

concentrated owner can help firms in times of crisis as such owners sometimes choose to transfer private resources into an ailing firm. This phenomenon, also known as “propping,” can help firms survive a temporary slump in performance, when owners choose “to invest private cash today in order to preserve their options to expropriate and to obtain a legitimate share of profits tomorrow” (Friedman, Johnson, and Mitton, 2003: 734). On the other hand, during periods of financial crisis, controlling shareholders have a larger incentive to transfers assets and profits out of better-performing firms towards their underperforming affiliates to “bail them out” (Gedajlovic and Shapiro, 2002; Granovetter, 2005).

A few studies have examined the link between corporate governance and firm value during periods of economic crisis. Using data for public companies in East Asia, Claessens et al. (2002) find that firm market value increases with the cash-flow ownership of largest shareholders, but drops when the control rights of largest shareholders exceed their cash-flow ownership. Similar results are found in Korea (Joh, 2003; Baek et al., 2004). Furthermore, Mitton (2002) shows a significant relationship between corporate governance mechanisms and stock price performance during the Asian crisis of 1997–1998 for a sample of firms from five East Asian countries. He argues that corporate governance becomes more critical in explaining cross-firm differences in performance during a financial crisis because of the increased incentive for expropriation of minority shareholders as well as the greater investor awareness of weaknesses in corporate governance in the region which could lead them to pull-out (Rajan and Zingales, 1998). Consistent with these arguments, Mitton (2002) finds that firms with higher outside ownership concentration experienced better stock price performance during the crisis.

*H1a: Ownership concentration is positively related to stock price performance.*

There is some evidence suggesting that that the effects of ownership structure on performance are nonmonotonic (Demsetz and Villalonga, 2001; Morck et al., 1988; McConnell & Servaes, 1990), and that they vary with the size of the concentrated owner’s stake. When a concentrated owner’s stake is relatively low, the owner has insufficient control to successfully engage in tunneling or other minority-disadvantaging strategies. Under these conditions, the concentrated owner’s most effective strategy for increasing his or her private wealth is to push the management of the firm for greater performance. Hence relatively low levels of concentrated ownership will have an overall positive influence on corporate performance. At higher levels of ownership, however, a point will

be reached where the concentrated owner effectively controls the firm, while there is still a significant fraction of small investors to expropriate. Under these conditions tunneling is both feasible and lucrative, and the effect of concentrated ownership on corporate performance will cease to be positive. Since in many jurisdictions dominant shareholders can have control rights in excess of their ownership rights (La Porta et al., 1999), tunneling often becomes a real possibility. However, as the concentrated ownership stake increases further, tunneling becomes a less sensible strategy for increasing private wealth, as there will be fewer minority shareholders to expropriate. Tunneling would then simply result in a direct transfer of private wealth from one venture into another, which is unlikely to benefit the concentrated owner. As the best strategy for majority owners to increase their private wealth is to gear the firm for higher performance, very large ownership stakes are again likely to have a positive effect on firm performance. Previous research by Morck et al. (1988) has reported a nonmonotonic relationship between the degree of ownership concentration and firm profitability. In addition, Gedajlovic and Shapiro (1998) show evidence of a non-linear relationship between ownership concentration and profitability in US and German firms. Nevertheless, no relationship between concentration and profitability was found in the UK, France and Canada. Kaplan and Minton (1994) and Gorton and Schmidt (2000), on the other hand, found a linear relationship for a sample of Japanese and German firms respectively. For a sample of Spanish listed companies, De Miguel et al. (2004) find that ownership concentration has a nonlinear effect on firms' value.

*H1b: the relationship between ownership concentration and stock price performance follows a non-monotonic pattern.*

## 2.1. Multiple blockholders

With the exception of Laeven and Levine (2007) and Maury and Pajuste (2005), most of the empirical studies focus little, if any, attention on the role of multiple blockholders in corporate governance. Blockholders are defined as shareholders who own at least 5 percent of a company's common shares. Arguably, the neglect of the potential monitoring benefits of blockholders, beyond the largest controlling shareholder, reflects the assumption that the former represents a homogenous group of uninvolved stakeholders,

with weak incentives and little power to engage in monitoring activities. However, La Porta et al. (1999), Claessens et al. (2000) and Faccio and Lang (2002) all document numerous instances of multiple large blockholders across the globe.

Only very recently have a few theoretical papers started to study how controlling groups are formed when there are multiple large shareholders (Zwiebel, 1995; Bennedsen and Wolfenzon, 2000) and which are the effects of multiple blockholders on monitoring (Pagano and Röell, 1998) and on the level of private benefit extraction (Bennedsen and Wolfenzon, 2000; Gomes and Novaes, 2001). Investors may associate the presence of multiple blockholders with efficient monitoring because large shareholders can bring valuable internal monitoring either by forming coalitions with large equity stakes or by competing for corporate control (e.g., Bennedsen and Wolfenzon, 2000; Bloch and Hege, 2001). Alternatively, multiple blockholders can present an opportunistic structure for coercive voting, where blockholders would find it mutually valuable to collude to extract divisible private benefits of control (e.g., Winton, 1993; Zwiebel, 1995; Kahn and Winton, 1998). These divergent perspectives imply that whether or not multiple blockholders serve a monitoring role in mitigating the agency problems that beset concentrated control remains an open question.

Empirical evidence validating the theoretical predictions is very limited. Volpin (2002) finds that the market value of Italian listed firms is higher for companies with a voting syndicate than for companies with a single large shareholder. Faccio et al. (2001) compare the dividend policies of listed companies across different countries and find that European companies pay higher dividends when they have multiple blockholders. Lehman and Weigand (2000) show that the presence of a second large shareholder improves the profitability of German listed companies.

*H2a: The shareholdings by secondary blockholders is positively related to stock price performance.*

*H2b: The number of blockholders is positively related to stock price performance.*



## 2.2. The identity of controlling owners

The classic owner-manager conflict is mitigated in the presence of large controlling shareholders. However, a second type of conflict appears as controlling owners may use their controlling position in the firm to extract private benefits at the expense of the small shareholders. If the large shareholder is a financial institution, such as a bank or an investment fund, the private benefits of control are diluted among several independent owners. If the large shareholder is an individual or a family, it has greater incentives for both expropriation and monitoring, which are likely to lead agency problem II to overshadow agency problem I (Villalonga and Amit, 2006). The different categories of concentrated owners may have different preferences and priorities with respect to corporate risk, stability, growth, and performance (Douma et al., 2006; Gedajlovic et al., 2005). We identify 4 different types of firms. First we distinguish between closely-held and widely held firms. In a second step, we distinguish between companies controlled by families (either direct or through non-financial companies) and companies controlled by financial institutions. Finally, for the companies controlled by families, we distinguish between firms controlled by founding families and firms controlled by non-founding families.

## 2.3. Firms controlled by families

Families may use their control over companies to extract private benefits of control at the expense of minority shareholders. The private benefit extraction may take different forms such as excessive compensation of family members or related-party transactions. In addition, families may be excessively interested in maintaining control over the company even in the presence of a potentially value increasing acquirer. When the family owns less than 100 percent of the shares of the company, it gives an excessive weight to private benefits of control over security benefits. Another type of cost of family ownership has to do with the family itself and the ties among its members. Family owners may have the incentive and power to assign key management positions to family members even when there are unqualified (Claessens et al., 2000). More generally, family priorities may conflict with the objectives of outside investors. Family control does not only come with cost, though. Families may have longer investment horizon with respect to other shareholders thereby avoiding managerial myopia. Because the company will be

controlled by future generations of the family, family firms may be natural long term value maximizers.

Since family control can have both positive and negative properties, empirical evidence is of paramount importance for judging about its final effect and for orienting regulations that could hamper the persistence of family controlled firms. Recently, several papers have begun to analyze the performance of family firms. Denis and Denis (1994) study majority-owned firms, and find that, although most of them are characterized by family involvement, they do not exhibit specific inefficiency features. Morck et al. (2000), using Canadian data, provide evidence that family control deteriorates firm performance. Performance is measured using accounting data. They find that widely held firms have a superior performance with respect to family firms. Results are unaffected by having the founder, or one of the heirs, as a CEO. In addition they find no evidence of a longer horizon in decision making in family firms, as they invest less in R&D and have fewer employees than widely held firms. Faccio, Lang and Young (2001) report that family ownership in East Asia leads to severe conflicts with other claimants and hampers firm performance. Their results are supported by Baek et al. (2004) who find that Korean chaebol firms with concentrated ownership by controlling family shareholders experienced a larger drop in the value of their equity during the Korean crisis. As far as Western Europe is concerned, two cross-country studies by Barontini and Caprio (2006) and Maury (2006) using panel data observe that family firms may have a higher market valuation calculated as Tobin's Q and a higher profitability under certain conditions. Barontini and Caprio find similarities to the study by Villalonga and Amit (2003) confirming that especially family firms with founder CEO perform better than other firms. However, compared to the evidence obtained for the United States, the performance of descendant owned firms appears to be different. If the descendant member of the family only assumes a non-executive position the firm still outperforms non-family firms, if he is CEO it performs as well as non-family firms and only if the family takes up no active role at all does it perform worse. Maury on the other hand, indicates that active management only enhances profitability but does not have a real impact on firm valuation.

Evidence on single European countries shows similar findings. Family firms outperform others depending on their characteristics. Both Favero et al. (2006) in their study of Italian listed family firms and Sraer and Thesmar (2007) on French listed family firms report

that family firms outperform widely held companies and this independent of a founder, descendant or outsider managing the firm. However, Sraer and Thesmar (2007) additionally find that founders explain most of the outperformance and propose different reasons linked to labour force, wages and productivity to explain why the respective management type delivers superior performance. Favero et al. on the other side find evidence that market performance is not different for family firms which is due to the wrong measurement methods. When using a dynamic performance measurement approach they find similar positive results as for accounting measures. In a study on German listed firms Andres (2008) finds that family firms are not only more profitable than widely held companies but also than companies with other kinds of blockholders. In line with evidence found in Sraer and Thesmar (2007), he finds that performance increases in particular with a founding family member actively managing the company and founder-managed companies showing the strongest effect on performance.

*H3a: Founding Family controlled firms are associated with higher stock price performance compared to widely held firms.*

*H3b: Non-Founding Family controlled firms are associated with lower stock price performance compared to widely held firms.*

## 2.4. Firms controlled by financial institutions

Researchers have tested the monitoring effect of both institutional investors and block holders in a variety of settings. Early research studies partitioned large owners into financial and non-financial classifications and concluded that financial investors were better monitors than non-financial shareholders when measuring their effect on firm value (McConnell and Servaes, 1990) and risk taking (Wright et al., 1996). Financial institutions tend to have multiple ties with the firms in which they own shares. In addition to being shareholders, stable investors are often also creditors, debtors, buyers, suppliers, or alliance partners. Their equity stake primarily serves to cement an often complex set of non-shareholder relationships with the focal firm, and is often reciprocated to create cross-holdings (Roe, 1994). Lehmann and Weigand (2000) confirm the benefits of large

shareholders in Germany, but only in the case of banks, since the presence of non-financial large owners negatively affects firm profitability.

*H4: Financial controlled firms are associated with higher stock price performance compared to widely held firms.*

### **3. Sample and data**

Our sample is drawn from the population of Spanish firms listed on the Madrid Stock Exchange during January 2000- January 2008. Fundamental stakeholders in the Spanish corporations include banks and industrial firms, although the role of financial institutions is not as prevalent as in other countries such as Germany and Japan, and the main agency problem arises from controlling and minority shareholders, as occurs in most European countries. For this study, we consider all listed firms (both financial and non-financial) for which we could retrieve the stock price and ownership structure data. For the period January 2000- January 2008, we calculated, daily, the 10, 20 and 30 trading day performance of the Ibex-35 (the Spanish reference stock exchange market index). We then identified the ten largest jumps and plummets for each time frame, avoiding overlap of periods within each timeframe. Table 1 gives an overview of the starting dates for each time frame, as well as the IBEX-35 stock price performance. After identifying the periods of maximum stock market turmoil, we calculated the individual stock price performance for each listed company. Table 1 gives a summary of the number of companies considered in each period. Obviously, the sample of listed companies varies slightly across time, as some companies start listing on the stock market while others de-list during the period considered in this study.

Period	Date	R_10	N	Date	R_20	N	Date	R_30	N
1	10/3/2000	-10.8%	95	5/2/2000	-10.3%	94	3/6/2000	-12.5%	89
2	11/8/2000	-11.8%	96	11/6/2000	-14.5%	97	9/5/2000	-10.1%	92
3	3/8/2001	-12.9%	92	6/14/2001	-13.8%	97	11/6/2000	-16.5%	96
4	9/6/2001	-17.8%	89	8/23/2001	-22.7%	93	2/8/2001	-14.9%	93
5	6/10/2002	-11.1%	95	5/29/2002	-15.9%	93	5/31/2001	-14.0%	98
6	7/8/2002	-12.4%	93	7/8/2002	-16.4%	93	8/8/2001	-23.0%	91
7	9/11/2002	-16.1%	93	8/27/2002	-19.6%	94	6/12/2002	-18.7%	95
8	1/14/2003	-9.6%	93	1/16/2003	-12.0%	96	8/27/2002	-18.6%	93
9	5/8/2006	-9.3%	113	2/14/2007	-8.7%	120	1/15/2003	-12.0%	97
10	1/9/2008	-16.1%	132	12/19/2007	-19.3%	135	12/5/2007	-22.5%	131
1	1/31/2000	15.0%	92	1/28/2000	15.3%	90	12/18/2000	11.8%	92
2	3/22/2001	9.5%	94	12/20/2000	13.0%	95	3/22/2001	13.2%	94
3	9/20/2001	11.0%	94	9/21/2001	19.7%	93	9/21/2001	22.0%	97
4	10/9/2001	11.2%	92	10/30/2001	11.6%	96	10/9/2002	21.1%	94
5	11/2/2001	11.2%	92	7/24/2002	11.2%	94	3/12/2003	19.1%	96
6	10/10/2002	11.1%	91	10/7/2002	16.6%	90	5/9/2003	10.9%	96
7	11/13/2002	9.2%	95	3/12/2003	18.6%	97	11/18/2003	11.5%	100
8	12/30/2002	9.5%	90	5/21/2003	13.2%	103	1/18/2006	11.2%	113
9	3/12/2003	12.7%	95	3/14/2007	10.0%	121	9/11/2006	13.0%	118
10	3/31/2003	10.5%	101	9/17/2007	10.9%	128	9/17/2007	14.9%	129

**Table 1.** Descriptive statistics – stock price performance of the IBEX-35 over the selected periods considering a 10, 20 and 30 days trading window

The principal source of our ownership structure data is the database from the CNMV (Spanish Securities and Exchange Commission, the equivalent to the U.S. Securities and Exchange Commission). Under the Spanish Companies law, listed companies have to report to the CNMV the names and shareholdings of shareholders with blocks of shares of 5 percent or more and any holdings for those that seat in the board of directors. This requirement became active through the Spanish transposition of the European transparency directive (Council Directive of 12 December 1988 (88/627/EEC)). From these files of the CNMV, we analyzed a total of 24.786 communications to determine the ownership structure for any given date as well as all changes in the ownership structure between any two dates. To calculate the ownership measures, we consider both direct and indirect shareholding. The ownership data is determined for the first day of the turmoil period. We also calculate the changes in the ownership structure during the considered up or down market periods. In addition, for each firm we identified its founders using the company website, annual reports, and other public sources of information. Our access to this type of in depth ownership structure data goes until January 2008.

Spanish listed companies have a number of characteristics that make them particularly suited to our investigation, as it presents corporate governance characteristics similar to many other Continental European countries, but quite different from Anglo-American or Asian listed companies. Continental European countries are typically categorized by concentrated ownership of firms, strong state intervention, and weak labour participation at company level (Rhodes and Van Apeldorn 1997; Aguilera and Jackson 2003). As noted in the World Bank's 2008 "Doing Business Report", investor protection in Spain is below the average achieved by member states of the OECD. The Investor Protection Index is a subcomponent of the World Bank's 2008 Doing Business Indicators, and consists of three dimensions of investor protection: transparency of transactions (Extent of Disclosure Index), liability for self-dealing (Extent of Director Liability Index) and shareholders' ability to sue officers and directors for misconduct (Ease of Shareholder Suits Index).

#### 4. Model and variable specification

The aim of our paper is to examine the relationship between stock price performance and the ownership structure during periods of market turmoil. In order to evaluate the different aspects of the ownership structure on stock market performance, we regress the stock market returns on the different specifications of ownership and control for sector and size. The methodology adopted is similar to Mitton (2002) and Baek et al. (2004).

$$\text{Stock Market Return}_{ij} = f(\text{Ownership structure Variables}_{ij}, \text{size}_{ij}, \text{industry}_{ij}) \quad (1)$$

i: up or down market, j: time frame: 10, 20 or 30 trading days

##### 4.1. Dependent variable

To measure stock price performance, we use the individual stock market returns, calculated as the relative percent difference between the value of the share at the end of the period and the value at the beginning at the period. For the period, January 2000-January 2008, we identified the ten largest jumps and plummets for each time window and calculated the individual stock price performance for each listed company. Table 1 presents the exact dates of the first day of the considered up or down market periods. For a trading window of 10 days, the largest jump (15 percent) of the Ibex-35 occurred during the first days of February 2000, while the largest loss (-17.8 percent) was registered during September 2001. For the 20-day and 30-day window, the largest jumps were 19.7 percent and 22.0 percent respectively, while the largest drops were -22.7 percent and -23.0 percent respectively.

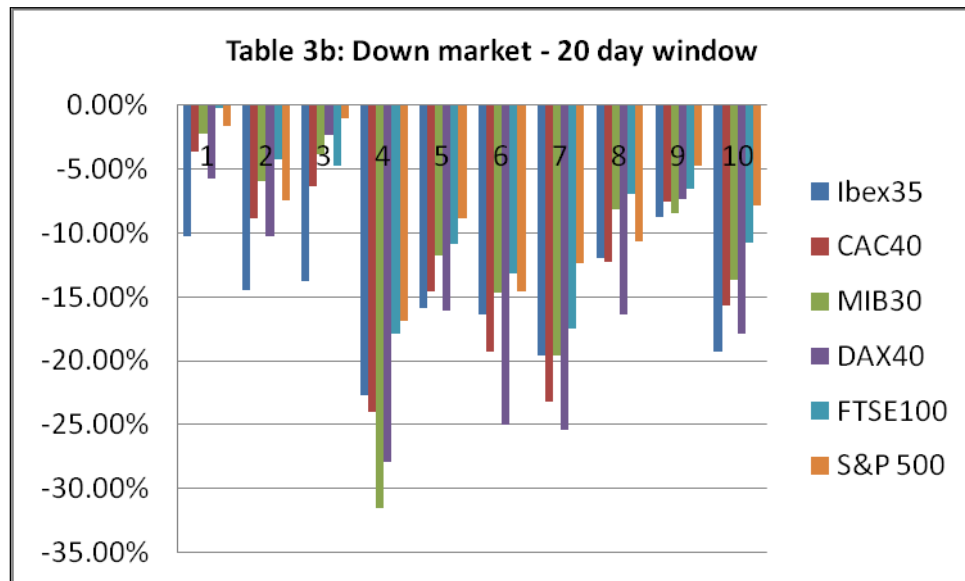
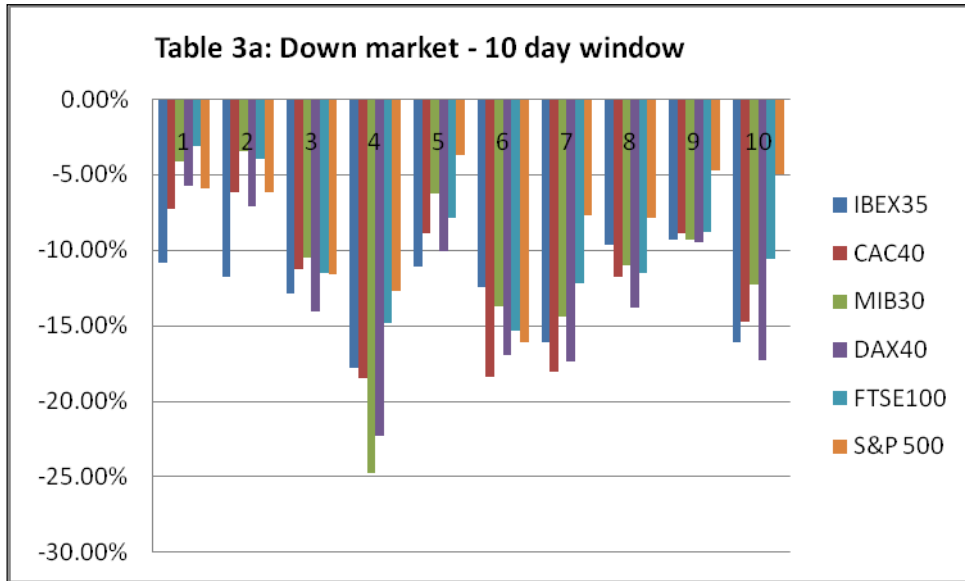
Stock exchange consolidation is at work since many years and has recently accelerated through competition for order flows, agreements and mergers, causing shocks to be transmitted from one stock market to another. Idier (2006) consider the DAX30, the CAC40, the FTSE100 and the NYSE indexes and documents stock exchanges convergence between European stock market indexes. To provide addition information of the nature of the identified short term shocks, we have calculated the performance of other leading stock market indices during the exact same periods. We present the comparative stock market movements (averages) in tables 2 and individual comparison for each period in Tables 3a-3f. Table 2 shows that the French, Italian, German, UK and US stock market indices display a very similar performance compared to the Ibex-35 over

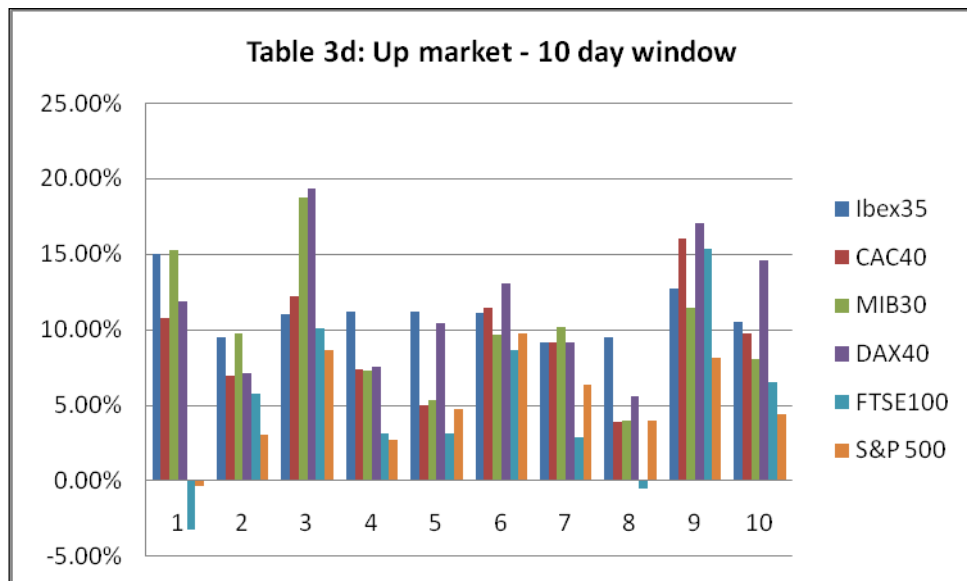
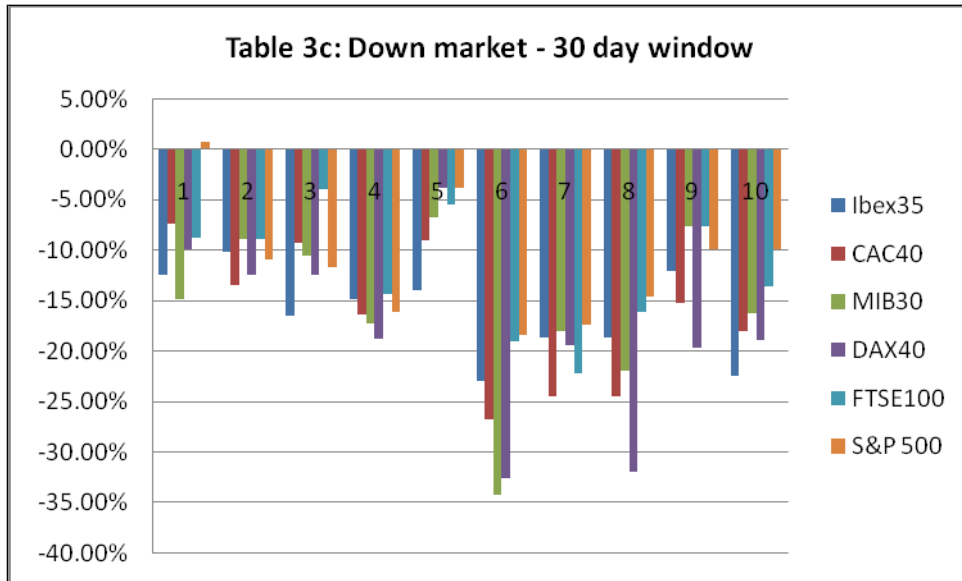


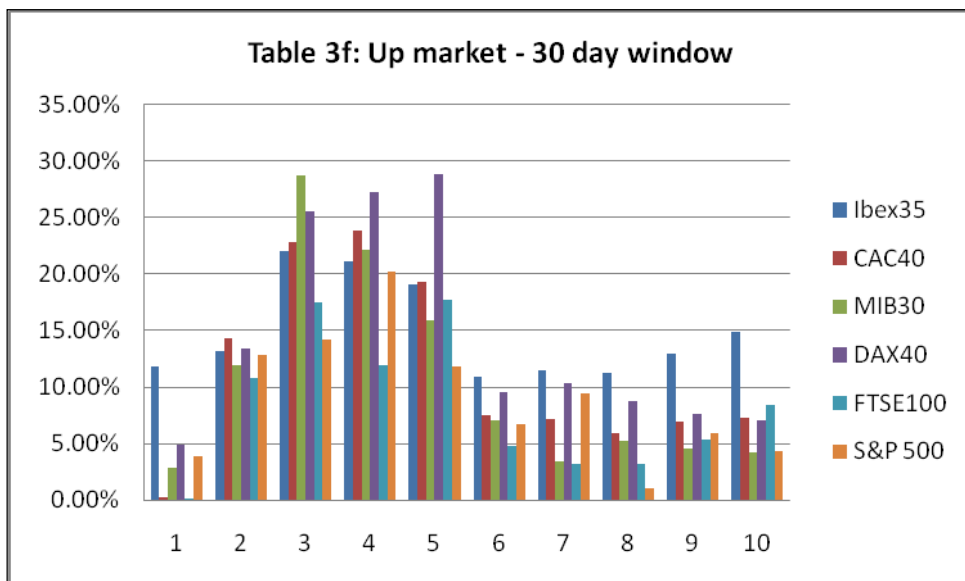
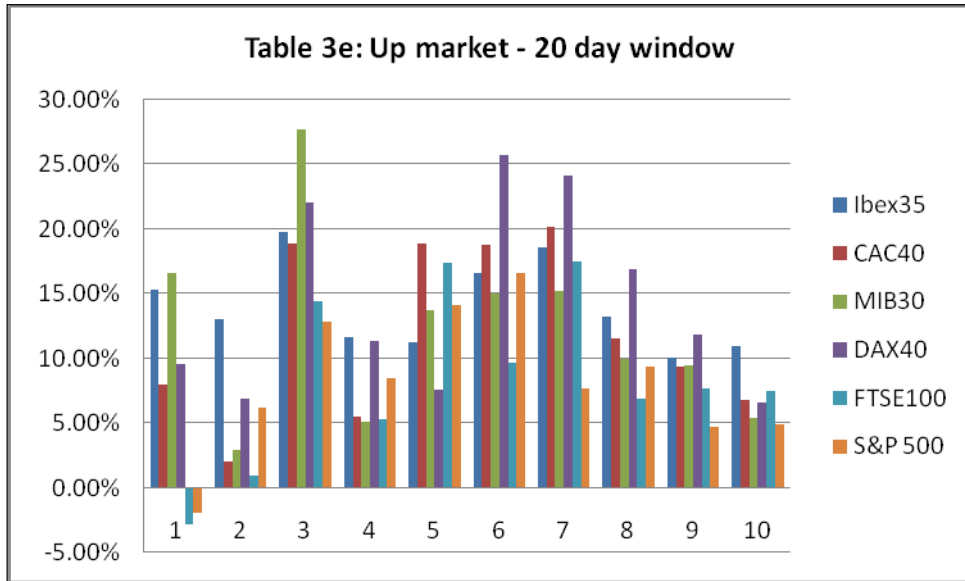
the selected periods. The Ibex-35 shows an average loss over a 10 day window, for the 10 periods we consider, of 13 percent, against a loss of 12 percent for the CAC-40, 11 percent for the MIB-30, 13 percent for the DAX-30, 10 percent for the FTSE-100 and an 8 percent loss for the S&P-500 market index, over the exact same periods. Both in up and down market the similarities hold, as well as for the different windows. This indicates that the extreme up and down market we consider in this study are not isolated from other stock markets and are, to a large extent, the results of worldwide events and stock market sentiment. In addition, tables 3a-f compares the performance of these stock market indices for each period of a plummeting or soaring Ibex-35. Again, for most of the periods, other important stock market indices suffer similar losses when the ibex-35 plummets and obtain similar gains when the ibex-35 soars. These descriptive results give additional validity for the dependent variable as it seems to capture not only large movements in the Spanish stock market but also global events which affect stock prices all over the world. Finally, it also provides support for the generalizability of this study.

Window	Up/down	IBEX35	CAC40	MIB30	DAX30	FTSE100	S&P500
10	down	-12.79%	-12.37%	-10.98%	-13.41%	-9.97%	-8.14%
10	up	11.09%	9.27%	9.96%	11.58%	5.19%	5.15%
20	down	-15.32%	-13.53%	-11.98%	-15.42%	-9.28%	-8.59%
20	up	14.01%	11.98%	12.09%	14.22%	8.43%	8.29%
30	down	-16.28%	-16.45%	-15.63%	-17.99%	-12.00%	-11.19%
30	up	14.87%	11.54%	10.61%	14.33%	8.31%	9.03%

**Table 2.** Comparative stock market movements of other stock market indices considering the same periods







## 4.2. Explanatory variables

For the ownership structure variables, we calculate several measures to test the hypotheses. To measure ownership concentration we use specifications in line with La Porta et al. (1999), Demsetz and Villalonga (2001), De Miguel et al. (2004) and Sánchez-ballesta and García-Meca (2007). Our first measure is the proportion of shares held by the largest shareholder (SH1). Alternatively we also use the proportion held by the three largest (SH1-3) and by the five largest (SH1-5) shareholders. Furthermore, we investigate whether the proportion of shares held by secondary shareholders (SH2-5), defined as the total shareholdings by the second to fifth largest shareholder helps to explain performance. In addition, we also look at the relationship between the total number of significant shareholders (N\_SH) and stock price performance.

Finally, we investigate whether the type of controlling owner affects the share price during periods of soaring or plummeting financial markets. We identify 4 different types of firms: widely held firms, firms controlled by financial institutions (Cont\_FI), firms controlled by founding families (Cont\_FF) and firms controlled by non-founding families (Cont\_NFF). We classify a firm as a widely held firm if the largest shareholder owns less than 20 percent of all shares. This threshold is in line with previous literature (Faccio et al., 2001, Anderson and Reeb, 2003, La Porta, 1999). For firms controlled by financial institutions, the largest shareholder is a financial institution and owns at least 20 percent of all shares. For firms controlled by founding families, the largest shareholder is the founder of the company or a relative of the founder and owns at least 20 percent. For firms controlled by non founding families, the largest shareholder owns at least 20 percent of all shares but is neither a member of the founding family nor a financial institution.

## 4.3. Control variables

To control for other factors that could affect stock price performance, we include firm size and industry into the regression models. We define firm size in terms of total market capitalization and define four categories: Ibex-35 firms, non-ibex firms with a market capitalization higher than €1000 million, firms with a with a market capitalization between €1000 million and €250 million, and firms with a market capitalization below €250 million. We define 12 industry categories using the Madrid Stock Exchange classification system. The size and industry categories are stable during the considered periods, eliminating the need to control for within period changes.

## **5. Results**

The descriptive statistics of the variables of interest are presented in Table 4. The average loss, considering the entire sample over the selected periods is 7.10 percent for a 10 day window, 10.35 percent for a 20-day window and 10.00 percent for a 30-day window. The average gains are 4.66 percent for a 10 day window, 8.08 percent for a 20-day window and 10.57 percent for a 30-day window. The high degree of ownership concentration in Spain is reflected in the different measures of ownership concentration. The average ownership stake of the biggest shareholder is 31.23 percent, while the average proportion of shares held by the three largest shareholders is 42.81 percent and 46.39 percent for the five largest shareholders. These results are similar to the values reported for Spain in De Miguel et al. (2004). In addition, the descriptive statistics confirm the importance of secondary blockholders. The average number of blockholders in Spanish listed companies is 2.31 and an average shareholding by the second to fifth largest shareholder of 15.16 percent of the shares. To control for stock market movement driven by sales or purchases of stock by large shareholders we calculated the total change in shareholdings by the top five shareholders during each period. On average, large shareholders very rarely trade during short term periods of market turmoil. For the entire sample, the average change in shareholdings by the five largest shareholders is only -0.03 percent. Finally, the descriptive statistics show that roughly one third of the companies are widely held, which is in line with findings by De Miguel et al. (2004), while 17 percent is controlled by financial institutions, 30 percent by a member (or members) of the founding family and 19 percent by a non-founding family.

Variable	Obs	Mean	Std Dev	Min	Max
R 10Down	991	-7.10	7.32	-50.21	23.01
R 20Down	1006	-10.35	10.37	-62.32	22.16
R 30Down	975	-10.00	15.08	-68.65	204.17
R 10Up	936	4.66	8.72	-23.32	76.18
R 20Up	1007	8.08	11.42	-28.11	133.38
R 30Up	1029	10.57	13.87	-28.28	187.74
SH1	5895	31.23	25.32	0	99.30
SH1-3	5895	42.81	25.55	0	99.51
SH1-5	5895	46.39	25.94	0	99.51
SH2-5	5895	15.16	12.92	0	49.21
N_SH	5895	2.31	1.45	0	9
D_SH1-5	5895	-0.03	2.82	-40.32	47.91
Widely	5895	0.34	0.48	0	1
Cont_FI	5895	0.17	0.46	0	1
Cont_FF	5895	0.30	0.39	0	1
Cont_NFF	5895	0.19	0.38	0	1

R ij: Stock price Return over a period of i trading days during a j (up/down) market

SH1: proportion of shares of the largest shareholder

SH1-3: proportion of shares of the 3 largest shareholders

SH1-5: proportion of shares of the 5 largest shareholders

SH2-5: SH1-5 – SH1

D\_SH1-5: Change in total shareholdings by 5 largest shareholders during the period

N\_SH: number of all significant shareholders

Widely: dummy variable taking value 1 if SH1<20%, 0 otherwise

Cont\_FI: Firm controlled by a financial institution

Cont\_FF: Firm controlled by the founding family

Cont\_NFF: Firm controlled by a non-founding family

**Table 4.** Descriptive statistics

Table 5 provides the correlations of the different performance measures against the independent variables. The three measures of ownership concentration are positively related to stock price performance during down markets, and negatively related to performance during up markets. Furthermore, the presence of multiple blockholders seems especially beneficial during down markets, as we find that the number of significant shareholders and the total shareholders by the secondary shareholders correlate positively with the stock price performance measures during down markets. Finally, firms controlled by financial institutions tend to outperform other types of companies while firms controlled by non founding families tend to do significantly worse

during down markets. The results from the table 5 seem to provide some support for the hypotheses 1a, 2a, 2b and 4. We also test for possible multicollinearity considering the independent and control variables. The Variance Inflation Factor (VIF) gives a mean value of 1.67 and a maximum value of 1.94, indicating that there are no multicollinearity problems.

	R 10Down	R 20Down	R 30Down	R 10Up	R 20Up	R 30Up
SH1	0.12***	0.11***	0.06**	-0.14***	-0.14***	-0.13***
SH1-3	0.14***	0.14***	0.09***	-0.13***	-0.14***	-0.12***
SH1-5	0.15***	0.15***	0.11***	-0.11***	-0.13***	-0.11***
D_SH1-5	0.013	0.018	0.003	0.009	0.008	0.005
N_SH	0.08***	0.08***	0.09***	0.02	-0.02	0.02
SH2-5	0.06**	0.08***	0.09***	0.04	0.01	0.05
Cont_FI	0.09***	0.07**	0.06*	-0.08**	-0.05*	-0.05
Cont_FF	0.03	0.05	0.01	0.01	0.00	-0.01
Cont_NFF	-0.06**	-0.14***	-0.09***	0.04	0.07**	0.04

\*: significant at 10%; \*\*: significant at 5%; \*\*\*: significant at 1%

R ij: Stock price Return over a period of i trading days during a j (up/down) market

SH1: proportion of shares of the largest shareholder

SH1-3: proportion of shares of the 3 largest shareholders

SH1-5: proportion of shares of the 5 largest shareholders

SH2-5: SH1-5 – SH1

D\_SH1-5: Change in total shareholdings by 5 largest shareholders during the period

N\_SH: number of all significant shareholders

Cont\_FI: Firm controlled by a financial institution

Cont\_FF: Firm controlled by the founding family

Cont\_NFF: Firm controlled by a non-founding family

**Table 5.** Correlation matrix

Next, we consider the multiple regression models to test our hypotheses 1-4. Table 6 represent the regression analysis considering the relationship between the stock price performance and ownership concentration during extreme down markets. Models 1-3 show a consistent positive relationship between the shareholdings by the largest shareholder (SH1) and different specifications of stock price performance. The other two measures of ownership concentration, the shareholdings by the three largest and five largest shareholders, show a very similar image. These results provide strong support for



hypothesis 1a. Furthermore, we observe that the changes in shareholdings during the considered periods are not significant. This is probably due to the infrequent trading of large shareholdings during periods of stock market turmoil. Finally, larger listed companies do not lose significantly more value during extreme down markets compared to smaller listed firms. Table 7 shows the results for the relationship between the stock price performance and ownership concentration during extreme up markets. The results for ownership concentration are the exact opposite during up markets. Our three measures of ownership concentration show a negative relationship with stock price performance over a 10, 20 or 30 days window. In addition, larger companies, especially those pertaining to the IBEX-35 perform better than smaller companies during extreme up market periods. In sum, the results from table 6 and 7 show that minority investors attach a significant positive value to ownership concentration during extreme down market periods, while ownership concentration is valued negatively during up market periods. This could be driven by the increased reliance on large shareholders by minority shareholders during down market periods. Alternatively, the value of firms with concentrated ownership may be perceived to be more stable, undergoing less severely external market shocks.

Dep var: Rij	H	R 10	R 20	R 30	R 10	R 20	R 30	R 10	R 20	R 30
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept		-6.043*** (0.845)	-8.230*** (1.232)	-8.717*** (1.823)	-6.823*** (0.890)	-9.239*** (1.282)	-10.018*** (1.926)	-7.158*** (0.909)	-9.626*** (1.282)	-10.622*** (1.970)
SH1	+	0.033*** (0.009)	0.041*** (0.013)	0.036* (0.023)						
SH1-3	+				0.040*** (0.009)	0.052*** (0.013)	0.054*** (0.023)			
SH1-5	+							0.043*** (0.009)	0.056*** (0.013)	0.062*** (0.023)
D_SH1-5	+	0.112 (0.175)	0.061 (0.109)	0.042 (0.144)	0.116 (0.174)	0.041 (0.109)	0.034 (0.143)	0.120 (0.174)	0.040 (0.109)	0.028 (0.143)
IBEX35		-0.566 (0.796)	-1.112 (1.135)	-0.064 (1.734)	-0.506 (0.794)	-1.064 (1.131)	0.082 (1.731)	-0.493 (0.792)	-1.074 (1.130)	0.115 (1.729)
Size_1000		1.084 (0.743)	0.638 (1.059)	1.398 (1.627)	1.001 (0.743)	0.414 (1.060)	1.116 (1.627)	0.830 (0.744)	0.264 (1.063)	0.906 (1.634)
Size_250		-0.019 (0.684)	0.202 (0.979)	1.402 (1.476)	-0.096 (0.683)	0.033 (0.979)	1.212 (1.473)	-0.184 (0.683)	-0.079 (0.981)	1.052 (1.475)
Industry		Included	Included	Included	Included	Included	Included	Included	Included	Included
N		983	998	968	983	998	968	983	998	968
R-squared		0.079	0.085	0.045	0.0844	0.090	0.049	0.0871	0.092	0.051
Prob>F		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

\*: significant at 10%; \*\*: significant at 5%; \*\*\*: significant at 1%

R ij: Stock price Return over a period of i trading days during a j (up/down) market

SH1: proportion of shares of the largest shareholder

SH1-3: proportion of shares of the 3 largest shareholders

SH1-5: proportion of shares of the 5 largest shareholders

D\_SH1-5: Change in total shareholdings by 5 largest shareholders during the period, taking positives values if shareholdings increased

lbex35, Size\_1000, Size\_250: lbex35 firms, firms with market cap > €1000 million and firms with €1000 million >market cap> €250 million, respectively

**Table 6.** Regression analysis: Performance and ownership concentration during down markets

Dep var: Rij	H	R 10	R 20	R 30	R 10	R 20	R 30	R 10	R 20	R 30
		(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Intercept		5.150***	5.595***	12.959***	5.730***	6.632***	12.959***	5.786***	6.910***	13.864***
	+	(0.977)	(1.261)	(1.594)	(1.037)	(1.329)	(1.594)	(1.067)	(1.359)	(1.727)
SH1		-0.051***	-0.066***	-0.076***						
		(0.011)	(0.013)	(0.023)						
SH1-3	+				-0.045***	-0.067***	-0.069***			
					(0.011)	(0.014)	(0.017)			
SH1-5	+							-0.041***	-0.067***	-0.064***
								(0.011)	(0.014)	(0.017)
D_SH1-5	+	0.083	0.044	0.020	0.092	0.065	0.034	0.096	0.070	0.041
		(0.117)	(0.112)	(0.112)	(0.117)	(0.112)	(0.112)	(0.117)	(0.112)	(0.112)
IBEX35		2.647***	3.745***	-1.824	2.615***	3.771***	-1.741	2.658***	3.817***	-1.665
		(0.938)	(1.176)	(1.478)	(0.942)	(1.176)	(1.481)	(0.943)	(1.176)	(1.482)
Size_1000		1.028	2.924***	-2.376*	1.039	3.077***	-2.282	1.081	3.193***	-2.219
		(0.890)	(1.101)	(1.387)	(0.895)	(1.104)	(1.394)	(0.901)	(1.109)	(1.400)
Size_250		-0.040	0.841	-3.192**	0.060	0.931	-3.133**	0.1060	1.022	-3.076**
		(0.801)	(1.014)	(1.274)	(0.804)	(1.016)	(1.278)	(0.808)	(1.020)	(1.284)
Industry		Included	Included	Included	Included	Included	Included	Included	Included	Included
N		927	998	1020	927	998	1020	927	998	1020
R-squared		0.143	0.126	0.064	0.138	0.126	0.061	0.136	0.125	0.059
Prob>F		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

\*: significant at 10%; \*\*: significant at 5%; \*\*\*: significant at 1%

R ij: Stock price Return over a period of i trading days during a j (up/down) market

SH1: proportion of shares of the largest shareholder

SH1-3: proportion of shares of the 3 largest shareholders

SH1-5: proportion of shares of the 5 largest shareholders

D\_SH1-5: Change in total shareholdings by 5 largest shareholders during the period, taking positives values if shareholdings increased

Ibex35, Size\_1000, Size\_250: Ibex35 firms, firms with market cap > €1000 million and firms with €1000 million >market cap> €250 million, respectively

**Table 7.** Regression analysis: Performance and ownership concentration during up markets

Table 8 looks at the hypothesised non-monotonic relationship between ownership concentration and stock price performance, as well as the importance of secondary blockholders during down market periods. Models 19-21 introduce the squared term of the total shareholdings by the largest shareholder, into models 1-3. The results do not provide support for a non-linear relationship between ownership concentration and stock price performance. We therefore conclude, considering models 1-3 and 19-21 that the relationship between performance and ownership concentration is linear and positive during down market periods. Furthermore, models 22-27 consider the importance of secondary blockholders. We consider therefore the total number of blockholders as well as the shareholdings by the second to fifth largest shareholder. Models 22-24 show a significant positive relationship between the total number of blockholders and performance, confirming hypothesis 2a. In addition, the shareholdings by the secondary blockholders are also positively related to performance, confirming hypothesis 2b.

Table 9 looks at the hypothesised non-monotonic relationship between ownership concentration and stock price performance, as well as the importance of secondary blockholders during up market periods. Similar to the results for the down market, models 28-30 do not provide support for a non-linear relationship between ownership concentration and stock price performance. Moreover, models 31-33 show no significant relationship between the total number of blockholders and performance. In addition, no significant relationship is found between the shareholdings by the secondary blockholders and performance in models 34-36. Overall, from tables 8 and 9, we conclude that the relationship between performance and ownership concentration is linear, and positive during down market periods and negative during up markets. In addition, the presence of multiple blockholders is clearly beneficial during down markets, but shows no significant relationship with performance during up markets. This could be driven by the increased reliance on multiple blockholders by minority shareholders during down market periods to provide effective monitoring.

Dep var: R <sub>ij</sub>	H	R 10 (19)	R 20 (20)	R 30 (21)	R 10 (22)	R 20 (23)	R 30 (24)	R 10 (25)	R 20 (26)	R 30 (27)
Intercept		-5.830*** (0.974)	-7.817*** (1.395)	-8.113*** (2.119)	-8.066*** (0.989)	-10.274*** (1.440)	-12.488*** (2.184)	-7.447*** (0.950)	-10.091*** (1.372)	-11.787*** (2.078)
SH1	+	0.0181 (0.034)	0.012 (0.047)	-0.004 (0.074)	0.041*** (0.009)	0.050*** (0.013)	0.053*** (0.021)	0.040*** (0.009)	0.052*** (0.013)	0.053*** (0.021)
SH1_SQ	-	0.0002 (0.0003)	0.0003 (0.0005)	0.0004 (0.0008)						
N_SH	+				0.636*** (0.165)	0.642*** (0.236)	1.101*** (0.354)			
SH2-5	+							0.060*** (0.019)	0.083*** (0.027)	0.123*** (0.040)
D_SH1-5	+	0.111 (0.175)	0.063 (0.109)	0.042 (0.144)	0.110 (0.174)	0.058 (0.109)	0.018 (0.143)	0.129 (0.174)	0.034 (0.109)	0.010 (0.141)
IBEX35		-0.548 (0.796)	-1.074 (1.137)	-0.045 (1.734)	-0.632 (0.791)	-1.246 (1.133)	-0.218 (1.722)	-0.515 (0.792)	-1.124 (1.130)	0.071 (1.727)
Size_1000		1.167 (0.747)	0.805 (1.090)	1.618 (1.673)	0.794 (0.741)	0.313 (1.062)	0.872 (1.627)	0.794 (0.745)	0.194 (1.065)	0.787 (1.630)
Size_250		-0.034 (0.686)	0.173 (0.981)	1.348 (1.476)	-0.286 (0.683)	-0.099 (0.983)	0.998 (1.475)	-0.199 (0.683)	-0.114 (0.981)	1.047 (1.474)
Industry		Included	Included	Included	Included	Included	Included	Included	Included	Included
N		983	998	968	983	998	968	983	998	968
R-squared		0.079	0.085	0.045	0.093	0.092	0.054	0.0882	0.093	0.054
Prob>F		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

\*: significant at 10%; \*\*: significant at 5%; \*\*\*: significant at 1%

R<sub>ij</sub>: Stock price Return over a period of i trading days during a j (up/down) market

SH1, SH1\_SQ: proportion of shares of the largest shareholder and squared term of SH1

N\_SH , SH2-5: Shareholdings by secondary blockholders and number of all significant shareholders, respectively

D\_SH1-5: Change in total shareholdings by 5 largest shareholders during the period

Ibex35, Size\_1000, Size\_250: Ibex35 firms, firms with market cap >

€1000 million and firms with €1000 million >market cap> €250 million,

respectively

**Table 8.** Regression analysis: Performance, concentration and secondary blockholders during down markets

Dep var: Rij	H	R 10 (28)	R 20 (29)	R 30 (30)	R 10 (31)	R 20 (32)	R 30 (33)	R 10 (34)	R 20 (35)	R 30 (36)
Intercept		5.011*** (1.126)	5.509*** (1.261)	10.629*** (1.799)	5.356*** (1.197)	7.126*** (1.329)	13.049*** (1.914)	4.844*** (1.114)	6.315*** (1.425)	12.520*** (1.799)
SH1	+	-0.041 (0.040)	-0.060 (0.013)	.0891 (0.062)	-0.052*** (0.011)	-0.066*** (0.013)	-0.078*** (0.017)	-0.049*** (0.012)	-0.071*** (0.014)	-0.074*** (0.017)
SH1_SQ	-	-0.0001 (0.0004)	-0.00006 (0.0005)	-0.002*** (0.0006)						
N_SH	+				-0.059 (0.200)	-0.472* (0.251)	-0.027 (0.327)			
SH2-5	+							0.013 (0.022)	-0.031 (0.029)	0.019 (0.036)
D_SH1-5	+	0.083 (0.117)	0.044 (0.112)	0.017 (0.112)	0.086 (0.117)	0.058 (0.112)	0.027 (0.113)	0.078 (0.117)	0.056 (0.112)	0.014 (0.113)
IBEX35		2.643*** (0.938)	3.746*** (1.179)	-2.017 (1.475)	2.643*** (0.932)	3.834*** (1.174)	-1.821 (1.479)	2.673*** (0.939)	3.743*** (1.176)	-1.809 (1.478)
Size_1000		0.978 (0.912)	2.888*** (1.102)	-3.186** (1.427)	1.064 (0.935)	3.161*** (1.106)	-2.363 (1.396)	0.957 (0.899)	3.082*** (1.111)	-2.475* (1.407)
Size_250		0.048 (0.802)	0.845 (1.015)	-3.113** (1.270)	0.066 (0.806)	1.085 (1.020)	-3.179** (1.275)	-0.012 (0.806)	0.964 (1.020)	-3.269** (1.280)
Industry		Included	Included	Included	Included	Included	Included	Included	Included	Included
N		927	998	1020	927	998	1020	927	998	1020
R-squared		0.143	0.126	0.072	0.143	0.129	0.065	0.144	0.127	0.065
Prob>F		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

\*: significant at 10%; \*\*: significant at 5%; \*\*\*: significant at 1%

R ij: Stock price Return over a period of i trading days during a j (up/down) market

SH1, SH1\_SQ: proportion of shares of the largest shareholder and squared term of SH1

N\_SH , SH2-5: Shareholdings by secondary blockholders and number of all significant shareholders, respectively

D\_SH1-5: Change in total shareholdings by 5 largest shareholders during the period

Ibex35, Size\_1000, Size\_250: Ibex35 firms, firms with market cap > €1000 million and firms with €1000 million >market cap> €250 million, respectively

**Table 9.** Performance, concentration and secondary blockholders during up markets

Dep var: R <sub>ij</sub>	H	R 10	R 20	R 30	R 10	R 20	R 30
Down/Up		Down	Down	Down	Up	Up	Up
		(37)	(38)	(39)	(40)	(41)	(42)
Intercept		-4.456*** (1.056)	-5.897*** (1.509)	-6.247*** (2.258)	4.036*** (0.989)	3.936*** (1.616)	10.979*** (2.009)
Cont_FI	+	2.549*** (0.723)	2.887*** (0.998)	3.013** (1.503)	-1.459* (0.869)	-0.799 (1.032)	-2.015 (1.385)
Cont_FF	+	-0.326 (0.682)	-0.219 (0.948)	-0.444 (1.446)	-0.460 (0.821)	-0.677 (0.948)	-0.537 (1.292)
Cont_NFF	-	-1.708** (0.849)	-4.467*** (1.192)	-4.439*** (1.812)	0.886 (1.045)	2.501* (1.296)	0.874 (1.615)
D_SH1-5	+	0.153 (0.177)	0.089 (0.108)	0.041 (0.144)	0.072 (0.122)	0.039 (0.117)	0.016 (0.117)
IBEX35		-0.721 (0.806)	-1.317 (1.129)	0.041 (1.723)	2.446** (0.983)	4.040*** (1.223)	-1.142 (1.524)
Size_1000		1.236* (0.761)	0.750 (1.061)	1.667 (1.634)	0.450 (0.938)	2.509** (1.161)	-2.726* (1.457)
Size_250		-0.431 (0.703)	-0.628 (1.061)	0.370 (1.496)	0.271 (0.857)	0.841 (1.074)	-3.265** (1.345)
Industry		Included	Included	Included	Included	Included	Included
N		983	998	968	983	998	968
R-squared		0.097	0.116	0.071	0.156	0.122	0.050
Prob>F		0.000	0.000	0.000	0.000	0.000	0.000

\*: significant at 10%; \*\*: significant at 5%; \*\*\*: significant at 1%

R<sub>ij</sub>: Stock price Return over a period of *i* trading days during a *j* (up/down) market

Cont\_FI: Firm controlled by a financial institution

Cont\_FF: Firm controlled by the founding family

Cont\_NFF: Firm controlled by a non-founding family

D\_SH1-5: Change in total shareholdings by 5 largest shareholders during the period

lbex35, Size\_1000, Size\_250: lbex35 firms, firms with market cap > €1000 million and firms with €1000 million > market cap > €250 million, respectively

**Table 10.** Performance, type of ownership during down/up markets

The results for the hypotheses related to the relationship between performance and the type of ownership are presented in table 10. The models 37-39 focus on down market periods and show a significant positive performance for firms controlled by financial institutions (compared to widely held firms) and a significant negative performance for firms controlled by non founding families (compared to widely held firms). In contrast, the models 40-42 focus on up market periods and show a negative (but not significant) performance for firms controlled by financial institutions and a positive (but not significant) performance for firms controlled by non founding families.

In summary, the results show the importance of ownership concentration, the presence of multiple blockholders and type of ownership to explain stock market performance. In addition, the results for extreme down markets are fundamentally different from the up market results. While ownership concentration is valued positively during down market periods, it is valued negatively during up market periods. Furthermore, the presence of multiple blockholders only influences the stock price during down market periods. Finally, firms controlled by financial institutions loose less value during down markets, while firms controlled by non-founding families loose more value compared to widely held firms during down market periods. No significant relationship is found during up market periods. It is important to notice that the results are robust for different specification of stock market return, i.e. for 10, 20 or 30 trading days. In addition, although there is some overlap, each window has some specific periods not covered by the other windows, which reinforces the robustness of the findings. Finally, the results are also robust for different specifications for ownership concentration or presence of multiple blockholders. In addition, focusing on a Continental European stock market allows us to sidestep the endogeneity critique of the ownership literature, for at least two reasons. First, investors can neither acquire nor divest controlling blocks without incurring significant costs, and must therefore seek to maximize the performance of corporations given the block of shares they own in them (Stiglitz, 1994). Ownership can therefore be treated as an exogenous variable. Second, using a given set of measures for ownership structure immediately before the crisis to explain changes in the stock prices, while controlling for changes during the considered period, largely eliminates any spurious causality.



## **6. Conclusions and Limitations**

Shareholder structures are quite diverse across countries, with dispersed ownership being much more frequent in US and UK listed firms, compared to Continental Europe, where controlled ownership is prevalent. The differences in ownership structure have two obvious consequences for corporate governance: on the one hand, dominant shareholders have both the incentive and the power to discipline management; on the other hand, concentrated ownership can create conditions for a new problem because the interests of controlling and minority shareholders are not aligned. Since ownership control can have both positive and negative properties, empirical evidence is of paramount importance for judging about its final effect and for orienting regulations that could hamper the persistence of large controlling shareholders. In this study, we investigate the relationship between stock market performance and ownership structure during plummeting and soaring financial markets in a Continental-European setting.

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between ownership structure and performance, highlighting the importance of ownership concentration, secondary blockholders as well as the type of the controlling owner from a minority shareholder's perspective.

We recognize that it would be insightful to focus on a multiple country. However, the country investigated shares the same institutional framework with most Continental European countries and shows many similarities concerning the ownership structure of firms. Furthermore, the precise ownership data we obtained from for our setting are difficult to obtain for other settings. However, it would be interesting to perform a similar analysis in settings where different types of owners play more or less prominent role. For example, in a US setting it would be interesting to see the relevance of institutional investors during periods of market turmoil, while in Japan or Germany, it would be interesting to see whether the impact of financial institution is similar. Finally, while our analysis employs pooled OLS regressions, the use of survival analysis or panel data would be alternative methodological approaches.

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