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Corporate Governance and Risk: A Study of Board Structure and Process

Corporate Governance and Risk: A Study of Board Structure and Process

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Contents

Executive summary	5
1. Introduction	8
2. Conceptual framework and testable hypotheses	9
3. Methods	14
4. Results on financial risk proxies	17
5. Business risk	19
6. Summary and conclusion	28
References	29
Appendix	32

Executive summary

BACKGROUND TO THE STUDY

This is a research study about boards of directors and risk. It took place against the backdrop of the financial crisis, the Walker Review (2009) and the publication of the UK Corporate Governance Code. These events saw boards being subject to some blame and, in the immediate aftermath of the crisis, emphasis was placed on the important role of boards in managing risk. A key recommendation of the Walker Report, a review of corporate governance of the UK banking industry, is that boards have responsibility for determining an appropriate level of risk exposure that an organisation is willing to accept in order to achieve its objectives. Subsequently, the UK Corporate Governance Code has articulated the responsibility of boards for effective risk management by stating that 'The board is responsible for determining the nature and extent of the significant risks it is willing to take in achieving its strategic objectives. The board should maintain sound risk management and internal control systems' (Principle C.2).

The findings of this study are therefore pertinent to recent corporate governance regulation regarding the effectiveness of internal governance mechanisms during abnormal periods of the economic cycle (ie financial crises).

While seemingly important, the work of boards is largely invisible to all but fellow board members. Hence the study set out to understand the conditions and arrangements through which boards may exercise responsibilities for risk. Specifically, the research sought to:

- ascertain the board structures and processes in place before the 2008–9 crisis
- relate board arrangements to their companies' financial and business risks as evidenced by company data over the period 2007–9
- identify board structures and processes that are important to boards' exercising responsibility for risk.

RESEARCH DESIGN AND METHODS

Conducted over a period of 12 months commencing March 2010 the study is based on a unique set of qualitative and quantitative data for a large sample of UK-listed companies. These data were collected through a survey of company chairs, secondary data about boards and companies' risk, and interviews with directors, both executive and non-executive, in late 2010 and early 2011.

The analysis uses key risk variables that relate to financial risk-taking (corporate liquidity/financial slack) and business/strategic risk-taking (new investment in property, plant and equipment and undertaking cash acquisitions). It examines whether the degree of risk, at a company level, is related to features of board structure and process. Measures of board structure were constructed using data from BoardEx about (eg board composition, board committees, director characteristics). Measures of board process (eg board effort norms, decision-making behaviour and relationships between executives and non-executives) are based on a questionnaire survey about board working and effectiveness. The study uses an approach to data collection and analysis that combines quantitative (eg regressions) and qualitative (eg survey and semi-structured interviews) methods to shed light on the inner workings of boards and how these relate to risk management.

RESEARCH FINDINGS

Financial risk

The analysis has produced several interesting findings for the hypotheses tested.

First, in testing the formal structures of boards, financial risk-taking was lower in boards that were smaller in size, that is, fewer than eight directors. The proportion of non-executive directors and the existence of risk committees were not found to have any significant effect on corporate risk.

Second, in examining the impact of director characteristics, financial risk-taking was lower where the board tenure of executive directors was significantly greater than that of non-executives. Also, there was some evidence of higher financial risk-taking in companies where executive director remuneration was significantly greater than that of non-executives.

Third, in analysing board behaviour financial risk-taking was lower where non-executive directors had high effort norms (as evidenced by the conduct of board meetings; preparation for board meetings and the frequency of dialogue between executives and non-executives) and where board processes were characterised by a healthy degree of cognitive conflict, that is, differences of opinion over key company issues and board tasks.

Business risk

The above methodology revealed no significant relationship between any of the board variables and the measures of business risk. This result appears contrary to common expectations, assumptions and prescription. This could be a function of using inappropriate risk measures, but other studies have found capital investment to be a significant indicator of business risk and interviews with directors for this study confirmed that major transactions, such as acquisitions and capital investments, are risk-laden matters.

An alternative explanation is that the finding is indicative of a lack of board involvement in risk. In other words, that business risk management is primarily an executive function or task; such that, de facto, business risk management, if it occurs at all, takes place prior to and away from the main board processes. To the extent that such a suggestion is valid, one possible conclusion is that boards are inconsequential for business risk management and, as such, poor mechanisms of corporate governance. Such a conclusion may be suggestive of 'minimalist boards'; boards whose non-executives are disconnected from the affairs of the business, perhaps engaging only in an empty ritual of passive behaviour and decision making. Interviews suggest that something akin to a 'minimalist board' does exist in some companies but this seems, at best, a partial explanation of findings about the role of boards in business risk.

Alternatively, the finding may be a function of a relationship between board behaviour and business risk that involves a more subtle and complex behavioural dynamic between executive and non-executive directors that develops over time.

This research, including interviews conducted for this study, suggests the following findings.

First, processes of strategic decision making in financial and business risk are closely related and fuse together within board decision processes. Furthermore, the relationship between financial and business risk is perceived to be even closer in the present economic conditions where liquidity is often a significant constraint on strategic decision making.

Second, major capital investment decisions are not a single event but a decision process that evolves over time, involving opportunities for the board to question, challenge and support executive enterprise; for example, ensuring that executives are pursuing the right acquisition at the right price.

Third, board influence on risk may extend beyond single decision episodes about capital investment to a more pervasive influence on the wider risk culture of the company. This occurs through the ways boards shape systems of risk management and executive ideas and choices. Interviews and company documents, such as annual reports, reveal that a considerable array of formal arrangements, tools and techniques appear to be used by companies when managing business risk, including risk registers, procedures for budgetary control, project appraisal processes and formal risk reviews at board and executive levels. Nonetheless, while not seeking to underplay the importance of such formal practices and processes, both executives and non-executives suggest that effective risk management at board level involves going beyond these formal arrangements to the deeper thought processes and assumptions that inform strategic choices and direction.

Fourth, the influence of boards lies largely in shaping the behaviour, reflections and forward thinking of executives to an extent that the board has confidence in what the executives have done and plan to do. To this end, some of the strongest messages in the data about boards' role in managing risk are not expressed in terms of formal risk structures and procedures but in rather softer, less tangible aspects of executive cognition and culture. Effective boards should focus on risk management not risk avoidance, and meeting this challenge includes: satisfying themselves about executives' sensitivity to risk; developing a sense of risk tolerance and appetite at board level; and knowing that executives feel a sense of responsibility for their decisions and the associated risk.

Finally, board influence on key decisions and the wider risk culture of the company requires an understanding of the business and high-quality relationships between non-executive and executive directors. No single forum is sufficient for boards to manage risk. Rather, a range of opportunities and gatherings facilitate boards in having a substantive and significant role in risk management because cumulatively they afford boards a deeper sense of strategic involvement, understanding and influence within the company.

Non-executives and boards need to be able to use these opportunities to convert their understanding of the business and contact with executives into effective influence. Board effectiveness draws on qualities of both sides of the executive and non-executive director relationships. On the one hand, it is important that executives enable, and see the value in, as challenging an environment as an effective board can provide. On the other hand, the non-executives need to exercise their influence by behaving in ways that combine host company understanding, insight and skill.

CONCLUSION

The overall contribution of this study lies in both its methodology and its findings. The study uses a multi-method approach, examining features of board structure and process through quantitative (eg regressions) and qualitative (eg survey and semi-structured interviews) analyses to shed light on the inner workings of boards and how board functioning relates to risk management. This methodology has not been explored in the existing literature on corporate governance and risk. This study is intended to be a stimulus for further research and wider debate about how to understand the relationship between risk and corporate governance, as exercised through the structure, process and behaviour of boards of directors.

Regarding the report's conclusions, there has been much debate about risk and corporate governance but very little in the way of actual empirical work on the relationship between risk and corporate governance, especially over the time period of interest to this study. This study attempts to contribute towards opening up the so-called 'black-box' of the board to shed light on roles, behaviour and relationships in and around boards. This study looks uniquely at liquidity risk measures pre- and post-credit crisis and examines whether corporate governance variables to do with board structure and process have significant explanatory power. Overall, the results of the study show that a number of features of board structure and process are significant in determining the level of financial risk to which companies choose to be exposed: board size, remuneration, tenure, effort norms and cognitive conflict have been found to be significant. These are important results, but are only part of the story. The multi-method approach in this study also found evidence to suggest that, while boards need to satisfy themselves that formal, internal controls and risk procedures are effective, there are more complex and subtle factors of cognition, culture and personalisation of risk that influence boards' behaviour and decisions. As a consequence, at board level, risk management is, in large part, a social and subjective process, rather than a purely technical or procedural matter, characterised by challenging, yet constructive, interactions between board members and geared towards developing a collective and informed sense of risk.

1. Introduction

Risk is an integral feature of business activity. Effective risk management not only helps companies avoid costly financial distress and sustain investment programmes, but also improves company-wide decision making. In the immediate aftermath of the financial crisis, emphasis has been given to the important role boards have in managing risk. A key recommendation of the Walker Review is that boards have responsibility for determining an appropriate level of risk appetite. This can be defined as the amount and type of risk exposure that an organisation is willing to accept in order to achieve its objectives. Subsequently, the UK Corporate Governance Code has articulated the responsibility of boards for effective risk management. 'The board is responsible for determining the nature and extent of the significant risks it is willing to take...The board should maintain sound risk management and internal control systems.' (Main Principle C.2 of The UK Corporate Governance Code: 19).

The aim of this study was to examine the arrangements and conditions through which boards engage in risk management. Specifically, the study sought to: (1) ascertain board structures and processes in place before 2008–9 crisis; (2) relate these governance arrangements to the financial and business risks of companies as evidenced by company data during the crisis period; and (3) examine board decision making and behaviour in relation to risk.

Methodologically the study has three key features that are combined with the intention of producing a novel and distinctive contribution to an understanding of board effectiveness, risk behaviour and corporate governance at the top of the firm. First, it is a multi-method study designed to examine risk behaviour and the inner workings of the board. Second, this study attempts to go beyond the use of company financial and governance data in the public domain, and gather and analyse data from directors about board structure and process including decision behaviour and relationships between executive and non-executive directors. Insight is generated about the relational nature of risk management and governance. Third, by studying board structure and process it seeks to link inputs and outputs (ie risk management) of board decision-making processes.

Analytically, the study measures risk through a selection of key risk variables. These include measures of financial risk-taking (corporate liquidity/financial slack) and business/strategic risk-taking (new investment in property, plant and equipment (PPE) and cash acquisitions). It uses measures of board effectiveness that relate to board structure and board processes. Structural measures are taken primarily from BoardEx data (eg board composition, board committees, director characteristics). Board process measures (eg board effort norms, decision-making behaviour and relationships between directors) are based on a questionnaire survey about board working and effectiveness undertaken by one of the authors (Professor McNulty) which was carried out in early 2008. These measures of board effectiveness are used to explain risk as identified above.

In addition, a number of semi-structured interviews with senior members of boards within the sample of companies were undertaken in late 2010 and early 2011 to provide insight into board behaviour in respect of risk. Individuals were interviewed whose experience spanned a range of directors' roles on boards. Their experiences covered the roles of finance director, joint chair and chief executive, company chair, non-executive director, company secretary, chair of audit committee and director of audit and risk management. The combined experiences of these directors covered directors' experiences of boards and risk management.

The remainder of the study is organised as follows. Chapter 2 provides a summary of the conceptual framework that has guided the study and formulates the empirical hypotheses; Chapter 3 considers the research methods and data used in the study including measures of risk outcomes and variables representing board structure and process; Chapter 4 provides an analysis of the quantitative empirical results relating to financial risk; Chapter 5 considers qualitative results relating to business risk arising from interviews; and, finally, Chapter 6 provides the summary and conclusion.

2. Conceptual framework and testable hypotheses

2.1 BOARDS AND RISK: ACCOUNTABILITY AND INFLUENCE

Boards of directors are responsible for the identification, assessment and management of all types of risk, including business risk, operating risk, market risk and liquidity risk (FRC 2010b). Boards that fail to meet these requirements leave their companies open to significant risk management failures, which tend to be more common, and more extreme, when exposed by abnormal periods of the economic cycle (eg crisis periods).

Drawing on recent research, board effectiveness is treated here as a key function of non-executives' capability and willingness to foster accountability in executives, which includes managing risk. Accountability is critical to generating and maintaining confidence within, but also outside, the boardroom (eg investor relations). Conceived in this way, actual board effectiveness involves non-executives being informed about, involved in and influential within company-related matters laden with risk, such as strategic choice and change. Non-executive directors create accountability through both individual and collective behaviour that challenges and encourages the executive directors in respect of company strategy and performance. Board effectiveness is therefore rooted in the behavioural dynamics of the board, including the conduct and relationships of non-executives vis-à-vis the executives (Roberts et al. 2005; Moxey and Berendt 2008). As viewed here, the practice of corporate governance as exercised through boards is more than remote mechanisms of (board) accountability via routine reporting of performance and associated meetings with analysts and fund managers. Rather, it is premised on the regular presence of non-executives who engage in active inquiry over time, by talking to executives, asking questions, listening and seeing whether what is said and promised is actually delivered (Roberts et al. 2005; ACCA 2008). In this way, the functions of boards, often described in terms of 'control' and 'service', are performed (see also Dalton et al. 1998; Hillman et al. 2008).

To this end, the study goes beyond the vast majority of earlier studies that propose several structural and compositional characteristics of the board as the key determinants of board effectiveness and, inevitably, produce mixed results (see Dalton et al. 1998; Hermalin and Weisbach 2003). This study goes further in suggesting that there are potentially three sets of board attributes that can facilitate or prevent boards from performing the risk management functions in an effective way (see Table 1). These are: (1) structural characteristics such as board size and composition; (2) director-specific characteristics such as pay, tenure and experience; and (3) board processes, including behaviour to do with effort norms on boards, interaction between directors and use of knowledge (Zahra and Pearce 1989; Forbes and Milliken 1999; Maassen 1999). The first set of attributes includes board size and the mix of different directors' demographics (executives/non-executives, experienced/inexperienced, male/female) (see Zahra and Pearce 1989; Maassen 1999). 'Board structure' covers board organisation, board committees, the formal independence of one-tier and two-tier boards, the leadership of boards and the flow of information between board structures (Maassen 1999). 'Director characteristics' encompass directors' backgrounds, such as directors' experience, tenure, independence and other variables that influence directors' interest and their performance (eg size and structure of director compensation) (Hambrick 1987; Zahra and Pearce 1989). Finally, 'board process' refers to effort norms, decision-making activities of boards (including related issues such the quality of board meetings), the formality of board proceedings and the interactions between executive and non-executives (Pettigrew 1992; McNulty and Pettigrew 1999).

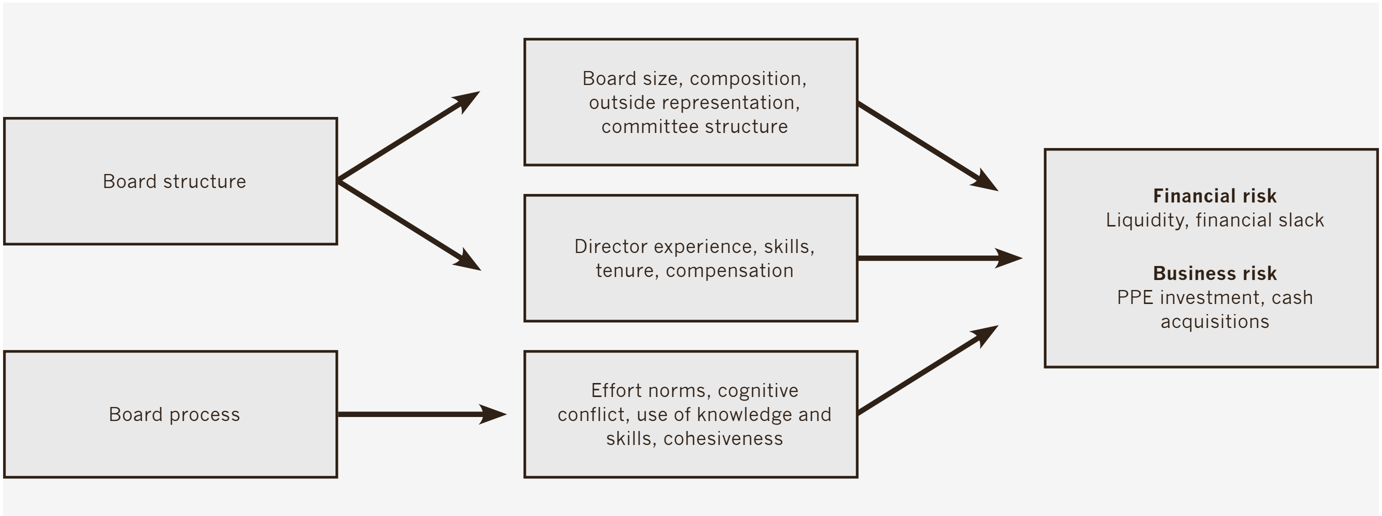
Focusing on this third set of board attributes, Pettigrew and McNulty (1995: 857) distinguish between minimalist and maximalist boards. Minimalist board cultures are those in which a set of conditions operate at board level that severely limit the involvement and influence of the board and its incumbent non-executive directors on the affairs of the firm, to the extent that boards are, at best, symbolic governance mechanisms, devoid of substantive involvement or influence over executives and the affairs of the company. By contrast, a maximalist board culture is one where non-executives actively contribute to dialogue within the board and build their organisational awareness and influence through contact, both formal and informal, with executive directors, managers and other non-executives. Differences between these board cultures stem from the effects of board size and composition but also from the attitudes of a powerful chair or chief executive, the nature of board meetings, executive respect for the the role of non-executives, and the will and skill of the non-executive directors in performing their role and exercising influence. Such variation in the processes and effects of boards is further explored by McNulty and Pettigrew (1999) in their differentiation of three modes of behaviour on boards in respect of strategy: 'taking strategic decisions', 'shaping strategic decisions' and 'shaping the content, context and conduct of strategy'. Each mode implies a different level of board involvement and influence over strategic choice and change, ranging from a minimal rubber-stamping behaviour of boards to a deep and consequential involvement with the executive in leading the company. A summary of the three sets of board attributes most commonly studied is provided in Table 1 and outlined in the following text.

Table 1: Features of boards and risk management

	Board structure	Director characteristics	Board process
Dimensions	Size (number of board members)	Experience/skills	Quality and effectiveness of board meetings
	Outside representation	Tenure	Commitment/availability of non-executive directors
	Board leadership	Level of compensation	Degree of differences of opinion at the board level
	Committee structure	Structure of compensation	Use of knowledge and skills

This study hypothesises that these three contributory elements to board effectiveness may help explain certain aspects of corporate risk-taking, such as financial risk and strategic/business risk. It is to be expected that the effectiveness with which boards perform their risk management function may vary across boards as a result of different structures, director characteristics and board processes. The empirical hypotheses tested in this study are formulated using the simple model below (Figure 1) as a conceptual framework. In the following section empirical hypotheses are formulated that associate risk with all identified aspects of board effectiveness.

Figure 1: A model of the effect of board attributes on risk



2.2 EMPIRICAL HYPOTHESES

2.2.1 Board size/composition/structure

The studies by Yermack (1996), Eisenberg et al. (1998) and Conyon and Peck (1998) document an inverse relationship between the size of the board and several measures of corporate performance. The explanation given for these findings is that larger boards are more difficult to coordinate and may experience problems with communication and organisation (Goodstein et al. 1994; Eisenberg et al. 1998; Forbes and Milliken 1999; Golden and Zajac 2001). On the basis of this evidence, we expect smaller boards to perform their risk-management function in a more efficient way.

Outside representation, in the form of non-executives sitting on the board, has also been suggested as a key criterion of board effectiveness. The studies by Byrd and Hickman (1992), Rosenstein and Wyatt (1990) and Coles et al. (2001), for example, suggest that a greater representation of non-executive directors improves the control and strategic functions of the board. Through activities such as close monitoring, non-executives may reduce excessive risk-taking by executives. This evidence thus supports an inverse relationship between the proportion of non-executives on a board and excessive risk-taking. Another strand of research, however, suggests that such an effect may not exist given non-executive characteristics, such as limited information about the firm and lack of the requisite skills to perform the role. Such characteristics often direct non-executives into a less confrontational, rather than a more critical monitoring role (see, for example, Agrawal and Knoeber 1996; Dalton et al. 1998; Franks et al. 2001; Hermalin and Weisbach 2003).

Similarly, there is no consensus in empirical research about a positive impact of a two-tier leadership structure (eg the separation of the positions of the chair of the board and the chief executive officer) as suggested by the Cadbury Report (1992). Although there is some rather limited evidence that a chair-CEO duality may create conflicts of interest in the case of US firms (see Coles et al. 2001), convincing empirical evidence for UK firms supports a weak positive association between chair–CEO duality and corporate performance (see Vafeas and Theodorou 1998; Weir et al. 2002; Florackis 2005; Florackis and Ozkan 2009). Moreover, meta-analyses by Dalton et al. (1998) show no relationship between board leadership structure and firm performance. Given that the analysis of the present report focuses on UK-listed companies, which have, in the vast majority of cases, the roles of CEO and chair separated, the impact of board leadership structure on risk is not addressed here.

The effectiveness of a board may also be buttressed by the appointment of committees of the board, such as the audit, remuneration and nomination committees (Cadbury 1992). The audit committee, in particular, may have a significant effect on the level of risk to which companies expose themselves. This is because among the main responsibilities of the audit committee are monitoring the integrity of the financial statements, review of internal financial controls and the company's internal control and risk management systems. Since Cadbury, the work of audit committees has been emphasised by the latest regulation from the Financial Reporting Council (FRC 2010a) 'Guidance on Audit Committees'. This guidance emphasises that 'the audit committee has a particular role, acting independently from the executive, to ensure that the interests of shareholders are properly protected in relation to financial reporting and internal control'. It makes clear that 'the core functions of audit committees set out in this guidance are expressed in terms of 'oversight', 'assessment' and 'review' of a particular function'. The current analysis considers the existence of a separate audit/risk committee that deals with risk, rather than its structure; having an audit committee made up solely of independent non-executive directors is now commonplace in UK corporations. Boards with a separate risk committee (including audit committees specifically identified as carrying out a risk committee function) are expected to be less likely to engage in excessive risk-taking.

Hypothesis 1: Corporate risk-taking is lower in boards with a structure characterised by: small board size; more non-executive directors; and the existence of a separate audit/risk committee.

2.2.2 Director characteristics

In addition to board size, structure and composition, another set of studies highlights the effect of a set of director-specific characteristics on the way in which boards function. Among a set of characteristics that have been considered, those relating to the tenure of non-executive directors and the CEO seem to matter the most. According to the 'expertise hypothesis' (see Vafeas 2003), a long-term tenure improves the quality of the board because it is associated with greater experience, commitment and knowledge about the firm and its business environment. Fiegener et al. (1996) show that firms whose non-executive directors have longer average tenures outperform other firms. It is also found in this study that non-executive director tenure heterogeneity is positively related to financial performance. Extended tenures, however, may reduce intra-group communication (Katz 1982; Vafeas 2003). This suggests that the relationship between director tenure and the performance of a group is not necessarily linear; tenure is beneficial because of the initial learning effect, but may be harmful thereafter. As mentioned above, this study treats board effectiveness as a key function of non-executives' capability and willingness to create accountability for executives to achieve what they have planned. It therefore focuses on the impact of the relative tenure between executive and non-executive directors on the level of corporate risk-taking. On the basis of the discussion above, the relationship between relative tenure and risk may be expected to go in either direction.

Directors' pay may be also associated with excessive risk-taking. Evidence from Core et al. (1999) and Stewart (2003) suggests that high levels of director compensation may destroy value as board members abandon their independence in order to retain their positions. Even so, consistent with the 'alignments hypotheses', Adjaoud et al. (2007), Becher et al. (2005) and Yermack (2004) show that attractive compensation packages can lead to a better supervising function of the board. This study tests whether the relative pay of executive and non-executive directors affects the magnitude of risk to which boards expose their companies. On the basis of the predictions of the tournament theory of Lazear and Rosen (1981), one could argue that a large spread in the remuneration of executives and non-executives provides extra incentives for non-executives to exert effort and, as a result, to get higher rewards. This implies that the higher the level of relative pay between executive and non-executives, the lower the level of corporate risk-taking. In the context of the UK market, however, regulation is likely to influence the relative level of risk aversion of executives and non-executives. In contrast to executive directors, non-executives are not allowed to hold options on shares in their company in the UK (see Higgs Report 2003: para. 12.27). It is therefore hypothesised that executive directors share in the upside of risky investments while non-executives have a flatter remuneration structure that is less dependent on financial performance. As a consequence non-executives do not have the same incentives to take risks as executive directors and thus they are motivated to be more risk averse. An additional explanation is that in order to recruit the most skilled and experienced non-executives, who may be more willing to act independently and competently in controlling excessive risk-taking by executives, a higher level of remuneration is required. Therefore less risk taking would be expected in cases when the compensation package of executives is closer to that of non-executives. In measuring the relative pay, both direct pay (eg salary and bonus) and indirect pay (eg long term incentive plans, share options) are considered. It is not, however, the primary purpose of this study to investigate analytically the different incentives for executives and non-executives to take risk engendered by remuneration structures.

Finally, corporate risk-taking may be associated with a certain set of skills that directors may possess. Among a wide range of skills that directors may have, Jensen (1993) and Chhaochharia and Grinstein (2007) suggest that financial literacy is essential in any board. In this study it was expected that boards with expertise in the area of finance (ie when all members of the audit committee are financially literate) and all other things being equal, would undertake less risky decisions.

Hypothesis 2: Corporate risk-taking is negatively related to 'relative tenure' (ie average tenure of executives divided by the average tenure of non-executives) and 'financial expertise' (ie whether non-executives are financially literate), and positively related to 'relative pay' (ie average remuneration of executive directors divided by the average remuneration of non-executive directors).

2.2.3 Board processes

Meta-analyses of the literature on governance and boards point to a range of inconclusive findings with respect to the relationship between board characteristics and firm performance (see eg Dalton et al. 1998; Daily et al. 2003). Reviews conclude that there is still rather a limited understanding of the working processes and effects of boards and there are calls for better understanding of the intervening variables that link board characteristics to board outcomes (Daily et al. 2003; Hermalin and Weisbach 2003; Finkelstein et al. 2009).

The search for a better understanding of board effectiveness by studying actual behaviour in and around boards is fuelled by empirical research that is opening up the so-called 'black-box' of the board to shed light on the roles, behaviour and relationships in and around boards (Pettigrew 1992). Some of these studies serve to explain further the inability of boards to exercise influence and be effective, hence confirming conditions of managerial hegemony whereby boards are weak, minimalist and ineffectual entities vis-à-vis executive management (Pettigrew and McNulty 1995). Others indicte that the limited rationality of boards is rooted in social-psychological dynamics of boards and decision-making failures. Westphal and Bednar (2005) observe 'pluralistic ignorance' to be a characteristic of board dynamics and decision making, whereby members fail to express concerns and opinions. By contrast with group-think, another form of group decision-making failure rooted in highly cohesive groups, pluralistic ignorance lies in a misperception by directors which serves to prevent them voicing concerns about strategic matters for fear of marginalisation. Tuggle et al. (2010) identify limitations in boards' information processing and calculation capabilities and the impact on boards' attention to monitoring. They find that deviation from prior performance and duality are the contextual and structural factors especially relevant to directors' attention to monitoring.

Conversely, where boards and directors appear to be influential and effectual, it is a function of non-executive (or outside) directors ability to create accountability in respect of company strategy and performance. Specifically, effective board behaviour requires of non-executives that they be 'engaged but non-executive', 'challenging but supportive' and 'independent but involved' (Roberts et al. 2005). Westphal and Bednar (2005) give emphasis to the trust, openness and close ties in relations between executive and non-executives as a condition of board dynamics. Somewhat contrary to agency theory assumptions, there is theoretical and empirical support for the argument that the behavioural dynamic on boards requires both control and collaboration within the relationships between the executive and non-executive (Sandaramurthy and Lewis 2003). A key proposition is that board structure and composition condition the way boards operate but actual board effectiveness depends on the behavioural dynamics of the board, including the conduct and relationships of non-executives vis-à-vis the executives (Roberts et al. 2005). A future challenge will be to test this proposition using a methodology attuned to a systematic analysis of the experience of those operating in and around boards.

In seeking better understanding of what makes boards effective strategic decision-making groups, Forbes and Milliken (1999) apply theories from groups and cognitive psychology to model the behaviour and output of boards of directors. They propose that board effectiveness be measured directly through tasks relating to a board's 'control' and 'service' functions. They view boards as relatively large, elite workgroups of seasoned, high-level executives who meet episodically but have little interaction with each other. Boards have minimal involvement with the organisation yet make significant, interdependent strategic decisions, working by consensus and taking into account the collective wisdom, skills and experience of the entire group. Consequently, Forbes and Milliken (1999) suggest that boards are vulnerable to 'process losses' and analysis of board effectiveness must also embrace the ability to keep working together ('cohesiveness') as the board endeavours to conduct the tasks of control and strategy. A certain level of cohesiveness is required to get boards to engage effectively, but too much cohesiveness can promote so-called 'group-think'. Thus, in their framework they draw on Janis (1983) who, mindful of 'group-think', suggests 'for most groups optimal functioning in decision making tasks may prove to be at a moderate level of cohesiveness'. Forbes and Milliken (1999) suggest three processes of importance in understanding board task performance and cohesiveness: 'effort norms', 'cognitive conflict' and 'the use of knowledge and skills'. Effort norms concern how directors prepare for board sessions, participate in board work and give attention to board tasks. Cognitive conflict refers to issue-related disagreement, an idea supported by Amason (1996), who sees high cognitive capabilities, as well as strong group interaction processes, as antecedents of good decisions. The use of directors' knowledge and skills refers to how relevant expertise is coordinated and deployed, which, as Zona and Zattoni (2007) note, requires extraction and integration of individual knowledge through an enabling internal process.

Following this line of inquiry, this study uses detailed information to examine a wide range of board processes that relate to board expertise in risk management. These criteria, which are classified into four measures, namely *effort norms*, *cognitive conflict*, *use of relevant knowledge and skills* and *board cohesiveness*, are used as determinants of financial and business risk.

Hypothesis 3: Corporate risk-taking is lower in boards with processes characterised by: high effort norms; cognitive conflict, use of knowledge and skills, and board cohesiveness.

3. Methods

3.1 SAMPLE AND DATA

This study adopts an interdisciplinary approach by using a set of methods, both qualitative and quantitative, to construct the dataset required for testing the empirical hypotheses identified above. Initially, a questionnaire survey of company chairs was used to obtain information on the structure and processes of boards. The sample frame for this study comprised board chairs at the 1,000 largest companies (by stock market value) in the UK in early 2008. A survey questionnaire was sent to each board chair. The following procedures were taken to enhance response rates:

- the initial survey questionnaire was developed on the basis of qualitative in-depth interviews with directors at UK listed firms
- feedback was used from pre-testing the survey instrument to refine the measures and appearance of the survey
- a covering letter explaining the academic and practitioner nature of the research project was included, highlighting the key themes of interest to practice
- two further waves of the survey were sent to non-respondents.

The survey yielded a response rate of 25.1%. Sample selection tests were used to assess sample representativeness. Specifically, the aim was to ensure that responding to the survey was not influenced by either firm size or profitability (ie the size and profitability of firms that responded to the survey were not statistically different from the size and profitability of those that did not respond). The questionnaire responses were coded and transformed into meaningful scores on *board effort norms*, *cognitive conflict*, *use of knowledge and skills* and *cohesiveness* using principal component analysis (PCA). These data were supplemented from structural indicators of board effectiveness that were collected from a BoardEx database and organised at a firm level. Data on the risk indicators and other firm characteristics (eg size, industry sector) were obtained from Thomson DataStream and from company annual reports.

The empirical hypotheses were tested using an ordinary least squares (OLS) approach robust for heteroskedasticity standard errors. Specifically, the measures of board structure and process identified in Chapter 2, together with a set of control variables such as size and industry, are regressed against the measures on financial and business risk. The analysis covers the period of 2007–9. In terms of the sample size, initial attention was paid to all the 1,000 largest companies (by stock market value) in the UK. Firms that did not respond to the questionnaire were excluded as were companies that responded but failed to answer certain questions in the questionnaire (ie questions relating to board attributes such as board effort norms, cognitive conflict, use of knowledge and skills and cohesiveness). Finally, companies with missing observations and outliers (on the basis of 1st and 99th percentiles) were excluded, as were companies belonging to the financial industries as they are exposed to different types of risk and to liquidity considerations. After matching the data from the different sources the final sample consisted of 121 companies.

For the purposes of conducting interviews a further sub-sample of 40 companies was taken from across a range of industries, including consumer goods/services, industrials, oil and gas, and technology. Written requests were made for interview to the finance director in the first instance, followed by telephone calls. In the course of this process, the callers were often referred on from the finance director to other directors and company officers. All in all, data were obtained from eight interviews involving a range of executive and non-executive directors, including: company chairs, a joint chair, chief executives, finance directors, chair of audit committee and a director of audit and risk management. The interviews were conducted under conditions of confidentiality, recorded and transcribed. They ranged across topics that relate to board structure, process, risk management within the company and strategic decision making.

3.2 VARIABLE MEASUREMENT

3.2.1 Risk factors

The measures of financial risk relate to the corporate liquidity and financial slack of companies at the onset and during the 2007–9 financial crisis. We consider a firm's financial policy as 'low risk' if a relatively high level of liquidity or financial slack was maintained throughout the crisis period (after controlling for industry). To illustrate, corporate policies characterised by 'burning' of cash reserves and difficulties in finding new sources of funding as the economy moved into the crisis are treated as 'high risk' as they lead to low levels of liquidity or financial slack. In particular, three measures of liquidity were used as inverse risk proxies: (1) cash and cash equivalents; (2) net cash; and (3) a measure of financial slack. These measures represent not just narrow cash but also potential cash which can be readily converted into cash in the short term to enhance liquidity (detailed definitions of these variables are provided in Table 2).

The risk factors identified in respect of *business risk* are, first, incremental cash investment in PPE investment, and, second, incremental cash investments in new acquisitions (detailed definitions of these variables are provided in Table 2). Incremental cash investment in PPE is deemed to be 'high risk' as (1) it is taken as indicative of boards' decisions to expand the business in a recession and (2) implies that the business model requires to be sustained by a significant amount of asset replacement. Cash acquisitions may also be regarded as high-risk decisions; a potential failure of an acquisition requires reinvention of the target company's business model. Empirical evidence also suggests that share price gains of acquiring companies are usually insignificant.

Table 2: Risk indicators

Variable	Definition and source
ΔCash& Equivalents	The change in the ratio of total cash and cash equivalents to total assets from 2007 (pre-crisis) to 2009 (crisis). This is an inverse proxy of risk taking. (Source: Thomson DataStream)
ΔNetCash	The change in the variable cash and cash equivalents less short-term debt and less the current liability element of long-term loans, from 2007 (pre-crisis) to 2009 (crisis). This is an inverse proxy of risk taking. (Source: Thomson DataStream)
ΔFinancial Slack	The change in financial slack from 2007 (pre-crisis) to 2009 (crisis). Financial slack is the sum of cash and marketable securities, 0.7 times accounts receivable, 0.5 times inventories, less the accounts payable, divided by total net fixed assets, as in Cleary (1999). This is an inverse proxy of risk taking. (Source: Thomson DataStream)
PPE Investment	The incremental cash investment in property, plant and equipment scaled by total assets during the crisis period. (Source: Thomson DataStream)
Cash Acquisitions	The incremental cash investments in new acquisitions scaled by total assets during the crisis period. (Source: company annual reports)

3.2.2 Board effectiveness

Onthe basis of the discussion in Chapter 2, the variables that are treated as potential determinants of board effectiveness with respect to risk-taking are: board size, board composition, risk committee, relative tenure, relative pay and financial expertise. These features of board structure are supplemented by attention to board processes in order to explain corporate risk. Board processes include group effort norms (quality of board meetings; quality of board member preparation and frequency of dialogue between executives and non-executives), cognitive conflict (quality of group discussion including attention to non-executive director involvement in strategic debate and decisions, degree of difference in opinion at the board level over key board tasks), use of relevant knowledge and skills (board expertise in risk management), and cohesiveness (the degree of interpersonal attraction among members). Analytical definitions for these variables are provided in Table 3.

Table 3: Determinants of board effectiveness

Variable	Definition and source
Board Size	The total number of directors on the board. (Source: BoardEx)
Board Composition	The ratio of the number of non-executive directors to the number of total directors on the board (%). (Source: BoardEx)
Risk Committee	A dummy variable that takes the value of 1 if a company has a separate risk or audit & risk committee, and 0 otherwise. (Source: BoardEx)
Relative Tenure	The average board tenure of executive directors divided by the average board tenure of non-executive directors. (Source: BoardEx)
Relative Pay	The average total remuneration (including options and LTIPS) of executive directors divided by the average total remuneration of non-executive directors. (Source: BoardEx)
Financial Expertise	A dummy variable indicating whether the board contains the key skills in the area of finance. This was constructed using a relevant question asked to board chairs. (Source: questionnaire survey on board working and effectiveness)
Board Effort Norms	A qualitative assessment on efforts norms that focuses on the number and duration of board meetings, the commitment/availability of non-executive directors, and the frequency with which chairs interacted with board members outside the formal board meeting. This variable was constructed using a three-item scale that included relevant questions asked to board chairs to assess the degree of such. Indicative survey items used were as follows. (1) On average, how long do formal board meetings last? (2) In addition to meetings of the board and board sub-committees, how often, on average do you speak to the non-executive directors in this company? (3) Please state whether NEDS devote due time and attention to their roles as directors. (Source: questionnaire survey on board working and effectiveness)

Table 3 continues over page...

Table 3 continued

Variable	Definition and source
Cognitive Conflict	A qualitative assessment of the degree of differences of opinion at the board level over key board tasks. This variable was constructed using a seven-item scale that included relevant questions asked to board chairs to assess the degree of such. Indicative survey items used were as follows. Please indicate on a scale of 1–5, where 1 is 'very low' and 5 is 'very high', the extent to which there are differences of opinion at board level about: (1) the role and responsibilities of the board (2) the overall purpose and strategy of the firm company results and performance. Indicate your level of satisfaction in respect of the following: (1) there is constructive challenge and debate between non-executive and executive directors at board meetings. (Source: questionnaire survey on board working and effectiveness)
Use of Knowledge/Skills	A qualitative assessment of the extent to which non-executive directors use their knowledge and skills, executives involve the board in strategic decisions, and a perfect fit is achieved between assigned tasks and each director's knowledge. This variable was constructed using a six-item scale that included relevant questions asked to board chairs to assess the degree of such. Indicative survey items used were as follows. Please indicate on a scale of 1–5, where 1 is 'very low' and 5 is 'very high', the extent to which: (1) non-executive directors (NEDs) use their skills and knowledge to contribute to board tasks (2) the executives seek to involve the board in key strategic processes and decisions fully (3) tasks on this board are generally delegated in a way that ensures the best fit between assigned tasks and each director's knowledge. (Source: questionnaire survey on board working and effectiveness)
Board Cohesiveness	The ability of the board to work together in a sustained way. Cohesiveness is measured using a four-item scale that included relevant questions asked to board chairs to assess the degree of cohesiveness. Indicative survey items used were as follows. Please indicate on a scale of 1–5, where 1 is 'very low' and 5 is 'very high', the extent to which: (1) good channels of communication enable executives and non-executives to work together (2) board members are comfortable challenging one another in debate at the board (3) interpersonal relations between board members are conducive to an effective board. (Source: questionnaire survey on board working and effectiveness)

4. Results on financial risk proxies

Table A1 in the Appendix presents the descriptive statistics and correlations of the main variables used in the empirical analysis. Some interesting observations include the following.

The corporate liquidity and financial slack of the average firm in the sample declined during the crisis period (ie the mean value of the variables '∆Cash& Equivalents', '∆NetCash', '∆Financial Slack' was –1.02%, –1.00% and –1.44%, respectively). On average, boards of directors consisted of about seven directors while the average proportion of non-executive directors on the board was 43.80% in year 2007. Additionally, we were able to identify 4.84% of companies that had a separate risk or audit/risk committee.[1] The analysis of the data also revealed that the average value for relative tenure and relative pay was 1.39 and 15.28, respectively. That is, on average, executives' tenure was 1.39 times longer than non-executives' tenure, while executive pay was 15.28 times higher than non-executive pay. Finally, in the vast majority of cases (86.29%), boards were perceived to contain the necessary key skills in the area of finance. The correlations analysis showed strong positive correlations between corporate liquidity/financial slack and the following variables: Relative Tenure, Board Effort Norms, and Cognitive Conflict.

Moving to the regression results, Table 4 describes the way in which the different board attributes/characteristics (structure and process) influence the three inverse proxies of risk ('∆Cash & Equivalents', '∆NetCash', '∆Financial Slack'). The results are presented analytically (eg regression coefficients, standard errors, *t*-statistics, etc) in Appendix Table A2. For the main specifications considered (Models 1, 3 and 5), Table 4 presents only the sign of each statistically significant relationship between each attribute of board effectiveness and corporate risk-taking. The symbol '–' indicates that the relationship is not statistically significant.

HYPOTHESIS 1: BOARD SIZE AND COMPOSITION

Starting with the structural criteria, 'Board Size' seems to be strongly associated with the inverse proxies of risk. In all models considered, the coefficient of board size is negative and statistically significant. This indicates that the larger the board size the lower the level of corporate liquidity/financial slack during the crisis, ceteris paribus. Put differently, large boards (eg those involving more than eight directors) were less effective than small boards in maintaining sufficient cash, and near cash, resources to meet their financial obligations (eg pay back short-term debt liabilities and interest obligations). Such evidence is in line with Hypothesis 1, suggesting that the typical problems of large boards (eg communication, coordination, free-riding) may lead to higher risk-taking (lower levels of corporate liquidity/financial slack). This result remains robust across several specifications considered. For example, given that board size measured by the numbers of directors on the board is highly correlated with firm size, the models were re-estimate after dividing board size with the logarithm of total assets (see Harford et al. 2008, for a similar approach).

There was no evidence of a significant relationship between the proportion of non-executive directors and the inverse risk proxies: the coefficients on the variable 'Board Composition' were statistically insignificant in all models in Table 4 and in the Appendix (Table A2). This implies that boards dominated by executive directors did not adopt different financial risk strategies to other companies during the crisis. This evidence is contrary to Hypothesis 1 but in line with the findings of Agrawal and Knoeber (1996); Franks et al. (2001) and Hermalin and Weisbach (2003). This result shows that the ratio of non-executive directors to total board size has no significant consequences for the level of financial risk.

Likewise, the relationship between the Audit/Risk Committee variable and the inverse proxies for risk appeared to be statistically insignificant in all cases. This finding suggests that companies with a separate risk committee in the pre-crisis period behaved similarly to those without with regard to exposure to financial risk during the crisis. Table A2 in Appendix A sets out the above findings in more detail.

HYPOTHESIS 2: DIRECTOR CHARACTERISTICS

Turning to Hypothesis 2 and the impact of director characteristics on corporate risk-taking, the results suggest that director relative tenure has some explanatory power in all models considered. Our finding is that the higher the relative tenure of executive to non-executive directors, the lower the level of financial risk.

The empirical analysis reveals a statistically significant association between relative pay and one of our inverse proxies for risk taking (NetCash). This provides some limited support for the notion that non-executives that are compensated well relative to executives (ie the variable RelativePay, as defined above, takes low values) are more effective in challenging executives on key issues that relate to financial risk-taking (eg maintaining a sufficient level of corporate liquidity/financial slack during the crisis). This finding is in line with extensive academic research suggesting that compensation is one of the key mechanisms through which outside directors can become engaged actors (see Carey et al. 1996; Deutsch 2005).

Regarding board financial expertise, the findings did not indicate any statistically significant association between board expertise and risk.

1. This includes separate risk committees but also committees that combine the audit and risk functions.

HYPOTHESIS 3: BOARD PROCESSES

Despite its useful insights into risk outcomes, the analysis above does not provide any indication of how the processes and mechanisms through which structural and director-specific characteristics of boards translate into positive outcomes (eg effective risk management). Instead of treating the board as a homogeneous unit with all directors having the same level of influence (see Hambrick at al. 2008), the analysis below attempts to extend the research on boards and corporate governance by examining the impact of behavioural processes and dynamics within the boardroom on corporate risk taking. Drawing attention to the theoretical model of Forbes and Milliken (1999), the findings show that some of the key board processes (eg board effort norms and cognitive conflict) are significantly associated with proxies of risk taking.

In particular, the variable 'Board Effort Norms' positively affects the inverse proxies of risk in all models considered. This finding suggests that, in addition to boards' demographic characteristics, such as size, the quality of board meetings (measured through the number and length of board meetings, the commitment and availability of non-executive directors, and the frequency with which chairs interacted with board members outside the formal board meeting) is strongly associated with our inverse proxies of corporate risk-taking. This is consistent with Hypothesis 3, and also reinforces the findings of earlier studies that establish a link between board processes/dynamics/culture and board performance (Roberts et al. 2005; Zona and Zattoni 2007; Minichilli et al. 2009).

Moving to the other key board process advanced by Forbes and Milliken (1999), namely 'Cognitive Conflict', the empirical evidence suggests that this is also positively associated (in a statistically significant way) with all three inverse proxies of risk. This finding suggests that the higher the degree of differentiation of opinion at the board level, the lower the level of financial risk taking (or the higher the level of corporate liquidity/financial slack), which is in line with Hypothesis 3. To the extent that better financial risk management leads to higher overall performance, the finding also supports the view that cognitive conflict in top management teams influences positively the overall effectiveness of the team (see Bourgeois 1985; Cosier et al. 1991).

Finally, this study shows no direct evidence that the use of knowledge and skills or board cohesiveness have any effect on financial risk. Nonetheless, there may be some indirect effects that relate to cognitive conflict. Some preliminary evidence (see columns 2 and 6 of Appendix Table A2) suggest that the interaction terms between cognitive conflict and cohesiveness is negative and statistically significant. These findings reveal that while board cohesiveness does not affect financial risk directly, it affects it through the variable Cognitive Conflict. Specifically, the positive impact of cognitive conflict on the inverse proxies of risk (ie corporate liquidity/financial slack) is less pronounced in cohesive boards. Given that cognitive conflict reveals itself only in decision processes and board member interaction, it is necessary to draw on the qualitative data collected for the study to understand how knowledge and skills and cohesiveness may inform risk management. Chapter 5 explores director behaviour in respect of board decision processes and the wider culture of risk management.

Table 4: Summary of results on financial inverse risk proxies

	Financial risk proxies		
	ΔCash&Equivalents (inverse risk proxy) (Model 1)	ΔNetCash (inverse risk proxy) (Model 3)	ΔFinancialSlack (inverse risk proxy) (Model 5)
Board size/composition/structure			
Board size	Negative	Negative	Negative
Board composition	–	–	–
Risk committee	–	–	–
Director characteristics			
Relative tenure	Positive	Positive	Positive
Relative pay	–	Negative	–
Directors with expertise	–	–	–
Board process/dynamic/culture			
Board effort norms	Positive	Positive	Positive
Cognitive Conflict	Positive	Positive	Positive
Use of knowledge/skills	–	–	–
Board cohesiveness	–	–	–
Control variables			
Profitability	–	–	–
Growth opportunities	–	–	–
Dividend	–	Positive	–
Firm size	Positive	Positive	Positive

Table A2 in Appendix A sets out the above findings in more detail.

5. Business risk

Quantitative results suggest no relationship between the two measures of business risk used here and the variables related to board structure and process (see Appendix Table A2). The remainder of the report draws on interviews to suggest some explanations for this result and offers these as a stimulus for further work in this area.

First, as capital investment has been found to be a significant indicator of risk (Deutsch et al. 2011), and the interviews with directors offered qualitative support to suggest that capital investment transactions, such as acquisitions, are risk-laden matters, it may have been that the specific measures used here were not an appropriate means of capturing business risk.

Going beyond an explanation that would suggest that the methodology has been insufficiently sensitive to explain board involvement in risk involves directing explanations at detailed board behaviour, largely invisible to public gaze, and accessed only through direct observations or accounts by actors involved in board processes. Hence a second explanation is that risk management is primarily an executive function or task; such that de facto risk management, if it occurs at all, takes place prior to and away from the main board processes and has not been picked up by the survey of chairs. To conclude that risk management is limited to the executive function is suggestive of a situation whereby boards are disconnected from the business and perhaps engaging only in an empty ritual of passive behaviour and decision making. Research about minimalist boards (Pettigrew and McNulty 1995) and managerial domination of boards (Finkelstein et al. 2009) would imply that such boards are inconsequential for risk management and, as such, poor mechanisms of corporate governance. The interview data used here give some credence to this argument. Looking beyond banking and explaining the background of a company undergoing a turnaround scenario, a chair remarked that the previous board was disconnected from the business and this weakened the quality of major decisions.

> *One of the problems with the structure that we had before I came on was that we had a chief executive who felt he had to do things. And he had a board that wasn't terribly close to the businesses and so you had some fairly wild decisions taken in order to show activity and growth and which weren't necessarily the best things for the group to have done.* (Chair)

> *Sometimes you see situations where the board just doesn't really know what's going on, doesn't really understand the businesses and some of the decisions that were being taken.* (Chair)

> *The reason it goes wrong is that there isn't sufficient challenge and robustness around the decision making and people get into deep water.* (Finance director)

A disconnected board lacks understanding of the business and can fail to appreciate the risk not only within particular decision scenarios but also in the wider context within which the company is operating. A non-executive director suggested that banks and property companies in particular have suffered from such weaknesses.

> *If you look at property companies that have failed or some of the banks that have failed and other leveraged businesses that have failed, it's because people did know what they were doing yet didn't realise that things could go suddenly and a market could change as quickly as they do change sometimes and leave you high and dry.* (Non-executive director)

By contrast, a third, and alternative, behavioural explanation is that the relationship between boards and business risk exists through quite subtle decision processes between executive and non-executives directors that unfold over time and that are not captured by this survey and analysis. A sense of what is suggested here is provided by the following comment from a finance director.

> *The added value you're getting from them* [the non-executive] *as you go along can alter your direction of travel or make you look at things differently... You need to live with these things. We* [the executives] *have been living with them and the non-execs need an opportunity to live with them and come back and challenge and question. And that's how you're always addressing the risks. Everybody's chipping in and chipping in and chipping in until we get to a point when we feel we've identified them and closed them down or mitigated them.* (Finance director)

> The remainder of this report is given to exploring this argument further using interview data that suggest there are two particular possible ways for boards to play an active role in managing risk. First, board influence can extend deep into the decision-making process as is the case when, for example, major capital investment decisions, such as an acquisition, require board approval and executives are challenged on the nature and value of an acquisition. Second, board influence on risk goes beyond single decision episodes about capital investment to become a more pervasive influence on the wider risk culture of the company. This occurs through boards' shaping of systems of risk management, executive assumptions and choices. Drawing on qualitative interview data collected for this study the remainder of this chapter elaborates on these two arguments.

5.1 THE ROLE OF THE BOARD IN 'RISKY DECISIONS'

Interviews suggest that in 'real-life' strategic decision making, financial and business risk are intertwined.

> *We've looked at acquisitions recently, a couple of sizeable ones that would take our leverage up, and we're scratching our heads because 'let's say our leverage goes to three and a half, would investors find that acceptable?' We've gone through this debate over the last couple of months on an acquisition and we haven't reached a conclusion yet. There's a very active sort of balance sheet risk assessment going on, that's a constant exercise here. The acquisitions of X and Y were for cash although you could argue we did get a convertible instrument to help a little bit. We took about 0.2 turns of additional debt out of it actually just to ease the stress.* (Chair)

Furthermore, the relationship between financial and business risk is closer in the present economic conditions.

> *We started the acquisition trail in 2006, all they'd really experienced as a board was a share price that went up...as we got to the end of that process, and a number of them had seen in other businesses they were operating that the downturn was starting, they were becoming much more risk aware. That was one of the reasons that we went back and renegotiated the price of the latest acquisition and at the same time changed the mix of debt and equity that we were looking to take on to finance it.* (Finance director)

The following extracts indicate how boards may be involved in decisions about restructuring and acquisitions. These decisions reveal how the governance responsibilities of boards embrace attention to risk in decision processes that evolve over time, involving moments for the board to question, challenge and support executive enterprise. Crucially, the quotes reveal how such behaviour by the board is conditioned by executives' development of ideas into formal proposals as a way to invite both challenge and support simultaneously.

> *We've done a number of acquisitions over the years. We typically know all the players in the industry, so we would have kind of off-the-record discussions with owners of businesses, establish their appetite for a sale, progress that in the background, work out a rough idea of a valuation, get the seller to kind of buy-in to that valuation. So we've got a straw-man of an acquisition that we would like to make. We would bring the board up to speed that it's something that we are considering. They would understand things in a very general way, give an indication of whether they think that's a good idea or a bad idea at this particular moment in time without too much detail. If they think it's a good idea we would go away and put a lot more flesh on the bones without actually doing a deal or anything and go back to the board with a formal paper. That formal paper is then discussed and challenged by the non-execs to understand both the valuation that we're putting on the acquisition, the impact that it will have on the Group, the impact that it will potentially have on shareholder value. We would also discuss the risks on the downside; so what if you're unable to keep all of the revenue; what if the synergy benefits that you're proposing do not come through? So they understand the risks around the acquisition that we're putting forward, they understand the valuation and they understand how we're looking to finance it. Now at that point they'd approve the acquisition subject to due diligence and final negotiation of the sale and purchase agreement. We look for the board to challenge why we want to make this acquisition at that valuation. That's quite important because as an executive team by the time you've got to that stage you want to make that acquisition, you're being swept along with all the euphoria of making the acquisition. It feels quite exciting, the negotiations are quite exciting, late nights are exciting, so you're kind of building up your level of enthusiasm. In some ways your reaction to the challenge is not always welcome really, because you don't really want people to say 'oh that's a bad idea or have you thought about this? You're paying too much, you're taking on too much debt, you need more equity'. So you do want that challenge but it's not always that welcome. The last one we completed was a big one. They basically said 'that we were paying too much'. So we had to go back and renegotiate the price, which we did. So it proved they were right because we lowered the price and then we went back and completed it.* (Finance director)

The extract below emphasises a board's overt attention to risk considerations in respect of major capital investment decisions. In this case, a board exercised control and restraint in respect of one acquisition but support and encouragement for another. In saying 'no' to an acquisition, the quotation shows an example of a board that has gone beyond a ritualistic approval process of simply 'rubber-stamping' executive proposals. The evidence supports that of previous studies, which show that boards can and do influence strategic decisions and occasionally say 'no' to executive proposals (McNulty and Pettigrew 1999).

> *We were looking to expand a particular business, so we were seeking some targets and we identified a target. We talked to the board about wanting to go ahead with the acquisition, about potential earnings and the risks. In fact we were looking at two acquisitions at the time, one we went ahead with, one we didn't. The board actually did express strong preference as to which one they wanted to do. That was mainly to do with reward for risk...if things went as we hoped they would go, one paid back much more rapidly than the other. There was an evaluation of risk, there was open debate and everyone ended up agreeing, even the director that was promoting the deal that was viewed as not necessarily so attractive...* (Chair)

The above extract is suggestive of a crucial point that is somewhat implicit in the comments above, this being that for boards to play a role in risk management requires executives who welcome challenges to their thinking and who hope to use the board to improve the quality of the final decision and are not simply looking for a rubber-stamp on their proposals.

I think over the last couple of years non-executives have had a bit of wake-up call, that they need to understand in a lot more detail how a business operates, what a business is doing, the risks associated in certain decisions and they do want to get a bit more involved with the business. As executives you want to encourage that. You don't want to be seen to be the risk takers per se, you want to be seen to be part of a board taking the risks. You don't want to be seen as part of a board where these two guys decide what to do. You want to make sure that externally the group is seen as a board of directors making cohesive decisions as opposed to the executive team making the decisions and the non-execs just rubber stamping them. (Finance director)

When there's a downturn the amount that you spend or the type of acquisitions that you make always come under scrutiny...this time round when we started to go through a process of refreshing the board we were very much of the view that we wanted non-executives willing to become even more involved in the business. We do want people that are willing to challenge us much more robustly on what we as a kind of executive team want to do. So when we're looking to make an acquisition we get challenged on why we want to make that acquisition and why we want to finance it in a certain way. (Finance director)

To reinforce the point, note the following comments of a finance director about a major refinancing. The relationship suggested between the executives and non-executives is in stark contrast to that portrayed for boards that are weak and passive.

I've just completed a multi-million refinancing with the banks, I welcomed the challenge of my chair in particular but also from one of the other non-execs in terms of whether I've considered the right banks, the right term of the loans, the right amount of the loan, things like that. They fed back to me, I thought 'OK I'll take that away and look at that one'. That's what you want, you want challenge because it's can be a lonely job when you're on your own. You know we're all big boys, we can get it wrong or we can at least have reached the wrong decision for a particular reason. I'm not scared of the challenge or the question of why, because that does make you reflect on it. (Chief finance officer)

Notwithstanding the above discussion of business risk as pursued through major capital investment decision processes, such as acquisition, it is necessary to ask whether boards have a greater potential with regard to risk management. Certainly the corporate governance code has such aspirations, stating that: 'The board is responsible for determining the nature and extent of the significant risks it is willing to take' and that 'The board should maintain sound risk management and internal control systems' (FRC 2010b: 7). This is a real practical challenge, as reflected below in the comments of two chairs.

So many companies, particularly financial institutions, seem to have missed the risk assessment and management processes as part of their standard management processes. So it is a good question to be asking, what is the process people are following right now, and if they're not following processes that would have picked up that level of risk and reported it properly and managed it properly why is that? (Chair)

I've seen the need for boards and I suppose thinking of non-executive directors and independent parties on the board to actually try and understand what the company is doing and maybe at least ensure that particular risks are properly discussed and looked at before they're taken...it a question of trying to understand what is normal risk for a business and what is a very high risk or dangerous risk or excessive risk. And that clearly those should be discussions that are had at board level but I don't think they quite often are. (Chair)

The next section delves deeper into the actions and relationships between a board and the executive, actions that take the boards' role in relation to risk beyond single decision episodes towards some deeper and more pervasive influence over the risk culture at the top of the firm.

5.2 FROM RISK PROCEDURE TO RISK CULTURE: THE ROLE OF BOARDS IN RISK MANAGEMENT

Interviews conducted for this study along with analysis of available company documents, such as annual reports, reveal that a considerable array of formal arrangements, tools and techniques appear to be used by companies when managing risk. The particular arrangements vary from company to company in accordance with: the type of business, the maturity of the business, the nature of the sector, the level of competition, and regulation. There do seem to be some quite commonplace practices including: risk registers, procedures for budgetary control, project appraisal processes, and formal risk reviews at senior levels. While not underplaying the importance of such formal practices and processes, executives and non-executives suggest that effective risk management at board level involves going beyond these formal arrangements and processes to affect the deeper thought processes and assumptions of the directors. An executive director with specific responsibility for risk commented that:

risk is taken very seriously by the non-executive to make sure that we're being sensible about it. So you do have the risk registers and reviews of risk and what are the major risks affecting the business, and you do all that and it is valuable in many instances. But I think our non-execs try to go a bit beyond that...they'll question the various businesses within the group, the heads of those businesses, the chief executives on 'what do they see as their risks' and talk to them. It's really a question of trying to identify the particular assumptions that we're making

> *about sort of economic direction or our ability to manage things or whatever it happens to be that are fundamental to the success and value of our enterprise and getting a little bit under the skin of that.* (Executive director)

This argument chimes with Birkinshaw and Jenkins (2009), who explain risk management failure as involving a breakdown between the formalisation of risk and the personalisation of risk in companies. Talk of assumptions and 'getting under the skin' resonates with ideas that understanding and managing culture requires attending to deep-lying patterns of basic assumptions that guide thought and action (Schein 1985). The practical implication is that managing risk is not simply a procedural task, but a cultural challenge, whereby boards need to satisfy themselves not only that formal, internal controls and risk procedures are effective but also that they are comfortable with executive aspirations, proposals and conduct. The suggestion here that the practices of corporate governance and risk management are cultural challenges is supported by a number of observations from the interviews that refer to risk as pervasive, social, subjective and cognitive.

Several respondents have been keen to emphasise that risk is a pervasive matter not a separate issue in business life.

> *Everything is risk management, it's running the business properly...there is risk in things that you do...people take it seriously because there's personal risk in not taking it seriously, but it's not just that, they are taking it seriously because they want to see the group do the right thing.* (Chair)

The reference to 'running the business' links risk to corporate governance. In practice, for boards and incumbent non-executives the challenge of managing risk is one where they are heavily reliant on executives and other employees who are full-time in the business and whose actions are not visible or observable by the board on a day-to-day basis. Given the episodic nature of board meetings and the part-time roles of many chairs and non-executive directors there are limits to what boards can do vis-à-vis managing risk.

> *If corporate governance is good and if a board is good and the non-executives are inquiring then I think the most that you'll get is an understanding of some of the risks that are being taken or at least that they'll be addressed and people will understand where there is particular exposure...I think the best you can hope for would be to have a board where you can have people on the board that do understand the businesses that you are in and are prepared to raise questions and ask questions and to have an environment of open discussion.* (Chair)

Direct, personal control is largely beyond boards and the challenge is therefore one of developing the fullest confidence possible, both for themselves and others, in the conduct and competence of executives. Risk-management procedures and arrangements, as well as the quality of information associated with such arrangements are important, but establishing trust and confidence in both the judgement and conduct of executives is rooted in the quality of board interaction and relationships. At the highest echelons of firms risk management is a social process rather than a purely technical or procedural matter.

> *A lot of it is actually to do with openness, dialogue, sharing, brainstorming, working together, chemistry and people not being driven to hide things. That's not to do with filling forms in or having a committee...its groups of people working together...the extent that a board can add value, certainly to a commercial entity has to be through having an understanding of the business, to having an openness between people who are prepared to discuss things. And that will bring more to the surface in terms of risk than any sort of formulaic approach. Risks come out in discussion, quite often you think 'shit I hadn't thought of that, what happens if this and this and this'...it's having a discussion about something but it's not to do with box-ticking.* (Chair)

As the management of risk is a social process it is also subjective. Indeed, boards and non-executives rely on the space for subjectivity provided by board meetings and other occasions to talk about risk with executives.

> *The executives look at the detail, sometimes that's sparked off by a non-executive question saying 'I think we might be a bit more aggressive there or whatever, go and have a look at it' and the execs take it away and come back. I don't think you can generalise about that but then it's brought back and we look at various scenarios and try to assess the probabilities and, of course, the trade-off between the risk and the profit. It can't really in practice be done in such a way as it's formulaic, you don't do sums to come up with an answer, it's subjective at that point.* (Finance director)

> *We have recently announced that they're going to invest a billion dollars...the project appraisal process was really well done. It was fascinating to see the guys at work and participate in it but you know it took the best part of a year working on it. A billion dollar investment is a quantum like change in your business and you can't avoid betting the business on something like that. You have to decide whether the whole thing is viable, you have nothing in terms of probabilities that you can go on, what you do is an elaborate subjective analysis. There's a lot of data you can get and you send the chaps out to get that and you do sensitivity analysis and ask how much margin you've got. One of the things you always have to remember in a business is that there are always risks in not doing things as well as in doing them, what's the range of possible results each way and maybe if you don't do it there's a higher probability that the business won't be there in 20 years time than if you do it even given the risks. So you go through all of that and you do it in a very disciplined way and you bring a paper to the board that's challenged, it goes back, comes back again. For a big project you iterate in that sort of way, this one came back four times to the*

board with exchanges electronically in between times, so a lot of work and very thoroughly done, but at the end of the day it can only be subjective. (Non-executive director)

The social and subjective nature of decision making reminds us that the output of boards is cognitive (Forbes and Milliken 1999) and as such the influence of boards lies largely in shaping the behaviour, reflections and forward thinking of executives to an extent that the board are comfortable with what the executives have done and plan to do. Some of the strongest messages in our interview data about boards' role in managing risk are not expressed in terms of formal risk structures and procedures but rather softer, less tangible aspects of executive cognition and culture. This is evident in the comments below, which suggest that boards should focus on risk management not risk avoidance and in so doing satisfy themselves about executive sensitivity to risk; develop a sense of risk tolerance and appetite at board level; and establish a sense of personal and shared responsibility for risk. Each of these points is elaborated below using data drawn from interviews.

Interviewees were keen to point-out that the challenge that boards and executives face with regard to risk is one of risk management, not risk avoidance. This was articulated by a non-executive director in the following way.

> *One thing you want to be sure about is that they* [the executives] *have thought about the risks, they've identified what the risks are in a reasonable manner and then made a reasonable judgement about what mitigating action should be taken and so on. If somebody kind of brushed talk of risk aside or appeared to be diminishing the risk then you'd worry about that.... A sensible reaction for an executive is to acknowledge the risks, I mean you can't make profit without taking risks and so you have to take risks, so it's not about avoiding risk, it's about managing risk. You want to see alertness to that.* (Non-executive director)

The metaphors of risk tolerance and risk appetite were mentioned during the interviews and help articulate the challenge of risk management at board level.

> *If you're a growing company you want to be successful you want people like that, you want people to take on risk and challenge and have a vision. But you've got to have the balance, you've got to have somebody there that's doing the checks and balances, and that's what I mean about having that balanced risk. If you take all the individuals round a board they've all got their different risk tolerances and you're trying to get that balance right, and that balance has got to be appropriate for the phase to meet the phase of development of the company.* (Finance director)

> *For them* [the board] *risk appetite would mean 'OK if I'm going to take that risk does it fit within a reasoned parameter we've set for the business in terms of the expected returns and do I really believe those projected expected returns?' I guess our market capitalisation is pushing three billion pounds or something like that, would we take a high risk project for a hundred or two hundred million, I would expect 'yes'. Would we take a high risk project for a billion or a billion and a half, I would expect 'no'. Would we take what we think is a pretty sure thing with some risk in it for a billion, well we have done that. So you know it's all about weighing up against your own resilience, your ability to handle the risk and then ask whether it's a high risk or a low risk and then...taking the judgement decision. Each year we will approve at the board level that our risk..guidelines and how risk then is translated down into the business, and there will be a risk factor which is then used in business cases to assess the level of risk and make sure it's within a level of contingency. Then on a quarterly basis for the board we assess how much risk is there in the business, and we can see just looking at this chart here where the risk has dropped or raised and whether it is within the tolerance level that the board has already agreed. So they see it visually on a quarterly basis, they approve it annually and they see it practically in all the business decisions that we are taking as projects come up for discussion and things like that.* (Chief executive)

The reference to 'seeing' risk is important as this is an example when formal procedures and quality of risk information and analysis, which can be highly technical and quantified, can enable and facilitate the social and subjective consensual work of the board. Another conceptual heuristic device which seems to perform the same function for boards is that of a 'business model'.

> *Every company that I'm involved with has a business model, what that's about is the market you're serving and the kind of technology you're using to serve it and that sort of thing. That's strongly related to the risk management approach, in a sense it's a sort of formulae way of constraining the risk because it means that you're doing things in a familiar way. So you've got some experience, you understand the risks and if you go outside your business model, you're entering into this unfamiliar territory where you may not be able to assess the risk so well. Of course you change the business model from time to time but a business model tends to evolve rather than to be the subject of quantum-like changes. So I guess it's a controlled situation. I would portray a business model as a sort of convenient way in practice of circumscribing the risks in such a way that the risk management system becomes more manageable.* (Non-executive director)

Another crucial aspect of the culture of risk management is how people take responsibility for risk. Once again, there is a cultural element to this as interviewees have expressed how responsibility for risk is related to issues of identification with the company and personalisation of risk.

> *I tend to think of it* [risk] *as taking personal responsibility, you deliver it and you believe in it and it's a very personal thing. I think that would be easier in an organisation like*

ours than maybe in some where people take decisions and move in two or three years time and leave the mess behind them. We have people in stable longer-term positions running these divisions and within these divisions. You know they've been there a long time, they intend to stay there a long time, they love the business, they believe in the business. There is no risk of someone taking a decision thinking 'well we'll be gone in two years time, it's someone else's problem'. That would never happen I believe…they identify very, very closely with their business, and it grieves them if things are done that they don't believe are right. (Chair)

Recalling Burkinshaw and Jenkins' concern (2009) about the relationship between the formalisation of risk and the personalisation of risk in companies, it is interesting to note how a chair uses the formal arrangement of the audit committee to seek to emphasise, simultaneously, the personal and shared responsibility for risk among directors.

I ask all directors to attend the audit committee. You know it's supposed to be the non-execs normally, I ask all directors to attend and I make it clear to them that we are in the trench together, and if these accounts are wrong it's our fault. And therefore they should be there and I want them to ask questions. I then have the execs leave the audit committee and I have a chat with the auditors and the non-execs. I am not a great believer in delegating board powers to committees.…I'm probably in contravention of some rules by making the whole board attend the audit committee, but they are our accounts. I'm trying to share the risk with them actually, and that's an important point about a board, we are in this together. (Chair)

5.3 MANAGING RISK AT BOARD LEVEL: ENABLING CONDITIONS AND QUALITIES OF BOARDS AND DIRECTORS

Having discussed above various ways in which boards may get involved in risk management, this final section of the report reflects on particular conditions and qualities at board level that enable board influence on key decisions and the risk culture of the company. This section builds on previous research that has identified how effective boards rely on non-executives who are not only independent but involved (not distant), engaged but non-executive, and finally challenging yet supportive (Roberts et al. 2005).

A strong message coming from the interviews is that without due time and space, boards cannot develop the understanding of the business and the quality of the relationships between non-executive and executive directors enable them to act effectively in respect of major decisions or shape the risk culture of the organisation. Furthermore, no single arena or occasion is sufficient for boards to manage risk. Rather, a range of opportunities and gatherings facilitate boards in having a substantive and significant role in risk management, as cumulatively they afford boards a deeper sense of strategic involvement, understanding and influence within the company.

The interviews support the idea that audit committees are important to managing risk. The extract below reveals how a position on the audit committee can be used by non-executives to develop a deeper understanding of the business and key executives involved.

I chair the audit committee here and at [company name] *I'm on the audit committee. It's very important in my contribution to the boards that I do what I can to make sure that all the internal controls are in good shape. If you've got a good internal audit department that's working well you…liaise closely with them to make sure that there are no problems cropping up. I think it's very important also that you don't just interact with your executive board colleagues but also you get to know the next layer of management in the company, at least the next layer… Most often when I'm in I'll stop by his* [the internal auditor's] *desk and say 'how are things going, found anything interesting?' you know that sort of thing. Also because I'm chair of the audit committee, every six months before results are published, I interview a selection of senior managers on a one-on-one basis from the point of view of audit and I ask them questions about this and that. The only thing you can do is talk to the guys and see what they've done and the important thing is to have maybe half a dozen different meetings and check out what each one says against what the others have said and at the end or towards the end of the discussion you have got a sense of whether they are under any pressure from management to come to a particular answer. So you do your own business…investigative work like that, which gives you a sense of the culture of the company.* (Non-executive director)

Nonetheless, interview data also caution about a reliance on the audit committee as a means of understanding and managing risk.

A lot of formal processes are handled through the audit committee which is where there'll be an evaluation [of risk]*, which will then come to the main board. It's usually quite a formulaic sort of process and sometimes one or two interesting things will come out, but quite often not. The more important things are the discussions around having new contracts, new areas or new directions or things that get discussed in the board.* (Chair)

Several respondents have been keen to emphasise how important it is that main board meetings give time to the subject of risk through attention to strategy.

A large part of a monthly board meeting has to be 'where are we against our objectives and strategy?'. (Non-executive director)

When you're discussing strategy risk would be an element…you think of strategy as the way you want to take the business, what is sensible by definition encompasses risk and the board is heavily involved in the strategy of the group. (Non-executive director)

A substantial thing that a good board has, apart from the business to do each meeting, is a presentation about a part of the business or a project. You will get somebody from the next layer of the executive, whoever's leading that area, probably bring in a couple of colleagues, so you might get a team of two or three come to make the presentation to the board. So the board sees the person and the person sees the board and you interact with them at the board as well. (Non-executive director)

In practice, the fullest form of strategic involvement for boards appears to develop when the board's attention to strategy goes beyond formal board meetings. Additional dedicated strategy events are organised as important occasions of strategy process when the whole board get together to develop a deeper appreciation of the strategic context facing the company and executives responsible for development and delivery of the strategy.

All of the boards I'm involved in have strategy sessions. To some extent strategy comes up at every meeting because there are things that touch on the strategy but we make a particular attempt to have strategy days. We go over strategic issues and make decisions to stay where we are on strategy or slightly reshape it. You have these strategy sessions and they're really about examining the business model and refining it. I think that's actually quite important to the risk-management system because although it's not the whole of the risk-management system, there are decisions to be made about risk within the business model. It gives you a framework which… enables you to know where you are in broad terms as far as the risks are concerned. (Non-executive director)

Well, we have strategic review every two years, two and a half years and we go away for two or three days (with the board). Actually, there's a bit of risk management there because we tend to go to one of the sectors. We spend a day looking at the businesses and the senior management in the businesses, the whole board talking about the business and the risks, so there's practical risk management. But then we have a couple of days as a board where we talk strategy and what we're trying to do. But that strategy is supported by lots of different papers and comprises strategy for each of the businesses in terms of whether to develop it, exit, acquisitions strategy and financial strategy. We set targets of where we want to be, how we're going to manage that, so all those different strategies come together. So we have parameters for managing the business and we use those to measure progress. The point of the strategy is to get them away from their two-hour, three-hour meetings here and put them in a two day environment in a hotel with us where you're not only having a formal meeting but you're actually having a lot of informal chats over a beer or whatever and really thrashing around what are we doing here, what's the strategy, what do we want to achieve. The meetings we have with different sectors, all with senior management, a great opportunity for the non-execs to really engage on a one-to-one with the next layer of management. (Finance director)

Crucially, these occasions afford additional time and space for non-executives to engage with executives and develop not only understanding of the business but also personal relationships with those executives. Informality can be extended further beyond these occasions to more private and informal meetings between executives and non-executives between board meetings.

We encourage non-execs to spend time with execs, for instance, the week before last two of the non-execs had a one-day session with one the execs at one of the divisions with all his team. And they presented the strategy to the non-execs, the non-execs probed it, came up with suggestions, talked about organisational structure in the division, talked about whether the guy was sufficiently well-supported, whether his team were sufficiently well-supported, talked about targets, you know marketing targets…so that was quite thorough. A lot of the relationship is developed outside the context of the formal board meetings. You would never get that [discussion] *in a board meeting, would you?* (Chair)

The non-execs challenged us 'guys we want you to talk to us in between the board meetings, we want that informality and we want to be able to email and pick up the phone to each other'. As communication's got better that has got better, and there is a lot more informality. For example, on Monday a couple of the non-execs are coming in to talk to us about various issues on a paper that we're working on. That is an informal meeting, they're coming in. They initiated it, it just happens to tie in with something else we're working on, so we can turn it into 'come on in and we'll talk to you about this and then let's talk to you about the other topic'. (Finance director)

Described here are a series of conditions and arrangements in and around boards and board sub-committees that serve to develop understanding and relationships between executives and non-executives and are crucial to boards' ability to exercise their responsibilities in relation to risk. Notwithstanding this, non-executives and boards need to be able to convert their understanding of the business and contact with executives into effective influence vis-à-vis executives. Board effectiveness draws on qualities on both sides of the equation of executive and non-executive director relationships. A failure to develop relationships between executives and non-executives can be very damaging to a company.

There was a big division between the executive…the executives that ran the divisions and certainly the non-executive directors didn't have much of a relationship. They would see each other periodically but there was no sort of mutual friendship, friendship's the wrong word but they didn't really consider them…it wasn't an easy relationship. (Chair)

Having already discussed above how important it is that the executives enable and see the value in a challenging forum, which a board can provide, it is worth concluding the report with some of the key qualities that non-executives must display in order to effect influence. At the heart of a good relationship are executive perceptions of value-adding behaviour by non-executives.

> *I think it's easier for the non-execs to add value when they get closer to the businesses and have a relationship with the major elements.* (Chair)

> *I just wanted people that my chief executives of the divisions could relate to and would...trust and would welcome an exchange of views with.* (Chair)

For relationships to flourish non-executives must engage in behaviour that challenges executives but ultimately supports them in managing the business.

> *They* [non-executive directors] *fulfil other regulatory functions like audit committees but what I really want them there for is to actually challenge the executive directors. You know, give them a bit of a hard time from time to time but in a pleasant way, and understand their businesses and help them. And that's probably the major change* [in this business]. *You've now got the situation where the executive directors really value the input of the non-execs because they respect them and they know they're sensible and they're going to ask sensible questions, and that's good, it works well. And they'll help them you know with ideas about pitches, they can call them and get advice. You know they're not sort of in each other's pockets but everyone feels that people have a contribution to make and it makes them more fun really yeah.* (Chair)

> *We're part of the team and it's important for a non-exec to remember that, we're there to work with the executives to enhance shareholder value and that must be the starting point for all we do but at the same time we're also there to challenge the execs and to make sure the company is well run in an internal control sense, to make sure that it adopts challenging targets, to come up with ideas that challenge them in terms of the way of proceeding.* (Non-executive director)

The following quotation about the recent problems in banking gives a very practical sense of the argument above.

> *I think there's a herd instinct. Thank God I wasn't on any of the bank boards at Northern Rock or anything like that, When everybody is going that way it's very difficult to stand out and say 'no I've thought about this one, it's that way'. And in part that's because you don't even think about going that way. That I suppose is the independence point, but it's more than just independence, it's independence and...the balls to do it or the confidence to do it.* (Chair)

Mirroring the discussion of cognitive conflict and cohesiveness (see Forbes and Milliken 1999) the challenge and support must also be accompanied by some sense of enjoyment of each other's company.

> *You can't have everyone being mates and things but on the other hand it needs to be an enjoyable place to be in.* (Chair)

> *I do believe that the board's a lot to do with chemistry. People that enjoy being together, work well together but at the same time have a professionalism. You don't want a bunch of mates but on the other hand you want people that feel comfortable with each other...* (Chair)

For non-executives a key part of being engaged but remaining non-executive and not over-stepping one's role is to have satisfied yourself about your own executive career as well as rewards.

> *You know I've been on other boards and I've seen it go totally wrong. That was helpful actually in board selection because we looked for people that just had the best interests of the business and they wouldn't have externalities to creep into the process. You know there's no one there that's trying to get their title, there's no one there trying to...make a noise to the press, there's no one there who has some other business interest that might in some way be in conflict. I mean there's no one there trying to get the CEO's job that I'm aware of.* (Company secretary)

Part of the skill of being a non-executive is to be able to respect executive openness and competence and not end up trying to do their jobs.

> *Non-executives who are worried about their reputation or don't have the competence, they're dangerous...in this company the non-execs and execs work well together. The execs are confident, the non-execs are competent and we have good robust discussions. Everything is on the table. Our chief executive is very sure that everything gets put on the table for challenge...* (Finance director)

> *It's a process of challenge...you're not doing that because you want to upset your colleague...what happens in boards is you have proposals, you challenge...you're looking for the discussion to produce a consensus and in my experience it does. There certainly are examples where the non-execs have changed things where they've said 'I don't think that budget's challenging enough, you've got to find a way of increasing the profit gross this year and you go off and come back and tell us how you're going to do it'. Well there are a number of cases like that. But most of the time it's not as clear cut as that because actually you can't with hindsight sort of put your finger on exactly who said the critical thing of the discussion because you're working towards a consensus and it just gets thrashed out and you find you have come to the point where everybody seems to have come in line.* (Non-executive director)

These qualities of an effective relationship between executives and non-executives are not a given and need to develop over time.

> *When we were first a public company and our board members were all new to the business it was quite a different boardroom because they would refrain from getting in to anything very deep in the business, because they didn't know enough and they would heavily rely on us. It was very, I wouldn't call it friendly but it was very mechanised almost in the way we originally, post IPO, were going through the board meetings. I know everyone's got good strong board members, we are a diverse group, a very capable group, a very experienced group, once they got to know the business then the whole dynamic changed…But I think we're at a point now where, without exception, they all know this business very well, they've all been around a few years and they also know us well enough, trust us enough and also understand how to work with us. They know we're not afraid to be questioned. They know that there is no question that they can ask and won't either get an answer to immediately or be sent in the right direction and go find the answer. So you know I think that openness has created even more trust right, because now they understand that you know they're sort of part of it, they're not just an observer who comes in once a quarter and looks at a couple of reports, they're actually part of it.* (Chief executive)

> *Over a period you get people working together and starting to trust each other, and then ultimately sort of enjoying each other's company, having fun, getting the important…We were very concerned about how the non-execs would fit in from a chemistry point of view, making sure that they…that people liked them and that they would…you know they would fit into the group and not…you know not…they have to do…they have to be independent and do their job but equally they have a create a chemistry.* (Chair)

Overall, this qualitative analysis does not deny the importance of particular procedures, strategies, tools and techniques for managing risk. Nevertheless, these arrangements and practices need to be seen in the wider context of the culture and the informal communications that shape the nature and effects of those practices. Fundamental to risk management by boards is the development of a collective and shared sense of risk, which arises out of challenge and subordinates different approaches to risk that may prevail among individual executives and non-executives. Such a collective sense is a cultural not a procedural quality at board level, rooted in, and characterised by, informed, challenging and skilful interactions between board members.

6. Summary and conclusion

This objective of this study was to develop an enhanced understanding of the conditions and arrangements through which boards exercise responsibilities for risk. Specifically, the research sought to:

- ascertain the board structures and processes in place before the 2008–9 crisis

- relate board arrangements to their companies' financial and business risks as evidenced by company data over the period 2007–9

- identify board structures and processes that are important to boards' exercising responsibility for risk.

The research design is based on a unique set of qualitative and quantitative data for a large sample of UK-listed companies. These data were collected through a survey of company chairs, secondary data about boards and companies' risk, and interviews with directors, both executive and non-executive.

The analysis used key risk variables that relate to financial risk taking (corporate liquidity/financial slack) and business/strategic risk taking (new investment in property, plant and equipment and cash acquisitions). It examined whether the level of risk, at a company level, relates to board structure and process, including behavioural features of the board. Structural measures of board effectiveness were constructed using data from a BoardEx database (eg board composition, board structure, director characteristics). Process measures used (eg board effort norms, decision behaviours and director relationships) are based on a questionnaire survey about board working and effectiveness.

Using a multi-method approach, the study examined board structure and process through quantitative (eg regressions) and qualitative (eg semi-structured interviews) analyses to shed light on the inner workings of boards and how these relate to risk management.

For financial risk, the analysis has produced several interesting findings for the hypotheses tested.

First, in testing the formal structures of boards, financial risk-taking is lower in boards that are small in size, that is, fewer than eight directors. The proportion of non-executives directors and the existence of risk committees were not found to have any significant effect on corporate risk.

Second, in examining the impact of director characteristics, financial risk-taking was found to be lower where the board tenure of executive directors was significantly greater than that of non-executives. Also, there is some limited evidence to support higher financial risk-taking in companies where executive director remuneration is significantly greater than that of non-executives.

Third, in analysing board processes and behaviours, financial risk-taking is lower where non-executive directors have high effort norms (as evidenced by the conduct of board meetings, preparation for board meetings and the frequency of dialogue between executives and non-executives) and where board processes are characterised by a healthy degree of cognitive conflict, that is, differences of opinion over key company issues and board tasks.

Using the same methodology as above reveals no significant relationship between any of the board variables and the business risk measures. This result appears contrary to common expectations, assumptions and prescription. This could be a function of using inappropriate business risk measures. This result may be indicative of a lack of board involvement in risk. In other words, business risk management is primarily an executive function or task; such that, de facto, business risk management, if it occurs at all, takes place before and away from the main board processes. To the extent that such a suggestion is valid, one possible conclusion is that boards are inconsequential for business risk management and, as such, poor mechanisms of corporate governance.

Alternatively, however, this finding may be a function of a relationship between board behaviour and business risk that involves a more subtle and complex behavioural dynamic between executive and non-executive directors that develops over time and has not been captured adequately by quantitative analysis.

Overall, the study shows that a number of aspects of board structure and process are significant in determining the level of financial risk to which companies choose to be exposed: board size, remuneration, tenure, effort norms and cognitive conflict are shown to be significant. These are important results, but are only part of the story. The multi-method approach in this study also provides evidence to suggest that, while boards need to satisfy themselves that formal, internal controls and risk procedures are effective, there are more complex and subtle factors of cognition, culture and personalisation of risk that influence boards' behaviour and decisions. As a consequence, at board level risk management is, in large part, a social and subjective process, rather than a purely technical or procedural matter, characterised by challenging yet constructive interactions between board members geared towards developing a collective and informed sense of risk.

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Appendix

Table A1: Descriptive statistics and correlations

	Mean	StDev	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ∆Cash&Equivalent (%)	–1.02	8.80	1.00												
2. ∆NetCash (%)	–1.00	10.56	0.88	1.00											
3. ∆Financial Slack (%)	–1.44	9.95	0.89	0.80	1.00										
4. Board Size	7.44	1.94	–0.11	–0.08	–0.04	1.00									
5. Board Composition (%)	43.80	13.03	–0.05	–0.07	–0.07	–0.22	1.00								
6. Risk Committee (%)	4.84	21.55	0.04	0.03	0.02	0.25	0.00	1.00							
7. Relative Tenure	1.39	1.05	0.26	0.19	0.26	0.06	0.05	0.13	1.00						
8. Relative Pay	15.28	11.95	0.00	–0.05	0.05	0.46	–0.47	0.20	0.12	1.00					
9. Directors with Expertise (%)	86.29	34.53	–0.01	–0.07	–0.01	0.28	–0.27	–0.02	–0.01	0.23	1.00				
10. Board Effort Norms	0.00	1.00	0.22	0.17	0.27	0.18	–0.08	0.06	–0.02	0.19	0.26	1.00			
11. Cognitive Conflict	0.00	1.00	0.20	0.24	0.17	–0.04	0.06	–0.01	–0.02	–0.16	–0.15	–0.19	1.00		
12. Use of Knowledge/Skills	0.00	1.00	–0.05	–0.01	–0.01	0.21	–0.08	0.07	0.01	0.08	0.36	0.54	–0.27	1.00	
13. Board Cohesiveness	0.00	1.00	–0.16	–0.15	–0.14	0.18	–0.10	–0.12	0.01	0.18	0.28	0.36	–0.47	0.54	1.00

Table A2: Regression analysis

	ΔCash&Equivalents (inverse proxy of risk)		ΔNetCash (inverse proxy of risk)		ΔFinancialSlack (inverse proxy of risk)	
	(1)	(2)	(3)	(4)	(5)	(6)
Board Size	–0.119 (–2.70)***	–0.127 (–2.89)***	–0.105 (–1.90)*	–0.112 (–1.99)**	–0.089 (–1.71)*	–0.099 (–1.88)*
Board Composition	0.038 (0.42)	0.041 (0.46)	–0.011 (–0.11)	–0.009 (–0.09)	0.007 (0.07)	0.010 (0.10)
Risk Committee	0.033 (0.94)	0.028 (0.78)	0.031 (0.80)	0.026 (0.68)	0.007 (0.25)	–0.004 (–0.10)
Relative Tenure	0.019 (2.63)***	0.019 (2.51)**	0.016 (1.96)*	0.016 (1.87)*	0.021 (2.16)**	0.020 (2.06)**
Relative Pay	–0.001 (–1.13)	–0.001 (–1.13)	–0.001 (–1.69)*	–0.001 (–1.70)*	–0.001 (–0.49)	–0.001 (–0.46)
Directors with Expertise	0.019 (0.73)	0.021 (0.84)	–0.009 (–0.26)	–0.006 (–0.19)	0.007 (0.25)	0.010 (0.36)
Board Effort Norms	0.039 (3.32)***	0.038 (3.26)***	0.037 (2.56)**	0.036 (2.52)**	0.046 (3.74)***	0.045 (3.66)***
Cognitive Conflict	0.023 (2.38)**	0.021 (2.24)**	0.034 (2.51)**	0.032 (2.44)**	0.023 (2.06)**	0.020 (1.87)*
Use of Knowledge/Skills	–0.007 (–0.85)	–0.006 (–0.62)	–0.001 (–0.08)	0.001 (0.03)	–0.010 (–0.97)	–0.008 (–0.72)
Board Cohesiveness	–0.012 (–1.07)	–0.010 (–0.88)	–0.008 (–0.50)	–0.006 (–0.39)	–0.013 (–1.02)	–0.011 (–0.82)
Board Cohesiveness x Cognitive Conflict	–	–0.010 (–1.66)*	–	–0.008 (–0.98)	–	–0.012 (–1.93)*
Profitability	–0.064 (–0.82)	–0.071 (–0.87)	–0.106 (–1.11)	–0.112 (–1.14)	–0.149 (–1.61)	–0.157 (–1.64)
Growth Opportunities	0.006 (0.91)	0.007 (1.11)	0.008 (1.22)	0.009 (1.37)	0.006 (0.79)	0.007 (1.00)
Dividend	0.190 (1.20)	0.212 (1.37)	0.349 (1.67)*	0.368 (1.75)*	0.143 (0.85)	0.171 (1.00)
Firm Size	0.015 (1.99)**	0.016 (2.19)**	0.019 (1.97)*	0.020 (2.09)**	0.014 (1.74)*	0.016 (1.96)*
Intercept	–0.022 (–0.24)	–0.031 (–0.35)	–0.043 (–0.35)	–0.050 (–0.41)	–0.051 (–0.48)	–0.062 (–0.60)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	121	121	121	121	121	121
R-Squared (Adj.)	0.21	0.22	0.13	0.13	0.20	0.22

Notes: This table presents regression results on the impact of board structure and process (and a series of control variables) on three inverse proxies of financial risk. The estimated coefficient is reported in each case using robust for heteroskedasticity standard errors. *t*-statistics are reported in parentheses. The symbols ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

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