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RELATIONAL PLURALISM IN BOARDS OF DIRECTORS:
A MULTIDIMENSIONAL VIEW

by

ZHU ZHU

A dissertation submitted to the Graduate Faculty in Business in partial fulfillment of the
requirements for the degree of Doctor of Philosophy, The City University of New York

2016

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This manuscript has been read and accepted for the Graduate Faculty in Business in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

Relational Pluralism in Boards of Directors: A Multidimensional View

by

Zhu Zhu

Advisor: Weilei Shi

A large body of literature has been devoted to explaining the influence of corporate boards on their firms' financial performance, yet the findings paint a puzzling picture. My dissertation seeks to shed light on current research by paying nuanced attention to latent board characteristics and obtaining a more comprehensive understanding of the board-performance relationship. I adapt a relational pluralistic perspective of the board to empirically examine multiple facets of director ties, identities, power relations, and networks and their effect on firm performance. This relational view of the board extends the current understanding of director behavior by aggregating director relationships on multiple relational dimensions. I also modify the existing relational pluralism model to be used specifically for the board literature and examine the contingent nature of the model. I establish the construct validity of my multi-dimensional conceptualization of board relational pluralism using panel data on listed Chinese firms between 2007 and 2010. I also establish predictive effect of relational pluralism on firms' accounting and market performance. In addition, I demonstrate that board relational pluralism have differential effects on firm performance, using firm strategy as a contingency.

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TABLE OF CONTENTS

Chapter I - Introduction	1
Chapter II - Literature Review.....	8
Board Characteristics and Firm Performance.....	8
Agency Perspective on Boards.....	9
Resource Dependence Perspective on Boards.....	13
Supplementing Agency and Resource Dependence Perspectives.....	16
Upper Echelons Theory.....	18
Interdisciplinary Theoretical Supplementation.....	22
CHAPTER III – Theory and Multidimensional Construct Development.....	25
Concept of Relational Pluralism.....	25
Dimensions of Relational Pluralism.....	28
Board Heterogeneity.....	29
Board Multiplexity.....	32
Board Connectedness.....	36
Board Skewedness.....	38
Relational Pluralism and Firm Performance.....	41
Board Heterogeneity and Performance.....	42
Board Multiplexity and Performance.....	45
Board Connectedness and Performance.....	50
Board Skewedness and Performance.....	52
CHAPTER IV - Contingent Nature of Board Relational Pluralism.....	55
Miles and Snow Typology.....	56
CHAPTER V – Methods.....	60
Sample and Data.....	60
Construct Validity of Relational Pluralism.....	64
Operationalization.....	64
Heterogeneity.....	64
Multiplexity.....	65
Connectedness.....	65

Skewedness.....	67
Relational Pluralism and Firm Performance Linkage.....	67
Operationalization.....	67
Dimensions of Relational Pluralism.....	67
Performance.....	68
Firm Strategy.....	69
Control Variables.....	71
CHAPTER VI – Results.....	71
Construct Validity of Relational Pluralism.....	73
Exploratory Factor Analysis.....	74
Confirmatory Factor Analysis.....	77
Predictive Validity of Relational Pluralism.....	79
Firm Strategy as Contingency.....	83
Endogeneity Tests.....	86
Post Hoc Analyses.....	87
Curvilinear Relationship.....	87
SOE and Firm Strategy.....	88
Firm Strategy Sub-sample t-tests.....	89
Firm Strategy as Moderator in addition to Sub-sample Analysis.....	90
Female Directors and Informal Hierarchy.....	91
CHAPTER VII – Discussion.....	92
Theoretical Implications.....	92
Managerial Implications.....	97
Limitations and Future Research.....	101
Conclusion.....	109
Figures and Tables.....	110
References.....	127

LIST OF FIGURES

Figure 1 Board Relational Pluralism Theoretical Framework.....	110
Figure 2 Second-order confirmatory factor analysis structural equation model.....	111

LIST OF TABLES

Table 1 Descriptive Statistics and Bivariate Correlation Matrix (12 indicator variables used in EFA) – Full Sample.....	112
Table 2 Results of KMO and Bartlett's Test.....	113
Table 3 Results of Principal Component Analysis.....	114
Table 4 Component Matrix.....	115
Table 5 Construct validity of the board relational pluralism model: five-factor solution Path coefficients year-wise results.....	116
Table 6 Hausman's Specification Test for Model Fit.....	117
Table 7 Description Statistics and Bivariate Correlation Matrix (All variables used in regression models) – Full Sample.....	118
Table 8 Fixed Effects Regressions on Firm Performance (ROA, ROE, & Tobin's Q).....	119
Table 9 Fixed effects Regressions on Firm Performance (ROA) With Firm Strategy as Contingent Variable.....	120
Table 10 Fixed effects Regressions on Firm Performance (ROE) With Firm Strategy as Contingent Variable.....	121
Table 11 Fixed effects Regressions on Firm Performance (Tobin's Q) With Firm Strategy as Contingent Variable.....	122
Table 12 Quadratic Fit on Firm Performance (ROA, ROE, & Tobin's Q) Year-wise.....	123
Table 13 Fixed Effects Regressions on Firm Performance with SOE Moderators (ROA, ROE, & Tobin's Q).....	124
Table 14 Sub-sample t-tests between Defenders and Prospectors on Performance (ROA, ROE & Tobin's Q) and State Ownership.....	125
Table 15 Fixed Effects Regressions on Firm Performance with Firm Strategy Moderators (ROA, ROE, & Tobin's Q).....	126

CHAPTER I

INTRODUCTION

“Who the directors are, what boards of directors do and how well they do it are important issues, not only for all shareholders, but for everyone dependent upon a vigorous economy for their well-being, which is to say, everyone.” (Leblanc & Gillies, 2005: 50–51)

A large body of literature has been devoted to explaining the influence of corporate boards on their firms’ financial performance, yet the findings paint a puzzling picture and leaves much to be desired. Boards, which occupy the upper echelons of corporations, are mainly responsible for monitoring and advising management, in addition to helping firms with managing their resource dependence (Hillman & Dalziel, 2003), all of which lead to the idea that board of directors should influence firm performance, and effective boards should positively affect performance. Therefore, for the past few decades, research on boards and their influence on firm outcomes have been regarded as a key element in the corporate governance literature (Dalton, Daily, Ellstrand, & Johnson, 1998, Forbes & Milliken 1999; Hillman & Dalziel 2003; Johnson, Daily & Ellstrand 1996; McDonal, Khanna, & Westphal, 2008; Pearce & Zahra 1992; Westphal, 1999; Westphal & Bednar, 2005; Westphal & Zajac, 1995; 2013). As a foundation to the corporate governance literature, research on board of directors has been driven by academic and practical curiosities revolving several persisting themes. Commanding issues such as the inability of boards to execute their advisory function, the frequency with which they ignore their monitory role, and their association with high-profile corporate failures have contributed to the undying interest of scholars to continue studying directors. Furthermore, large investors do not always advocate for board

independence, which draw in researchers and mass media attention (Brickley, Coles, & Jarrell, 1997). However despite the impressive body of research that has focused on the relationship between corporate boards and firm performance, empirical results display a notable lack of consensus (Zajac & Westphal, 1996).

Corporate governance is believed to play the role of safeguarding stakeholders' rights and serve as a system by which business organizations are controlled and directed (Cadbury, 1992). Although the literature has continuously placed importance on defining and developing good corporate governance practices and characteristics, there has not been a universally accepted interpretation on the role and performance effects of boards (Dalton & Dalton, 2011; Zahra, 1996). The lack of clarity persisted due to the interdisciplinary nature of theories that contributed to the development of the corporate governance literature. Main theories that have shaped the field include agency theory (Donaldson & Davis, 1991; Eisenhardt, 1989; Jensen, 1983), resource dependence theory (Hillman & Dalziel, 2003; Hillman, Withers, & Collins, 2009; Johnson, Ellstrand, & Daily, 1996; Pfeffer & Salancik, 2003), transaction cost theory (Coase, 1937; Oviatt, 1988; Williamson, 1981), stewardship theory (Donaldson & Davis, 1991; Muth & Donaldson, 1998), stakeholder theory (Donaldson & Preston, 1995; Hart, 1995), classes hegemony theory (Bazerman & Schoorman, 1983; Zahra & Pearce, 1989), managerial hegemony theory (Clarke, 1998; Mace, 1971), and principal-principal agency theory (Dharwadkar, George, & Brandes, 2000; Renders & Gaeremynck, 2012; Young, Peng, & Ahlstrom, Bruton, & Jiang, 2008). Agency theory and resource dependence theory are by far the most extensively used theoretical perspectives. Agency theory emphasizes the importance of the monitoring and controlling role of boards (Dalton & Dalton, 2011; Daily, Dalton, & Cannella, 2003; Dalton, Daily, Ellstrand, &

Johnson, 1998; Eisenhardt, 1989; Jensen & Meckling, 1976), whereas resource dependence theory focuses on the importance of the advisory role (Daily et al., 2003; Zahra & Pearce, 1989). Both theories propose that certain characteristics of boards can and should influence their ability to monitor and guide firm activities, and subsequently affect firm performance. Therefore, understanding the relationship between board characteristics and performance has become a critical research focus.

However, to promote the debate about boards' effect on firm performance, it is important to recognize that idiosyncratic aspects of each board makes it possible to observe differentiated performance implications across firms. So what makes a board truly unique and what makes a board effective? The dominant view in the existing literature states that effective boards and ineffective boards differ in their ability to control and advise management (Adams, Hermalin, & Weisbach, 2010; Post & Byron, 2015). An alternative perspective is that individuals, teams, and organizations derive their distinctiveness from relations with other entities (Shipilov, Gulati, Kilduff, Li, & Tsai, 2014). Using this relational perspective could reveal neglected or overlooked aspects (i.e. board power dynamics, hierarchy, incentive alignment, etc.) of how boards utilize social interactions and how they navigate through social systems that inevitably play a part in their effectiveness. Corporate boards and the organizations they represent, are complex adaptive systems that are embedded in heterogeneous networks consisting of many different kinds of nodes. By shifting towards a relational approach, scholars can obtain insights on new pathways for research in the governance literature (Gulati, Kilduff, Li, Shipilov, & Tsai, 2011; Kilduff, Crossland, Tsai, & Krackhardt, 2008; Shipilov et al., 2014). In addition, applying a relational perspective answers the call for expanding the applicability and relevance of agency theory

by examining the influence of the relational factors (social capital, networks, power relations, etc.) on the principal-agent interactions (Wiseman, Cuevas-Rodriguez, & Gomez-Mejia, 2012). The addition of a relational lens could examine social contexts such as director social capital, power relations, and diversity of principals alongside traditional agency problems (Wiseman, Cuevas-Rodriguez, & Gomez-Mejia, 2012). Taking a relational perspective can help scholars with building comprehensive models of relational dynamics and their performance consequences, as well as enriching our understanding of the opportunities and constraints facing organizations and individuals (Shipilov et al., 2014). I propose that the corporate governance literature can greatly benefit from adopting a relational lens, which can supplement existing theoretical approaches.

Gulati, Kilduff, Li, Shipilov, and Tsai (2010) introduced the concept of relational pluralism to examine the extent to which an individual, a team, or an organization derives its meaning and courses of action from relationships with other entities. Building upon the initial definitions, Shipilov and colleagues (2014) further develop the relational pluralism perspective to represent the coexistence of a broad array of different relationships and/or identities among the same set of actors. Relational pluralism is prevalent in the world around us, but very few studies have attempted to develop comprehensive models using relational pluralism due to the difficulty of obtaining the quantity and quality of data necessary (Shipilov et al., 2014). So far, answering the Gulati and colleagues' (2010) call for research, six studies have examined relational pluralism empirically to develop theory and provide support for the efficacy of the model. Strategic alliances and lawsuits between companies in the biotechnology and pharmaceutical industries have been used to examine relational pluralism driven by multiple types of ties between firms and the firms' multiple identities as

adversaries and collaborators (Sytych & Tatarynowicz, 2014). Relational pluralism has also been shown to arise from an organization's internal and external influences to affect the adoption of new corporate social responsibility practices using data from 161 Fortune 500 organizations (Rafaelli & Glynn, 2014). Relational pluralism in inter-organizational interactions has been used to examine the effect of executive departures, where multiple ties and identities are managed within organizations to prevent client losses (Rogan, 2014). Moreover, identities and affiliations of board members were shown to represent intra-organizational origins of relational pluralism, which affects new ventures' ability to build diverse alliance portfolios (Beckman, Schoonhoven, Rottner, & Kim, 2014). Firms' network positions in different kinds of ties is another example of relational pluralism where the firms' centrality in different networks affect their voting behaviors in standard-setting committees (Ranganathan & Rosenkopf, 2014). Lastly, relational pluralism provides a way to examine knowledge creation based on focal actors' identities and relationships (Rodan, Fruin, & Xu, 2014).

This stream of new research has brought our attention closer to the realities in which organizations and individuals find themselves, but substantial gaps regarding the antecedents, consequences, and validity of relational pluralism still exist in the literature, and significant work needs to be done on all levels (individual, groups/teams, firm) to add to our understanding of the relational pluralism framework. Corporate boards are the perfect research subjects in this emerging literature because boards can be conveniently examined as an instantiation of relational pluralism (Beckman et al., 2014). As soon as an outside director joins the board, the focal firm is connected to a larger network of organizations and is able to tap into the outside resources now made available by the outside director. In addition, board

members often come from unique backgrounds and each board can be viewed as a repository of multiple relationships with unique expertise and ideas (Shipilov et al., 2014). When directors with different observable and non-observable characteristics come together to make up a board, the subtleties of their interactions with each other could influence the board's effectiveness and its degree of impact on firm outcomes at large. Directors' behaviors are constantly affected by the multiple ties and identities they hold, which in turn, influence their ability to execute their control and advisory functions. By applying the relational pluralism perspective in corporate governance literature, latent dimensions of board member dynamics can be explored to obtain a more comprehensive understanding of the board-performance relationship.

In this paper, to empirically examine the relational pluralism model in the corporate governance context, multiple facets of director characteristics, ties, identities, power relations, and interlocking directorate networks are observed and aggregated on the board level to represent their focal firms. Unlike prior studies that mainly emphasize on board structure and observable board characteristics, this paper extends the scope of the current literature by not only examining variables that have been well supported, but also supplementing current knowledge with latent relational dimensions illuminated by the relational pluralism framework.

I propose that a firm's board provides differential benefits/limitations to firm performance outcomes in terms of four dimensions (heterogeneity, multiplexity, connectedness, and skewedness). This paper modifies existing relational pluralism models to be applied specifically to the corporate governance literature by providing theoretical and empirical evidence in hopes of motivating and justifying a four-dimension model. In addition

to developing the four dimensional relational pluralism model, I draw upon existing theories to examine the performance implications of the model. One of the main reasons for developing a multidimensional view of board relational pluralism is to explore its effect on firm performance. Although there has been a call for research on the outcomes of relational pluralism (Gulati et al., 2010), no existing paper has tailored a relational pluralism model specifically for the corporate governance literature with a focus on predicting firm level performance. Therefore, in addition to establishing the multidimensional model of board relational pluralism and identifying key concepts for each dimension, I also examine the model's consequences by focusing on the prediction of relationships between each of the four dimensions and firm performance.

Furthermore, as noted by many some scholars (Dalton, Daily, Ellstrand, & Johnson, 1998; Dalton, Johnson, & Ellstrand, 1999; Dawna, Rhoades, Rechner, & Sundaramurthy, 2001; Larcker, So, & Wang, 2013; Westphal & Zajac, 2013), the board and firm performance relationship is inevitably affected by the firm's strategic behavior, which dictates the governance choices of organizations, which could directly influence boards' ability to affect firm performance. Applying the relational pluralism model to the board-performance literature necessarily leads to the consideration concerning the strategic contexts under which the firms operate. To demonstrate the contingent nature of board relational pluralism, I examine the relational pluralism dimensions and their differential effects on firm performance under different strategic contexts using the Miles and Snow (1978) Typology.

What I hope to accomplish with this study is three-fold. First, I establish the construct validity of the board relational pluralism framework. I provide and justify a unifying framework that pieces together relevant dimensions of the board in accordance to the call for

interdisciplinary and integrative research, I tailor and redesign the original three dimensional model of relational pluralism to specifically fit the board context. Second, I provide theoretical and empirical evidence to show that a firm's board affects firm performance outcomes in terms of the proposed relational pluralism dimensions. Finally, I demonstrate the contingent nature of board relational pluralism, and empirically examine relational pluralism dimensions' differential effects on firm performance.

CHAPTER II

LITERATURE REVIEW

Board Characteristics and Firm Performance

Main theories that have shaped the corporate governance literature include agency theory (Donaldson & Davis, 1991; Eisenhardt, 1989; Fama & Jensen, 1983), resource dependence theory (Hillman & Dalziel, 2003; Hillman et al., 2009; Johnson et al., 1996; Pfeffer & Salancik, 2003), upper echelons theory (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick, 2007; Hamrick & Mason, 1984), transaction cost theory (Coase, 1937; Oviatt, 1988; Williamson, 1981), stewardship theory (Donaldson & Davis, 1991; Muth & Donaldson, 1998), stakeholder theory (Donaldson & Preston; Hart, 1995), classes hegemony theory (Bazerman & Schoorman, 1983; Zahra & Pearce, 1989), managerial hegemony theory (Clarke, 1998; Mace, 1971), and principal-principal agency theory (Dharwadkar et al., 2000; Renders & Gaeremynck, 2012; Young et al., 2008). Out of these well studied theories, agency theory, resource dependence theory, and upper echelons theory are undoubtedly the most prevalent theoretical perspectives used to explore boards' performance implications. In

order to address the lack of clarity in the corporate governance literature regarding board-performance linkage with the addition of a relational approach, I provide a brief review of agency theory, resource dependence theory, and upper echelons theory, and build an argument for supplementing them with a relational lens.

Agency Perspective on Boards

From the agency theory perspective, Boards are viewed as the most important internal corporate governance mechanism that remedying agency problems caused by the separation of ownership and control in public firms (Dalton & Dalton, 2011; Fama & Jensen, 1983). Since the main function of the board is to observe and reprimand managers presumed to make decisions that benefit themselves at the expense of shareholders as well as incentivizing managers to align their interests with those of shareholders', members of the board should be sufficiently independent in order to successfully carry out their role of criticizing management actions and policies (Johnson, Daily, & Ellstrand, 1996). Therefore, a board comprised of a greater proportion of independent directors benefits the firm by providing less biased advice and protects the board's legitimacy in the investor community (Jensen & Meckling, 1976; Peng, 2004). In addition, the board is expected to best perform its monitoring job when the chair of the board is someone other than the CEO due to concerns regarding the potential for management domination of the board (Conger & Lawler, 2009; Fama & Jensen, 1983; Rechner & Dalton, 1991; Westphal & Zajac, 1995).

Through the lens of agency theory, board independence and leadership structure have become the most extensively examined board characteristics in the board performance effects literature (Dalton et al., 1998). Despite a wide range of theory-driven rationales that suggest

a relationship between board composition (ratio of inside vs. outside directors), leadership structure (CEO duality) and firm performance, the literature has not yet shown consensus about the direction of the relationship. Dalton and colleague's (1998) meta-analysis of 85 empirical papers found no evidence of systematic governance structure and performance relationships. A more recent meta-analysis of 86 empirical papers on Asian firms yielded similar results where governance structure and composition have very weak direct relationship with firm performance, however, strategic preferences were shown to mediate the relationship (van Essen, van Oosterhout, & Carney, 2012). These large systematic reviews of the literature reveals that it is very difficult to draw any conclusion regarding board characteristics and firm performance in different samples from all around the world. Much of the difficulty with applying agency theory in governance research stems from the simplicity of the way current literature defines board composition. Presence of independent directors and CEO duality are the most vigorously studied variables in board composition, and they serve as the basis for determining board independence, which is considered to be the most crucial factor in effective monitoring of agents by principals (Johnson et al., 1993). However, corporate boards inevitably consist of directors who influence each other by ways they form relationships within and outside their boards. The governance research solely based on the agency theoretical lens has not paid enough attention to the intricate interactions and relationships that exist in each board, and the effect of board relational properties on board decision making. One way to address this is to further examine the relational subtleties that exist within each board (Daily & Dalton, 1994), as well as delving deeper into the sub level characteristics that cannot be detected when treating boards as similar entities with few observable differences. Many critical processes and decisions of boards do not derive from

the board-at-large, but rather from nuanced sublevel groups (Bilimoria & Piderit, 1994; Lorsh & MacIver, 1989) that are formed based on formal appointments (audit, compensation, or supervisory committees) or informal social cliques (insider vs. outsider, executive vs. independent groups).

The agency perspective of the board places strong emphasis on the balance between insiders and outsiders, which overlooks the heterogeneity of boards' capabilities and the variance in boards' influence on firm decisions. Directors bring a wide range of attributes to the boardroom that may help the board with completing varied tasks (Baysinger & Butler, 1985; Gompers, Ishii, & Metrick, 2001; Hermalin & Weisbach, 2001). Some directors may have more experience than others in certain industries or geographic contexts; other directors may have relevant functional backgrounds that set them apart. In addition, many directors are CEOs or members of top management teams, they often provide the boardroom with invaluable knowledge and expertise to counsel firm management (Fama & Jensen, 1983; Zahra & Pearce, 1989), which means that outside directors do not only serve to monitor managerial opportunism. When comparing outside directors of different boards, there may be large variation in the levels of corporate/industry experience, functional background, age, and tenure. Therefore, outside directors of different boards are not equivalent and it is much more meaningful to examine the unique composition and heterogeneity of boards than to focus purely on board independence. Although agency theory provides an important framework regarding the monitoring relationship of the board with the firm, not all roles of the board are accounted for. Research on board-firm performance link requires complementary theoretical perspectives.

In addition, scholars have suggested that a social theory of agency could be a natural extension of the existing agency perspective, where institutional contexts and investments in governance mechanisms are examined alongside agency problems (Wiseman, Cuevas-Rodriguez, & Gomez-Mejia, 2012). An extension of the agency perspective expands its applicability and relevance to a certain extent. Much of the agency scholarship has implicitly taken a view of exchanges between principals and agents that overlooks the relational aspects of their interactions (Wiseman et al., 2012), which cannot be ignored because actors differ across relational contexts and are ultimately socially embedded (Aguilera & Jackson, 2010). A social theory of agency identifies constructs of institution, cognition, social capital, networks, and power relations as aspects of society that influence the process of agents and principals interactions as well as the solutions to their problems (Dobbin, 2004). In particular, the constructs of social capital, networks, and power relations represent a relational view within the social theory of agency. Applying a relational perspective in accordance to the social theory of agency on board of directors could supplement existing theoretical frameworks by revealing overlooked aspects of the board-performance linkage. In particular, investigating the social capital and network ties enjoyed by the board allows the examination of information brokerage and resource exchange between boards; additionally, inspecting the power relations of a board will reveal the ownership concentration and decision power distribution within the board, which can shed light on the likelihood of incentive alignment and monitoring be used in a complementary fashion, as well as directors' level of accountability for focal firm's performance outcomes (Wiseman et al., 2012). Therefore, existing literature on board-performance linkage can be greatly enhanced by supplementing existing theoretical frameworks with a relational perspective.

Resource Dependence Perspective on Boards

Aside from the monitoring function, boards also have the important role of providing resources (Hillman & Dalziel, 2003). Resource dependence theory suggests that board members are appointed based on their ability to support the organization and concern themselves with the firm's problems (Hillman, Cannella, & Paetzold, 2000; Pfeffer, 1972; Pfeffer & Salancik, 1978). According to this theoretical approach, boards provide firms with four primary resources (Hillman & Dalziel, 2003): (1) advice and counsel, (2) legitimacy, (3) channels for communicating information between external organizations and the firm, and (4) preferential access to support from outside the firm. The resource dependence logic assumes that the board's provision of resources directly relate to firm performance (Hillman & Dalziel, 2003). Director resources help reduce the organization's dependency on external contingencies (Pfeffer & Salancik, 1978), lower transaction costs (Williamson, 1984), diminish uncertainty in the environment (Pfeffer, 1972), and enhance the firm's probability for survival (Sigh, House, & Tucker 1986). Under the resource dependence perspective, several board characteristics are extensively studied and each of these characteristics contribute to overall board capital. Director expertise, experience, reputation, skills, and knowledge have all been used to represent the board's provision of resources (Coleman, 1988). In addition, resource dependence scholars have shown that useful resources are also derived from director social capital embedded in their social ties (Nahapiet & Goshal, 1998).

Interestingly, the most extensively studied proxy for the resource provision function of the board and its linkage to firm performance is the size of the board (Dalton, Daily, Johnson, & Ellstrand, 1999; Gulati & Sytch, 2007; Ozcan & Eisenhardt, 2009). As the

theoretical foundation for this perspective, resource dependence theory links board size to a firm's overall ability to establish environmental links to secure critical resources (Goodstein, Gautam, & Boeker, 1994). The size of the board is assumed to capture the availability and quantity of resources that a firm is able to obtain. In this view, firms with greater need for effective external linkage would require more members on their boards (Pfeffer & Salancik, 1978). In addition, larger board size has been associated with a firm's ability to obtain essential resources such as sufficient budget, external funding, and leverage from its environment (Dalton et al., 1999; Pfeffer, 1972; Provan, 1980). When faced with a lack of information and an overall environmental uncertainty, firms have been shown to respond by increasing the size of their boards (Hillman, Cannella, & Paetzold, 2000). Larger boards are also linked to better firm outcomes via more extensive board interlocks because they provide more possibilities for capital acquisition and minimizing uncertainties (Burt, 1980, 1997; Stearns & Mizruchi, 1993). On the other hand, there are performance advantages to having smaller boards. Smaller boards are believed to function more effectively and have greater focus, participation, and debates, in addition to avoiding CEO control (Jensen, 1993; Kameda, Stasson, Davis, Parks, & Zimmerman, 1992; Lipton & Lorsch, 1992). When board size is constrained, board members are not easily manipulated by top management when compared to their large and diverse counterparts (Mintzberg, 1983), and smaller boards are less likely to form factions and coalitions that lead to group conflicts, which could further develop into slow reaction and indecisions in a crisis (Daily & Dalton, 1994; Goodstein et al., 1994). Once again, the literature champions a wealth of theory-driven rationales that point to a relationship between board characteristics and firm performance, but when it comes to board size, there is no consensus on the direction of the relationship. Dalton and

colleague's (1999) meta-analysis attempted to address this issue and found a small positive relationship between board size and performance, but van Essen and colleague's (2012) meta-analysis on Asian firms found no meaningful relationship.

A noteworthy weakness of the resource dependence perspective is that there is an underlying assumption that resources provided by directors are directly useful to the firm (Zahra & Pearce, 1989). This perspective disregards the power dynamics and structural idiosyncrasies within boards and how they can affect the usefulness of director resources. Existing literature largely ignores the relational intricacies that inevitably influence directors' ability to benefit the firm. For example, a director with invaluable experience and knowledge may not have the status or power to speak up against other directors when bad decisions are made, therefore, simply having resourceful directors on the board does not directly translate to positive outcomes. Although the resource dependence perspective provides a convincing explanation of how firms use the board to obtain a supply of necessary resources, the overwhelming focus on the size of the board and functional background characteristics suggests that all board members provide the similar amount of useful resources and that every board member can contribute freely. This assumption is misleading and does not examine the boundary conditions under which board resources are transformed into effective outcomes. Therefore, it is crucial to enhance our understanding of the board-performance linkage by supplementing other theoretical perspectives. Examining the board through a relational lens makes it possible to assess the likelihood that director resources can be used to benefit the firm, which helps with addressing the issue of equating theoretically supported useful director characteristics directly to positive effects on firm outcomes.

Supplementing Agency and Resource Dependence Perspectives

Incorporating a wide range of theoretical perspectives, scholars have produced an impressive body of research over the past four decades on the relationship between board characteristics and firm performance. However, the persistent lack of consensus in the literature may suggest that we need to examine board characteristics through a different lens. Many scholars have noted the importance of supplementing current theoretical frameworks with other perspectives (e.g., Dalton et al., 1998; Dalton et al., 1999; Hillman & Dalziel, 2003; Lynall, Golden, & Hillman, 2003). The link between board of directors and performance is perhaps more complicated than the literature suggests, so a direct one on one relationship may not be apparent. As Hillman and Dalziel (2003) recommends, in addition to examining boards' monitoring function and resource provision function, it is necessary to go a step beyond and understand antecedents of these functions in order to sufficiently examine board members' effects on performance.

According to the agency perspective, a primary antecedent to the monitoring function is board incentives, when incentives are aligned with shareholder interests, boards will be more effective monitors of management. Board incentives cannot be accurately examined by only looking at board composition based on the presence of independent directors, because the independent label does not guarantee that these directors are without family, social, or business ties with management, which compromises the integrity and motivation behind their monitoring behavior. Therefore, it is important to supplement the examination of board composition with information on directors' additional roles, especially if the directors are also the firm's shareholders (Dalton et al., 2003). The resource dependence perspective of the board can also be enhanced by examining additional latent characteristics, such as board

members' human capital, which include director expertise, experience, and reputation (Coleman, 1988). In addition, the sum of tangible and potential resources embedded within board members' relationships and social networks represent board members' relational capital, which is a construct that resource dependence scholars have directed increasing attention to when examining performance linkages. Studying board capital, which encompasses both human and relational capital, is a helpful way to complement the traditional approach to board influence on firm performance (Hillman & Dalziel, 2003).

Board members, each carrying unique relationships and network ties, exhibit multiple forms of connections with other board members and people in their external networks. For example, the configuration of directors' heterogeneous relations in organizational settings could represent a distinctive characteristic of the board that current literature does not carefully examine. What make each individual board different from one another are perhaps the unique combinations of relationships and dependencies that exist between board members. Studying board of directors through a relational lens allows scholars to focus on latent variables that have not garnered sufficient attention. A number of studies have applied a relational perspective to examine performance outcomes across different levels of analysis, for example, studies have looked at work related implications by examining individuals with multiple relationships and roles, (Pratt & Rafaeli, 1997), and how identities affect cooperation and performance between group members (Milton & Westphal, 2005). On the team level, theoretical and empirical research have explored the connection between social and relational structures and team performance outcomes (Oh, Chung, & Labianca, 2004; Roberson & Colquitt, 2005). However, the origins and consequences of having multiple inter-team relations are ignored (Gulati et al., 2011). On the firm level, multiplexity in

relationships can affect competition between firms (Baker & Faulkner, 2002) and heterogeneous relations and influence stock market value (Zuckerman, 1999). As suggested by Little (2012, p. 143), “the molecule of all social life is the socially constructed and socially situated individual, who lives, acts, and develops within a set of proximate social relationships, institutions, norms, and rules”, it is important to remember that board members and their behaviors are embedded in a set of social relationships and networks that shape their agency (Westphal & Zajac, 2013), especially when research conducted via this perspective are scant. Therefore, applying a relational perspective developing a relational framework for the corporate governance literature could supplement existing theoretical frameworks by revealing overlooked aspects of the board-performance linkage. The purpose of this paper is to shed light on the performance effect of boards by examining the relational interdependencies within boards through the theoretical perspective of relational pluralism as well as exploring the effects of potential firm level and environment level moderators. This will enhance the current literature by examining both internal and external elements of corporate boards as well as many latent variables that have been neglected by the dominant frameworks.

Upper Echelons Theory

Another major theory that has contributed to the understanding of board-performance linkage is upper echelons theory (Hambrick & Mason, 1984). One of the persisting themes in the vast literature under the upper echelons research stream focuses on examining top management team (TMT) characteristics and their influence on strategic decisions and firm outcomes (Carpenter, Geletkanycz, & Sanders, 2004). The emphasis on the effect that top

managers have on their firms has led to the development of several specialized fields of research, such as the study of boards and directors, chief executive succession and compensation, and the relationships between the TMT composition and different aspects of the organization (Pettigrew, 1992).

Overall, upper echelons theory focuses on the study of TMTs' observable characteristics of its members. According to Pfeffer (1983:352), demographic characteristics are the variables of choice due to their "comprehensibility, logical coherence, predictive power, and testability". Observable TMT characteristics are assumed to influence the behaviors and preferences of individuals. These characteristics are mostly used as proxies, because direct cognitive and psychological measures are more difficult to measure and obtain in the context of corporate elites (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Mason, 1984). Hambrick and Mason (1984) initially proposed that both psychological and observable characteristics of the upper echelons determine organizational performance through their influence on strategic choices. The observable variables proposed by Hambrick & Mason (1984) included age, functional tracks, career experiences, education, socioeconomic foundation, and financial position. These variables, however, were not meant to be exhaustive and demographic characteristics like race and gender have been included in recent studies of upper echelons as they garner more theoretical attention (Carpenter et al., 2004; Westphal & Milton, 2000). In addition to focusing on demographic characteristics, upper echelons theory also emphasizes the study of an entire group, the TMT (Hambrick & Mason, 1984). Different definitions of this group have been used, and there is still controversy about the boundaries for inclusion of individuals as members of the top management team (Carpenter et al., 2004). More traditional definitions of TMT include only

a company's executives, whereas a more broad definition known as supra-TMT incorporates the board of directors as well as the executives (Finkelstein, Hambrick, & Cannella, 1996; Jensen & Zajac, 2004). A number of studies consistently provide support for the upper echelons propositions that focuses on examining a company's executives (Carpenter, Geletkanycz, & Sanders 2004; Hambrick, 2005), specifically in terms of top executives' cognitive characteristics, educational level, international experience, and how they relate to firm strategic choice and innovation (Hambrick, 2005), as well as acquisition success (Cannella & Hambrick, 1993; Krishnan, Miller, & Judge, 1997) and overall performance (Hambrick & Fukutomi, 1991).

A second line of research extends the existing definition of the TMT to include the board's effect on firm level strategy (Goodstein, Gautam, & Boeker, 1994; Rindova, 1999). This extension of the upper echelons perspective became the catalyst that initiated a large body of research on studying the role of directors. Following Hambrick and Mason's (1984) upper echelons approach, where "primary emphasis is placed on observable managerial characteristics as indicators of the givens that a manager brings to an administrative situation," TMT studies that include the board use demographic variables proposed by the theory, such as gender, functional background, and age as proxies for the cognitive and psychological models of top managers. Along this line of research, board member demographic characteristics and board composition have been found to affect strategic change (Golden & Zajac, 2001; Goodstein et al., 1994). In addition, Hillman, Cannella, and Paetzold (2000) proposed resource dependence roles of the board using resource dependence theory through the upper echelons lens to better examine the effects of the supra TMT on board and firm strategy. Furthermore, scholars have also drew from theories and findings in

the agency perspective of the board to disaggregate the board into executive and non-executive director subgroups, instead of “focusing on the corporate elites as an aggregate whole” (Jensen & Zajac, 2004:521). Along this stream of research, board independence and CEO duality garnered renewed attention, especially in studies that examine firm investment strategy and R&D intensity (Kor, 2006). This inclusion of board of directors in upper echelons theory also broadened its application in the entrepreneurship literature, because in entrepreneurial firms, the activities of executives and directors are more intertwined, and boards often have a dominating affect over firm strategies and performance (Boeker & Wiltbank, 2005; Carpenter, Pollock & Leary, 2003; Kor & Misangyi, 2008).

A review of upper echelons theory by Carpenter, Geletkanycz, and Sanders (2004) emphasizes that the vast literature using the upper echelons perspective mainly focuses on demographic backgrounds as the primary determinants of board behaviors and mindset. Nonetheless, this approach ignores many important structural determinants such as the heterogeneity, compensation, and relational dynamics within each board. The link between the board and firm decision making is founded upon complicated interactions between members of the upper echelon, therefore, studies that examine the effect of boards should pay more attention to the complexity of interactions and decision processes. Studies in executive change demonstrate that latent variables such as political and power dynamics of the TMT can greatly shape major organizational outcomes (Bigley & Wiersema, 2002). Using upper echelons theory alone does not provide sufficient theoretical scope to capture all the necessary factors that contribute to our understanding of the link between boards and firm outcomes. Some scholars have made successful attempts to supplement the upper echelon lens with agency theory (Boeker & Wiltbank, 2005; Carpenter, Pollock & Leary, 2003; Kor,

2006) and resource dependence theory (Hillman, Cannella, & Paetzold; 2000), however, a further push toward a more comprehensive and integrated multidisciplinary theoretical approach is highly encouraged (Carpenter et al., 2004; Strandholm, Kumar, & Subramanian, 2004). By adopting a relational lens, I argue that the board-performance linkage literature can be greatly enhanced by answering the call for a broader and more inclusive approach and examine not only the board characteristics championed by upper echelons theory, agency theory, and resource dependence theory, but also latent board characteristics such as heterogeneity, director network positions, compensation, within board power dynamics and hierarchy. In addition, applying a relational perspective and developing a relational framework to examine the board further expands applicability of existing dominant theories to be used beyond the management discipline.

Interdisciplinary Theoretical Supplementation

Addressing the call for a more interdisciplinary approach (Carpenter et al., 2004; Hillman & Dalziel, 2003; Wiseman et al., 2012), many scholars have expanded their research to include other well developed theoretical perspectives to better explain board effectiveness. Taking a step beyond linking important salient director characteristics such as gender, age, ethnicity, functional background, and experience directly to board performance (Hillman, Cannella, & Harris, 2002; Westphal & Stern, 2007), latent board dimensions such as in-group out-groups (Westphal & Milton, 2000; Zhu, Shen, & Hillman, 2014), faultlines (Kaczmarek, Kimino, & Pye, 2012; Lau & Murnighan, 2005; Li & Hambrick, 2005), social networks (Larcker, So, & Wang, 2013), and power hierarchies (He & Huang, 2011). For instance, to supplement the vast literature that focuses on board demographic diversity, Zhu,

Shen, and Hillman (2014) build on social categorization theory (Tajfel & Turner, 1979) and recategorization theory (Gaertner, Dovidio, Banker, Houlette, Johnson, & McGlynn, 2000) to examine board diversity and its effect on director reclassification processes into the in-group. Exploring further into the board demographic diversity literature, several studies draw from faultline theory to examine the boundaries of potential board subgroups based on major background characteristics and how the strength of board faultlines are reduced by board heterogeneity over time (Lau & Murnighan, 2005; Sawyer, Houletter, & Yeagley, 2006). Li and Hambrick's (2005) study on factional groups and demographic dissimilarity also provides foundation for future corporate governance research to explore task, emotional conflict and board behavioral disintegration caused by faultlines.

Another key latent board characteristic that has gathered significant attention is the social capital of board members and how directors use their networks to affect firm outcomes, especially through board interlock (Beckman, Haunschild, & Phillips, 2004; Davis, Yoo, & Baker, 2003; Palmer, Friedland, & Singh, 1986). Interlocking directorate network has been used to answer questions regarding board independence (Bizjak, Lemmon, & Whitby, 2009; Chiu, Teoh, & Tian, 2013), monitoring effectiveness (Core, Holthausen, & Larcker, 1999; Fich & Shivadasni, 2006), firm performance (Larcker et al., 2013), firm financial reporting quality (Omer, Shelley, & Tice, 2014a), and firm value (Omer et al., 2014b). Drawing from social network theory, scholars have examined directors' ability to access information and control information flow (Borgatti & Halgin, 2011; Phelps, Heidl, & Wadhwa, 2012), as well as boards' overall network position and their ability to positively influence firm outcomes (Larcker et al., 2013; Omer et al., 2014). By incorporating the social network perspective, scholars are able to look one step beyond salient director characteristics

and obtain a more comprehensive understanding of the board-performance linkage where easily observable director characteristics are supplemented by the latent social capital dimension.

In addition, many scholars suggest that interactions and within board dynamics should be a point of interest in order to truly understand how boards affect firm performance (Carter & Lorsch, 2004; Finkelstein & Mooney, 2003; Johnson, Daily, & Ellstrand, 1996). Many have started to pay attention to the informal aspects of corporate boards such as director relationships and conflicts and their critical role in defining director interactions and decision making (Johnson & O’Leary-Kelly, 2003; Westphal & Stern, 2006). Drawing from a group perspective, directors on a board are expected to automatically sort into an informal hierarchy based on deference that they have for each other’s competence and ranking (Gould, 2002; Magee & Galinsky, 2008). When such informal social structures are formed, the implicit hierarchy dictates the power dynamics within the board and orchestrates board interactions, which eventually influences board effectiveness. A board’s ranking composition based on members’ average rank in the corporate community and the overall power balance between board members are both shown to be important factors in understanding the relationship between boards and firm performance (He & Huang, 2011). Examining within board power relationships and informal structures recognizes and addresses the overlooked fact that boards are fundamentally groups of human individuals, as Finkelstein and Mooney (2003) have pointed out, latent group features and processes such as conflict, teamwork, and comprehensiveness are all vital determinants of board effectiveness. Incorporating a social group perspective can greatly enrich the board-performance linkage literature. Johnson, Schnatterly, and Hill (2013)’s comprehensive review of the board characteristics literature

has revealed that the growing literature demonstrating the link between board composition and firm outcomes needs to be extended by paying more nuanced attention to the aggregation of latent board characteristics to obtain more meaningful understanding of the impact of boards on firms. More studies need to analyze the mechanisms underlying the direct composition and performance relationship (Adam, Hermalin, & Weisbach, 2010)

Overall, a relational pluralistic view of the board tactfully incorporates all of the aforementioned latent board characteristics, while at the same time, builds upon existing dominating theoretical frameworks such as agency theory, resource dependence theory, and upper echelons theory. Adapting a comprehensive approach supplements existing literature with latent board characteristics and answers the call for research by numerous reviews (Carpenter et al., 2004; Finkelstein & Mooney, 2003; Hillman & Dalziel, 2003; Wiseman et al., 2013). Using a more inclusive perspective via a relational lens also provides a much needed response to address the lack of consensus about the relationship between key board characteristics and firm performance (Dalton et al., 1998; Dalton et al., 1999; van Essen et al., 2014; Westphal & Zajac, 2013).

CHAPTER III

THEORY AND MULTIDIMENSIONAL CONSTRUCT DEVELOPMENT

Concept of Relational Pluralism

“An infinite range of individualizing combinations is made possible by the fact that the individual belongs to a multiplicity of groups, in which the relationship between competition and socialization varies greatly.”

- Georg Simmel (1955: 151)

Examining factors regarding the firm points to the fact that organizations, as complex systems, are entangled in heterogeneous networks consisting of many different kinds of interactive pathways (Kilduff, Crossland, Tsai, & Krackhardt, 2008; Shipilov, Gulati, Kilduff, Li, & Tsai, 2014). Studying these interrelated networks naturally leads to studying the entities (individuals, dyads, groups) involved and opens up opportunities to discover new conduits for research (Shipilov, 2012; Shipilov et al., 2014). Relational pluralism is defined as the extent to which a focal entity (a person, a team, or an organization) derives its meaning and its potential for action from multiple kinds of relations with other entities (Gulati, Kilduff, Li, Shipilov, & Tsai, 2010; Shipilov et al., 2014). For example, the members of a board can have multiple responsibilities to firm's multiple stakeholders (e.g., investors, customers, community, and/or representatives of the parent company), which may influence their ability and incentive to make decisions (Beckman et al., 2014; Lan & Heracleous, 2010). Relational pluralism also helps to highlight the power mechanisms and interdependencies between different types of relationships within a network (Beckman et al., 2014; Ranganathan & Rosenkopf, 2014; Rogan, 2014; Sytch & Tatarynowicz, 2014). From a connectionism and structuralism perspective (Borgatti & Foster, 2003), relational pluralism can be described as a collection of multi-faceted ties that shape organizational decisions via the dissemination of knowledge and influence (Beckman et al., 2014). Recent studies have begun to examine the phenomenon of relational pluralism and its implications (Shipilov et al., 2014). Within this emerging area of inquiry, a noticeable emphasis has been placed on relational pluralism its effect on social identity, where a focal actor's sense of self is dependent on their group memberships (Tajfel, 1979). The pluralistic nature of social

relationship leads to multiple ways social ties can form between any entities, and these social ties shape individual realities and behaviors (Simmel, 1955). In the context of corporate boards for example, board composition and power dynamics directly affect directors' ability to advise and monitor executive decision making (Dalton & Dalton, 2011; He & Huang, 2011). On the firm level, both the type of ties between firms and the structure of the firms' networks are found to dictate the opportunities and constraints to the firm (Ranganathan & Rosenkopf, 2013; Shipilov & Li, 2012). However, substantial gaps still exist in the literature regarding the existence and validity of the relational pluralism framework, and significant work needs to be done to enhance our understanding of the relational pluralism framework.

As aforementioned, corporate boards are the perfect research subjects in this emerging literature because boards can be examined as an instantiation of relational pluralism (Beckman et al., 2014). By conceptualizing relational pluralism as a collection of nested ties instantiated in the board of directors, the board performance linkage literature can supplement its focus on the observable characteristics and structural features by delving deeper into the latent dimensions of board member dynamics. Boards are able to demonstrate multiple dimensions of the relational pluralism collective, such as board level heterogeneity, multiplexity, connectedness, and skewedness, through which they shape and regulate the focal firm's behaviors. A relational pluralistic view of the board extends the current understanding of director behavior by aggregating director relationships on multiple relational dimensions to explore nuanced effects on firm outcomes (Beckman et al., 2014). In addition, relational pluralism provides a theoretical framework corporate boards incarnate a collection of relationships that can significantly influence organizational performance.

Dimensions of Relational Pluralism

Gulati et al. (2010) introduced three dimensions of relational pluralism: heterogeneity, multiplexity, and overlap to examine the extent to which an individual, a team, or an organization derives its meaning and courses of action from relationships with other entities. In this paper, the focus is on the board. Heterogeneity is the extent to which a board consists of directors that form connections with others from diverse backgrounds (functional and demographic), multiplexity is the extent to which a board enjoys multiple types of relationships, and overlap is the degree to which the board's relationships are clustered in one group or scattered across different groups. This paper examines all three dimensions, however, the term connectedness is used in place of overlap because the theoretical focus of this paper lies in the board's contribution to firm performance, which means that instead of looking at the distribution of a relationships, it is more theoretically relevant to examine the network position of board members in order to infer the availability and quantity of resources they can bring to the focal firm. Therefore, I choose the term connectedness to describe boards' collective social capital, particularly the extent to which a board occupies central or dominant positions within their networks. A fourth dimension, skewedness, is added to the original three dimensions to more fully represent the effect of board relational pluralism on performance. This dimension focuses on investigating the imbalanced distribution of power and status amongst directors. When the board grants certain individuals significantly more decision power and or resources than others, the power balance is disturbed, which decreases the likelihood that the board can successfully accomplish its advisory and monitoring responsibilities. Following the theoretical footsteps of existing literature on board independence, the skewedness dimension aims to capture the

effect of disproportional distribution of power within boards on firm performance. To empirically examine these four dimensions of relational pluralism, multiple facets of director characteristics, ties, identities, power relations, and interlocking directorate networks are observed and aggregated on the board level to represent their focal firms. Unlike prior studies that mainly emphasize on board structure and observable characteristics, this paper extends the scope of the current literature by supplementing current knowledge with relational dimensions illuminated by the relational pluralism framework.

I propose that a firm's board of directors provides differential benefits/limitations to firm performance outcomes in terms of heterogeneity, multiplexity, connectedness, and skewedness. This paper answers the call for research on relational pluralism (Gulati et al., 2010; Shipilov et al., 2014), in addition to developing theory and providing empirical evidence to motivate and justify a four-dimension model of relational pluralism, which is illustrated in Figure 1.

Board Heterogeneity

The heterogeneity dimension of relational pluralism highlights the importance of relationships formed between individuals with different demographic and or functional backgrounds. This dimension is crucial to the board-performance literature for several reasons. First of all, heterogeneous boards are more likely to have effective problem solving, increased creativity, and a better understanding of the market (Cannella, Park, & Lee, 2008; Carter, Simkins, & Simpson, 2003; Finkelstein & Hambrick, 1996). The existing literature most commonly explores board heterogeneity through the theoretical lens of group membership diversity, where diverse groups have been found to promote the exchange of

ideas (Schippers, Hartog, Koopman, & Wienk, 2003). Specifically in the context of board membership and consistent with resource dependence theories, directors with different backgrounds bring varied ideas and viewpoints that are unique to each individual director (Hillman et al, 2002; Lückerath-Rovers, 2013), which provides the board with novel insights and perspectives that could lead to a means of improving organizational value (Carter et al., 2003; Coffey & Wang, 1998), and increases the likelihood that the board will comprise of members who are more capable of representing varied stakeholder interests (Huse & Rindova, 2001). Theoretically and empirically, board member diversity is an aspect of the board that has received rigorous investigation in the corporate governance literature (Cannella, Park, & Lee, 2008; Carpenter, Geletkanycz & Sanders, 2004; Finkelstein & Hambrick, 1996). There has been an increasing public and academic curiosity in the mechanisms of corporate boards and how boards can be used to align shareholders' interests and management strategies (Burton, 2000; Mueller, 2006). Government agencies, social activists, and shareholder groups frequently advocate for greater heterogeneity among directors based on the assumption that managers and firms benefit from directors with diverse social and functional viewpoints to the boardroom. In addition, corporate governance codes based on the Organization for Economic Co-operation and Development (OECD) model has been adopted and implemented in many developing countries in the past decade (Tsamenyi & Uddin 2008; Soobaroyen & Mahadeo 2008), which has contributed to increasing interest in optimizing board composition and structural design. Therefore, the heterogeneity dimension of relational pluralism plays a key role in understanding the board-performance linkage. Several board characteristics contribute to board heterogeneity, which means that the heterogeneity dimension consists of more than one indicator. According to

Kang, Cheng, and Gray (2007), a heterogeneous board composition refers to having diversity amongst board members, and board member diversity consists of observable characteristics such as gender, age, and race, as well as less visible characteristics such as level of education, and functional background (Kilduff et al., 2000; Milliken & Martins, 1996). In the aforementioned board characteristics, gender and functional background diversity have the strongest theoretical and empirical evidence that link them to firm performance.

First of all, in terms of observable board characteristics, management research in the past two decades have begun to focus on gender diversity in top management positions and boardrooms (Bilimoria & Piderit, 1994; Carter et al., 2003; Daily et al., 1999; Kang, Cheng, & Gray, 2007). Gender diversity has repeatedly been shown to positively affect firm value (Adams & Ferreira, 2003; Carter et al., 2003) and firm performance (Catalyst, 2004; Erhardt, Werbel, & Shrader, 2003; Smith, Smith, & Verner, 2006; Van der Walt, Ingley, Shergill, & Townsend, 2006). In addition to observable characteristic, management scholars have argued that director functional diversity is one of the most important non-observable board characteristics that affect firm outcomes (Erhardt et al., 2003; Milliken & Martins, 1996). Diversity in board member functional background refers to the occupational and educational heterogeneity of board members (Murray, 1989). This type of diversity greatly enhances the range and scope of knowledge and expertise that directors bring into the boardroom, which leads to better decision making and greater likelihood for improved performance outcomes (Cannella, Park, & Lee, 2008; Cho & Hambrick, 2006; Finkelstein & Hambrick, 1996; Kim & Rasheed, 2014). Therefore, in the board-performance literature, gender, occupational, and educational background diversity are indicator variables that most accurately capture the heterogeneity dimension of the relational pluralism framework.

Board Multiplexity

Another dimension of relational pluralism is multiplexity, which refers to the extent to which individuals are connected by multiple ties (Gulati et al., 2010). According to Shipilov et al. (2014), members of a group demonstrate the multiplex aspect of relational pluralism by maintaining multiple relations and/or identities simultaneously. For example, one way that multiplex relationships are expressed is when group members hold one shared identity and multiple ties (Shipilov et al., 2014), in an organizational setting, employees can form both informal friendship ties and formal reporting ties with each other while sharing the same identity as supervisors or subordinates (Toegel, Kilduf, & Anand, 2013); interlocking directors between cooperating joint ventures can establish multiple ties within the interlocking network to encourage alliance formation while maintaining a shared identity as collaborating directors (Beckman, Haunschild, & Philips, 2004; Gulati & Westphal, 1999); coworkers who share common work identities can also form both advisory ties and supervisory ties to satisfy personal and professional needs (Toegel et al., 2013); both competitive and cooperative relationships form among firms in the auto industry (Kim & Tsai, 2012).

On the other hand, multiplexity is represented by having one type of tie and multiple identities (Shipilov, et al., 2014). A firm can form relationships with a supplier as a buyer, but also act as a connector between suppliers to influence formation of relationships. In the example of tie formation between issuers (firms that place stocks in financial markets) and lead underwriters (investment banks hired to underwrite stock issues), the lead underwriter and the issuer form a customer-supplier relationship, but the issuer can also play the role of

connector by influencing relationships between investment banks (Shipilov & li, 2012). The issuer may ask the lead underwriter to include in its syndicate specific investment banks with which the issuer has already developed working relationships. Therefore, the issuer in this case, maintains dual identity of customer and connector while maintaining a buyer-supplier tie with the lead underwriter. In the groups and teams context, group members sometimes form informal ties with each other based on multiple demographic and cultural identities (Mehra, Kilduff, & Brass, 1998). In addition, the most complex form of multiplexity in a group is when members have multiple identities and ties. An example is when there are informal, workflow, and resource sharing ties between employees who have different identities based on race, age, or formal positions (Briscoe & Tsai, 2011). There are many consequences of relational multiplexity (Shipilov, 2009; Ibarra, 1993), such as subsequent alliance formation (Kenis & Knoke, 2002), variety and range of future ties (Lomi & Pattison, 2006), and overall performance in collaborative groups (Provan & Sebastian, 1998).

The multiplexity dimension of the relational pluralism framework is important in the board-performance literature because board of directors often maintain multiple types of ties or identities that influence board effectiveness. Directors serving on the same board often share a common network through the formal appointment to the board, but some directors hold multiple identities and additional relationships outside of the board that could potentially impact firm outcomes. For example, the corporate governance literature differentiates between board members who are insiders, such as directors who are also currently serving as managers or executives, and decision controllers who are outsiders (Finkelstein, Hambrick, & Cannella, 2009; Gulati & Westphal, 1999). Insider directors have shared attitudes, a common identity (McDonald & Westphal, 2010), familiarity of expertise

(Zahra & Pearce, 1990), and compatible behavioral styles (Westphal & Stern, 2006), therefore, one type of board multiplexity lies in director independence. In addition, outside directors often represent large shareholders (Hill & Snell, 1988; Qi, Wu, & Zhang, 2000; Peng, 2004; Ramaswamy, Li, & Veliyath, 2002), by having directors who identify with the interests of large shareholders, the collective voice of the board are more likely to be concerned with overall performance in order to maximize shareholder investment (Peng, 2004). Compared to boards solely consisting of inside directors with a uniform sense of identity and ties, multiplex boards that maintain a mix of inside and outside directors are able to provide a more comprehensive assessment of firm wellbeing and CEO behavior, as well as a more representative voice for large shareholders and external stakeholders (Claessens, Djankov, Fan, & Lang, 2002; Dahya & McConnell, 2007; Peng, 2004). Overall, outside directors share a formal tie and identity with other board members, but fundamentally champion additional identities that make them outsiders and shareholder representatives, which contribute to the overall multiplexity of a board.

Furthermore, many directors, both insiders and outsiders are themselves shareholders of the focal company they serve. A multiplex tie is hence created when a board member has an additional point of connection with the firm by being an investor (Gulati et al., 2010). Shareholder directors can potentially bring additional information to the firm through the lens of investors and provide the firm with in-depth knowledge as well as a deeper understanding of the environment. Shareholder directors not only hold shared formal ties and identities with other directors on the board, they also have an extra tie with the firm by having personal stakes in the firm. Therefore, having board members who hold significant amount of the focal firm's stock increases the overall multiplexity of the board.

Another way that board members display relational multiplexity is through maintaining external ties. In the case of boardrooms, directors share a common network with other directors by serving the same board, but some directors also maintain useful external networks that may positively influence firm outcomes. Resource dependence theory argues that directors often utilize their social and/or professional ties between the firm and its external stakeholders to influence decision making (Peng, 2004; Pfeffer, 1972).

Conventionally, the board most commonly consists of directors with relevant functional background that is in alignment with the firm's needs, however, an additional group of directors that have garnered increased attention in recent years is those with political affiliations via prior appointments in governmental and political institutions. Directors with political ties serve as conduits of information and grant access to invaluable political resources that are especially beneficial to firms that operate in highly regulated environment (Hillman, 2005). Therefore, besides shared formal ties and identities with other board members, directors with political ties through prior political appointments represent a group of directors that have additional external ties that could benefit firm outcomes. The inclusion of politically connected directors increase the overall board multiplexity.

In summary, the multiplexity dimension of the relational pluralism framework recognizes that directors maintain multiple ties and identities. The multiplexity of boards can influence board effectiveness and is critical to the board-performance literature. The multifaceted nature of director ties and identities are demonstrated by outsider director representation, director stock ownership, and director external political ties.

Board Connectedness

Extended from the overlap dimension of the relational pluralism framework, which refers to distribution of a focal actor's ties and the extent to which these relationships are dense and clustered, the connectedness dimension focuses on directors' contribution to their focal firm's performance, which means that compared to the distribution of a focal director's relationships, the network position of a director is more important when assessing the availability and quantity of resources a director can bring to the focal firm. Connectedness describes boards' collective social capital, particularly the extent to which a board's directors occupy central or dominant positions within their networks. An individual's social and economic networks serve as conduits for interpersonal and interorganizational support, influence, and information flow (Larcker, So, & Wang, 2013). One of the key types of network in the corporate finance literature is the boardroom network formed by shared board directorates. The potential costs and benefits of network connections are well documented by extensive research in the field of organizational sociology, finance and economics.

Board members' formal or professional ties can be proxies for the concept of board connectedness. Although it is likely that directors' networks extend far beyond those associated with formal board appointments and are influenced by informal social connections, it is important to note that formal and informal networks are positively correlated and can be complementary (Hwang & Kim, 2012; Westphal, Boivie, Chng, & Han, 2006). Due to the fact that directors' formal network is substantially more readily observable by market participants than informal ties, focusing on boardroom formal network is more meaningful when examining financial performance. Well connected boards enjoy a

greater number of ties and are central to the interlock network's collective flow of information and resources, therefore, should observe performance benefits.

The dimension of board connectedness is inherently multifaceted. Network theory has provided several distinct yet related notions of connectedness, Larcker and colleagues (2013) have suggested that boards' level of connectedness in their interlock network can provide substantial firm level performance benefits. First, a board is considered to be well connected if it has multiple channels of communication that allow it to gather information and participate in resource exchange. Connected boards that enjoy opportunities and alternatives that are otherwise unavailable are often central boards within their board interlock networks. These boards have a higher overall degree of centrality than otherwise comparable firms. Second, a board is also considered to be well connected if it has closer ties to outside boards, therefore making information and resource exchange occur quicker. These boards are able to obtain information and resources more easily and more frequently due the relatively fewer steps between boards in their interlock network. Connected firms enjoy a closeness to outside boards in terms of having more direct access to beneficial resources than their less connected counterparts. Third, a board is well connected if it is positioned in between relatively more pairs of outside boards, which makes such a board an important broker of information and resource exchange. The high level of betweenness in this case provides significant advantages for the focal firm due to its board's ability to control and leverage information flow.

Hence, the connectedness dimension of the relational pluralism framework acknowledges and investigates the extent to which a board can obtain special advantages through leveraging its professional network based on its connections to other boards. The

connectedness of a board directly influence its ability to obtain and broker resources, which is highlighted in the existing board-performance literature. The multifaceted nature of board connectedness are demonstrated by degree centrality, closeness centrality, and betweenness centrality to capture different ways in which boards are connected to other boards in their interlocking directorate networks.

Board Skewedness

The dimension of skewedness refers to the uneven distribution of power and influence amongst board members. When the board grants certain individuals significantly more decision power than others, the power balance is disturbed, which decreases the likelihood that the board can successfully accomplish its advisory and monitoring responsibilities. In a group setting, when one or few individuals have considerably more power and/or status than everyone else, it becomes almost impossible for the majority of the group to give honest opinions and suggestions during problem solving, the weaker majority also do not dare to object ideas and decisions championed by the powerful individuals (Salin, 2003). Power imbalance is extremely detrimental to group effectiveness and commitment because it can lead to workplace bullying and aggression (Ashforth, 1994; Hoel, Einarsen, & Cooper, 2003; Keashly & Jagatic, 2003). This leads to a phenomenon where one or a few individuals have control and dominance over everyone else, so group decision making only exists on the surface, which greatly diminishes the potential benefits of having a group.

One of the most extensively studied elements of the corporate governance literature regarding power imbalance is the general concern for board independence, which revolves around the common phenomenon of CEO duality, where the positions of CEO and board

chairperson are held simultaneously by the same person. The topic of CEO duality has generated an impressive body of literature over the past few decades. Many scholars argue that the role of CEO and chair of the board should not be occupied by the same individual because directors are unable, or unwilling to objectively evaluate the performance and practices of a firm's CEO when that CEO in question is also serving as the chairperson of the board (Conger & Lawler, 2009; Fama & Jensen, 1983; Monks & Minow, 2008). CEO duality presents a fundamental conflict of interest and can be viewed as the functional equivalent of a "CEO grading his/her own homework" (Brickley, Coles, & Jarrell, 1997:190). Advocates of agency theory have argued that having the CEO chair the board which evaluates his/her own work defeats all of which the board stands for (Boyd, 1995; Dalton et al., 2008; Fama & Jensen, 1983) due to the absence of separation of decision management and decision control. When CEO duality is present, the decision power and status of the CEO is drastically increased, this heavily skews the power dynamic of the board and TMT to be in favor with the CEO. The CEO in this scenario is more likely to use the power as board chairperson to pursue personal goals, abuse resources for self-interest, and select directors who are agreeable to the status quo and who are not able to or dare to challenge CEO actions (Conger & Lawler, 2009; Fama & Jensen, 1983; Jensen, 1993; Westphal & Zajac, 1995).

Similarly, an issue of power imbalance arises when controlling shareholders occupy seats on a board. The presence of controlling shareholders creates a new type of agency problem because the interests of controlling and minority shareholders are not perfectly aligned, especially when there is a separation of ownership and control (Bebchuk, Kraakman, & Triantis, 2000; Claessens, Djankov, Fan, & Lang, 2002). Since controlling shareholders often obtain power and ownership through complex pyramid structures, interlocking

ownership, and voting pacts that promotes the preserves majority voting rights, they make decisions but do not bear the full cost, therefore, the agency problem is exacerbated (Ben-amar & Andre, 2006). Large shareholders often perform the practice of tunneling, where they create group structures such as pyramids that enable them to transfer profits to other dominated parties (Johnson et al., 2000). Firms with large controlling shareholders, especially in the case of founding families, may forgo maximum profits due to their inability to separate their financial preferences with those of outside owners (Anderson, Mansi, & Reeb, 2010; Faccio & Lang, 2002; Morck & Yeung, 2000). Controlling shareholders are also able to draw scarce resources away from profitable projects in order to pursue personal endeavors (Demsetz, 1983; Fama & Jensen, 1983), as well as extract private benefits from the firm without considering the wellbeing of other shareholders (Shleifer & Vishny, 1997).

Another way that boards exhibit power imbalance is through informal hierarchy (He & Huang, 2011). Board informal hierarchical order affects firm performance by shaping the board's group processes. Just like any other human group, an informal hierarchy forms naturally in boards (Gould, 2002; Magee & Galinsky, 2008; Overbeck, Correll, & Park, 2005). According to Forbes and Milliken (1999), boards of directors can be characterized as elite decision making groups that depend heavily on social psychological processes, especially those related to group participation, interaction, informational exchange, and critical discussion. Board members spontaneously form hierarchical social structures based on the comparative number of additional board membership they maintain (D'Aveni, 1990). Directors form inferences about each other's competence to guide their interactions – each director receive different levels of respect from other board members with regard to their views on firm strategic issues (Belliveau, O'Reilly, & Wade, 1996). A high level of informal

hierarchy in a board represents a set of implicit rules for its members on when to speak, how to speak, and with whom they can speak, which makes it very difficult for low ranking members to voice their opinion. However, having high informal rank does not automatically translate to being a more effective board member because having multiple additional board memberships sometimes compromises director independence and leads to inadequate monitoring (Core, Holthausen, & Larcker, 1999). Higher ranking directors inherently hold more power and credibility, therefore are able to ignore dissenting views and heavily influence other members' actions (He & Huang, 2011). Therefore, boards with a clear hierarchical structure grants an unjustified amount of power to a minority group of directors.

Boards with CEO duality, controlling shareholders, and high degree of informal hierarchy suffer from a diminished ability to execute their advisory and monitoring functions. The skewed distribution of power in favor of CEO board chairs, controlling shareholders, and high ranking directors leads to agency and power dynamic issues that significantly reduce the effectiveness and usefulness of boards. These represent three major aspects of board skewedness in relational pluralism that deserve attention in the board-performance literature.

Hypothesis 1: Four dimensions (Heterogeneity, Multiplexity, Connectedness, and Skewedness) together define the second-order latent variable construct – relational pluralism.

RELATIONAL PLURALISM AND FIRM PERFORMANCE

After proposing the construct validity of the four dimensional relational pluralism model, I draw upon existing theories to examine the model's link to firm performance. The primary reason for developing a multidimensional view of board relational pluralism is to

explore its effect on firm performance. Although there has been a call for research on the outcomes of relational pluralism (Gulati et al., 2010), existing papers has not yet developed a relational pluralism framework tailored specifically for the corporate governance literature with a focus on linkage to firm level performance. Therefore, in addition to establishing the multidimensional model of board relational pluralism and identifying indicators for each dimension, it is also crucial to examine the performance consequences. The following section of this paper will focus on the prediction of relationships between each of the four dimensions and firm performance.

Board Heterogeneity and Performance

The board heterogeneity dimension of the relational pluralism framework has critical implications to the board-performance literature. Theoretically and empirically, board diversity is an aspect of the board that has received rigorous investigation in the corporate governance literature (Cannella, Park, & Lee, 2008; Carpenter, Geletkanycz & Sanders, 2004; Finkelstein & Hambrick, 1996). The existing literature mostly explores board heterogeneity through the theoretical lens of group membership diversity, where diverse groups have been found to greatly stimulate the exchange of diverse ideas (Schipper, Hartog, Koopman, & Wienk, 2003). Consistent with resource dependence theories, heterogeneous boards are more likely to have effective problem solving, increased creativity, and a better understanding of the market (Cannella, Park, & Lee, 2008; Carter, Simkins, & Simpson, 2003; Finkelstein & Hambrick, 1996). Having a mix of heterogeneous directors also increases the likelihood that the board is more capable of representing varied stakeholder interests (Huse & Rindova, 2001). Heterogeneous boards also enjoy varied

viewpoints and expertise (Hillman et al, 2002; Lückerath-Rovers, 2013), which could translate to novel insights and perspectives that lead to improved organizational value (Carter et al., 2003; Coffey & Wang, 1998).

Gender diversity and director functional background diversity, the two major components identified in the heterogeneity dimension, are arguably the most important aspects of board diversity that affects firm performance. Gender is undeniably one of the most debated element in the board composition literature. There are numerous competitive benefits that female directors bring to firms (Bear, Rahman, & Post, 2010; Burke & Cooper, 2004; Erhardt, Werbel, & Shrader, 2003; Zelechowski & Bilimoria, 2004). In particular, female directors exhibit greater conscientiousness in their monitoring responsibilities as well as reporting with transparency (Adams & Ferreira, 2009). Females, when compared to their male counterpart, also display higher levels of empathy, concern for others, and interest in actualizing values in relationships (Boulouta, 2013; Campbell & Mínguez-Vera, 2008; Eagly, Karau, & Makhijani, 1995; Fondas, 1997; Miller & Triana, 2009), which is conducive to helping firms create enduring relationship with their internal and external stakeholders. Female directors are also less tolerant than male directors towards opportunist behavior (Srinidhi, Gul, & Tsui, 2011). These views suggest that gender diversity pushes boards to be stricter monitors and should lead to better performance (Smith, Smith, & Verner, 2006). Numerous empirical studies show that in many cases, board gender diversity does indeed correlates with better performance. Firms with gender diverse boards enjoy higher return on asset and investments (Erhardt et al., 2003), higher rate of innovation (Miller & Triana, 2009), higher assessed company value (Campbell & Mínguez-Vera, 2008), more positive corporate reputation (Bear, Rahman, & Post, 2010). Although some evidence suggest that

women director participation are sometimes used as a legitimating device to appease stakeholder demands and regulatory recommendations (Adams & Ferreira, 2008), the effect of board gender diversity on performance cannot be ignored. A comprehensive report on 353 US Fortune 500 companies (Catalyst, 2004) discovered that compared to companies low female representation, companies with the greatest gender diversity in their top management teams enjoyed 35% higher return on equity and 34% higher total return to shareholders. Overall, boardroom gender diversity is likely to have a positive impact on firm performance.

In addition to gender diversity, the other main component of the board heterogeneity dimension is director functional background diversity. As one of the most relevant non-observable board characteristics (Erhardt et al., 2003), diversity in board member functional background refers to the occupational and educational heterogeneity of board members (Murray, 1989). The performance benefit comes from the cognitive and informational diversity that diverse board members bring to the process of group decision making (Jackson & Joshi, 2002). In a group setting, variation amongst members' cognitive backgrounds contribute to diversity in values, attitudes, perspectives, knowledge, skills, and problem solving behaviors, which enhances decision comprehensiveness and accuracy (Milliken & Martine, 1996). Diversity in educational and functional backgrounds should widen the scope of a board's cognitive perspectives, since members from different occupational backgrounds and educational backgrounds bring a wide range of experience and expertise into the boardroom, which yields a more extensive list of alternatives, more accurate estimate of environmental changes, and higher quality evaluation of strategic options (Finkelstein & Hambrick, 1996). Diversity in board functional background also encourages constructive debate, therefore increasing resourcefulness in problem solving while deterring narrow-

mindedness (Kim & Rasheed, 2014). In addition, board members with dissimilar functional experience would contribute to a richer and more thorough assessment of market opportunities (Cho & Hambrick, 2006), as well as a heightened ability to address product-market issues and environmental changes (Cannella, Park, & Lee, 2008). Therefore, heterogeneity in board member functional background (occupational and educational background diversity), together with board gender heterogeneity, are likely to relate to positive performance outcomes.

H2: The degree of heterogeneity of the board, as indicated by director gender diversity, occupational background diversity, and educational background diversity, positively relates to firm performance.

Board Multiplexity and Performance

The multiplexity dimension of relational pluralism refers to the extent to which individuals are connected by multiple ties (Gulati et al., 2010), specifically, members of a group demonstrate the multiplex aspect of relational pluralism by maintaining multiple relations and/or identities simultaneously. Directors serving on the same board that hold multiple identities and additional relationships outside of the board could potentially impact firm outcomes. Each of the three components of the multiplexity dimension has obtained some support in the literature that link them to firm performance.

Since the major function of outside directors is to control and monitor the CEO's behavior, outside directors hold a separate identity and the relationship between the insider and outsider groups is often competitive. Agency theory suggests that the separation of corporate ownership and control could lead to selfish actions by executives (Claessens,

Djankov, Fan, & Lang, 2002; Jensen & Mecklin, 1976), although the establishment of boards is to combat agency problems, the inclusion of current officers on boards present a threat to boards' effectiveness. The insider directors have shared attitudes, a common identity (McDonald & Westphal, 2010), familiarity of expertise (Burris et al., 2009), and compatible behavioral styles (Westphal & Stern, 2006), therefore it could be difficult to avoid self-interested actions, and they might not be equipped with the experience or perspectives different enough from their peers to challenge questionable decisions. In addition, outside directors often represent large shareholders (Hill & Snell, 1988; Qu, Wu, & Zhang, 2000; Peng, 2004; Ramaswamy, Li, & Veliyath, 2002), whose presence have been linked to positive firm performance (Shleifer & Vishny, 1997). By having directors who identify with the interests of large shareholders, the collective voice of the board are more likely to be concerned with overall performance in order to maximize shareholder investment (Peng, 2004). Compared to boards solely consisting of inside directors with a uniform sense of identity and ties, multiplex boards that maintain a mix of inside and outside directors are able to provide a more comprehensive assessment of firm wellbeing and CEO behavior, as well as a more representative voice for large shareholders and external stakeholders (Claessens et al., 2002; Dahya & McConnel, 2007; Peng, 2004). Due to their presumed independence relative to insiders, outside directors are more likely to do a better job at performing monitoring and controlling roles, thus helping to improve firm performance (Dahya & McConnel, 2007; Duchin, Matsusaka, & Ozbas, 2010; Walsh & Seward, 1990). Overall, it is reasonable to assume that outside directors are expected to play an increasingly active role in corporate governance and strategic decision making via their monitoring and advisory functions (Finkelstein & Mooney, 2003).

Another important aspect of corporate board that has attained some attention in the corporate governance literature is stock ownership of board members (Bhagat, Carey, & Elson, 1999). In the multiplexity dimension, shareholder directors' extra tie with the firm as investors fundamentally change their motivation as advisors and monitors of the firm due to their personal stakes. Directors with stock ownership potentially bring additional information to the firm through the lens of investors and provide the firm with in-depth knowledge as well as a deeper understanding of the environment. This type of multiplex tie also indicates higher levels of cohesiveness within the boardroom due to more trust and shared information between individual directors. In addition, board members with appropriate stock ownership have more incentive to provide effective monitoring and oversight of important corporate decisions (Bhagat & Bolton, 2014), and the amount of board member stock ownership has been shown to positively relate to future operating performance and the probability of disciplinary management of poor performance (Bhagat & Bolton, 2007). Moreover, greater stock ownership by the board also helps with internalizing the costs and benefits of compensation disclosure at the board decision making level (Hermalin & Weisbach, 2007). Some scholars argue that senior policy makes and corporate boards in general should expend more efforts to improve governance effectiveness by focusing on improving stock ownership of board members (Bhagat & Bolton, 2007). Therefore, board stock ownership likely relate to firm performance positively.

Some directors also maintain useful external networks that may positively influence firm outcomes. Resource dependence theory argues that directors often utilize their social and/or professional ties between the firm and its external stakeholders to influence decision making (Peng, 2004; Pfeffer, 1972). In this perspective, board members serve several

important functions to accrue benefits for the firm: access to resources, advice and expertise, and legitimacy (Gulati & Sytch, 2007; Hillman, 2005; Pfeffer, 2003; Pfeffer & Salancik, 1978). Conventionally, the board most commonly consists of directors with relevant functional background that is in alignment with the firm's needs. These directors possess valuable technical know-hows and provide useful advice to top managers based on their expertise in the industry. Similarly, some directors possess an additional type of background that is beneficial to the firm. Directors with political affiliations via prior appointments in governmental and political institutions are some of the most important players in the corporate world. Directors with political ties serve as conduits of information and grant access to invaluable political resources that are especially beneficial to firms that operate in highly regulated environment (Hillman, 2005). Appointing politicians or ex-politicians has been a method used by many firms to reduce uncertainty (Hillman, 2005; Lang & Lockhart, 1990; Mahon & Murray, 1981). Firms with politically connected directors has been shown to enjoy various positive performance outcomes such as stock value (Faccio, 2007), access to financial resource at more favorable and convenient conditions (Boubakri, Cosset, & Guedhami, 2009; Faccio, 2010; Gomez & Jomo, 1999), and increase in corporate value (Faccio, 2007; Goldman, Rocholl, & So, 2009). In countries with a weak legal system and a high level of corruption, political connections are particularly valuable to a corporation. In emerging markets in South America, Eastern Europe, and Asia, government actors play a key role in steering resources toward firms with political connections (Li, Chen, Liu, & Peng, 2012; Shi, Markóczy, & Stan, 2014). A wealth of recent research on Chinese firms has found that political ties are playing an increasing role, where business managers and state officials interdependently shape economic policy (Kennedy, 2005; Li, Meng, Wang, & Zhou, 2008;

Sheng, Zhou, & Li, 2011). Although there is increasing levels of economic liberalization in emerging markets, the new market based economies often lack a complimentary regulatory system due to the absence of political liberalization (Luo & Chung, 2005). Therefore, political ties remain important in the emerging markets because firms continue to exhibit severe resource dependence on the government. Firms in transitional markets like China rely on the government for critical information, despite the progress made in the marketization process (Shi, Markóczy, & Stan, 2014). Therefore, it is highly beneficial for firms to obtain directors with political ties in emerging markets. Surprisingly, the importance of political ties cannot be ignored even in developed economies. In the US, financial and legal institutions are strong and well developed, political connections therefore should not significantly influence company success, but empirical data shows quite the contrary. In the post-election period after the 2000 Presidential Election, the portfolio of S&P500 companies classified as having a Republican board significantly outperforms (in terms of cumulative abnormal return) those classified as having a Democrat board (Goldman, Rocholl, & So, 2009). More comprehensively, firms' overall political affiliations to US political campaigns positively and significantly correlate with future returns (Claessens, Feijen, & Laeven, 2006; Cooper, Gulen, & Ovtchinnikov, 2009). Similarly, German public companies that are politically connected exhibit significantly better accounting and stock market performance (Niessen & Ruenzi, 2010). A comprehensive bailout study that covered firms from 35 countries has found that politically connected firms are significantly more likely to be bailed out than similar firms with no connections (Faccio, Masulis, & McConnell, 2006). Therefore, it is reasonable to posit that developed economies are not immune from the preferential treatment

of companies due to their political ties. Directors with political ties exercise their power to affect the economic values of public firms all around the world.

H3: The degree of multiplexity of the board, as indicated by the proportion of outside directors vs. inside directors, the degree of director stock ownership, and the existence of directors with political ties, is positively related to firm performance.

Board Connectedness and Performance

The concept of board connectedness is conceptualized based on board members' formal or professional ties. In the past decade, there has been an increasing level of interest in the application of social network analysis to interorganizational context. The network perspective adds explanatory power to organizational outcomes, and expands the span and scope of organizational phenomena from a relational view (Zaheer, Gozubuyuk, & Milanov, 2010). Corporations with well-connected boards have better access to information on industry trends, market conditions, and regulatory changes, which leads to a comparative advantage in making strategic decisions (Mizruchi, 1990; Mol, 2001). Boardroom networks also allow firms to leverage social relationships to reduce ambiguity and uncertainty in the environment to maximize performance outcomes (Schoorman, Bazerman, & Atkin, 1981). In addition, interlock networks allow directors to gather useful business contacts that could turn into beneficial business relationships (e.g., clients, suppliers, alliance partners) (Nicholson, Alexander, & Kiel, 2004), to learn about effective governance mechanisms and innovative compensation structures from other firms in the interlock network (Haunschild & Beckman, 1998), and to obtain personal and political favors facilitates resource exchange (Mol, 2001; Nicholson et al., 2004). Boardroom network fosters collusive competitive behavior by

creating a channel of communication (Larcker et al., 2013; Pennings, 1980), which helps firms to enjoy favorable lending terms, better credit ratings, enhanced stock price performance (Engelberg, Gao, & Parsons, 2012), reduce ambiguity in uncertain business environment to improve return on equity (Boyd, 1990), and become more likely to be targeted in mergers and acquisition deals (Stuart & Yim, 2010).

To study shared directorates between boards as channels of resource exchange, the tools of analysis developed by social network theory are particularly relevant and appropriate (Larcker et al., 2013). Network theory provides measures of centrality to identify the most prominent or well-connected actors in a network (Wasserman & Faust, 1994). First, a firm has a central board when its directors possess many first-degree links to outside boards (DEGREE centrality). This is the most commonly used and most basic of all the centrality measures – it refers to the simple count of the number of each director's ties. An actor with a high degree centrality is in direct contact with many other directors, is highly visible and has access to many channels of communication and alternatives (Larcker et al., 2013; Tsai, 2001; Wasserman & Faust, 1994). Second, a board enjoys a central position in its network when its directors possess relatively closer ties to outside board, which implies that it takes fewer steps between boards to reach each point of connection (CLOSENESS centrality). This measure captures the speed and ease at which directors are able to draw upon useful information in their networks. Directors with a high closeness centrality have access to more readily available resources. Third, a central board is present on more paths between pairs of outside boards, which suggest that its directors are important information or resource brokers who have control over information flow and direction of resource exchange (BETWEENNESS centrality) (Freeman, 1977). This measure captures the importance of a

board in terms of connecting other boards to each other, as well as the average proportion of paths between two outside boards on which a focal board lies. The distance of the shortest path between two firms is proportional to the costs of communication or exchanging favors between them, therefore, betweenness centrality also depicts the reduction of average cost for obtaining information and resources.

Overall, the concept of a centrality is multidimensional and highly relational. The degree to which a board can maintain advantages and leverage its professional network depends on how much better connected it is than its peers. Prior research has empirically demonstrated that firm centrality positively affects several aspects of firm performance (Larcker et al., 2013; Larcker, So, & Wang, 2010). Central firms in the biotech and chemical industries enjoy higher revenue, employment growth, patenting rate, R&D spending growth (Baum, Calabrese, & Silverman, 2000), and increased innovation output (Ahuja, 2000). Evidence suggests that boardroom centrality is beneficial to firm outcomes (Tsai, 2001; 2002) and the concentration or cluster of director ties that central boards enjoy can positively affect performance.

H4: The degree of connectedness in board ties, as indicated by degree centrality, closeness centrality, and betweenness centrality, is positively related to firm performance.

Board Skewedness and Performance

When one or a few directors control significantly more decision power than others, the power balance of the board is disturbed, which decreases the likelihood that the board can successfully accomplish its advisory and monitoring responsibilities. Board skewedness

focuses on power imbalance amongst board members, which is represented by two important aspects of the board that have significant performance implications.

First, when the role of CEO and chair of the board are occupied by the same person, it drastically compromises other directors' willingness to objectively evaluate the performance and practices of a firm's CEO when that CEO in question is also serving as the head of the board (Conger & Lawler, 2009; Jensen, 1993; Monks & Minow, 2008). This severe conflict of interest weakens a board's ability to execute its control function (Brickley, Coles, & Jarrell, 1997:190) and undermines all of which the board stands for due to the absence of separation of decision management and decision control (Boyd, 1995; Dalton et al., 2008; Fama & Jensen, 1983). Additionally, the board's ability to perform control and monitoring role effectively depends on the distribution of power between the board and the CEO (Finkelstein et al., 1996), so CEO duality directly threatens the effectiveness of the board, which then leads to negative performance outcomes (Conger & Lawler, 2009; Jensen, 1993). When the integrity and utility of the board are compromised, the CEO is unlikely to be penalized and rectified for behavior that damage shareholder interest. CEO duality heavily skews the power dynamic of the board in favor of the CEO, making it more likely for the CEO to use the formal power embedded in the board chair position to legitimize the pursuit of personal goals at the expense of other shareholders (Conger & Lawler, 2009; Fama & Jensen, 1983; Jensen, 1993; Westphal & Zajac, 1995). Therefore, boards that are chaired by the CEO are less likely to focus on the interests of shareholders, which translates to more agency problems overall, leads to poor performance (Rechner and Dalton, 1991).

Likewise, the presence of controlling shareholders in a board have negative performance implications because the interests of controlling and minority shareholders do

not completely coincide, especially when there is a separation of ownership and control (Bebchuk, Kraakman, & Triantis, 2000; Claessens, Djankov, Fan, & Lang, 2002).

Controlling shareholder directors do not always have the expertise or competency to properly counsel and monitor management, which has negative impact on firm value (Ben-Amar & Andre, 2006). The amount of power that controlling shareholders have on a board do not align with the benefit they can offer to the firm, the opportunity costs created by a suboptimal board appointment is shared by all shareholders while the private benefits accrue to the controlling shareholders (Peres-Gonzalez, 2001). Due to controlling shareholders' ability to expropriate valuable firm resources for personal gain, granting them formal monitory roles on the board will have negative performance implications.

Furthermore, individual board members are informally ranked against each other based on the number of additional board membership they maintain (Belliveau, O'Reilly, & Wade, 1996). A high degree of hierarchical differentiation between directors is likely to negatively influence board effectiveness because a deference-based hierarchical order promotes severe power imbalance. Board informal hierarchy provides a strict social order within which the decisions made by high ranking directors are much more respected and their opinions are rarely challenged, especially when the CEO occupies the highest rank in the informal hierarchy (He & Huang, 2011). A clear hierarchical differentiation subdues diverse viewpoints and reduces the quality of objectivity of decisions (Finkelstein & Mooney, 2003), where higher ranking directors actively or unconsciously suppresses opposing opinions with little to no risk of retaliation. In addition, directors with many additional board memberships are linked to fostering excess CEO compensation (Core, Holthausen, & Larcker, 1999), where these directors are more likely to be chosen for

additional seats if the CEO of the firm is involved in the director selection process, which undermines the independence of the board (Shivdasani & Yermack, 1999). This suggests that a high degree of informal hierarchy is especially problematic because higher ranked directors are given special deferential privileges and more power, but are often ineffective monitors.

Boards with CEO duality, controlling shareholders, and a high degree of hierarchical differentiation suffer from a diminished ability to execute their advisory and monitoring functions. The skewed distribution of power in favor of CEO board chairs, controlling shareholders, and high ranking directors leads to agency problems that greatly reduce the effectiveness and utility of boards.

H5: The degree of skewedness of the board, as indicated by CEO duality, the presence of controlling shareholder, and the degree of hierarchical differentiation is negatively related to firm performance.

CHAPTER IV

Contingent Nature of Board Relational Pluralism

As noted in earlier research (Dalton et al., 1998; Dalton et al., 1999; Larcker et al., 2013; Westphal & Zajac, 2013), the board and firm performance relationship carries an assumption that the choice of various governance options is associated with organizational strategy, the context in which the firm operates may influence the governance of organizations in ways that temper boards' ability to affect firm performance. Applying the relational pluralism model to the board-performance literature leads to the obligatory consideration regarding the strategic contexts under which the firms operate.

Miles and Snow Typology

The Miles and Snow (1978) typology categorizes organizational patterns of strategic behavior into three main strategic problem and solution sets: (1) entrepreneurial problems (product-market domain), (2) engineering problems (choice of technologies), and (3) administrative problems (structure and processes). Based on this categorization, the Miles and Snow typology defines four distinct strategic types: Prospectors, Defenders, Analyzers and Reactors. With empirical evidence, Miles and Snow (1978) developed a strategy typology interrelating organizational strategy, structure, and process within the theoretical framework of organizational adaption, which is the process of actively aligning and adjusting the organization with its environment (Miles, Snow, Meyer, & Coleman, 1978).

To build onto the contingency theory of the multidimensional relational pluralism model, a set of potential moderators can be derived from Miles and Snow's strategy typology (1978). This typology has been used in other contingency theory research and has been widely used in the management literature (e.g., Doty, Glick, & Huber, 1993; Hambrick, 2003; Lin, Tsai, & Wu, 2014; Rajagopalan, 1997; Rajagopalan & Finkelstein, 1992; Sollosy, Guidice, & Parboteeah, 2015; Thomas, Lischert, & Ramaswamy, 1991). Three of the four strategy types in Miles and Snow's typology fall along a continuum where the "prospector and the defender are endpoints and the analyzer is the midpoint of the continuum" (Doty et al., 1993: 1227). This assumption is based on Miles and Snow's argument that "the defender and the prospector reside at opposite ends of a continuum" and that the analyzer lies "between those extremes" (1978: 68). The continuum perspective of the Miles and Snow's typology lends itself better to empirically testing the contingency interrelationships among

board relational pluralism, organizational environments, strategy, and performance (Smith, 1989).

Prospectors are organizations that seek to gain a first-mover advantage by constantly developing new products and markets. The product and market innovations require the prospectors to be risk takers, often resulting in prospectors operating within broad product-market domains. Since prospectors rely on their ability to pioneer new ideas in the market (Miles & Snow, 1978), their effectiveness maximizes when they operate in turbulent and uncertain environments. As a result, prospectors favor organizational structures and compositions that exhibit high flexibility and diversity, which makes them better equipped to respond to the demands of rapidly changing environmental conditions. Following Weick's (1979) observation that external diversity should be matched by internal diversity, prospectors are expected to benefit more from having a relatively heterogeneous governing board in terms of demographic and functional background. The need for innovation and fast-paced decision making necessitates a diverse mix of directors from differentiated backgrounds in order to adequately perform their advisory function. Moreover, the varied and turbulent environment that prospectors face makes it very important for their boards to have an advantageous network position in order to receive and broker information and resource exchange frequently. Director external ties are also extremely valuable to prospectors because the high level of external diversity can only be managed by directors with experience and expertise in differentiated areas relevant to the firm's success. External ties such as political ties are especially useful to prospectors because they are constantly under the stress of environmental change. To deal with potential institutional or governmental constraints, prospectors could benefit greatly from having directors with

political affiliations as well as directors with central positions in their interlocking directorate networks. In addition, the prospector competes by focusing on innovation and new market opportunities, which sacrifices internal efficiency for external effectiveness. This lop-sided focus can have potential negative impact on the effectiveness of governance if the board already suffers from an imbalance of power. Prospectors are likely to exacerbate the negative effects of having a board that is unable to competently complete its monitoring function. Hence, board relational pluralism has an amplified effect on firm performance if the firm focuses on using the prospector strategy.

On the other hand, defenders focus on stable product-market domains and obtain competitive advantages through operational efficiencies (Miles & Snow, 1978). Defenders do their best to protect their existing market positions and avoid risky product and market innovations (Dess, Lumpkin, & Covin, 1997). The survival and prosperity of defenders depend on minimizing operational costs and dominating in their limited product-market domains. In addition, defenders tend to maintain a simple and mechanistic administrative system that can best be described as centralized and inorganic to ensure operational efficiencies (Miles et al., 1978). Therefore, when compared to prospectors, defenders are less likely to benefit from having a board that's diverse, well connected, and politically affiliated, this is due to the fact that defenders do not have an intrinsic need to frequently draw upon information and resources that are outside of their existing positions. Therefore, board relational pluralism does not have as strong an impact on firm performance when the firm has a defender strategy in place.

To summarize, board relational pluralism's effect on firm performance is largely contingent on the firm's strategic context, where prospectors are much more likely to exhibit the proposed performance effects due to dimensions of relational pluralism than defenders.

The other two strategy types are analyzers and reactors. Analyzers can be summed up as a hybrid strategy type which lies somewhere in between prospectors and defenders (Miles & Snow, 1978). Due to their dual characteristics, the success of analyzers depends on balancing product and market innovations with operational efficiencies. However, analyzers do not necessarily exhibit a perfect balance of prospector and defender strategies at all times, which sometimes makes it difficult to accurately categorize at a single point in time. Finally, reactors lack a consistent strategic approach to solving problems. The reactor strategy type is considered impractical and unfeasible, as a result, it is usually omitted from studies. Because Reactors may vary their behavior any time to exhibit the characteristics of a Defender, Analyzer or Prospector type, they are also difficult to characterize at a single point in time using objective approaches (Blackmore & Nesbitt, 2013). Consistent with prior research in both management and accounting (Bentley, Omer, & Sharp, 2013; Hambrick, 1981, 1983; Saraç, Ertan, & Yücel, 2014; Simons, 1987), the current study focuses on prospectors and defenders.

Hypothesis 6: The relationships in H2-5 are stronger in the hypothesized direction in prospector firms when compared to defender firms.

CHAPTER V

METHODS

Sample and Data

My sample consists of Chinese A-share public companies listed on the Shanghai or Shenzhen Stock Exchanges between 2007 and 2010. The data is obtained from the China Stock Market and Accounting Research (CSMAR) database. Firms with missing information that would prevent the calculation of any of the twelve first-order latent variables of board relational pluralism are excluded. Firms with missing financial information are also excluded. Interlocking directorate network information is collected for all directors in included firms from annual reports and corporate websites, from which the centrality measures are constructed. For the years between 2007 and 2010, there are 1,530, 1,604, 1,700, and 2,063 domestically listed Chinese firms respectively, after matching data across all four years and excluding firms with missing key data, a final panel sample containing data of 1,172 firms are included. Network measures are constructed based on the full sample, therefore, omitted firms do not affect the network data of focal firms. A total of 56,256 individual director level panel data are aggregated into the board level to construct the final data.

The time range of my study is carefully chosen based on several reasons. First, corporate governance in China has been established and reexamined alongside massive state-owned enterprise reforms and private sector growth in the past decade (OECD, 2011). China has started the creation of a legal system for corporate governance to keep up with the Western standards in the early 2000s, and the system has developed fairly quickly and increasingly similar to US and European systems. The China Securities Regulatory Commission (CSRC) has identified the

improvement of corporate governance as a priority, and has adopted many measures in the areas of independent directorship, information disclosure, interest related party transaction, general shareholders' meeting, merger and acquisition and reorganization and investor protection within the framework of the Company Law and the Securities Law between the years 2001 and 2007. By 2007, major components of corporate governance laws and guidelines that are shared by the international community have been implemented in Chinese listed firms, common corporate governance practices in US and Europe have finally been adopted. Therefore, it is important for me to choose 2007 as the starting point of my study to maximize the generalizability of my findings. Second, the National People's Congress passed a revision of China's Company Law in October 2005, which turned the 2002 CSRC requirement of independent directors into a legal necessity. This change has greatly altered the composition of most Chinese boards and I choose the start time of 2007, which is two years after the new laws, to capture Chinese boards' characteristics after changes have been made. Furthermore, the Chinese government started to allow mainland citizens to invest in non-mainland stock markets in 2007, this policy pushed Chinese firms to accelerate corporate governance reform to match their US, European, and Hong Kong counterparts in order to stay competitive for investors (OECD, 2011). This makes 2007 a very fitting starting point for my study because Chinese boards had many idiosyncrasies that were not generalizable to other countries prior to 2007. Overall, 2007 marks a time by which Chinese has fully adapted to the Anglo-American style of governance mechanisms.

The end point of my time range is also carefully chosen. Shortly after Xi Jinping established and confirmed his status as the successor to Hu Jintao as the next president of China, Xi began the preparations for his long term anti-corruption campaign, and new sets of anti-corruptions laws were passed in 2011 (CECC, 2011). As a result, roughly 160,000 Chinese

officials were reprimanded in 2012, and the number has been growing every year ever since (Donovan, 2014). The anti-corruption campaign has also greatly affected the composition of corporate boards – under new rules, university educators and government officials are no longer allowed to receive separate paychecks outside their primary jobs (Li, 2016), consequently, corporate boards have been witnessing an exodus of independent directors who have political affiliations or hold university positions¹. Therefore, Chinese board composition and network data gathered after 2010 are undoubtedly greatly affected by the new laws, which could lead to severe confounds to my findings, especially when the number of “shadow directors” is likely to increase. “Shadow directors” still influence their firms to a significant extent by virtue of their hidden relationships and functions to the firms, while not letting their names appear in any corporate records or legal documents (Wang, 2014), which makes it impossible to capture their information in public data. While many key variables will remain observable, it is very likely that there will be invisible components of board characteristics that will weaken or threaten the validity of my findings. Overall, the 2007 to 2010 window represents the ideal timeframe to use Chinese boards for this study due to generalizability and relative stability.

Using the Chinese context is a suitable theoretical and empirical setting for this study because as China emerges as a global economic power, the corporate governance and performance of Chinese firms demands more research attention (Chen & Young, 2009; Peng et al., 2010; Wright et al., 2005). Existing work, especially those conducted in emerging markets, has largely focused on the direct relationship between board characteristics and firm performance (Peng, Zhang, & Li, 2007; Peng et al., 2010; Peng, Tan, & Tong, 2004), the relational pluralism

¹ e.g. Liu Ya, vice principal of the University of International Business and Economics in Beijing, was fired because he received 1.2 million yuan (about \$185,000) as compensation for his director memberships in corporations.

framework developed and validated in this study provides promising theoretical foundations to motivate research that explore how board characteristics interact with each other to further influence firm performance. The relational pluralism framework has very recently been applied to the corporate governance literature in the US context, it would be very meaningful to extend this new stream of research to the context of emerging markets to answer the call for research on board characteristic interactions and their performance implications (Peng et al., 2010). Although there are undeniable institutional and cultural differences between China and other countries, in terms of corporate governance, drastic reforms in regulations in recent years have greatly transformed Chinese boards under Anglo-American standards, which alleviates some concerns regarding the generalizability of findings, while on the other hand, explores the boundary effects of international corporate governance practices on performance under different institutional contexts. Therefore, the similarities and dissimilarities of the Chinese context compared to the US context provides invaluable research opportunities.

In addition, China is a relational society, where most business transactions are carried out between parties with close social ties; and individuals' behaviors are governed not by universal law but by social norms and informal rules (Fei, Hamilton, & Wang, 1992; Granoetter, 1985). The corporate environment in China is much more relationship-based than rule-based (Ding, Sun, & Au, 2014). In a relationship-based context, managers usually use established social ties to exploit opportunities (Gao, Wang, Xia, & Yu, 2014). Rather than relying on formal channels, directors in China rely on their relationships and interactions to build trust, inform decisions, and obtain resources (Wong, 2016). This phenomenon amplifies the effect of Chinese boards' social networks and relational dynamics on firm outcomes, which makes China the ideal context to study the board relational pluralism framework. Board relational pluralism focuses on

directors' relationships within, between, outside the board; Chinese boards, arguably rely more on these relationships to make decisions than most other countries. Therefore, the Chinese context in this case is not simply a setting, it motivates my study because it provides unique opportunities that examine phenomenon that would otherwise be less salient in other contexts. This answers the call for more context driven and context appropriate management scholarship (George, 2014).

Construct Validity of Relational Pluralism

Operationalization

Four dimensions of relational pluralism:

1) Heterogeneity

Gender diversity. This is measured by using a Blau index (Blau & Blau, 1982). The Blau index is a useful diversity measure when the variables are categorical (Harrison & Klein, 2007). A Blau index is calculated and the geometric mean is obtained. Blau's Index is defined as:

$$Blau\ Index\ ij = 1 - \sum_{t=1}^n P_{ijt}^2$$

the board heterogeneity index for firm i during year j, t is the number of categories a director can belong to, and P is the proportion of directors on board i who belong to category j at time t (Blau, 1977). The value range of the diversity index falls between 0 and 1, with values close to 1 indicating greater diversity.

Occupational background diversity. This is measured by calculating a Blau index and obtaining the geometric mean. Different occupational backgrounds are represented by a unique number. (1-5): 1 = business background (including commercial and investment banks, or venture capital); 2 = government background (including all official and semi-official government positions,

government-supported nonprofit organization, or military units); 3 = consulting background (including law firms, accounting, or management consulting firms); 4 = academic background (including universities or research centers); and 5 = others.

Educational background diversity. This is measured by calculating a Blau index and obtaining the geometric mean. Different educational backgrounds are represented by a unique number (1-6): 1 = management; 2 = engineering; 3 = marketing; 4 = accounting or finance; 5 = law; and 6 = others.

2) Multiplexity

Independent directors. This is measured by the ratio of independent directors to inside directors on a board.

Director stock ownership. This is measured by a count measure of directors with stock ownership.

Political ties. This is measured by counting the total number of political ties enjoyed by directors on a board. Political affiliations are represented by prior or current appointments in the central government. In addition, a dummy variable (0, 1) is created to represent the existence of political ties in a board.

3) Connectedness

All three centrality measures in the Connectedness dimension are calculated by constructing an undirected boardroom interlock network formed by shared directorates. Shared directorate is defined by the linkage between two firms based on having at least one board member that is shared by both firms. An undirected network is one in which boardrooms are either connected or not, and there is no assumptions place on the direction of the flow of information and resources.

Degree centrality. A board interlock network matrix is used to calculate this measure using the UCINET software program (Bonacich, 1987). This measure examines the number of channels of communication or resource exchange that a board enjoys (Larcker, So, & Wang, 2013). The formula below is used to obtain the number of first-degree links to outside boards, where the term $\delta(i, j)$ represents an indicator that boards i and j share a director, for a given firm i in the network.

$$\text{DEGREE}_i \equiv \sum_{j \neq i} \delta(i, j)$$

Closeness centrality. A board interlock network matrix is used to calculate this measure using the UCINET software program. This measure represents how easily or quickly a board can reach an outside board through its interlock network (Larcker et al., 2013). The formula below is used to calculate the steps in the path between two boards, where the term $l(i, j)$ is the number of steps in the shortest path between board i and j .

$$\text{CLOSENESS}_i \equiv \frac{n-1}{\sum_{j \neq i} l(i, j)}$$

Betweenness centrality. A board interlock network matrix is used to calculate this measure using the UCINET software program. This measure captures how important a board is in connecting other boards to each other, or how advantageous its network paths are (Larcker et al., 2013). The formula below calculates the average proportion of paths between two outside boards on which a board is positioned. The term $P_i(k, j)$ represents the total number of shortest paths between board k and j , the term $P(k, j)$ represents the total number of shortest paths between k and j .

$$\text{BETWEENNESS}_i \equiv \sum_{j \neq i: i \notin \{k, j\}} \frac{P_i(k, j)/P(k, j)}{(n-1)(n-2)/2}$$

Each of these three connectedness measures is aggregated to the board level by averaging the centrality scores of directors on the same board (Omer, Shelley, & Tice, 2014).

4) Skewedness

CEO duality. This is measured by a dummy variable (0, 1), with a value of 1 indicating that the chair of a board is also the CEO of the same firm, 0 otherwise.

Controlling shareholder. This is measured by a dummy variable (0, 1), with a value of 1 indicating the existence of a shareholder director who owns more than fifty percent of the shares in a company, 0 otherwise.

Informal hierarchy. Measured by board membership ranking inequality using a Gini coefficient:

$$G = \frac{2cov(y, r_y)}{N\bar{y}}$$

Where G= Gini coefficient; y = total number of board memberships held by the board; r = rank of each director based on the number of board memberships held (i.e. a board member with 3 board memberships is ranked above a board member with 2 board memberships, etc.); cov(y, r) = covariance of y and r; N = number of directors on the board. The value range of the Gini coefficient falls between 0 and 1, with values close to 1 indicating greater inequality.

Relational Pluralism and Firm Performance Linkage

Operationalization

Dimensions of relational pluralism. The factor scores derived from the principal components factor analysis are used as a single composite measure for each of the dimensions of relational pluralism. These factor scores are automatically calculated for each dimension when the principal components analysis is conducted. Five unique factor scores (each representing one

dimension of relational pluralism) per board are saved in the regression format, in order to be used as independent variables in my regression models.

Performance. Return on assets (ROA), Return on equity (ROE), and Tobin's q.

ROA is one of the most effective financial measure to assess company performance (Buck, Liu, & Skovoroda, 2008; Chizema, Liu, Lu, & Gao, 2014). It captures the fundamentals of business performance by looking at both income statement performance and the assets required to run a business. Commonly used performance metrics such as return on equity (ROE) and net income are susceptible to financial manipulation (e.g., debt leverage, taxes, interest, one-time charges). Many assets, such as property, equipment, and intangibles involve long-term asset decisions that are more difficult to tamper with, therefore, ROA is less vulnerable to short-term gaming (Hagel, Samoylova, & Lui, 2013; Shift Index, 2013). Using ROA as a key performance metric focuses management attention on the assets required to run the business. Additionally, ROA is a better metric of financial performance than income statement profitability measures like return on sales (Hagel, Brown, & Davison, 2010) because ROA explicitly takes into account the assets used to support business activities. It determines whether the company is able to generate a sufficient return on these assets rather than simply showing healthy return on sales. ROA is calculated as operating income over total assets. Although there are strong arguments for using ROA as the key performance indicator, in order to be thorough, ROE will also be observed because it remains one of the commonly used performance metrics in the management literature and in practice. ROE is calculated as net income over total equity.

In addition to ROA and ROE, I use Tobin's q to assess firm value. Tobin's q is the firm's current market-to-book ratio (Jensen and Meckling, 1976; Morck et al., 1988). Tobin's q is calculated by dividing the firm's market value by the replacement cost of its assets, where

market value is the value of common equity plus the book value of preferred stock and debt, and the replacement cost of assets is their actual book value. Theoretically, Tobin's q is a commonly used performance measure because q implicitly uses the correct risk-adjusted discount rate and minimizes accounting convention and tax law related distortions (Wernerfelt & Montgomery, 1988).

For all three performance measures, I use the log transformation and 1-year lag in my analysis. I also conduct t-tests for all three performance measures between my firms included in my final sample and excluded firms, the two groups, are not significantly different (ROA: $t\text{-value} = 0.387$, $p = 0.198$; ROE: $t\text{-value} = 0.763$, $p = 0.261$; Tobin's Q : $t\text{-value} = 0.814$, $p = 0.149$).

Firm strategy. Miles and Snow Typology

There are several ways to measure business strategies. Snow and Hambrick (1980) introduced four main methods: (1) *Self-typing*, which allows the organization's top managers to identify and summarize the organization's strategy, (2) *Investigator inference*, where the researcher uses available information to assess the organization's strategy, (3) *External assessment*, in which a panel of experts evaluates the organization's strategy, and finally (4) *Objective indicators*, which focuses on measuring financial and accounting parameters that provide information on the organization's strategy (Sarac, Ertan, & Yucel, 2014). The Objective indicators method has advantages over the other methods because objective data are not dependent on the assumptions and biases of researchers, managers, or consultants. Objective data are also comprised of large, heterogeneous samples that makes it possible to assess relative strategic properties (Blackmore & Nesbitt, 2012). Furthermore, if data are available longitudinally, this method allows differentiation between strategic changes and strategic

adjustments, as well as capturing executed strategies rather than intended strategies (Thomas & Ramaswamy, 1996: 255).

The nature of my study, which requires that large amounts of data be collected from different industries and different time periods, fits well with a measurement approach that is based on objective measures. In the literature, there is a lack of commonly agreed upon objective measures to assess Miles and Snow's strategy types. Therefore, I have selected the most appropriate existing measures in the literature to accompany the dimensions of Miles and Snow's typologies (Blackmore & Nesbitt 2012; Bentley et al., 2013; Ittner, Lacker, & Rajan, 1997). I find a set of measures used by Bentley et al. (2013) and Ittner et al. (1997): (1) the ratio of research and development to sales, (2) the ratio of employees to sales, (3) a historical growth measure (one-year percentage change in total sales), (4) the ratio of marketing to sales, (5) a measure of employee fluctuations (standard deviation of total employees) and (6) a measure of capital intensity net PPE scaled by total assets. As advised by several scholars (Conant, Mokwa, & Varadarajan, 1990; Blackmore & Nesbitt, 2013), these six measures capture the appropriate characteristics and all of the dimensions (stability, efficiency, growth, product development research, marketing, and capital intensity) of Miles and Snow's Strategy typologies. Each of the measures is calculated and ranked into quintiles, the observations in the highest quintiles are given a score of 5, those in the second highest quintile are given a score of 4, and so on, the observations in the lowest quintile are given a score of 1 (except the capital intensity measure, which is reverse-coded so the quintile scores are also reversed). The scores are then summed over the six measures per company-year where a firm could potentially obtain a maximum score of 30 (prospector type) and a minimum score of 6 (defender type). The scores are then further categorized into defenders (scores between 6 and 17) and prospectors (scores between 18 and

30). All firms in my sample are coded as either defenders or prospectors following this method, resulting in 1,653 defender firms and 1,863 prospector firms.

Control Variables

Control variables include other firm characteristics that may affect the link between board composition and firm performance. Prior research has suggested that the board performance relationship is related to firm size (Core, Holthausen, & Larcker, 1999; Halebian & Finkelstein, 1993), ownership structure (Demsetz & Villalonga, 2001; Kapopoulos & Lazaretou, 2007), as well as board level factors such as board size (van Essen, van Oosterhout, & Carney, 2012), audit/advisory committee meetings (Fauzi & Locke, 2012), average director age and tenure (Westphal & Shani, 2016), and compensation (Rhoades, Rechner, & Sundaramurthy, 2001), therefore, I control for 1) *Firm Size* (the natural logarithm of firm total assets), 2) *Audit/advisory committee* (the number of audit/advisory committee meetings per year), 3) *Board Size* (number of directors on a board), 4) *Board compensation* (reported total cash compensation of a board, log transformed), 5) *Director Age* (mean age of directors on a board), 6) *Director Tenure* (mean tenure of directors on a board), 7) *SOE* (dummy variable to indicate state ownership). I also include industry, year, and province dummies in order to control for the industry, year, and sub country regional effects.

CHAPTER VI

RESULTS

I first report the descriptive statistics and bivariate correlations for all indicator variables used in this study (see Table 1). A total of 56,256 individual director level panel data are aggregated into the board level (N=4,688) to construct the twelve indicator variables used in the construct validity analyses of my study. A review of the correlation matrix reveals that all indicator variables are significantly correlated, this is not surprising because theoretically, different components of relational pluralism are not orthogonal constructs, and this provides face validity for my proposition that these indicator variables on the board level describe one second order latent variable, board relational pluralism. The magnitude of correlation is as expected, that is, the within-dimension variable correlations are generally higher than the correlations of variables between dimensions. However, there are a few exceptions: *Degree centrality* is highly correlated with not only *Betweenness Centrality* ($\beta = 0.839$) and *Closeness Centrality* ($\beta = 0.698$), it is also strongly correlated with *Independent Directors* ($\beta = 0.797$) and *Political ties* ($\beta = 0.715$). Similarly, *Gender Diversity* and *Informal Hierarchy* correlate with each other more strongly ($\beta = 0.425$) than their respective measures in the proposed dimensions. Although simply examining the correlations between the indicator variables does not provide concrete information regarding the underlying relationships between the variables, they do offer some insights to understanding the outcomes of exploratory factor analysis, which is presented in the next section. In addition, the descriptive statistics reveal that boards in my sample have relatively low occupational diversity (mean= 0.288), educational diversity (mean= 0.164), and gender diversity (mean=0.063) when compared to existing literature with non-Chinese data, where mean occupational and educational diversity range from 0.2 to 0.5, and mean gender diversity range from 0.1 to 0.2 (Erhardt, Werbel, & Shrader, 2003; Jindal & Jaiswall, 2015; Stern & Westphal,

2010). 4,669 out of 56,256 director level panel observations are female (8.3% of the data); male directors hold on average 1.62 board memberships, female directors hold on average 3.41 board memberships; 8.2% of female directors have 5 board memberships (5 is the maximum allowed per individual), 1.6% male directors have 5 board memberships. The average number of directors per board is 12.0, and the average number of independent directors per board is 3.3. On average, 3.7 directors per board have stock ownership, and 1.1 directors have political ties. 14.6% of board exhibit CEO duality and 12.2% of boards have controlling shareholder directors. The informal hierarchy of boards is represented by the Gini coefficients, where numbers closer to 0 indicate perfect equality and numbers closer to 1 indicate perfect inequality, the mean score in my data is 0.297.

I also report the descriptive statistics and bivariate correlations for all variables included in all regression models (Table 7). The average firm size in my sample is 21.3; advisory committees meet 3.55 times annually, the average size of boards is 12.0, board members are on average 48.57 years old, and the average tenure for directors is 2.92 years (this number is low compared to other countries because the new government regulations on mandatory independent directors has caused a huge new wave of directors, which lowers the overall mean director tenure). Board compensation as a whole averages 14.04, which translates to RMB 1,255,280 or \$189,292 before log transformation. The mean of firm size is 21.3, which is RMB 1.78 billion or \$268million; the mean of ROA is 3 percent, the mean ROE is 2 percent, and the mean Tobin's Q is 1.36. 53% of firms in my sample are categorized into the prospector strategic type.

Construct Validity of Relational Pluralism

A two-step process is used to obtain evidence of construct validity of relational pluralism. The first step is to identify the optimal factor structure using exploratory factor analysis

techniques. Doing so provides a theoretical understanding of how the twelve indicator variables group together to create multiple first order constructs within the instrument. Since no prior published studies have examined the construct validity of board relational pluralism, it is invaluable to begin with an exploration of the factor structure (Tabachnick & Fidell, 2013). The second step is to confirm the structure using confirmatory factor analysis methods. To assess the board relational pluralism construct validity through both exploratory factor analysis and confirmatory factor analysis, the matched sample of 1,172 firms over four years (2007-2010) is used. The complete sample is then split randomly into two using the SPSS 22 random selection technique ($n = 586$ in each sample). The first sample is randomly selected for the exploratory factor analysis procedure and the second is used for the confirmatory factor analysis procedure. The logic behind randomly splitting the sample for the two analyses is that a model is very likely to fit the data set it was created from better than any other random sample from the same population, therefore, to obtain an honest and unbiased test of how well a model fits the data, the confirmatory factor analysis should be conducted on a different sample than the exploratory factor analysis (Bollen, 1989).

Exploratory Factor Analysis

A review of the literature revealed a number of recommendations for determining adequate sample size when conducting an exploratory factor analysis. According to Comrey and Lee (1992), a guideline for ample sample size is as follows: *100 = poor, 200 = fair, 300 = good, 500 = very good, and 1,000 or more = excellent*. In addition, each variable involved in the analysis should have at least 20 cases (Hair, Anderson, Tatham, & Black, 1995), and it is important that some high loadings (>0.8) and communalities in the range of 0.5 are present in the

results (MacCallum, Widaman, Zhang, & Hong, 1999). The current study's sample size ($n = 586$) falls within the "very good" range on the assessment adequacy scale (Comrey & Lee, 1992), and the subjects to items ratio is well above the 20:1 criteria (Costello & Osborne, 2009).

Standard methods of performing factor analysis (typically based on a matrix of Pearson's correlations) assume that all variables are continuous and that they follow a multivariate normal distribution. However, the current study includes variables that are categorical, if Pearson correlations are used in this case, the relationship between measures would be artificially restricted due to the restrictions put in place by categorization (Gilley & Uhlig, 1993), with Pearson correlations, these restrictions in assigning scores to subjects would lead to an underestimation of the association between observed variables, as well as a decrease in the factor weightings (DiStefano, 2002). In order to combat this issue, Jöreskog and Sörbom (1996) found that polychoric correlations are the more consistent and robust estimator, regardless of sample size and population correlation. Therefore, factor analysis in this study should utilize a polychoric correlation matrix, which can include variables that are binary, ordinal, or continuous (Holgado-Tello, Chacón, Barbero, & Vila, 2010). In Stata 13, I generate a matrix of polychoric correlations to use in exploratory factor analysis. In addition to using a polychoric correlation, I further examine the factorability of the data by conducting the Kaiser Meyer Olkin (KMO) test (see table 2), which assesses the partial correlations among pairs of items. The the KMO test value is 0.719, which suggests the existence of some partial correlations, but the test result still falls within the range of a standard matrix for use in exploratory factor analysis (Kaiser, 1974; Tabachnick & Fidell, 2013). In addition, Bartlett's test of sphericity is conducted to examine the null hypothesis that the item-level bivariate correlations are zero, the test results indicates that the matrix has nonzero bivariate correlations, $\chi^2(59) = 7,474.565$, $p < 0.0001$. The results of

these factorability tests suggest that it is feasible and appropriate to proceed with an exploratory factor analysis.

An exploratory factor analysis is conducted using IBM SPSS AMOS Version 22. I use the principal component method with varimax rotation and identify an optimal five-factor solution that explains 70.489% of the variance in the items (see table 3). Item communalities are high, with the lowest communality value being the *Informal Hierarchy* indicator, which has a value of 0.715, all other items have communality values ranging from 0.781 to 0.962, which indicates that a large proportion of the variance in each item is explained by the five factor structure, the mean communality score is 0.851, which is larger than the suggested minimum of 0.60 (Kaiser, 1974; William, Onsman, & Brown, 2010), in addition, all individual communality values are greater than the 0.60 benchmark. Component loadings are high and supports a five dimension model. Loadings lower than 0.40 are deleted, which leaves only one item with cross loading (see table 4). This suggests that board relational pluralism measures five first order latent constructs, instead of the four as proposed. I conduct the analyses year-wise for the four year period 2007-2010. Consistent and stable results across the years increased my confidence in the validity, reliability, and stability of the board relational pluralism construct.

The results largely confirms my proposed first order latent variables for board relational pluralism, however, two of the indicator variables are extracted into a fifth dimension (*Gender Diversity* and *Informal Hierarchy*), where all other variables are loaded into hypothesized dimensions (see Figure 2 for the five-dimension model). Although *Degree Centrality* is shown to highly correlate with a number of variables outside of its proposed dimension as discussed earlier, all repeated year-wise analyses consistently exhibit the same component structure for the *Connectedness* dimension (*Degree Centrality*, *Betweenness Centrality*, and *Closeness*

Centrality) and the results of the principal component analysis are very encouraging. However, it is very interesting that a fifth dimension emerges in my analysis, one explanation for this is that the data in this study contains only Chinese firms, where there is a phenomenon that a small elite group of female directors who sit on multiple boards, which explains why the gender diversity and informal hierarchy variables have loaded into a separate dimension of their own. In China, there are many obstacles for women when it comes to obtaining board positions (Hewlett & Rashid, 2011), in addition, unlike a number of European countries, where there are legal gender quotas for board appointments (Ahern & Dittmar, 2012), Chinese firms do not pay much attention to board gender diversity (Süssmuth-Dyckerhoff, Wang, & Chen, 2012). Therefore, women who have successfully obtained board positions are likely to stand out and become successful in obtaining additional board positions. I further examine the data and find that female directors make up 8.3% of the data (4,669 out of 56,256 director level observations between 2007 and 2010), and the average number of board membership of female directors is more than twice that of male directors (3.41 compared to 1.62), and the percentage of female directors who have four or five board seats (five being the maximum allowed per individual) is also drastically higher than male directors with four or five board seats (32.8% compared to 7.6%). This idiosyncrasy in the Chinese context could potentially explain the five dimensional model, compared to the four dimensional model proposed in this study based on existing theoretical and empirical evidence.

Confirmatory Factor Analysis

Although exploratory factor analysis is helpful in determining the dimensionality of the construct, it only provides a theoretical factor structure. Therefore, confirmatory factor analysis

methods must be used to validate the factor structure and provide additional evidence of construct validity (Fabrigar & Wegener, 2012).

After extracting the components from the exploratory factor analysis, I conduct a second-order confirmatory factor analysis using IBM SPSS AMOS 22. Confirmatory factor analysis enables hypothesis testing of the proposed factors because it explicitly tests both the overall qualities of the proposed model and the specific parameters composing the model. The first-order latent constructs obtained in the exploratory factor analysis are tested to define the second-order latent variable construct – relational pluralism. The operationalized measures for each dimensions are the indicator variables that measure the first-order latent constructs. I conduct multiple goodness of fit measures to determine the overall fit of the mode. Instead of the normal minimum fit function chi-square, I use the Satorra-Bentler scaled chi-square because it adjusts for the non-normality in the data. I also apply the normed fit index (NFI), goodness of fit index (GFI), and relative fit index (RFI). Goodness-of-fit indices ranging between 0.9 and 1.0 indicate good fit (See table 5). The next step in examining the results of the confirmatory factor analysis is to investigate the significance of the parameters of the specified paths (See figure 2). Significance tests for each paths' parameters test the validity of the model specifications. All of the paths specified in my model are significant at $p < 0.01$, these results provide good support for convergent validity. The paths of all first-order dimensions are significant in measuring the second-order latent construct – board relational pluralism. In addition, repeated analyses of all four years show consistent parameter estimates and good fit indices, this attests to the reliability of the proposed model. To address the alternative hypothesis that relational pluralism is three-dimensional (Shipilov et al., 2014), as well as my own hypothesis for a four-dimensional model, I compare the three-dimensional and four-dimensional model fit with my five-dimensional

model fit, and the five-dimensional model consistently exhibits better results. Therefore, based on the results of both exploratory factor analysis and confirmatory factor analysis, hypothesis 1 receives partial support.

Predictive Validity of Relational Pluralism

After testing for the construct validity for the five dimensions of board relational pluralism, I proceed to test for the model's predictive validity, which involves testing the degree of correspondence of the construct with a particular criterion (Carmines & Zeller, 1979). My primary motivation for developing a multidimensional view of the board is to explore its effect on firm performance as well as its contingencies. As aforementioned, the effect that the dimensions of board relational pluralism have on firm performance are likely to be influenced by a firm's strategy. Therefore, predictive validity for the multidimensional construct of board relational pluralism can be tested by showing that under particular strategic contexts, the different dimensions of the board relational pluralism construct have differential effects on firm performance.

I include a panel sample consisting of 4,688 firm-year observations. In order to test my hypotheses longitudinally, I must first determine the appropriate regression model, I conduct the Hausman specification test in (Hausman, 1978), which compares an estimator that is known to be consistent with another estimator that is efficient under the assumption being tested. The null hypothesis is that there is no systematic differences between the two estimators. The result of the Hausman test rejects the null hypothesis, $\chi^2 = 65.84, p < .0000$; $\chi^2 = 23.64, p < .0028$; $\chi^2 = 55.97, p < .0000$ for ROA, ROE, and Tobin's Q, respectively (See Table 6), therefore, a fixed effects model is appropriate.

There are several advantages to using the fixed effects model. First, it addresses the issue of unobserved within firm heterogeneity by modeling each firm as a dummy variable in the regression equation (Greene, 2008). The firm dummies will act as a control for all other unknown firm specific and time invariant factors that may affect the dependent variable (Koka & Prescott, 2002), therefore, the estimated coefficients of the fixed effects model cannot be biased due to omitted time-invariant characteristics of the firm (Torres-Reyna, 2007). Second, this model addresses the issue of serially correlated errors that could have an impact on the study's validity. In addition, fixed effects can ameliorate endogeneity concerns (Roberts & Whited, 2012), where firm-specific intercepts are included and using longitudinal panel design eliminates the endogeneity due to unobserved heterogeneity (Baltagi, 2008; Wooldridge, 2006). Overall, the fixed effects panel model is a very conservative test. Furthermore, I confirm the causal relationship in my model by conducting the Granger causality test in STATA 13.0, where I reject the null hypothesis that coefficients of my independent variables are equal to 0 ($\text{Prob} > F = 0.0000$), therefore establishing the causal relationship between dimensions of board relational pluralism and firm performance (Stock & Watson, 2007; Greene, 2008).

Table 8 provides the results of the panel fixed effects regression analysis (with firm performance as the dependent variable: ROA, ROE, and Tobins' Q). Tables 9, 10, and 11 provide the regression results with firm strategy as a contingent variable. Models 4, 5, and 6 show the results for the complete sample with ROA ($R\text{-squared} = 0.0789, p < 0.0001$; Change in $R\text{-squared} = 0.0448, p < 0.0001$), ROE ($R\text{-squared} = 0.0280, p < 0.05$; Change in $R\text{-squared} = 0.0136, p < 0.05$), and Tobin's Q ($R\text{-squared} = 0.0610, p < 0.001$; Change in $R\text{-squared} = 0.0252, p < 0.001$) as dependent variable, respectively. For performance measure ROA, *Connectedness* ($\beta = 0.0543, p < 0.0001$), *Skewedness* ($\beta = -0.1721, p < 0.0001$), and *Multiplexity*

($\beta = 0.2292, p < 0.0001$) are strongly significant in the hypothesized direction. *Heterogeneity* ($\beta = -0.2711, p < 0.001$), is significant in the opposite direction. For performance measure ROE, *Connectedness* ($\beta = 0.0307, p < 0.01$), *Skewedness* ($\beta = -0.0876, p < 0.05$), and *Multiplexity* ($\beta = 0.1107, p < 0.05$) are significant in the hypothesized direction. *Heterogeneity* ($\beta = -0.1476, p < 0.001$), is significant in the opposite direction. For performance measure Tobin's Q, *Connectedness* ($\beta = 0.0478, p < 0.0001$), *Skewedness* ($\beta = -0.1454, p < 0.0001$), and *Multiplexity* ($\beta = 0.1917, p < 0.0001$) are strongly significant in the hypothesized direction. *Heterogeneity* ($\beta = -0.1980, p < 0.01$), once again, is significant in the opposite direction. The fifth dimension, *Hierarchy*, does not significantly predict any of the three performance measures. Therefore, the Connectedness, Multiplexity, and Skewedness dimensions of board relational pluralism significantly affect firm ROA and Tobin's Q in the hypothesized direction. These dimensions also show significant, but weaker effects on ROE. Therefore, hypotheses 3, 4, and 5 receive strong support.

Interestingly, the fifth dimension, which includes *gender diversity* and *informal hierarchy*, does not significantly predict any of the three performance variables. This is likely due to fact that higher levels of gender diversity combined with higher informal hierarchy captures information regarding a relatively small group of female directors that have multiple seats on multiple boards, which arguably represents the phenomenon of token female directors in boards (Burgess & Tharenou, 2002; Torchia, Calabrò, & Huse, 2011), where the same group of female directors are present in many boards to artificially inflate the demographic diversity of these boards (Singh & Vinnicombe, 2004), therefore, the true performance effects of these female directors are diluted. Research on corporate boardroom tokenism has shown that female directors with corporate experience are recruited to be highly visible members who at the same

time do not have a voice in the boardroom (Burgess & Tharenou, 2002), in addition, as tokens, female directors are often perceived negatively, and are not trusted by other board members (Torchia, Calabrò, & Huse, 2011). With increasing pressure to ensure stronger representation of women on corporate boards, the pressure for gender diversity complicates the process of female directors' entry into the boardroom (Gregoric, Oxelheim, Randøy, & Thomsen, 2013), evidence suggests that even symbolic actions such as recruiting a single female director, can efficiently alleviate external pressure for organizational change (Chizema & Shinozawa, 2012; Davis, 2005). As a result, female directors are not chosen on the same standard and motivation as their male counterparts, therefore, it is not surprising to see that this dimension of board relational pluralism does not have meaningful effects on firm performance.

What's also extremely interesting is that while 4 out of 5 dimensions of relational pluralism significantly predict firm performance (ROA and Tobin's Q), the first dimension (heterogeneity) exhibits a significant relationship in the opposite direction from my hypothesis. Hypothesis 2 does not receive support in my predicted direction, but its consistently significant effects in the opposite direction cannot be ignored. Board heterogeneity and its indicators are arguably some of the most well studied board characteristics in the current literature, although there is a large number of studies that show individual board heterogeneity characteristics positive influence many firm outcomes, the results of my study has convinced me to dig deeper into the literature to find alternative explanations. It is possible that when both educational background diversity and occupational diversity are high in a boardroom, board members' dissimilarity with each other and biases against each other's backgrounds become more detrimental than beneficial. While prior research have shown that that some level of diversity in a boardroom is necessary for functionality and effectiveness, there could very well be "too

much” diversity in the boardroom and a board that does not enjoy educational and occupational diversity is in fact much more conducive to better performance. It is likely that the benefit of having a socially cohesive and compatible board outweighs the benefit of having diverse knowledge and viewpoints based on director background. Li and Hambrick’s (2005) study on factional groups and demographic dissimilarity shows that emotional conflict and board behavioral disintegration can be caused by vast differences in members’ background. Board diversity has also been linked to reduced group cohesion and increased member dissatisfaction (Dobbin & Jung, 2011). Considering research on social categorization theory, social identity theory, similarity-attraction theory and their application to the performance of board members also suggest that board rooms that are filled with directors who do not have educational or functional similarities with other are more likely to encounter conflict and misunderstandings (Bell, Villado, Lukasik, Belau, & Brigga, 2011; Harrison & Klein, 2007), which could ultimately lead to the failure of a board. In this study, the results suggest that board heterogeneity significantly and negatively affect all three measures of firm performance (ROA: $\beta = -0.2711$, $p < 0.001$; ROE: $\beta = -0.1476$, $p < 0.05$; Tobin’s Q: $\beta = -0.1980$, $p < 0.01$), in other words, homogenous boards are more likely to positively influence firm performance.

Firm Strategy as Contingency

To test the hypothesis that board relational pluralism’s effect on firm performance is largely contingent on the firm’s strategic context, where prospectors are much more likely to exhibit the proposed performance effects due to dimensions of relational pluralism than defenders, I conduct sub-sample analysis and examine the predictive effect of relational pluralism on prospectors versus defenders. Models 7 and 8 demonstrate results for prospector and defender firms in relation to ROA; models 9 and 10 are results for for ROE, and models 11

and 12 are results for Tobin's Q. The results are shown in tables 9, 10, and 11. For ROA, *Heterogeneity* ($\beta = -0.3698, p < 0.001$), *Connectedness* ($\beta = 0.0721, p < 0.001$), *Skewedness* ($\beta = -0.2259, p < 0.0001$), and *Multiplexity* ($\beta = 0.2712, p < 0.01$) are strongly significant for prospector firms (R-squared: 0.0977, $p < 0.0001$; Change in R-squared: 0.0636, $p < 0.0001$); none of the dimensions of board relational pluralism are significant for defenders firms. For ROE, only *Heterogeneity* ($\beta = -0.4879, p < 0.05$) is significant for prospector firms (R-squared: 0.0420, $p < 0.05$; Change in R-squared: 0.0276, $p < 0.05$); none of the dimensions of board relational pluralism are significant for defenders firms. For Tobin's Q, *Heterogeneity* ($\beta = -0.3077, p < 0.05$), *Connectedness* ($\beta = 0.0590, p < 0.01$), *Skewedness* ($\beta = -0.1954, p < 0.001$), and *Multiplexity* ($\beta = 0.2940, p < 0.001$) are significant for prospector firms (R-squared: 0.0925, $p < 0.001$; Change in R-squared: 0.0567, $p < 0.001$); none of the dimensions of board relational pluralism are significant for defenders firms. The fifth dimension *Hierarchy* is not a significant predictor for any of the performance measures for neither prospector firms nor defender firms. Overall, the results show strong evidence that there are significant differences between prospector firms and defender firms for the effect of different dimensions of relational pluralism on firm performance. For prospector firms, when compared to defender firms, the dimensions *Heterogeneity*, *Connectedness*, *Multiplexity*, and *Skewedness* more significantly affect performance (*Connectedness*, *Multiplexity*, and *Skewedness*, in the hypothesized direction; *Heterogeneity*, in the opposite direction). What's shocking is that none of the five dimensions of relational pluralism predict performance outcomes for defender firms. These results are largely in line with hypothesis 6, however, the degree to which defender firms are less affected by relational pluralism is more severe than expected. In other words, not only do four out of five dimensions of relational pluralism impact prospector firms' performance more than that of

defender firms, the results provide very strong evidence that relational pluralism **only** affect prospector firms' performance. Hypothesis 6 receives strong support.

Another interesting phenomenon observed in my results is relational pluralism's weak to non-existence effect on ROE. This finding is understandable considering ROE as a performance measure is surrounded by scrutiny and uncertainty. A firm's reported ROE is very susceptible to financial manipulation (e.g., debt leverage, taxes, interest, one-time charges). Many argue that ROE is easy to tamper with to give inflated or falsely presented information to investors, it is also quite vulnerable to short-term gaming (Shift Index, 2013) (i.e. Dell's ROE has been well above Apple's for many years of the past decade). Nonetheless, my results indicate that the dimensions of board relational pluralism do not consistently nor confidently predict a firm's ROE. Overall, my results provide support for my hypothesis and establish predictive validity of the board relational pluralism construct. The results also confirms the contingent nature of the dimensions of relational pluralism.

The R-squares observed in this study are low (ROA: 0.0341 – 0.0977; ROE: 0.0144 – 0.042; Tobin's Q: 0.0358 – 0.0745) according to common standards of effect size assessment (Cohen, 1977), however, meaningful interpretation requires the comparison between effects observed and measures used in strategy research. In a comprehensive analysis of 200 predictors of firm performance, only one set of predictor variables accounted for more than 10 per cent of the variance in financial performance (R&D, 10.7%), while most other aggregated predictors explained 1% to 5% of performance variance (Capon, Farley, & Hoenig, 1990). A meta-analysis (228 studies) on the relationship between performance and board composition/board leadership structure found that the effect sizes ranged from 0.01 to 0.11, the average percentage of variance explained across board characteristics is around 1% (Dalton et al., 1998). Another meta-analysis

on board structure (22 studies) observed effect sizes between 0.01 and 0.12 (Rhoades et al., 2001). Interestingly, a meta-analysis that focused on Asian boards (86 studies) found effect sizes similar to their US counterparts, ranging from 0.01 to 0.24 (van Essen et al., 2012). The effect sizes in my study range between 0.01 and 0.13, which is consistent with existing literature. Although the individual models in this study at best explains 9.77% of the variance in performance, and the highest change in variance explained is 6.36% (i.e. change in r-squared due to adding the relational pluralism dimensions), considering the generally small to modest effects of board level variables have on performance and the substantially large number of factors that have been shown to affect performance, the findings in this study are still worth noting.

Endogeneity Tests

Empirical corporate governance research, which often attempts to explain the causal effects of boards on performance, sometimes has serious issues with endogeneity. It is usually difficult to find exogenous factors or natural experiments with which to examine the relationships proposed. Works that do not adequately address potential endogeneity issues can have severe implications for their usefulness because “endogeneity leads to biased and inconsistent parameter estimates that make reliable inference virtually impossible (Roberts & Whited, 2011)”. I test the reverse causality between all five relational pluralism dimensions and three performance measures with fixed effects panel model. None of the three performance measures are significant at t-0, t-1, or t-2. The results provide strong evidence that suggests endogeneity is not an issue in the current study. The only significant predictor of any relational pluralism dimensions (in this case *Connectedness* and *Multiplexity*) is one of the control

variables, board compensation, at $t-1$. This is to be expected because boards that are compensated well are more appealing to board members that are viewed as more valuable. For *Connectedness*, directors with more advantageous interlocking network positions are more likely to sit on boards that pay well; while for *Multiplexity*, higher pay can attract directors with political affiliations and more independent directors. The predictive relationship between compensation and these two dimensions of relational pluralism is especially salient in the Chinese context, because government regulations limit the maximum directorships per director, valuable directors who are well-connected and politically affiliated can be viewed as a scarce resource in China. In addition, new regulations mandate that all listed Chinese firms must include independent directors (China Securities Regulatory Commission, 2004), in combination with the limitation of maximum board membership, qualified independent directors are also in high demand. Therefore, higher board compensation is a common way for firms to recruit directors with characteristics that are captured in the *Connectedness* and *Multiplexity* dimensions of my relational pluralism model, hence the significant relationship observed in the reverse-causality test.

Post Hoc Analyses

Curvilinear Relationship

While 4 out of 5 dimensions of relational pluralism significantly predict firm performance (ROA and Tobin's Q) in my study, the first dimension (heterogeneity) exhibits a significant relationship in the opposite direction from my hypothesis. This puzzling finding has triggered my curiosity to examine a potentially curvilinear relationship between relational pluralism heterogeneity and firm performance. Perhaps board heterogeneity positively affects

performance only to a certain extent and too much diversity can hurt performance. Therefore, it is possible that the relationship between heterogeneity and performance is bell shaped and not linear. I conduct year-wise quadratic curve estimation regressions on heterogeneity and all three performance measures to examine the goodness of fit and significance of the curvilinear models after creating and centering the quadratic term (See Table 12), in addition, I examine the curve-fit plots to inspect the nature of the curvilinear relationship. Although all main terms (heterogeneity) are positive while the quadratic term (heterogeneity^2) are negative, which provides strong support for a bell shaped curve as expected, none of the quadratic terms in the analyses are significant. The results do not provide enough evidence to support a curvilinear relationship, however, the consistent bell shaped curves in each analysis provides some support to justify and motivate future research on this relationship.

SOE and Firm Strategy

The control variable SOE is significant in models 1 to 6, which leads to some suspicion that SOE could confound the interaction results if more defender firms are state-owned and the main driver of the observed effect is SOE and not firm strategy. I examine the correlation between SOE and Firm Strategy ($r = -0.0088, p < 0.068$) and determine that although SOE and Firm Strategy are negatively correlated (i.e. state-owned firms are less likely to be prospectors), the relationship is not statistically significant. This alleviates the concern that results on defender firms are caused by state ownership. In the past decade, China has put considerable efforts into corporate privatization and decentralization to keep up with other market economies (Wong, 2016), and many regulatory changes have been implemented to limit the control of government ownership and to protect the interests of minority shareholders (Berkman, Cole, & Fu, 2011). While SOEs are acting more and more like private firms, a large number of

SOEs have been transformed into private firms (Fan et al., 2013). These reforms in privatization and a shift in SOE behaviors can explain the phenomenon that SOEs are not more likely to be defenders than other firms. I further test SOE as a potential moderator (see Table 13), but none of the five interaction terms are significant predictors of any of the three firm performance measures at $p < 0.01$. The only significant interaction term is SOE*Connectedness ($\beta = 0.0718, p < 0.05$) for Tobin's Q, which means that state ownership positively moderates the effect of *Connectedness* on a firm's market performance, Tobin's Q; in other words, directors' advantageous interlock network positions are more likely to benefit a firm's market performance when the firm is state-owned.

Firm Strategy Sub-sample t-tests

To further confirm the interpretations of the sub-sample analysis in the firm strategy contingency model, I first conduct two-sample t-tests with unequal variances for all three dependent measures of firm performance and state ownership between prospectors and defender in order to shed light on any systematic differences between the two sub-samples that may confound my results (see Table 14). For ROA ($t\text{-value} = 0.6410, p = 0.5216$), ROE ($t\text{-value} = 0.2086, p = 0.8347$), Tobin's Q ($t\text{-value} = 0.9750, p = 0.3296$), and SOE ($t\text{-value} = 0.3994, p = 0.6896$), prospector firms and defender firms do not exhibit significant differences in terms of performance. The results of the two-sample t-tests reveal no significant differences between the sub-samples for none of the three dependent variables, therefore, I fail to reject the null hypothesis that the two sub-samples have the same performance means and state ownership characteristics. In other words, there is no evidence that suggests the two sub-samples are different. To further confirm my findings in the sub-sample analysis, I test the null hypothesis that the coefficients of relational pluralism are the same between prospectors and defenders. I use

the *suest* postestimation command in STATA to compare the coefficients of my sub-sample analysis models. The results show significant differences between for all models (ROA: Chi-squared: 3945.01, $p < 0.000$; ROE: Chi-squared: 2870.19, $p = 0.000$; Tobin's Q: Chi-squared: 3719.68, $p = 0.000$), therefore, I reject the null hypothesis that the coefficients of relational pluralism are the same in my sub-sample analysis between prospectors and defenders. My interpretation of my findings for the test for firm strategy as a contingency variable remains the same.

Firm Strategy as Moderator in addition to Sub-sample Analysis

In addition to the sub-sample analysis of prospector and defender firms, I examine firm strategy as a moderator in my complete sample, results are displayed in models 13, 14, and 15 (see Table 15). For performance measure ROA, the interaction terms *Firm Strategy* * *Heterogeneity* ($\beta = -0.0782$, $p < 0.01$), *Firm Strategy* * *Connectedness* ($\beta = 0.1138$, $p < 0.001$), *Firm Strategy* * *Skewedness* ($\beta = -0.0307$, $p < 0.01$), and *Firm Strategy* * *Multiplexity* ($\beta = -0.0647$, $p < 0.05$) are significant in the direction consistent with findings in the sub-sample analysis. For performance measure Tobin's Q, the interaction terms *Firm Strategy* * *Heterogeneity* ($\beta = -0.0309$, $p < 0.001$), *Firm Strategy* * *Connectedness* ($\beta = 0.0845$, $p < 0.001$), *Firm Strategy* * *Skewedness* ($\beta = -0.0279$, $p < 0.01$), and *Firm Strategy* * *Multiplexity* ($\beta = -0.0294$, $p < 0.05$) are significant in the direction consistent with findings in the sub-sample analysis. For ROE, none of the five interaction terms are significant, also the interaction term *Firm Strategy* * *Hierarchy* is not significant in any of the three models. The results suggest that firm strategy significantly positively moderates the effects of *Heterogeneity*, *Connectedness*, *Skewedness*, and *Multiplexity* on ROA and Tobin's Q, in other words, prospector firms enjoy the performance benefits of board relational pluralism much more than defender firms. One

interesting observation is that firm strategy does not significantly predict performance in isolation, this finding is consistent with prior research that have linked firm strategy directly to performance (Hambrick, 1983; Kabanoff & Brown, 2008; Sarac, Ertan, & Yucel, 2014), which further strengthens the argument that many factors can influence the performance outcomes of different strategic types (Desarbo et al., 2005; Zahra & Pearce, 1990), in this case, board relational pluralism.

Female Directors and Informal Hierarchy

The emergence of an additional dimension outside of my proposed model is surprising but very interesting. The fifth dimension, which consists of *Gender Diversity* and *Informal Hierarchy* warrants a closer examination of the interaction between female directors and board membership in my data. I suspect that female directors, albeit small in number (8.3% of whole sample), have a high number of board membership when compared to their male counterparts, which explains why the gender diversity and informal hierarchy variables have loaded into a separate dimension of their own. In my data, 4,669 out of 56,256 director level observations (between 2007 and 2010) are female, the average number of board membership of female directors is more than twice that of male directors (3.41 compared to 1.62), and the percentage of female directors who have four or five board seats (five being the maximum allowed per individual²) is considerably higher than male directors with four or five board seats (32.8% compared to 7.6%). This idiosyncrasy in the Chinese context could potentially explain the five dimensional model, compared to the four dimensional model proposed in this study based on existing theoretical and empirical evidence. This observation also suggests that the fifth

² Compared to male directors, there is also a higher percentage of female directors who occupy the maximum of 5 seats. In my sample, 8.2% of females (compared to 1.6% of males) have 5 board memberships.

dimension is uniquely salient in the Chinese context due to the phenomenon of token elite female directors, therefore, it is not unreasonable to assume that my proposed four dimensional model remains theoretically sound, but may not be completely appropriate or accurate when empirically tested in this context.

CHAPTER VII

DISCUSSION

Theoretical Implications

Applying a relational perspective to the board-performance literature answers the call for research in integrating research under agency, resource dependence, and upper echelons theory, as well as promoting the development of a social theory of agency. This paper also contributes to building comprehensive models of board dynamics by integrating literatures in social capital, power relations, and interest alignment. Furthermore, my paper captures important latent characteristics of the board that are traditionally studied in isolation and provides a unifying framework that pieces together relevant dimensions of the board in accordance to the call for interdisciplinary and integrative research.

First of all, my study contributes to the emerging literature on relational pluralism by establishing the construct validity of relational pluralism in board of directors. I argue that the relational pluralism framework proposed and tested in this study represents a reliable way to capture the uniqueness of each board. Building upon the perspective that individuals, teams, and organizations derive their distinctiveness from relations with other entities (Shipilov et al., 2014), I use this relational perspective to reveal neglected or overlooked aspects (i.e. board power dynamics, hierarchy, incentive alignment, etc.) of how boards

utilize social interactions and how they navigate through social systems that inevitably play a part in their effectiveness. By shifting towards a relational approach, we can gain insights on new pathways for research in the governance literature (Gulati et al., 2010; Kilduff et al., & Krackhardt, 2008; Shipilov et al., 2014). In addition to providing empirical evidence to support the existence and validity of the relational pluralism framework, this paper examines the relational pluralism model in the corporate governance context extensively. Multiple facets of director characteristics, ties, identities, power relations, and interlocking directorate networks are observed and aggregated on the board level to represent their focal firms. Unlike prior studies that mainly emphasize on board structure and observable board characteristics, this paper extends the scope of the current literature by not only examining variables that have been well supported, but also supplementing current knowledge with latent relational dimensions illuminated by the relational pluralism framework. In addition to demonstrating the relevance and applicability of the framework, I tailor it specifically for the board to more accurately define the relational pluralism of the board. The results of the exploratory factor analysis and confirmatory factor analysis not only expands the existing understanding of relational pluralism, they also provide encouraging foundations for the current study as well as motivating future studies to continue developing and examining the board relational pluralism framework. My study paves the way for the corporate governance literature to greatly benefit from adopting a relational lens, which supplements and strengthens existing theoretical approaches.

It is worth noting that in this paper, I propose a four dimensional board relational pluralism model based on robust theoretical evidence in the existing literature, however, a five dimensional model emerges from my construct validity analyses. The existence of a fifth

dimension is very interesting to say the least, I argue that the mismatch between my theoretical model and my empirical results can be due to two possible reasons. One reason is that the board relational pluralism framework truly consists of five latent dimensions, and the theoretical justification based on existing evidence for four dimensions does not represent the reality and true nature of board relational pluralism. Therefore, the theoretical development of the four dimensional model needs to be reexamined and modified to reflect the five dimensional model. On the other hand, a different explanation for the fifth dimension is that the empirical setting of this study plays a huge role, due to idiosyncrasies that exist only in this set of data, the proposed four dimensional model is not accurately tested, which leads to the emergence of an extra dimension. As discussed in my post hoc analyses section, this study contains only Chinese firms, and there is a phenomenon that a small elite group of female directors obtain more board memberships per person than their male counterparts. Women who have successfully obtained board positions in China are likely to stand out and become successful in obtaining additional board positions. Although female directors make up only 8.3% of the data³ (4,669 out of 56,256 director level observations between 2007 and 2010), the average number of board membership of female directors is more than twice that of male directors (3.41 compared to 1.62), and the percentage of female directors who have four or five board seats (five being the maximum allowed per individual) is also drastically higher than male directors with four or five board seats (32.8% compared to 7.6%). There is no evidence in current literature that would suggest that this phenomenon, especially the severity of this phenomenon, is common anywhere else. Therefore, it is reasonable to assume that this is unique to the Chinese context, which explains why the *Gender Diversity* and *Informal Hierarchy* variables have loaded into a separate dimension of

³ 8.3% is relatively low compared to US female board membership of 15.7% in 2010, and 35.5% in Scandinavian countries

their own in the EFA step of my empirical tests – empirically, the interaction of these two variables are to be expected, even if there is no theoretical support for the existence of this dimension based on literature that contribute to board relational pluralism. Based on this information, it is likely that the explanation for the mismatch between the proposed four dimensional model and the empirically validated five dimensional model can be attributed to the idiosyncrasies in the data, and is not due to a misrepresentation during theory development or a true five dimensional model.

In addition to developing the multi-dimensional relational pluralism model, this study makes significant contribution to the board-performance linkage literature by examining the performance implications of the model. One of the main reasons for developing a multidimensional view of board relational pluralism is to explore its effect on firm performance. While large systematic studies have failed to produce any consistent evidence to show direct linkage between single characteristics of board composition and board structures (Dalton et al., 1998; van Essen et al., 2012), my study can potentially guide future research toward a more fruitful path.

Although there has been a call for research on the outcomes of relational pluralism (Gulati et al., 2010) to potentially expand and enhance the board-performance literature, no existing paper has a dedicated relational pluralism model specifically made for the corporate governance literature with a focus on predicting firm level performance. Therefore, in addition to establishing the multidimensional model of board relational pluralism and identifying key concepts for each dimension, my study also provides great insights on the model's consequences by focusing on the prediction of relationships between each of the four dimensions and firm performance. Board characteristics in existing literature that fall

under each dimension of the relational pluralism framework are often linked directly to performance. By predicting firm performance with the first order latent variables instead of the indicator variables, I demonstrate that the indicators are just small pieces of the puzzle, contrary to popular belief, they are not enough on their own to answer the questions regarding board-performance linkage. Specifically, my study shows that a firm's board has differentiated effects on firm performance outcomes in terms of five dimensions, where four (originally proposed) out of the five dimensions are found to significantly affect firm performance (ROA and Tobin's Q). Therefore, by developing and introducing the relational pluralism framework and testing it with longitudinal and comprehensive data, this paper provides theoretical and empirical contributions to the board-performance literature.

Furthermore, as noted by many some scholars (Dalton et al., 1998; Dalton et al., 1999; Rhoades et al., 2001; Larcker et al., 2013; Westphal & Zajac, 2013), the board and firm performance relationship is inevitably affected by the firm's strategic behavior, the organizational context dictates the governance choices of organizations, which could directly influence boards' ability to affect firm performance. Applying the relational pluralism model to the board-performance literature necessarily leads to the consideration concerning the strategic contexts under which the firms operate. My study successfully demonstrates the contingent nature of board relational pluralism, and exhibits that four out of the five relational pluralism dimensions have differential effects on firm performance (ROA and Tobin's Q) under different strategic contexts.

In addition, not only does relational pluralism impact prospector firms' performance more than that of defender firms, my results provide strong evidence that relational pluralism do not have influence defender firms much at all. This observation motivates the consideration for

other potential moderators. In particular, firms in different industries are likely to have differentiated performance effect for relational pluralism. I suspect that firms in industries that place more emphasis on R&D and risk taking (e.g., electronics, instruments, information technologies, etc.) and industries that in general have more prospectors will benefit more from board relational pluralism.

Managerial Implications

This study also has managerial implications in that the board relational pluralism framework can potentially serve as a guideline to help firms, especially prospector firms, with decisions regarding board member appointments, retention, and perhaps even removal. By using the board relational pluralism framework proposed and tested in this study as a reference, firms are more likely to make board composition decisions in an informed way to maximize the performance benefits that directors can bring to the firm.

In particular, having both educational and functional background diversity in the boardroom is not beneficial to firm performance as previously expected (see Models 4-6, Table 8). Although there is some evidence to suggest a bell shaped relationship between board diversity and performance, in other words, diversity perhaps positively affects performance up to a certain point before the effect becomes negative, the findings in this study strongly suggests that having diverse boards harms performance. If the impact of board diversity on corporate performance is negative, as shown in this study, and requires implementation costs, such as hiring directors for the sake of increasing diversity (Gregoric et al., 2013), transaction cost of managing diverse boards (Deon, Carbado, & Gulati, 2003), adjusting to diverse perspectives and dealing with higher levels of miscommunication (Li &

Hambrick, 2005), then managers must question the notion that more diversity is better for the board. When the performance effects of board diversity are unclear, should shareholders sustain the costs of inducing greater board diversity? According to the findings of this study, having board members who are very different from each other will hurt both accounting (i.e. reducing the growth rate of ROA by 27.11% and ROE by 14.76%) and market performance (i.e. reducing the Tobin' Q ratio by 19.8%), therefore, two potential managerial decisions can address this problem: on one hand, board members' educational and occupational background should be relatively homogeneous, since complete homogeneity is almost impossible (e.g. Chinese public boards must have at least one independent director with accounting background), it is important to minimize the likelihood of within board sub-group formations⁴. On the other hand, boards can attempt to promote social cohesion and minimize conflict between diverse members. This method can alleviate the negative outcomes of board diversity while maintaining the potential benefits of diversity. However, it is uncertain what is required to successfully encourage social cohesion amongst diverse board members in a cost effective way, so cost-benefit analyses are needed to determine the optimal plans of future action in this case.

Well connected firms, on the other, are shown to reap performance benefits (see Models 4-6, Table 8). A board's connectedness, or its collective social capital, can be manipulated by selecting directors based on their interlock network positions. A director's social and economic networks serve as conduits for interpersonal and interorganizational support, influence, and information flow (Larcker, So, & Wang, 2013), therefore, it is crucial

⁴ For example, in a board of 9 directors, if 3 are accountants, 3 are engineers, and 3 are lawyers, this board will exhibit very high functional background diversity and it is likely that there will be three sub-groups within this board based on directors' backgrounds.

for firms to find directors who have advantageous and strong social networks. Although it is likely that directors' networks extend beyond those associated with formal board appointments and are influenced by informal social connections, it is important to note that formal and informal networks are positively correlated and can be complementary (Hwang & Kim, 2012; Westphal, Boivie, Chng, & Han, 2006). Board members' formal or professional ties, in this case, interlocking ties, are a perfect way for firms to identify valuable directors because these ties are visible and quantifiable. Boards with well-connected directors enjoy central positions within the interlock network, which can lead to more opportunities to gather information and participate in resource exchange; well-connected boards also exhibit closeness of ties to outside boards, from which they can attain more direct access to beneficial resources; and finally, well-connected boards occupy interlock positions that are in between more pairs of outside board, which makes it more important as an information broker. The findings of this study, demonstrate that board connectedness can improve the growth of ROA by 5.43%, ROE by 3.07%, and Tobin's Q by 4.78%, which supports the notion that well-connected firms outperform firms with less connected boards, can be used to guide firms in using a director's connectedness as one of the criteria or references for selection and retention.

My study also demonstrate that firms with boards that exhibit high levels of multiplexity performance better (see Models 4-6, Table 8). Directors serving on the same board often share a common network through the formal appointment to the board, but some directors hold multiple identities and additional relationships outside of the board that can benefit firm outcomes. In particular, the results of my study show that multiplex boards improve the growth of ROA by 22.92%, ROE by 11.07%, and Tobin's Q by 19.17%. Firm

can potentially benefit via maintaining a high number of outside directors on their boards to protect the separation of ownership and control (Jensen & Mecklin, 1976) and to represent the interests of large shareholders (Qu, Wu, & Zhang, 2000; Peng, 2004; Ramaswamy, Li, & Veliyath, 2002). Boards should also seek out directors who are politically connected to reduce environmental and institutional uncertainty (Hillman, 2005; Lang & Lockhart, 1990) and get access to financial resources at more favorable and convenient conditions (Faccio, 2010). In addition, firms should always give directors stock options as part of their compensation in order to maximize directors' incentives to provide effective monitoring and oversight of important corporate decisions (Bhagat & Bolton, 2014).

Furthermore, firms can also make more informed decisions about the composition of their boards by examining the distribution of power and influence amongst board members. When the board grants certain individuals significantly more decision power than others, the power balance is disturbed, which decreases the likelihood that the board can successfully accomplish its advisory and monitoring responsibilities. Power imbalance is extremely detrimental to group effectiveness and commitment because it can lead to workplace bullying and aggression (Hoel, Einarsen, & Cooper, 2003; Keashly & Jagatic, 2003). The findings of this study provides strong evidence that boards with high skewedness suffer performance consequences such as a decrease in growth of ROA by 17.21%, ROE by 8.76%, and Tobin's Q by 14.54% (see Models 4-6, Table 8). Firms can decrease their boards' skewedness by eliminating CEO duality and put forth measures to suppress the board presence of controlling shareholder directors.

Limitations and Future Research

Corporate governance institutions in emerging economies such as China have come very far in terms of reforming under Anglo-American standards over the past two decades. However, certain aspects of the Chinese corporate governance are still not developed to the same degree as in the US (Heugens, van Essen, & van Oosterhout, 2009), and there are still some differences between Chinese and US boards, as well as differences in the institutional environment in which they operate in.

The China Securities Regulatory Commission (CSRC) implemented "The Guidance for Establishing Independent Director Institution in Listed Companies" in 2002. The regulation requires public companies to hire independent directors to safeguard the interests of the company and the interests of public shareholders. A revision of China's Company Law in October 2005 has made the independent director requirement a legal necessity. As a result, a majority of companies were pressured to acquire experienced directors from other companies as independent directors to fill the quota. Therefore, interlocking networks have grown at a tremendous rate over a short period of time, and the formation of these networks have not been as organic as those built by US boards over a much longer period of time. This phenomenon can potentially weaken the relationship between board *Connectedness* and performance in the current study, in other words, conducting this study in the US context is likely to yield stronger results. However, the regulation has been in place in China for several years, and the motivation and benefits for forming interlocking networks in Chinese boards are shown to be aligned with those of US firms (Markóczy, Sun, Peng, Shi, & Ren, 2013). Nevertheless, the relationship between *Connectedness* and performance (ROA and Tobin's Q) exhibited in this study are consistently positive and strong, which provides

evidence to support the notion that board interlocks and board network position advantages positively affect performance in the Chinese context. Future research should reexamine the performance effect of board *Connectedness* in other contexts to compare the findings with the findings of this study. In addition, future research can examine the relationship between *Connectedness* and performance in the Chinese context over a longer period of time to examine whether or not the effect becomes stronger. In doing so, future research will be able to replicate the findings of this study and provide evidence to either support or challenge the idea that benefits for forming interlocking networks in Chinese boards are consistent with those of US firms. Another direction for future research is including data on informal network capital of Chinese boards to more fully represent the *Connectedness* dimension. The corporate governance environment in China are more relationship-based than rule-based, therefore, directors' informal networks such as personal contacts, family members, business partners, coworkers in other firms, and personal friendships, etc., can also be extremely important in affecting the performance benefits that directors bring to their firms.

Another difference lies within board composition. Chinese boards, very much like US boards, consist of inside directors, who are current executives within the firm, and outside directors, who are non-management members (Peng, 2004). Unlike US boards, Chinese boards further categorize outside directors into two groups: (1) independent directors and (2) shareholder directors, who sit on the board on behalf of major shareholders. In the US, although major shareholders may be active participants in choosing independent directors, the chosen independent directors are usually not directly affiliated with the shareholder. In China, shareholder directors must be part of the institute of shareholders and are handpicked to be advocates and representatives for shareholder interests. The existence of this distinct

group of outside directors can potentially strengthen the relationship between board *Multiplexity* and performance because having shareholder directors in the outside director group makes the board more likely to effectively perform its monitoring function by lessening agency problems (Westphal & Zajac, 2013). Therefore, the effect observed in this study may be greater than that of a US study. Future studies can separate the two groups of outside directors and examine the potential moderating effect of outside director type on the performance effect of *Multiplexity*.

Chinese firms also differ from US firms in terms of compensation structure. While most US firms use the one size fits all models and pay their independent directors equally in the form of an annual retainer and stock options, Chinese directors on the same board can receive different types and varying amounts of compensation, and stock option payment is not nearly as common as in the US. One major reason for having variance in director compensation in China is the fact that experienced directors in China are highly demanded. The Chinese government restricts the maximum number of board that each director can sit on to five. This limitation alongside the independent director requirement greatly increased the demand for experienced directors. Furthermore, the number of Chinese firms that have gone public has almost doubled over the past decade (Ernst & Young Global IPO trends, 2012), which makes qualified directors even more desirable. The five-board per director limit could lead to the creation of “shadow directors”, where certain individuals performance all functions of a director and are compensated accordingly, but do not appear on public records. This could be a potential problem to the current study, especially the *Multiplexity* dimension of board relational pluralism, because these hidden directors and their information are not available to be analyzed, and the *independent director representation* variable could be

inaccurately reported. Along the same line of thought, directors with significant political connections may actively seek to avoid official affiliations with firms. These directors are often extremely valuable, but they are hidden from publically available data, which could affect the *political ties* variable. The shadow director phenomenon will especially be problematic in the Chinese context after 2011 due to new laws that forbid university educators and government officials from getting additional paychecks outside of their primary jobs. Overall, it is likely that the predictive power of the *Multiplexity* dimension is suppressed and weakened in the Chinese setting. Future relational pluralism studies, especially those that use Chinese data after year 2011 should be cognizant of this potential issue, in addition, future studies should examine the board relational pluralism model in non-public firms, as well as other institutional contexts, to lessen issues regarding shadow directors and shed light on its generalizability.

Another important contextual difference is that it is especially difficult for women to become directors in China (Hewlett & Rashid, 2011). Female directors are relatively rare and are often highly visible. Therefore, women who have successfully obtained board positions are likely to be viewed as a scarce resource and therefore have a much easier time in obtaining additional board positions. This idiosyncrasy in the Chinese context likely provides the explanation for the empirical results of a five dimensional model, compared to the four dimensional model proposed in this study. As abovementioned, the five dimensional model may not apply in a non-Chinese context. Future studies need to reexamine the number of dimensions that are valid in this model in other contexts as well as reexamining the construct validity of the board relational pluralism framework. Based on existing literature, which are largely based on US and

European data, a four dimensional model, as originally proposed in this study, is likely to be more fitting.

In addition the racial demographics of China and US are quite different. One of the major board demographics characteristics that have been examined in the existing literature is board racial diversity (Carter et al., 2003; Erhardt et al., 2003). However, the overwhelming majority of Chinese public companies do not have any non-Chinese directors. Therefore, it is impossible to examine the effect of board racial diversity on performance in this study. Future studies that use the relational pluralism framework to examine board-performance linkage should include racial diversity in the board heterogeneity dimension if possible.

Another interesting finding that can potentially motivate a new stream of research is the unexpected results for Hypothesis 2 regarding board *Heterogeneity* and its consistently significant negative impact on firm performance. Theoretically and empirically, board diversity is an aspect of the board that has received rigorous investigation in the corporate governance literature (Cannella, Park, & Lee, 2008; Carpenter, Geletkanycz & Sanders, 2004; Finkelstein & Hambrick, 1996). Studies have shown that heterogeneous boards are more likely to have effective problem solving, increased creativity, and a better understanding of the market (Cannella, Park, & Lee, 2008; Carter, Simkins, & Simpson, 2003), and provide novel insights and perspectives that lead to improved organizational value (Carter et al., 2003; Coffey & Wang, 1998). However, social psychological perspectives have suggested that heterogeneity in a group can lead to a low degree of social integration and difficulties in communications (Hambrick, Cho, and Chen, 1996; Michel and Hambrick, 1992; Smith et al., 1994; Westphal and Bednar, 2005). Perhaps, the findings in

my study regarding board heterogeneity can be explained by taking on an interdisciplinary approach. In a recent study, board heterogeneity reduces effective communications among directors and exacerbates group polarization bias (Zhu, 2013). While prevailing perspectives on corporate governance often emphasize the benefits of diverse boards' influence on strategic decisions (Cannella, Park, & Lee, 2008; Hambrick & Mason, 1984), the theory and findings from Zhu's (2013) study suggest that board diversity can also add certain group decision-making biases to strategic decisions and become detrimental to firm outcomes. Future studies need to further explore the potential negative performance implications of board heterogeneity and contribute to the emerging interdisciplinary stream of corporate governance research.

Finally, a major institutional characteristic of China that could potentially affect the implication and generalizability of this study is ownership structure. After years of market reform, the corporate structure of listed firms in China appears very similar to listed firms in the West (Wong, 2016), but ownership structure of these firms remains very different from most other market economies, with the most important feature being the dominance of government ownership. Many listed firms are restructured from SOEs, and when they go public, assets previously owned by the government are converted into shares owned directly or indirectly by the government. As a result, the government to this day still dominates the ownership of many public firms in China. Although there is a steady decrease in the percentage of SOEs in listed firms every year (74.86% in 2003, compared to 37.88% in 2014), SOEs still make up a significant portion (41.9%) of the listed firms this study. Government control over Chinese SOEs has many negative effects on firm outcomes – for example, SOEs often have lower performance and depressed share prices when compared to

non-SOEs (Allen et al., 2015); CEOs who are current government officials underperform CEOs without political affiliations (Fan et al., 2007); and SOEs often have symbolic directors, who do not have any meaningful influence over management decisions and firm outcomes (Wong, 2016); in addition, many SOEs in China have been converted to privately owned companies over the past decade to promote privatization, but most of these firms are still partially controlled by the government via having government affiliated managers and large government shareholders (Leutert, 2016). These findings raise the concern that the large representation of SOEs in this study may have weakened my results overall. In particular, the positive effect of *Multiplexity* is likely to be weaker in this study than what I might find in other contexts because politically connected directors in the Chinese context do not always benefit the firm. Future studies that examine politically tied directors need to find ways to identify whether or not they are on the board to bring in useful resources to benefit the firm, or appointed by the government to apply influence and control over the firm. Future studies can also focus on determining the true level of government influence on a firm based on company history, CEO political affiliation, managers/directors appointed by the government, large shareholder political affiliations, and other factors that can help us gauge the level of state control that may not be captured by the official public categorization of state ownership. Future studies can also examine the potential moderating effect of various levels of government control on board relational pluralism and performance.

On a positive note, China has rigorously pushed for partial corporate privatization and decentralization in the past decade to increase its economic competitiveness against other market economies in the global market (Wong, 2016). In particular, numerous regulatory changes have been implemented to limit the control of government ownership and to protect

the interests of minority shareholders (Berkman, Cole, & Fu, 2011). One decentralization strategy that has been especially effective is the creation of “corporate pyramids” (e.g. company A is partially owned by parent company B, and parent company B is completely owned by the State, therefore, there is a corporate layer in between the State and company A, the overall structure is a two-layer corporate pyramid) by local governments, where corporate layers between the government and listed firms at the bottom of the pyramid can mitigate government intervention due to information loss (Fan et al., 2013). Adding corporate layers between the government and listed firms prevents the government from having direct contact with the firms’ strategic and operational information. Many local governments use this strategy to credibly commit to decentralization without having to adopt full privatization measures. This recent trend in regional privatization practices can potentially guide future research to examine the effect of regional institutional environment on the board-performance relationship. One way to explore this is to examine whether or not there are differentiated effects of board relational pluralism on performance between different provinces or regions. To take things one step further, aspects of regional institutional environment can be assessed by examining the Marketization index (Cordeiro, He, Conyon, & Shaw, 2013; Li & Qian, 2013; Markóczy, Sun, Peng, & Ren, 2013; Peng, Sun, & Markóczy, 2015), which measures China’s institutional development and market reforms on the regional level. The marketization index can be used in future studies as a potential moderator for board relational pluralism and firm performance in order to shed light on the effects of regional level institutional characteristics on board-performance relationship.

Conclusion

This study is a large step towards developing a more comprehensive theory of relational pluralism in strategy research. By theoretically developing and empirically validating the relational pluralism framework in corporate boards, this study brings to the attention of managers the need to consider the entire composition of their boards on both observable characteristics and latent dynamics between board members. Although an enormous amount of research has focused on the direct link between board characteristics and firm performance, inconsistent and inconclusive findings has troubled scholars for decades – one of the most important goals that I hope to accomplish with this study is to motivate future research to steer away from simply linking surface level board characteristics directly to firm outcomes. As many papers have exhibited, examining isolated board characteristics do not often yield meaningful or generalizable results. I demonstrate in this study that it is extremely valuable to explore latent board social dynamics and the interaction of key board characteristics when attempting to predict performance outcomes.

Ultimately, with the growth of interest and attention on topics in corporate governance effectiveness, incremental reforms and transformations of corporate boards are likely to occur in the foreseeable future. An understanding of how board characteristics interact with each other to affect firm performance is not only instrumental to managers' ability to effectively serve their firms, it is also essential for policy and law makers to make educated decisions regarding corporate governance regulations and reforms to protect and ensure the well-being of all stakeholders, and the economy at large.

Figure 1 Board Relational Pluralism Theoretical Framework

Figure 2 Second-order confirmatory factor analysis structural equation model (2010 sample)

Table 1 Descriptive Statistics and Bivariate Correlation Matrix (12 indicator variables used in EFA) – Full Sample

	N	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12
1. Occupational diversity	4688	0.288	0.149	1											
2. Educational diversity	4688	0.164	0.155	0.515	1										
3. Gender diversity	4688	0.063	0.083	0.234	0.382	1									
4. Closeness centrality	4688	0.021	0.088	-0.018	0.014	0.020	1								
5. Degree centrality	4688	11.75	3.994	0.017	0.018	0.015	0.698	1							
6. Betweenness centrality	4688	89.26	123.3	-0.023	0.014	0.018	0.420	0.839	1						
7. Independent directors	4688	3.306	0.746	0.022	0.017	0.012	0.155	0.797	0.141	1					
8. Stock ownership	4688	3.732	1.570	-0.026	0.013	0.046	0.048	0.434	0.063	0.736	1				
9. Political ties	4688	1.132	1.638	0.024	0.022	0.141	0.622	0.715	0.010	0.719	0.817	1			
10. Informal Hierarchy	4688	0.297	0.255	0.019	0.021	0.425	-0.037	0.025	0.025	0.016	-0.023	0.030	1		
11. CEO duality	4688	0.146	0.327	-0.034	-0.017	-0.014	-0.063	-0.017	-0.041	-0.054	-0.531	-0.021	-0.033	1	
12. Controlling Shareholder	4688	0.122	0.330	0.014	-0.047	-0.036	0.077	-0.011	-0.003	-0.023	0.103	-0.032	-0.268	0.610	1

*All correlation coefficients are significant at the .05 level (two-tailed).

Table 2 Results of KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.719
Approx. Chi-Square		7474.565
Bartlett's Test	df	59
	Sig.	.000

Table 3 Results of Principal Component Analysis

Communalities		
	Initial	Extraction
Occupational diversity	1.000	.884
Educational diversity	1.000	.880
Degree centrality	1.000	.962
Closeness centrality	1.000	.796
Betweenness centrality	1.000	.918
CEO duality	1.000	.861
Controlling shareholder	1.000	.781
Independent director	1.000	.836
Political ties	1.000	.922
Stock ownership	1.000	.833
Informal Hierarchy	1.000	.715
Gender diversity	1.000	.822

Extraction Method: Principal Component Analysis.

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.770	23.082	23.082	2.770	23.082	23.082
2	2.339	19.489	42.571	2.339	19.489	42.571
3	1.301	10.838	53.409	1.301	10.838	53.409
4	1.029	8.576	61.985	1.029	8.576	61.985
5	1.020	8.504	70.489	1.020	8.504	70.489
6	.968	8.065	78.554			
7	.892	7.430	85.984			
8	.733	6.111	92.095			
9	.625	5.208	97.303			
10	.187	1.555	98.858			
11	.088	.729	99.588			
12	.049	.412	100.000			

Extraction Method: Principal Component Analysis.

Table 4 Component Matrix

	Component				
	1	2	3	4	5
Occupational diversity	.891				
Educational diversity	.861				
Degree centrality		.882			
Closeness centrality		.796			
Betweenness centrality		.690			
CEO duality			-.791		
Controlling shareholder			-.691		
Independent director				.815	
Political ties				.773	
Stock ownership				.625	
Informal Hierarchy			.401		.761
Gender diversity					.621

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Table 5 Construct validity of the board relational pluralism model: five-factor solution
Path coefficients year-wise results

	2007	2008	2009	2010
<i>Measurement model</i>				
Occupational diversity: HETEROGENEITY	1.00	1.00	1.00	1.00
Educational diversity: HETEROGENEITY	0.97	0.95	0.92	0.96
Degree Centrality: CONNECTEDNESS	1.00	1.00	1.00	1.00
Closeness Centrality: CONNECTEDNESS	0.52	0.50	0.51	0.52
Betweenness Centrality: CONNECTEDNESS	0.84	0.83	0.83	0.84
CEO Duality: SKEWEDNESS	-0.88	-0.87	-0.90	-0.93
Controlling Shareholder: SKEWEDNESS	1.00	1.00	1.00	1.00
Independent directors: MULTIPLEXITY	1.12	1.04	0.98	1.09
Stock ownership: MULTIPLEXITY	1.00	1.00	1.00	1.00
Political ties: MULTIPLEXITY	0.93	0.92	0.86	0.91
Informal hierarchy: HIERARCHY	1.00	1.00	1.00	1.00
Gender diversity: HIERARCHY	0.48	0.41	0.40	0.46
<i>Structural model</i>				
HETEROGENEITY: RELATIONAL PLURALISM	0.96	0.94	0.83	0.85
CONNECTEDNESS: RELATIONAL PLURALISM	1.29	0.98	0.91	0.99
SKEWEDNESS: RELATIONAL PLURALISM	0.82	0.73	0.71	0.74
MULTIPLEXITY: RELATIONAL PLURALISM	0.45	0.41	0.38	0.4
HIERARCHY: RELATIONAL PLURALISM	0.65	0.62	0.56	0.58
Sample size	586	586	586	586
d.f.	66	66	66	66
Satorra-Bentler	22.58	19.92	21.22	23.74
Chi-Square	($p < 0.11$)	($p < 0.25$)	($p < 0.18$)	($p < 0.09$)
NFI	0.92	0.92	0.93	0.92
GFI	0.91	0.91	0.92	0.92
RFI	0.97	0.97	0.98	0.98

Table 6 Hausman's Specification Test for Model Fit

	ROA	ROE	Tobin's Q
chi²	65.84	23.64	55.97
Prob > chi²	0.0000	0.0028	0.0000

Table 7 Description Statistics and Correlation Matrix

	Variable	Mean	Std.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Firm Size	21.30	1.19	9.158	27.54	1															
2	Meetings	3.55	1.22	1.000	21.00	0.0219	1														
3	Board Size	12.00	2.23	1.000	25.00	-0.0079	0.1476	1													
4	Compensation	14.04	2.79	7.530	19.01	0.0397	0.0050	-0.0085	1												
5	Director Age	48.57	0.87	46.60	53.01	0.0234	0.0435	0.2134	-0.0133	1											
6	Director Tenure	2.92	0.80	1.000	5.780	0.0428	0.0090	0.0312	-0.0350	0.0202	1										
7	SOE	0.42	0.49	0.000	1.000	0.0152	0.0050	-0.0101	-0.0039	-0.0017	-0.0023	1									
8	ROA	0.03	8.42	-0.33	0.29	0.0329	0.0038	-0.0103	0.0380	-0.0165	-0.0502	-0.0149	1								
9	ROE	0.02	9.36	-0.26	0.64	0.0213	0.0037	0.0031	0.0091	-0.0134	-0.0030	-0.0166	0.4892	1							
10	Tobin's Q	1.36	1.30	0.10	2.72	0.0199	-0.0197	-0.0236	0.0250	-0.0083	-0.0266	-0.0396	0.0242	0.0231	1						
11	Factor Score 1	0.00	1.00	-0.138	5.077	-0.0171	-0.0043	0.0317	-0.1997	-0.0135	0.0877	-0.0123	-0.0934	-0.0414	0.0217	1					
12	Factor Score 2	0.00	1.00	-1047	15.00	-0.0025	-0.0065	0.0211	-0.0043	-0.0169	0.0048	0.0151	0.0417	0.0140	0.0230	0.0000	1				
13	Factor Score 3	0.00	1.00	-527.3	11.41	-0.0398	0.0048	-0.0021	0.0056	-0.0205	0.0122	-0.0224	-0.1264	-0.0853	0.0191	0.0000	0.0000	1			
14	Factor Score 4	0.00	1.00	-152.4	9.063	-0.0252	-0.0025	-0.0128	-0.0260	-0.0044	0.0212	0.0369	0.0734	0.0035	0.0239	0.0000	0.0000	0.0000	1		
15	Factor Score 5	0.00	1.00	3.519	151.7	0.0015	-0.0067	0.0020	-0.0172	-0.0072	0.0126	0.0050	-0.0158	0.0241	0.0190	0.0000	0.0000	0.0000	0.0000	1	
16	Firm Strategy	0.53	0.49	0.000	1.000	0.0190	0.0293	0.0144	-0.0121	0.1490	0.0731	-0.0088	0.0089	0.0056	0.0076	0.0319	0.0139	0.0112	0.0108	0.008	1

Notes: * Correlations above |.012| are significant at the .01 level. N = 4688

Table 8 Fixed Effects Regressions on Firm Performance (ROA, ROE, & Tobin's Q)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	ROA	ROE	Tobin's Q	ROA	ROE	Tobin's Q
Firm Size	0.0464***	0.0400***	0.0150***	0.0451**	0.0387**	0.0120**
Board Size	0.1079*	0.0221	0.0313	0.1035*	0.0210	0.0392
Advisory Committee	0.0780	0.0775	-0.0249	0.0825	0.0782	-0.0403
SOE	-0.0512***	-0.0285**	-0.0903***	-0.0142**	-0.0094**	-0.0557**
Director Age	0.0288	0.0184	0.0204	0.0285	0.0200	0.0168
Director Tenure	0.0536	-0.0333	-0.0774	0.0611	-0.0290	-0.0619
Board Compensation	-0.0599*	-0.0373	-0.0544*	-0.0776*	-0.0448	-0.0919**
Firm Strategy	0.0512	-0.0215	0.0588	0.0436	-0.0123	0.0647
Factor Score 1 (H2) Heterogeneity				-0.2711***	-0.1476*	-0.1980**
Factor Score 2 (H4) Connectedness				0.0543*****	0.0307**	0.0478*****
Factor Score 3 (H5) Skewedness				-0.1721*****	-0.0876*	-0.1454*****
Factor Score 4 (H3) Multiplexity				0.2292*****	0.1107*	0.1917*****
Factor Score 5 Hierarchy				0.0096	-0.0195	0.0278
Constant	-0.0739	-0.0178	-0.0678	0.0267	0.0789	0.2775
Year, province, industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Firm fixed effects	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Observations	3,516	3,516	3,516	3,516	3,516	3,516
R-squared	0.0341***	0.0144*	0.0358***	0.0789*****	0.0280*	0.0610***
Change in R-squared				0.0448*****	0.0136*	0.0252***

Notes: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ***** $p < 0.0001$.

Table 9 Fixed effects Regressions on Firm Performance (ROA)
with Firm Strategy as Contingent Variable

	Model 4	Model 7	Model 8
	Complete set	Prospector firms	Defender firms
Firm Size	0.0451**	0.0159	0.0019
Board Size	0.1035*	0.1287	0.0591
Advisory Committee	0.0825	0.0651	0.0694
SOE	-0.0142**	-0.0296	-0.0195
Director Age	0.0285	-0.0169	0.0254
Director Tenure	0.0611	0.0882	0.0835
Board Compensation	-0.0776*	-0.100	0.0678
Factor Score 1 Heterogeneity	-0.2711***	-0.3698**	0.1728
Factor Score 2 Connectedness	0.0543****	0.0721***	0.0036
Factor Score 3 Skewedness	-0.1721****	-0.2259****	0.0214
Factor Score 4 Multiplexity	0.2292****	0.2712**	0.0526
Factor Score 5 Hierarchy	0.0096	-0.0052	0.0145
Constant	0.0267	0.2087	0.0106
Year, province, industry	Controlled	Controlled	Controlled
Firm fixed effects	Controlled	Controlled	Controlled
Observations	3,516	1,863	1,653
R-squared	0.0789****	0.0977****	0.0458
Change in R-squared	0.0448****	0.0636****	0.0117

Notes: ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

Table 10 Fixed effects Regressions on Firm Performance (ROE)
with Firm Strategy as Contingent Variable

	Model 5	Model 9	Model 10
	Complete set	Prospector firms	Defender firms
Firm Size	0.0387**	0.0127	0.0835
Board Size	0.0210	0.0015	0.0582
Advisory Committee	0.0782	0.0805	-0.0244
SOE	-0.0094**	-0.0389	0.0323
Director Age	0.0200	0.0152	0.0298
Director Tenure	-0.0290	-0.1433	-0.0176
Board Compensation	-0.0448	-0.0542	0.0054
Factor Score 1 Heterogeneity	-0.1476*	-0.4879*	0.7939
Factor Score 2 Connectedness	0.0307**	0.0310	0.0756
Factor Score 3 Skewedness	-0.0876*	-0.0916	-0.0421
Factor Score 4 Multiplexity	0.1107*	0.1039	0.1834
Factor Score 5 Hierarchy	-0.0195	0.0117	-0.0350
Constant	0.0789	0.2896	0.0014
Year, province, industry	Controlled	Controlled	Controlled
Firm fixed effects	Controlled	Controlled	Controlled
Observations	3,516	1,863	1,653
R-squared	0.0280*	0.0420*	0.0191
Change in R-squared	0.0136*	0.0276*	0.0047

Notes: ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

Table 11 Fixed effects Regressions on Firm Performance (Tobin's Q)
with Firm Strategy as Contingent Variable

	Model 6	Model 11	Model 12
	Complete set	Prospector firms	Defender firms
Firm Size	0.0120**	0.0112	0.0120
Board Size	0.0392	0.0253	0.0547
Advisory Committee	-0.0403	-0.0831	-0.0028
SOE	-0.0557**	-0.0634	0.0327
Director Age	0.0168	-0.0416	0.0496
Director Tenure	-0.0619	-0.0648	-0.2107
Board Compensation	-0.0919**	-0.1488*	-0.0293
Factor Score 1 Heterogeneity	-0.1980**	-0.3077*	-0.0316
Factor Score 2 Connectedness	0.0478****	0.0590**	0.3995
Factor Score 3 Skewedness	-0.1454****	-0.1954***	-0.0787
Factor Score 4 Multiplexity	0.1917****	0.2940***	-0.0637
Factor Score 5 Hierarchy	0.0278	0.0401	0.0142
Constant	0.2775	0.4229	0.1407
Year, province, industry	Controlled	Controlled	Controlled
Firm fixed effects	Controlled	Controlled	Controlled
Observations	3,516	1,863	1,653
R-squared	0.0610***	0.0925***	0.0501
Change in R-squared	0.0252***	0.0567***	0.0143

Notes: ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

Table 12 Quadratic Fit on Firm Performance (ROA, ROE, & Tobin's Q) Year-wise

DV	Year	IV & Quadratic term	<i>B</i>	<i>t</i>	<i>p</i>
ROA	2007	Heterogeneity	1.933	1.908	.067
		Heterogeneity ** 2	-.771	-2.094	.057
		(Constant)	2.179	3.967	.000
ROE	2007	Heterogeneity	2.081	.767	.443
		Heterogeneity ** 2	-.767	-.778	.437
		(Constant)	4.526	3.075	.002
Tobin's Q	2007	Heterogeneity	.115	1.371	.171
		Heterogeneity ** 2	-.039	-1.272	.204
		(Constant)	1.323	29.115	.000
ROA	2008	Heterogeneity	.861	.845	.398
		Heterogeneity ** 2	-.363	-1.061	.289
		(Constant)	5.032	8.335	.000
ROE	2008	Heterogeneity	.870	.366	.314
		Heterogeneity ** 2	-.457	-.572	.567
		(Constant)	8.436	5.990	.000
Tobin's Q	2008	Heterogeneity	.053	.348	.228
		Heterogeneity ** 2	-.016	-.309	.257
		(Constant)	2.281	25.422	.000
ROA	2009	Heterogeneity	.389	.358	.320
		Heterogeneity ** 2	-.169	-.455	.349
		(Constant)	5.087	7.733	.000
ROE	2009	Heterogeneity	-3.641	-1.471	.141
		Heterogeneity ** 2	1.129	1.335	.182
		(Constant)	9.040	6.025	.000
Tobin's Q	2009	Heterogeneity	.013	.076	.339
		Heterogeneity ** 2	-.039	-.689	.491
		(Constant)	2.325	22.983	.000
ROA	2010	Heterogeneity	.245	.234	.215
		Heterogeneity ** 2	-.033	-.083	.334
		(Constant)	7.382	12.841	.000
ROE	2010	Heterogeneity	2.931	1.402	.161
		Heterogeneity ** 2	-.603	-.757	.449
		(Constant)	7.649	6.661	.000
Tobin's Q	2010	Heterogeneity	.323	1.572	.116
		Heterogeneity ** 2	-.086	-1.105	.269
		(Constant)	2.141	18.987	.000

Table 13 Fixed Effects Regressions on Firm Performance with SOE Moderators (ROA, ROE, & Tobin's Q)

	Model 4	Model 5	Model 6	Model 13	Model 14	Model 15
	ROA	ROE	Tobin's Q	ROA	ROE	Tobin's Q
Firm Size	0.0451**	0.0387**	0.0120**	0.0318**	0.0284**	0.0098**
Board Size	0.1035*	0.0210	0.0392	0.1035	0.0210	0.0392
Advisory Committee	0.0825	0.0782	-0.0403	0.0825	0.0782	-0.0403
SOE	-0.0142**	-0.0094**	-0.0557**	-0.0196*	-0.0094*	-0.0557*
Director Age	0.0285	0.0200	0.0168	0.0285	0.0200	0.0168
Director Tenure	0.0611	-0.0290	-0.0619	0.0611	-0.0291	-0.0612
Board Compensation	-0.0776*	-0.0448	-0.0919**	-0.0476**	-0.0442	-0.0924**
Firm Strategy	0.0436	-0.0123	0.0647	0.0404	-0.0098	0.0527
Factor Score 1 (H2) Heterogeneity	-0.2711***	-0.1476*	-0.1980**	-0.2421**	-0.1432*	-0.1951**
Factor Score 2 (H4) Connectedness	0.0543****	0.0307**	0.0478****	0.0591***	0.0301*	0.0396**
Factor Score 3 (H5) Skewedness	-0.1721****	-0.0876*	-0.1454****	-0.1787***	-0.0866*	-0.1398****
Factor Score 4 (H3) Multiplexity	0.2292****	0.1107*	0.1917****	0.1497***	0.1036*	0.1577***
Factor Score 5 Hierarchy	0.0096	-0.0195	0.0278	0.0092	-0.0184	0.0367
SOE * Heterogeneity				0.0533	-0.0128	-0.0188
SOE * Connectedness				0.0752	-0.0265	0.0718*
SOE * Skewedness				0.0482	0.0812	-0.0092
SOE * Multiplexity				-0.0628	0.0011	0.0462
SOE * Hierarchy				-0.0743	-0.0763	0.0192
Constant	0.0267	0.0789	0.2775	0.0225	0.0679	0.2144
Year, province, industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Firm fixed effects	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Observations	3,516	3,516	3,516	3,516	3,516	3,516
R-squared	0.0789****	0.0280*	0.0610***	0.0816****	0.0297*	0.0745****
Change in R-squared	0.0448****	0.0136*	0.0252***	0.0017	0.0017	0.0135*

Notes: ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

Table 14 Sub-sample t-tests between Defenders and Prospectors on Performance (ROA, ROE & Tobin's Q) and State Ownership

ROA

Firm Strategy	Mean	Std. Dev.	95% Confidence Interval	
Defender	5.216	8.610	5.014	5.734
Prospector	5.374	8.247	4.892	5.540

t-value = 0.641; *p* = 0.522

ROE

Firm Strategy	Mean	Std. Dev.	95% Confidence Interval	
Defender	7.746	19.405	6.935	8.558
Prospector	7.628	19.317	6.868	8.387

t-value = 0.209; *p* = 0.835

Tobin's Q

Firm Strategy	Mean	Std. Dev.	95% Confidence Interval	
Defender	2.056	1.279	2.002	2.109
Prospector	2.093	1.325	2.041	2.145

t-value = 0.975; *p* = 0.330

SOE

Firm Strategy	Mean	Std. Dev.	95% Confidence Interval	
Defender	0.421	0.493	0.395	0.436
Prospector	0.415	0.494	0.402	0.441

t-value = 0.399; *p* = 0.690

Table 15 Fixed Effects Regressions on Firm Performance with Firm Strategy Moderators (ROA, ROE, & Tobin's Q)

	Model 4	Model 5	Model 6	Model 13	Model 14	Model 15
	ROA	ROE	Tobin's Q	ROA	ROE	Tobin's Q
Firm Size	0.0451**	0.0387**	0.0120**	0.0278**	0.0253*	0.0093**
Board Size	0.1035*	0.0210	0.0392	0.0912	0.0197	0.0256
Advisory Committee	0.0825	0.0782	-0.0403	0.0879	0.0580	-0.0428
SOE	-0.0142**	-0.0094**	-0.0557**	-0.0144*	-0.0011*	-0.0526*
Director Age	0.0285	0.0200	0.0168	0.0362	0.0204	0.0145
Director Tenure	0.0611	-0.0290	-0.0619	0.0594	-0.0291	-0.0612
Board Compensation	-0.0776*	-0.0448	-0.0919**	-0.0209	-0.0397	0.0604*
Firm Strategy	0.0436	-0.0123	0.0647	0.0388	-0.0063	0.0455
Factor Score 1 (H2) Heterogeneity	-0.2711***	-0.1476*	-0.1980**	-0.2421*	-0.1432*	-0.1951*
Factor Score 2 (H4) Connectedness	0.0543****	0.0307**	0.0478****	0.0591**	0.0301	0.0396**
Factor Score 3 (H5) Skewedness	-0.1721****	-0.0876*	-0.1454****	-0.2034*	-0.0795	-0.0812**
Factor Score 4 (H3) Multiplexity	0.2292****	0.1107*	0.1917****	0.1055**	0.0965	0.1187**
Factor Score 5 Hierarchy	0.0096	-0.0195	0.0278	0.0087	-0.0180	0.0245
Firm Strategy * Heterogeneity				-0.0782***	-0.0077	-0.0309***
Firm Strategy * Connectedness				0.1138***	-0.0213	0.0845**
Firm Strategy * Skewedness				-0.0307**	-0.0384	-0.0279**
Firm Strategy * Multiplexity				0.0647*	0.0536	0.0294*
Firm Strategy * Hierarchy				0.0201	-0.0081	0.0364
Constant	0.0267	0.0789	0.2775	0.0285	0.0578	0.1856
Year, province, industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Firm fixed effects	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Observations	3,516	3,516	3,516	3,516	3,516	3,516
R-squared	0.0789****	0.0280*	0.0610***	0.0937****	0.0302	0.0790****
Change in R-squared	0.0448****	0.0136*	0.0252***	0.0148**	0.0022	0.0180**

Notes: + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$

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