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Did Board Configuration Matter? The Case of US Subprime Lenders

Maureen I. Muller-Kahle* and Krista B. Lewellyn

ABSTRACT

Manuscript Type: Empirical

Research Question/Issue: The origins of the global financial crisis have been attributed to the combination of a housing price bubble and innovative financial instruments, as well as the lack of restraint by corporate executives and boards to engage in excessive risk-taking. The rise in subprime lending between 1997 and 2005 played a crucial role in inflating the housing price bubble. We take a unique dataset of US financial institutions heavily engaged in subprime lending and ask the following research question: Did board configuration play a role in determining whether a financial institution specialized in subprime lending?

Research Findings/Insights: We use a matched-pair sample of firms in the financial industry from 1997–2005 with half of the sample specializing in subprime lending and conduct panel data logistic regression analysis. We find that the board configurations of those financial institutions that engaged in subprime lending were significantly different from those that did not. Specifically, subprime lenders had boards that were busier, had less tenure, and were less diverse with respect to gender.

Theoretical/Academic Implications: This study uses the group decision making perspective in the context of subprime lending to examine board of director configuration and its influence on decision making processes around the issue of risky subprime lending. Findings show that how boards were configured did influence the decision to specialize in subprime lending. We find robust support for predictions based on the group decision making perspective.

Practitioner/Policy Implications: The deterioration of mortgage lending requirements that gave rise to the defaults of so many subprime loans, in retrospect, appears to be something that should have been entirely preventable. By demonstrating that subprime specialists had significant differences in board configuration that impacted group decision making, this study offers guidance to policymakers considering additional regulation and for corporate officers examining corporate governance issues.

Keywords: Corporate Governance, Subprime Lending, Group Decision Making, Board of Directors, Board Busyness, Board Gender Diversity, Board Tenure

“We almost invariably spent more time living with the consequences of our decisions than we do in making them” (Pfeffer, 1972:19). Group decision making has been studied in the context of both top management teams (Wiersema & Bantel, 1992) and the board of directors (Amason, 1996; Forbes & Milliken, 1999). Scholars have examined decision speed (Eisenhardt, 1989; Judge & Miller, 1991), decision quality (Amason, 1996; Atkinson & Atkinson, 2006; Dooley & Fryxell, 1999; Schweiger, Sandberg, & Ragan, 1986; Stasser & Birchmeier, 2003), decision accuracy (Hollenbeck, Ilgen, Segó, Hedlund, Major, & Philips, 1995),

and decision processes (Brodbeck, Kerschreiter, Mojzisch, & Schulz-Hardt, 2007) in the context of top management teams and boards of directors.

Others have studied the dynamics of group decision making within the board of directors and identified several challenges confronting boards as they strive to be involved in the strategic decision making process. Bainbridge (2002) suggests that social loafing, where some members choose not to actively participate in board decision making, and herd-type behavior where a decision maker “imitates the actions of others while ignoring his/[her] own information and judgment with regard to the merits of the underlying decision” can both be problematic issues that arise as boards seek to be involved in strategic decision making (Bainbridge, 2002:28). Groupthink has also been cited as a problem where

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too much group cohesiveness can lead to diminished critical thinking (Janis, 1983). More recently, Westphal and Bednar (2005) find that pluralistic ignorance can occur in boards, meaning board members fail to express concerns about corporate strategy based on others not expressing concern.

With the possibility of these numerous issues that can arise in group decision making, are there ways to structure the board of directors to increase the likelihood of effective group decision making? We suggest the recent context of the subprime mortgage industry provides a unique research setting to study board of director configuration and its impact on board decision making. Many argue for the need to move away from studies of board demography or board characteristics to a more holistic approach (Johnson, Daily, & Ellstrand, 1996; Kim, Burns, & Prescott, 2009; Pettigrew, 1992. Ingley and van der Walt (2003) use the term board configuration when examining how board structure can improve decision making effectiveness.

Many point to subprime mortgage defaults in the United States as being the key trigger to the global financial crisis that began in 2007 (Duchin, Ozbas, & Sensoy, 2010). Subprime loans are defined as "loans granted to borrowers with low credit ratings" (Piskorski, Seru, & Vig, 2010:370). Recent reports estimate that 3.6 million homeowners in the US will have to foreclose on their homes because they are unable to meet their loan obligations (Simon, 2010). As of 2008, US financial institutions are facing estimated losses of up to \$300 billion as a result of their subprime lending (Sherman & Tana, 2008). The collapse of the subprime market and the subsequent financial shock that rippled across global markets can be attributed to a combination of factors, but has its roots in risky US mortgage lending practices (Wolf, 2010). Clearly, if the global financial crisis can be compared to an earthquake, subprime lending is at the epicenter.

In this paper, we examine the impact of the board of director configuration on the decision making abilities of the board of directors in the context of the US subprime industry by asking the following research question: Did board of director configuration limit the decision making abilities of financial institutions and lead certain firms to heavy involvement in subprime lending? Using the group decision making perspective to guide our analysis, we argue that some firms had board configurations which led to inferior group decision making processes leading firms to specialize in risky subprime lending, which not only adversely impacted firm performance, but, on a mass scale, contributed to the global financial crisis. We use a unique dataset of firms identified by the US Housing and Urban Development (HUD) as specializing in subprime lending and compare their corporate governance mechanisms to a matched pair sample of non-subprime specialist firms to test a theoretical framework underpinned by group decision making theory. In doing so, we seek to contribute to corporate governance literature and, in particular, add to the knowledge about the strategic decision making role of boards.

This paper adds to the corporate governance literature by considering how certain attributes of boards impact their effectiveness in firm decision making. In addition, it furthers understanding of antecedents leading to the global financial crisis. The assumption that a firm's board of directors con-

stitutes a group responsible for monitoring firm level strategic decisions (Forbes & Milliken, 1999) guides our examination of how board configuration impacted the decision to specialize in subprime lending. In the next section, we develop the theoretical framework underpinning our study, including a discussion of the rationale for using the subprime lending context and the group decision making perspective. Following the development of testable hypotheses, we discuss the methodology employed, and the results from our analysis. We conclude with a discussion of the findings including theoretical and managerial implications.

THEORETICAL DEVELOPMENT

Subprime Lending Context

Kranacher (2008) provides an excellent summary of the subprime mortgage loan process. First, individuals were able to acquire loans with poor credit and little to no income verification. Second, mortgage lenders used introductory "teaser" rates to qualify borrowers. Third, loans were then re-packaged and sold into collateralized debt obligations (CDOs) and sold to other investors. Investors were unable to gauge the riskiness of these loans. Fourth, CDOs were then packaged into loan groupings on the basis of risk level, labeled by credit rating agencies as AAA to A for the best group, BBB to B for the middle group, and the riskiest were not rated or covered by bond insurance. Fifth, many of these CDOs were transferred to off-balance sheet special purpose vehicles and held by banks. When homeowners with poor credit and increasing payments began to foreclose, the riskiest CDOs were not insured and the remaining CDOs were inadequately covered by underfunded bond insurance which in turn led to huge losses and dramatic failures of many financial institutions and a worldwide global financial crisis.

Given the colossal failures of firms such as Enron, Worldcom, and Tyco in the early 2000s and now, with the global financial crisis, the topic of corporate governance continues to garner much attention. Solomon (2007:14) defines corporate governance as "the system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all their shareholders and act in a socially responsible way in all areas of their business activity." Firms are governed by both internal and external governance mechanisms (Denis & McConnell, 2003). Internal governance mechanisms include such things as the board of directors and the ownership structure of the firm, while external governance mechanisms include the market for corporate control and the pertinent legal system. Agency theory has been the dominant theoretical perspective used in research on boards (Dalton, Hitt, Certo, & Dalton, 2007; Daily, Dalton, & Cannella, 2003). The central tenet of agency theory is an overarching concern about the divergence of interests between principals and agents (Berle & Means, 1932; Jensen & Meckling, 1976). Berle and Means (1932) trace the growth of the American corporation from a single proprietorship to a public corporation and suggest that this new structure was likely to give rise to problems of ownership and control. As a result, there is the fear that managers may be acting in their own self-interest instead of

the interests of the corporation. In other words, opportunistic managerial decision-making could adversely impact company performance. This gave rise to agency theory that was further enhanced by the work of Jensen and Meckling (1976) and Fama and Jensen (1983) who posit that managers may misuse corporate assets for their own personal benefit and at the expense of shareholders. Thus, agency costs can diminish corporate performance.

A core agency theory premise is that boards are configured to monitor company executives and protect shareholder interests (Fama & Jensen, 1983). Monitoring activities include hiring and firing top managers (Johnson et al., 1996), assessing and rewarding top management performance, ratifying managerial decisions (Fama & Jensen, 1983; Rosenstein & Wyatt, 1997), and overseeing strategic initiatives (Rindova, 1999). However, many studies including recent meta-analyses show equivocal results when examining relationships between firm performance and agency variables such as board independence, CEO duality, and board size (Dalton, Daily, Ellstrand, & Johnson, 1998). Researchers are beginning to explore drivers and implications of board behavioral dynamics (Hermalin & Weisbach, 2003; Payne, Benson, & Finegold, 2009; Ruigrok, Peck, & Keller, 2006) specifically from a group dynamics perspective. This study aims to contribute to this research.

Group Decision Making Perspective

The study of group decision making has its roots in the field of psychology via cognitive theories, but has been also studied by management researchers. Cutting and Kouzmin (2002:28) define a decision as a "judgement, assessment, or cognitive commitment to a particular knowing." Blinder and Morgan (2005) find that groups make better decisions than individuals. Boards are not only decision-making groups (Forbes & Milliken, 1999) but are also the "apex of the firm's decision control system" (Fama & Jensen, 1983:311). Boards are unique work groups who meet on average only seven times per year (Monks & Minow, 1995).

We build on Forbes and Milliken (1999) who identify three key components of board effectiveness: the presence and usage of knowledge and skills, effort, and cognitive conflict. We posit that these components are linked to how long directors have served on the board, how overcommitted they are to other entities, and whether the board has gender diversity and in turn how these board configurations impact board decision making effectiveness.

Usage of Knowledge and Skills and Board Tenure. Forbes and Milliken (1999:495) define use of knowledge and skills as "the board's ability to tap the knowledge and skills available to it and then apply them to its task." We argue that boards with low tenure lack internal knowledge of firm and industry specific issues and thus, are not as effective in decision making as boards with greater tenure. Boards with directors that have less tenure have also been deemed ineffective, as a result of their inability to effectively challenge management (Lorsch & MacIver, 1989). Three studies examining the relationship between board tenure and financial fraud found that boards with low tenure were more likely to

engage in fraudulent financial reporting (Beasley, 1996; Dechow, Sloan, & Sweeney, 1996; Dunn, 2004). These studies suggest that at low levels of tenure, boards are more likely to acquiesce to management, putting a hold on expressing opinions and questioning management until they are more familiar with company and its operations. In the context of the current study, at low levels of tenure, boards may be less likely to question management's decision to specialize in subprime lending. Defined as "the fruits of an organization's experience" (Rothwell & Poduch, 2004:406), institutional memory is important as it leads to higher quality output (Bainbridge, 2002). When boards have low tenure, they may lack necessary skills and knowledge due to low levels of institutional memory. Thus, we predict a negative relationship between board of director tenure and subprime lending, leading to our first hypothesis:

H1. Board of director tenure will be negatively associated with subprime lending.

Effort and Board Busyness. Forbes and Milliken (1999) argue that effort level is another important determinant of effective group decision making. Effort is defined as the level of energy a member devotes to a task (Wageman, 1995). Effort levels can be influenced by group norms (Feldman, 1984; Steiner, 1972). Lipton and Lorsch (1992) suggest that decision quality can suffer due to the lack of time directors have to devote to board duties. Others argue that many directors do not put significant effort into their board duties and are not fully engaged with their board duties (Herman, 1981; Mace, 1986).

Thus, we posit that effort levels by board members are diminished when directors serve on multiple boards. Multiple board appointments can adversely affect a board's decision-making effectiveness as directors are overcommitted and inattentive. Furthermore, two groups, the National Association of Corporate Directors (NACD) and the Council of Institutional Investors (CII), have recommended placing limits on the number of board appointments an individual should accept. NACD suggests that individuals holding senior corporate executive positions should accept no more than three board appointments, while the CII recommends that individuals holding full-time jobs be limited to no more than two board appointments.

There is empirical evidence to suggest that busy boards have an adverse impact on firms. Core, Holthausen, and Larcker (1999) find a positive relationship between director busyness and excessive CEO compensation. Others find a negative relationship between number of outside board seats and firm performance. For example, Fich and Shivdasani (2006) find that firms with a majority of outside directors holding more board seats have a 4.2 per cent lower book to market ratio, lower operating ROA, lower asset turnover ratios, and lower operating return on sales. They also point out methodological problems of noisy data that does not distinguish between inside and outside director busyness in the Ferris, Jagannathan, and Pritchard (2003) study which finds a positive relationship between busy boards and firm performance. Jackling and Johl (2009) also find a negative relationship between multiple directorships and firm performance in a sample of Indian firms. Finally, Jiraporn, Singh,

and Lee (2009) find that firms with multiple directorships tend to be more diversified and are more likely to suffer from diversification discounting (Denis, Denis, & Yost, 2002).

We posit that a firm's decision to heavily engage in subprime lending may have arisen from the board being busy with the affairs of other entities, thus lacking time and motivation to put in the effort required to provide meaningful and adequate strategic guidance. Thus, firms with busy boards are more likely to suffer from ineffective group decision making that could lead to financial firms choosing to take part in subprime lending. Thus, the next hypothesis is offered.

H2. The level of outside director busyness is positively associated with subprime lending.

Cognitive Conflict and Gender Diversity. The third component of Forbes and Milliken's (1999) model is the need for cognitive conflict in group decision making. Cognitive conflict is defined as "task-oriented differences in judgment among group members" (Forbes & Milliken, 1999:494). Cognitive conflict can be beneficial to boards for several reasons. First, when there is lack of cognitive conflict, groupthink can occur (Williams & O'Reilly, 1998) and decision quality suffers. Second, when board members disagree on an issue, additional discussion about an issue is required and the CEO is forced to allocate additional time and effort to alleviate concerns and possibly introduce new strategic options (Forbes & Milliken, 1999). Third, others find that diversity within the decision making group can improve decision making quality due to group members having different educational, functional and industry backgrounds (Stasser & Birchmeier, 2003). Ancona and Caldwell (1992) find that diverse groups have higher levels of cognitive conflict because group members bring many different types of information into group discussions.

We examine cognitive conflict with respect to gender diversity for several reasons. First, reports suggest that only 15 per cent of *Fortune* 500 boards have a woman on the board (Singh, Terjesen, & Vinnicombe, 2008). Miller and del Carmen Triana (2009) note that the Sarbanes-Oxley Act of 2002 mandated increased independence of boards opening up many new opportunities for women to join boards. With more women climbing the corporate ladder, it is important to address the issue of board gender diversity. Indeed, others have called for increases in research on the impact of board gender diversity (Bilimoria & Wheeler, 2000; Burke, 2000).

Diversity "relates to board composition and the varied combination of attributes, characteristics, and expertise contributed by individual board members in relation to board process and decision-making" (Van der Walt & Ingle, 2003:219). Prior conceptual and empirical research suggests that board of director diversity is beneficial to the firm. First, board diversity is thought to increase legitimacy among stakeholders (Ray, 2005) and lead to better stakeholder relationships (Tyson, 2003). Second, diverse boards show the benefits of cognitive conflict as they foster more effective strategic decision making (Eisenhardt & Bourgeois, 1988; Schweiger et al., 1986) and increase the likelihood of needed strategic change (Goodstein & Boeker, 1991; Goodstein, Gautam, & Boeker, 1994).

Other ways gender diversity on the board can potentially improve corporate governance are by providing a larger assortment of perspectives for assessing managerial decisions and actions as well as providing increased levels of information search (Hillman, Shropshire, & Cannella, 2007). Several studies report that boards containing women are more civilized and sensitive (Bilimoria, 2000). Research also suggests that women are more collaborative (Konrad, Kramer, & Erkut, 2008).

Increased diversity of skills, experiences, and backgrounds are more likely to raise questions that add to, rather than simply echo, the voice of management" (Selby, 2000:239). Women are not part of the "old boys' network" and thus, can be considered to be more independent than male board members (Brennan & McCafferty, 1997). Increased independence translates into increased heterogeneity of ideas leading to higher quality decisions (Amason, 1996). Many studies have found a positive impact of board gender diversity on firm performance (Bernardi, Bean, and Weippert, 2002; Burke, 2000; Carter, Simkins, & Simpson, 2003; Erhardt, Werbel, & Shrader, 2003). Recently, Nielsen and Huse (2010) found that boards with gender diversity led to increased board strategic control.

Using the group decision making perspective, we argue that board gender diversity encourages cognitive conflict which leads to more effective decision making within the firm and, thus, firms with gender diversity will be less likely to engage in subprime lending. More formally stated:

H3. Gender diversity of the board of directors is negatively associated with subprime lending.

METHODOLOGY

Sample and Data

The sample used in this study consists of 74 US based publicly traded firms in the financial industry in 13 SIC codes ranging from 6,021 to 6,798 over the period from 1997–2005. The data is sourced from US Department of Housing and Urban Development (HUD), Thomson One Financial, and DEF14A Proxy statements filed with the Securities and Exchange Commission.

Thirty-seven of the 74 firms are designated as subprime specialists by HUD, which created and maintained a database of financial institutions that were heavily engaged in subprime lending from 1993–2005. The database contained 485 publicly and privately held companies that were heavily involved in subprime lending any time from 1993–2005. HUD ceased updating their database after 2005. Subprime lenders were identified by HUD using a two-step process. First, HUD used three indicators to narrow the list of lenders who specialized in subprime – origination rates, resale of portfolios, and rate spreads. From there, these lenders were either called or their web pages were visited by HUD staff to verify their subprime status. A lender was identified by HUD as being a subprime specialist if over 50 per cent of their lending portfolio consisted of subprime loans (HUD, 2010).

As subprime lending was so limited in the early years, we chose to look at data from 1997 to 2005. Chomsisengphet and

Pennington-Cross (2006) report that subprime lending grew from a \$65 billion business in 1995 to a \$332 billion business in 2003. As our research objective was to study the subprime industry as a catalyst of the global financial crisis, we felt it prudent to start our sampling in 1997.

Of the 485 companies in the HUD database, 438 were privately held leaving 47 publicly held firms. Next, we utilized Thomson One Financial to acquire financial data. Governance data was then hand collected from SEC DEF 14A proxy statements. There were no proxy statements for 10 of the firms, leaving a final sample of 37 firms specializing in subprime lending over 1997–2005. The mean number of years that the firms in the sample appeared on the HUD subprime list is 4.4, with a range from one to nine years. From inspection of the data, there was no incidence of a firm appearing and reappearing on the subprime specialist list. In summary, the total firm years for the subprime specialist firms are 172.

We then obtained a matched pair of companies that did not specialize in subprime lending. We matched firm size (via total assets) and industry (to a four digit SIC) for the first year that the firm appeared in the study. For example, if the first year of the sample firm was 1997, then we found a corresponding firm in the same four-digit SIC that was within 10 per cent of total assets in 1997 and never subsequently on the subprime specialist list. If the firm had data for the full nine years of the sample, we used the same control firm throughout the time frame. If the first year that firm appeared on the subprime list was 2003, we then found a control firm that matched asset size and SIC in 2003. Thus, our final sample consists of 74 firms and 344 firm years. Table 1 shows the breakdown of the full sample by year.

All financial data was sourced from Thomson One Financial. Governance and ownership data was hand collected from proxy statements (Schedule DEF14A reports) filed with the SEC. Compact Disclosure was also used to source of some of the ownership data that was missing in the Schedule DEF14A. Due to missing observations on some variables, the final sample consists of 275 observations over 1997–2005.

TABLE 1
Full Sample Total Sample Break-Down by Year

Year	Frequency	Percent	Cumulative
1997	38	11.05	11.05
1998	44	12.79	23.84
1999	48	13.95	37.79
2000	46	13.37	51.16
2001	42	12.21	63.37
2002	34	9.88	73.26
2003	34	9.88	83.14
2004	28	8.14	91.28
2005	30	8.72	100.00
Total	344	100.00	

Measures

Dependent Variable. For this study, we utilize one dependent variable, *Subprime*. *Subprime* is a dichotomous variable which takes a value of 1 if the firm is on the HUD Subprime Specialist List and 0 otherwise.

Independent Variables. Endogeneity, or reverse causality is less plausible, given our research design. In our empirical tests, all of our independent variables are collected in the year preceding the firm identified on the subprime list. Thus, measures for our explanatory in the earlier period could not have resulted from identified as a subprime specialist in the subsequent period.

Our key explanatory variables are *board of director tenure*, *outside director busyness*, and *board gender diversity*. We follow Dunn (2004) and measure *board of director tenure* as the total number of years served on the board by each director divided by the total number of directors. Data on board of director tenure was sourced from firm proxy statements.

Outside director busyness refers to the number of outside board seats each outside director holds divided by the number of outside directors. Board of director busyness has been measured several different ways. Jiraporn et al. (2009) measure the total number of outside directorships held by both inside and outside directors. Ferris et al. (2003) used four different measures for board busyness: (1) average number of director positions held by all the directors; (2) the maximum number of director positions held; (3) the percentage of directors that held three or more outside director positions; and (4) the average number of outside director positions held by outside board members. Fich and Shivdasani (2006) criticize the operationalization of the Ferris et al. (2003) study suggesting that their measures are noisy, suggesting that the data does not distinguish between inside and outside director busyness. Instead, they define a board as busy if a majority of the outside directors have three or more board positions.

Finally, Jackling and Johl (2009) use two measures of board busyness. The first measure of board busyness is the average number of directorships held by both inside and outside directors of a firm. The second measure is the average number of director positions held by outside directors of the firm. As this study is indirectly examining the monitoring capabilities of outside board members, the second Jackling and Johl (2009) measure is used. Thus, *outside director busyness* is measured as the average number of director positions held by outside directors of the firm and was sourced from proxy statements.

We follow Miller and del Carmen Triana (2009) and measure *board gender diversity* as the proportion of women to total directors and the data was also sourced from proxy statements.

Control Variables. Our model includes three types of control variables to capture the impact of variables that may influence group decision making dynamics: board, CEO, and firm related characteristics. As with the independent variables, all control variables are lagged one year. First, we control for other governance variables such as *board size*, *board independence*, and *staggered board*. Board size is

included as a control variable as it has been shown to have some impact on group decision making. Some suggest that large boards can bring additional perspective to discussions; however, large boards can also contribute to social loafing (Forbes & Milliken, 1999). Additionally, Judge and Zeithaml (1992) found that the board size is negatively related to strategic decision making. *Board size* is defined as the total number of members that are on the board of directors (Judge, Gaur, & Muller-Kahle, 2010). Data on *board size* is sourced from proxy statements. We also examine the impact of board independence on the decision to engage in subprime lending. Baysinger and Hoskisson (1990) argue that board members differ in their access to information which could have an impact decision making. They argue that inside board members have greater access to information that outside board members who are not as knowledgeable about the day to day affairs of the company and must rely on the information presented by the CEO. Thus, we include *board independence* as a control variable. We measured *board independence* as the ratio of independent directors to total directors. Next, we control for staggered boards as this could have some impact on board decision making. Bebchuk, Coates and Subramanian (2002) find that firms with staggered boards are less likely to accept a hostile offer bid even though it could be to detriment of the shareholders. We follow Pathan (2009) and create a dummy variable for *staggered board* which takes the value of 1 if the firm's entire board is not up for re-election at the same time and 0 if it is a unitary board with all members standing for election each year.

Second, we control for CEO characteristics by controlling for *CEO duality*, *CEO tenure*, and *CEO ownership*. Cutting and Kouzmin (2002) argue that when the CEO performs the dual role of chairperson on the board, the concentration of power can cause dialogue and discussion to diminish and potentially impact board decision making. Furthermore, Westphal and Zajac (1995) suggest that a CEO who is also the chairperson of the board may be more likely to select board members who will not challenge him/her. Following Boyd (1995), a dummy variable for *CEO duality* is created by coding 0 for separated CEO and chair roles, and 1 for a combined CEO/chair role. *CEO duality* data is also sourced from proxy statements. As CEOs gain tenure, they are more likely to establish bonds with the board of directors, become more entrenched, and receive less scrutiny (O'Sullivan, 1999). Miller (1991) shows that long tenured CEOs avoid making strategic changes. Similarly, top management team research shows that top management teams are less likely to make large strategic changes as their tenure increases (Finkelstein & Hambrick, 1990; Grimm & Smith, 1991; Wiersema & Bantel, 1992); thus, *CEO tenure* may impact board of director making. We define *CEO tenure* as the total number of years that person has been in the CEO role.

As CEO ownership increases, scholars have found that CEO have their personal wealth at stake and are more likely to utilize the board in an advisory capacity (Beatty & Zajac, 1994; Rediker & Seth, 1995). Following Zhou (2001), we define *CEO ownership* as the total number of shares held by the CEO divided by the firm's total number of outstanding shares.

The last three control variables are used to control for firm related effects—*firm age*, *firm size*, and *debt to equity*. The age of the firm could have some impact on group decision making within boards as younger firms may be under greater pressure to involve boards in key decisions (Judge & Zeithaml, 1992). Furthermore, Mishra, Randøy, and Jønsen (2001) determined that *firm age* is an important determinant for business characteristics and company goals. *Firm age* is calculated by the total number of years since incorporation and is calculated by the difference between the subprime year and the firm's year of incorporation lagged one year. *Firm age* data is sourced from Thomson One. We include *firm size* as a control variable as it has been shown to have some impact on group decision making in boards. Finkelstein and Hambrick (1996) find that boards in smaller firms have more input in decision making. *Firm size* is measured by the book value of total assets (Linck, Netter, & Yang, 2008). Jensen and Meckling (1976) argue that firm managers may prefer to use debt financing instead of equity as a strategy to avoid scrutiny by shareholders, lessen the monitoring by the board, which could impact board decision making. Thus, we use a control variable, *debt-to-equity*, which is defined as total debt divided by total assets.

Methods

Since our dependent variable, *subprime specialist*, is dichotomous in nature, we utilize a binary logistic regression model. Moreover, as our sample is longitudinal, we use a panel logistic regression to test our hypotheses as this method enables us to account for within firm correlation in the error terms. We use a random effects model for several reasons. First, our sample is made up of an unbalanced panel as not every firm appears for the full nine years of the sample. Second, we used random effects estimation, since fixed-effects estimation requires significant within panel (financial firm) variation of the variables to produce efficient estimates (Zhou, 2001). Many of the independent variables, such as board independence and ownership structure are stable over time, within firm variation for these variables is minimal. Also, since firms were only listed as a subprime specialist if they were on the HUD list there are many years where a firm is not listed at all, and with a fixed effects model, these firms would be dropped, making the applicability of this procedure inappropriate for the analysis.

RESULTS

Correlations

All variables were tested for normality using the STATA 10.0 Skewness-Kurtosis test (*sktest*) and all variables are found to be normally distributed. Next, correlations and descriptive statistics for all the variables included in the study are presented in Table 2. There seems to be no major problems with multi-collinearity as all correlations are under .58. To be sure, all independent variables were checked for multi-collinearity via analysis of variance inflation factors (VIF) and results also reported in Table 2. All independent and control variables have variance inflation factors (VIF) well under the suggested value of 10 with the mean VIF of 1.55

TABLE 2
T-tests Comparing Means of Key Variables

Variable	Non-subprime specialist	Subprime specialist	T-Stat
	Mean	Mean	
BOD tenure	8.67	5.78	5.63***
Outside Director Busyness	0.80	1.15	-3.33***
Board Gender Diversity	0.10	0.08	1.82†
Board Independence	0.72	0.70	0.74
Board Size	9.51	9.83	-.65
Staggered Board	.61	.65	-.86
CEO Duality	.74	.73	.22
CEO Ownership	12.61	13.94	-.58
CEO Tenure	9.05	7.79	1.37
Firm Age	52.99	34.84	3.33***
Firm Size	7.77	7.56	.67
Debt to Equity	.03	.03	.78

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Subprime is a dichotomous variable which takes a value of 1 if the firm is on the HUD Subprime Specialist List and 0 otherwise. *Board independence* is the ratio of independent directors to total directors. *CEO duality* is a dummy variable is created by coding 0 for separated CEO and Chair roles, and 1 for a combined CEO/chair role. We define *CEO ownership* as the total number of shares held by the CEO divided by the firm's total number of outstanding shares. *Board of director tenure* as the total number of years served on the board by each director divided by the total number of directors. *Outside director busyness* is measured as the average number of director positions held by outside directors of the firm. *Board gender diversity* is the proportion of women to total directors. *Board size* is defined as the total number of members that are on the board of directors. *Staggered board* is a dummy variable which takes the value of 1 if the firm's entire board is not up for re-election at the same time and 0 if it is a unitary board with all members standing for election each year. *CEO tenure* is the total number of years that person has been in the CEO role. *Firm age* is calculated by the total number of years since incorporation and is calculated by the difference between the subprime year and the firm's year of incorporation lagged one year. *Firm size* is measured by the book value of total assets. *Debt-to-equity* is defined as total debt divided by total assets.

and the highest value equal to 2.11; thus, we do not have any problems with multi-collinearity.

There is a strong negative correlation between *board of director tenure* and *subprime specialist* as well as *board gender diversity* and *subprime specialist*. In addition, we find a strong positive correlation between *outside director busyness* and *subprime specialist*.

Univariate Analysis

In Table 3, the sample was divided into subprime and prime firms and *t*-tests were run to provide a univariate analysis of

differences in means for the key variables in the study. First, it is important to note that there is no statistical difference in *firm size* as measured by total assets. As the matched pairs were selected on total assets, there should be no difference in *firm size* between the two samples. Significant differences were found in the following variables – *board tenure*, *outside director busyness*, *board gender diversity*, and *firm age*. Subprime firms had boards of directors with significantly less tenure than the control firms ($t = 5.63$, $p < .001$). Subprime firms also had significantly busier boards ($t = -3.33$, $p < .001$) and less board gender diversity ($t = 1.82$, $p < .10$). Last, subprime firms were much younger than the control firms ($t = 3.33$, $p < .001$).

Logistic Regression

The results of the panel data logistic regression with subprime as the dependent variable can be found in Table 4. Two models are built and tested in a hierarchical manner. In Model 1, only control variables are used. In Model 2, the three main effect variables are added; thus, comparing Model 1 and Model 2, it can be demonstrated that the model becomes robust. Furthermore, there are significant improvements between Models 1 and 2 as indicated by changes in the Chi-Square values and using a Chi-Square test of model fit. In addition, likelihood ratio tests indicate a significant improvement in model fit between Models 1 and 2.

H1 suggested that there would be a negative relationship between *board of director tenure* and *subprime lending*. In Model 2, the coefficient for board of director tenure is negative and significant, thus providing strong support for H1 (Model 2: $\beta = -1.25$, $p < .000$). Therefore, H1 is supported. H2 posited a positive relationship between *outside director busyness* and *subprime lending*. The coefficient in Model 2 is positive and significant (Model 2: $\beta = 1.65$, $p < .01$). Thus, the data supports H2. H3 stated that there would be a negative relationship between *board gender diversity* and *subprime lending*. Again, the coefficient for *board gender diversity* in Model 2 is negative and significant (Model 2: $\beta = -12.94$, $p < .05$). Therefore, H3 is supported. In summary, three hypotheses that examined the influence of attributes connected to group decision making processes of the board of directors on subprime lending were introduced and empirically tested. Empirical support was found for all hypotheses. In the next section, we will discuss the findings in greater detail.

DISCUSSION AND CONCLUSIONS

Given that subprime lending in the US played a significant role in the global financial crisis, this study makes a contribution by examining the role of corporate governance among firms that specialized in subprime lending between 1997 and 2005. In retrospect, we now know that the decision to be involved in subprime lending brought huge levels of risk to firms. Using a unique dataset provided by HUD, we created a matched pair sample of financial firms that specialized in subprime lending and those who did not and examined the differences in board configuration. We found that board tenure and board gender diversity were negatively

TABLE 3
Descriptive Statistics and Correlation Matrix

	Mean	Std. Dev.	VIF	1	2	3	4	5	6	7	8	9	10	11	12
1 Subprime	.50	.50		1.00											
2 BOD tenure	7.38	4.64	1.99	-.31	1.00										
3 Outside Director Busyness	.96	.93	1.34	.19	-.14	1.00									
4 Board Gender Diversity	.09	.13	1.44	-.14	.36	.07	1.00								
5 Board Independence	.71	.18	1.63	-.04	.13	.06	.12	1.00							
6 Board Size	9.66	4.38	1.74	.04	.12	.28	.19	.41	1.00						
7 Staggered Board	.63	.48	1.28	.05	.10	-.13	.10	.26	.07	1.00					
8 CEO Duality	.74	.44	1.23	-.01	.14	-.19	.01	.12	.03	.14	1.00				
9 CEO Ownership	13.24	19.99	1.43	.03	-.06	.01	-.07	-.46	-.26	-.20	.14	1.00			
10 CEO Tenure	8.46	8.06	2.11	-.08	.58	-.20	.38	.03	-.14	.02	.24	.00	1.00		
11 Firm Age	44.91	51.36	1.50	-.18	.24	.20	.13	.22	.43	-.09	-.01	-.02	.01	1.00	
12 Firm Size	61,268	191,371	1.74	.07	.17	.41	.17	.25	.42	-.27	-.17	-.15	-.09	.41	1.00
13 Debt/Equity	.03	.05	1.11	-.04	-.13	.02	.11	.10	.01	.00	-.10	-.16	-.12	.03	.04

All correlations in bold are significant at $p < .05$. *Subprime* is a dichotomous variable which takes a value of 1 if the firm is on the HUD Subprime Specialist List and 0 otherwise. *Board independence* is the ratio of independent directors to total directors. *CEO duality* is a dummy variable is created by coding 0 for separated CEO and Chair roles, and 1 for a combined CEO/chair role. We define *CEO ownership* as the total number of shares held by the CEO divided by the firm's total number of outstanding shares. *Board of director tenure* as the total number of years served on the board by each director divided by the total number of directors. *Outside director busyness* is measured as the average number of director positions held by outside directors of the firm. *Board gender diversity* is the proportion of women to total directors. *Board size* is defined as the total number of members that are on the board of directors. *Staggered board* is a dummy variable that takes the value of 1 if the firm's entire board is not up for re-election at the same time and 0 if it is a unitary board with all members standing for election each year. *CEO tenure* is the total number of years that person has been in the CEO role. *Firm age* is calculated by the total number of years since incorporation and is calculated by the difference between the subprime year and the firm's year of incorporation lagged one year. *Firm size* is measured by the book value of total assets. *Debt-to-equity* is defined as total debt divided by total assets.

TABLE 4
Panel Binary Logistic Regression (Dependent Variable: Subprime Lending)

Variable	Model 1		Model 2	
	Beta	Std. Err.	Beta	Std. Err.
Constant	-3.96	8.84	-1.1	3.56
Controls				
Board Independence	4.21	11.72	1.25	4.86
Board Size	.24	.49	.33	.21
Staggered Board	-2.56	3.75	1.44	1.70
CEO Duality	-1.98	4.54	.15	1.86
CEO Ownership	.03	.07	.06	.05
Firm Age	.01	.04	-.02	.01
Firm Size	.00	.00	.11	.11
Debt to Equity	.00	.00	.00	.00
Direct Effects				
BOD tenure			-1.35	.25***
Outside Director			1.65	.69**
Busyness				
Board Gender Diversity			-12.94	7.42*
Model χ^2	5.44 (8 df)		74.48 (11 df)	
$\Delta \chi^2$			69.04***	
Sample size	N = 277		N = 275	
Log likelihood	-27.79		-37.47	

†p < .10; *p < .05; **p < .01; ***p < .001.

Subprime is a dichotomous variable which takes a value of 1 if the firm is on the HUD Subprime Specialist List and 0 otherwise. *Board size* is defined as the total number of members that are on the board of directors. *Board independence* is the ratio of independent directors to total directors. *Staggered board* is a dummy variable which takes the value of 1 if the firm's entire board is not up for re-election at the same time and 0 if it is a unitary board with all members standing for election each year. *CEO duality* is a dummy variable is created by coding 0 for separated CEO and Chair roles, and 1 for a combined CEO/chair role. We define *CEO ownership* as the total number of shares held by the CEO divided by the firm's total number of outstanding shares. *CEO tenure* is the total number of years that person has been in the CEO role. *Firm age* is calculated by the total number of years since incorporation and is calculated by the difference between the subprime year and the firm's year of incorporation and lagged one year. *Firm size* is measured by the book value of total assets. *Debt-to-equity* is defined as total debt divided by total assets. *Board of director tenure* as the total number of years served on the board by each director divided by the total number of directors. *Outside director busyness* is measured as the average number of director positions held by outside directors of the firm. *Board gender diversity* is the proportion of women to total directors.

related to the decision to specialize in subprime lending while outside director board busyness was positively related to the decision. These results support our group decision making perspective predictions.

The results of our study add to the body of literature suggesting that characteristics of board members are important. Our finding that board tenure is negatively related to subprime lending adds support to research that has found younger boards may be too inexperienced to be effective (Beasley, 1996; Dechow et al., 1996; Dunn, 2004). We discovered a positive and significant relationship between board busyness and subprime lending which adds to work done in this area, by supporting the notion that busy boards may not be the most effective boards when it comes to overseeing risky strategic initiatives (Fich & Shivdasani, 2006; Jackling & Johl, 2009; Jiraporn et al., 2009). Our evidence that board gender diversity negatively impacts the decision to specialize in subprime lending not only contributes to governance

research but makes a contribution to the diversity research stream. The greater the percentage of women on the board, the less likely a firm was to specialize in subprime lending. Our findings suggest that board gender diversity can have differential and positive impacts on firm operations, possibly by providing firm decision-makers with a wider range of view-points and alternative modes of decision-making, particularly when risky strategic decisions are being evaluated.

Despite the significant findings, there are some limitations to this study. First, while we relied on a unique dataset from HUD of firms specializing in subprime lending, we had difficulty finding financial data for a number of the listed firms. A large portion of the firms in the HUD dataset were privately owned. Furthermore, it would have been better to have more exact information about the level of subprime lending as a proportion of their overall business. Further studies may be able to utilize a dataset with more extensive data on the level of subprime lending. In addition, some of

our control firms may have been involved in subprime lending, but to a lesser extent than the 50 per cent cut-off set by HUD.

Our second limitation is our reliance on archival data. The study of corporate governance is in desperate need of additional studies that provide insight on the "black box" of board decision making. Further studies may be able to uncover richer insights on how boards interact with top management to monitor and provide strategic insight in the context of strategic decision making.

Finally, our study was US-centric because the subprime banking crisis originated there. Shleifer and Vishny (1997) and Aguilera and Jackson (2003) suggest that governance environments differ between countries. It would be interesting to examine the role of the board of directors in subprime lending across different governance environments as there has been sparse research comparing the subprime lending intensity across different governance environments.

Theoretical, Managerial and Policy Implications

There are theoretical, managerial, and policy implications of this research. This study makes a contribution to the literature as the group decision making perspective was successful in predicting whether a firm engaged in risky subprime lending. It also suggests that the board of director configuration can influence board decision making in the firm.

For managers and shareholders, this study finds that board configuration is an important determinant of good decision making. Firms need to be aware of the extra challenges that boards face as a group that only meets sporadically (Monks & Minow, 1995). Thus, group decision making problems such as herding, group think, and pluralistic ignorance can easily be exacerbated. Firms need to pay closer attention to board tenure and make sure that the board remains balanced with respect to board experience with the focal firm. Special attention may be needed for younger board members to encourage them to speak out and actively engage in strategic decisions. Creating a climate where cognitive conflict or the asking of tough but productive questions should be encouraged. Furthermore, the findings suggest that busy boards can be problematic. While busy boards can provide extensive external networks for companies, board members may be too consumed with matters related to multiple firms to have the time and energy to provide the type of effort needed to add value at the focal firm. Board nominating committees should carefully balance experience with how over-committed a director may become, when selecting potential board members. Finally, we clearly demonstrate that board gender diversity adds value to a board. For enhanced decision making processes, firms would be advised to continue to strive to add diversity to board rooms. Finally, consistent with our findings, Atkinson and Atkinson (2006) offer three recommendations to improve board decision making. First, they suggest that "chairs could attempt to engender both task and relation oriented atmospheres in the boardroom" (Atkinson & Atkinson, 2006:26) so that key decisions are more thoroughly discussed. Second, they recommend speaking rituals whereby all members are routinely asked for input on decisions. Third, board members are encouraged to be recognized for

their efforts. Implementation of these suggested activities may mitigate some of the negative influences and enhance the positive ones we found in our study.

For policymakers, the study provides evidence about the important role of corporate governance and possible directions for future regulation (Kranacher, 2008). Pattanaik (2009:21) argues that increased regulation is necessary as "free market forces had created a monster out of the underlying sub-prime loans through financial innovations, whose potential for a global systemic meltdown was largely ignored because of the growing perception among policymakers that free markets and globalization together had succeeded in delivering a prolonged period of high growth and low inflation for the world economy" however, regulation is not a simple task. John Carver, a noted governance expert, states that, "governance theory will not be a 'one size fits all' prescription as to structure and composition, but a coherent framework of fundamental, global principles upon which each board's individual practices can be left to vary in recognition of contextual and cultural particulars (2010:150)."

To conclude, this study makes a significant contribution to the literature and practice with regards to corporate governance and the global financial crisis. We are optimistic our findings will generate additional research on these important issues.

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