

# Institutional Investors on Boards: Does Their Behavior Influence Corporate Finance?

Emma García-Meca<sup>1</sup> · Felix López-Iturriaga<sup>2,3</sup> · Fernando Tejerina-Gaite<sup>2</sup>

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**Abstract** We examine whether the behavior of institutional investors representatives on boards leads to observable differences in corporate finance. We find that directors representing pressure-sensitive investors (i.e., banks and insurance companies) prefer lower financial leverage whereas pressure-resistant directors (i.e., mutual funds and pension funds) show no particular preference. When analyzed separately, directors appointed by banks and insurance firms have different attitudes. Bank representatives on boards increase both the financial leverage and the banking debt. This result suggests that some types of institutional directors provide financial resources to the firms on whose board they sit, supporting the view that boards manage the uncertainty associated with strategic decision making and provide firms with preferential access to resources and financial expertise. This research has interesting academic and policy implications for the debate over the proper degree of institutional involvement in corporate governance. Different institutional investors have different agendas and incentives for corporate governance, and, therefore, both researchers and policy makers should no

longer consider institutional investors as a whole. In addition, our paper calls for new research on the causes and implications of institutional investor involvement in the corporate governance of nonfinancial firms. This new research could require new insights on the dynamics within the boards and on the interplay among the knowledge, incentives and attitudes of quite different directors.

**Keywords** Boards of directors · Ethical behavior · Civil-law countries · Corporate governance · Institutional investors

**JEL codes** G32 · G34

## Introduction

Recent research has highlighted the growing importance of institutional investors in corporate governance (Ferreira and Matos 2008; Ruiz Mallorquí and Santana Martín 2009, 2011; Hamdani and Yafeh 2013; Shu 2013). Theory suggests and empirical evidence confirms that institutional investors can provide active monitoring (Almazán et al. 2005) and bring board members closer to strategic decision making (Hoskisson et al. 2002). Weak investor protection laws in European countries have caused institutional investors to become important controlling shareholders and to take up active roles in the corporate governance.<sup>1</sup>

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✉ Emma García-Meca  
emma.garcia@upct.es

Felix López-Iturriaga  
flopez@eco.uva.es

Fernando Tejerina-Gaite  
ftejerina@efc.uva.es

<sup>1</sup> Accounting and Finance Department, Business Faculty, Technical University of Cartagena, Cartagena, Spain

<sup>2</sup> Accounting and Finance Department, Business Faculty, University of Valladolid, Valladolid, Spain

<sup>3</sup> Laboratory of Intangible-Driven Economy, NRU Higher School of Economics, Moscow, Russia

<sup>1</sup> On 5 April 2011, the European Commission adopted a Green Paper and launched a wide-ranging public consultation on the EU corporate governance framework. Among other questions, the European Commission asked about the incentive structure of asset managers managing long-term institutional investors' portfolios and about more effective monitoring by institutional investors. The results of this consultation were published on 15 November 2011 (European Commission 2011).

Business ethics is one of the most significant demands made by institutional investors, who usually require the participation of the board of directors in the planning and implementation of ethical behavior in corporations (García-Sánchez et al. 2015). In common-law environments, corporate governance has been improved by enhancing board independence (Duchin et al. 2010; Masulis and Mobbs 2011); however, agency problems specific to civil-law countries have resulted in the high participation of institutional directors on boards. Heidrick and Struggles (2011) find that directors appointed by institutional investors account for 40 % of directorship in Spain, 35 % in Belgium, 24 % in Poland, and 22 % in France; in comparison, they only account for 2 % of British firms directorships.

Despite the involvement of institutional investors in the European corporate governance, the academic research has often focused on their role as shareholders, and thus the effect of such investors as directors is relatively unexplored. Given the importance of institutional investors in capital allocation to corporations as well as their role in firm governance, a better understanding of how their presence on boards affects corporate finance is needed, especially in the European countries where they have a higher presence.

Although agency theory has dominated research about board of directors, other theoretical approaches such as resource theory, stewardship theory, and resource dependency theory provide interesting insights regarding the role of institutional directors (Gabrielsson and Huse 2005). When examined through complementary theoretical lenses, institutional participation on boards of directors may help to empower managers to formulate and implement strategy and to reduce complexity and facilitate cooperation and coordination among stakeholders (Cuevas-Rodríguez et al. 2012). In line with van Ees et al. (2009) and Pugliese et al. (2009), we propose that institutional directors may be more concerned with solving problems of coordination and managing the complexity and uncertainty associated with strategic and financial decision making rather than with resolving conflicts of interests (Roberts et al. 2005). Consequently, we analyze the roles of institutional directors in corporate finance decisions, integrating agency, and other organizational control perspectives.

Our analysis proceeds in two steps. First, we study the impact of directors who represent institutional investors on leverage. However, according to recent literature, institutional investors are not a homogeneous group as they have different incentives and varying abilities to engage in the corporate governance (Almazán et al. 2005; Chen et al. 2007; Cornett et al. 2007; Bona et al. 2011). We propose that clarifying the type of business relations between firms and institutional investors is necessary to describe the role

of institutional directors and, thus, the financial decisions taken by the board. Accordingly, we study the relation between capital structure decisions and institutional directors, making a distinction between those institutional investors who maintain business relations with the firm on whose board they sit (pressure-sensitive directors) and institutional investors whose business activity is not related to the company on which they hold a directorship (pressure-resistant directors).

In a second step, we focus on the specific role of bank directors and analyze their effects on corporate finance when they act as shareholders and directors. This second step is motivated by Kroszner and Strahan (2001) who find that when bankers serve on boards, the fiduciary duty of directors to promote the interests of shareholders can lead to a conflict with the banker-director's role as lender or potential lender due to the different payoff structures of debt.

We use a sample of Spanish listed firms between 2004 and 2010. Spain is a good paradigm to study the effectiveness of institutional directors for two main reasons: First, Spain has the highest presence of institutional investors on boards of large firms in Europe. In contrast to the Anglo-Saxon capital markets, Spain's capital markets are characterized by high ownership concentration and a lack of liquidity. As a result, the board of directors is the prevalent mechanism of control, and institutional directors are often large block-holders. This high proportion of institutional directors creates a sense of stability, and these directors thus have ample opportunities to engage in financial strategic decisions (Elyasiani et al. 2010). Second, Spain has a bank-based financial system in which financial intermediaries perform a wide range of financial services. Contrary to their Anglo-Saxon counterparts, Spanish financial institutions have traditionally played a relevant role in the governance of nonfinancial firms. As a consequence of the deregulation process and the growing pressure from financial markets, banks have recently widened their activities from their traditional lending–borrowing to include, for example, asset management and shares issuance underwriting.

Our results suggest that institutional directors have diverse incentives to engage in the corporate governance. Consistent with the relevant role of business relations with the firm, we find that directors representing pressure-sensitive investors (i.e., banks and insurance companies) are related to lower financial leverage. Pressure-resistant directors (i.e., mutual funds and pension funds) do not have any significant effect. Nevertheless, when analyzed separately, bank and insurance firm representative directors show different attitudes. Specifically, banks representatives on the board have a positive relation with both the firm's financial leverage and the banking debt. This result

suggests that some types of institutional directors provide financial resources to the firms on whose board they sit, supporting the view that boards manage the uncertainty associated with strategic decision making and provide firms with preferential access to resources and financial expertise (van Ees et al. 2009). Our results are robust to different metrics of the firm's financial policy, to additional identifications of the role played by institutional directors on the board committees, and to different estimation methods.

In our extended analysis, we also find that at low levels of director ownership the benefits of providing financial access appear to dominate while at higher levels risk-taking issues and lender liability concerns become more important. In these cases, bank directors prefer that the firm undertake actions that increase the probability of debt repayment rather than maximize the expected return to shareholders. To some extent, it can be understood as a possible substitution effect between monitoring through the board of directors and insider ownership.

Our results must be understood with some caveats. We find relations among variables but there is a concern about the relation of causality. The endogeneity has been identified as a common problem in empirical corporate finance (Roberts and Whited 2013; Ang and Cheng 2011). Thus, there can be a concern about a possible opposite relation between corporate finance and institutional involvement in the corporate governance. For example, higher leverage provided by banks could mean that the lending banks are interested in taking up a directorship. In any case, our empirical method (the generalized method of moments) provides efficient estimates to address this problem.

This study contributes to the literature in three different ways. First, we complement the empirical evidence regarding the different types of institutional investors and the different ways that they can engage in corporate governance (Almazán et al. 2005; Ruiz Mallorquí and Santana Martín 2009). Although considerable research has been conducted on institutional ownership, the literature to date has failed to reach a consensus on whether institutional investors perform a specific role in boardrooms. In addition, banks are institutional investors that have drawn most of the attention. Our paper, however, focuses not only on banks, but also on other institutional investor categories, distinguishing between sensitive and resistant investors. Second, we provide new evidence on the link between boards of directors and firms' financial strategy. Capital structure can be a financial mechanism of managerial discipline (Margaritis and Psillaki 2007), and thus institutional directors can improve managerial monitoring in a complementary/substitute way. Our results support the literature that emphasizes the strategic advisory role of board members in addition to exercising independent control. Our

findings are also in line with the literature on board of directors that concludes that resource dependence theory is supported more often than other board perspectives (Hillman et al. 2008; Barroso et al. 2009), including agency theory. Third, we extend previous research, mainly focused on the Anglo-Saxon environment, to a bank-oriented system with lower legal protection for investors. Whereas in US and UK institutional investors have a very reduced presence in boards, in Spain internal control mechanisms are prevalent and institutional blockholders monitor managers similarly to traditional owners. Our results go one step further to test the role of financial intermediaries when they not only act as traditional creditors but also sit on the board of directors and even own significant equity stakes. Spain offers a unique opportunity to analyze the conflicts of interests that arise from banks being simultaneously shareholders, creditors, and directors.

The remainder of the paper is organized as follows. "Institutional Investors, Boards of Directors, and Corporate Finance" section reviews the main theoretical ideas and states our hypotheses about the influence of institutional directors on capital structure. "Empirical Design" section describes the sample, data, and empirical method. "Results" section contains the empirical results. Finally, "Concluding Remarks" section provides our summary and conclusion.

## Institutional Investors, Boards of Directors, and Corporate Finance

### Institutional Directors: Types

Prior research on the effects of institutional investors often addresses shareholders and bondholder wealth and is commonly based on the framework of the conventional US/UK model of corporate control (Elyasiani et al. 2010). These studies generally focus on institutional investors as shareholders (Roberts and Yuan 2006), and when they do address the role of boards of directors, they usually focus on independent directors (Ertugrul and Hegde 2008; Fields et al. 2012). However, the analysis of independent directors in Europe has not provided conclusive results, with some authors finding, contrary to the UK- and US-based researches, that gray directors representing controlling shareholders rather than independent directors fill the monitoring role.<sup>2</sup>

<sup>2</sup> The Unified Code of Corporate Governance in Spain distinguishes three types of directors: executive directors, independent directors, and gray directors. Gray directors are nonexecutive directors representing block-holders, most commonly banking and insurance companies or investment funds.

Given the conflicting relation in Continental European countries under civil-law orientation, as well as many non-European countries between minority shareholders and controlling shareholders (La Porta et al. 1997; Morck et al. 2005), institutional directors can significantly influence the wealth distribution of shareholders and even of bondholders. Although previous research has addressed the influence of the board of directors on managerial relations, relatively little is known about the relation between board composition and the shareholders–bondholders conflict. As far as we are aware, the studies by Bhojraj and Sengupta (2003) and Roberts and Yuan (2006) are among the few that investigate how institutional ownership is related to debt cost and find that institutional investors have a significant influence in the risk faced by debtholders.

Despite their influence, not all institutional investors are equally willing or able to serve this function (Almazán et al. 2005; Pucheta-Martínez and García-Meca 2014; Wang 2014). The literature suggests that some institutional investors focus on monitoring and exerting influence on managers, whereas others concentrate on information gathering and short-term trading profits (Elyasiani et al. 2010). In other words, the differences across institutional investors are not only legal or regulatory but also vary in terms of investment strategy and their incentives and resources to gather information and to engage in corporate governance (Bennett et al. 2003; Cox et al. 2004).

Consistent with this heterogeneity across institutional investors, some authors have classified institutional ownership into two groups: pressure-resistant and pressure-sensitive institutional investors (Bhattacharya and Graham 2007; Dong and Ozkan 2008; Kochhar and David 1996). Pressure-resistant investors are institutional investors that only keep an investment relation with firms whose shares they own. These institutional investors include pension funds, mutual funds, venture capital firms, endowments, and foundations. Their position in the firm is more independent. Conversely, pressure-sensitive investors keep both investment and business relations with firms. These institutional shareholdings include equity holdings by insurance companies, banks, and nonbank trusts. Their ability to control may be weakened by keeping business and financial relations simultaneously with firms (Brickley et al. 1988).

## Theoretical Background and Hypotheses Development

The corporate governance literature recognizes different roles of boards of directors in decision making (Barroso et al. 2011; Knapp et al. 2011). Resource-dependence theory argues that board members are in a good position to contribute to strategic decision making by providing access

to resources (Pfeffer 1972, 1973). In this sense, the presence of institutional investors on boards can moderate the loss of independence by giving a firm access to debt funds and providing financial resources, services, and business connections. In addition, pressure-sensitive directors (i.e., banks and insurance companies) are likely to have additional information about the firm's investment opportunities and also have better chances of raising external funds (Morck et al. 2000; Hoshi et al. 1990).

Stewardship theory, which emphasizes the experience of a director as it complements the experience, knowledge, and skills of managers, is commonly used to understand the involvement of institutional directors in the strategic course of the corporation (Castaldi and Wortman 1984). Consistent with this view, directors appointed by institutional investors provide expertise on financial issues. However, consistent with the agency theory, pressure-sensitive directors pose a problem of conflicting interests because they may be focused mainly on the firm's long-term viability and debt payoffs. Hence, we pay special attention to this kind of directors.

From the agency theory perspective, the board of directors can work as an information system for external stakeholders to monitor managerial behavior and firm leverage. Trying to limit managerial opportunism and lower the risk faced by lenders, financial institution representatives may restrict further borrowing, thus acting as enabled monitors. Insurance companies are also likely to have incentives to minimize the probability of default, and so they may encourage lower levels of leverage. Jia et al. (2012) point out that the insurance coverage allows debtholders' payoffs to become relatively independent of project selection, and so limits the ability of borrowing firms to shift business risk onto debtholders. As a result, corporate control by insurance companies can help to mitigate potential agency problems such as borrowers' assets substitution and thereby lowers lenders' risk exposures, reducing leverage capacity.

Given the reasons both for a positive relation and a negative relation between capital structure and pressure-sensitive directorships, we pose the first hypothesis in a dual way:

**H1a** Pressure-sensitive investor directorships are positively related to corporate leverage.

**H1b** Pressure-sensitive investor directorships are negatively related to corporate level of leverage.

Nevertheless, even within pressure-sensitive investors (i.e., insurance companies and banks), some differences exist. Banks have a special financial relation with firms. In the bank-oriented systems such as Spain, banks are the main financial suppliers of nonfinancial firms, and thus

they are directly involved in the capital structure decisions of the firm, acting simultaneously both as lenders and as shareholders.

Banks usually have representatives on the boards of nonfinancial firms in many bank-oriented countries. Previous literature highlights four main reasons that firms have a bank on the board (Kroszner and Strahan 2001; Booth and Deli 1999; Dittmann et al. 2010). First, bankers can improve the information flow between the bank and customer firms, thus helping the firm to raise funds from the bank. The information advantage noted by resource-dependence theory permits a better assessment of a firm's creditworthiness and eases loans from the incumbent banks. In this case, bankers may seek board seats to sell debt to the firm. Second, according to stewardship theory, the board of directors and especially bank directors may be considered as a bundle of strategic resources to be used by and within firms as a source of timely advice in areas in which in-firm knowledge is limited or lacking. Consequently, financial executives may be appointed to the boards of nonfinancial firms as financial experts to raise funds. Bankers on the board overcome adverse selection and credit-rationing problems, and firms with a banker on their board are more leveraged and able to use more bank lending. Third, bankers can play a certification role on the board because a banker joining the board of a firm can signal to the market that the firm is unlikely to experience financial distress. Thus, a banker's presence may lower the cost of external finance. Finally, bankers on boards can take advantage of their monitoring abilities and play a role in controlling managers, aligning their interests with shareholders' interests.

Regarding this monitoring role, Fama (1985) suggests that banks' monitoring costs can be lower than the monitoring costs of the other intermediaries (e.g., insurance and finance companies). The ongoing history of a borrower as a depositor provides information that allows a bank to identify the risks and to monitor at a lower cost. Likewise, signals from bank loans about a firm's credit worthiness can lower the information costs of other contracts. Hadlock and James (2002) further report that banks are unique because, unlike other security offerings, bank loan announcements are associated with positive abnormal returns. They conclude that banks provide some special services not available from other lenders. Long-term relations between banks and nonfinancial firms reduce asymmetric information and allow banks to control firm's investment decisions. Thus, they diminish adverse selection and moral hazard problems. In addition, banks can acquire bargaining power over the firm's profits, once projects have begun (Rajan 1992). This power comes in part because of a variety of control rights that they receive when firms default or violate debt covenants and in part

because they typically lend short term, so borrowers must return at short and regular intervals for more funds.

Despite the advantages of having a bank on board, when banks act simultaneously as directors, investors, and creditors, conflicts of interests arise. Bankers on boards can simply protect their interests as shareholders or safeguard their loans by getting involved in the governance of the companies in which their loans have a significant probability to be distressed. Thus, the fiduciary duty of directors to promote the interests of shareholders can lead to a conflict with the banker-director's role as lender or potential lender. Adams and Ferreira (2007) find that institutional directors may spend a significant portion of their time advising rather than monitoring. This advisory influence can be problematic when directors are affiliated with financial institutions and are more focused on pursuing the interests of those institutions rather than maximizing all shareholders' value.

These diverse roles have direct consequences in the capital structure of the firm. Ramírez (1995), who was the first author to provide evidence that bank directors may help raise capital, finds that the presence of bankers on corporate boards reduces the sensitivity of investment to cash flow. In the same vein, Stearns and Mizruchi (1993) find that the types of financial institutions represented on firm's boards (commercial banks, insurance companies, or investment banks) were associated with different types of funds raised by the firms. Morck et al. (2000) show that banker-directors emphasize policies that favor creditors over shareholders in Japan. In addition, Booth and Deli (1999) find that the presence of commercial bankers on the board is positively related to firm debt. Interestingly, Booth and Deli also find that although the presence of unaffiliated bankers (i.e., those whose banks do not have business relationships with the firm) on boards is positively related with bank borrowing, the presence of affiliated bankers is not. They conclude that these results are consistent with the view that commercial bankers supply bank debt market expertise (resource dependence theory) but do not play a monitoring role (agency theory). Also, Byrd and Mizruchi (2005) find that the presence of lending bankers on a firm's board negatively affects the debt ratio, while the impact of nonlending bankers depends on the firm's probability of financial distress. Notwithstanding this finding, Güner et al. (2008) show that a company that includes an affiliated banker on its board is able to raise larger loans. More recently, Slomka-Golebiowska (2012) shows that firms with a banker on the board rely more heavily on bank loans than on internal funds. However, Kroszner and Strahan (2001) show no significant relation between debt ratios and affiliated bank presence on the board of nonfinancial firms.

To summarize, the empirical evidence remains inconclusive about the relation between the presence of banker-

directors and the availability of debt finance. On the contrary, there is a wide consensus about banks' potential influence on firms' financial decisions due to the close relation between banks and nonfinancial firms, especially in bank-oriented countries.

Therefore, we state our second hypothesis in a dual way:

**H2a** Bank directorships are positively related to the leverage of nonfinancial firms.

**H2b** Bank directorships are negatively related to the level of leverage of nonfinancial firms.

## Empirical Design

### Sample and Variables

The sample is drawn from the population of Spanish nonfinancial firms listed on the Spanish Stock Exchange during 2004–2010. We exclude financial companies both because they are under special scrutiny by financial authorities that constrain the role of their board of directors and because of their special accounting practices. We obtain our data from two databases. Financial information and firms' market value come from the Amadeus database.<sup>3</sup> Corporate governance information is collected from the annual corporate governance reports that all the listed companies must publish since 2003. We build an unbalanced panel of 627 firm-year observations from 162 firms. Roughly, our sample accounts for more than 95 % of the capitalization of Spanish nonfinancial firms.

We define two dependent variables. LEV is the financial leverage variable, measured as the ratio of book value of debt to total assets, and BKLEV is the bank leverage variable, defined as the proportion of bank debt (both short term and long term) over total debt. We operationalize the board of directors through a number of variables. We define SENSIT as the proportion of the board members who are representative of pressure-sensitive institutional investors (i.e., banks and insurance companies), and RESIST as the proportion of the board members who are representative of pressure-resistant institutional investors (primarily mutual funds and pension funds). Given our special attention to the roles played by the different institutional investors, we define the BANK variable as the proportion of directors who are representative of banks (both commercial banks and saving banks) and INSUR as the proportion of directors appointed by the insurance companies.

As a robustness analysis, we check the validity of our results when the audit and compensation and nominating committees are taken into account. Thus, we define analogous variables concerning the presence of such directors in the audit and compensation and nominating committees. Specifically, SENSITAC (SENSITNC) is the proportion of pressure-sensitive representatives on the audit (compensation and nominating) committee, RESISTAC (RESISTNC) is the proportion of the pressure-resistant representatives on the audit (compensation and nominating) committee, BANKAC (BANKNC) is the proportion of members of the audit (compensation and nominating) committee appointed by banks, and INSURAC (INSURNC) is the proportion of the audit (compensation and nominating) committee members appointed by insurance companies. As discussed later, we interact some boards of director variables with the insider ownership (INSOWN), defined as the proportion of shares held by the directors.

We control for a number of factors that can potentially affect corporate leverage and that make our research comparable to previous studies (Antonioni et al. 2008; Frank and Goyal 2009; Kayo and Kimura 2011; Dang 2011; Gómez et al. 2014). ASMAT is the assets maturity, defined as the ratio of fixed assets to annual depreciation expenses. MTB is the equity market-to-book value, which proxies both growth opportunities and market expectations about the firm. SIZE is the log of total assets and is a measure of firm size. TANGIB is the proportion of tangible assets over total assets and is informative about a firm's debt collateral. We also control for the return on assets (ROA), the age of the firm as the log of the number of years since the firm constitution (AGE), and the tax advantages of debt (TAX) defined as tax payments to costly total debt. Table 1 provides a summary of all the variables.

### Empirical Method

We first report a descriptive analysis to show the main characteristics of our sample. This step provides preliminary evidence about a possible effect of institutional directors on corporate finance and about possible differences among the types of institutional investors who appointed the directors. Then we perform an explanatory analysis to test our hypotheses. We run the following baseline model:

$$\begin{aligned} LEV_{it} = & \alpha + \beta_1 \cdot LEV_{it-1} + \beta_2 \cdot ASMAT_{it} + \beta_3 \cdot MTB_{it} \\ & + \beta_4 \cdot SIZE_{it} + \beta_5 \cdot ROA_{it} + \beta_6 \cdot TANGIB_{it} \\ & + \beta_7 \cdot AGE_{it} + \beta_8 \cdot TAX_{it} + \sum \beta_j \\ & \cdot CORPGOV_{it} + \eta_i + \eta_t + \varepsilon_{it}, \end{aligned}$$

where CORPGOV stands for the variables of corporate governance as previously defined,  $\eta_i$  represents the

<sup>3</sup> Amadeus is a product of Bureau van Dijk Electronic Publishing and provides comparable standardized financial information for companies across Europe.

**Table 1** Variable definition

Variables	Description
LEV	Ratio of book debt to total assets
BKLEV	Bank debt to total debt
SENSIT	Proportion of the directors who represent pressure-sensitive institutional investors
RESIST	Proportion of the directors who represent pressure-resistant institutional investors
BANK	Proportion of the directors who represent banks
INSUR	Proportion of the directors who represent insurance companies
SENSITAC	Proportion of the audit committee members who represent pressure-sensitive institutional investors
RESISTAC	Proportion of the audit committee members who represent pressure-resistant institutional investors
BANKAC	Proportion of the audit committee members who represent banks
INSURAC	Proportion of the audit committee members who represent insurance companies
SENSITNC	Proportion of the compensation and nominating committee members who represent pressure-sensitive institutional investors
RESISTNC	Proportion of the compensation and nominating committee members who represent pressure-resistant institutional investors
BANKNC	Proportion of the compensation and nominating committee members who represent banks
INSURNC	Proportion of the compensation and nominating committee members who represent insurance companies
INSOWN	Insiders ownership (i.e., proportion of shares held by the directors)
ASMAT	Assets maturity (i.e., ratio of fixed assets to annual depreciation expenses)
MTB	Equity market to book ratio
SIZE	Total assets (log)
TANGIB	Tangible assets over total assets
ROA	Gross profit to total assets
AGE	Years since the firm constitution (log)
TAX	Tax payments to costly debt

individual effect,  $\eta_i$  represents the time effect, and  $\varepsilon_{it}$  represents the stochastic error. The time effect includes the macroeconomic factors that affect all the firms in the same period.

Our database combines time-series with cross-sectional data, allowing the formation of panel data, which we estimate with the appropriate panel data methodology (Arellano 2003). In the estimation of our model, two problems can arise: constant and unobservable heterogeneity and endogeneity. Constant and unobservable heterogeneity refers to specific characteristics of each firm that remain constant over time as represented by the fixed-effects term  $\eta_i$ . Because they are unobservable, they become part of the random component in the estimated model. Panel data methodology enhances the control of this constant and unobservable heterogeneity introduced by the fixed-effects term.

Both prior literature and practitioners have noticed the existence of target debt ratios as firms attempt to adjust their financial leverage to an annual target level (Bancel and Mittoo 2004; Flannery and Rangan 2006). Consequently, we propose an auto-regressive model in which lagged financial leverage is among the right-hand-side variables.

The endogeneity problem may appear because lagged financial leverage can be affected by the structure of the

board of directors (Demsetz and Villalonga 2001; Hermalin and Weisbach 1998; Villalonga and Amit 2006). To address this problem, Blundell and Bond (1998) and Bond (2002) suggest the use of the panel data system estimator. This procedure is an improved version of the generalized method of moments given the possibility that weak instruments can induce poor asymptotic precision (Alonso-Borrego and Arellano 1999). This method provides efficient estimates whose consistency depends critically on the absence of second-order serial autocorrelation in the residuals and on the validity of the instruments (Arellano and Bond 1991). Accordingly, we report the  $m_2$  test. To test the validity of the instruments, we use the Hansen test of overidentifying restrictions, which allows us to test the absence of a correlation between the instruments and the error term and, therefore, to check the validity of the selected instruments.

## Results

### Descriptive Statistics

Table 2 presents the mean value, the standard error, and the quartiles of the main variables. Representatives of

**Table 2** Main descriptive statistics

	Mean	Std. Dev.	Q25	Q50	Q75
LEV	0.593	0.183	0.483	0.611	0.729
BKLEV	0.478	0.214	0.343	0.511	0.642
RESIST	0.137	0.182	0.000	0.083	0.200
SENSIT	0.072	0.110	0.000	0.000	0.125
BANK	0.063	0.102	0.000	0.000	0.111
INSUR	0.009	0.051	0.000	0.000	0.000
INSOWN	0.275	0.264	0.026	0.195	0.505
ASMAT	17.094	19.672	8.988	13.015	19.440
MTB	2.656	2.529	1.310	1.984	3.117
SIZE	13.592	2.021	12.192	13.471	14.862
TANGIB	0.568	0.193	0.425	0.586	0.706
ROA	0.041	0.076	0.013	0.041	0.077
AGE	3.804	0.630	3.434	3.807	4.263
TAX	0.173	1.189	0.110	0.244	0.309

This table provides the mean, standard deviation, and quartiles of the main variables. LEV is the book value of debt over total assets; BKLEV is the proportion of total debt lent by banks; RESIST, SENSIT, BANK, and INSUR are the proportion of the directors who represent pressure-resistant, pressure-sensitive institutional investors, banks, and insurance companies, respectively; INSOWN is the proportion of shares held by directors; ASMAT is assets maturity; MTB is equity market-to-book ratio, SIZE is the log of total assets, TANGIB is tangible assets over total assets, ROA is gross profit over total assets; AGE is the log of the number of years since the constitution of the firm; and TAX is taxes paid over costly debt

institutional investors account for around 21 % of directorships, with pressure-resistant directors twice as important as pressure-sensitive directors. Consistent with the international trend to increase the importance of institutional investors, the proportion of directors appointed by institutional investors in our sample increases from 19.6 % in 2004 to 21.7 % in 2010.

Table 3 reports the correlation matrix among the variables. With the exception of the relation between SENSIT and BANK, all present low correlation coefficients, so that multicollinearity should not be a concern. To be sure, we also provide a vector inflation factor (VIF). Our VIF scores are below three, and thus we confirm that multicollinearity does not skew our results (Kutner et al. 2005).

For an exploratory analysis, we divide the sample into two groups depending on the proportion of institutional investors in the boardroom: a group of firms with the proportion of pressure-sensitive directors over the SENSIT median value and the group of firms with the proportion of pressure-sensitive directors under the SENSIT median value. The same pattern applies to BANK, INSUR, and RESIST variables. Then, we conduct a test of means comparison to explore whether capital structure and bank debt are different between both groups. Table 4 reports the

results. Although not conclusive, the findings suggest that gray directors appointed by institutional investors are related to differences in corporate finance. More specifically, directors representing pressure-resistant investors and banks increase both the leverage and the proportion of bank debt. Furthermore, the insignificant effect of directors representing pressure-sensitive investors seems to be due to the opposing influence of banks and insurance companies in corporate finance.

### Baseline Regression Results

Table 5 provides the estimates for the first hypothesis. In column 1, we test the effects of both pressure-sensitive and pressure-resistant institutional directors on financial leverage along with the control variables. The results are in line with H1b because the proportion of pressure-sensitive directors has a negative influence on corporate leverage. This result can be understood as a sign that this kind of director exercises control that deters risk taking through debt, supporting the managerial monitoring role by directors representing pressure-sensitive investors.

In column 2 of Table 5, we unravel the different types of pressure-sensitive directors (i.e., banks and insurance companies) along with pressure-resistant directors. We find a different role for bank representative directors relative to insurance companies' representatives. Whereas bank representatives have a positive impact on firm leverage, directors appointed by insurance companies avoid the use of debt. These results are in line with Booth and Deli (1999), Güner et al. (2008), and Kroszner and Strahan (2001). The findings confirm H2a and suggest that directors who represent banks provide financial expertise and access to financial funds, as the stakeholder and resource dependence theories suggest. They are also consistent with the idea that bankers serve on boards of nonfinancial firms to promote their own business (debt selling hypothesis). The negative coefficient of insurance company representatives can be understood as insurance companies' expression of their interest in reducing firms' risk taking by minimizing default probability. The results show that pressure-resistant directors (i.e., mutual funds and pension funds) do not seem to have a consistent effect.

The coefficient of the lagged leverage is consistent with previous research about the speed of debt adjustment (Hovakimian and Li 2011; Vallelado and Saona 2011; González and González 2011). The estimates of our control variables also show that firms with longer asset maturity, higher market-to-book ratios, and larger size have higher leverage. Conversely, assets tangibility, a firm's profitability, and the effective tax rate are negative determinants of corporate leverage.



**Table 3** Correlation matrix

	LEV	BKLEV	SENSIT	RESIST	BANK	INSUR	INSOWN	ASMAT	MTB	SIZE	TANGIB	ROA	AGE
BKLEV	0.213												
SENSIT	0.070	0.134											
RESIST	0.186	0.107	-0.205										
BANK	0.130	0.133	0.967	-0.224									
INSUR	-0.225	0.014	0.189	0.061	-0.068								
INSOWN	-0.083	-0.028	-0.062	0.367	-0.074	0.044							
ASMAT	0.064	0.196	0.026	-0.036	0.025	0.004	0.071						
MTB	0.080	-0.210	-0.084	-0.063	-0.067	-0.073	-0.036	-0.085					
SIZE	0.383	0.152	0.285	-0.066	0.331	-0.157	-0.268	0.182	-0.020				
TANGIB	0.007	0.468	0.229	-0.100	0.221	0.044	-0.077	0.227	-0.242	0.401			
ROA	-0.293	-0.365	-0.014	-0.138	-0.014	-0.003	-0.110	-0.080	0.442	0.122	-0.130		
AGE	0.239	0.010	0.046	0.187	0.008	0.149	-0.099	-0.030	0.053	0.207	-0.079	-0.031	
TAX	-0.090	0.020	0.053	-0.016	0.039	0.057	0.050	0.027	0.005	0.034	0.036	0.099	-0.005
VIF			1.25	1.39	1.50	1.19	1.33	1.15	1.11	1.73	1.66	1.27	1.22

This table presents the Pearson's correlation matrix. LEV is the book value of debt over total assets; BKLEV is the proportion of total debt lent by banks; RESIST, SENSIT, BANK, and INSUR are the proportion of the directors who represent pressure-resistant, pressure-sensitive institutional investors, banks, and insurance companies, respectively; INSOWN is the proportion of shares held by directors; ASMAT is assets maturity; MTB is equity market-to-book ratio; SIZE is the log of total assets; TANGIB is tangible assets over total assets; ROA is gross profit over total assets; AGE is the log of the number of years since the constitution of the firm; and TAX is taxes paid over costly debt

**Table 4** Test of means comparison

	LEV			BKLEV		
	Under median	Over median	<i>p</i> value	Under median	Over median	<i>p</i> value
SENSIT	0.591	0.598	0.646	0.455	0.492	0.039
BANK	0.579	0.616	0.016	0.454	0.497	0.017
INSUR	0.604	0.391	0.000	0.468	0.503	0.409
RESIST	0.555	0.608	0.002	0.439	0.493	0.005

This table provides the proportion of directors who represent pressure-sensitive investors (SENSIT), pressure-resistant investors (RESIST), banks (BANK) or insurance companies (INSUR) conditional on the financial leverage (LEV) or bank debt (BKLEV). *p*-value is the significance level to accept the null hypothesis of equality of means between groups

**Table 5** Generalized method of moments estimates of the baseline model (financial leverage)

	(1)	(2)	(3)	(4)
LEV <sub><i>t</i>-1</sub>	0.721*** (62.37)	0.704*** (60.45)	0.729*** (69.18)	0.682*** (39.03)
SENSIT	-0.030** (2.437)		0.0402*** (3.594)	
SENSIT·INSOWN			-0.003*** (6.123)	
RESIST	0.056*** (2.889)	0.0203* (1.631)	0.099 (0.596)	0.030 (0.335)
RESIST·INSOWN			-0.004 (1.193)	-0.004* (1.892)
BANK		0.007** (2.355)		0.066** (2.555)
BANK·INSOWN				-0.004*** (5.515)
INSUR		-0.408** (2.571)		-1.754** (2.403)
INSUR·INSOWN				0.0270 (1.604)
ASMAT	0.0005*** (6.269)	0.0006*** (6.142)	0.0007*** (7.481)	0.0007*** (7.760)
MTB	0.004*** (12.66)	0.004*** (10.05)	0.004*** (11.94)	0.004*** (10.01)
SIZE	0.087** (2.154)	0.075** (2.106)	0.059* (1.695)	0.067 (1.645)
SIZE <sup>2</sup>	-0.002* (1.802)	-0.002* (1.760)	-0.001 (1.361)	-0.002 (1.350)
TANGIB	-0.052*** (6.215)	-0.049*** (5.509)	-0.042*** (3.660)	-0.032*** (2.769)
ROA	-0.296*** (10.23)	-0.305*** (10.15)	-0.278*** (8.815)	-0.308*** (7.809)
AGE	-0.004 (0.477)	-0.005 (0.773)	-0.005 (0.801)	-0.002 (0.179)
TAX	-0.009*** (8.707)	-0.008*** (8.130)	-0.011*** (6.689)	-0.009*** (6.502)
Observations	413	417	411	415
<i>m</i> <sub>2</sub>	0.85	-0.17	-0.19	0.35
Hansen test (d.f.)	63.93 (215)	55.32 (207)	56.64 (213)	61.85 (206)

This table provides the estimated coefficients (*t*-stats) of the estimation of the baseline model through the generalized method of moments. The dependent variable is always LEV (i.e., the book value of debt over total assets). RESIST, SENSIT, BANK, and INSUR are the proportion of the directors who represent pressure-resistant institutional investors, pressure-sensitive institutional investors, banks, and insurance companies, respectively; INSOWN is the proportion of shares held by directors; ASMAT is assets maturity; MTB is the equity market-to-book ratio; SIZE is the log of total assets; TANGIB is tangible assets over total assets; ROA is the return on assets; AGE is the log of the number of years since the constitution of the firm; and TAX is taxes paid over costly debt. *m*<sub>2</sub> is a test of second order serial autocorrelation. Hansen test is a test of overidentifying restrictions, which distributes as  $\chi^2$  (degrees of freedom)

\*\*\*, \*\*, and \* indicate confidence at the 99, 95, and 90 % levels, respectively

Antoniou et al. (2008) and Psillaki and Daskalakis (2009) show that decisions on the firm's leverage are quite specific to the country and institutional setting. Therefore, we must check the consistency of our estimates against the estimates from the same country or institutional environment. The results reported by Acedo-Ramírez et al. (2013), Sogorb Mira (2005), López

Gracia and Sogorb Mira (2008), and González and González (2011) for Spanish firms and by Psillaki and Daskalakis (2009) for civil law firms in the framework of the trade-off and the pecking-order theories of capital structure are coherent with our findings in terms of tax rate, firm size, firm age, profitability, asset tangibility, and growth opportunities.

**Table 6** Generalized method of moments estimates of the baseline model (bank debt)

	(1)	(2)	(3)	(4)
BKLEV <sub><i>t-1</i></sub>	0.603*** (24.24)	0.595*** (21.24)	0.600*** (21.79)	0.590*** (17.69)
SENSIT	0.173*** (4.271)		0.290*** (6.114)	
SENSIT·INSOWN			−0.006*** (10.09)	
RESIST	0.070** (2.243)	0.094 (1.289)	0.049 (0.952)	0.064 (1.272)
RESIST·INSOWN			0.0005 (0.691)	0.0007 (0.914)
BANK		0.126*** (3.349)		0.259*** (5.008)
BANK·INSOWN				−0.005*** (9.004)
INSUR		0.985*** (3.940)		1.484 (1.635)
INSUR·INSOWN				−0.023 (1.047)
ASMAT	0.0003*** (2.824)	0.0002** (2.459)	0.0005*** (4.206)	0.0005*** (3.555)
MTB	0.004*** (10.30)	0.004*** (8.937)	0.004*** (8.371)	0.005*** (7.802)
SIZE	−0.123* (1.870)	−0.151** (2.325)	−0.187** (2.477)	−0.151* (1.900)
SIZE <sup>2</sup>	0.004* (1.813)	0.005** (2.411)	0.006** (2.434)	0.005* (1.878)
TANGIB	0.190*** (10.08)	0.199*** (10.23)	0.209*** (10.20)	0.200*** (9.395)
ROA	−0.122** (2.105)	−0.217*** (5.044)	−0.229*** (4.508)	−0.242*** (4.153)
AGE	−0.018** (−2.112)	−0.024*** (−3.166)	−0.042*** (−3.478)	−0.0351*** (−3.170)
TAX	−0.003 (−1.154)	−0.006** (−2.630)	−0.005*** (−4.200)	−0.004 (−1.443)
Observations	417	417	411	415
<i>m</i> <sub>2</sub>	0.24	0.09	0.23	0.13
Hansen test (d.f.)	62.59 (215)	65.30 (207)	66.42 (213)	64.97 (204)

This table provides the estimated coefficients (*t*-stats) of the estimation of the baseline model through the generalized method of moments. The dependent variable is always BKLEV (i.e., the proportion of bank debt over total debt). RESIST, SENSIT, BANK, and INSUR are the proportion of the directors who represent pressure-resistant institutional investors, pressure-sensitive institutional investors, banks, and insurance companies, respectively; INSOWN is the proportion of shares held by directors; ASMAT is assets maturity; MTB is the equity market-to-book ratio; SIZE is the log of total assets; TANGIB is tangible assets over total assets; ROA is the return on assets; AGE is the log of the number of years since the constitution of the firm; and TAX is taxes paid over costly debt. *m*<sub>2</sub> is a test of second order serial autocorrelation. Hansen test is a test of overidentifying restrictions, which distributes as  $\chi^2$  (degrees of freedom)

\*\*\*, \*\*, and \* indicate confidence at the 99, 95, and 90 % levels, respectively

The specification proofs of our model are satisfactory. According to the *m*<sub>2</sub> test, no second order correlation exists among the residuals, so our estimates are efficient. The Hansen test of overidentifying constraints supports the selection of instruments.

Table 6 reports the estimates of the baseline model when we replicate the analysis using bank debt. As shown in column 1, the proportion of pressure-sensitive directors is positively related to bank debt. This finding is in line with the view that these directors reinforce commercial ties with banks (i.e., access to critical resources). Our results hold when we introduce the distinction between banks and insurance companies as reported in column 2: The presence of directors representing banks has a positive effect on bank debt. Again, these findings support the resource dependence hypothesis regarding access to financial resources (i.e., bank debt) when pressure-sensitive investors are on the board. Pressure-resistant directors do not show a consistent effect on bank debt.

### Analysis Extension

We now analyze whether insider ownership moderates the relation between institutional directors and firms financial leverage. Bozec and Bozec (2007) and Schiehl et al. (2014) suggest that firms form internally efficient sets of controls so that deficiencies in one mechanism is counterweighed by the action of an alternative mechanism. Because ownership structure and the board of directors can be substitute mechanisms, the influence of institutional directors in capital structure can be conditional on the shares held by the members of the board.

Column 3 of Table 5 provides interesting insights about the interaction between insider ownership and directors representing institutional investors. We interact the proportion of ownership owned by directors (INSOWN) with SENSIT and RESIST. Contrary to our initial result, the proportion of directors appointed by pressure-sensitive investors has a positive effect on firm’s leverage.

**Table 7** Two-stage least squares estimates of the baseline models

	(1)	(2)	(3)	(4)
LEV <sub><i>t</i>-1</sub>	0.732*** (27.26)	0.771*** (22.18)		
BKLEV <sub><i>t</i>-1</sub>			0.744*** (19.23)	0.798*** (7.144)
SENSIT	0.677*** (3.605)		0.741** (2.69)	
SENSIT·INSOWN	-0.018*** (4.18)		-0.015** (2.61)	
RESIST	0.151*** (3.244)	0.171*** (3.910)	0.134** (2.191)	0.301 (2.142)
RESIST·INSOWN	0.001 (0.244)	-0.001 (0.189)	-0.001 (1.021)	0.001 (0.412)
BANK		0.635*** (3.14)		2.278* (1.926)
BANK·INSOWN		-0.014*** (4.743)		-0.050* (1.889)
INSUR		-0.173 (0.268)		-0.305 (0.876)
INSUR·INSOWN		-0.004 (0.401)		0.011 (0.911)
ASMAT	0.001*** (4.144)	0.001*** (3.997)	0.001* (2.010)	0.003 (1.707)
MTB	0.009*** (3.430)	0.009*** (3.421)	0.005* (1.843)	0.008 (1.155)
TANGIB	-0.051* (1.873*)	-0.039 (1.037)	0.145*** (3.838)	0.155** (2.217)
ROA	-0.233*** (3.527)	-0.222*** (3.690)	-0.109 (1.104)	-0.034 (0.212)
SIZE	0.059** (2.245)	0.075** (2.210)	0.059* (1.935)	0.067 (1.145)
SIZE <sup>2</sup>	-0.001* (-1.815)	-0.001* (-1.709)	-0.001 (-1.216)	-0.002 (-1.043)
AGE	-0.021** (2.334)	-0.010 (1.027)	-0.016 (1.042)	-0.711 (0.854)
TAX	-0.015*** (3.290)	-0.010 (3.011)	-0.004 (0.065)	-0.009 (0.327)
Observations	415	415	415	394
Adj. <i>R</i> <sup>2</sup>	0.5823	0.5142	0.5341	0.2927

This table provides the estimated coefficients (*t*-stats) of the estimation of the baseline model through the two-stage least squares method. The dependent variable is LEV (total debt to total assets) in columns 1 and 2 and BKLEV (the proportion of bank debt over total debt) in columns 3 and 4. RESIST, SENSIT, BANK, and INSUR are the proportion of the directors who represent pressure-resistant institutional investors, pressure-sensitive institutional investors, banks, and insurance companies, respectively; INSOWN is the proportion of shares held by directors; ASMAT is assets maturity; MTB is the equity market-to-book ratio; SIZE is the log of total assets; TANGIB is tangible assets over total assets; ROA is the return on assets; AGE is the log of the number of years since the constitution of the firm; and TAX is taxes paid over costly debt

\*\*\*, \*\*, and \* indicate confidence at the 99, 95, and 90 % levels, respectively

Nevertheless, the coefficient of the interacted variable is negative and significant. Given this result, we analyze the effect of institutional directors conditional on the stake of the directors in the ownership.

The results suggest a possible substitution effect between institutional directorship and institutional ownership: the higher the proportion of shares owned by directors, the more resistant to high leverage levels the pressure-sensitive investors become. This finding means that when insiders own a significant fraction of shares, the ownership structure becomes a relevant mechanism of corporate control and the disciplinary effect of debt becomes less necessary.

In column 4, we report the results when we take into account pressure-sensitive institutional investors (i.e., banks or insurance companies) and introduce directors' ownership as interacted variables. The results show that directors representing banks have a dual impact. Although bankers on boards exacerbate financial leverage, their influence is conditional on the proportion of shares owned

by directors. The negative sign of the interacted variable shows that bankers as directors avoid taking too much financial risk. Then, banks are not interested in high levels of leverage that can threaten the viability of the firm whose shares they own. This result can also imply that the ownership structure is an alternative mechanism of control to the board of directors. Thus, the higher the fraction of shares held by directors, the less prone the firm is to borrow.

In column 3 of Table 6, we reproduce the analysis concerning bank debt. Once again, pressure-sensitive directors seem to reinforce the relations with banks and have a positive effect on bank debt. Nevertheless, the negative sign of the interacted variable suggests that they avoid taking too much financial risk when they are shareholders on top of directors. Results reported in column 4 of Table 6 corroborate the dual role of banks: Although bankers on boards increase banking debt, the joint effect of bank ownership and bank directorship is negative. The different roles seem to interact as they may be

**Table 8** Generalized method of moments estimates (compensation and nominating committee)

	(1)	(2)	(3)	(4)
LEV <sub><i>t</i>-1</sub>	0.737*** (49.96)	0.737*** (46.71)		
BKLEV <sub><i>t</i>-1</sub>			0.742*** (67.22)	0.734*** (44.91)
SENSITNC	0.090*** (4.161)		0.009** (2.664)	
SENSITNC·INSOWN	-0.001** (2.153)		-0.001*** (3.151)	
RESISTNC	0.056*** (4.803)	0.054*** (3.174)	0.044*** (3.372)	0.044*** (2.935)
RESISTNC·INSOWN	-0.001*** (4.636)	-0.001*** (2.883)	-0.001*** (3.875)	-0.001** (2.394)
BANKNC		0.076*** (3.301)		0.052** (2.383)
BANKNC·INSOWN		-0.001*** (3.663)		-0.001*** (-2.890)
INSURNC		-1.121* (1.914)		-0.717** (2.636)
INSURNC·INSOWN		0.060 (0.946)		0.024* (1.834)
ASMAT	0.001*** (9.554)	0.001*** (7.335)	0.0001*** (7.431)	0.001*** (6.346)
MTB	0.005*** (10.09)	0.005*** (8.849)	0.005*** (9.557)	0.005*** (8.704)
SIZE	0.0393 (0.995)	0.0214 (0.639)	0.039 (1.081)	-0.00176 (0.0618)
SIZE <sup>2</sup>	-0.0001 (0.719)	-0.005 (0.436)	-0.001 (0.673)	0.004 (0.424)
TANGIB	-0.023* (1.878)	-0.022* (1.928)	-0.013 (0.773)	-0.011 (0.946)
ROA	-0.199*** (5.583)	-0.154*** (3.063)	-0.335*** (8.430)	-0.291*** (5.457)
AGE	0.005 (0.563)	0.015 (1.311)	-0.009 (0.923)	-0.001 (0.125)
TAX	-0.010*** (7.664)	-0.010*** (6.524)	-0.008*** (5.180)	-0.009*** (4.425)
Observations	378	378	378	378
<i>m</i> <sub>2</sub>	-0.05	-0.08	0.07	-0.23
Hansen test (d.f.)	51.73 (245)	55.68 (235)	54.27 (241)	55.21 (237)

This table provides the estimated coefficients (*t*-stats) through the generalized method of moments. The dependent variable is LEV (total debt to total assets) in columns 1 and 2 and BKLEV (the proportion of bank debt over total debt) in columns 3 and 4. RESISTNC, SENSITNC, BANKNC, and INSURNC are the proportion of members of the compensation and nominating committee, who represent pressure-resistant institutional investors, pressure-sensitive institutional investors, banks, and insurance companies, respectively; INSOWN is the proportion of shares held by directors; ASMAT is assets maturity, MTB is the equity market-to-book ratio; SIZE is the log of total assets; TANGIB is tangible assets over total assets; ROA is the return on assets; AGE is the log of the number of years since the constitution of the firm; and TAX is taxes paid over costly debt. *m*<sub>2</sub> is a test of second order serial autocorrelation. Hansen test is a test of overidentifying restrictions, which distributes as  $\chi^2$  (degrees of freedom)

\*\*\*, \*\*, and \* indicate confidence at the 99, 95, and 90 % levels, respectively

simultaneously directors, shareholders, and (probably) lenders. If so, banks are concerned about the viability of their firm and avoid taking too much financial risk.

As regards the control variables, we find that arm’s-length funds are positively related to the maturity and tangibility of assets and to growth opportunities. Conversely, arm’s-length funds are negatively affected by firm’s performance. These results are consistent with the asymmetric information approach (Haque et al. 2011) and the moral hazard approach (Johnson 1997; Dewaelheyns and Van Hulle 2010) of financial intermediation.

**Sensitivity Analysis**

We now present some further analysis to check the sensitivity of our results to different estimation methods and different specifications of our model. First, we run new estimates using the two-stages least square method. Given

the possibility of boards of directors being affected by corporate finance issues, Coles et al. (2008) and Bhagat and Black (2001) use an instrumental variables model. Table 7 reports the estimates for our model. In columns 1 and 2, the dependent variable is LEV, and in columns 3 and 4 the dependent variable is BKLEV. For simplicity, we only report the most comprehensive models combining both the presence of gray directors and the ownership of the investors who they represent.

The estimates of Table 7 corroborate the results previously reported. According to columns 1 and 3, directors representing pressure-sensitive investors have a positive influence on both leverage and bank debt, which is consistent with H1a. Nevertheless, this influence becomes negative when the ownership held by the institutional investors is taken into account. When we split up the effect of pressure-sensitive directors into bank representatives and insurance companies representatives (columns 2 and

**Table 9** Generalized method of moments estimates (audit committee)

	(1)	(2)	(3)	(4)
LEV <sub><i>t</i>-1</sub>	0.725*** (15.11)	0.734*** (97.46)		
BKLEV <sub><i>t</i>-1</sub>			0.734*** (97.46)	0.722*** (46.91)
SENSITAC	0.006* (1.682)	-0.00589 (1.292)	0.005*** (3.292)	
SENSITAC·INSOWN	-0.005* (1.936)		-0.005** (1.936)	
RESISTAC	0.022 (1.316)	0.003 (0.991)	0.003** (2.199)	-0.017 (0.453)
RESISTAC·INSOWN	0.064 (0.782)		0.154 (0.876)	0.015 (0.991)
BANKAC		0.067** (2.178)		0.049*** (3.478)
BANKAC·INSOWN		-0.004*** (6.810)		-0.013*** (3.110)
INSURAC		0.424 (0.433)		0.225 (0.337)
INSURAC·INSOWN		-0.046 (0.793)		0.461 (1.023)
ASMAT	0.005*** (10.38)	0.006*** (8.900)	0.0001*** (8.900)	0.007*** (4.608)
MTB	0.004*** (11.71)	0.004*** (13.19)	0.004*** (13.19)	0.004*** (9.847)
SIZE	0.052 (1.587)	0.036 (1.230)	0.036 (1.230)	0.060 (1.275)
SIZE <sup>2</sup>	-0.001 (1.127)	-0.001 (0.718)	-0.001 (0.718)	-0.002 (0.992)
TANGIB	-0.047*** (4.602)	-0.055*** (4.498)	-0.055*** (4.498)	-0.023 (1.463)
ROA	-0.285** (10.97)	-0.299*** (9.655)	-0.299*** (9.655)	-0.392*** (8.821)
AGE	-0.012* (1.720)	-0.010 (1.420)	-0.010 (1.420)	-0.012 (1.269)
TAX	-0.010*** (7.413)	-0.010*** (7.869)	-0.010*** (7.869)	-0.008*** (4.351)
Observations	414	414	414	414
<i>m</i> <sub>2</sub>	0.28	-0.14	-0.21	0.12
Hansen test (d.f.)	59.21 (250)	65.02 (215)	56.58 (250)	53.02 (215)

This table provides the estimated coefficients (*t*-stats) through the generalized method of moments. The dependent variable is LEV (total debt to total assets) in columns 1 and 2 and BKLEV (the proportion of bank debt over total debt) in columns 3 and 4. RESISTAC, SENSITAC, BANKAC, and INSURAC are the proportion of members of the compensation and nominating committee who represent pressure-resistant institutional investors, pressure-sensitive institutional investors, banks, and insurance companies, respectively; INSOWN is the proportion of shares held by directors; ASMAT is assets maturity; MTB is the equity market-to-book ratio; SIZE is the log of total assets; TANGIB is tangible assets over total assets; ROA is the return on assets; AGE is the log of the number of years since the constitution of the firm; and TAX is taxes paid over costly debt. *m*<sub>2</sub> is a test of second order serial autocorrelation. Hansen test is a test of overidentifying restrictions, which distributes as  $\chi^2$  (degrees of freedom)

\*\*\*, \*\*, and \* indicate confidence at the 99, 95, and 90 % levels, respectively

4), the most remarkable result is the positive effect of the BANK variable and the negative effect of the interacted variable BANK·INSOWN. This result corroborates the findings reported in Tables 5 and 6.

Our second robustness check addresses the role that gray directors play on the board. As a number of authors have noted, the committee structure is an outstanding feature of the board of directors. Policy makers pay special attention to three committees in particular: the executive, the audit, and the compensation and nominating committees (Brick and Chidambaran 2010; Cook and Wang 2011; Reeb and Upadhyay 2010). Because the Spanish Foundation of Financial Studies (2011) has shown that fewer than 46 % of the Spanish quoted firms have an executive committee, we analyze the role of the institutional directors in the two other committees: audit and compensation and nominating.

The results reported in Tables 8 and 9 for the compensation and nominating committee and for the audit

committee, respectively, corroborate our previous findings. As shown in columns 1 and 3, directors representing pressure-sensitive investors increase financial leverage, consistent with H1a. Nevertheless, column 1 shows that, when the directors own a high proportion of shares, they refuse to reach high levels of financial leverage. According to columns 2 and 4, this combined effect is predominant among the directors representing banks and other deposit entities.

## Concluding Remarks

Whereas recent studies have shown the prevalence of large institutional shareholdings around the world, the research about the influence of institutional investors as directors is still scarce. We propose that the type of business relations between firms and institutional investors is important to

understand the incentives of these directors and, hence, the financial policy of the firm. We study the relation between the capital structure decisions of Spanish listed firms and institutional directors, making a distinction between those directors who keep business relations with the firm on whose board they sit and institutional investors whose business activity is not related to the company in which they hold a directorship. We analyze the role of these directors under agency theory along with other behavioral perspectives such as resource-dependence theory and stewardship theory.

Our results suggest that institutional directors have diverse incentives to engage in the corporate governance. Consistent with the importance of business relations, the directors representing pressure-sensitive investors (i.e., banks and insurance companies) have a preference for lower financial leverage, whereas the pressure-resistant directors (i.e., mutual funds and pension funds) do not seem to have a consistent effect. This result suggests that pressure-sensitive directors can provide a managerial discipline alternative to the capital structure mechanism or prevent excessive financial risk taking. Nevertheless, when analyzed separately, bank and insurance firm representative directors show different attitudes. Bankers on the board increase the financial leverage, which suggests that some types of institutional directors provide financial resources to the firms on whose board they sit. We also find a sort of risk aversion among directors representing banks, so that the higher the fraction of shares they own, the more the companies refuse both financial leverage and banking debt. It also can be understood as a possible substitution effect between the monitoring by the board of directors and the control through insider ownership.

The amplifying effect on the financial leverage of the bank involvement on boards of directors suggests that bank directors provide financial expertise and access to financial funds, as resource-dependence theory suggests. Nevertheless, the moderating effect of insider ownership on capital structure indicates that the role played by banks as providing critical resources is conditional on their stakes in the ownership.

Our research sheds some light on the role played by financial intermediaries in the governance of nonfinancial firms. The supervision performed by these directors explains why—unlike the US or the UK systems in which board independence has been enhanced to serve as a mechanism to monitor managers—firms in Continental Europe have a significantly higher proportion of directors representing institutional investors. In addition, unlike the Anglo-Saxon countries, the concentrated ownership in Continental European firms results in interacted effects between institutional directorship and institutional ownership.

Overall, our research has interesting academic and policy implications for the debate over the proper degree of institutional involvement in corporate governance as witnessed by the public consultation recently launched by the European Commission on some corporate governance issues. First, when analyzing the role of institutional investors, researchers must take into account not only institutional investors' ownership stake but also their participation in other mechanisms of corporate control such as the board of directors. Second, different institutional investors have different agendas and incentives for corporate governance, and, therefore, both researchers and policy makers should no longer consider institutional investors as a whole. Third, the incentives of banks and, hence, the role that bank representative directors play in corporate governance can vary depending on other corporate variables including the ownership held by directors. Fourth, analyzing the role of institutional directors from a behavioral perspective is necessary to better understand their involvement in effective corporate governance.

For the academia, although the recent literature has shed some light on these issues, our paper calls for new research on the causes and implications of institutional investors involvement in the corporate governance of nonfinancial firms, particularly in bank-based economies. These new directions of research could require new insights on the dynamics within the boards and even new methods to address the decisional processes of the boards of directors (Huse et al. 2011). Different directors have different kinds of knowledge, different incentives, and different attitudes. Dealing with boards that are so complex is a challenge that must be faced by interdisciplinary studies from the management, finance, ethics, and psychology fields.

Our main limitation is the difficulty to collect the data about the ownership of pressure and sensitive investors groups, as shareholders. We would consider this aspect for future research. Similarly, it would be interesting to analyze the effects of these kinds of directors on earnings' informativeness and accounting conservatism.

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