DOES THE TEAM LEVERAGE THE BOARD'S DECISIONS?

CARMEN BARROSO CASTRO*

MARTA DOMINGUEZ DE LA CONCHA

JULIO VECINO GRAVEL

Mª MAR VILLEGAS PERIÑAN

Department of Business Management and Marketing, University of Seville, Seville, Spain

Carmen Barroso is Senior Professor of Business at the University of Seville, Spain. She is the author of articles and papers for several academic national and international journals and proceedings. At present, her main research topics are related to resource-based theory and board behaviour, including board dynamics. She has published a considerable number of articles about boards, strategic and entrepreneurial management perspective.

Department of Business Management and Marketing, Av. Ramón y Cajal 1, 41018 Seville (Spain), Phone:+ 34 954557521, Fax:+ 34 954556989 (email: barroso@us.es).

Marta Dominguez de la Concha is Associate Professor at the University of Seville. At present, her main research topics are related to strategic change. (email: martad@us.es)

Julio Vecino Gravel is Associate Professor at the University of Seville. At present, his current research interests include strategic change and board. (email: juliovecino@us.es)

Mº Mar Villegas Periñan is Associate Professor at the University of Seville. Her main research topics are related to strategic change, board capability and board dynamics. (email: marvillegas@us.es)

*** Corresponding author. Email: barroso@us.es**

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Research Question /Issue: This study analyses the influence of the corporate governance (the board of directors and TMT) on the firm's strategic change, using the premise that this important event for the organization occurs as a result of an appropriate relationship/fitting between both governance mechanisms.

Research Findings/Insights: Using archival data from a sample of 119 firms in the period 1993-2000, we found that when a synergy exists between the board and the TMT, there will be a greater inclination for strategic change. The results indicate that a board's inclination to contribute to strategic change increases as the board size increases. Equally, it is possible to accept that the relationship between board tenure and their inclination towards strategic change is not linear. Finally, the simultaneous analysis of board composition and the ratio of directors on the TMT, demonstrates that the interaction of both variables has effects on the firm's strategic change.

Theoretical/Academic Implications: This study provides empirical support in favour of an active role of the board shaping the firm's strategic decisions. We have developed and tested a set of arguments regarding with the role of the board on the firm's change in strategy. We have investigated as well, the leveraging effect of one of the variables that define the composition of the management team on the relationship board-change in strategy.

Practitioner/Policy Implications: In order to create an effective board, a broader governance structure must be examined with a detailed study of aspects of the composition of the board and the TMT (previous research has only considered characteristics linked to the CEO). The dynamics of the relationships between both governance mechanisms are essential and leverage the board capability.

Keywords: Corporate Governance, TMT-Board relationship, Strategic Change, Board Involvement.

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INTRODUCTION

The current literature on corporate governance highlights the importance of board effectiveness for the success of a company (Petrovic, 2008). However, the evolution of research on boards appears to follow a dialectical sequence from a thesis (managers dominate directors) to an antithesis (directors should control managers). Early research on board roles embraced a managerial dominance perspective and proposed that boards are ineffective governing structures because incumbent managers control them (Mace 1986; Vance, 1983; Lorsch and Maclver, 1989). In contrast, the primary research of agency theory argued that boards are an efficient mechanism for monitoring a firm's managers (Baysinger and Butler, 1985). Therefore, a third stage of synthesis (directors and managers work together toward organizational success) can be expected to work (Rindova, 1999). Both groups –TMT and boards– have a direct responsibility for the decision-making process, which has prompted a significant body of research (Ocasio, 1994; Pearce and Zahra, 1992; Zahra and Pearce, 1989). This stage of synthesis defend an active board of directors (Demb and Neubauer, 1992; Westphal, 1999) and relies on stewardship (Donaldson, 1990), agency (Eisenhardt, 1989) and resource dependence (Pfeffer, 1973) theories.

This line of argument understands that the board is a valuable resource (Macus, 2008; McIntyre, Murphy and Mitchell, 2007), which should be exploited when the firm needs to take important decisions –such as a change in strategy– (Ginsberg, 1994; Rindova, 1999). The board of directors is therefore part of a collective, together with the top management, which should work together, for the sake of improving the organization’s performance (Anderson, Melanson and Maly, 2007). Our investigation, in the active school, studies if does the team leverage the board’s decision over strategic change.

We argue that the board and management formulate strategy in a partnership approach (Hendry and Kiel, 2004). As Andrews (1980) already pointed out, it is advisable that directors work with managers on devising strategic plans for two reasons: (1) directors can contribute to creative strategizing because they can offer a variety of experiences and; (2) directors can better perform their functions if they understand in depth a firm's strategy.

Despite the current development of the active school, research carried out on joined influence of TMT and boards, regarding decisions taken, are scarce (Tricker, 1996). In this sense, previous research focuses with few exceptions, in the analysis of one type of governance mechanism, while excluding others (Daily and Dalton, 1993; Forbes and Miliken, 1999; Johnson, Daily and Ellstrand, 1996). As Brunninge, Nordqvist and Wiklund (2007) point out, governance research would benefit from studies that investigate how board and management are interrelated in creating key organizacional outcomes.

On the other hand, and in keeping with this active school of thought, the most recent studies about boards have adopted a multitheory perspective, as they have become aware that the active role of this government mechanism entails multiple task and that this implies, in turn, an explicit recognition of the board's processes that take place within board that influence on his outcomes. (Forbes and Milliken, 1999; Golden and Zajac, 2001; Macus, 2008). Given the complexity of this concept, a good starting point would be examining the relationship within the boards as the building blocks of any board process. We believe that the correct approach to any research on boards must focus on its relationships. These relationships can arise, among others, between directors and top managers. The effectiveness of the board may also be driven by the nature of inter-group dynamics between the board and the top management team. A healthy dialogue between the team and the board can contribute to the quality of the strategic decisions, whereas conflicts and power struggles can create negative dynamics and an inappropriate decision-making environment. We argue that for this relational dynamics to be present, it is necessary that the composition of both bodies of government be related. For this reason, our work is centred in studying the composition of the boards as well as its influence on the composition of TMT, concretely the weight of the board director onto the TMT. Rather than dynamics within the board, this paper investigates how the interactions between the management team and the board may influence the governance role with respect to strategic change. *This is where we make our contribution*.

Thus, following Kor (2006), this paper examines whether both top management team and board have direct additive effects on firms' strategic change. This examination is superior to examining management and board effects as separate systems of constructs because it allows us to understand whether management teams and board governance play unique roles in shaping a firm's strategy change. In addition, this paper theorizes about and tests complex interaction effects of the dynamics between the management team and the board. These interaction effects demonstrate when conflicts between management teams and boards with specific compositions may undermine the effectiveness of board.

The results of this investigation show that the presence of board members on the management team affects the development of these relationships, in such a way that the board's composition has a leveraging effect on strategic change.

In the subsequent sections of this article we conduct a literature review, and propose a series of hypotheses relating to the direct effects of and the interaction between different variables that define a firm's corporate governance (boards of directors and TMT) on its strategic changes. After presenting and discussing our empirical results, we conclude by outlining the implications for theory and managerial practice of our findings.

THEORY AND HYPOTHESES

In this section, we develop the argument that the board composition may affect the board's inclination towards the firm's strategic change. Furthermore, we suggest that an appropriate combination of board and management team composition can leverage this inclination.

Board involvement in the firm's strategy

The literature traditionally describes two broad schools of thought regarding the board's involvement in strategy, referred to as active and passive (Golden and Zajac, 2001; Hendry and Kiel, 2004). According to the passive school, boards are a legal fiction, dominated by management (Pfeffer, 1972) and the CEO in particular (Mace, 1972). This school of thought is supported by the theoretical perspective of managerial hegemony. On one hand, the presence of inside directors (i.e., executive directors) who report to the CEO confers power and control onto the chief executive (Baliga, Moyer and Rao, 1996; Boeker and Goodstein, 1993; Hill and Snell, 1988; Kesner, Victor and Lamont, 1986; Mallette and Fowler, 1992; Wade, O'Reilly and Chandratat, 1990); on the other hand, outside directors are often appointed by the management and therefore management again controls the board (Pfeffer, 1972). From this perspective, strategy is the responsibility of the TMT and the board's only role is to review and approve (rubber-stamps function) (Herman, 1981; Rosenstein, 1987).

In contrast to the passive school, the active school sees the board's directors as independent thinkers who shape the strategic direction of their organization (Walsh and Seward, 1990; Davis and Thompson, 1994; Finkelstein and Hambrick, 1996). From this perspective, strategy is the responsibility of both the TMT and the board of directors. Some studies argue that the board should participate as an equal partner with management, while others suggest that the board should only provide oversight in this area (Hendry and Kiel, 2004). This evolution of the board to strategic management partner presents an opportunity to produce a superior governance regime. The board as strategic partner can bring differing perspectives to the planning of strategy, risk management and execution, potentially leading to better decision outcomes and improved company performance (Anderson *et al.*, 2007). Johnson *et al.* (1996), in their extensive literature review, indicate the progressive growth of the involvement of the board on questions of strategy (Judge and Zeithaml, 1992; Forbes and Milliken, 1999). Anderson *et al.* (2007), in a survey of corporate directors in four countries, indicate a fundamental shift in the position of the board towards becoming a strategic partner with management. Roberts, McNulty and Stiles (2005) propose a more inclusive role for the board, enhancing strategy discussions, with non-executive directors involved in a wide range of behaviours that combine elements of control and collaboration.

In our investigation we have chosen to position ourselves within the active school, as we perceive the board of directors as an asset, with the potential to generate strategic benefits for the firm, working together with the management. The active school assumes that the board and management formulate strategy through a partnership approach (Hendry and Kiel, 2004). The active school relies on stewardship, agency and resource dependence theories. These perspectives arise from the three main roles identified by the literature within boards of directors: control, service and resource dependence (Johnson *et al.*, 1996). In general, each of these roles has been independently analysed and is based on different theoretical perspectives (Bennett and Robson, 2004). Agency theorists have emphasised the boards' control role as monitoring the behaviour and performance of managers, acting as fiduciaries of stockholders (Letza, Sun and Kirkbride, 2004). Stewardship theory relates to the board's task of providing support and advice to management (Davis, Schoorman and Donaldson, 1997). Resource dependence theorists (Hendry and Kiel, 2004) argue the board is a co-optative mechanism to extract vital resources to company performance, through its members' networks with other organizations and by linking the firm to its overall environment (Pfeffer, 1972; 1973; Pfeffer and Salancik, 1978; Pearce and Zahra, 1991; Korac-Kakabadse, Kakabadse and Kouzmin, 2001; Hillman, Cannella and Paetzold, 2000).

The dominant theoretical lens for examining corporate governance has been agency theory. Fama and Jensen (1983) indicate that the board of directors is the core of corporate governance and that the structure of board of directors is influential to the functions of the board. They argue that outside directors are more efficient in monitoring the management and will not collude with the management. Therefore, under the separation of ownership and control, outside directors facilitate the governance functions of the board. They argue that the board of directors is the highest internal control mechanism responsible for monitoring the actions of top management. The control role that agency theory grants the board also extends to the role of the board in the firm's strategy. Following a sequential process, managers generate strategic alternatives and directors select from those alternatives, managers put the chosen alternatives into practice and directors evaluate the outcomes. Rindova (1999) demonstrates the limitations of agency theory in this respect. In reality, strategic decisions evolve through complex, non-linear and fragmented processes (Cohen, March and Olsen, 1972; Hickson, Butler, Cray, Mallory and Willson, 1986; Mintzberg, Raisinghani and Theoret, 1976). Directors can contribute to the strategic work of the firm, beyond a control role, using the information, expertise and other cognitive resources that they posses to enhance the understanding, creativity and coherence of the firm's decisions (Rindova, 1999; Ginsberg, 1994).

In contrast to the opportunistic self-interest assumption of agency theory, the stewardship perspective (Sundaramurthy and Lewis, 2003; Forbes and Milliken, 1999) posits that managers are trustworthy individuals and good stewards of the firm's resources (Donaldson, 1990; Donaldson and Davis, 1991, 1994). This perspective recognises a range of non-financial motives for managers' behaviour (Davis *et al*., 1997). Managers feel commitment to the organization, acting in the best interest of the firm and its shareholders. The implications of stewardship theory for corporate governance are significant, it emphasises a different service and advisory role for the board: the board acts as part of the collective with management, working together through co-operation and enabling management to enhance organizational outcomes (Anderson *et al.*, 2007). The collaborative model suggests that board's role should centre on advising management and enhancing strategy discussion (Kroll, Walters and Lee, 2007; Walters, Kroll and Wright, 2008). From this perspective, directors and managers might also share social ties and informal working relationships, which make it more likely for directors to provide candid feedback to managers and improve performance. Insiders on the board are viewed as important contributors as they are knowledgeable about the firm's operations. A result of closer board-management ties might be to promote the board's involvement: allowing space for advice-seeking on the part of the management and/or to reduce defensive and political behaviour within the board (Westphal, 1999).

Finally, from the perspective of resource dependence theory, directors may be actively involved in the firm's strategy through counsel and advice to the CEO (Zahra and Pearce, 1989). The board's boundary-spanning activity contributes to the strategy role by bringing in new strategic information and reducing uncertainty (Hendry and Kiel, 2004). Strategic decisions move between enterprises through interlocking directorates (Davis, 1991; Johnson *et al.*, 1996; Palmer, Jennings and Zhou, 1993; Westphal and Fredickson, 2001). The strategic context of external network ties may determine the board's involvement and ability to contribute to the firm's strategic decisions (Carpenter and Westphal, 2001).

The most recent studies have adopted a multitheoretical perspective, combining different theories in their approach to board research (Macus, 2008). In this sense, Sundaramurthy and Lewis (2003) propose the simultaneous need for control (agency perspective) and collaboration (stewardship perspective) in the working style and dynamics of boards. Organizational failure may result when one perspective gains dominance over the other (Anderson *et al*., 2007). Roberts *et al.*

(2005) take a similar approach when they state that in order to create accountability; non-executive directors combine elements of control and collaboration.

Alongside this multitheoretical view, we would point out the need to consider that in practice, boards fulfil several tasks simultaneously (Strebel, 2004; Hillman and Dalziel, 2003) and that this implies an explicit recognition of the board's processes (Forbes and Milliken, 1999; Golden and Zajac, 2001). The board's process refers to decision-making activities; the styles of board; the frequency and the length of board meetings; the formality of board proceedings and board culture on the evaluation of the director's performance (Korac-Kakabadse *et al.*, 2001). Given the complexity of this concept, we believe, as Macus (2005, 2008) suggests, that we could start by examining the relationships within the boards as the building blocks of any board process. These relationships, as the most basic element of board processes, are the interpersonal activities that occur within a group and which influence the group's results (Hopkins and Hopkins, 2002).

For these reasons, and following the most recent recommendations in the field, our study is argued from the multitheoretical perspective. Likewise, we believe that the correct approach to any research on boards must focus on its relationships. These relationships can arise among directors, between directors and top managers and between directors and individuals external to the firm. From this multitheoretical perspective, our study aims to be a first attempt at the analysis of the relationships that are required between the board and the TMT. In order to do this, we start with the composition of both governance mechanisms (Lant, Milliken and Batra, 1992; Wiersema and Bantel, 1992; 1993; Boeker, 1997; Gordon, Stewart, Sweo and Luker, 2000; Carpenter, 2002; Rindova, 1999; Westphal and Fredickson, 2001) as proxy variables of the intended objective. Following Pfeffer (1983), we argue that demographic variables provide parsimonious and objective representations of the construct that are otherwise difficult to collect. The demographic variables used in this study to determine the board's composition are size, the percentage of outsiders and board tenure (Westphal, 1999; Rindova, 1999).

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Board Composition

The composition of the board has been examined in numerous studies (Pettigrew, 1992; Westphal, 1999). Board composition subsumes the individual director's potential to solve the various tasks (Daily, Johnson and Dalton, 1999) and has generally been analysed by examining the demographic characteristics of the board (Rindova, 1999).

One of the variables most frequently analysed has been board size. With regard to its influence, the literature offers no clear consensus. A literature review throws up two contradictory arguments, regardless of which variable is being connected. Thus, with respect to the balance of power as opposed to the TMT, some studies agree with the advantages of large boards (Zahra and Pearce, 1989; Pelled, Eisenhardt and Xin, 1999), whilst others argue for smaller boards (Alexander, Fennell and Halpern, 1993). The same arguments arise with the analysis of the relationships between size and functions of the board (Lipton and Lorsch, 1992; Alexander *et al.*, 1993).

As to the question of a board's inclination towards a firm's change in strategy, the arguments suggest, on average, a lower inclination for relatively small boards (Amason and Sapienza, 1997; Daily, McDougall, Covin and Dalton, 2002; Dalton, Daily, Johnson and Ellstrand, 1999; Goodstein, Gautam and Boeker, 1994; Hillman and Dalziel, 2003; Pfeffer and Salancik, 1978; Westphal and Fredickson, 2001; Davis, 1991; Johnson *et al.*, 1996; Palmer *et al.*, 1993; Brunninge *et al.*, 2007). This is because larger boards are more likely to be heterogeneous in their members' backgrounds, values and skills (Hambrick and D'Aveni, 1992). Insufficient breadth of expertise in smaller boards has the following negative implications: i) an inadequate recognition of the need to initiate or support the change, ii) a lack of a clear understanding of alternatives; and iii) a lack of confidence in recommending the strategic change. That is to say, given the variety of cognitive resources within heterogeneous boards, they are likely to be better equipped to identify the need for change. Larger and more heterogeneous boards enhance a firm's ability to establish links with its environment and secure essential resources (Daily *et al.*, 2002; Dalton *et al.*, 1999; Goodstein *et al.*, 1994; Hillman and Dalziel, 2003; Pfeffer, 1972; Pfeffer and Salancik, 1978); increase the possibilities for interlocking directorates between board members and other firms (Westphal and Fredickson, 2001; Davis, 1991; Johnson *et al.*, 1996; Palmer *et al.*, 1993); and facilitate favourable external conditions for change (Brunninge *et al.*, 2007). In spite of these arguments, other investigations take the opposite view, indicating that the potential problems of the group dynamics associated with large groups could slow down the process of strategic decision-making and hinder the board's ability to initiate change (Goodstein *et al.*, 1994; Judge and Zeithaml; 1992). Social psychological research on groups suggests that larger groups often suffer from a diffusion of responsibility or "social loafing". In this regard, economists have devoted attention to the fundamental problem of "free riders" in groups involved in common efforts (Golden and Zajac, 2001). We argue that larger boards are likely to have more resources and skills available to them in decision-making. Larger size also increases cognitive diversity, adding perspectives available for strategy-making and can increase creativity, indicating new alternatives for the future development of the firm (Forbes and Milliken, 1999). Board size may act as a barrier to change due to the difficulties in coordinating a larger decision-making body. However, such barriers may be partly mitigated through the use of subcommittees that may improve coordination even in large boards (Goodstein *et al.*, 1994). Finally, this problem of coordination is more important when the board is very large, and the recommendation of numerous codes of corporate governance is that the board size should not exceed 15 members. We argue that the advantages of a group's heterogeneity outweigh the possible disadvantages arising from its larger size. Taking these arguments into account, we propose the following working hypothesis:

H_1: Board size is positively associated with the firm's extent of strategic change.

Another factor that is likely to indicate differences in the inclination for strategic change in a firm is board tenure. The majority of studies have analysed the effects of tenure in the TMT (Kalyta, 2009; Katz, 1982; Wiersema and Bantel, 1992; Finkelstein and Hambrick, 1996; Boeker, 1997), but many of the arguments used would be equally applicable to boards (Rutherford and Buchholtz, 2007). On the one hand, long organisational tenure is thought to be associated with rigidity and commitment to established policies and practices (Katz, 1982) and may also restrict information processing through the establishment of routines and repertoires for dealing with problems and issues (Miller and Friesen, 1984). During their tenure, directors develop similar dominant logics (Prahalad and Bettis, 1986), and a cognitive framework about the firm. Symptomatic of reduced cognitive conflict, long tenure has been associated with commitment to the organizational status quo, group conformity, inertia, and a reduced willingness to take risks (Donoher, Reed and Storrud-Barnes, 2007; Kor, 2006).

On the other hand, other authors argue in favour of low turnover in the group's members. A low turnover facilitates communication (Zenger and Lawrence, 1989), favours the maintenance of networks (Roberts and O'Reilly, 1979) and increases the shared team experience. Shared team experience is essential for directors to function together and take risks on behalf of the firm under uncertainty (Kor and Mahoney, 2000). During their tenure, directors build up a good knowledge of the business; simultaneously diminishing pluralistic ignorance, that is, outsider dominated boards may fail to spur on necessary changes due to the perceived risk of voicing minority opinions. Long-tenured directors make important influence bases (Finkelstein and Hambrick, 1989; Pfeffer, 1983), which increase their ability for action (Kor, 2006).

Using these arguments, in this investigation we suggest that there is a curvilinear relationship between tenure on the board and the inclination to change the firm's strategy. Other recent works also study the non-linear relationships of the effects of tenure (Kor, 2006; Golden and Zajac, 2001).

Board tenure is therefore negatively associated with a firm's strategic change, where the strength of the negative effect diminishes with tenure. In line with Kor (2006), we argue that directors with less tenure in the firm may be more willing to take a risk, because they are compelled to prove themselves as competent managers. As their tenure on the board increases, they have a more risk-averse approach, because they are less pressured to prove themselves. Nevertheless, when directors are very long-tenured, they have established a rich knowledge of their environment and the firm's resources, which, in conjunction with their great experience, brings the ability to identify the need for change. In short, as board tenure increases, its effect on the firm's strategic change will be negative for boards with lower levels of tenure and positive for boards with higher levels of tenure.

H_2: As board tenure increases, its effect on strategic change will be negative for boards with lower levels of tenure, and positive for boards with higher levels of tenure.

With regard to the presence of outside directors on the board, again the literature is inconclusive. We find the following arguments which establish a positive relationship between a higher number of outsider and strategic change (Brunninge *et al.*, 2007): (i) Outside directors contribute to freedom of thought and enable a potential break with the dominant logic (Forbes and Milliken, 1999; Lant *et al.*, 1992; McDonald and Westphal, 2003; Sundaramurthy and Lewis, 2003; Westphal and Bednar, 2005); (ii) Outside directors' networks can act as an important channel through which organisational practices and strategies spread (Westphal and Fredickson, 2001; Rindova, 1999); (iii) Outside directors are a source of cognitive diversity in the task of decision-making, thereby stimulating more innovative decisions (Rindova, 1999; Forbes and Milliken, 1999; Eisenhardt, Kahwajy and Bourgeois, 1997; Jackson, 1992); (iv) They act as a co-optative mechanism to extract resources (Brunninge *et al.*, 2007); (v) They enhance the knowledge capability of the firm (Goll, Johnson and Rasheed, 2007); and (vi) The additional information that outside directors can make available to managers may reduce uncertainty in the face of change (Zahra and Pearce, 1989).

Faced with these arguments, other authors argue in favour of a higher number of inside directors on the board. The arguments they use are as follows: (i) Pluralistic ignorance (Miller, Monin and Prentice, 2000; Westphal and Bednar, 2005); (ii) Cognitive diversity that is brought to the board by outsider can also arouse negative emotions. Many directors respond to high levels of cognitive conflict on the board by reducing, rather than increasing their commitment to the board (Mace, 1986); (iii) A low level of cohesiveness and high heterogeneity in outsider dominated boards is also associated with a variety of group process difficulties, such as higher levels of conflict, uncoordinated group action, inefficient communication and/or lack of a common language

(O'Reilly, Caldwell and Barnett, 1989; Kor, 2006; Milliken and Martins, 1996). We find both logics compelling: the percentage of outsider on the board may be either positively or negatively associated with the firm's strategic change. When the number of outside directors is low, an increase reduces the possibility of strategic change for the firm. We believe that, in these circumstances, when insiders outnumber outsiders, an increase in the number of outside directors will disrupt the social cohesion of the group and increase the level of conflict, disrupting the board's degree of involvement with the firm's strategic decisions. Prior studies have shown that having more outside directors seems to discourage corporate entrepreneurship, an important strategy for firm survival (Zahra, 1996). Conversely, when the percentage of outside directors on the board is high, an increase favours change. In these circumstances, the advantages derived from the breadth of arguments and points of view within the new board are strengthened, once the group has overcome the initial difficulties of social cohesion and communication. In this case, the advantages of outsiders outweigh the drawbacks of fewer insiders.

> *H_3: As the number of outside directors increases, the effect on strategic change will be positive for boards with a higher number of outside directors and negative for boards with a higher percentage of inside directors.*

The effect of the composition of TMT on the boards

The effectiveness of the board in carrying out its advisory functions may be driven by the nature of the inter-group dynamics between the board and the top management team (Kor, 2006). Conflicts and power struggles may occur when boards and management teams have a specific composition (Golden and Zajac, 2001). This paper investigates, by examining the composition of both the TMT and board, how the relationship between the two governance mechanisms may influence the role of the board on the firm's strategic change. Therefore, we propose that an appropriate relation is required in the composition of both governing mechanisms. In this sense, the influence on board composition of variables that define the management team, such as the percentage of directors on the TMT, may provide a richer perspective on the effectiveness of boards and their impact on the firm's strategic changes.

Our analysis is limited to the weighting of board directors on the TMT. Their presence on the TMT highlights the mutual influence between board and TMT and, in principal, should leverage the service role, as these types of boards command more precise and richer information about the firm at the time that the board has to make important decisions. As the percentage of board directors on the management team increases, the greater the overlap and familiarity between both governing mechanisms. However, this influence can be subtly affected by the size of the management team. In the event of disparate views on a decision relating to the firm, the more influential governance structure would be able to exercise its force. Equally, being a member of both management and board might mean that an individual's decisions are influenced by the governance structure in which he or she is more involved.

In this sense, the literature indicates that TMTs play a relevant role in formulating corporate strategy (Westphal and Fredickson, 2001). Strategic decisions are often made and implemented through dynamic processes where management interact, consult and debate with each other (Kor, 2006). On these occasions, the insider might be subject to the so-called 'strategic persistence' of the management (Westphal and Bednar, 2005; Starbuck, Greve and Hedberg, 1978; Starbuck and Milliken, 1988; Milliken and Lant, 1991; Barker and Duhaime, 1997), which causes them to over-attribute the possible low performance of the firm to uncontrollable factors or current environmental conditions, which in turn leads to an underestimation of the need for strategic change (Lant *et al*., 1992; Barker and Duhaime, 1997). In this way the directors are familiarised with the values and belief systems of the firm and, to the extent that they have participated in the formulation of the strategy, are reluctant to believe that it is not working (Tripsas and Gavetti, 2000; McDonald and Westphal, 2003).

Board size and ratio of directors on the TMT

The first effect concerns board size. The arguments suggest, on average, that there is less inclination for strategic change within firms with relatively small boards (Amason and Sapienza, 1997, Daily *et al.*, 2002; Dalton *et al.*, 1999; Goodstein *et al.*, 1994; Hillman and Dalziel, 2003; Pfeffer and Salancik, 1978, Westphal and Fredickson, 2001; Davis, 1991; Johnson *et al.*, 1996; Palmer *et al.*, 1993, Brunninge *et al.*, 2007). In our investigation, we argue that in larger boards there is likely to be a greater heterogeneity of members' backgrounds, values and skills, which creates favourable external conditions for change (Brunninge *et al.*, 2007). Large groups are believed to have greater information-processing and decision-making capabilities than small teams. The resources available to a team result from the number of people on it (Hambrick and D'Aveni, 1992). Group size is likely to influence the degree of demographic heterogeneity, since larger groups have more potential for dissimilarity. In a small group, the addition of one person can substantially increase heterogeneity (Bantel and Jackson, 1989). If the increase in board size is accompanied by an increase in the number of directors on the management team, it is more likely that the perceptions of a more diverse board would be transferred to the TMT, increasing the inclination for a change in direction for the firm and, overcoming the management's 'strategic persistence'.

H_4: An increase in the ratio of directors on the TMT leverages the positive effect of the relationship between board size and a firm's strategic change.

Directors' tenure and the ratio of directors on the TMT

The second effect relates to directors' tenure. As indicated above, this variable is associated with resistance to change in the firm's strategy (Boeker, 1997; Wiersema and Bantel, 1992). After early success and initial learning, directors may commit psychologically to strategies they feel comfortable with (Finkelstein and Hambrick, 1996). These feelings are transferred to the TMT by those insiders who are also on the TMT, increasing the degree of rigidity and resistance to change in both governance structures. We must bear in mind that a general increase in the tenure of directors on the board implies, for those who are also on the management team, that they spend time developing this role; they share the beliefs of the firm and demonstrate their aversion to change. Based on this idea, we propose the following hypothesis:

H_5: In increase in the ratio of directors on the TMT leverages the negative effect of the relationship between directors' tenure and the firm's change in strategy.

METHOD

Sample and data collection

The empirical context of this paper is taken from companies listed on the Madrid (Spain) Stock Exchange between 1993-2000. This sample was chosen because of the requirement of these companies to publish data regarding their management and their performance, which provided the information required for this study. We began with the 272 companies listed in the year 2000. From these companies, we cleaned the data by taking into account potential rises and falls in the stock market, mergers or acquisitions and the initial date of their market entry, in order to compile all the required information within the selected time frame. The final sample comprises 119 firms, with data covering eight years. Secondary sources of information include the annual reports that we requested from each company. In order to add any missing data and to verify the information obtained, we checked against the Dicodi 50.000, Duns 50.000 and Sabi databases. Using these sources, we verified the composition of the governance structures of each company: the management team and the board of directors, for each year of our study.

After a further sifting of the data by annual comparison, it was possible to identify the directors board who remained on the firm's board year after year (directors' tenure), the size of both governance mechanisms (taking into account potential departures or appointments each year), as well as identifying those directors on the management team and managers on the board. We also carried out a detailed review of the information published in the press regarding the selected firms, using the Baratz database and the Madrid Stock Exchange's own database, which provided 'important events', reporting a change in the company's strategy. Baratz provides a summary of the articles published in the Spanish newspapers and journals. Firstly, we grouped together articles relating to each firm and then analysed the contents of each article. If the information was repeated, it was only counted once.

The information obtained from the articles was classified according to a change model that captures possible changes in a firm's strategy (Lant *et al.*, 1992; Gordon *et al.*, 2000) (see Table 3). The review of the 101,100 published articles relating to the firms within our study was carried out independently by at least two people. Each reviewer used a "strategic change diagnostic" template (Table 3). It was therefore easy to allocate each item. Regular meetings were also held to resolve any possible doubts the reviewers may have had. The results of both reviewers were cross-checked and in the event of discrepancies, an expert analyzed the differences. One article could be assigned to more than one change. The first 10 firms were reviewed by three people: two expert analysts and one junior, achieving a minimum agreement between the experts of 99.6%. The diagnostic overlap between the experts and the junior varied between 89% and 99%. Given the very high number of articles studied, the change diagnostic procedure was very lengthy; this phase of the investigation took six months. Telefónica deserves a special mention, since, for the period in question, it appeared in over 14,000 published articles, all of which were reviewed and analyzed by the same person. Only the 961 articles from 1993 were cross-checked, achieving a 90% consensus (see Table 5). The sample consisted of 1032 observations company-year (119 firms 1993-2000). Finally, we excluded from the study those observations reporting a change of CEO. As Golden and Zajac (2001) suggest, this is crucial, given that our analysis of the influence of the board of directors on strategic change. Our final sample includes 862 observations on 119 firms.

Take in Table 3 about here

Take in Table 4 about here

Take in Table 5 about here

Dependent variable

The dependent variable in this study is the strategic change chosen by the firm. We subscribe to a broad view of strategic change. Strategic change is a process involving most parts of a firm and its relationship with the environment. Some studies on governance and strategic change take a much narrower approach (Brunninge *et al.*, 2007). They conceptualize strategic change as either the change from one generic strategy to another (Boeker, 1989; Naranjo-Gil and Hartmann, 2007) or only include service additions, divestures and/or industry changes (Golden and Zajac, 2001; Goodstein *et al.*, 1994). We argue that this gives too simplistic and limited a view on strategic change. As with prior investigations (Lant *et al.*, 1992; Gordon *et al.*, 2000), our operationalization of strategic change includes changes in various dimensions (see Table 3).

Recent investigations have highlighted the need to evaluate the performance of the board, noting how effectively it carries out its functions (Zona and Zattoni, 2007; Van Ees, Van der Laan and Postma, 2008; Wang and Ong, 2005; Huse, 2005). In this sense, the current school of thought regarding board involvement focuses on the board's collaboration with the management team and the development of its duty to serve, as well as to control, when deciding the firm's strategy (Huse, 2005). It is true that there are works that use the firm's performance as a dependent variable; but the results obtained are contradictory, making it impossible to draw any clear conclusions (Daily *et al.*, 2002; Dalton *et al.*, 1999; Johnson *et al.*, 1996). By eliminating changes of CEO from the sample, we can predict that the changes in strategy are as a result of the board fulfilling its functions. On the other hand, strategic change has strong repercussions within the firm, which fundamentally affect its performance. By studying this variable we can take an initial step towards seeing the board's effectiveness reflected in the firm's performance (Murphy and McIntyre, 2007).

As with prior investigations, we have used variables to measure a change in strategy (see Table 3). A change in strategy is deemed to have taken place when any of these variables changes. The strategic change dependent variable is obtained from the quotient of the total number of changes that have taken place in a firm during one year over the total number of changes within firms in the sector in the same year.

The literature regarding the performance-strategic change relationship recognises a time lag effect (Bommer and Ellstrand, 1996; Kesner and Dalton, 1994; Pitcher, Chreim and Kisfalvi, 2000; Shen and Canella, 2002), so we collected data for the dependent variable with a two-year lag. We believe that this will safeguard against a potential reverse causality and will also allow for the time it takes for the firm's performance to influence the decisions to change (Melin and Hellgren, 1994; Brunninge *et al.*, 2007).

Independent variables

Board size was defined as the number of directors on the board from year to year (Ocasio, 1994; Kroll *et al*. 2007), taking into account possible incorporations and departures during the year. The ratio of outsiders was calculated as the number of outsider divided by the size of the board. In accordance with earlier investigations (Daily and Dalton, 1992; Goodstein *et al.*, 1994; Kor, 2006) and taking into account the specifications in Spain (Good Governance Code, 2006; Aldama Report, 2003), we have defined outside board members as those board members with a non-executive role in the firm. Prior studies (Sundaramurthy, Mahoney and Mahoney, 1997; Kor, 2006) have used this measurement as an approximate indicator of the outside directors as a governance mechanism, as it is not possible to identify which of the outside board members may be directly influenced by the CEO, who took an active role in their appointments. The ratio of outsiders squared was calculated as the square of the ratio of outside board members and was used to test our prediction of a curvilinear relationship between the ratio of outside board members and the firm's strategic change.

Board tenure was calculated as the number of board members who have stayed from one year to the next, divided by the size of the board (Hambrick, Cho and Chen, 1996; Michel and Hambrick, 1992; Kor, 2006). Board tenure squared was calculated as the square of board tenure and was used to test our prediction of a curvilinear relationship between board tenure and the firm's strategic change.

Finally, the percentage of board members on the TMT was calculated as the quotient of the number of inside board members on the board of directors each year over the size of the management team.

Control variables

Finally, and in line with previous studies on the governance of firms, this investigation includes three control variables in the analysis: firm size (Harrison, Torres and Kukalis, 1988; Haveman, 1993; Kor, 2006), expressed by the natural logarithm of sales; firm's previous performance, measured by the indicator of economic profitability and duality. We include a dummy variable (duality) in order to verify whether the separation of the positions of CEO and chairman of the board affects strategic change. This variable takes a value of one if the chairman of the board and the CEO are the same person, and zero if they are separate posts. The separation of the roles of CEO and chairman of the board is persistently recommended in numerous corporate governance codes (Fernández and Arrondo, 2007)

Data analysis

Our theoretical discussion indicates the need to test our predictions regarding the relationship between the board's inclination and strategic change, using multiple regression analysis.

Take in Table 6 about here

RESULTS

The results of this investigation are set out in Table 7. This shows the principal effects, as well as the interactions, according to the different models that were calculated. As the base model, model A shows only the control variables. Models B and C include the first three hypotheses of the study and models D and E show the interaction between the composition of the board and the TMT.

Hypothesis 1 suggests that board size is positively related to the firm's change in strategy. The analysis supports this prediction (Model B, $z = 5.76$, $p < .001$; Model C, $z = 5.35$, $p < .001$; Model D, $z = 5.78$, $p < .001$; Model E, $z = 6.49$, $p < .001$). Equally, Hypothesis 2 suggests a curvilinear relationship between members' tenure on the board and their inclination for strategic change. The results confirm this prediction. The root term is significantly negative (Model C, $z = -2.10$, $p < .01$; Model D, $z = -2.10$, $p < .01$; Model E, $z = -2.01$, $p < .01$) , while the squared term is significantly positive (Model C, $z = 2.28$, $p < .01$; Model D, $z = 2.29$, $p < .01$; Model E, $z = 2.12$, $p < .01$). Thus, as predicted, board member tenure can be seen to be positively associated with strategic change for higher levels of tenure, and negatively associated with strategic change for lower levels of tenure.

Hypothesis 3, which establishes a U-shaped relationship between the percentage of outsiders and strategic change, was partially supported. The results reveal a negative relationship between both variables, without inverting the sign of the relationship, as suggested (Model C, $z = -1.08$; Model D, $z = -1.06$; Model E, $z = -2.34$, $p < .05$). We will examine this further in the Discussion section.

Hypothesis 4 suggests that the percentage of board members who are also on the firm's management team strengthens the relationship between the size of the board and strategic change. The results set out in Table 7 confirm this prediction (Model E, $z = 3.11$, $p < .001$). The interaction between both variables demonstrates a positive and significant relationship with the firm's change in strategy.

Finally, Hypothesis 5 posited a similar situation with regard to board members' tenure, suggesting that the percentage of board members on the management team has a leveraging effect on the relationship between board tenure and strategic change. On this occasion, the results achieved are not significant, although they follow the direction we have set out, and so do not support our predictions (Model E, z = -0.55). The effects of the interaction are shown in the figures below.

Take in Table 7 about here

Take in Figure 1 about here

DISCUSSION

Our study follows the line of investigation that stresses the active participation of boards in important decisions for their firms, or more specifically, in those decisions that involve strategic change. Our starting point is to consider the board as an active participant in corporate governance, and we suggest there is a need for further investigation into the relationships between the different agents involved in the direction of the company, namely the TMT and the board.

Our argument highlights the need for a closer study of the role of the board, and shows the many and diverse tasks assigned to it, which need to be carried out in agreement with the management team for it to be most effective. This idea is based on the need to analyse in greater detail the agreement between both governing bodies. Therefore, this work suggests that one of the conditions required for the relationship between TMT and board to function is its composition. In other words, when a synergy exists between the board and the TMT, there will be a greater inclination for strategic change. This is where we make our contribution.

In this work we have made the first attempt at the analysis of the coherence between board and TMT. We have developed and tested a set of arguments regarding the role of the board in a firm's strategic change, as well as investigating the leveraging effect of one of the variables that define the composition of the management team on that relationship.

Direct effects of board composition

The first three of our hypotheses state that the demographic characteristics of boards help to explain whether or not they are likely to change the firm's strategy. We have used variables such as board size, or characteristics that define their composition, as *proxys* of the group's behaviour. Many investigations have considered boards as "black boxes" and assign their behaviour to "the usual suspects" (Finkelstein and Mooney, 2003). We are well aware of the debate in the literature about this, which has been dominated by conflicting arguments and inconsistent findings. From our perspective, and, with Golden and Zajac (2001), we suggest that it is necessary to bear in mind that effects may vary across the range of values of the demographic variable of interest. In the same way, more recent suggestions (Macus, 2005; 2008) suggest that the composition of the board, measured through demographic variables, is an essential element of the board's capabilities. Our results demonstrate the importance of demographic variables, in accordance with the arguments set out.

The results indicate that a board's inclination to contribute to strategic change within a firm increases as the board size increases. This result is consistent with the argument that bigger boards are more heterogeneous in the knowledge, values and experience of its members, which enables information from different sources to be understood, and different resources to be exploited, which improves the conditions for change.

Equally, our findings show that it is possible to accept that the relationship between board members' length of tenure and their inclination towards strategic change is not linear. In this sense, new members of the board, or those who have been on the board for a long time, are more likely to favour change. In the former instance, they wish to prove themselves as being competent. In the latter case, their extensive experience and broad knowledge of the firm's environment and its resources, inclines them towards change. Conversely, board members in the intermediate stages of tenure are more risk-averse, as there is less pressure on them to demonstrate their value.

The arguments put forward on both sides in the literature are valid, but at different levels within the demographic variable in question (Golden and Zajac, 2001). One of the advantages of suggesting a non-linear relationship is the ability to see precisely when the relationship changes from negative to positive. From the evaluation of our model, it is possible to calculate that the negative impact of tenure on strategic change occurs in those board members whose tenure is slightly less than two years. From this point, higher values in board tenure produce a positive relationship.

On the other hand, the results do not allow us to confirm the non-linear relationship between the percentage of outsider board members and their inclination towards strategic change. We found that the relationship was negative and linear. This finding runs counter to arguments that outsiders are a source of cognitive diversity in the task of decision-making; stimulating more innovative decisions. Rather, our finding is consistent with the argument that to impel strategic change, boards should not have many outsiders. Given the composition of our sample, we can explain the results achieved by demonstrating that the presence of outsiders on our boards is relevant, but not sufficiently important for the advantages of this composition to outweigh the possible disadvantages, and positively affect strategic change.

Interaction effects of the top management team and board composition

This study also examines the interaction between the TMT and the board in order to explain the firm's strategic change, as we predict that both governance mechanisms of the organization must act jointly when making important decisions. In other words, the board's effectiveness in its monitoring and advisory roles may be driven not only by its independence but also by the nature of the group dynamics between the board and the TMT.

The presence of board members on the management team affects the development of these relationships, in such a way that the board's composition has a leveraging effect on strategic decisions. If an increase in the number of board members, which favours its heterogeneity, is accompanied by an increase in board members on the management team, it is more likely to overcome the potential strategic persistence of the TMT and, when the circumstances are favourable, to initiate strategic change. Our results prove this relationship. Unfortunately, the results are inconclusive with regard to board members' tenure so that, although the relationship follows the general trend we posit, it does not achieve significant values.

In this work we have conducted a series of important studies into the relationship between both governing bodies. Table 7 and Figure 1 demonstrate that when there is a higher number of a board member on the management team, the firm may or may not initiate strategic change. That is to say, the presence of board members on the TMT does not in itself explain the inclination to change or not change the firm's strategic direction (Model D). However, when the number of board members on the management team is lower, a trend towards strategic change can be seen, which is very slight in the case of small boards and slightly more noticeable in firms with bigger boards. Finally, a firm's inclination towards strategic change is very marked when the board is large and there are a high number of board members on the management team.

Finally, the simultaneous analysis of the effects of the composition of a firm's board of directors and its management teams demonstrates that both have effects on the firm's strategic change. Firms are more likely to change their strategy when: (i) they have a large board of directors; (ii) board members have a very short tenure or, conversely a very long tenure; (iii) the size of the board and the number of board members on the TMT increase at the same time.

These results reinforce the hypothesis that in order to create an effective board, a detailed study of aspects of the composition of the board and the TMT is required, which should not only consider the characteristics linked to the CEO, as has been done in the majority of traditional studies. A more detailed study of the dynamics of the relationships between both governance mechanisms is also essential.

In conclusion, we recognise certain limitations of this work. Firstly, the difficulty in establishing an indicator for the firm's strategic change has led us to consider this variable as the sum of the different changes that occur in any of the parameters that form part of the firm's strategy. It is necessary to seek alternative measurements for this variable. Secondly, the exclusion from the sample of those cases where there has been a change of CEO could also affect the final results. Thirdly, the firms used in the sample are only Spanish firms, so it is doubtful whether they could be generalised to other countries. Finally, the choice of firms listed on the stock exchange prevents us from studying firms with active boards, but which are still too small to be listed.

Implications for future research and practice

Despite the above limitations, our study has important implications for future research and practice. First, it contributes to the literature on corporate governance that investigates how board and management are interrelated in the creation of key organisational outcomes, as earlier studies have sought to do (Brunnige et al., 2007). In our work we highlight the state of 'synthesis' reached in the investigation into boards of directors (Rindova, 1999), in which this governing body should be considered as a valuable resource for the firm and as such, should be exploited. Our work demonstrates the need for further research in this field, taking a multitheoretical perspective, combining different theories in the approach to board research. We would point out the need to consider that, in practice, boards fulfil several tasks simultaneously. Therefore, the inevitable symbiosis that arises between the TMT and the board of directors when deciding on strategy facilitates the development of the other functions allocated to the board, as this body understands and participates in the direction the firm will take.

Secondly, our study has implications for future research. We believe that the correct approach to any research in this field must focus on the relationships within the boards and recognise that the effectiveness of boards may also be driven by the nature of inter-group dynamics between the board and TMT. We argue that for this relational dynamic to be present, the composition of both governing bodies must be related. Future research can examine other variables relating to the composition of these bodies, and enrich the study by making progress in relationship dynamics.

Thirdly, our work shows that the importance of the interaction between board size and the presence of board members on the management team is much more marked when the size of the board is greater. Given the current economic conditions, we believe that our conclusions are of great practical interest for firms competing in turbulent sectors and which need to reorientate their business.

Nevertheless, in response to the question of whether the board of directors plays an active part in a firm's strategic decision-making, our answer is yes, and that this role is more marked when effective dynamics are established between the different parts that comprise the governance mechanisms. These dynamics, together with the board's structure and composition, allow us to speak of a firm's distinctive capability.

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Table 1
Schools of Thought: Active Schools

Dimension	Agency theory	Stewardship	Resource dependence
Board role	Control and supervision	Service and advice	Links the firm to the resources required to maximise performance
Theoretical basis	Economics and finance	Sociology and psychology	Organizational Theory and Sociology
Effective Boards	Independent (outsider dominated board, no social, personal or professional ties between board and CEO/management) Separate CEO - Chairperson	Insider dominated board. Joint CEO-Chairperson (duality) CEO- board social ties.	Large board Board member diversity External networks among board members and others firms.
Representative studies	Fama and Jensen (1983), Baysinger *et al.* (1991), Baysinger and Hoskisson (1990), Hill and Snell (1988).	Donaldson (1990), Donaldson and Davis (1991, 1994), Davis *et al.* (1997).	Pfeffer (1973), Pfeffer and Salancik (1978), Hillman *et al.* (2000).

Table 2
Board Demography Approach

DEMOGRAPHY VARIABLES		Studies
Board size		
	Firm performance	McIntyre *et al.,* 2007; Finegold *et al.,* 2007; De Andres *et al.,* 2005; Benett and Robson, 2004; Kiel and Nicholson, 2003; Dalton *et al.,* 1999; Eisenberg *et al.,* 1998, Barnhart and Rosenstein, 1998; Wagner *et al.,* 1998; Mueller and Barker, 1997; Johnson *et al.,* 1996; Daily and Dalton, 1993; Zahra and Pearce, 1989; Pearce and Zahra, 1992; Kesner and Dalton, 1985; Pfeffer, 1972,1973.
	Board roles	Gabrielsson, 2007; Ruigrok *et al.,* 2006; Golden and Zajac, 2001; Zahra *et al.,* 2000; Beekun *et al.,* 1998; Sanders and Carpenter, 1998; Ocasio, 1994; Goodstein *et al.,* 1994; Pearce and Zahra, 1992; Judge and Zeithaml, 1992; Zahra and Pearce, 1989.
Percentage of Outside/inside on the Board		
	Firm performance	Kroll *et al.,* 2007; Finegold *et al.,* 2007; Combs *et al.,* 2007; De Andres *et al.,* 2005; Dulewicz and Herbert, 2004; Peng, 2004; Bhagat and Black,, 2002; Rhoades *et al.,* 2000; Coles *et al.,* 2001; Coles and Hesterly 2000; Bhagat and Black, 1999; Dalton *et al.,* 1998; Wagner *et al.,* 1998; Barnhart and Rosenstein, 1998; Johnson *et al.,* 1996 ; Daily, 1995; Daily and Dalton, 1994; Pearce and Zahra, 1992; Hermalin and Weisbach, 1991; Kesner and Johnson, 1990; Zahra and Pearce, 1989; Pfeffer, 1972,1973.
	Board roles	Rongrong *et al.,* 2009; Rutherford and Buchholtz, 2007; Fernández and Arrondo, 2007; Brunninge *et al.,* 2007; García and Gil de Albornoz, 2007; Kor, 2006; Ruigrok *et al.,* 2006; Long *et al.,* 2005; Deutsh, 2005; Wan and Ong, 2005; Tihanyi *et al.,* 2003; Hillman and Dalziel, 2003; Daily *et al.,* 2002; Beekun *et al.,* 1998; Conyon and Peck, 1998; Johnson *et al.,* 1996; Judge and Zeithaml, 1992; Baysinger *et al.,* 1991; Baysinger and Hoskisson, 1990; Zahra and Pearce, 1989; Fama and Jensen, 1983.
Board tenure		
	Firm performance	McIntyre *et al.,* 2007; Murphy and McIntyre, 2007; Howton, 2006; Santiago-Castro and Baek, 2004.
	Board roles	Kalyta, 2009; Hoye, 2007; Rutherford and Buchholtz, 2007; Donoher *et al.,* 2007; Schnake *et al.,* 2005; O'Regan and Oster, 2005; Zelechowski and Bilimoria, 2004; Vafeas, 2003; Golden and Zajac, 2001; Vafeas, 1999; Zajac and Westphal, 1996; Johnson *et al.,* 1993.

Table 3
Possible changes in a firm's strategy

Lower pricing	Price reductions intended to achieve a more attractive positioning against competitors.
Product quality	Changes in the product quality strategy. Quality becomes the core of business strategy. It includes meaningful modifications and improvements to the end product, quality assurance certificates obtained by the company.
Customer service quality	A new approach to the company's customer service strategy.
Delivery lead times	Meaningful changes in the supply chain focused on delivery shorter lead times.
Level of response to client's needs	Changes related to the capacity of the business to anticipate market requirements and customer needs.
Innovation	Development of new products, services or processes. It includes significant changes in the R&D budget.
Product exclusivity	Differentiation strategy
Growth	To increase the size of the company by mergers, takeovers or strategic alliances, either short term (joint ventures) or structural that affect the core competitive set of each firm involved in the alliance.
Reach	Actions aimed at entering new markets in which the company has not been present before.
Market Share	Changes in the company strategy to achieve a stronger position and share in existing markets.
Communications	Changes in communications strategy (positioning, brand communications, above the line and below the line)
Distribution	It refers to changes on the route to market; wholesale and retailing strategy.
Width of product range	Product range diversification.

Lant *et al.* **(1992)**

Table 4
Sample Table

Geographical range	Spain
Universe	Companies listed on the Madrid Stock Exchange
Context	119 firms with data for the period (1993-2000)
Sample size	862 observations
Data	Secondary information: **Annual Report** **Duns 50.000 Principal Spanish companies; Dun&Bradstreet.-** annual directory of Spanish firms by annual income. **Dicodi 50.000**: Yearbook of the largest Spanish firms **Sabi**. (Database with economic data) **Baratz**. Press database – contains references to articles published in the press and journals: primarily general and local Spanish information (politics, economics and socio-labour) Governing bodies: Annual Report, Dicodi and Dun&Bradstreet. Economic data: Sabi Strategy (Baratz): 101,100 articles in the press
Industry	Non-financial Madrid Stock Exchange (CNMV)

Table 5:
Review of published articles

Nº articles	101.100
Total analysts	26
Nº experts	2
Nº juniors	24
Average articles per firm	783,78
Length of investigation	6 months

Table 6
Descriptive statistics and zero-order correlation

	MEAN	S.D.	1.	2.	3.	4.	5.	6.	7.	8.	9.
1 Board size	11.7	5.36		.39**	-.14**	-.04	.39**	-.07	.47**	.06	.39**
2 Board Outsiders ratio	.85	.16	.39**		-.73**	-.07	.99**	-.08*	.29**	-.02	.22**
3 Percentage Board insiders over TMT	.18	.19	-.14**	-.73**		.05	-.77**	.05	-.26**	.03	-.21**
4 Board tenure	.88	.16	-.04	-.07	.05		-.07	.97**	-.10**	.04	-.01
5 Board Outsiders ratio squared	.75	.23	.39**	.99**	-.77**	-.07		-.08*	.29**	-.03	.23**
6 Board tenure squared	.80	.23	-.07	-.08*	.05	.97**	-.08*		-.13**	.05	-.01
7 Firm size	5.22	.78	.47**	.29**	-.26**	-.10**	.29**	-.13**		.09*	.45**
8 Economic Profitability (-1)	-.04	5.26	.06	-.02	.03	.04	-.03	.05	.09*		.12**
9 Strategic change (+2)	.15	.19	.39**	.22**	-.21**	-.01	.23**	-.01	.45**	.12**	

**** Correlation is significant to 0.01 (bilateral)**

Table 7
Regression analysis: determinants of strategic change

	Model A		Model B		Model C		Model D		Model E	
	Coefficient	z-scores	Coefficient	z-scores	Coefficient	z-scores	Coefficient	z-scores	Coefficient	z-scores
(Constant)	.02	.31	.05	.99	.04	.87	.04	.82	.01	1.40
Economic Profitability (-1)	**.08***	**1.87**	**.07***	**1.89**	**.06***	**1.79**	**.06***	**1.44**	**.06***	**1.74**
Firm size	**.44*****	**10.32**	**.31*****	**6.50**	**.31*****	**6.54**	**.28*****	**5.83**	**.29*****	**5.99**
Duality	-.01	-.24	-.01	-.03	.01	.166	.01	.21	.00	.08
Board size			**.27*****	**5.76**	**.27*****	**5.35**	**.31*****	**5.78**	**.36*****[a]	**6.49**
Board Outsiders ratio					-.03	-1.08	-.07	-1.06	**-.17***	**-2.34**
Board tenure					**-.34****	**-2.10**	**-.33****	**-2.10**	**-.32****	**-2.01**
Board Outsiders ratio squared					.40	1.87	.30	1.06	31	1.06
Board tenure squared					**.37****	**2.28**	**.37****	**2.29**	**.34****	**2.12**
Percentage Board insiders over TMT							-.13	-1.61	**-.15****[a]	**-2.37**
Board size x Percentage Board insiders over TMT									**.15*****	**3.11**
Board tenure x Percentage Board insiders over TMT									-.02	-.55
R^2		**.212**		**.269**		**.279**		**.286**		**.302**
F		**38.876*****		**39.646*****		**23.655*****		**21.430*****		**18.46*****

p<.05; ** p<.01; *** p<.001. Z-scores are given in parentheses under coefficient estimates

[a] In the presence of interactions, that the coefficients for independent terms making up the interactions convey no meaningful, but possibly misleading information (Cohen and Cohen, 1983)

Figure 1. Interaction effects of % Board insiders over TMT and board size