

**THE TRIAD THAT BINDS:**  
**How the social structure of analyst and journalist performance evaluations**  
**influences relations among corporate leaders and their strategic decision making**

by

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## **DEDICATION**

To my family

## ACKNOWLEDGEMENTS

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## **ABSTRACT**

This dissertation develops a social structural perspective on multiple social ties among corporate leaders and external firm constituents to examine how the triadic structural embeddedness of corporate leader-constituent relationships can influence relations among corporate leaders themselves and their strategic decision making. I first examine how relations among corporate leaders indicated by board interlock ties are affected by their common network ties to a group of financial analysts who are simultaneously following the board interlock companies (Chapter 2). In particular, I explore whether similarities in stock recommendations from the common analysts influence the maintenance of board interlock ties as result of top executives' concerns about social comparison or cognitive dissonance in a triad. I then address how ties between two different constituent groups of analysts and journalists can constrain corporate leaders with respect to their strategic decision making (Chapter 3). I analyze how a triadic closure indicated by a perceived tie between an analyst and a journalist increases the likelihood of a focal firm's strategic change in response to poor firm performance, by constraining the managers' structural brokerage opportunities and increasing the subjective uncertainty about their current strategic choice. Overall, results of archival analyses, supported by CEO surveys, and interviews with Investor Relations executives provide supportive evidence for the theoretical perspectives developed in the two studies. Taken together, this dissertation contributes to the organization theory and strategic management literature by developing a more fully developed social structural and psychological perspective on the relations between organizations and the external environment in the context of board interlock ties maintenance and corporate strategic change.

# **Chapter 1**

## **Introduction and Overview**

### **Introduction**

Firms and corporate leaders are evaluated and scrutinized by a variety of constituents in the external environment. Indeed, numerous external firm constituents (e.g. regulatory authorities, consumer groups, and members of financial communities) provide their own accounts of firm performance and leadership and corporate leaders devote a significant amount of time to interpreting and responding to them (e.g. Selznick, 1957; Mintzberg, 1973; Pfeffer, 1981). A number of interconnected literatures in organization theory and strategic management have explored how relations between corporate leaders and external constituents of the firm influence corporate strategy, organizational legitimacy, and firm performance (Meyer and Rowan, 1977; Oliver, 1991; Useem, 1996; Westphal and Bednar, 2005). There is also a growing body of literature on how so-called ‘information intermediaries’ such as financial analysts and journalists influence firm behavior and performance (Zuckerman, 2000; Pollock and Rindova, 2003; Kennedy, 2008).

While this body of research has enhanced our understanding of the relations between corporate leaders and external firm constituents as well as their influence on firm behavior, prior research has mostly focused on a dyadic perspective between a focal organization and a given external constituent, or multiple constituents as one collective entity of external environment. Much less attention has been paid to how a given dyadic relation between a firm and a chosen constituent is embedded in a larger social structure of alternative social ties among multiple constituents and corporate leaders. The dyadic

structural perspective, however, stands in strong contrast to the qualitative research evidence in corporate governance, which reveals that top executives of large U.S. public companies are closely followed by *multiple* external firm constituents with different evaluations of firm performance and corporate leadership (Useem, 1996; Freeman and McVea, 2001; Davis, 2005; Hambrick et al., 2008). For instance, top executives of large U.S. companies are followed by usually a dozen different analysts and journalists at the same time. Yet, it is entirely possible that while one analyst issues a ‘strong sell’ stock recommendation for the company, another journalist writes about the CEO’s superb strategic decision making capability and positive future prospects of the firm. A closer look at news articles also reveals that journalists often refer to other firm constituents by name (e.g. government officials, consumer advocates, and financial analysts), which may indicate different degrees of structural connectedness among multiple groups of firm constituents. This complex structural embeddedness of the relations between corporate leaders and external firm constituents in a larger social structure cannot be fully explained with the extant dyadic structural perspective alone.

Indeed, Figure 1 illustrates that structural embeddedness of corporate leader-firm constituent relationship is manifested in two ways at both ends of the dyadic relation. The first dimension of structural embeddedness is that a firm is followed by *multiple external constituents* whose accounts of firm performance and leadership are not necessarily consistent in terms of their contents or influence. For instance, large U.S. public companies are followed by a group of analysts (constituent 1) as well as a different group of journalists (constituent 2), who may have inconsistent evaluations of firm performance and leadership about the focal company. The second relevant dimension of structural embeddedness is that external constituent accounts of firm performance and leadership are also compared and contrasted among *multiple corporate leaders* themselves through their own social networks, e.g., board interlock ties. Due to their inherent evaluative nature, these firm performance and leadership accounts often function as potential

sources of social comparison among corporate leaders. For instance, relatively negative stock recommendations may serve as a source of relative deprivation for the ‘outperformed’ executive compared to his or her colleagues, especially when the two managers are followed by the same set of financial analysts.

This dissertation develops a social structural perspective on multiple social ties among corporate leaders and external firm constituents to examine how this structural embeddedness of corporate leader-constituent relationships can influence relations among corporate leaders themselves and their strategic decision making. Structural sociologists have long suggested a triadic social structure as a way to consider influence of the adjacent third-party indirect ties on the focal actor’s behavior; for instance, the focal actor’s agency against the two connected alters (Merton, 1957; Coleman, 1988; Burt, 1992) and maintenance of the focal actor’s dyadic ties in the face of the common third party alter (Simmel, 1950; Heider, 1958). Drawing on these theoretical perspectives of social triads in structural sociology, I designed two empirical studies in my dissertation. I first examine how relations among corporate leaders indicated by board interlock ties are affected by common network ties to a group of financial analysts who are simultaneously following the board interlock dyad members (Chapter 2). I then address how ties between two different constituent groups of analysts and journalists can constrain corporate leaders with respect to their strategic decision making (Chapter 3). Taken together, I aim to develop a more fully developed social structural perspective on the relations between organizations and the external environment in the context of board interlock ties maintenance and corporate strategic change.

Against this backdrop, the present dissertation represents two important theoretical departures from the extant literature on corporate leader-constituent relationships and their influence on relations among corporate leaders and their strategic decision making. The first departure is from a traditional, dyadic perspective on relations between the focal organization vs. its external environment, which is implicit in most

existing studies on external firm constituents and their influence on firm behavior. From this perspective, the external environment is considered a place of evolutionary selection (Hannan and Freeman, 1977; Aldrich, 1979), a stock of organizational resources (Pfeffer and Salancik, 1978), and a field of collective institutional pressure (DiMaggio and Powell, 1983). Despite their significant contributions, these theoretical perspectives have paid less attention to heterogeneous, thus potentially inconsistent external pressures from multiple external constituents as more realistic manifestations of the external firm environment. This theoretical distinction enables me to expand the present study's structural scope of analysis from that of a dyad between a focal firm and a given constituent to one consisting of i) multiple ties between the focal firm and different constituents and ii) ties among multiple constituent groups.

In particular, I turn to the theories of triads in structural sociology, which have argued triads as the fundamental social unit to be studied (Simmel 1950:135-136). This literature has approached triadic social structures from two different angles (Figure 1). One stream of research ("Social Triad 1" in Figure1) has focused on the distinction between a dyad in structural isolation from a dyad embedded in a triad, emphasizing the unique constraining role of the third party alter on the members of the embedded dyad (Simmel, 1950; Heider, 1958; Lorrain and White, 1971). The other stream of research ("Social Triad 2" in Figure1) has explored a focal actor facing two alters who are potentially connected to each other, examining how this connection between the two alters constrains the focal actor's agentic behavior (Merton, 1957; Coleman, 1988; Burt, 1992). I employ the prior triad structure to analyze the maintenance of a board interlock tie between the focal and the interlocked company and a set of common financial analysts following the two companies simultaneously (Chapter 2). I also utilize the latter triad structure to analyze how a perceived tie between analysts and journalists following the focal firm may constrain the focal firm managers with respect to their strategic change decisions in the face of poor firm performance (Chapter 3).

The second departure challenges the widely held assumption that interorganizational ties serve mostly as conduits of organizational resources or as quality signals. Specifically, prior research has emphasized how interorganizational ties may function as conduits of financial or information resources between two organizational entities (Pfeffer and Salancik, 1978; Haunschild, 1993; Ingram and Baum, 1997) or signals of quality associated with the prominence of tie partners (Stuart et al., 1999; Higgins and Gulati, 2003; Podolny, 2005). While this role of interorganizational tie is valid and significant, it is rather limited as it ignores the vital influence of social ties on interpersonal perception and cognition induced by the social structure, including processes of social comparison and cognitive dissonance (Festinger, 1954; Heider, 1958). Indeed, whereas tie content and structure (e.g. balance in a triad) as sources of sentiment and affect (e.g. liking) in interpersonal relationships are critical in classical studies of structural sociology (e.g. Newcomb, 1953; Heider, 1958; Schachter, 1959), more recent studies in the interorganizational networks literature tend to pay much less attention to this cognitive aspect of social ties (see Kilduff and Krackhardt, 1994; 2008 for a critique). Similarly, in the literature on external constituents' influence on firm behavior, this more social psychological, micro-foundation of structural research is largely absent. For instance, although the possibility of information exchange or cascade between the financial community and the media has been suggested in the IPO process of entrepreneurial companies (Pollock and Rindova, 2003; Pollock et al., 2008), we know much less about how these information flows will be *perceived* by the focal firm managers and thus influence their strategic decision making.

In the present dissertation, I emphasize the role of social ties as sources of individual cognition involved in the web of social ties (Krackhardt and Porter, 1985; Krackhardt, 1987; Kilduff and Krackhardt, 2008). In Chapter two, I consider the positivity or negativity of financial analysts' stock recommendations as a reflection of the tie content between the financial analysts and the focal firm CEO or the outside director



and explore whether similarities in stock recommendations from the common analysts influence the maintenance of board interlocks as result of top executives' concerns about social comparison (Stouffer et al., 1949; Festinger, 1954; see Gartrell, 1987:for a review), or cognitive dissonance in a closed triad (Heider, 1958). In Chapter three, I examine how a perceived tie between analysts and journalists may be interpreted as a coalition that excludes the focal firm management in a closed triad (Simmel, 1950), and causes the focal firm managers to be less confident about their current strategic choices, which in turn increase the likelihood of the focal firm's strategic change. This renewed emphasis of the present dissertation on i) multiplicity of social ties between corporate leaders and external firm constituents and ii) structural influence of multiple ties on the focal firm executives' cognitive perspectives and strategic decision making leads to some important contributions to the strategic management and organization theory literature, which I review below.

### **Expected Contributions**

First of all, the present dissertation contributes to the longstanding literature in organization theory and strategic management on the relations between organizations and the external environment (Lawrence and Lorsch, 1967; Thompson, 1967; Meyer and Rowan, 1977; Oliver, 1991) by providing a social structural perspective on how the focal organizations' ties to different kinds of constituents as well as ties among the constituent groups can constrain a focal organization with respect to its agentic behavior. Specifically, I revisit the dyadic paradigm of a focal firm and its relationship to the external environment and propose a triadic social structure as a more fully developed structural mechanism to explain important firm behaviors such as strategic change in the face of poor firm performance or maintenance of board interlock ties with other organizations. In doing so, I also consider how ties with external constituents can function as sources of different social psychological pressures induced by the triadic social structure such as

social comparison and cognitive dissonance. By extension, this structural and social psychological perspective of a triad also has potential applications to other fields of organizational studies and strategic management where external constituents' role to 'observe, interpret, and make sense of firms and their actions' (Rindova and Fombrun, 1999:700) is emphasized. For instance, the present study may provide a useful social structural paradigm to the literature on market identities and categories, which has started to recognize the theoretical significance of multiple audiences (e.g. Pontikes, 2009) and their social structures (see Hsu and Hannan, 2005 for a critique).

The present dissertation also contributes to the larger body of literature on corporate governance, including board interlock research (Mizruchi, 1996; Davis and Greve, 1997; Westphal et al., 2001; Kang, 2008). The extant perspectives on board interlocks such as inter-organizational resource dependence (Pfeffer and Salancik, 1978; Pennings, 1980) or intra-class cohesion among the corporate elites (Useem, 1984; Domhoff, 2002) have been limited to the relational embeddedness at the dyad level between the focal and the interlocked companies. More recent studies of the consequences of board interlock were not exceptions in this regard (Haunschild, 1993; Palmer et al., 1993; Davis and Greve, 1997). Although a small number of studies went beyond the dyad level and examined how board interlock can be analyzed from a triadic perspective (e.g. Gulati and Westphal, 1999) they have not drawn from social structural theory of triadic relations and their structural analysis has been limited to the network of corporate executives themselves. In the present dissertation, I expand the social structural perspective of the prior board interlock research from the dyad to the triad that includes external constituents of the focal and the interlocked companies. In particular, I consider how the motivation of corporate leaders to maintain their board interlock ties can be structurally induced from the balance of a triadic social structure among the focal firm, the interlocked company, and the set of financial analysts following the two companies. As a result, the present study begins to develop a more social structural and social

psychological perspective on the determinants of board interlock maintenance, incorporating external constituents of the focal and the interlocked companies simultaneously. This structural perspective of a triad by extension may be applicable to other areas of corporate governance research. For instance, it may help us understand the adoption (or abandonment) of different governance policies as a result of both the pressure from the external constituent and the social comparison process between the focal firm and its inter-organizational partners that interact with the same set of external constituents.

The present dissertation also contributes to the literature on strategic decision making, in particular strategic change (Gioia and Thomas, 1996; Boeker, 1997; Zajac et al., 2000; Westphal and Bednar, 2008) by advancing a more social structural perspective on determinants of strategic change. Although efforts have been made to understand strategic change from an embeddedness perspective, the theoretical emphasis has been on the dyad level between the focal firm and its network partners, whether they are interorganizational network partners (Kraatz, 1998) or the focal firm CEO's peers for advice seeking on strategic decision making (McDonald and Westphal, 2003). The present study expands the social structural perspective on firm strategic change to a triad comprising the focal firm management and two different external firm constituents, in particular analysts and journalists simultaneously following the focal firm. Moreover, I theorize and document a novel social structural and psychological mechanism on how managers' subjective uncertainty about their current strategic choice can be amplified by social structure - a triadic closure between analysts and journalists around the focal firm. Although a stream of prior research on strategic change has emphasized the role of managerial cognition such as 'belief structure' or 'perceptual distortions' of top executives (Starbuck et al., 1978; Hambrick and D'Aveni, 1988; Sutcliffe, 1994), it has been limited to individual or top management team level cognition. Indeed, although more cognitive perspectives on strategic change have emphasized how the external firm

environment is represented through managerial cognitions rather than objectively determined (Johnson, 1990; Lant et al., 1992; Walsh, 1995), we still lack a clear understanding of how the managerial cognition is influenced by the focal firm managers' interactions with external firm constituents. I examine how a particular social structure including multiple external firm constituents may influence such individual cognition of top managers regarding their firm performance and strategic leadership. In this regard, I provide a more fully developed social psychological perspective on determinants of strategic change.

Finally, the present dissertation contributes to the expanding literature on the role of financial analysts and journalists on firm behavior and performance by considering these two social actors together. Studies of analysts and journalists suggest that they actively participate in socially constructing the reputation or legitimacy of corporate strategies (Zuckerman, 2000; Pollock and Rindova, 2003; Kennedy, 2008). However, these studies have examined the influence of analysts and journalists on firm behavior independent of each other, when in fact they pay close attention to each other and a substantial amount of information is exchanged between them (e.g. Pollock et al., 2008). Moreover, prior studies have overlooked the distinct roles of analysts and journalists in their social construction process of firm reputation and legitimacy (Kurtz, 2001; Reingold, 2006). Whereas analysts provide condensed, technical performance accounts to the members of the financial community (e.g. EPS forecast), journalists often provide 'stories' about firm performance and leadership to a broader audience consisting of the general public (e.g. whether the CEO is responsible for the current performance problem). By considering i) consensus between analyst evaluations and journalistic accounts of firm performance and leadership and ii) structural connection between the two constituents as indicated by journalists' reference to a particular analyst's name in their news articles, the present dissertation starts to develop a more comprehensive theoretical framework to

understand their influence on important firm behaviors, including strategic change in the face of poor firm performance.

## **Overview**

This dissertation is organized as follows. The following two chapters are devoted to two separate empirical studies to explore how the triadic perspectives about corporate leader-constituent relationships can enhance our understanding of the external constituents' influence on important firm behaviors. In Chapter two, I examine how relations among corporate leaders indicated by board interlock ties are affected by each firm's common network ties to a group of financial analysts following the board interlock dyad members simultaneously. Drawing on the theories of triads in structural sociology, I cast the relationship between financial analysts, a focal firm CEO, and the interlocked firm director as a triad and examine how the positivity or negativity of analyst stock recommendations regarding the focal firm CEO and the interlocked directors influence the maintenance of the board interlock ties. Then I theorize how structural difference between an open and a closed triad leads the interlock dyad members to prefer partners with similar, rather than better stock recommendations to avoid unfavorable social comparison and cognitive dissonance. I also theorize how structural intensity of the triadic closure and socio-political interests and power of the focal firm CEO moderate the triad closure effects. I test the hypotheses with longitudinal panel data of S&P500 companies for the sample period between 2000 and 2008.

In Chapter three, I convert the triadic structure of Chapter two to address how ties between two different constituent groups of analysts and journalists can constrain corporate leaders with respect to their strategic decision making. I first theorize how consensus on negative firm performance and leadership between a focal firm's analysts and journalists can influence the focal firm executives' perception of performance feedback from the external environment and eventually increase the focal firm's strategic

reorientation efforts. I then analyze how triadic closure indicated by perceived ties between analysts and journalists (i.e. journalists' references of analyst names in news articles) increases the likelihood of the focal firm's strategic change in response to poor firm performance, by constraining the focal firm managers' structural brokerage opportunities and increasing the managers' concerns against future escalations of negative performance evaluations. I also examine how the audience characteristics of the analysts and journalists following the focal company moderate the triadic closure effect. I utilize a subsample companies which received negative stock recommendations provided by analysts from S&P500 companies for the sample period between 2000 and 2008.

Chapter four concludes by summarizing the theoretical perspectives and findings of the two empirical studies. I discuss the implications and possible future extensions of the current dissertation in three broad directions: i) relational and structural embeddedness of strategic decision making in the context of corporate governance, ii) corporate governance policies as impression management tactics targeted at external firm constituents, and iii) multiple firm constituents spanning across different cultures and institutions.

## Chapter 2

### **The Triad That Binds: How Common Financial Analyst Coverage Reveals Different Motivations of Corporate Leaders to Maintain Board Interlocks**

#### **Introduction**

“An existing pair relation is either weakened or strengthened by interaction with another person. Rarely if ever does the degree of association or dissociation remain unchanged” (Von Wiese and Becker, 1932).

A substantial body of research in corporate strategy and organizational studies has examined board of director interlocks, where a top executive affiliated with one organization sits on the board of directors of another organization as an outside director (Mizruchi, 1996). As a unique formal mechanism linking individual top managers of large corporations, board interlocks are widely considered to be an important interorganizational network with significant organizational and economic consequences. Scholars have highlighted how interlock ties serve as conduits for important corporate information, including insights into environmental shifts (Useem, 1984) and new corporate practices such as organizational forms (Palmer et al., 1993), corporate governance policies (Davis and Greve, 1997) and acquisition premiums (Haunschild, 1993). Board interlocks are also shown to provide an arena for firsthand learning to the corporate leaders for the consequences of new strategic alternatives (Geletkanycz and Hambrick, 1997; Westphal and Fredrickson, 2001; Beckman and Haunschild, 2002). Finally, more recent studies suggest that the ties established by board interlocks function as a signaling mechanism endorsing the tie partners’ underlying quality to the external firm constituents (Filatotchev and Bishop, 2002; Higgins and Gulati, 2003; Kang, 2008).

These streams of research have significantly advanced our understanding of board interlocks and their consequences. Interestingly, however, prior research has focused almost entirely on the relational embeddedness of the focal and the interlocked company at the *dyad* level, paying much less attention to the structural embeddedness of board interlock ties in its *adjacent network of external constituents*, i.e. how the board interlock tie itself is linked with other external ties of the focal firm CEO and the outside directors representing the interlocked companies. For instance, prior theoretical perspectives of board interlocks such as interorganizational communication, learning, and signaling have been largely limited to the dyadic level of analysis between two firms. These dyadic perspectives, however, stand in contrast to qualitative research evidence in corporate governance, which reveals that top executives of large U.S. companies linked by board interlocks are closely followed by multiple external firm constituents with different evaluations of firm performance and corporate strategies (Useem, 1996; Reingold, 2006; Mayew, 2008). While studies in structural sociology focusing on the embeddedness of direct ties in a larger network structure have emphasized that the dynamics of direct tie formation and maintenance cannot be foreseen without considering neighboring third-party indirect ties (Simmel, 1950; Mizruchi, 1992; Burt and Knez, 1995; Gulati and Westphal, 1999), these insights on the role of third-party indirect ties have not yet permeated board interlock research. In particular, although social network research emphasizing social actors' perception in their local network have long suggested how individual preferences for tie partner selection can be structurally induced by the content and structure of the ties with third-party others (Festinger, 1954; Heider, 1958; Merton and Rossi, 1968), the influence of the tie content and structure between external constituents and board interlock members on the motivation of board interlock tie maintenance has received little scholarly attention.

In the present study, I attempt to address this gap in the literature by offering a more social structural perspective on board interlock tie maintenance. I first expand the



social structural perspectives of board interlocks from the dyad between the focal and the interlocked company to their adjacent network of external constituents. In particular, I focus on financial analysts as a primary external constituent of the focal firm CEO and the outside director representing the interlock company, building on the studies emphasizing the significance of corporate leaders' interactions with financial analysts (Useem, 1996; Rao and Sivakumar, 1999; Zuckerman, 2000). I then consider how the motivation of corporate leaders to maintain board interlock ties can be *structurally* induced from the *balance of a triadic social structure* among the focal firm CEO, the outside director representing the interlocked company, and the set of financial analysts following the two companies (Simmel, 1950; Heider, 1958). Utilizing the positivity of financial analysts' stock recommendations as a characterization of the tie content between the financial analysts and the focal firm CEO or the outside director, I explore whether similar (e.g. 'strong buy' vs. 'buy') or dissimilar (e.g. 'strong buy' vs. 'strong sell') stock recommendations from the common set of financial analysts to the focal firm CEO and the outside director can influence the maintenance of the board interlock ties between the two corporate leaders. Drawing from theories of social comparison (Festinger, 1954) and relative deprivation (Stouffer et al., 1949), I suggest that CEOs who have received relatively negative evaluations may prefer outside directors who have also received similarly negative stock recommendations to their counterparts with positive stock recommendations, who will make them look worse by comparison. Moreover, dissimilar stock recommendations from the same financial analyst may trigger cognitive dissonance in a CEO – outside director relationship and eventually make the dyad less likely to persist (Heider, 1958).

In proposing the triadic social structure as a mechanism that influences the maintenance of the board interlock ties, the present study contributes to a more nuanced understanding of structural embeddedness in structural sociology. Developing the theory of triads below, I distinguish between an open and a closed triad depending on whether

the set of analysts following the two companies overlaps or not. Specifically, in an *open triad*, the focal firm CEO and the outside director are followed by different, non-overlapping sets of financial analysts. In a *closed triad*, the interlock dyad is followed partly by the same, overlapping sets of financial analysts although the degree of coverage overlap may vary (see Figure 3)<sup>1</sup>. As I will describe below, this distinction between an open and a closed triad is important because it expands our perspectives on the role of interorganizational ties from strictly that of information conduits or quality signals (e.g. Podolny, 2005) to also one of social comparison and cognitive dissonance induced by the social structure (e.g. Festinger, 1954; Festinger, 1957; Heider, 1958). Indeed, whereas the tie valence (e.g. positive vs. negative ties) as sources of positive or negative sentiment in interpersonal relationships are critical in classical studies of structural sociology (e.g. Newcomb, 1953; Heider, 1958; Schachter, 1959), more recent studies in interorganizational networks literature tend to pay much less attention to this cognitive aspect of social ties (see Kilduff and Krackhardt, 1994; 2008 for a critique). By analyzing the indirect tie contents in different triad closure structures, the present study provides important insights into how the open vs. closed triads can induce different social psychological motivations for corporate leaders in choosing their interorganizational network partners.

Moreover, the present study begins to develop a more social structural and social psychological perspective on the determinants of board interlocks maintenance. Whereas the extant perspectives on board interlocks have assumed determinants such as interorganizational communication, learning, and signaling at the dyad level, this study suggests that the maintenance of board interlock ties can be influenced by their structural

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<sup>1</sup> As illustrated in the Figure 3, there are more than three actors in the triadic structure of this study. In particular, financial analysts covering the focal and the interlocked company are multiple in numbers. The triad in this study can be understood as three sets of roles, especially when the third party role is occupied by multiple actors (Merton, 1957). This is consistent with the theoretical extension of the original balance theory by Cartwright and Harary (1956) and Newcomb (1953). The key distinction is whether the third party role is occupied by an overlapping, common set of alters (closed triad) or non-overlapping, independent alters (open triad).

embeddedness in the broader, adjacent network of external constituents such as financial analysts. Although the role of third-party institutions such as political or non-profit associations on the consequences of board interlocks has been examined in the prior studies (Useem, 1984; Galaskiewicz and Burt, 1991; Mizruchi, 1992), the content of the tie between the board interlock members and their external constituents and its influence on the maintenance of board interlock ties has not been examined. Moreover, the present study also indicates that board interlocks maintenance decisions may reflect top executives' concerns about social comparison in light of the evaluative judgment from the investor community or potential cognitive dissonance in a triadic social structure. In essence, success in such avoidance of social comparison effectively substitutes the strategic motivation of the focal company to maintain ties with a *better* performing board interlock partner for the socio-political motivation of the CEO to maintain ties with a *similarly* performing board interlock partner. Accordingly, I offer a novel structural and social psychological mechanism by which board interlock ties can be maintained or dissolved depending on the similarity of the tie contents with a common third-party alter in a social triad.

Finally, this study contributes to the broader literature of corporate governance by providing a social structural perspective considering multiple external firm constituents and corporate actors simultaneously. Most existing studies in the governance literature have explored how and when a particular external constituent constrains firm action, for instance, how institutional investors pressure firms to pursue corporate strategies that are believed to promote shareholder interests, paying less attention to how multiple constituent members with different evaluations of firm performance interact with corporate leaders simultaneously. The present study may contribute to our understandings of the focal firm behavior triggered by external governance pressure by considering how multiple focal firms compare and contrast the content of external pressure with each other, in particular, different evaluations of firm performance issued by multiple financial

analysts. Indeed, while the concept of structural equivalence (Lorrain and White, 1971; Burt, 1987; Mizruchi, 1993) has long indicated the prevalence of such ‘symbolic communication’ between two social actors connected to the same set of third-party alter, the structural paradigm of a triad has not been introduced to the governance research, where evaluative judgment and pressure from the multiple external governance constituent is often regarded as the main theoretical mechanism (Hambrick et al., 2008; Wiesenfeld et al., 2008).

In the following section, I start the discussion by briefly reviewing the role of financial analysts and their relationship with corporate executives, before I theorize how their different stock recommendations can ultimately influence the maintenance of board interlocks.

#### Financial analyst stock recommendation and board interlocks

Financial analysts guide investor behavior by interpreting information and providing summary statements about corporate finance, strategic decisions, and industry trends of the firms they follow (Hayward and Boeker, 1998; Rao and Sivakumar, 1999; Zuckerman, 2000; Dobbin and Zorn, 2005). The summary statements of future prospects of the covered firm include recommendations about whether to buy, hold, or sell the firm’s stock. The impact of these stock recommendations on stock market valuations, a firm’s capacity to raise capital and general firm reputation has been well documented in the accounting literature.<sup>2</sup> Apart from the impact on a firm’s market valuation, changes

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<sup>2</sup> Another summary judgment of financial analysts is future earnings forecast indicating how profitable the covered firm is expected to be in a given time horizon of a quarter or a year. Multiple studies in accounting literature suggest that managers have incentives to prefer a lower earnings forecast to avoid missing earnings targets and experiencing a negative earnings surprise (Joyce et al., 1997; Matsumoto, 2002). This incentive leads to potential earnings management on the management side. Moreover, analyst forecasts can also be biased depending on potential conflicts of interest with the coverage firms (Michaely and Womack, 1999) or analysts’ future career concerns (Hong et al., 2000). On the other hand, stock recommendations suffer less from these potential biases (Houston et al., 2010). For this reason, I focus on stock recommendations as less biased indicators of the tie relationship between the analyst and the firm in this study.

in stock coverage and recommendations can ultimately influence a firm's corporate strategy as well as career prospects of the firm's top executives (Puffer and Weintrop, 1991; Zuckerman, 2000). For instance, studies indicate that failure to meet financial analysts' earnings forecasts can result in a greater likelihood of CEO dismissal even after controlling for other conventional measures of firm performance (Puffer and Weintrop, 1991; Wiersema and Zhang, 2011).

Given this wide-ranging impact of financial analysts on corporate leaders and their firms, it is not surprising that the relationships between analysts and corporate leaders are characterized not only by objective evaluation of firm performance but more importantly by sociopolitical tension and bidirectional influence. Qualitative studies on executive-analyst relationships suggest that analysts' firm coverage ties tend to move beyond fleeting, impersonal contacts between covered firms and the capital market to more informal social relations that are carefully cultivated through analysts' regular company visits and social gatherings arranged by the covered company (Useem, 1996). Not surprisingly, transcripts of corporate conference calls reveal that executives and analysts of major brokerage houses address each other by their first names, often making comments on each other's career moves. However, such informal friendly ties between executives and analysts seem to be contingent on analysts' positive evaluations of the covered firm. Indeed, CEOs are shown to respond to analyst questions during corporate conference calls in a discriminatory manner, preferring analysts who offer more positive stock ratings of their firms (Mayew, 2008), and even inviting as outside directors former analysts who had previously given positive evaluations of their companies (Cohen et al., 2008). On the other hand, Westphal and Clement (2008) show how CEOs engage in negative social reciprocity toward analysts who issue negative stock recommendations to their firms and how this retaliation eventually reduces the likelihood of negative recommendations for the firm from the analysts in the future. These findings reveal that

the analysts' evaluation of the coverage firms and their leaders significantly influences the interpersonal relationships of top executive-analyst dyadic ties.

The main argument of the present study is that this relationship between top executives and financial analysts captured by different stock recommendations may influence the way top executives maintain their own interorganizational network partners, especially their board interlock ties. In particular, I focus on how the influence of analysts on board interlock tie maintenance can depend on the existence of a structural overlap between the analysts' firm coverages of the two interlocked firms<sup>3</sup>. The theoretical premise of the present study is that the executives' decision to maintain their board interlock ties will be influenced by the *relative salience of the executives' instrumental and cognitive motivations of social affiliations*. Instrumental motivation in social affiliation refers to an individual's preference for a better performing alter over a worse performing counterpart, in part to bask in the glory of accomplished others (Cialdini et al., 1990). Cognitive motivation in social affiliation, on the other hand, refers to people's tendency to avoid relationships producing cognitive inconsistency (Festinger, 1957; Heider, 1958) (feeling 'uncomfortable', as I will elaborate below). In the following section, I turn to the theories of social comparison and structural balance under open vs. closed triad structures to hypothesize i) how different stock recommendations from financial analysts affect this relative salience of instrumental and cognitive motivations for social affiliations in open vs. closed triads, ii) which in turn will be manifested in executives' decisions to maintain different types of board interlock ties in open vs. closed triads.

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3 Although financial analysts mostly specialize in their coverage industries and board interlocks between the same industry firms are discouraged (e.g. The Clayton Act), such closed triads do exist. This is mainly due to the presence of analysts specializing in more than two industries (refer to [Zuckerman, 2004] for this 'structural incoherence' of analyst coverage) and the overlap of the primary and secondary industries between diversifying firms as interlock partners. In fact, board interlock scholars have explicitly studied these interlock ties among companies in the same industries as 'horizontal interlocks' (Pennings, 1980; Zajac, 1988).

## **Theory and Hypotheses**

### Open triads and the instrumental motivation to maintain interlock partners with more positive stock recommendations

A key fact of organizational life is that individuals and organizations seek out partners whom they believe have better task-related capabilities (see Rivera et al., 2010). Social ties with more competent others may bring two different types of benefits to a focal actor. One is transfer of substantive knowledge and capabilities from more competent alters to the focal actor. The other is a more symbolic, signaling benefit of maintaining ties with better performing alters. This is the classic social influence tactic of basking in the reflected glory of accomplished others and distancing oneself from less attractive counterparts. From this perspective, individuals use social affiliations as an instrument to take advantage of the evaluative generalizations that occur in the minds of a third party evaluator (Cialdini et al., 1976; Podolny, 2005) regardless of the substantive benefits of social ties. Thus, social affiliation with more prominent alters becomes a signaling device to the third-party evaluator.

While this instrumental motivation of social affiliations seems beneficial to the focal actor in most cases, establishing a tie as a signaling device may not be as effective when the focal actor and the social tie partner are evaluated by the same set of third-party alters, i.e. in a closed triad. Research on structural equivalence has shown that when two social actors interact with the same set of alters, they function as each other's social referent providing a basis of social comparison, mutual monitoring, and competition (Lorrain and White, 1971; Burt, 1987). Thus, in a closed triad where the two social actors are evaluated by the same set of alters, the two structurally equivalent actors would almost automatically consider each other as a frame of reference in understanding their own evaluation from the same third-party evaluator (Merton and Rossi, 1968). In other words, the closure of a triad renders the potential tie partner as a social comparison peer rather than a target of instrumental social affiliation. Such conversion of the focal actor's

perception of the tie partner leads to the emergence of distinct cognitive motivations in a closed triad such as the reduction of cognitive dissonance or social comparison pressure. Accordingly, although both the instrumental and cognitive motivations exist in executives' decision to maintain their board interlock ties, cognitive motives may prevail over instrumental motives in a closed triad. Conversely, instrumental motives might be more pronounced than cognitive motives in an open triad.

Therefore, in an open triad with no overlapping common financial analyst coverages, interlock partners are more likely to pursue instrumental motivations in social affiliations and maintain ties with *better* performing partners. While prior research on board interlocks provides less definitive evidence regarding the transfer of substantive benefits between the two interlocked firms (Davis, 1993; Davis, 2005), multiple studies on board composition have suggested that corporate executives seek interlock partners who provide positive signals to the investor community (Filatotchev and Bishop, 2002; Higgins and Gulati, 2003) and try to avoid partners that provide negative signals (Kang, 2008). For one, when the interlocked company receives negative stock recommendations, the outside director representing the interlocked company may be less likely to be retained on the focal company board. For another, when the focal company receives negative stock recommendations, the outside director may be more likely to decide to leave the focal company board due to his or her status concern. Finally, when both companies receive negative stock recommendations, the interlock dyad in an open triad is least likely to be maintained compared to the cases where only one of the interlock partners receives negative ratings, or where both of the interlock partners receive positive ratings. In other words, as the negativity of interlock partners' stock recommendation increases, the board interlock members' instrumental motivation in an open triad may render them inclined to disassociate with their current interlock partners. This line of reasoning leads to the following hypothesis on the maintenance of board interlock ties in an open triad.



H1: In an open triad, where the focal and the interlocked company are followed by non-overlapping set of financial analysts, negative analyst stock recommendations regarding either the focal company or the interlocked company are more likely to lead to the dissolution of board interlock ties.

Closure of the triad and intensification of the cognitive motivation to maintain interlock partners with similar stock recommendations

This section builds on the distinction between open and closed triads above to elaborate how the closure between the interlock dyad and the common set of financial analysts makes the instrumental motive in dyadic affiliation less salient than the cognitive motives of interpersonal relationship such as reducing anxiety or maintaining cognitive consistency. Theories of social comparison and triadic balance suggest that a focal CEO or the interlocked director will maintain interlock partners with *similar* stock recommendations and avoid tie partners with *dissimilar* stock recommendations.

**Closure of a triad and emergence of social comparison** The formation and maintenance of dyadic ties embedded in a triadic relationship, i.e. through common third-party alters, has been extensively studied in social psychology and structural sociology (Simmel, 1950; Heider, 1958; for a review Kilduff and Krackhardt, 2008). Emphasizing the significance of the transition from dyadic to triadic social structure, Simmel (1950:136) wrote that the transition can be characterized by “intensification of (dyadic) relations by a third element, or by a social framework that transcends both members of the dyad”. As noted above, one of the most important features of such a structural transformation from an open to a closed triad is that the emergence of a common third-party other can enhance social comparison pressure between the dyad members. Indeed, triadic closure with a common third-party alter clearly indicates the dyad members’ social comparison peers in their local social network (Burt, 2009). Under such triadic closure, evaluative information issued by the common set of third-party alters becomes readily comparable to the dyad members themselves as well as to the third-party evaluators. As a

result, the dyad members would function as direct anchoring points for each other in the common third-party alter's evaluation process (Kahneman et al., 1982). Moreover, while the relative lack of performance comparability in an open triad allows the dyad members to attribute their negative performance evaluations to differences in the evaluators, such excuses are less feasible in a closed triad. Accordingly, the comparability of performance evaluations in a closed triad may lead to the relative salience of cognitive motivations of social affiliations such as social comparison pressure between dyad members. When such social comparison by a common third-party evaluator is salient, people anticipate the pain of falling behind their social comparison referent and try to avoid such a comparison situation.

Therefore, in the present study context, an outside director with better analyst stock recommendations in a closed triad may serve as a source of relative deprivation for the 'outperformed' focal firm CEO (Stouffer et al., 1949; Festinger, 1954), rather than a source of positive evaluative generalization as in an open triad. Upon receiving negative stock recommendations, the CEO may prefer outside directors with similarly negative stock recommendations to their counterparts with positive stock recommendations who will make the focal CEO look worse by comparison.<sup>4</sup> Indeed, several studies in the top management team literature suggest that social comparisons can be prevalent among corporate executives especially when performance evaluation is highlighted. For instance, CEO compensation committee chairs have been suggested to consider first their own compensation level in determining the focal firm CEO's compensation package (O'Reilly et al., 1988). Board members have also been shown to manipulate the list of peer companies for annual performance comparison in order to justify the focal firm CEO's

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<sup>4</sup> Another explanation would be that the outside director with more positive stock recommendations may decide to leave the focal company board (or decline the invitation to stay) due to his or her concerns for negative status spillover from the focal company. With the current archival data, I cannot observe the directionality of tie dissolution, i.e. who initiates the tie breakage. However, I included multiple control variables indicating director status and time availability for board service. High status directors or 'busy' directors may be more sensitive to such negative status spillover from the focal firm where they serve as directors and more likely to leave.

pay allocations (Porac et al., 1999). Social comparison pressure due to pay dispersion among top management team has also been suggested as a source of the top team fragmentation and subsequent low firm performance (Fredrickson et al., 2010). These streams of research demonstrate that in a closed triad, the relative similarity or dissimilarity of stock recommendations may form the basis of social comparison influencing the interlock partner's cognitive motives for the maintenance of the interlock ties rather than the absolute positivity of the recommendations as in an open triad.

**Balance of the triad and intensification of the cognitive motivation to maintain ties with similarly performing alters** Theories of interpersonal affiliations in social psychology have also explored the “structural-dynamic character of human cognition” in social life (Simon and Holyoak, 2002), highlighting that relational components between dyad members such as liking (sentiment) can be influenced by the presence of a third-party alter. The main proposition of the early balance theorists is that individual efforts to maintain cognitive consistency lead to change in belief, attitude, and behavior in social affiliations (Heider, 1946; Newcomb, 1953). For instance, if a focal person P likes some object O (positive relationship), P also likes the alter X (positive sentiment), and P perceives X's dislike of the object O (negative relationship), the triadic relationship P-O-X is ‘unbalanced’, which creates cognitive dissonance (members feel ‘uncomfortable’) because the focal person P's cognitive consistency towards the alter X and the object O is violated. Balance theory further predicts that “if no balanced state exists, then forces towards this state will arise (Heider, 1946:107-109). As a result, the dyadic relationship between P and O could become more fragile. This transitivity of relationship content in a social triad is succinctly illustrated by the famous Arab proverb, “the enemy of my enemy is my friend and the enemy of my friend is my enemy”. Indeed, the proverb indicates that the presence of two negative relationships toward the common third-party other enhances the strength of a dyad embedded in a triad. Conversely,

conflicting relationships (e.g. combination of positive and negative relationships) toward the common third-party other will tend to divide the embedded dyad.

From this balance theoretic perspective, dissimilar stock recommendations regarding one of the focal and the interlocked companies from the same financial analyst may indicate either i) that one of the dyad members failed to garner positive stock recommendations from the common financial analyst while the other succeeded (cognitive unit as a third-party object) or ii) that one of the interpersonal relationships between the common analyst and the interlock dyad members developed as negative while the other remains as positive (cognitive unit as a third-party person). In either case, balance theory predicts that imbalance in stock recommendations between the focal CEO and the outside director can trigger cognitive dissonance in their relations, which in turn makes the board interlock in a closed triad less likely to persist. For instance, contrasting stock recommendations from the common financial analyst may yield less positive affect and relational tension between the focal CEO and the outside director and make it more difficult to establish a cooperative relationship in the boardroom. On the other hand, similar stock recommendations, regardless of their positivity or negativity, may enhance interpersonal affect and induce attitudinal congruence towards the common financial analyst. Indeed, the case of ‘negative balance’ where both the focal CEO and the interlocked director receive similarly negative stock recommendations, may enhance interpersonal affect and sympathy between the executives and even induce them to establish a ‘common front’ against the financial analyst who holds a negative opinion of their firm performance and strategic capabilities. For instance, this sympathy between the focal CEO and the interlocked director in the negative balance situation might be manifested in the form of similar or coordinated performance justification accounts targeted at the common financial analyst.

In sum, the theories of social comparison and triadic balance suggest that, in a closed triad where a set of common financial analysts follows both a focal firm CEO and

the interlocked director, it is not the positivity but the similarity of stock recommendations of the interlock partners that maintains the board interlock ties. The two mechanisms of social comparison and cognitive dissonance above might operate simultaneously in a closed triad. Similar stock recommendations from the common set of financial analysts may help the interlock dyad members avoid unfavorable social comparison and cognitive dissonance that are highlighted in cases of dissimilar stock recommendations. On the other hand, dissimilar stock recommendations from the common financial analysts will both increase the social comparison pressure and cognitive dissonance in the interlock dyad, eventually increasing the likelihood of tie dissolution. Therefore,

H2: The triadic closure, i.e. the coverage of the focal and the interlocked companies by the same financial analyst a) increases the likelihood of board interlock tie dissolution when both the companies receive unbalanced (dissimilar) stock recommendations, and b) decreases the likelihood of board interlock tie dissolution when both the companies receive balanced (similar) stock recommendations.

#### Structural and social psychological moderators of the triad closure effect on interlock tie maintenance

While the hypothesis above focuses on the maintenance of interlock dyads in a closed triad, the effect of the triad closure on interlock maintenance can be moderated by the strength of the triadic closure. For instance, although different stock recommendations to a focal and the interlocked company can cause cognitive dissonance in the dyad, the CEO and the director may pay less attention to the analyst stock ratings because the analyst has insufficient structural influence on them. Similarly, the effect of the triad closure on the likelihood of interlock tie maintenance might be moderated by the direction of social comparison, i.e. whether the focal or the interlocked company receives relatively negative stock recommendations. This is because the triad closure effect might be asymmetrical for the focal firm CEO and the outside director depending on their

different motivations and relative influence over the interlock tie maintenance. In the following section, I examine i) structural intensity of the triadic closure ii) directions of social comparison and iii) the CEO's power over the board as key potential moderators of the triad closure effects.

**Structural intensity of the triadic closure** Building on the Heider's triadic balance, Newcomb (1953) suggested that the greater the strength of the relationship among elements of a triad, the greater the triad's imbalance-induced tension. In other words, the relevance of the third-party X on the P-O dyad is contingent on the intensity of P or O's attitude toward X. For instance, when the stock recommendation from the common financial analyst is not highly valued by the interlock dyad members, its influence on cognitive dissonance and the dyadic tie maintenance in a closed triad will be limited. The interlock dyad members can ignore the evaluative information. Conversely, when the stock recommendation is perceived as more significant by the interlock dyad members, its influence on their social comparison concerns, cognitive dissonance and eventually the likelihood of the board interlock tie dissolution will become stronger.

When would the stock recommendations from the common financial analysts be regarded as more or less significant by the interlock dyad members? Social exchange literature on power and dependence (Emerson, 1962; Cook and Emerson, 1978) provides a more social structural account to this question. Social exchange theorists view social relations as ties of mutual dependence between dyadic members involved in multiple alternative social ties. From this perspective, the dependence of actor A upon actor B is explained by i) A's motivational investment in his or her goals mediated by B and ii) availability of alternative sources to achieve A's goal without resorting to B (Emerson, 1962: 32). Accordingly, the strength of the triadic closure will be related i) positively with the number of the common financial analysts, which increases the salience and pressure of social comparison and cognitive dissonance and ii) negatively with the number of the alternative, non-common analysts following the focal and the interlocked

companies. In other words, when there exist more non-common analysts compared to the number of common analysts, the executives in the interlock dyad are less dependent on the common analysts to achieve their goal of receiving a more positive evaluation from the investor community. Conversely, when the common financial analyst is one of the few analysts following the focal and the interlocked companies, the stock coverage and recommendations from the common financial analyst cannot be ignored, thus amplifying the effect of (dis)similar stock recommendations on the interlock tie maintenance under the closed triad. The arguments thus far lead to the following hypothesis regarding how the triad closure effect on interlock tie maintenance depends on the structural intensity of the triadic closure, indicated by the number of common over non-common financial analysts.

H3: Structural intensity of the triadic closure indicated by the number of common financial analysts relative to the number of non-common financial analysts i) decreases the likelihood of interlock tie dissolution in balanced (similar) triads and ii) *increases* the likelihood of interlock tie dissolution in *unbalanced (dissimilar)* triads.

**Direction of social comparison in unbalanced closed triads** Whereas early balance theorists emphasized cognitive consistency in people's interpersonal relationships, cognitive dissonance theory was later reformulated to incorporate how the dissonance in unbalanced relationships pertains to violations of different self-related motivations such as self-improvement or self-enhancement (Simon and Holyoak, 2002). More recent studies of social comparison also examined how these different motivations are related to individual preferences for different directions of social comparison. In particular, people motivated by self-improvement prefer upward social comparison, where the focal actor chooses to partner with better-performing alters. On the other hand, people motivated by self-enhancement prefer downward social comparisons, where the focal actor feels more comfortable in a relationship with worse-performing alters (Tesser

and Campbell, 1980; Wills, 1981). Moreover, studies also indicate that people try to avoid upward social comparison especially in a threat situation when positive self-presentation is in danger (Major et al., 1991; Miller et al., 2010). Such avoidance of upward comparison is especially pronounced when tasks of the comparison other are directly relevant and comparable to those of the focal actor in terms of performance evaluation (Suls and Wheeler, 2000; Major and Schmader, 2001).

According to these perspectives, when a focal company receives negative stock ratings relative to the interlocked company from the same set of analysts, the focal firm CEO may perceive the situation as a kind of performance threat and seek to avoid unnecessary upward social comparison with the outside director of the better performing interlocked company. Indeed, the avoidance of upward social comparison allows the focal firm CEO to achieve better self-presentation to the common security analysts, the investor community, and other non-triad directors in the board room. In essence, success in such avoidance of upward social comparison effectively substitutes the strategic motivation of the focal company to find a better performing board interlock partner for the political motivation of the CEO's better self-presentation to avoid such a better performing interlock partner. Therefore, from the focal CEO's perspective, social comparison pressure and related cognitive dissonance experienced in closed triads will be especially salient when the focal firm receives relatively negative stock recommendations. On the other hand, while the outside director may experience similar social comparison pressure when the interlocked company receives relatively negative stock recommendations, the extent of such performance threat will be significantly weaker than the case of the focal firm CEO. This is because most of the outside directors are affiliated with interlocked companies also as outside directors rather than as CEOs and held less responsible for the stock recommendations as the evaluation of the interlocked company's performance.



Thus, to the extent that the focal firm CEO perceives negatively unbalanced closed triads as a kind of performance threat situation, the likelihood of interlock tie dissolution as a result of social comparison pressure and cognitive dissonance will be higher in negatively unbalanced closed triads (i.e. negative recommendations for the focal firm and positive recommendations for the interlocked firm) than in positively unbalanced closed triads (i.e. positive recommendation for the focal firm and negative recommendations for the interlocked firm). One direct way of testing this idea is to examine the influence of the structural intensity of the triadic closure on the likelihood of tie dissolution for the two different unbalanced closed triad cases. To the extent that the triad closure effect is larger in negatively unbalanced closed triads than in positively unbalanced closed triads, structural intensity of triad closure will reflect such asymmetry of triad closure effects. Therefore,

H4: Structural intensity of the triadic closure indicated by the number of the common over non-common financial analysts increases the likelihood of interlock tie dissolution to a greater extent in *negatively unbalanced* triads than in *positively unbalanced* triads.

**CEO power over the board in unbalanced closed triads** While board interlock tie dissolution in negatively unbalanced closed triads may result from avoidance of increased social comparison pressure and cognitive dissonance alone in a given interlock dyad, the CEO's self-presentation motive to avoid upward social comparison is more likely to be realized when the CEO has the power over the board to influence the director nomination process. Indeed, corporate governance literature suggests that power and political dynamics between the focal firm CEO and the board can be an important moderator in determining the board composition. Research on the board composition suggests that when a CEO is more powerful than the board, the CEO is able to realize a number of socio-political and financial benefits such as symbolic board independence (Westphal and Graebner, 2010), higher compensation packages and the adoption of

golden parachutes (Wade et al., 1990; Wade et al., 1997). Research also suggests that although board members are often nominated by a nomination committee, the CEO almost invariably is consulted before director candidates are finalized (Wade et al., 1990). Therefore, to the extent that the focal firm CEO has power over the board, the CEO's self-presentation motive to avoid upward social comparison in a performance threat situation is more likely to be realized in the interlock tie maintenance. The arguments above lead to the following hypothesis on the influence of CEO power and the likelihood of interlock tie dissolution in negatively unbalanced closed triads.

H5: The more powerful a focal firm CEO over the board, the higher the likelihood of interlock tie dissolution in *negatively unbalanced* closed triads.

## **Method**

### Sample and data collection

I use a longitudinal panel research design to examine the maintenance of board interlock ties as a function of positivity or balance of financial analyst stock recommendations issued to the focal firm and its interlock companies. The sample is derived from the S&P 500 companies representing large industrial and service corporations listed on U.S. stock exchanges. 479 S&P 500 companies continuously represented for the sample period from 2000 to 2008 are retained as the final sample. To construct board interlock ties for these sample companies, I first created all the pairwise corporate interlock dyads between the focal and the interlocked companies based on a director list obtained from the BoardEx database. To preserve the directionality of interlock ties, I designated the focal and the interlocked company at a given interlock dyad and counted a given dyad twice (In the analysis, I clustered the standard errors of all the coefficient estimates around the dyad). These interlock dyads include both directional (i.e. where the director serves as a CEO or an executive director at one of the interlocked

companies) and non-directional ties (i.e. where the director serves only as non-executive director for both companies) (Palmer et al., 1986).

To examine the triadic structure between a board interlock dyad and financial analysts following the dyad members, I then followed all the stock recommendations issued to the focal and the interlocked companies from the start of the board interlock until the tie is broken. To verify the presence of a closed triad, I combined individual analyst identification information with all the interlock dyads. Analysts' firm coverage, stock recommendation, and identification data were obtained from the I/B/E/S Recommendation Detail database. Sample companies not interlocked at all, or not covered by the I/B/E/S were excluded from the final sample. *T*-tests revealed no significant differences between this sample and the larger population companies across the director, board, or firm attributes. This procedure yielded 16,753 observations of focal-interlocked company dyads at the individual executive level over the sample period, which is the unit of analysis for this study.

To collect data on individual director and firm level characteristics of the dyad, various archival databases were combined. Information on i) director's identity, demographic information, and job title, ii) other social ties among directors such as service on non-profit organizations or social club memberships and iii) director's educational background was obtained from the BoardEx database. Changes in corporate control and alternative sources of interorganizational network such as mergers and acquisitions and alliances were coded from SDC. Financial information and annual meeting data were collected from COMPUSTAT and Corporate Library respectively. The final sample included 924 aggregated triads and 1,195 outside director turnover cases over the sample period.

## Measures

**Board interlock tie dissolution** I coded a dummy variable *Board Interlock Tie Dissolution* to indicate director turnover at the interlock dyad as the dependent variable that measures board interlock tie dissolution. A director was regarded as having departed from the board as of the current year if the director was not reelected in the current year's annual shareholder's meeting. While director resignation during the director's term occurs, such resignation is very unusual (Agrawal and Chen, 2011) because it could be interpreted as an indication of boardroom disputes and provide a negative signal for the director's future career (Whisler, 1984). Due to the left-truncation of the data following this coding procedure, I coded the variable *Board Interlock Tie Dissolution* from the year 2000 as the start year and discarded the year 2000 data. To exclude alternative mechanisms of outside director turnover such as individual director characteristics (e.g. age, retirement), director reputation and director's limited time and resources, I included various control variables established in the corporate governance literature below.

**Analyst appraisals and balance** Following the prior research on the positivity or negativity of analyst appraisals (Womack, 1996; Brochet et al., 2011), I took the median value of all the stock recommendations issued to the focal and the interlocked companies during the most recent prior quarter (three preceding months) to the current year's annual shareholder's meeting date. For multiple analysts following the same dyad (overlapping triads), I calculated the median of aggregated stock recommendations at the individual company level. These aggregated stock recommendations regarding the focal and the interlocked companies were updated as past experiences of receiving positive or negative stock recommendations for the entire past year until the annual meeting date when the board interlock ties under examination were broken. To check the robustness of this aggregation measure, I tried different aggregation methods such as using the most recent prior year (twelve preceding months) before the annual meeting, and the results were substantively unchanged. In addition, to address the possibility that executives consider

the variance of multiple analyst stock recommendations in their judgment of stock recommendation positivity, I also verified the robustness of the median stock recommendation values by i) adjusting the median values with the standard errors of different stock recommendations issued by multiple analysts or ii) controlling for the standard errors of stock recommendations.

For specific stock recommendation sub-categories, I followed the I/B/E/S recommendation code where all the stock recommendations of different brokerage houses are divided into five sub-categories: 1, “strong buy”; 2, “buy”; 3, “hold”; 4, “sell”; 5, “strong sell”. To code the positivity or negativity of the stock ratings, I assigned sub-categories of “strong buy” and “buy” to the positive category and all the other ratings including “hold” to the negative category. This is consistent with prior research and qualitative studies showing that the “hold” rating is mostly considered as a negative evaluation (Barber et al., 2006; Reingold, 2006). This categorical measurement approach to the positivity or negativity of stock recommendations is justified given the ordinal nature of the stock recommendation categories. I then coded a dummy variable indicating particular balance status of stock recommendations between the focal and the interlocked company. *Negativity in Recommendation* is coded as a dichotomous variable when the focal company and/or the interlocked company receive negative stock ratings. *Unbalanced Recommendation* is a dichotomous variable indicating that the focal and the interlocked company receive opposite recommendations to each other. Within the *Unbalanced Recommendation* category, I distinguished between *Positive Unbalanced Recommendation* (the focal company receives positive and the interlocked company receives negative recommendations) and *Negative Unbalanced Recommendation* (the focal company receives negative and the interlocked company receives positive recommendations). Finally, *Positive Balanced Recommendation* and *Negative Balanced Recommendation* were coded to indicate either both positive or both negative recommendations to the interlock members.

**Triad Closure** A closed triad where the same financial analyst follows the focal and the interlocked company simultaneously was coded as a dichotomous variable *Triad Closure*. An interlock dyad covered by the same financial analyst at least once during the most prior year before the annual shareholder's meeting of the focal firm was considered as a closed triad. The analyst identification was coded at the individual analyst level from the analyst and brokerage house identification in the I/B/E/S database. To consider the possibility that the triad occurs more or less frequently within the same industry, I included a control variable *Same Industry* (explained below) in all the model specifications. In a supplementary analysis, I also controlled for the industries where the triadic closure occurs with relatively higher frequency such as utilities, software, and retail and the results did not change substantively.

**Structural intensity of the triadic closure** Following Emerson (1962), I coded the structural intensity of the triadic closure as a ratio of the number of all the common analysts covering the focal and the interlocked companies over the number of all the non-common analysts, whose coverage do not overlap. This is consistent with the social exchange theorists' operationalization of structural dependence and power use in exchange networks (e.g. Cook and Emerson, 1978). In examining H3 below, I also tried operationalization of triad closure intensity separately, i.e. as the number of all the common analysts over the number of the non-common analysts following i) only the focal company (*Intensity of Triadic Closure, Focal Firm*) and ii) only the interlocked company (*Intensity of Triadic Closure, Tied Firm*).

**CEO power over the board** Following prior research, I coded two variables as indicators of CEO power over the board: i) whether the focal CEO assumes the title of the chairman of the board simultaneously, and ii) the ratio of the independent directors over the total number of the board members. Director independence was coded following the title of the outside director as is indicated in the BoardEx database. These two variables have been used as indicators of a CEO's structural power over the board

(Finkelstein, 1992; Pollock et al., 2002b). Among various indicators of CEO power (Finkelstein, 1992), structural power of the CEO has been shown to influence the director selection process by allowing the CEO to select board members who are loyal, as well as by increasing directors' dependence on the CEO for their board seats (Westphal and Zajac, 1995; Belliveau et al., 1996).

### Control Variables

**Firm performance** Although the findings on the influence of firm performance on board composition are mixed in the literature (Davis, 1993; Yermack, 2004), I controlled for the firm performance of both the focal and the tied company as *Firm Performance, Focal Firm* and *Firm Performance, Tied Firm* in all the analysis models. I used return on asset (ROA) as a measure of firm performance coding the ROA of each company as *Firm Performance, Focal Firm* and *Firm Performance, Tied Firm*. Prior research on performance aspiration level suggests that managers perceive firm performance as the focal firm's relative performance compared to its competition (Cyert and March, 1963; Greve, 1998). Following this line of research, I first adjusted firm performance measures of both companies for industry differences by subtracting the median performance value for the firms' primary industry, defined at the two-digit SIC code level. In the main analysis models, I included this industry-adjusted performance of the focal and the tied companies. In a supplementary analysis, I also included categorical variables indicating the balance of the focal and the tied firm performance operationalized in a consistent manner with the four different balance categories of the stock recommendations (e.g. positive balance, negative unbalance) and the substantive results did not change.

**Individual director characteristics** Studies in management and financial economics on director turnover and board interlocks have suggested multiple variables to be controlled at the individual director level. Following prior studies, I coded *Director*

*Age* and *Director Age<sup>2</sup>* (square term of *Director Age*) to capture potentially non-linear effect of directors' age on director turnover. I also coded *Director Female* as a dichotomous variable indicating a female director. Prior studies of board interlocks in sociology also indicated that corporate elite status is an important determinant for board invitation for corporate leaders (Palmer and Barber, 2001; Westphal and Khanna, 2003). Indeed, social class theorists interpreted board interlock as an indication of social cohesion among members of the capitalist upper class (Zeitlin, 1974; Domhoff, 2002). To account for these perspectives, I coded a set of control variables as indicators of director corporate elite status. *Director Elite Education* indicates whether the director has attended elite educational institutions of undergraduate, business and law schools as defined by Ussem and Karabel (1986). *CEO Director* is a dichotomous variable coded as one when the outside director holds the CEO title of the interlocked company. To capture the prestige of the director's home organization, I also coded total sales revenue of the interlocked firm as *Log of Sales, Tied Firm*. Total revenue is often used in determining corporate reputational rankings such as Forbes 500 company index. Finally, I coded *Number of Total Board Appointments* as the total number of board appointments the director holds. The number of board appointments has been interpreted in different ways in governance research as an indicator of either i) high director status, predicting future director appointments (Davis, 1993) or ii) 'busy' director, since busy directors may be more likely to leave the focal board to spend more time and resources on their home organizations (Yermack, 2004; Fahlenbrach et al., 2010). I also controlled for the director board tenure and retirement during the sample period, and the results did not change substantively.

In addition, I coded two control variables to measure the social cohesion between the focal firm CEO and the interlocked company director, since the existing social cohesion between members of the dyad may decrease the influence of negativity or imbalance of stock recommendations on the dyad maintenance. *Indirect Social Ties*



indicate the total number of informal social ties that the CEO shares with the director through non-profit organizations and social clubs (Useem, 1982; Palmer and Barber, 2001)). *Other Board Ties* measure the total number of board ties that the CEO shares with the director on the corporate boards other than the focal board (Mace, 1971; Gulati and Westphal, 1999).

**Other firm and interorganizational networks characteristics** I also controlled for the focal firm characteristics other than firm performance which potentially influence a director's decision to serve at the focal firm's board. The prestige of serving at a larger company may increase a director's incentive to serve on a board. I coded *Focal Firm Size* as the log of total asset for the focal firm. I also controlled other direct or indirect interorganizational ties between the focal and the interlocked companies. I coded a dummy variable *Same Industry* when the focal and the interlocked companies belong to the same industry defined at two-digit SIC code level<sup>5</sup>. To control for the possibility that more central corporate boards experience more or less frequent director turnover, I also coded *Network Centrality of the Board (in-degree)* as the number of the total board interlock ties the focal firm receives from other companies (Davis and Robbins, 2004). I also coded multiple control variables characterizing the content of an interlock tie. A dummy variable *Ties to Financial Companies* indicates that the interlock tie is received from financial institutions. Financial control theorists studying board interlocks have long posited that interlock ties from financial institutions represent attempts of financial institutions to monitor a focal company (Mintz and Schwartz, 1981; Mizruchi and Stearns, 1988). I also included a dummy variable *Ties Reconstituted* to control for the scenario in which a broken board interlock tie at the director level is eventually reconstituted at the

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<sup>5</sup> On the one hand, product and geographic market similarities of the companies belonging to the same industry may provide more opportunities for the executives to interact with each other, which may lead to a decreased likelihood of interlock tie dissolution. On the other hand, legal restrictions (e.g. the Clayton Act) based on the public concern against board interlocks as a source of industry collusion may discourage companies from establishing or maintaining interlock ties within the same industry. In the sample frame of the current study, 581 (ca. 3.5% of total sample) dyads are observed to belong to the same industry and ca. 25 % of the same industry interlock dyads are under a triadic closure.

company level during the sample period (Palmer et al., 1986; Stearns and Mizruchi, 1986). Such board interlock tie reconstitution may indicate higher level of organizational resource dependence between the interlocked companies. In a supplementary model, I also examined tie reconstitution at the industry level during the sample period and the results did not change.

Finally, director turnover can also result from change in corporate control between the focal and the interlocked companies. I captured whether the two companies experienced any mergers and acquisition activities together in the past with the dummy variables *Merger Experience*. Similarly, the influence of cooperative strategies such as strategic alliances or joint ventures between the focal and the interlocked companies was captured by a dummy variable of *Alliance Experience*. To consider the possibility where the strategic similarity between the focal and the interlocked companies decreases the influence of the triadic closure, I also examined the distance of the diversification entropy measures at the interlock dyad along the product and geographic diversification dimensions (Palepu, 1985; Hoskisson et al., 1993; Westphal and Fredrickson, 2001). In the subsample analysis where the product and geographic diversification data is available from the database COMPUSTAT, the main results remained statistically significant.

### Analysis

The data for the present study is organized in a panel structure where the dichotomous dependent variable *Board Interlock Tie Dissolution* and other independent and control variables are observed at the focal-interlocked company dyad of the individual executive level throughout the sample period. The analytical challenge to analyze such panel data is that the dyads are not independent from each other. The error terms with the conventional OLS regression analysis will be correlated both within units over time and within years across units. To address this lack of independence among the dyads, I used a logistic panel regression model with clustered standard errors around the

focal-interlocked company dyads at the individual director level (Wooldridge, 2003; Mizruchi et al., 2006). Random effects logistic panel regression is used because there are several individual director and company level variables which do not exhibit enough within-unit variation over time, for instance, *Director Elite Education*, *Director CEO*, and *Same Industry* (Cameron and Trivedi, 2009). To establish better causality, I lagged all the independent and control variables by one year in all the analysis models. I also followed the precautionary measures in analyzing the marginal and interaction effects of logistic regression models suggested by Hoetker (2007). For example, I calculated the marginal effects of each interaction and verified its statistical significance along different predicted probabilities of the dependent variable, i.e. *Board Interlock Tie Dissolution* (see Norton et al., 2004). I also used Heckman selection models to address potential sample selection problems in analyzing the triad closure subsamples (Heckman and Borjas, 1980). The selection equation estimates the likelihood of triad closure using all the independent and control variables of the study. For the instrumental variable in the selection equation, I used the variable *Same Industry* where the focal and the interlocked firms belong to the same industry at the two-digit SIC level. The inverse Mills ratio as a selection parameter (*Inverse Mills Ratio of Heckman Selection Model*) is included in the subsample analysis of H5.

## Results

Descriptive statistics and bivariate correlations of all the research and control variables are provided in Table 1. Table 2 presents the results of random effect logistic panel regression models with clustered standard errors predicting the likelihood of board interlock dissolution indicated by director turnover (H1/H2). The first three models include only control variables - Model 1 with controls for individual director characteristics, Model 2 with controls for the focal and the interlocked company characteristics, and Model 3 including all the control variables. Some of the control

variables merit attention. The total number of director board appointment significantly increases the likelihood of interlock tie dissolution, providing support for prior studies suggesting that director turnover is more likely for more prestigious and busy directors. Moreover, social cohesion between the CEO and the director such as indirect ties via non-profit boards and industry associations decreases the likelihood of interlock dissolution. Firm performance of the focal firm is negatively associated with the interlock dissolution likelihood and more central boards in terms of network centrality experience more director turnover. Overall, individual director characteristics provided much stronger explanatory power in predicting director turnover than the focal and the interlocked firm characteristics.

Model 4-5 and 6-10 in Table 2 examine H1 and H2 respectively. H1 predicted that the likelihood of board interlock tie dissolution will be higher when either the focal or the interlocked company receives negative stock ratings in an open triad. Model 4 indicates that the negativity of stock recommendations for either the focal or the interlocked company (*Negativity of Stock Recommendations*) increases the likelihood of interlock tie dissolution compared to the cases where both companies receive positive recommendations, providing strong support for H1. Model 5 further explores the relative tie dissolution likelihoods in different balance categories compared to the reference category of the *Positive Balance of Stock Recommendations*, where both the focal and the interlocked companies receive positive stock recommendations. The result suggests that tie dissolution likelihood is especially high in *Negative Unbalance* and *Negative Balance* categories in open triads.

H2 predicted that the likelihood of interlock tie dissolution will be higher when the focal and the interlocked companies receive unbalanced, i.e. dissimilar stock ratings, in a closed triad compared to an open triad cases. Results of Model 6 to 10 provide supporting evidence for H2. A strong interaction effect was found between unbalanced stock recommendations and triadic closure predicting interlock tie dissolution (model 6).

In other words, interlock dyads are less likely to be maintained when they are embedded in an unbalanced triadic closure, consistent with the prediction of the H2. Models from 7 to 10 further investigate subcategories of stock recommendation balance by examining the interaction effects between each balance state and triadic closure. In particular, Model 8 and 9 split the categories of *Unbalance* into *Negative Unbalance* and *Positive Unbalance* categories. The two models indicate that the effect of the triadic closure in unbalanced triads mainly comes from the *Negative Unbalance* category when the focal company receives negative recommendations, while the interlocked company receives positive recommendations from the common set of analysts (Model 9). Interestingly, the interaction effect between triadic closure and *Positive Unbalance* category is statistically not significant (Model 8), where the focal firm receives positive stock recommendations while the interlocked company receives negative recommendations. On the other hand, Model 7 and 10 examine *Positive Balance* and *Negative Balance* categories respectively. Similar to the *Unbalance* cases, triadic closure effect seems to be pronounced only in the ‘negatively balanced’ cases where both the interlock partners receive similarly negative recommendations. Model 10 indicates a strong interaction effect between negative balance status of stock recommendations and triadic closure on the maintenance of board interlock ties but this interaction is not found for positive balance cases (Model 7).

Figure 4 plots the predicted probabilities of interlock tie dissolution (conditional probabilities) in different categories of stock recommendations balance in open and closed triads. The triad closure effect is particularly significant when the focal firm receives negative stock recommendations. Triadic closure significantly increases interlock tie dissolution likelihood in *Negative Unbalance* category. Conversely, triadic closure significantly decreases interlock tie dissolution likelihood in *Negative Balance* cases, where both the interlock dyad members receive negative stock recommendations. This cross-over interaction between different stock recommendation balance states and triadic closure is notable both by size and statistical significance. With all the other

independent and control variables set at their mean level, the triadic closure is found to increase the interlock dissolution likelihood by 34% in the *Negative Unbalance* category. Conversely, with all the other covariates set at their mean level, the triadic closure decreases the tie dissolution likelihood by 39% in the *Negative Balance* category. Although this cross-over interaction is also observed in the *Positive Unbalance* and *Positive Balance* categories, the effect is not as large and statistically insignificant.

Models in Table 3 examine H3 and H4, which consider the structural and social psychological moderators of the triad closure effect on interlock tie maintenance. H3 predicted that the structural dependence of the interlock dyad for their stock coverage increases the triad closure effect both in balanced and unbalanced stock recommendations. Model 1-4 examines the interaction effect between the *Intensity of Triadic Closure* and each stock recommendation balance category. Model 3 and Model 4 provide support for H3 in *Negative Unbalance* and *Negative Balance* cases. There are significant positive interaction effect between *Negative Unbalance of Stock Recommendations* and *Intensity of Triadic Closure* (Model 3) and significant negative interaction effect between *Negative Balance of Stock Recommendation* and *Intensity of Triadic Closure* (Model 4) in predicting the interlock tie dissolution likelihood. Interestingly, this moderating effect of structural dependence is not observed in other balance categories. Although the coefficient signs are in line with H3 for positive balance and unbalance recommendation cases (Model, 1, 2), the effects are not significant at the conventional statistical significance test level. Taken together, the overall results indicate the triad closure effects mainly depend on the negative stock recommendations of the focal firm, rather than the tied firm.

H4 predicted that structural intensity of the triadic closure increases the likelihood of interlock tie dissolution to a greater extent in negatively unbalanced triads than in positively unbalanced triads. To examine the relative magnitude of the triad closure effects directly, I compared the magnitude of the interaction effects of negative unbalance

and positive unbalance cases using the same reference category of balanced triads in Model 5. Consistent with H4, interaction effect with triad closure intensity is larger in negative unbalance than positive unbalance cases and only significant for negative unbalance cases of stock recommendations. In a supplementary analysis of Model 6-8, I also examined whether triadic closure intensity from the focal or the interlocked firm has stronger effects on the likelihood of interlock tie dissolution in negatively unbalanced closed triads. Consistent with the coding procedure of the *Intensity of Triad Closure*, I coded the number of the common analysts over the number of non-common analysts following the focal company as *Intensity of Triad Closure, Focal Firm*. Similarly, I also coded *Intensity of Triad Closure, Tied Firm* for the analysts following the interlocked company. Although both intensity measures have significant effects interacting with the negative unbalance category of stock recommendation to predict the increased likelihood of interlock tie dissolution (Model 6,7), the effect of triad closure intensity from the tied firm's analysts does not remain statistically significant when the triad closure intensity from the focal firm's analysts is controlled (Model 8). This provides further support to the theoretical argument of H4 that the triad closure effect can be asymmetrical depending on the direction of social comparison and will be pronounced especially in the negative unbalance cases due to the social comparison concern of the focal firm CEO rather than the outside director of the interlocked company.

H5 predicted that the focal firm CEO's power is positively related with the likelihood of interlock tie dissolution in negatively unbalanced closed triads, because more powerful CEOs are better able to avoid upward social comparison in negatively unbalanced closed triads. I examined H5 in the subsample of closed triads (N=924) and included *Inverse Mills Ratio of Heckman selection model* in all the models to address potential sample selection problem. Results of the random effect panel regression models in Table 4 provide empirical support for H5. Model1-3 indicates that there is a significant positive interaction effect between the CEO duality (CEO assumes the position of the

Chairman of the Board) and the negative unbalance of stock recommendations in the subsample of closed triads. Similarly, significant negative interaction effect is found for the ratio of the independent directors as the reverse measure of the CEO's structural power over the board<sup>6</sup>. It might be suggested that the interlock director's concern for negative status spillover, not the focal firm CEO's social comparison pressure, may increase the likelihood of tie dissolution in negatively unbalanced closed triads (D'Aveni, 1990; Jensen, 2006; Kang, 2008). To address this alternative mechanism directly, I examined the interaction effect between indicators of director status and the negative unbalance of stock recommendations in predicting the likelihood of the interlock tie dissolution. *Director Status* has been coded as the factor score of the principal component analysis for the three independent variables in the main model – the director's total number of board appointments, total number of non-profit board appointments, and elite education. As shown in Model 4 and 5, i) the interaction effect between *Director Status* and *Negative Unbalance of Stock Recommendations* is not significant, and ii) the interaction effects of the CEO power measures remain statistically significant even after controlling for the interaction effect of *Director Status*.

Finally, to explore the relative strength of cognitive over instrumental motivations of the CEOs to maintain board interlock ties under the presence of triadic closure, I implemented a small-scale survey to CEOs of public companies<sup>7</sup>. The survey population was CEOs of large and mid-sized public U.S. companies with more than 100 million dollars in sales. 250 companies were sampled out of the Reference USA Index. 101 out of 250 CEOs in the sample frame responded. As illustrated in Table 5, the first question asked whether the CEO would 'feel uncomfortable' (cognitive dissonance) when the

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<sup>6</sup> I examined the interaction effects between measures of CEO power and other balance categories of stock recommendations in closed triads (i.e. positive balance, negative balance, and positive unbalance categories) but could not find similar interaction effects between CEO power measures and stock recommendation balance categories.

<sup>7</sup> This CEO survey was administered as part of another study outside this dissertation, which was a follow-up of another CEO survey. Although the sample was not a random sample, the CEOs in the final sample were representative of the population in terms of firm performance (ROA, MBV) and total annual sales.



CEO's firm is downgraded by a security analyst, while the home firm of the CEO's board member (another CEO) received positive ratings. The other question asked whether the same situation of negative unbalance would make the CEO 'look bad' (social comparison pressure). This same set of questions was repeated under open vs. closed triad scenarios respectively (when the stock ratings come from a different set of analysts vs. the same analyst). Table 5 suggests that most CEOs disagreed that they would feel cognitive dissonance or social comparison pressure when the stock ratings come from a different set of analysts. However, when the same set of questions was asked under the closed triad scenario, a majority of the CEOs agreed that they would 'feel uncomfortable' or the situation would make them 'look bad'. While it has the limitations of a small sample, this survey provides supportive evidence to the main mechanisms of the current study's triadic closure and balance between the focal firm CEO, interlocked director, and their analysts.

## **Discussion**

Overall, the findings support the theoretical perspectives of the present study. The first set of results showed that in an open triad where there is no analyst stock coverage overlap, the likelihood of board interlock tie dissolution between a focal and the interlocked company increases with the negativity of each company's stock recommendations. This finding is consistent with the theoretical perspectives of the present study that board interlock partners in an open triad interpret each other's stock recommendations as an important signal from the investor community and as a result, interlock partners with negative stock recommendations are less likely to be maintained. A second set of results addressed how this instrumental motive of board interlock tie maintenance becomes less salient than the cognitive motivation to avoid unfavorable social comparison or cognitive dissonance in a closed triad, where a common set of financial analysts follow both the focal and the interlocked company. The empirical

analysis confirmed that board interlock ties are less likely to be maintained when they are embedded in a triad that is both unbalanced and closed, i.e. when the focal and the interlocked company receive dissimilar stock recommendations from the common set of financial analysts. The effect of triadic closure is especially significant when the focal firm receives relatively negative stock recommendations compared to its interlock partner. In particular, I find that triadic closure increases interlock tie dissolution likelihood in ‘negative unbalance’ cases where the focal company receives worse recommendations than the interlocked company. Conversely, interlock ties are less likely to be dissolved in ‘negative balance’ cases in a closed triad, where the two companies receive similarly negative stock recommendations.

The final set of results examined structural and social psychological moderators of the triad closure effect on board interlock tie maintenance – i) structural intensity of triadic closure, ii) direction of social comparison, and iii) CEO power over the board. The results showed that the focal and the interlocked firm’s structural dependence on the common financial analysts increases the effect of the triadic closure in a consistent manner with the main effects especially when the focal firm receives negative stock recommendations. This is consistent with the theoretical argument of the present study regarding the direction of social comparison in closed triads, which suggest that interlock tie dissolution in closed triads will be mainly driven by the focal firm CEO’s avoidance of upward social comparison when the focal firm receives relatively negative stock recommendations compared with the tied firm. Indeed, results indicated that the CEO’s power over the board increased the likelihood of interlock tie dissolution in negatively unbalanced closed triads. This set of findings suggests that when a focal firm CEO has power over the board in closed triads characterized by negative unbalance, the CEO can successfully substitute the strategic motivation of the focal company to maintain a tie with a better performing board interlock partner for the CEO’s political motivation to

maintain a tie with a similarly performing partner, in order to ensure a relatively favorable self-presentation to the investor community.

Several supplementary analyses lend support to the robustness of this triad closure effect. I considered potential selection bias where directors with particular demographic profiles or relatively high status are disproportionately represented on board with certain balance states. This might especially be the case when both the interlock companies receive negative evaluations from the investor community (negative balance), because they may have difficulty persuading qualified directors to serve on their boards. Although this scenario alone does not explain the strong interaction effect between different balance states and triad closure, I examined multiple indicators of director characteristics in different balance states in open and closed triads. I did not find significant statistical differences in terms of director demography, CEO status, or number of other board memberships over different categories of balance and triadic closure. Another possibility is that the effect of triadic closure is not exogenous, i.e. it represents some confounding effects of other variables such as same industry membership between the focal and the interlocked company. Most of all, I controlled for the *Same Industry* in all the model specifications. Moreover, since almost 75% of closed triads are between different industries at the two-digit SIC level, I was able to directly examine the interaction effect between membership in the same industry and different balance states. The results did not provide similar interaction patterns between different balance states and triadic closure observed in the main analysis of the study.

Taken together, the theory and supportive findings of the present study make a significant contribution to the larger body of literature on corporate governance, including board interlock research (Mizruchi, 1996; Davis and Greve, 1997; Westphal et al., 2001; Kang, 2008). In the present study, I have sought to expand social structural perspectives on board interlocks from the dyad to triadic structures that include external constituents of the focal and the interlocked companies. Although a small number of

studies have considered how board interlocks can be analyzed from a triadic perspective (e.g. Mizruchi, 1992; Gulati and Westphal, 1999), they have not drawn from social structural theories of triadic relations and their structural analyses have not considered the tie content and balance of the triadic structures. In particular, the theoretical perspectives developed in the present study suggest how the executives' decision to maintain their interlock ties can be influenced by the relative salience of the executives' instrumental and cognitive motivations of social affiliations in different balance states of open vs. closed triads respectively. Moreover, the present study also incorporated the board interlock members' adjacent network of external constituents such as financial analysts in developing the structural theory of triads on board interlocks. I also argued how the effects of triad closure on board interlock maintenance can be moderated by socio-political interests and power of the focal firm CEO. As a result, the present study starts to develop more structural and social psychological perspectives on interorganizational networks in corporate governance context such as board interlock ties. These theoretical perspectives may be also extended to other kinds of relationships among corporate elites such as corporate executives' advice seeking network for strategic decision making (McDonald and Westphal, 2003). Moreover, in suggesting that the quality of the board interlock ties of a focal firm can be compromised by i) the structural influence of external firm constituents and ii) socio-political interests and power of the CEO, the present study also provides important managerial and policy implications. Overall, there has been lack of attention to the quality of the board members' external ties as corporate governance mechanisms despite their strategic significance. The present study indicates that firm constituents and policy makers can consider the quality of the board interlock ties as an important part of their corporate governance monitoring scorecards and in doing so, consider the triadic social structure and CEO power as potential risk elements which can undermine the board interlock tie quality.

In proposing the triadic social structure as a mechanism that underlies the maintenance of board interlock ties, the present study also contributes to a more nuanced understanding of structural embeddedness in interorganizational network research. In particular, the distinction between an open and a closed triad expands our perspectives on the role of interorganizational ties from strictly that of information conduits or quality signals (e.g. Podolny, 2005) to also one of social comparison and cognitive dissonance induced by the social structure (Festinger, 1954; Heider, 1958). This insight on the alternative role of interorganizational ties may allow future studies to examine other consequences of triadic closure than the maintenance of embedded dyads such as board interlock ties. For instance, the structural perspective of a triad may help us understand the adoption (or abandonment) of different governance policies not only as a result of dyadic diffusion based on learning and imitation (e.g. Haunschild and Miner, 1997) but also as a result of social proof processes (e.g. Rao et al., 2001) between a focal firm and its interorganizational network partners that interact with the same set of external constituents. Triadic closure may amplify the effect of more cognitive mechanisms such as social proof between the members of the embedded dyad in their decisions to comply with the pressure of the external constituents or not. Structural analysis at the dyad level alone cannot provide these insights on the adoption or abandonment of different governance policies targeted at the external constituents.

Finally, the present study also has implications on the vibrant literature in organizational studies, finance and strategy on the influence of external firm constituents including financial analysts on corporate governance. This study suggests that not only the content but also the *structure* of analyst firm coverage ties can influence important strategic decisions made by corporate leaders such as maintenance of board interlock ties. Future extension of the present study's structural framework can examine how connections between multiple groups of external constituents following a focal company influence the focal firm managers' strategic decision making. Indeed, the literature on

social triads has approached triadic social structures from two different angles. One stream of research has explored the constraining role of the common third party alter on the members of the embedded dyad (Simmel, 1950; Heider, 1958; Lorrain and White, 1971). The other stream of research has inverted the triad, examining how a connection between two alters in a focal actor's adjacent network can constrain the focal actor's agentic behavior (Merton, 1957; Coleman, 1988; Burt, 1992). While the present study has focused on the former triad structure, the latter triad structure can be also utilized to investigate ties among multiple groups of external constituents, e.g. analysts and journalists, and their influence on a focal firm managers' strategic decision making. One potential candidate is to examine the focal firm's strategic change as a response to the performance criticism of analysts and journalists and their different degrees of structural connection to each other. By extension, the present study's structural and social psychological perspective of a triad has potential applications to other fields of organizational studies and strategic management where external constituents' role to 'observe, interpret, and make sense of firms and their actions' (Rindova and Fombrun, 1999:700) is emphasized as a main theoretical mechanism of external constituents' influence on firm behavior

The theoretical perspectives of the present study also await refinement in future research. Future studies could be directed at determining the nature of negative ties in triadic closure. For instance, the present study finds a strong interaction effect between triadic closure and negative balance states from different stock recommendations on the likelihood of interlock tie maintenance. I interpreted this interaction as resulting from the relative lack of social comparison pressure and cognitive dissonance when both the executives of the interlocked companies receive similarly negative evaluations from the common set of financial analysts. In fact, triad closure in negative balance states may go beyond this lack of cognitive pressure to enhanced interpersonal affect and sympathy between the focal firm CEO and the outside director, which may result in increased

collaboration in the board room. Future studies can examine the potential for such collaboration to develop in closed triads and its consequences for the executives' strategic decision making. Among other possible outcomes, this collaboration in the boardroom might be manifested in the form of similar or coordinated performance justification accounts targeted at the common financial analyst. In any event, the nature of negative ties in closed triads and their consequences remain intriguing issues that awaits future research.

## Chapter 3

### **The Triad That Binds: How the Social Structure of Analyst and Journalist Performance Accounts Affects Firm Strategic Change**

#### **Introduction**

“He who has one child is his slave; he who has more is their master” (Simmel, 1950:141)

“I must be blind” (an experiment subject surrounded by six other confederates as he changes his original opinion on a task of visual perception accuracy, conforming to the majority opinion of the confederates, Asch, 1951: 181)

Firms and corporate leaders are evaluated and scrutinized by a variety of external constituents, including regulatory authorities, consumer groups, and members of financial communities. A number of interconnected literatures have explored how these external firm constituents exert pressure on firms to adopt different organizational practices and change corporate policies. For instance, institutional theorists have suggested that external constituents function as legitimacy conferring actors who promote the adoption of organizational practices that are aligned with the interests of the state, professional associations, or dominant institutional logics (DiMaggio and Powell, 1983; Edelman, 1992; Scott and Meyer, 1994). Corporate governance scholars have focused on shareholders or their representatives and suggest how, for instance, large institutional investors pressure firms to pursue corporate strategies or policies that are believed to promote shareholder interests (Westphal and Zajac, 1998; Useem, 1999). There is also a growing body of research on how so-called ‘information intermediaries’ such as financial analysts or journalists influence firm behavior and performance. These studies indicate that analysts and journalists provide accounts of firm performance and leadership to a



broader audience of stakeholders, which in turn influences firm reputation and legitimacy with respect to different corporate strategies (Zuckerman, 2000; Pollock and Rindova, 2003; Kennedy, 2008).

While this body of research has enhanced our understanding of external constituents' influence on different corporate policies and strategies, much less attention has been paid to how different accounts of firm performance and leadership provided by *multiple* external firm constituents can influence managers' strategic decision making. For instance, most existing studies on external firm constituents tend to assume that these different, but not necessarily consistent external pressures from multiple external constituents are homogeneous in their contents and influence, thus considering them in isolation. This lack of scholarly attention to the influence of the social structure among multiple external firm constituents on firm behavior is surprising, since the larger literature in social structural theory has long suggested that the presence or perception of ties between alters can influence the focal actor's behavior (Simmel, 1950; Coleman, 1988; Burt, 1992; Kilduff and Krackhardt, 1994). Indeed, given the frequent interactions between corporate leaders and firm constituents such as financial analysts and journalists, their influence on corporate strategy may derive not only from the dyadic relationship between a given corporate leader and a constituent, but also from the dyadic tie's structural embeddedness in a larger social structure, such as how the firm constituents themselves are connected to each other.

In this chapter, I attempt to address this gap in the literature by examining how consensus in opinion and connection among multiple external firm constituents influence a focal firm's strategic decision making. In particular, I examine how multiple but not necessarily consistent firm performance accounts provided by analysts and journalists can affect the focal firm top managers' interpretation of firm performance and decision to engage in strategic reorientation of the firm. I first start by considering how a consensus in the performance evaluations between the analysts and journalists increases the focal

firm's strategic change. Specifically, I examine how analysts' negative evaluation of firm performance (e.g. 'strong sell' stock recommendations) followed by journalists' i) negative news articles in their overall tenor or ii) internal attribution of the negative firm performance (e.g. "it is the CEO's current strategy that has caused the performance problem") can encourage the covered firm managers to reconsider their unsuccessful strategic choices. Drawing on theories of attribution and persuasion (Kelley, 1967; Eagly and Chaiken, 1975; Goethals, 1976) and theories of second or third order expectations in social psychological research (Perloff, 1999; Webster and Whitmeyer, 1999; Ridgeway and Correll, 2006), I argue that the managers' reconsideration of their strategic choice can result from their concerns about other external firm constituents exposed to the negative evaluations of the firm in an agreement reached by analysts and journalists.

I then explore how the social structure of the performance accounts issued by analysts and journalists can prompt strategic change in the focal firm, independently of the consensus effect examined above. In particular, I propose how references to a particular analyst's name in a news article authored by a journalist following the same company may function as a perceived tie between these two important external constituents from the standpoint of the focal firm management and therefore constitute a *triadic closure* comprised of the analyst, the journalist and the focal firm management. This triadic closure, I argue, may increase the likelihood of strategic change in the focal firm through two different mechanisms. First, a perceived tie between analysts and journalists may function as a constraint for the focal firm managers to 'divide and conquer' the two connected social actors in defending the managers' strategic choice (Simmel, 1950; Merton, 1968; Burt, 1982), thus increasing the likelihood that the managers will reconsider their current strategic choice. Second, a perceived tie in a closed triad can be interpreted as a 'coalition' between the analyst and the journalist to the exclusion of the focal firm management, which in turn increases the subjective uncertainty of the focal firm managers about their current strategic choice, especially

when the focal firm performance is relatively low (Simmel, 1950; Heider, 1958; Krackhardt, 1999). Taken together, I argue that a perceived tie between external constituents may increase the constituents' pressure on the focal firm due to the loss of the focal firm's structural brokerage opportunity and the unique social psychological pressure in a closed triad that causes the independent opinions of the focal firm to be less tolerated.

Against this backdrop, the present study advances more social structural perspectives on strategic decision making of the firm as a reaction to different performance accounts issued by multiple external firm constituents. I examine how different performance accounts by analysts and journalists together with their social structure can influence the focal firm managers' perception of the external environment and eventually increase the likelihood of the firm's strategic reorientation. Whereas previous research on strategic change has conceptualized the external environment as a homogeneous, unfragmented and unidimensional entity (see Chapter 1 for the discussion), the present study departs from this assumption and considers multiple, potentially inconsistent performance evaluations of the external constituents as more realistic manifestations of the external environment. As a result, this study identifies a novel social structural mechanism by which i) negative evaluations of the firm as an agreement reached by analysts and journalists or ii) perceived ties between the two social actors from the standpoint of the covered firm's managers may encourage the managers to reconsider their current strategic choices. Although efforts have been made to understand strategic change from the embeddedness perspective, the theoretical emphasis has been on the dyad level between the focal firm and its network partners, whether they are interorganizational network partners (Kraatz, 1998) or the focal firm CEO's peers for advice seeking (McDonald and Westphal, 2003). The present study expands the social structural perspective on corporate strategic change to include external firm constituents, in particular analysts and journalists and consider how a triadic social structure comprised

of these two constituents and the focal firm management can influence individual cognition of top managers regarding their firm performance and strategic leadership.

Moreover, in suggesting the framework of the triadic closure as a mechanism for the focal firm's strategic change, the present study has implications for the larger literature on firms' strategic reaction to institutional pressures. Despite the lively debate on agency vs. structure in the structural sociology and corporate strategy literatures (Oliver, 1991; Sewell, 1992; Emirbayer and Mische, 1998), we still lack a clear understanding about what kind of social structure among the external constituents may encourage or discourage the agentic behavior of the focal firm (Hannan et al., 2007:174). Whereas the institutional theorists have long suggested that relational networks in the institutional environment assist the elaboration and transfer of institutional norms in the organizational field (Meyer and Rowan, 1977; Oliver, 1991), our understanding of this important insight has been limited to the dyadic paradigm of the focal organization in relation to its homogeneous external environment. As a result, attempts to extend the relational networks in external environment toward social structural perspectives have been limited to a few propositions of global network properties of the external environment such as network cohesion or density (e.g. Abrahamson and Fombrun, 1994; Rowley, 1997). By theorizing and documenting how the presence of a perceived tie between external constituents to the exclusion of the focal actor in a closed triad may constrain the agentic behavior of the focal actor (e.g. avoidance of strategic change), the present study offers a triadic social structural perspective comprising both the focal actor and the ties among external constituents. Moreover, the present study advances a more nuanced social psychological mechanism to the agency vs. structure debate by examining how the *perception* of the focal actor about the ties between external constituents influence the focal actor's agency, in particular by theorizing perceived loss of structural brokerage opportunities of the focal actor and the increased subjective uncertainty of the focal actors' independent opinion.

Finally, this study also contributes to the expanding literature on the role of financial analysts and journalists on firm behavior by considering these important external constituents together. Studies of analysts and journalists suggest that these two social actors actively participate in socially constructing reputation of a firm or legitimacy of corporate strategies (Zuckerman, 2000; Pollock and Rindova, 2003; Kennedy, 2008; Wiesenfeld et al., 2008). However, these studies have examined the influence of analysts or journalists on firm behavior independent of each other, when in fact they often pay attention to each other and exchange a substantial amount of information (Pollock and Rindova, 2003; Pollock et al., 2008). A further limitation of the prior studies is that the distinct roles of analysts and journalists in the social construction process of firm reputation and legitimacy have been overlooked. Indeed, qualitative studies indicate that the two parties approach the subject of firm performance and leadership in quite a different manner due to varying emphasis in analysis and target audiences (Kurtz, 2001; Gans, 2004; Reingold, 2006). Not surprisingly, the prior studies' empirical predictions that do not consider both analysts and journalists have often produced inconsistent and mixed results (but see Core et al., 2008; Joe et al., 2009). By considering both actors together to examine their influences on strategic change, I aim to develop a better understanding of their influence on firm behavior in terms of both theory and empirical predictions. In the following section, I begin my discussion by reviewing i) the unique role of analysts and journalists in providing their accounts of firm performance and leadership to other firm stakeholders and ii) the social structure on how the two constituents are connected to each other through their accounts. I then turn to the theory development on how their consensus and connection foster strategic change efforts of the covered firm.

### Analysts, journalists, and the social structure of their performance accounts

Analysts and journalists are ‘institutionalized suppliers of social judgments’ of organizations (Bitektine, 2011) and their leaders (Wiesenfeld et al., 2008). While other external firm constituents (e.g. regulatory authorities or consumer groups) may make statements that influence top managers’ performance attributions and consideration of strategic alternatives, analysts and journalists are particularly important because they reach the shareholders and other stakeholders of the firm with regular, institutionalized accounts of firm performance and leadership. For instance, analysts guide investor behavior by providing regular summary statements about corporate finance, strategic decisions, and industry trends of the firms they follow (Hayward and Boeker, 1998; Zuckerman, 1999; Rao et al., 2001; Zuckerman, 2004). Similarly, journalists often offer interpretations of firm performance, leadership, and strategy to diverse sets of readers (Hayward et al., 2004; Miller, 2006; Kennedy, 2008). Qualitative research on the relationship between top executives and analysts or journalists also suggests that top executives devote significant time and attention to interpreting and responding to the stock recommendations and news articles issued by these two social actors (Useem, 1996; Rao and Sivakumar, 1999; Kurtz, 2001). A consequence of this regularity of their reports and the scope of their audience is that analysts and journalists have become among the most significant external constituents for top executives in their assessment of firm performance and strategic decision making processes. As one Investor Relations executive I interviewed noted<sup>8</sup>,

*“Often times, analysts critique corporate strategy directly. Then, the management should think about this. That doesn’t mean the management necessarily follows their strategic advice, but still they think about it. There are actually cases where*

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<sup>8</sup> I conducted informal interviews with corporate executives responsible for investor relations (IR) activities of large public companies. The 15-20 minute interviews were administered one-on-one basis with selected participants of the executive education program at the University of Michigan for the National Investor Relations Institute for a week. The IR executives and their companies were representative of top managers of large industrial and service companies in terms of their demography and company characteristics. The interviewees included both the U.S. and non-U.S. corporations.

*top managers change their strategies following an analyst's critique, [when asked to elaborate], for instance, when we entered the China market"*

Yet, the role of analysts and journalists seems to be perceived differently by the managers.

Another executive added,

*"Analysts and journalists are basically very different. We think of sell-side analysts kind of our partners or gateways to the investor community. Journalists just try to sell their stories. They can be very risky"*

Indeed, while both analysts and journalists can influence strategic decision making process of the firm via their accounts of firm performance and leadership, the underlying mechanisms of how these two parties achieve their goals seem quite different. As professionals, most analysts specialize in a limited number of industries (Zuckerman, 1999; 2004) and communicate directly with the investor community. This industry specialization and intense time pressure to respond to the stock market promptly restrict analysts' evaluations of firm performance and leadership to a few, predefined technical categories of corporate finance; for instance, three to five different stock recommendation classifications (Fleischer, 2009) or ratios and numbers distilled from technical analyses (e.g. EPS). As a result of this constraint, it is less common, if not rare, for analysts to directly critique the CEO or the top management in their brief reports, although the observations of the firm's management quality remain an important part of analysts' cognitive schema as they evaluate a covered firm (Kuperman, 2003; Reingold, 2006).

In contrast, journalists target as their audience the general public, who may lack technical knowledge of corporate finance. Although the topic and format of journalist articles vary significantly depending on the media outlet<sup>9</sup>, the press on corporations often

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<sup>9</sup> Different types of media publications target different audiences and journalists' firm performance attribution can vary depending on the target audience. For instance, Miller (2006) categorizes the press into five different categories – national business (e.g. Wall Street Journal), local market (e.g. San Francisco Chronicle), electronic business (e.g. Bloomberg), trade publications (e.g. Chemical Week), and national nonbusiness (e.g. New York Times). The influence of these different media outlets on the likelihood of the covered firm's strategic change is further discussed below in the theory development section. Also, following the other management studies focusing on the media, I focus on news media and its journalists, but other media outlets such as internet blogs can be an interesting extension of the current study's analysis.

follows a broader logic of reporting ‘newsworthy events’ that are more personalized, dramatic, and of ongoing interest to target readers (Jamieson and Campbell, 2001). Thus, unlike stock recommendations or equity research reports by analysts, journalist articles often provide ‘stories’ about firm performance and leadership, for instance, why negative firm performance persists or why the future prospects of a firm are deemed unfavorable in the market (Hayward et al., 2004; Tetlock, 2007; Tetlock et al., 2008). A further impact of the peculiarity of journalists’ target audience is that journalist accounts often emphasize the CEO and the top management team as the most visible figureheads of the covered firm, thus holding them responsible for the firm’s performance outcomes (Meindl et al., 1985; Hayward et al., 2004). Indeed, streams of research on managerial performance attributions indicate that they can be classified into two broad categories – internal attribution where the CEO’s strategic choice is suggested as a cause of poor firm performance and external attribution where the responsibility is attributed to macroeconomic factors and industry trends (Bettman and Weitz, 1983; Salancik and Meindl, 1984; Meindl et al., 1985). Therefore, whereas analysts’ judgments about firm performance are relatively limited to a few categories of firm evaluations such as ‘buy’ or ‘sell’ stock recommendations, journalists’ stories provide a rationale for the current firm performance outcomes. And these journalistic accounts of firm performance often diverge even for the same company. For instance<sup>10</sup>,

*"We're operating in a very difficult climate overall for our industry," thanks in part to cost-containment pressures. Political pressures on the industry, noted Mr. White (the CEO), will continue."* (A journalist article with an external attribution for the negative firm performance of the Abbot Laboratories Inc.)

*"Jon Fisher, health-care analyst with Fifth Third Asset Management in Minneapolis, questioned just how much drug-eluting stent market share Abbott will be able to grab,*

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<sup>10</sup> It might be suggested that journalists just deliver the other party’s opinion on the subject matter to the audience, for instance, the CEO’s own performance attribution in the provided examples. Yet, Studies in journalism suggest that journalists carefully choose their interview subjects and their quotes, so that the interviews and quotes can represent the journalist’s own perspective about the subject matter (e.g. Gans, 2004).



*‘They don't really have any experience in the business,’ Fisher said, referring to Abbott.’* (Another journalist article with an internal attribution for the negative firm performance of the Abbott Laboratories Inc.)

Despite the divergence in their evaluations of performance and leadership even for the same companies followed by both the analysts and journalists, a closer look at their reports reveals that the two parties are often structurally connected to each other as well. This is because journalists often repackage and rebroadcast information from other firm constituents or information intermediaries such as consumer groups, competitors, and analysts (Miller, 2006). Conversely, the information rebroadcasted by the media also influences other firm constituents’ evaluation of the firm, such as those of financial auditors (Joe, 2003). This information flow between the investor community and the media has been suggested in the context of media legitimation or information cascades in the IPO process (Pollock et al., 2003; 2008), but the social structure of how these two communities are connected to each other and whether and how such connection influences the focal firm managers’ strategic decision making have not been investigated. One possible approach to establishing this connection between analysts and journalists is illustrated in the following article in which the journalist ‘rebroadcasts’ an analyst opinion by quoting a particular analyst name who is following the same company.

*“Abbott's impressive sales set the stage for a promising year, said **Morningstar analyst Elizabeth Bernstein**. She labeled Abbott a ‘company in transition.’ ‘They're being very bold with Humira,’ she said of the unusually early 2005 forecast. ‘I think they're doing it because they don't believe that the Street is fairly valuing their stock, so they're trying to show a bit more of their cards.’”* (**Francine Knowles**, Chicago Sun Times, 2004, Apr, 17<sup>th</sup>)

Indeed, a journalist’s reference to a particular analyst’s name may indicate different degrees of social interaction between these two parties. On the one hand, the journalist may have talked to the analyst and know him or her. Thus, this quotation may indicate a relational tie based on social interactions (Wasserman and Faust, 1994). Alternatively, the journalist may have simply read the analyst’s stock report or listened to

a conference call in which the analyst participated in a discussion, without necessarily talking to the analyst<sup>11</sup>. Despite the different degrees of communications, I argue that the quotation constitutes an important kind of *perceived tie between the analyst and the journalist* from the standpoint of the focal firm top managers. In other words, this tie can function as a *social-psychological cue* to the focal firm management that these two important firm constituents are paying attention to each other (Krackhardt, 1990; Monge and Contractor, 2003). The perception of managers about this analyst-journalist tie and the managers' potential reaction to it are well illustrated by the following quotes in my interviews:

*“We do know who talks to whom. Sometimes journalists even come to us asking for a potential analyst contact. Of course, we recommend someone who covers us positively”*

Another executive emphasized,

*“Well, when analysts and journalists are too closely connected, we wouldn't like it - simply because they will ask too many questions. They could be more critical about us.”*

Organizational studies emphasizing embeddedness perspectives (Granovetter, 1985) highlight how social actors define alters by the pattern of alters' relations *with each other* as well as alters' relations *with the focal actor* (Burt, 2009; Gulati and Westphal, 1999; Podolny, 2005). Research on social networks further suggests that this *perceived* web of social relations between alters influences the focal actor's behavior toward alters through a shift in the focal actor's evaluation of the alters' power and status (Krackhardt, 1987; Brass et al., 2004; Kilduff and Krackhardt, 2008). Following the idea of 'structural hole' (Burt, 1982) and 'triad' (Simmel, 1950), I define the presence of the perceived tie between two external constituents around the focal firm as a '*triadic closure*' of external

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<sup>11</sup> Informal interview with a former sell-side analyst confirmed that citation ties between journalists and analysts likely indicate stronger underlying social interactions between the two. This is because analysts are almost always expected to read most of the news articles about the firms they follow and journalists seldom cite analysts' actual name without prior social interactions or approval.

constituents around the focal firm [see Figure 3]. In the present study context, the triadic closure occurs when a journalist and an analyst are following the same firm and the journalist refers to the analyst by name, thus creating a perceived tie from the standpoint of the top managers of the focal firm. I propose that this triadic closure may influence the way in which the focal firm managers process external accounts of their firm performance and ultimately, the likelihood of engaging in a strategic reorientation of the firm. In the following sections, I turn to the theories of attribution and persuasion to theorize how multiple, potentially inconsistent accounts of firm performance and leadership issued by analysts and journalists can affect top managers' interpretation of firm performance and prompt strategic reorientation of the firm. I then consider how a perceived tie between the two social actors from the standpoint of the covered firm's managers may also encourage the managers to reconsider their current strategic choice.

## **Theory and Hypotheses**

### Consensus on the attributions of the negative firm performance between analysts and journalists

Behavioral theories of the firm suggest that managers engage in problemistic search facing an organizational problem such as persistent negative firm performance (Cyert and March, 1963; Starbuck and Milliken, 1988). In fact, it is not only the managers who engage in the search process. Other external firm constituents also similarly ask why the unexpected negative performance problem of the focal firm has occurred, and often continues without a clear sign of improvement. Studies in social psychology suggest that this causal reasoning process does not emerge in a social vacuum – individuals seek others' opinions and consider their validity (Eagly and Chaiken, 1975; Wong and Weiner, 1981; Fiske and Taylor, 2008). One primary rule of evaluating the validity of others' opinions is to assess the consensus among multiple accounts issued by actors of different backgrounds (Kelley, 1967; Goethals, 1976; Eagly et al., 1981). Indeed,

attribution and persuasion scholars indicate that high consensus between two communicators of different backgrounds encourages the attributor to conclude that the communicators' message content reflects external validity of the message rather than potential reporting bias of the individual communicators (Goethals, 1976; Eagly et al., 1978). In the present study context, a high level of consensus between analysts and journalists in their evaluations of the focal firm performance and leadership is more likely to be interpreted as a result of an objective evaluation of the firm and is perceived as valid, rather than discounted as a reflection of an individual's lack of knowledge and reporting biases. Accordingly, unanimously negative performance accounts of a firm issued by the two parties more likely will be accepted as more valid accounts of the negative firm performance and problematic leadership, as opposed to two inconsistent performance evaluations of the firm.

While the consensus in the firm performance accounts between analysts and journalists provide a more objective evaluation of the firm and thus function as a trigger for strategic change efforts of the firm, the focal firm managers may dismiss the performance accounts of analysts and journalists in the first place, discounting them as the reporting of non-experts of corporate strategy (Westphal and Deephouse, 2011) or reporting bias due to the conflicts of interest (Han, 1988; Kurtz, 2001). Indeed, the self-serving attribution efforts of the managers may encourage them to perceive journalists promoting more positive aspects of the firm and leadership responding to the facts, while viewing those offering more negative stories as biased non-experts (e.g. 'false-consensus effect' see Ross et al., 1976). Despite the potential for being discounted by the managers, the journalists' negative attributions following the negative performance accounts of analysts can be especially damaging to the focal firm managers, because it provides negative evaluations of the firm in an agreement to a variety of *other* external firm constituents who are also seeking to understand the performance problem. These external constituents include present and future employees, customers, suppliers and buyers, debt

holders and the investors of the firm, who are important constituents in preserving the focal firm's access to resource provision (Pfeffer and Salancik, 1978) as well as the top executives' compensation and career prospects (Wade et al., 1997; Porac et al., 1999). Therefore, the focal firm managers faced with portrayal of negative firm performance and leadership may engage in strategic change efforts not because the managers themselves necessarily believe those accounts, but because the managers are concerned about the 'third-party others' who might be influenced by the negative performance evaluations.

This line of reasoning regarding the potential change in the attitude of the focal firm managers is also consistent with the theories of second or third order expectations documented in social psychological research (Perloff, 1999; Webster and Whitmeyer, 1999; Ridgeway and Correll, 2006). These theories indicate that changes in the focal actors' attitude and behavior may not necessarily result from the changes in the focal actor's beliefs, but from how the focal actor thinks his or her interaction partner will respond (second order expectation) or 'generalized others' (third order expectation) will react in a given situation. Similarly, 'third-person effects' in the communication literature have found robust empirical support on the persuasiveness of the media messages (Davison, 1983; Milkie, 1999; Perloff, 1999). The core idea of the third-person effect is that persuasive effects of the media messages hinge on the reaction of *third-party others* who will be exposed to the media message, not on the endorsement of the messages by the focal actor (Davison, 1983:3). According to these perspectives, negative performance evaluations issued by analysts followed by journalists' similarly negative portrayal of the firm performance and leadership will be especially damaging to the focal firm management, thus encouraging it to reconsider current unsuccessful strategic choices.

As discussed above, journalists provide a wide range of different stories on firm performance and leadership. Scholars in management exploring the influence of the media on firm behavior have suggested that the overall negative tenor of journalist articles alone have a direct influence on firms' stock market performance, audit opinion

change, and IPO success (Joe, 2003; Tetlock, 2007; Pollock et al., 2008). Thus, the overall negativity of the focal firm's performance and leadership might be an important dimension of performance accounts that are considered by the focal firm managers and other external firm constituents in considering the consensus of performance attributions between analysts and journalists.

Another key dimension of the consensus related to the focal firm's strategic change effort will be the responsibility of the current management in explaining the negative firm performance. As noted above, journalists can provide two distinct types of explanations for the negative firm performance indicated by analysts. Internal attributions indicate that it is the top executives, in particular the CEO, or their strategic choices which caused the current performance problem. Conversely, external attributions suggest that the performance problem is due to industry trends or economic situations that may be temporary and beyond the control of the current management. While journalists' external attribution of negative firm performance provides an opportunity for the focal firm management to justify their current strategy, internal attributions directly raise questions about the managerial capability of the focal firm executives or their strategic choices in explaining the current unfavorable firm performance. Thus, internal performance attributions made by journalists that accord with analysts' negative evaluation of the firm create a more convincing perspective that the current performance problem is the responsibility of the current management. Therefore, when journalists' internal attributions of the negative firm performance accord with analysts' negative evaluations of the firm, the focal firm management more likely will reconsider its current strategic choice. The arguments thus far lead to the following hypothesis on the likelihood of the focal firm's strategic change efforts based on the performance accounts made by analysts and journalists.

H1a: The more frequently the negative evaluations of firm performance issued by analysts are followed by *negative evaluations of firm performance and leadership provided by journalists*, the higher the likelihood that the focal firm will engage in strategic change efforts.

H1b: The more frequently the negative evaluations of firm performance issued by analysts are followed by *internal attributions of the negative firm performance and leadership provided by journalists*, the higher the likelihood that the focal firm will engage in strategic change efforts.

### Triadic closure between analysts and journalists around the focal firm

In this section, I consider how the triadic closure, which I define as the reference to a particular analyst's name by different journalists covering the same company, may increase the likelihood of strategic change efforts initiated by the focal firm. As noted above, this reference may indicate a relational tie between the analyst and the journalist based on social interactions or constitute a social-psychological cue to the focal firm management that the two parties are paying attention to each other. I propose two different, yet interrelated mechanisms by which the triadic closure increases the likelihood of strategic change: i) through the loss of structural brokerage opportunities of the focal firm managers in a closed triad and ii) through the increased subjective uncertainty of the focal firm managers about their current strategy due to the perceived coalition of the analysts and journalists in a closed triad.

**Loss of structural brokerage opportunities of the focal firm managers under the triadic closure** A perceived tie between analysts and journalists may signal the focal firm managers their loss of structural brokerage opportunities which the management could otherwise exploit when the two parties are not connected to each other. In particular, a tie between analysts and journalists can be interpreted as a coalition against the focal actor in the triadic relationship comprised of an analyst, the focal firm management, and a journalist. The structural brokerage opportunities of the focal management is lost in interactions with either the analyst or the journalist, when a perceived coalition between the two constituents is established (Simmel,1950:138).

Indeed, Simmel writes that “the favorable position of the *tertius* (the third party) disappears quite generally the moment the two others become a unit – the moment the group in question changes from a combination of three elements back into that of two (Simmel, 1950:160).” This is consistent with Burt’s notion of ‘structural hole’, where a third party actor enjoys information and brokerage benefits between two unconnected alters. Conversely, the closure of a structural hole deprives the third party actor of the structural brokerage opportunities between the two connected alters (Burt, 1992, Coleman, 1988). In fact, the structural closure effect does not require actual information among the ‘audience’ of the focal actor to be shared or the sanction against the actors with deviant actions to be enforced (e.g. Merton, 1957; Coleman, 1988). Indeed, in explaining the effectiveness of the ‘visibility’ of audience connections in monitoring the role-performance of social actors, Merton suggests that the ‘anticipation’ of the focal actors that information channeling will occur among the connected audience members and potential sanctions from the focal actor’s standpoint are enough to forestall deviant actions that are inconsistent with the audience’s expectation (Merton, 1957:390; Stinchcombe, 1975: 25).

In the present study, the structural brokerage opportunities of the focal firm managers are maximized when the analysts and journalists covering the focal firm simultaneously are not connected to each other. In the absence of this connection, the focal firm managers may better defend their current strategic choice by utilizing their third-party position to tailor their arguments defending their current strategy to each constituent. For instance, the managers may justify their unrelated diversification strategy to journalists by offering an explanation as to why the strategy is a better utilization of their managerial capabilities and firm resources, an explanation which normally does not convince the investor community and frequently invites harsh criticism. In the presence of triadic closure, however, this structural brokerage opportunity is constrained, because the focal firm managers have less opportunity to ‘divide and conquer’ their external



constituents to defend their strategic choice. Thus, in the previous example, journalists may discover the investor community's evaluation of the unrelated diversification strategy by contacting the analyst that they referenced. Alternatively, the perceived tie between the analyst and the journalist may lead the focal firm managers to assume that the journalists are aware of the investor community's criticism about unrelated diversification strategies. Structural brokerage against these two potentially connected actors is risky and may even backfire. Thus, a perceived tie between analysts and journalists may function as a constraint for the structural brokerage opportunities of the focal firm managers, who will be less able to engage in any justification efforts. This lack of brokerage opportunity in a closed triad makes it harder for the managers to defend their current strategic choices in their interactions with the analysts and journalists who are connected to each other and more likely to consider the performance accounts of analysts and journalists in their deliberations surrounding strategic alternatives.

**Increased subjective uncertainty about the current strategy of the focal firm managers under the triadic closure** A more social psychological perspective on a triadic closure further indicates that a perceived tie between analysts and journalists can increase the subjective uncertainty of the focal firm managers about their current strategy and increase the likelihood that they will reconsider their current strategic choice.

'Subjective uncertainty' in the present study refers to the lack of confidence of the managers in their strategic choice due to the current unsuccessful firm performance outcomes (McDonald and Westphal, 2003). Given the inherent ambiguity in determining the effect of corporate strategy on firm performance (Pfeffer, 1981), current unsuccessful firm performance itself may not compel the focal firm management to entirely discredit its strategy. However, poor firm performance can reduce the confidence of the focal firm managers in the cause-and-effect relationships between their strategic choices and firm performance. Studies in social psychology on the dynamics of interpersonal relationships suggest that this lack of confidence and potential change in one's independent opinion are

especially likely in a triadic social structure. For instance, in discussing how a coalition between two alters that excludes the focal actor in a closed triad can be interpreted as a potential for ‘ganging up’ against the focal actor, Heider suggests that the focal actor becomes more unsure about his or her own opinions due to the isolation in a closed triad (Heider, 1958:179)<sup>12</sup>. This is also consistent with Simmel’s argument about how group norms emerge and opinion individuality becomes less tolerated once a third-party alter is attached to a dyad and a closed triad is formed (Simmel, 1950; Krackhardt, 1999). Accordingly, when the focal firm performance is relatively low, a perceived tie between analysts and journalists following the focal company causes its managers to become less confident about their current strategic choices.

Another cause for concern for the focal firm managers about the tie between analysts and journalists is the possibility of potential escalation of negative evaluations about the focal firm by the connected analysts and journalists. Thus, the focal firm management is more likely to consider strategic change as a response to forestall the escalation or perpetuation of negative evaluations of the firm in the future. In the case of unsuccessful firm performance, the focal firm managers are especially concerned about the tie because the connected analysts and journalists may perceive each other as a source of opinion validation when issuing negative performance accounts of the firm. Qualitative studies indicate that analysts and journalists are reluctant to issue negative evaluations of their covered firms due to the potential denial of future access to the management or concerns about their career in the field (Reingold, 2006; Hong, 2000; Kurtz, 2001). The opinion validation based on the ties, however, can embolden the analysts and journalists to issue a negative evaluation of the firm in the future or in their

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<sup>12</sup> This isolation in a closed triad can be understood either as i) relational isolation in the sense that the focal actor is rather weakly connected to the other two dyadic coalition members in the triad, or ii) more social psychological *feeling* of isolation in social interaction (Schachter, 1959). Streams of research in social psychology suggest how minority opinion holders facing the opposite opinion of majority members conform to the majority opinion, partly due to such sociological or socio psychological isolation (Asch, 1951; Lazarsfeld and Merton, 1954; Zucker, 1977).

other related areas of firm evaluations. In addition, as noted above, the ‘third-person-effect’ of the media suggests that the management will be particularly concerned about the other constituents exposed to the performance accounts of these analysts and journalists. This possibility of potential escalation or perpetuation of negative evaluations of the firm can compel the focal firm managers to engage in strategic change efforts as a reaction to the formation of a coalition between the two parties in a closed triad. The arguments above suggest how the presence of a perceived tie between an analyst and a journalist covering the focal firm (i.e. the triadic closure) may increase the likelihood that the focal firm managers reconsider their strategic choice and engage in strategic reorientation of the firm when the focal firm performance is relatively low.

H2: In the presence of a negative firm evaluation from analysts, the more frequent the reference to analyst names by journalists in news articles about the focal firm (*triadic closure between analysts and journalists*), the higher the likelihood of strategic change efforts by the focal firm.

#### Structural moderators of the triadic closure effect on the focal firm’s strategic change

While the arguments above have focused on how the presence of a perceived tie between analysts and journalists following the focal company may increase the likelihood of the focal firm’s strategic reorientation, the effect of the triadic closure may depend on the different degrees of structural influence of the analyst-journalist dyad in the triad. For instance, triadic closure between more prestigious analysts and journalists might be more influential to the focal firm managers in that they may reach a wider audience that includes external firm constituents or general public. In this section, I examine how the effect of triadic closure is moderated by the various audience characteristics of the analysts and journalists.

**Audience characteristics of the analysts and journalists in the triad** Social exchange theorists view social relations as ‘ties of mutual dependence between actors’ and indicate that power is a property of the social relations, not an attribute of the social

actor (Emerson, 1976; Cook and Emerson, 1978). Thus, the power of analysts and journalists over the focal firm managers in triadic closure originates from the focal firm managers' *dependence* on the analyst-journalist dyad (Emerson, 1962:32). In other words, the analysts and journalists covering the focal firm are powerful in relation to the focal firm managers, because the managers are dependent on the positive firm coverage by the analysts and journalists in preserving the managers' career prospects and securing the external resource provisions of the firm. Moreover, as we noted above in the discussion of the third-person-effects, this dependence of the focal firm managers on the analysts and journalists mainly originate from the audience who will be exposed to the analyst reports or the media message. Therefore, one primary way of examining the structural influence of the analyst-journalists dyad on the focal firm managers in the triadic closure is to examine how the analysts and journalists relate to their own audience outside the triadic closure, such as other firm stakeholders, shareholders, and the general public.

What kind of audience characteristics of the analysts and journalists in the triadic closure would be regarded as more or less significant by the focal firm managers? Among others, I focus on the following three factors: i) the scope of the audience that analysts and journalists can reach, ii) prestige and reliability of the analysts and journalists, and iii) information redundancy of the triadic closure provided to the audience. First of all, the wider the scope of the audience the analysts and journalists can potentially reach with their performance accounts, the more dependent are the focal managers on the dyad for their positive coverage of the firm. Since the readership of analyst reports is relatively limited, one useful indicator of the audience scope for the analyst-journalist dyad is the circulation of the journalist's news media. Second, analysts and journalists in the triadic closure may vary in their prestige. Journalists employed by more prestigious media outlets can be more influential to the readers, and thus to the focal firm managers as well. Moreover, due to the varying degrees of individual analysts' industry and firm coverage experiences, triadic closure that includes analysts of higher status and expertise in the

focal firm coverage might be more influential than triadic closure that includes analysts of lower status and more generalist experiences. Finally, when the triadic closure connects more non-overlapping audience in terms of the information it is providing, it will be more influential to the focal firm managers in limiting their structural brokerage opportunities. In other words, when the triadic closure combines the business and non-business audience simultaneously, it will be more influential to the focal firm managers than the triadic closure where the business media relays relatively redundant information from the investor community. The arguments thus far lead to the following moderators of triadic closure effects based on different audience characteristics of the analysts and journalists in triadic closure.

H3a: The higher the *circulation of the newspaper of the journalist* in the triadic closure, the more likely is the triadic closure to increase the likelihood of the focal firm's strategic change efforts.

H3b: The more *prestigious the newspaper of the journalist* in the triadic closure, the more likely is the triadic closure to increase the likelihood of the focal firm's strategic change efforts.

H3c: The higher the *status* or the *expertise of the analyst* in the triadic closure, the more likely is the triadic closure to increase the likelihood of the focal firm's strategic change efforts.

H3d: *Non-business media* for the journalist in the triadic closure is more likely to increase the likelihood of the focal firm's strategic change efforts than *business media*.

## **Method**

### Sample and data collection

I use a longitudinal panel research design to examine how a negative consensus about firm performance and a perceived tie between analysts and journalists influence the focal firm managers' decision to engage in strategic change efforts. The sample is derived from the S&P 500 companies representing large industrial and service corporations listed on U.S. stock exchanges. Preliminary data collection indicates that 471 S&P 500

companies are retained for the sample period from 2000 to 2008. To construct the ties between analysts and journalists following a focal firm, I followed three steps. First, I identified all the financial analysts following the sample companies during the sample period based on the analyst identification obtained from I/B/E/S database – identities of individual financial analysts, their brokerage houses, and past stock recommendation for their coverage firms. Prior research suggests that quarterly earnings announcement is an event that prompts external constituents of the firm, for instance, members of the financial community to become particularly salient about firm performance and leadership. In particular, if the focal firm announces earnings lower than the original earnings forecast provided by analysts, analysts assess the cause of unexpectedly low performance and adjust their forecast for the future prospect of the firm (Hirshleifer et al., 1994; Barron et al., 2008). Similarly, earnings announcement also prompts journalists to provide their own accounts of firm performance and leadership (Kurtz, 2001; Gans, 2004). Following these previous studies, I used quarterly earnings announcement as a triggering event that prompts external constituents and managers to assess the focal firm's current performance. Accordingly, I identified all the firms receiving relatively negative evaluations in terms of analyst stock recommendations during the four months period after the quarterly earnings announcement of the firm. Sample companies receiving quarterly median of stock recommendation ratings equal to or lower than 'hold' (see below for details of analyst evaluations) during this four months period were categorized as companies receiving negative analyst evaluations for the respective earnings announcement quarter. 84 companies and 119 company years in the sample were retained in this subsample<sup>13</sup>.

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<sup>13</sup> Subsampling of the current study (84 subsample companies out of the full sample of S&P 500 companies) was necessitated by limited resources with respect to human coding and the number of journalist articles to be analyzed. To address potential sampling errors of this approach, I employed Heckman selection model and included the selection parameter for all the models in the analysis. Future studies can examine the robustness of the results to alternative empirical strategies, such as retaining all the original S&P 500 full

Second, for these companies receiving negative analyst ratings for the respective earnings guidance quarter (i.e. during the four months period since the latest quarterly earnings announcement of the firm), I collected all the news articles from FACITVA, which lists major U.S. print media publications. These publications include national business (e.g. Wall Street Journal), national nonbusiness (e.g. New York Times), and the local media where the firm has its corporate headquarters (e.g. Chicago Tribune for the Abbott Laboratory). To ensure that the article was written particularly for the focal firm, I limited my analysis to the articles that mention less than five firms including the focal firm (e.g. Bednar, 2009). I then identified all the journalists and their employers following the focal company, utilizing the XML tagging structure to retrieve relevant fields (e.g. “by-line” of the XML tagging for journalist names). This XML tagging structure has been extensively used in the content analysis of journalist reports in prior research (Miller, 2006; Bednar, 2009; Gruber, 2009). Third, to establish a tie between an analyst and the journalist authoring the article, I developed a computer script using the natural language processing program Python, which identifies the word ‘analyst’ appearing in any part of the news articles at the sentence level. Analyst names and brokerage affiliations were extracted from individual sentences and multiple ties were coded when there were more than two analyst names mentioned in the same sentence. I also matched the analyst names captured in the journalist articles to the analyst data in the I/B/E/S to code whether the cited analyst is actually following the focal company and how positive or negative the analyst has been in terms of stock recommendations for the focal company and other companies in the sample.

The data collection procedure above may pose a selection problem for the variables involved (e.g. ties between analysts and journalists or negativity of the journalist reports on firm performance and leadership), since I focus on the subsample of

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sample companies by i) randomly choosing a subset of journalist articles or ii) choosing journalist articles from selected large media outlets rather than coding all the articles for the subsample companies.

firms which have already received negative performance evaluations from the analysts. To address this concern, I employed Heckman selection model (Heckman and Borjas, 1980) to address potential sampling bias between the subsample of companies receiving negative analyst evaluations and the full sample of companies (details of the selection model are explained later in the analysis section). To collect other data on the sample companies and analysts and journalists following these companies, various archival databases other than FACTIVE and I/B/E/S were combined. Quarterly earnings announcement date information was coded from Thompson First Call Historical database. Financial information and firm headquarters location data were coded from COMPUSTAT. SEC 8K filings for the sample companies were collected from SEC EDGAR and Morning Star Document Search. Data for the corporate governance characteristics of the sample companies was obtained from BoardEx. Data for analyst status was directly coded from the Institutional Investor magazine. Finally, data on the media characteristics such as circulations was coded from Gale Directory of Publications and Broadcast Media.

### Measures

**Strategic change efforts** Measuring the degrees of strategic change has been a challenge in the strategic management literature. The lack of consensus in measuring strategic change seems to revolve around at least two topics: i) the dimensions of strategic action to be considered in measuring the strategic persistence or reorientation and ii) the relevant time horizons to be considered. On the first dimension, strategic change measures such as product and geographic market diversification (e.g. Palepu's [1985] entropy measures of diversification) or change in the profile of a firm's resource deployment as indicated by different financial ratios (Finkelstein and Hambrick, 1990; Chatterjee and Hambrick, 2007) (e.g. R&D expenses over sales) have been used as indicators of strategic change at the corporate and business levels respectively. While the



two dimensions together are thought to capture a firm's 'competitive profile' (Geletkanycz and Hambrick, 1997:667), scholars do not seem to agree on a definitive, unitary concept and measure of strategic change (Barker III and Duhaime, 1997; Rajagopalan and Spreitzer, 1997). On the second dimension, studies have used different time frames to measure strategic change without reaching consensus on a definitive time interval to measure the notion of change in firm strategy – for instance, from one to three years in archival research (Wiersema and Bantel, 1993; Zajac et al., 2000), or from the 'initial' to the 'current' strategy in qualitative studies based on interviews and surveys with top executives (Gioia and Chittipeddi, 1991; Boeker, 1997).

In this study, I used the number of the Form 8-K filings, i.e. the "current report" of the sample companies to the Securities and Exchange Commission (SEC) as a proxy of strategic change to capture *the overall level of the focal firm's strategic change efforts*. In addition to the conventional challenges in operationalizing strategic change, the current study faces a unique challenge in that the measure should reflect the *comprehensive response* of the focal firm to the performance accounts of analysts and journalists in a *timely* manner. On the dimension of strategy content, the current study's strategic change measure should capture the focal firm's proactive communication efforts of strategic change to the external firm constituents, including framing and sense-giving efforts accompanied by strategic change (Gioia and Chittipeddi, 1991; Kuperman, 2003; Fiss and Zajac, 2006). The number of 8-K filings is a particularly appropriate measure of strategic change in this regard because 8-K forms are regarded as 'streams of corporate information' a public company provides to the investor community (*SEC Accounting Series Release No. 306 [1982]*), mostly followed by voluntary press releases of the focal firm. On the dimension of time horizon, the present study's strategic change measure should capture the focal firm's strategic change efforts in a relatively short time interval. This is because the accounts of analysts and journalists on firm performance and leadership are often updated along institutionalized timelines such as quarterly earnings

announcements that are more frequent than the usual annual update of other strategic change measures. SEC 8K filings have a unique advantage over other strategic change measures in terms of timeliness (Carter and Soo, 1999), because the SEC requires all the listed companies on U.S. stock exchanges to disclose major change in their business within four business days after occurrence of the event.

Table 6 illustrates major dimensions and examples of strategic change efforts captured in the Form 8-K filings of this study's sample companies. The examples suggest that this measure captures multiple dimensions of strategic actions comprehensively, including i) corporate acquisitions and divestitures (e.g. Ford Motor's acquisition of its largest supplier or business division divestiture to Tata Motors), ii) corporate wide restructuring (e.g. Dow Chemical's global workforce reduction and divestitures), and iii) announcement of CEO succession process initiation and completion. I first coded the number of all the SEC Form 8-Ks that the focal company has filed to the SEC in a given earnings guidance quarter into *Strategic Change Efforts of the Focal Company*. In effect, the time spell of this strategic change variable is a quarter and the variable is updated on a quarterly basis. The results remained substantively unchanged when I controlled for the number of items on more unconventional dimension of strategic change such as CEO succession (item 5)<sup>14</sup>.

**Analysts' evaluations of firm performance and leadership** Following prior research on the positivity or negativity of analyst appraisals, I coded the median value of all the stock recommendations issued to the focal firm during the four months period after

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<sup>14</sup> In future studies, I plan to verify the construct validity of the total number of 8-K filings as an indicator of strategic change effort in more detail. In the current sample, correlations of this measure with more conventional strategic change measures are -0.06 (with change in related diversification measure,  $p < 0.1$ ), 0.16 (with change in R&D expenses over sales,  $p < 0.05$ ), and 0.07 (with change in capital expenditures,  $p < 0.05$ ). This indicates that while the total number of 8K filings may indicate the level of the focal firm's strategic change efforts, the measure may not capture a particular dimension of strategic change. As explained in the discussion section, the measure may represent the focal firm's strategic change efforts as an impression management tactic to the investor community, rather than substantive strategic change. In a supplementary analysis, I extracted each sub-category of 8-K items to explore whether a particular dimension of strategic action captured in 8K filings is more or less sensitive to consensus and triadic closure mechanisms. The results varied depending on the chosen section of 8K filings.

the quarterly earnings announcement of the firm. For specific stock recommendation sub-categories, I followed the I/B/E/S recommendation code where all the stock recommendations of different brokerage houses are divided into five sub-categories: 1, “strong buy”; 2, “buy”; 3, “hold”; 4, “sell”; 5, “strong sell”. I then coded *Negative Evaluations of Firm Performance, Analysts* as a continuous variable indicating the median value of all the stock recommendations when the median is equal or larger than three, considering sub-categories of “hold”, “sell”, and “strong sell” as negative stock recommendations. This is consistent with prior research and qualitative studies showing that the “hold” rating is mostly considered as a negative evaluation (Barber et al., 2006; Reingold, 2006). In addition, to consider the possibility that the focal firm managers consider the variance of multiple analyst stock recommendations in their judgment of stock recommendation negativity, I also verified the robustness of this measure against the median values adjusted with its standard errors of stock recommendations.

**Journalists’ evaluation of firm performance and leadership** To code the journalists’ evaluation of firm performance and leadership, I first identified all the journalist articles on the focal company during the respective earnings guidance quarter. 92,692 articles were captured in this category for the subsample of 84 companies. Then I coded two dimensions of journalist evaluation at the individual sentence level and aggregated the scores to the article and to the respective company-quarter level. First, I measured the overall valence of the articles for the focal company as *Negativity of Journalist Reports* and *Positivity of Journalist Reports* using the content analysis program, General Inquirer. The General Inquirer is a well-known quantitative content analysis program, which counts the number of relevant words from the predetermined categories of the Harvard IV psychosocial dictionary (e.g. Tetlock, 2007). I used two particular valence categories – “positiv” and “negativ” from the Harvard IV dictionary to count the corresponding words in the sample sentences. In addition, I also coded *Total Number of Journalist Reports* to control for the overall exposure of the company to the

media (in thousands) and *Variance in Negativity of Journalist Reports* as the standard deviation of the *Negativity of Journalist Reports*.

Second, to measure the internal or external attributions for negative firm performance and leadership by journalists, I first identified the sentences of the focal company articles which refer either to the focal company or the company's CEO by name. Among these sentences, I focused only on those sentences with their standard score of the *Negativity of Journalist Reports* higher than the sample mean. 4,331 sentences were retained in this final subsample of 51 companies for human coding. Three undergraduate coders with different backgrounds (mathematics, computer science, and chemistry majors) who were not aware of the research hypotheses participated in the coding process. In line with the recent studies that have conducted a content analysis of journalist reports, I first asked the coders to assign each sentence referring to a company or CEO in the sample articles to either negative or non-negative categories (Deephouse, 2000; Pollock and Rindova, 2003). Coders then were asked to determine whether each negative statement represents an internal attribution or external attribution for negative firm performance. For coding instructions, I followed the procedures of Staw et al. (1983) for identifying internal and external attributions in annual reports. Finally, the mean frequencies of individual sentences involving internal or external attributions on negative firm performance and leadership were aggregated to the respective company-quarter level as *Internal Attribution of Journalist Reports* and *External Attribution of Journalist Reports* respectively. Both measures were standardized over the number of words in the respective sentences. Weighted Kappa coefficients for these attribution measures ranged from 0.66 to 0.81, which are acceptable level of inter-rater agreement (Fleiss, 1981).

**Triadic closure between analysts and journalists around the focal firm** To measure the level of triadic closure between analysts and journalists indicated by journalists' reference to a particular analyst name, I identified all the analyst names referenced in the articles authored by the journalists following the focal firm that has

received negative analyst evaluations during the respective earnings guidance quarter. As noted above, to extract all the analyst names and their affiliations from the journalist articles, I utilized a computer script which identifies the word ‘analyst’ appearing in any part of the news articles at the sentence level. Most of the times, the computer program captured the name of the analyst and the analyst’s institutional affiliation such as brokerage house as well. When more than two analysts are referenced in the same article, individual analysts were coded separately. Total number of references to analysts was counted in hundreds and aggregated to the variable *Triadic Closure between Analysts and Journalists* after standardized over the total number of sentences.

**Moderators of the triadic closure effect** I also coded multiple analyst and journalist characteristics influencing their audience which may eventually moderate the triadic closure effect. Since the analyst and journalist characteristics are observed at the individual article or sentence level, I coded separate variables of triadic closure for each dimension of audience characteristic and aggregated them at the company level. For instance, I first coded circulation of journalists’ employers to a dummy variable when the daily circulation of the media is higher than the sample mean and counted the number of the triadic closure instances only for the high circulation media to code the variable *Triadic Closure, High Circulation Media*. In similar manner, I coded a dummy variable indicating prestigious journalist employer when the journalist is employed by one of the following news media - *Business Week, Fortune, the Wall Street Journal, the New York Times, and the Washington Post* (Pollock et al., 2008; Westphal and Deephouse, 2011) and counted the number of the triadic closure instances only for the prestigious media to code the variable *Triadic Closure, Prestigious Media*. Finally, to code the different media outlets I first created a dummy variable indicating whether the journalist writes for i) national business news outlets (e.g. the Wall Street Journal or Barron’s), ii) national non-business, general news outlets (e.g. the New York Times or USA Today) or iii) local news outlets (e.g. Chicago Tribune for the Abbott Laboratory). To code local news

outlets, I matched the ZIP and MSA code of the focal company address to those of the media company. Then I counted the instances of triadic closure for each news outlet to code *Triadic Closure, National Business Media, Triadic Closure, National Non-Business Media, and Triadic Closure, Local Media* respectively.

I also coded indicators of status and expertise for the analysts referenced by the journalists in the triadic closure. I first created a dummy variable indicating whether the analyst has been included in the ‘All-American Analyst’ list announced by the Institutional Investor magazine for the respective year. The award has been widely used as an indicator of financial analyst status and influence in the investor community (Hayward and Boeker, 1998; Rao et al., 2001). I also created a dummy variable indicating whether the analyst referenced actually follows the focal company at all – by tracking the analyst and brokerage house names in the I/B/E/S database. Finally, I counted the instances of triadic closure for each analyst dummy variable to code *Triadic Closure, Prestigious Analysts, and Triadic Closure, Company Following Analysts* respectively.

### Control Variables

**Firm performance and financial resources** Organizational performance is a key control variable in models of strategic change (Boeker, 1989; Boeker & Goodstein, 1991; Hannan & Freeman, 1984). I controlled both the accounting and market measures of firm performance in all the models of strategic change in this study. For accounting measures of firm performance, I coded *Firm Performance (ROA)* as the ratio of the earnings before interest and tax (EBIT) over total assets, i.e. return on assets. For market measures of firm performance, I coded *Firm Performance (MBR)* as the ratio of the total market capitalization over total book value of the equity, i.e. market book ratio. Following the prior research on performance aspiration level and strategic change (Cyert and March, 1963; Greve, 1998), I adjusted both performance measures with the performance of the

prior year of the focal company. Prior research on strategic change also suggests that measures of financial distress or organizational slack also need to be controlled (Haveman, 1993; Kraatz, 1998; Love and Nohria, 2005). To consider this, I coded debt/equity ratio of the focal firm as the variable *Financial Distress*.

**Other firm characteristics** I also included multiple control variables suggested by prior research. I controlled for *Firm Size*, measured as the log of firm sales since larger firms may be more responsive to external pressure due to its high visibility (Gioia and Thomas, 1996; Carter, 2006), but at the same time less likely to change because of organizational inertia (Hannan and Freeman, 1984). Prior studies of top management characteristics and corporate strategic change suggest that CEO tenure is negatively associated with strategic change efforts mainly due to the CEO's commitment to the current strategy (Hambrick and Fukutomi, 1991; Geletkanycz, 1997; Miller and Shamsie, 2001). To capture the influence of the CEO's tenure on strategic change, I created two variables: *New CEO* was coded as a dummy variable indicating the appointment of a new CEO for the focal company and *CEO Board Tenure* was coded as a continuous variable indicating the current tenure of the CEO's board appointment. Although board independence alone may not be directly related to strategic change, a more independent board facing poor firm performance might be more responsive to external accounts of negative firm performance and pressure the focal firm management for strategic change (Haleblian and Rajagopalan, 2006; Wiersema and Zhang, 2011; Wiersema and Zhang, 2012). I coded two direct measures of board independence following the corporate governance literature (Chatterjee and Harrison, 2001; Pollock et al., 2002; Finkelstein et al., 2009): the separation of the CEO and board chair positions (*CEO Chairman of the Board*), and the ratio of the independent directors over the total number of the directors of the board (*Independent Director Ratio*).

## Analysis

I examined the count dependent variable *Strategic Change Efforts of the Focal Company* by utilizing negative binomial panel regression models. The data is organized in a panel structure where the dependent variable is observed at the focal company level for every consecutive quarter of the selection year and the following year of the selection year, i.e. for eight consecutive quarters. Selection year indicates the year when the focal company received negative evaluations in terms of the analyst stock recommendations. To address potential unobserved heterogeneity, I included dummy variables indicating each selection year of the sample companies for the whole sample period and clustered the standard errors of the coefficient estimates around the company id. I used random effects panel regression model because some sample companies did not exhibit enough within-unit variation in the panel structure. The Hausman (1978) test confirmed that a random effects model is adequate for estimating the model coefficients. The count dependent variable showed signs of modest overdispersion but the number of zeros was not excessive, confirming the appropriateness of the negative binomial model specification (Cameron and Trivedi, 2009). Vuong test also confirmed the model choice of negative binomial regression over Poisson or zero-inflated negative binomial regression models. To establish better causality, all the independent variables were lagged by one time spell in the panel data, i.e. one quarter in every model.

I used Heckman selection model to address potential sample selection problems in analyzing the subsamples of the present study. The selection equation predicting the likelihood of receiving negative stock recommendations included all the control variables (firm performance, size, and corporate governance characteristics) and industry dummy variables at two digit SIC code level. As instrumental variables in the selection model, I also included the different individual characteristics of the analysts following the focal company – i) the mean number of all the *other* sample companies the focal company analysts are following, ii) the median of all the stock recommendations issued by the



analysts for all the *other* sample companies, iii) the mean number of years the focal company analysts have been following the focal company and iv) the number of the focal company analysts who work for the big ten brokerage houses based on asset size (e.g. Goldman Sachs, JP Morgan, and Morgan Stanley). The selection parameter (inverse mills ratio) of this selection equation was included in all the analytical models testing the hypothesized relationships of the present study as *Selection Parameter (Negative Stock Recommendation)*, controlling for unmeasured differences between firms that received negative stock recommendations and other firms in the sample frame.

## Results

Descriptive statistics and bivariate correlations of all the research and control variables are provided in Table 7. The descriptive statistics suggest that triadic closure between analysts and journalists is not a rare event – approximately 10% of all journalist articles cite financial analysts, which confirms frequent information exchange between the investor community and the media. Table 8 presents results of random effects negative binomial panel regression models predicting the focal firm’s strategic change efforts indicated by the number of the SEC 8-K filings of the focal company. The first two models include only control variables- Model 1 with controls for firm performance, size, and financial distress, and Model 2 with additional controls for governance characteristics of the firm. Consistent with prior theories, firms with newer CEO or lower financial distress are more likely to engage in strategic change efforts. Larger firms tend to engage in strategic change efforts more, probably due to their visibility to the public.

Model 3 and 4-7 in Table 8 examine H1a and H1b respectively. H1a predicted that negative evaluations of firm performance and leadership provided by journalists establish a consensus of opinion with the negative stock recommendations issued by analysts, thus increasing the likelihood that the focal firm will engage in strategic change efforts. Model 3 provides a strong support for H1a. With the number of journalist reports

and the positivity of journalist reports controlled, *Negativity of Journalist Reports* significantly increased strategic change efforts of the focal firm. H1b proposed to examine internal attribution of negative firm performance and leadership as a different type of opinion consensus which journalists can provide to analysts' negative evaluation about the firm. H1b predicted that internal attribution of journalist reports increases the likelihood that the focal firm will engage in strategic change efforts. Utilizing a subsample of 51 companies which received significantly negative journalist reports (166 company-quarters), Model 4 indicates that this hypothesis is not supported. Rather, *external* attribution of negative firm performance and leadership in journalist reports is shown to increase the focal firm's strategic change efforts (Model 5). Model 6 also confirms that it is external, rather than internal attribution that increases the focal firm's strategic change efforts, when the two variables are examined simultaneously in the same model.

There can be various reasons behind this puzzling finding in Models 4-6, which is opposite to the prediction of the original hypothesis H1b. H1b emphasized how internal attribution of journalists will raise questions about the current CEO's strategic choice as a cause of the current poor firm performance, whereas external attribution of journalists may make it easier for the CEO to justify his or her current strategy despite the current unfavorable firm performance. At least two theoretical accounts provide alternative explanations for this reasoning between different attribution types of poor firm performance and strategic change. Threat rigidity theory of organizational change would suggest that poor firm performance coupled with unfavorable evaluations of external constituents may function as threat, causing restriction in information sharing and constriction in control in organizations, which in turn leads to rigidity in organizational response to poor performance (Staw et al., 1981). Part of this organizational rigidity may be observed as the CEO's commitment to the failing strategic choice despite questions

about the CEO's strategic capability (Staw, 1976) such as internal attribution in journalist reports.

Yet, the threat rigidity thesis alone does not explain why external attributions of journalist reports increase strategic change efforts of the firm. Another explanation would be the CEO's ownership level of the current firm strategy (Kahneman et al., 1991; e.g. Wiseman and Gomez-Mejia, 1998). To the extent that the CEO did not develop a sense of ownership and responsibility for the current strategy, internal attributions emphasizing the responsibility of the current CEO as a cause of the unfavorable firm performance may not be effective in bringing about strategic change efforts. For instance, a new CEO recently appointed may have less commitment to the current firm strategy and regard journalists' internal attributions as a criticism of the previous CEO's unsuccessful strategy, thus less relevant to addressing the current performance problem. External attributions of journalists, on the other hand, might be perceived as pointing to unaddressed dimensions of performance problem even with the recent CEO turnover, thus more relevant to addressing the current performance problem. Indeed, studies found that top executives of firms experiencing performance decline tend to pay more attention to the critical aspects of their firm's external environment when the managers did not develop enough ownership of the current strategy (D'Aveni and MacMillan, 1990), for instance when the firm has a new CEO (Clapham et al., 2005). Therefore, new CEOs may be more responsive to journalists' external, rather than internal, attribution of unfavorable firm performance as a consensus of negative evaluations of firm performance between analysts and journalists in considering their firms' strategic change.

Model 7 explores this possibility by examining the interaction effects between *New CEO* and internal vs. external attribution of journalist reports on the likelihood of the focal firm's strategic change. Indeed, a strong interaction effect is found – new CEOs are significantly more likely to engage in strategic change efforts in response to external attributions of negative firm performance and leadership rather than internal attributions

provided by journalists. Figure 5 (panel a) graphically illustrates this interaction effect. For CEOs of longer organizational tenure (non-*New CEO* groups), negative effect of journalists' internal attribution on the likelihood of the focal firm's strategic change is found to be much weaker. Similarly, positive effect of journalists' external attribution on the focal firm's strategic change efforts is significantly stronger for the companies led by new CEOs. Taken together, the results suggest that the mechanism behind the influence of internal vs. external attribution of journalist reports on strategic change, as a consensus provided to analysts' negative evaluation of the focal firm, can be more nuanced than the focal company CEO's justification efforts only. Indeed, threat rigidity or sense of ownership of the CEO about the current strategic choice of the firm seems to be important factors to consider.

Models in Table 9 examine H2 and H3, which consider the effect of triadic closure between analysts and journalists on the likelihood of the focal firm's strategic change efforts. H2 predicted that the likelihood of the focal firm's strategic change will be positively associated with the frequency of triadic closure (i.e. reference to analyst names by journalists following the focal firm). Models 1-3 indicate that triadic closure does not influence the likelihood of the focal firm engaging in strategic change efforts. Model 1 and Model 2 examined the effect of triadic closure with different sets of control variables. In both models, the triadic closure effect is not statistically significant, failing to provide support for H2. In fact, the interaction effect between the *Negativity of Journalist Reports* and the *Triadic Closure* is not significant either in predicting the likelihood of strategic change (Model 3). This suggests that the triadic closure alone does not influence the likelihood of the focal firm's strategic change efforts, irrespective of consensus of negative firm performance and leadership between the analysts and journalists following the focal firm.

Models 4-10 in Table 9 examine whether the triadic closure effect is moderated by different audience characteristics of analysts and journalists (H3a-H3d). Indeed, these

models reveal that the triadic closure effect is contingent on i) the scope of the audience that the analysts and journalists can reach (H3a), ii) prestige of the media outlets (H3b), iii) expertise of the analysts (H3c) and iv) information redundancy provided to the audience by the analysts and journalists (H3d). In support of H3a, triadic closure involving media outlets of relatively higher circulation increased the likelihood of the focal firm's strategic change efforts compared with media outlets of relatively lower circulation (Model 4). Models 5-6 provide a partial support for H3b. Triadic closure effect is found to be stronger when the referenced analyst has more expertise about the focal company, for instance, actually issuing stock recommendations for the focal firm rather than just being cited by the journalist (Model 5). One standard deviation increase in journalists' reference of analysts who actually issue stock recommendations for the focal company (5 more cites per quarter) is associated with 5.6 percent increase in the number of the focal firm's 8K filings, holding all other variables constant. Interestingly, status of cited analysts indicated by the All American Analyst award winning is found to be not as significant. The triadic closure involving higher status analysts is not statistically significant in predicting the focal firm's strategic change efforts (Model 6). Yet, prestige of journalists' employer in triadic closure is found to be an important moderator of triadic closure, in a way corroborating the finding of the H3a on media circulation effects (Model 7). One standard deviation increase in the triadic closure involving more prestigious media outlets such as Wall Street Journal (4 more cites per quarter) is associated with increase in the focal firm's strategic change efforts by 9.2 percent.

Finally, Models 8-10 explore whether the triadic closure effect is moderated by a particular type of media outlets. Model 9 provides a strong support for H3d that the triadic closure capturing non-overlapping audience of analysts and journalists is more likely to increase the focal firms' strategic change efforts. Indeed, whereas the effect of triadic closure involving business media is relatively weak and statistically not significant (Model 8), the effect of triadic closure involving non-business media is found to be much

stronger and statistically significant. For instance, one standard deviation increase in journalists' reference of analysts in the national non-business media such as New York Times or Washington Post is shown to increase the strategic change efforts of the focal firm by 8.6 percent, holding constant all other variables. In addition, Model 10 examined whether the triadic closure involving local media journalists is particularly influential to the focal firm's strategic change, but did not find a statistically significant effect. Overall, these models suggest that triadic closure effect on the focal firm's strategic change efforts is significantly moderated by the audience characteristics of the analysts and journalists following the focal firm. Triadic closures involving higher circulation media, more experienced analysts in the focal firm coverage, more prestigious media outlets, and non-business media are found to increase the effect of triadic closure on the focal firm's strategic change efforts significantly.

I also implemented several supplementary analyses to examine whether the triadic closure effect is moderated by the focal firm CEO characteristics, most importantly by CEO tenure. Indeed, different studies have suggested CEOs of longer tenure become more confident of and committed to their chosen courses of strategic action as they become more familiar with their strategy (Hambrick and Fukutomi, 1991; Boeker, 1997; Henderson et al., 2006). To the extent that CEOs of shorter tenure did not have a chance to develop enough sense of ownership about the current firm strategy and related unfavorable firm performance, they might be less confident about their own strategies, thus more likely to be influenced by triadic closure in their strategic decision making. Indeed, statistically significant negative interaction was found between *CEO Board Tenure* and *Triadic Closure, High Circulation Media* ( $b=-0.99, p<0.05$ ) and *Triadic Closure, Non-Business Media* ( $b=-0.14, p<0.1$ ) in predicting the likelihood of the focal firm's strategic change efforts. Figure 5 (panel b) also illustrates this interaction effect between CEO tenure and triadic closure by examining the dummy variable *New CEO*. The positive effect of triadic closure involving high circulation media on the focal firm's

strategic change efforts was found much weaker for CEOs of longer organizational tenure (non- *New CEO* groups). Similarly, the positive effect of triadic closure involving non-business media on the focal firm's strategic change was significantly stronger for the companies led by new CEOs, whose board tenure is less than one year<sup>15</sup>. Taken together, this set of findings suggests that the triadic closure effect on the focal firm's strategic change is significantly moderated both by i) the audience characteristics of the analysts and journalists outside the triad and ii) the focal firm CEO characteristics such as CEO tenure indicating the CEO's level of subjective uncertainty or confidence of the current strategic choice.

## **Discussion**

Overall, the findings provided supportive evidence for the theoretical perspectives of the present study about the influence of consensus and connection between analysts and journalists on the strategic change efforts of the focal company. The first set of results showed that consensus in accounts of firm performance and leadership between analysts and journalists following the focal firm can increase the focal firm's strategic change efforts in the face of poor firm performance. Journalist reports that are negative in their overall tenor followed by negative stock recommendations by analysts covering the same company were found to increase the focal firm's strategic change efforts, providing a consensus in their negative evaluation about the focal firm performance and leadership. As another type of consensus to the analyst opinion, I also examined the influence of journalists' internal vs. external attributions of negative firm performance on the focal firm's strategic change efforts. Opposite to the original hypothesis, external, rather than internal, attribution of negative firm performance was found to increase the focal firm's strategic change efforts. Supplementary analysis indicated that external attribution of

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<sup>15</sup> Other triadic closure measures such as *Triadic Closure*, *Prestigious Media* and *Triadic Closure, Company Following Analysts* also showed similar pattern of strong interaction effects with *New CEO* in predicting the focal firm's strategic change efforts.

negative firm performance in journalist reports is more effective to trigger the focal firm's strategic change efforts when the focal firm CEO did not have a chance to develop a sense of ownership for the current firm strategy as a new CEO.

The second set of results suggested that triadic closure indicated by reference ties to a particular analyst's name by different journalists covering the same company can increase the focal firm's strategic change efforts above and beyond the consensus effect. Yet, influence of triadic closure on the focal firm's strategic change was found to be contingent on the audience characteristics of the analysts and journalists covering the company. In particular, the triadic closure effect to increase the likelihood of the focal firm's strategic change efforts was only significant when i) the circulation of the journalist's newspaper is high, ii) the journalist's newspaper is more prestigious, iii) the cited analyst has an expertise on the focal company, and iv) the triadic closure combines business and non-business audience together (i.e. when the connected journalist writes for non-business media). These findings support my theoretical contention that the influence of triadic closure on the focal firm's strategic reorientation mainly originates from i) the audience exposed to the performance accounts of the analysts and journalists following the focal firm and ii) the restriction to the focal firm's structural brokerage opportunities between the analysts and journalists. Supplementary analysis also indicated that these moderated triadic closure effects are especially stronger when the focal firm CEO is relatively new in tenure. These findings provide additional support to the other theoretical mechanism of the study that triadic closure is more effective when the focal firm CEO's subjective uncertainty level about the current firm performance is especially high.

Taken together, the results suggest that the influence of analysts and journalists on the strategic decision making of the focal firm executives may originate from structural consensus and connection between analysts and journalists, rather than either party's unidirectional influence on the focal firm. Moreover, the influence of these two



information intermediaries is found to be significantly contingent on their audience characteristics. These findings contribute to the growing literature in organization theory and strategic management that examines how the public portrayal of firms influences external firm constituents and eventually, the focal firm behavior (Meyer and Rowan, 1977; Pfeffer, 1981; Hayward et al., 2004; Rindova et al., 2011). Whereas this literature addressed how external firm constituents as homogeneous, unfragmented, and unidimensional entity of external environment can influence corporate policies and strategies, there has been less attention to how different accounts of firm performance and leadership provided by multiple constituents can affect managers' strategic decision making. Yet, the larger literature in social psychology and structural sociology has long suggested that agreement in opinion and ties between alters can influence the focal actor's behavior (Simmel, 1950; Eagly and Chaiken, 1984; Coleman, 1988; Kilduff and Krackhardt, 1994). The present study fills the gap in the literature by considering how consensus and connection between different constituents such as analysts and journalists can affect a firm's strategic decision making. In particular, this study identifies a novel social structural mechanism by which i) negative evaluations of firm performance and leadership as an agreement reached by analysts and journalists and ii) a perceived tie between these two social actors from the standpoint of the covered firm executives may trigger the focal firm's strategic change efforts. Accordingly, triadic closure as a social structural mechanism provides one possible answer to the question in the institutionalism literature about how multiple constituents in an organization's institutional environment elaborate and transfer their opinions in their judgment about the organization's performance and leadership, and eventually influence the organization's behavior (Oliver, 1991; Abrahamson and Fombrun, 1994; Scott and Meyer, 1994; Rowley, 1997).

In suggesting that consensus in opinion and triadic closure between the analysts and journalists following the focal firm can increase the firm's strategic change efforts, this study also advances more social structural perspectives in strategic change literature.

While strategic management literature has long acknowledged that a firm's strategic reorientation can be initiated by organizational scanning and performance monitoring of the firm's top executives (Starbuck and Milliken, 1988; Sutcliffe, 1994; Ocasio, 1997), less attention has been paid to how the social structure of multiple external firm constituents can influence the executives' assessment of firm performance and strategic decision making process. In this regard, the present study makes two important contributions to the strategic change literature from the embeddedness perspectives. First, this study examines analysts and journalists following a focal firm as important network partners whom the focal firm executives consider in their strategic decision making process, in addition to the other kind of tie partners such as interorganizational network partners (Kraatz, 1998) or the focal firm CEO's advice seeking partners (McDonald and Westphal, 2003). Second, the present study theorizes and documents a novel social structural and psychological mechanism about how the triadic closure between analysts and journalists can increase the likelihood of the focal firm's strategic change efforts by constraining the focal firm executives' brokerage opportunities between the analysts and journalists and increasing the executives' subjective uncertainty about their strategic choice. As a result, the current study provides a more fully developed social structural and psychological perspective on determinants of corporate strategic change.

Finally, the results also suggest that analysts and journalists play significant but quite different roles in influencing the focal firm's strategic decision making. Informal interviews with Investor Relations executives working for large public companies reveal that analysts and journalists are regarded as two separate channels of influence through which the executives communicate with the investor community. Indeed, as one executive commented, while analysts are conceived of as partners or gateways of the firm to the investor community, journalists are viewed as 'story tellers' adding more substantive interpretation to more quantifiable information. Indeed, the findings about the relative influence of internal vs. external attribution of journalist reports on the focal

firm's strategic change efforts provide an example where analysts and journalists play distinctively different roles in affecting firm behavior. In addition, the findings also suggest that analysts and journalists vary significantly in their degree of influence on the focal firm's strategic decision making depending on their audience characteristics. Triadic closures initiated by journalists working for more prestigious employers or media outlets with higher circulations were more influential. Triadic closures referencing analysts having more expertise on the focal firm coverage were more influential than any random analysts on Wall Street. This set of findings has implications to the burgeoning literature on the role of analysts and journalists influencing firm behavior by suggesting the significance of considering the two social actors simultaneously and modeling their influence differentially depending on their audience characteristics.

The theoretical perspectives and empirical strategies of the present study also await refinement in future research. Studies in management literature about the media effects on firm behavior have been challenged to establish better causalities by addressing potential endogeneity between the cause and effect of journalist writing (Joe, 2003; Tetlock et al., 2008; Bednar, 2012). In this study, I utilized a panel structure to observe the frequency of triadic closure and strategic change efforts of the focal firm with a more fine-grained time spell, i.e. a quarter, and constructed a lag structure to provide a stronger test of causality. Future study efforts can be directed to employing additional methods such as two-stage models to help control for potential endogeneity of journalist reports influencing strategic change. These efforts may include having a more extensive set of control variables to address alternative sources of negative journalist reporting or internal vs. external attributions. Moreover, examining other structural properties than triadic closure between analysts and journalists around the focal firm would be also interesting. Although the current study did not consider the structural characteristics of the individual analysts and journalists within their own network such as centrality and cohesion, more conventional social network measures indicating different levels of information exchange

between the two communities may provide another fruitful venue to explore their structural influence on firm behavior.

Future studies could also refine the current measure of strategic change efforts and examine more specific dimensions of strategic action. The present study uses the number of 8-K filings as an indicator of both proactive communication efforts and more substantive strategic change, which captures a broad range of strategic actions simultaneously. One possible direction of refining the current strategic change measure is to analyze the content of strategic action indicated in the 8-K filings in terms of the symbolic vs. substantive nature of strategic change (Westphal and Zajac, 1994; Zajac and Westphal, 1995; Graffin et al., 2011). For instance, adoption of more controversial corporate policies or issues of corporate leadership such as corporate restructuring (lay-offs) and generous CEO compensation packages may be announced more as an impression management tactic to the investor community than a substantive strategic action. As a result, these controversial corporate policies might be more likely to be implemented with other ceremonial corporate actions to appease multiple firm constituents simultaneously or less likely to be implemented at all depending on the socio-political power of different stakeholders of the firm. To the extent that these controversial corporate policies bring more attention from a broader audience representing different stakeholders of a firm, examining structural influences of multiple firm constituents on the focal firm executives' decision making for these controversial corporate policies will be an interesting arena to explore with the framework of triadic closure proposed in this study.

## **Chapter 4**

### **Summary and Future Directions**

#### **Summary**

In this dissertation, I developed a social structural perspective on multiple social ties among corporate leaders and external firm constituents to examine how the triadic structural embeddedness of corporate leader-constituent relationships can influence relations among corporate leaders and their strategic decision making. I first examined how relations among corporate leaders indicated by board interlock ties are affected by common network ties to a group of financial analysts who are simultaneously following the board interlock dyad members (Chapter 2). In particular, I explored whether similarities in stock recommendations from the common analysts influence the maintenance of board interlock ties as result of top executives' concerns about social comparison or cognitive dissonance in a triad. I then addressed how the consensus and connection between two different constituent groups of analysts and journalists can constrain corporate leaders with respect to their strategic decision making (Chapter 3). I first theorized how consensus on negative firm performance and leadership between a focal firm's analysts and journalists can influence the focal firm executives' perception of performance feedback from the external environment and eventually increase the focal firm's strategic reorientation efforts. I also theorized how triadic closure indicated by perceived ties between analysts and journalists increases the likelihood of a focal firm's strategic change in the face of poor firm performance, by constraining the managers' structural brokerage opportunities and increasing the subjective uncertainty about their current strategic choice.

Overall, results of archival analyses, CEO surveys, and interviews with Investor Relations (IR) executives provide supportive evidence for the theoretical perspectives developed in this dissertation. The results of a longitudinal panel data study for S&P 500 companies for the sample period between 2000 and 2008 showed that relations between corporate leaders indicated by board interlock ties can be interrupted by the board interlocks' structural embeddedness in financial analysts' firm coverage ties. In particular, triadic balance depending on tie valence (i.e. positivity or negativity of stock recommendations received) and triadic closure (i.e. presence of common analysts following the focal and interlocked firms simultaneously) strongly predicted the maintenance of board interlock ties (Chapter 2). Another archival panel data study utilizing the same sample suggested that a focal firm's strategic reorientation efforts in the face of poor firm performance are strongly associated with consensus of opinion (i.e. analysts' negative stock recommendations followed by journalists' articles of negative tenor about the focal firm) as well as triadic closure between analysts and journalists following the focal company (i.e. journalists' reference to a particular analyst's name in their news articles) (Chapter 3).

Moreover, CEO surveys and interviews with IR executives also provided supportive evidence for the theoretical mechanisms proposed in each study including i) the focal firm CEO's social comparison pressure from relatively worse performance evaluations than the focal firm's interlock partner especially when the two firms are followed by the same group of analysts, and ii) constrained structural brokerage opportunities against connected analysts and journalists covering the focal firm simultaneously. These findings are consistent with the theoretical perspectives of the present dissertation emphasizing how the influence of multiple external firm constituents on the focal firm executives' strategic decision making may originate from structural consensus and connection among the focal firm, the focal firm's interorganizational

partners, and external firm constituents, rather than either party's unidirectional influence on the focal firm.

With these findings, the present dissertation offers a number of important theoretical contributions to the organization theory and strategic management literature. First, it contributes to a longstanding body of research on the relations between organizations and the external environment by providing a more fully developed social structural perspective on how ties between different groups of firm constituents can constrain the focal organization with respect to its agentic behavior. Second, this dissertation also contributes to the literature on corporate governance, including board interlock research, by expanding the social structural perspective of the prior board interlock research from the dyad to the triad that includes external constituents of the focal and the interlocked companies. Third, it contributes to the literature on strategic decision making, in particular strategic change by examining how a particular social structure including multiple external firm constituents can influence managerial perception about the performance feedback from the environment to reconsider their current strategic choices in response to poor firm performance. Finally, the present dissertation also contributes to the burgeoning literature on the role of financial analysts and journalists on firm behavior and performance by considering these two important firm constituents together and acknowledging the unique role of their firm performance and leadership accounts. In the following section, I briefly review related future research directions of the present dissertation.

### **Future Directions**

In this dissertation, I conceptualized corporate governance as a process by which a firm's top managers interpret and respond to the requests of various external constituents in the external environment, which includes shareholders, third-party stakeholders, and their representatives. This process does not occur in a social vacuum.

On the contrary, the process is embedded in ‘concrete, ongoing systems of social relations’ (Granovetter, 1985:487) and structured under a particular cultural and institutional environment (Hamilton and Biggart, 1988; Scott and Meyer, 1994). Moreover, just like any other human decision making, managers’ interpretation and response to governance pressures are affected by judgmental biases and social influences (Bazerman, 2006; Fiske and Taylor, 2008). Although theories and empirical studies of corporate governance have flourished in management research, fewer studies have attempted to explore the social structural and psychological aspect of top managers’ strategic decision making in the corporate governance context, offering rich opportunities for future research. Below, I grouped these opportunities into three major categories of my current and future research agenda – relational and structural embeddedness of strategic decision making in corporate governance, governance policies as impression management targeted at external constituents, and multiple firm constituents spanning across different cultures and institutions.

#### Relational and structural embeddedness of strategic decision making in corporate governance

In the two studies of the present dissertation, I proposed a social structural and psychological mechanism of ‘triadic closure’ among a focal firm top executives, the firm’s board interlock partners, and multiple external constituents to explain i) the maintenance of board interlock ties and ii) the focal firm managers’ strategic change decision in the face of poor firm performance. In related research, I have adopted a similar approach to investigate how corporate leaders’ impression management activities are influenced by their ties with other corporate leaders and external constituents. In my coauthored paper “*Helping other CEOs avoid bad press: Impression management support among CEOs in communications with journalists and the negativity of journalist reporting about firm leadership*” (Westphal et al., 2011) my coauthors and I examined



how CEOs ‘pay forward’ their impression management supports targeted at journalists who hold negative opinions about their colleague’s leadership and strategy, which in turn compels the journalists to change their originally negative tenor against the CEO. Specifically, we theorized and documented how this impression management support can result from social exchange process of direct and generalized reciprocity (Homans, 1958; Ekeh, 1974). This study suggests how social ties among corporate leaders and firm constituents can also constrain *external constituents* with respect to their governance pressure, whereas the current dissertation examines how the social ties between different constituents constrain the focal firm managers’ strategic decision making.

In line with this embeddedness perspective on strategic decision making, my coauthors and I also explored how CEOs’ strategic decision making can be affected by social influence tactics exerted by other board members and senior managers as well (“*The higher they rise, the harder they fall: The insidious effects of ingratiation toward corporate leaders*”, Park et al., 2010). Specifically, we examine how the social influence tactic of ingratiation (Jones, 1964) targeted at a CEO by multiple top managers and board members can increase the CEO’s overconfidence in strategic judgment and leadership capability, which in turn reduces the likelihood of strategic change in response to poor firm performance. Consistent with the consensus effect among multiple external firm constituents in the present dissertation (Ch.3), exaggerated description of a CEO’s strategic decision making and leadership capability by multiple top executives in unison is shown to foster self-enhancing cognitions of the CEO, which eventually lead to strategic persistence of the firm despite its poor performance.

Future studies can also examine how structural embeddedness of a firm against a group of firm constituents (e.g. financial analysts’ firm coverage ties) can provide the focal firm managers a social comparison reference point in their strategic decision making. Different studies have examined how social comparison and social proof process among corporate leaders can influence their strategic decision making such as market

entry (Haveman, 1993), choice of capital markets (Rao et al., 2000), and determination of corporate acquisition premiums (Kim et al., 2011). Yet, prior studies have focused on the same industry peers or ‘strategic groups’ (Fiengenbaum and Thomas, 1995; Peteraf and Shanley, 1997) in theorizing whom the focal firm managers choose for their social referent in this social comparison process, paying less attention to external firm constituents and their social structure. To the extent that a group of constituents follows multiple firms simultaneously, structural equivalence of multiple firms against the same group of constituents may provide a basis to the focal firm managers in determining the social comparison referent of their strategic decision making. Providing more theoretical perspectives on top executives’ social comparison referent based on their firms’ structural embeddedness in the external constituents’ firm following will enhance our understanding of i) whom the top executives attend to in their social comparison process (Ocasio, 1997) and ii) how such social comparison among multiple structurally equivalent firms influence the managers’ strategic decision making (e.g. Greve, 2003). Taken together, with this stream of research, I aim to shed light on how corporate leaders’ strategic decision making in corporate governance context is influenced by their relational and structural embeddedness in their ties with other corporate leaders and external constituents.

#### Governance policies as impression management targeted at external constituents

The conceptualization of corporate governance as a process by which a firm’s top managers interpret and respond to the requests of various external constituents can be also extended to another stream of research investigating how corporate governance policies can be understood as impression management activities targeted at external constituents (e.g. Pfeffer, 1981; Elsbach, 1994; Arndt and Bigelow, 2000). In my project titled “*Belling the cat: the adoption and abandonment of quarterly earnings guidance of the S&P500 companies, 2000-2009*”, I extend the framework of the triadic closure in my

dissertation to examine how the adoption and abandonment of important corporate governance policies, such as quarterly earnings guidance provided to members of the financial community, can result from both the investor community's pressure and the social proof process (Cialdini, 1993) by the focal firm to other firms that interact with the same set of analysts, i.e. structurally equivalent partners. Specifically, I examine how the triadic closure can amplify such social proof process at the embedded dyad between the focal and the structurally equivalent firm top executives. Preliminary results indicate that i) the likelihood of the focal firm's abandonment of quarterly earnings guidance increases when the partner firm also abandons the practice, and ii) this relationship is strongly moderated by the balance of the two firms in terms of their stock recommendations received from the common set of analysts. This finding suggests that important corporate governance policies such as quarterly earnings guidance can be understood as part of the focal firm's impression management tactic resulting from the focal firm managers' social proof process with its structurally equivalent partners as well as the firm's voluntary disclosure measure to the investor community.

It would be also interesting to examine the origin of verbal accounts (Scott and Lyman, 1968) top executives create to justify avoidance of governance policies and how executives learn these accounts from each other. As an extension of the "*Belling the cat*" project, I am collecting data on the 'accounts' that top managers utilize to justify their abandonment of quarterly earnings guidance practices. Preliminary analysis indicates that various accounts are utilized to justify the decision to stop providing quarterly earnings guidance, such as 'to focus on long-term strategy', 'follow other firms' practice in the industry', and 'lack of relevancy to current management' (Hsieh et al., 2006; Houston et al., 2010). The study explores three different but related issues: i) the degree of negative reactions from the investor community to different kinds of verbal accounts (e.g. coverage drop by analysts or stock price decrease), ii) the kinds of triadic structural embeddedness which encourage the invention of 'better' verbal accounts associated with

less negative response from investment community (e.g. in a ‘balanced’ triadic closure where executives receive similar, rather than dissimilar, stock recommendations) , iii) the kinds of triadic structural embeddedness that encourage the learning of better verbal accounts (e.g. the learning might be better facilitated in a ‘balanced’ triad). As a final goal in this research stream, I aim to develop a theoretical perspective on the impression management capability of top executives regarding their corporate governance policies targeted at the external constituents.

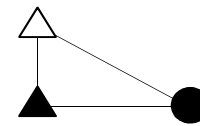
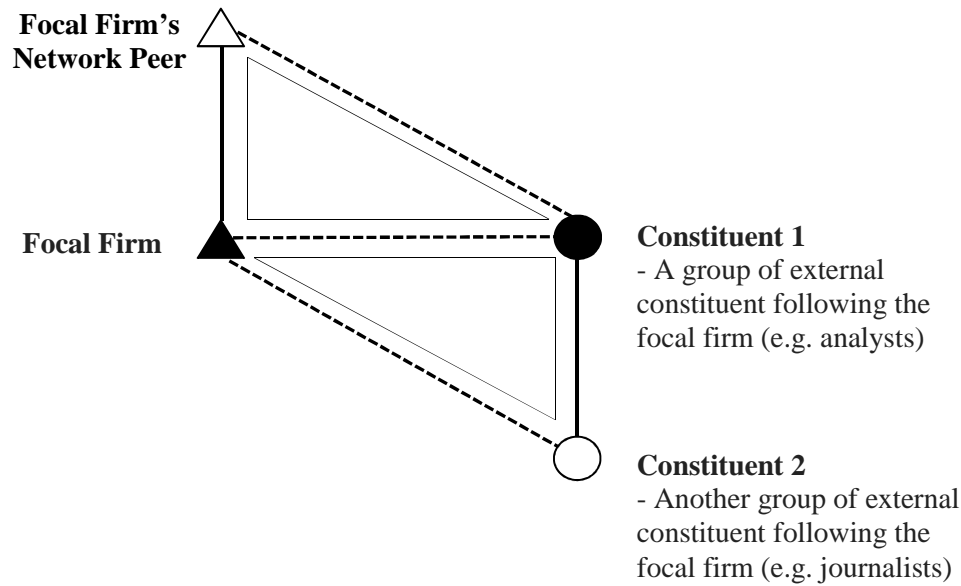
#### Multiple firm constituents spanning across different cultures and institutions

To the extent that corporate governance can be understood as a process by which a firm’s top managers interpret and respond to the requests of various external constituents, studies can also explore multiple firm constituents spanning across different cultures and institutional environments. In my third line of inquiry, I also explore how the two research streams above can be applied to inter-cultural or inter-institutional context of corporate governance. Indeed, an individual firm’s governance arrangements are situated in a particular historical, social and organizational context (Ahmadjian and Robbins, 2005; Davis, 2005; Hambrick et al., 2008). An awareness of this inter-cultural context of corporate governance has led to a growing body of research on how firms operate in multiple governance institutional settings and adjust their policies if required. For instance, multinational companies are shown to change their human resource policies in different countries in response to multiple and often conflicting labor market institutions (Siegel and Larson, 2009). Similarly, different corporate governance models are adjusted to different institutional environments and often contested among different types of corporate stakeholders (Fiss and Zajac, 2004, 2006).

In my project titled “*Lost in Translation? The "Independent Directors" Reinterpreted By the NYSE Listed Chinese Companies*”, I examine how Chinese companies listed on the NYSE describe their independent directors along two different

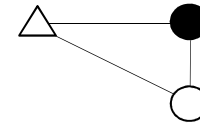
dimensions of director capabilities – either as monitors of management on behalf of shareholders (e.g. director independence) or as providers of external resources (e.g. government affiliation). While the former can be interpreted as a more Anglo-American notion of the independent directors, the latter has been a more East-Asian way of conceiving outside directors (Peng, 2004). In addition to the highly relevant variables such as top executives' educational background in U.S. or U.K. or the focal firm's board interlock with foreign companies, my preliminary results show that companies listed offshore are more likely to uphold the Anglo-American idea of the independent directors than their counterparts listed both on the stock exchanges of mainland China and Hong Kong. This finding provides further support to the main idea developed above that the adoption of governance policies can be understood as an interpretation and response tailored to the requirements of multiple external constituents even in inter-cultural or inter-institutional context. Finally, to further my investigations of corporate governance as impression management targeted at multiple external constituents in inter-cultural contexts, I am also collecting conference call transcripts data for international companies operating in different corporate governance institutional environments. In this project, I plan to examine different impression management tactics and their performance consequences employed by top executives in their interactions with conference call participants representing different governance institutions. Taken together, in this research stream, I aim to develop a theoretical understanding on how managers adjust their corporate governance policies and accompanying impression management tactics, when they cross the borderline of different corporate governance institutions.

[Figure 1] Two Theoretical Traditions on Social Triads in Structural Sociology and Their Relations to the Present Dissertation



**Social Triad 1 (Chapter 2)**




- Focus on an embedded dyad and the role of a common third-party alter attached to the dyad (Simmel, 1950; Heider, 1958; Lorrain and White, 1977)



**Social Triad 2 (Chapter 3)**

- Focus on a focal actor's structural agency against two potentially connected alters (Merton, 1957; Coleman, 1988; Burt, 1992)

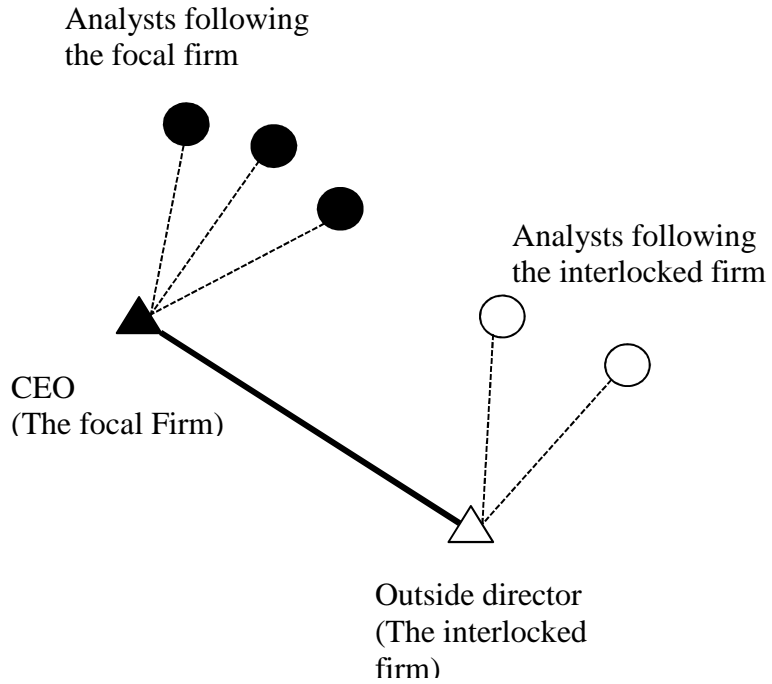
- Focus on the focal actor's social psychological and behavioral change in a triad (e.g. isolation caused by a coalition of two alters excluding the focal actor) (Simmel, 1950; Asch, 1951; Schachter, 1959)

-  A board interlock tie between the focal and the interlocked firm
-  A tie between two groups of constituents (e.g. analysts and journalists)
-  Firm coverage ties by the audience

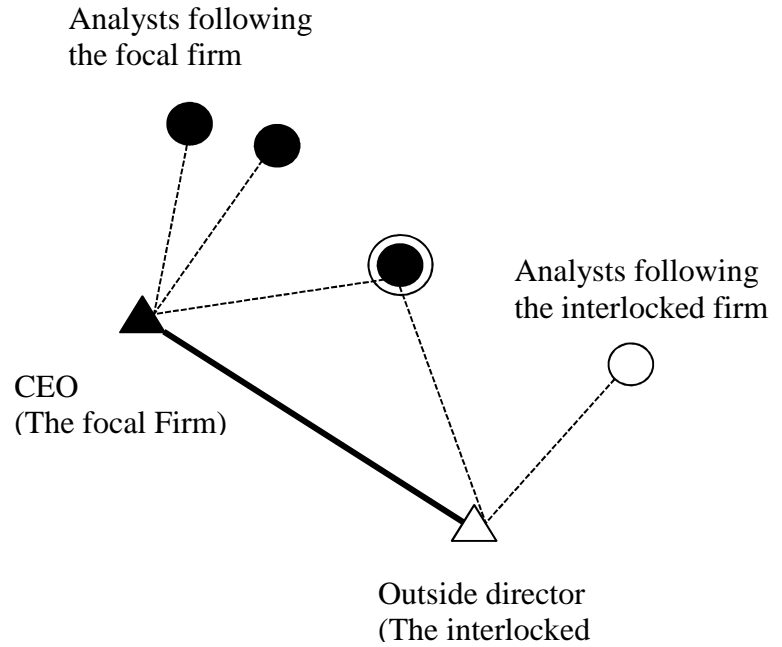
[Figure 2] The Open vs. Closed Triads

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Open Triad

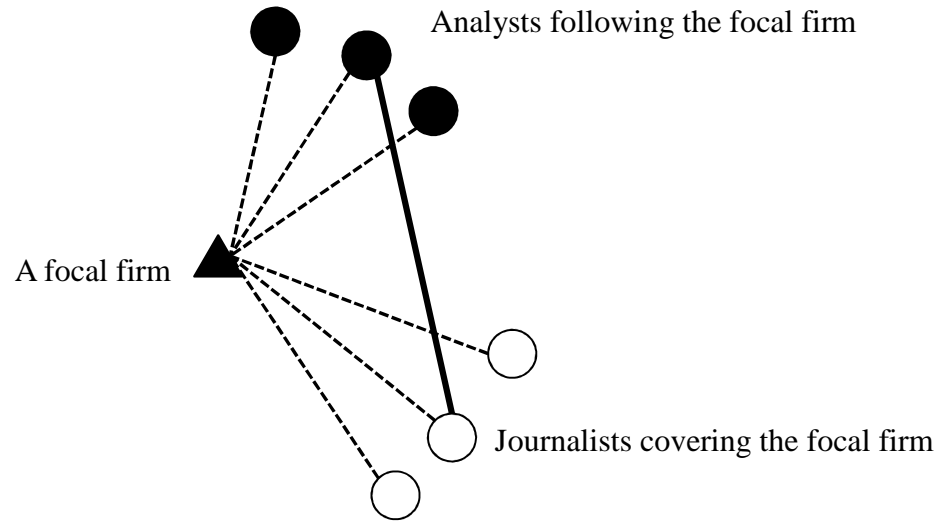


Closed Triad



- Board Interlock dyad between the focal and the interlocked firm
- ⊙ A group of “triad analysts” who cover both the focal and the interlocked firm
- + / - The sign indicates positivity/negativity of stock recommendations issued by

[Figure 3] Triadic Closure between an Analyst and a Journalist around a Focal Firm

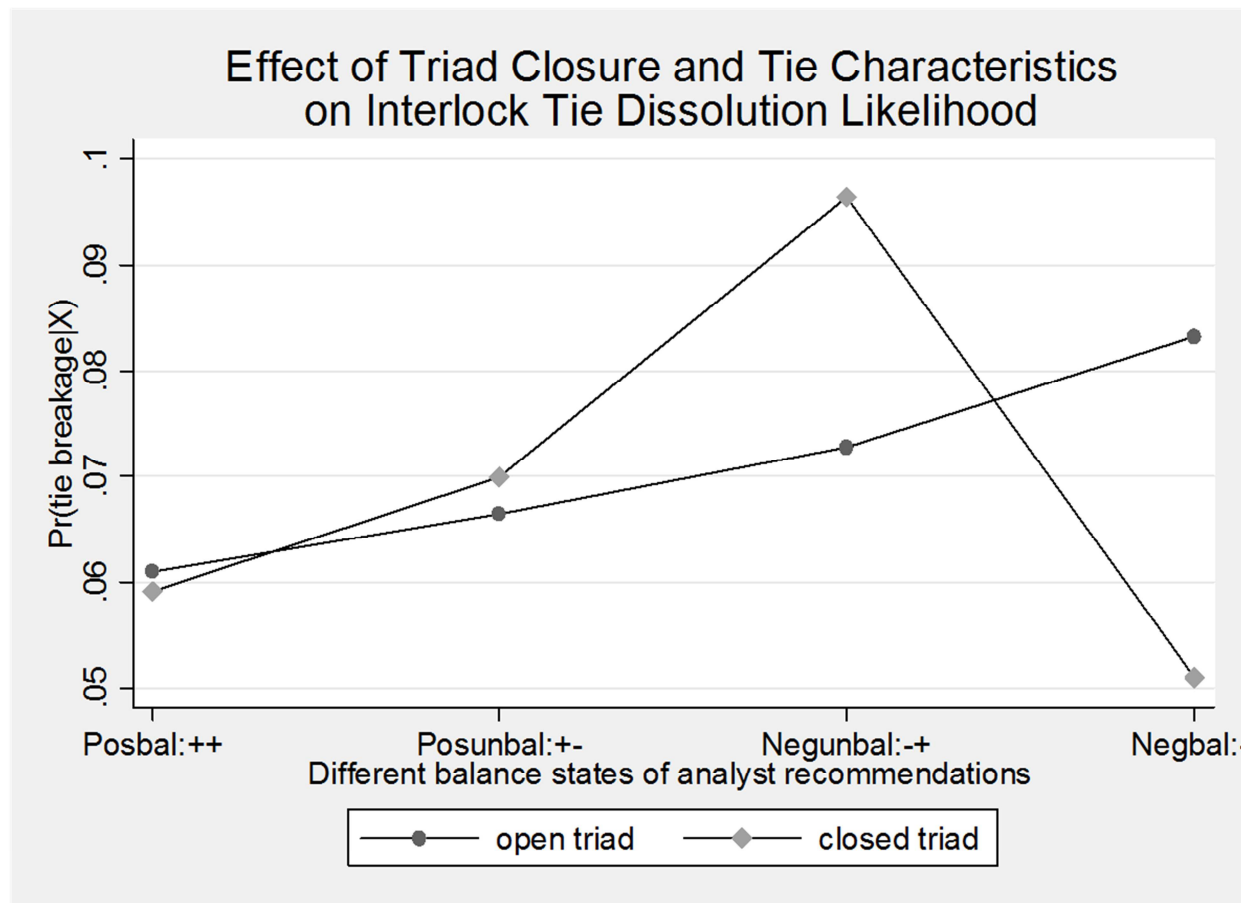


————— A tie between analysts and journalists perceived by the focal firm top managers, indicated by a journalist's reference to a particular analyst's name in his or her news article

+ / - Positivity/negativity of the firm performance and leadership accounts by analysts and journalists

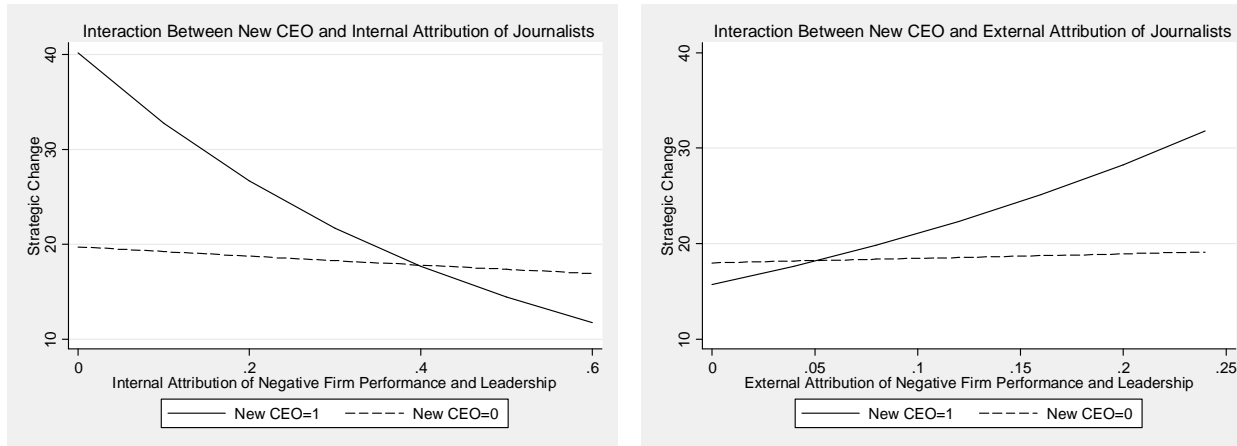


[Figure 4] Effect of Triad Closure on Interlock Tie Dissolution in Different Balance States of Open vs. Closed Triads

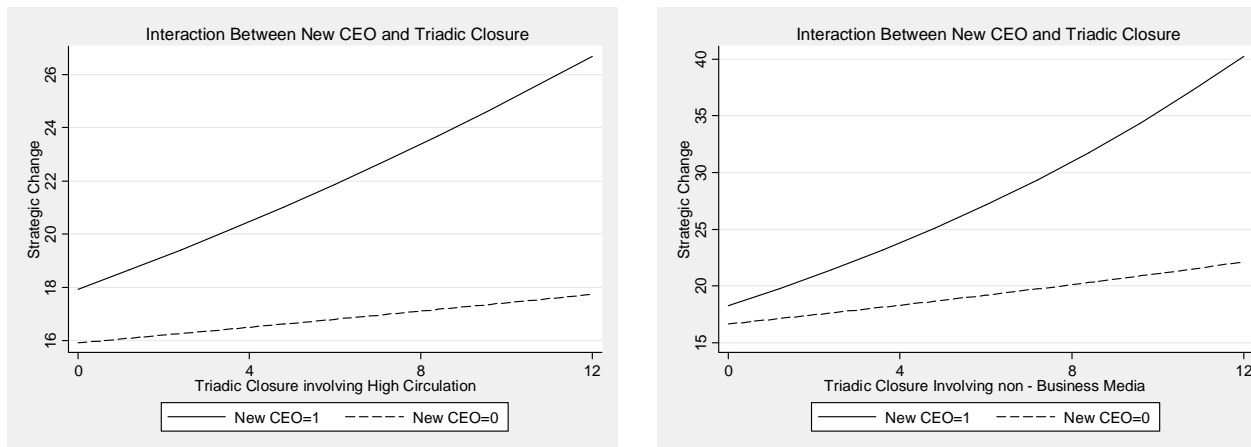


**[Figure 5] Moderating Effects of New CEO on Strategic Change Efforts**

a. Interaction between *New CEO* and *Internal vs. External* attributions predicting the likelihood of *Strategic Change Efforts*



b. Interaction between *New CEO* and *Triadic Closure* predicting the likelihood of *Strategic Change Efforts*



**[Table 1] Descriptive Statistics and Correlation Coefficients, First Study**

Variable	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
(1) Board Interlock Tie Dissolution	0.07	0.26																												
(2) Director Age	62.02	6.54	0.09																											
(3) Director Age2	3889.23	793.65	0.10	1.00																										
(4) Director Female	0.19	0.39	-0.02	-0.22	-0.22																									
(5) Director Elite Education	0.45	0.50	0.00	-0.01	0.00	-0.04																								
(6) Director CEO	0.09	0.28	-0.02	-0.24	-0.24	-0.11	-0.04																							
(7) Log of Sales, Tied Firm	0.63	0.82	0.02	0.09	0.09	0.02	0.04	-0.05																						
(8) Indirect Social Ties	0.22	0.72	-0.01	0.04	0.04	-0.07	-0.02	0.03	0.01																					
(9) Other Board Ties	0.11	0.62	0.00	0.05	0.05	0.01	-0.05	0.00	0.00	0.06																				
(11) Number of Total Board Appointments	2.92	1.02	0.03	0.09	0.08	0.12	0.01	-0.12	0.12	0.07	0.05																			
(12) Firm Performance, Focal Firm	0.00	0.08	-0.02	0.03	0.03	0.01	0.02	0.00	0.04	0.03	-0.01	0.04																		
(13) Firm Performance, Tied Firm	0.00	0.09	0.01	0.04	0.03	0.01	0.01	-0.04	0.04	0.01	0.00	0.03	0.01																	
(14) Past Alliance Experience	0.01	0.08	0.01	-0.01	-0.01	0.00	0.00	0.03	0.07	-0.02	0.00	0.01	0.00	0.00																
(15) Past Merger Experience	0.00	0.06	0.01	0.02	0.02	0.01	-0.01	-0.02	0.04	0.00	-0.01	0.02	-0.01	0.00	-0.01															
(16) Focal Firm Size (log of total asset)	0.60	0.98	0.01	0.06	0.06	0.00	0.04	0.02	0.21	0.12	0.02	0.09	-0.03	0.03	0.06	0.02														
(17) Network Centrality of the Board (indegree)	0.84	0.49	0.03	0.03	0.03	0.04	0.07	-0.01	0.02	0.13	0.02	0.33	0.06	0.02	0.02	0.00	0.43													
(18) Same Industry (SIC 2digit)	0.03	0.18	0.01	-0.05	-0.05	-0.03	0.01	0.02	-0.13	-0.05	0.01	-0.05	-0.01	-0.03	0.06	-0.01	-0.12	-0.11												
(19) Ties to Financial Companies	0.15	0.36	-0.01	0.05	0.05	0.00	0.00	-0.04	0.10	0.00	0.01	0.01	0.02	0.03	-0.04	-0.03	-0.03	-0.09	-0.05											
(20) Ties Reconstituted	0.07	0.25	-0.01	0.03	0.03	-0.01	-0.01	0.02	0.00	0.01	0.01	0.01	0.00	0.00	-0.02	0.03	0.02	0.06	-0.03	-0.02										
(21) Negativity of Stock Recommendation	0.77	0.42	0.02	0.01	0.01	0.00	-0.01	0.00	-0.09	-0.01	0.01	-0.03	-0.07	-0.05	-0.03	-0.02	-0.09	-0.06	0.03	-0.02	0.01									
(22) Unbalance of Stock Recommendation	0.45	0.50	0.00	0.00	0.00	0.01	0.02	-0.02	0.03	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.01	-0.02	0.00	0.49								
(24) Positive Balance of Stock Recommendation	0.23	0.42	-0.02	-0.01	-0.01	0.00	0.01	0.00	0.09	0.01	-0.01	0.03	0.07	0.05	0.03	0.02	0.09	0.06	-0.03	0.02	-0.01	-1.00	-0.49							
(25) Negative Balance of Stock Recommendation	0.32	0.47	0.01	0.01	0.00	-0.02	-0.02	0.02	-0.11	-0.01	0.02	-0.05	-0.07	-0.06	-0.04	-0.03	-0.11	-0.08	0.02	0.00	0.01	0.37	-0.62	-0.37						
(26) Positive Unbalance of Stock Recommendation	0.25	0.43	-0.01	-0.02	-0.02	0.01	0.01	0.01	-0.06	0.02	-0.01	0.01	0.07	-0.05	0.01	0.01	0.10	0.08	0.01	-0.01	0.00	0.31	0.63	-0.31	-0.39					
(27) Negative Unbalance of Stock Recommendation	0.20	0.40	0.01	0.02	0.02	0.00	0.01	-0.03	0.10	-0.02	0.00	0.02	-0.07	0.06	0.00	0.00	-0.08	-0.06	0.00	-0.01	0.00	0.28	0.56	-0.28	-0.35	-0.29				
(28) Triad Closure	0.06	0.23	0.00	-0.03	-0.03	-0.03	-0.02	0.05	-0.06	-0.02	0.02	-0.04	-0.01	-0.01	0.01	0.06	-0.08	-0.05	0.29	-0.06	-0.03	0.01	-0.02	-0.01	0.03	-0.02	-0.01			
(29) Structural Intensity of the Triadic Closure	0.00	0.03	0.02	-0.01	-0.01	-0.04	-0.01	0.03	-0.06	-0.02	0.01	-0.04	0.00	0.00	0.02	0.12	-0.07	-0.06	0.30	-0.03	-0.03	0.02	-0.02	-0.02	0.04	-0.02	-0.01	0.73		
(30) CEO Chair of the Board	0.75	0.43	0.00	0.05	0.05	-0.04	-0.05	0.02	0.03	0.09	0.05	0.02	0.01	0.00	-0.04	0.02	0.10	0.09	-0.06	-0.01	0.04	-0.04	0.00	0.04	-0.03	0.02	-0.02	-0.02		
(31) Independent Director Ratio	0.79	0.13	-0.07	0.06	0.06	0.00	0.00	0.00	0.08	0.01	0.03	-0.04	0.01	0.01	-0.02	0.01	0.09	0.10	-0.04	0.01	0.02	0.11	-0.02	-0.11	0.11	0.00	-0.02	-0.01	-0.02	0.19

[Table 2] Logistic Panel Regression Analysis of Interlock Tie Dissolution (H1/H2)

Dependent Variable: Interlock Dissolution (1/0)	Control Variables			H1		H2				
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Director Age	-0.587*** (-11.85)		-0.591*** (-11.84)	-0.594*** (-11.91)	-0.598*** (-12.00)	-0.593*** (-11.89)	-0.596*** (-11.93)	-0.592*** (-11.88)	-0.592*** (-11.86)	-0.602*** (-12.09)
Director Age2	0.00518*** (12.86)		0.00522*** (12.88)	0.00525*** (12.94)	0.00528*** (13.03)	0.00524*** (12.93)	0.00526*** (12.96)	0.00523*** (12.92)	0.00523*** (12.90)	0.00531*** (13.12)
Director Female	-0.142 (-1.62)		-0.143 (-1.63)	-0.145* (-1.65)	-0.143 (-1.63)	-0.145* (-1.65)	-0.145* (-1.66)	-0.144 (-1.64)	-0.142 (-1.62)	-0.144 (-1.64)
Director Elite Education	-0.0580 (-0.94)		-0.0749 (-1.21)	-0.0762 (-1.23)	-0.0759 (-1.23)	-0.0777 (-1.26)	-0.0771 (-1.25)	-0.0766 (-1.24)	-0.0783 (-1.27)	-0.0740 (-1.20)
Director CEO	0.0413 (0.32)		0.0310 (0.24)	0.0331 (0.26)	0.0304 (0.24)	0.0353 (0.28)	0.0373 (0.29)	0.0339 (0.27)	0.0377 (0.29)	0.0356 (0.28)
Log of Sales, Tied Firm	0.0684* (1.83)		0.0866** (2.23)	0.0937** (2.40)	0.0949** (2.40)	0.0864** (2.22)	0.0938** (2.40)	0.0832** (2.13)	0.0847** (2.16)	0.0977** (2.49)
Indirect Social Ties	-0.0994** (-2.03)		-0.111** (-2.23)	-0.113** (-2.27)	-0.115** (-2.30)	-0.111** (-2.22)	-0.113** (-2.27)	-0.111** (-2.22)	-0.111** (-2.24)	-0.114** (-2.28)
Other Board Ties	-0.0673 (-1.35)		-0.0707 (-1.41)	-0.0718 (-1.44)	-0.0738 (-1.48)	-0.0689 (-1.38)	-0.0705 (-1.41)	-0.0701 (-1.40)	-0.0693 (-1.38)	-0.0697 (-1.39)
Number of Total Board Appointments	0.135*** (4.49)		0.101*** (3.14)	0.102*** (3.17)	0.102*** (3.20)	0.100*** (3.13)	0.101*** (3.16)	0.100*** (3.13)	0.0999*** (3.12)	0.102*** (3.20)
Firm Performance, Focal Firm		-0.711** (-2.38)	-0.782*** (-2.58)	-0.742** (-2.42)	-0.702** (-2.25)	-0.776** (-2.56)	-0.742** (-2.41)	-0.762** (-2.50)	-0.787*** (-2.58)	-0.711** (-2.30)
Firm Performance, Tied Firm		0.680 (1.62)	0.702 (1.63)	0.793* (1.80)	0.802* (1.81)	0.718* (1.67)	0.798* (1.81)	0.677 (1.57)	0.708* (1.66)	0.828* (1.88)
Past Alliance Experience		0.309 (1.00)	0.342 (1.10)	0.354 (1.14)	0.377 (1.21)	0.353 (1.13)	0.349 (1.12)	0.348 (1.12)	0.346 (1.11)	0.370 (1.19)
Past Merger Experience		0.473 (1.18)	0.198 (0.48)	0.231 (0.57)	0.259 (0.63)	0.241 (0.59)	0.247 (0.60)	0.226 (0.55)	0.247 (0.60)	0.244 (0.59)
Focal Firm Size (log of total asset)		-0.000835 (-0.02)	-0.00868 (-0.25)	-0.00260 (-0.07)	0.00497 (0.14)	-0.0113 (-0.32)	-0.00394 (-0.11)	-0.00722 (-0.20)	-0.00997 (-0.28)	-0.00310 (-0.09)
Network Centrality of the Board (indegree)		0.228*** (3.50)	0.237*** (3.31)	0.242*** (3.38)	0.248*** (3.47)	0.240*** (3.36)	0.242*** (3.39)	0.240*** (3.35)	0.241*** (3.36)	0.246*** (3.43)
Same Industry (SIC 2digit)		0.236 (1.52)	0.260 (1.63)	0.256 (1.61)	0.262 (1.64)	0.293* (1.76)	0.303* (1.82)	0.305* (1.83)	0.291* (1.75)	0.328** (1.97)
Ties to Financial Companies		-0.119 (-1.34)	-0.184** (-2.05)	-0.182** (-2.02)	-0.181** (-2.01)	-0.188** (-2.09)	-0.185** (-2.05)	-0.185** (-2.06)	-0.188** (-2.09)	-0.189** (-2.11)
Ties Reconstituted		-0.140 (-1.12)	-0.220* (-1.72)	-0.224* (-1.76)	-0.226* (-1.78)	-0.224* (-1.76)	-0.225* (-1.77)	-0.223* (-1.75)	-0.222* (-1.74)	-0.222* (-1.78)
Negativity of Stock Recommendation				0.208*** (2.72)						
Triad Closure						-0.336* (-1.76)	-0.143 (-0.90)	-0.165 (-1.03)	-0.233 (-1.45)	0.0927 (0.55)
Unbalance of Stock Recommendation						-0.0478 (-0.76)				
Unbalance of Stock Recommendation X Triad Closure						0.496* (1.84)				
Positive Balance of Stock Recommendation							-0.213*** (-2.71)			
Positive Balance of Stock Recommendation X Triad Closure							0.107 (0.32)			
Positive Unbalance of Stock Recommendation					0.116 (1.25)			-0.0738 (-0.99)		
Positive Unbalance of Stock Recommendation X Triad Closure								0.185 (0.58)		
Negative Unbalance of Stock Recommendation					0.197** (2.07)				0.00794 (0.10)	
Negative Unbalance of Stock Recommendation X Triad Closure									0.546* (1.73)	
Negative Balance of Stock Recommendation					0.291*** (3.34)					0.223*** (3.32)
Negative Balance of Stock Recommendation X Triad Closure										-0.626** (-2.16)
_cons	13.26*** (8.81)	-2.751*** (-43.11)	13.24*** (8.73)	13.19*** (8.69)	13.29*** (8.77)	13.34*** (8.80)	13.45*** (8.85)	13.33*** (8.78)	13.29*** (8.75)	13.51*** (8.93)
N	16753	16753	16753	16753	16753	16753	16753	16753	16753	16753
Log Likelihood	-4162.3	-4291.9	-4146.0	-4142.2	-4139.9	-4143.9	-4141.8	-4145.1	-4144.1	-4139.1

t statistics in parentheses (\* p<0.10, \*\* p<0.05, \*\*\* p<0.01)

[Table 3] Logistic Panel Regression Analysis of Interlock Tie Dissolution (H3/H4)

Dependent Variable: Interlock Dissolution (1/0)	H3/H4							
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Director Age	-0.592*** (-11.86)	-0.590*** (-11.84)	-0.592*** (-11.85)	-0.603*** (-12.09)	-0.594*** (-11.88)	-0.593*** (-11.85)	-0.590*** (-11.82)	-0.593*** (-11.85)
Director Age2	0.00523*** (12.89)	0.00522*** (12.87)	0.00524*** (12.90)	0.00532*** (13.12)	0.00525*** (12.93)	0.00524*** (12.89)	0.00522*** (12.86)	0.00524*** (12.89)
Director Female	-0.143 (-1.63)	-0.141 (-1.61)	-0.136 (-1.55)	-0.139 (-1.58)	-0.135 (-1.54)	-0.137 (-1.56)	-0.140 (-1.59)	-0.137 (-1.56)
Director Elite Education	-0.0765 (-1.24)	-0.0738 (-1.19)	-0.0763 (-1.23)	-0.0686 (-1.11)	-0.0753 (-1.22)	-0.0771 (-1.25)	-0.0826 (-1.33)	-0.0775 (-1.25)
Director CEO	0.0273 (0.21)	0.0251 (0.20)	0.0396 (0.31)	0.038 (0.26)	0.0411 (0.32)	0.0426 (0.33)	0.0384 (0.30)	0.0429 (0.34)
Log of Sales, Tied Firm	0.0941** (2.40)	0.0849** (2.17)	0.0885** (2.26)	0.1000** (2.55)	0.0860** (2.19)	0.0850** (2.17)	0.0853** (2.18)	0.0844** (2.15)
Indirect Social Ties	-0.113** (-2.27)	-0.111** (-2.22)	-0.111** (-2.22)	-0.113** (-2.26)	-0.111** (-2.22)	-0.112** (-2.24)	-0.113** (-2.26)	-0.112** (-2.24)
Other Board Ties	-0.0744 (-1.49)	-0.0735 (-1.47)	-0.0704 (-1.40)	-0.0700 (-1.40)	-0.0697 (-1.39)	-0.0696 (-1.39)	-0.0699 (-1.39)	-0.0688 (-1.37)
Number of Total Board Appointments	0.102*** (3.19)	0.102*** (3.17)	0.101*** (3.16)	0.104*** (3.25)	0.101*** (3.15)	0.105*** (3.28)	0.102*** (3.18)	0.105*** (3.27)
Firm Performance, Focal Firm	-0.755** (-2.46)	-0.776** (-2.55)	-0.783*** (-2.58)	-0.728** (-2.35)	-0.768** (-2.51)	-0.790*** (-2.60)	-0.775** (-2.55)	-0.789*** (-2.60)
Firm Performance, Tied Firm	0.780* (1.77)	0.670 (1.56)	0.690 (1.60)	0.818* (1.84)	0.675 (1.57)	0.690 (1.60)	0.685 (1.59)	0.691 (1.60)
Past Alliance Experience	0.356 (1.14)	0.345 (1.11)	0.334 (1.07)	0.344 (1.10)	0.334 (1.07)	0.358 (1.15)	0.335 (1.07)	0.355 (1.14)
Past Merger Experience	0.179 (0.43)	0.120 (0.29)	0.215 (0.52)	0.0937 (0.23)	0.230 (0.56)	0.195 (0.47)	0.227 (0.55)	0.210 (0.51)
Focal Firm Size (log of total asset)	-0.00145 (-0.04)	-0.00401 (-0.11)	-0.00896 (-0.25)	0.000666 (0.02)	-0.00737 (-0.21)	-0.0103 (-0.29)	-0.00868 (-0.24)	-0.0101 (-0.28)
Network Centrality of the Board (indegree)	0.243*** (3.40)	0.239*** (3.34)	0.237*** (3.31)	0.243*** (3.40)	0.240*** (3.35)	0.234*** (3.26)	0.237*** (3.30)	0.234*** (3.26)
Same Industry (SIC 2digit)	0.178 (1.06)	0.188 (1.12)	0.171 (1.01)	0.211 (1.26)	0.169 (1.00)	0.106 (0.62)	0.177 (1.06)	0.116 (0.67)
Ties to Financial Companies	-0.181** (-2.02)	-0.181** (-2.02)	-0.189** (-2.10)	-0.185** (-2.05)	-0.189** (-2.09)	-0.186** (-2.07)	-0.189** (-2.10)	-0.187** (-2.07)
Ties Reconstituted	-0.220* (-1.72)	-0.215* (-1.68)	-0.217* (-1.70)	-0.219* (-1.72)	-0.218* (-1.71)	-0.215* (-1.68)	-0.218* (-1.71)	-0.216* (-1.69)
Intensity of the Triad Closure	1.649 (1.57)	1.395 (1.26)	-0.336 (-0.26)	3.544*** (3.09)	-1.320 (-0.85)			
Positive Balance of Stock Recommendation	1.052 (0.36)							
Positive Balance of Stock Recommendation X Intensity of Triad Closure	-1.252 (-0.42)							
Positive Unbalance of Stock Recommendation		-0.587 (-0.26)			-3.317 (-1.32)			
Positive Unbalance of Stock Recommendation X Intensity of Triad Closure		0.525 (0.23)			3.245 (1.30)			
Negative Unbalance of Stock Recommendation			-6.740*** (-3.37)		-7.745*** (-3.53)	-1.628*** (-2.91)	-1.671*** (-2.80)	-1.795** (-2.55)
Negative Unbalance of Stock Recommendation X Intensity of Triad Closure			6.731*** (3.39)		7.715*** (3.54)			
Negative Balance of Stock Recommendation				6.044*** (2.79)				
Negative Balance of Stock Recommendation X Intensity of Triad Closure				-5.824*** (-2.71)				
Intensity of the Triad Closure, Focal Firm						0.0244 (0.08)		0.170 (0.44)
Negative Unbalance of Stock Recommendation X Intensity of Triad Closure, Focal Firm						1.629*** (3.00)		1.430** (2.13)
Intensity of the Triad Closure, Tied Firm							-0.169 (-0.49)	-0.256 (-0.58)
Negative Unbalance of Stock Recommendation X Intensity of Triad Closure, Tied Firm							1.680*** (2.89)	0.362 (0.43)
_cons	13.32*** (8.77)	13.24*** (8.73)	13.26*** (8.73)	13.49*** (8.91)	13.33*** (8.77)	13.30*** (8.74)	13.23*** (8.71)	13.29*** (8.74)
N	16753	16753	16753	16753	16753	16746	16746	16746
Log Likelihood	-4141.1	-4144.6	-4139.4	-4136.9	-4138.4	-4130.9	-4137.5	-4130.7

t statistics in parentheses (\* p<0.10, \*\* p<0.05, \*\*\* p<0.01)

[Table 4] Logistic Panel Regression Analysis of Interlock Tie Dissolution (H5)

Dependent Variable: Interlock Dissolution (1/0)	H5				
	(1)	(2)	(3)	(4)	(5)
Independent Variables					
Director Age	0.504 (0.82)	0.462 (0.75)	0.347 (0.57)	-0.464 (-1.64)	-0.465 (-1.64)
Director Age2	-0.00390 (-0.77)	-0.00352 (-0.70)	-0.00259 (-0.52)	0.00402* (1.69)	0.00405* (1.70)
Director Female	2.538*** (2.63)	2.285** (2.39)	2.406** (2.52)	0.912* (1.88)	1.169** (2.35)
Director Elite Education	1.230* (1.70)	1.121 (1.54)	1.017 (1.40)		
Director CEO	-4.592** (-2.46)	-4.336** (-2.36)	-4.077** (-2.24)	-1.843** (-2.07)	-1.731** (-1.98)
Log of Sales, Tied Firm	-0.0838 (-0.46)	0.0330 (0.18)	0.0119 (0.06)	0.0130 (0.08)	0.0716 (0.38)
Indirect Social Ties	-0.269 (-0.89)	-0.240 (-0.77)	-0.239 (-0.77)	-0.244 (-0.81)	-0.222 (-0.71)
Other Board Ties	-0.729** (-2.07)	-0.654* (-1.89)	-0.643* (-1.86)	-0.186 (-1.03)	-0.208 (-1.13)
Number of Total Board Appointments	0.757** (1.97)	0.674* (1.77)	0.628 (1.64)		
Firm Performance, Focal Firm	0.260 (0.25)	0.244 (0.23)	0.305 (0.27)	0.112 (0.12)	0.118 (0.11)
Firm Performance, Tied Firm	-1.394 (-1.03)	-1.262 (-0.92)	-1.090 (-0.80)	0.0536 (0.05)	0.113 (0.10)
Past Alliance Experience	2.805*** (3.79)	2.584*** (3.41)	2.572*** (3.32)	2.781*** (3.84)	2.517*** (3.28)
Past Merger Experience	-18.80** (-2.10)	-17.98** (-2.02)	-16.58* (-1.88)	-4.258 (-1.27)	-4.134 (-1.24)
Focal Firm Size (log of total asset)	2.538** (2.44)	2.444** (2.36)	2.292** (2.22)	0.845** (2.07)	0.849** (2.08)
Network Centrality of the Board (indegree)	-1.434* (-1.79)	-1.265 (-1.59)	-1.242 (-1.55)	-0.173 (-0.42)	-0.187 (-0.44)
Same Industry (SIC 2digit)	-22.70** (-2.19)	-21.53** (-2.09)	-19.97* (-1.95)	-5.706 (-1.51)	-5.464 (-1.45)
Ties to Financial Companies	4.856* (1.93)	4.543* (1.81)	4.306* (1.74)	0.749 (0.62)	0.897 (0.75)
Ties Reconstituted	3.895** (2.04)	3.655* (1.94)	3.544* (1.88)	0.943 (0.92)	1.138 (1.10)
Inverse Mills Ratio of Heckman Selection Model	-21.33** (-2.24)	-20.41** (-2.15)	-18.92** (-2.01)	-5.708* (-1.65)	-5.571 (-1.61)
Negative Unbalance of Stock Recommendation	-1.043 (-0.98)	4.729*** (2.60)	3.755* (1.85)	0.759** (2.12)	3.907* (1.92)
CEO Chairman of the Board	-0.251 (-0.73)		-0.245 (-0.70)		-0.230 (-0.66)
Negative Unbalance of Stock Recommendation X CEO Chairman of the Board	2.046* (1.81)		2.757** (2.32)		2.787** (2.35)
Independent Director Ratio		-0.449 (-0.36)	-0.287 (-0.23)		-0.383 (-0.30)
Negative Unbalance of Stock Recommendation X Independent Director Ratio		-5.614** (-2.26)	-7.362*** (-2.77)		-7.537*** (-2.80)
Director Elite Status				0.220 (0.54)	0.169 (0.40)
Negative Unbalance of Stock Recommendation X Director Elite Status				0.237 (0.29)	-0.00868 (-0.01)
_cons	22.87*** (3.53)	22.43*** (3.42)	23.04*** (3.50)	21.74*** (3.32)	21.78*** (3.23)
N	924	924	924	924	924
Log Likelihood	-202.0	-200.3	-196.2	-206.3	-197.5

t statistics in parentheses (\* p<0.10, \*\* p<0.05, \*\*\* p<0.01)

[Table 5] CEO Survey for Social Comparison Pressure under Triadic Closure

Item	Response (5 point scale)
“I would feel uncomfortable if my firm was downgraded by a security analyst while the home firm of another CEO who serves on my board received generally positive ratings <i>from a different set of analysts.</i> ”	Agree (5)/ Neither Agree nor Disagree (49) / Disagree or Strongly Disagree (47)
“It would make me look bad if my firm was downgraded by a security analyst while the home firm of another CEO who serves on my board received generally positive ratings <i>from a different set of analysts.</i> ”	Agree (7)/ Neither Agree nor Disagree (46) / Disagree or Strongly Disagree (48)
“I would feel uncomfortable if my firm was downgraded by a security analyst and the home firm of another CEO who serves on my board was not downgraded <i>by the same analyst.</i> ”	Strongly Agree or Agree (92) / Neither Agree Nor Disagree (8) / Disagree (1)
“It would make me look bad if my firm was downgraded by a security analyst and the home firm of another CEO who serves on my board was not downgraded <i>by the same analyst.</i> ”	Strongly Agree or Agree (93) / Neither Agree Nor Disagree (7) / Disagree (1)

Survey population is CEOs of large and mid-sized public U.S. companies with more than \$100 million in sales (Reference USA index). 101 out of 250 CEOs in the sample frame responded.

[Table 6] Major Dimensions and Examples of Strategic Change Efforts Captured in SEC Form 8-K filings

Section	Broad Definition and Categories	Examples of Strategic Change Efforts
Section 1	Change in the registrant's business and operations - Entry into a Material Definitive Agreement - Termination of a Material Definitive Agreement	<p><b><u>Acquisition along the Supply Chain</u></b>                      On September 12, 2005, Ford Motor Company (“Ford”, “we” or “our”) and Visteon Corporation (“Visteon”), our largest supplier, entered into definitive agreements designed to protect the supply of critical parts and components, create opportunities for production material cost savings, and improve our ability to benefit from competitively-priced and high-quality parts, systems and technologies.</p>
		<p><b><u>International Corporate Divestiture</u></b>                      On March 25, 2008, Ford Motor Company (“Ford”) signed a sale and purchase agreement (the “Sale and Purchase Agreement”) with Tata Motors Limited (“Tata Motors”). Under the terms of the transaction, Tata Motors will purchase the Jaguar and Land Rover operations (“Jaguar Land Rover”), comprising 100% of outstanding shares in Jaguar Cars Limited, Land Rover and related companies, and their respective subsidiaries, and certain assets used by Jaguar Land Rover, including ownership rights in, or licenses to use, related intellectual property currently owned by non-transferring companies, and the assets of national sales companies operating within non-transferring companies, for approximately US\$2.3 billion in cash payable upon completion.</p>
		<p><b><u>Compensation &amp; Retention Strategy with Employees</u></b>                      On February 10, 2005, Sara Lee Corporation (“Sara Lee”) announced its strategic transformation plan (the “Transformation Plan”). In connection with the Transformation Plan, the Compensation and Employee Benefits Committee of the Board of Directors of Sara Lee (the “Committee”) approved certain compensation arrangements, described below. On February 9, 2005, the Committee approved a special retention plan for select members of management and key employees (the “Retention Plan”). The objectives of the Retention Plan are to recognize exemplary performance and retain and motivate key employees overseeing the Transformation Plan.</p>



Section	Broad Definition and Categories	Examples of Strategic Change Efforts
Section 2	Change in activities influencing financial position of the company - Completion of Acquisition or Disposition of Assets - Costs Associated with Exit or Disposal Activities - Creation of a Direct Financial Obligation	<p><b><u>Corporate Restructuring</u></b></p> <p>On December 5, 2008, the Board of Directors of The Dow Chemical Company (“Dow” or the “Company”) approved a restructuring plan as part of a series of actions to advance the Company’s strategy and respond to the recent, severe economic downturn. The restructuring plan includes the shutdown of a number of facilities, as described in Item 2.06 below, and a global workforce reduction, which are planned to be completed during the next 2 years. The Company also expects to complete several divestitures within the next 2 years, which will result in a reduction of approximately 2,000 positions. As a result of the restructuring plan, the global workforce reduction and the divestitures, approximately 5,000 jobs will be eliminated across several functions, geographies and businesses.</p>
		<p><b><u>Corporate Divestiture</u></b></p> <p>On November 30, 2006, Aon Corporation (the “Company”) consummated the sale of all of the outstanding equity interests of the Company’s subsidiaries that conduct the Aon Warranty Group (“AWG”) business to TWG Holdings, Inc. (f/k/a Warrior Acquisition Corp.), an affiliate of Onex Corporation. The consideration received consisted of \$710 million in cash, pursuant to the terms of the previously disclosed Purchase Agreement, dated as of June 30, 2006, between the Company and TWG Holdings, Inc. (the “Warranty Agreement”). The final purchase price is subject to a post-closing adjustment based upon the net worth (excluding goodwill) of AWG at the closing compared to a target level of \$420,011,470.</p>
		<p><b><u>Mergers and Acquisitions</u></b></p> <p>On March 3, 2006, CA, Inc. (“CA”) completed its previously announced acquisition of Wily Technology, Inc. (“Wily”) by merger for total consideration of approximately \$375 million. Wily is a provider of enterprise application management software solutions that enable companies to manage the health and availability of their web applications and infrastructure.</p>

Section	Broad Definition and Categories	Examples of Strategic Change Efforts
Section 5	Change in corporate governance and management - Change in Control of Registrant - Departure of Directors or Certain Officers	<p><b><u>Initiation of CEO Succession Process</u></b>            On September 30, 2004, Aon Corporation (the “Company”) issued a press release announcing that the Company has initiated its CEO succession process. Patrick G. Ryan will continue to serve as Chief Executive Officer of the Company until a successor is named and, thereafter, will continue to serve as Chairman of the Company’s Board of Directors. Michael D. O’Halloran, the Company’s current President and Chief Operating Officer, becomes Senior Executive Vice President of the Company effective immediately.</p> <p><b><u>Announcement of CEO Succession</u></b>            Huntington Bancshares Incorporated announced on January 14, 2009 that Stephen D. Steinour, age 50, has been elected Chairman, President and Chief Executive Officer, succeeding Thomas E. Hoaglin, who had served in these capacities since 2001. Mr. Steinour was appointed to serve as a Class III member of the Board of Directors serving a term expiring in 2011. Mr. Hoaglin will remain with Huntington to assist with transition matters until he retires from service as an employee and as a director on February 28, 2009.</p>

[Table 7] Descriptive Statistics and Correlation Coefficients, Second Study

Variables	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1) Strategic Change Efforts of the Focal Company	4.05	3.22																					
(2) Firm Performance (ROA)	-0.25	4.68	-0.11																				
(3) Firm Performance (MBR)	-0.47	4.55	0.00	-0.07																			
(4) Firm Size (Log of Total Assets)	9.20	1.31	0.32	-0.20	-0.05																		
(5) Financial Distress (Debt Equity Ratio)	1.19	19.57	-0.02	-0.08	0.32	0.03																	
(6) Selection Parameter (Negative Stock Recommendation)	2.18	0.68	-0.01	0.00	0.03	-0.11	-0.09																
(7) New CEO	0.18	0.38	0.07	-0.11	-0.16	-0.04	-0.07	0.15															
(8) CEO Board Tenure	7.85	7.75	-0.25	0.03	0.06	-0.17	-0.01	0.01	-0.22														
(9) CEO Chairman of the Board	0.62	0.48	-0.18	0.00	-0.05	0.04	-0.08	-0.02	-0.28	0.37													
(10) Independent Director Ratio	0.80	0.12	0.01	0.00	0.04	0.11	0.07	-0.15	-0.07	-0.26	0.05												
(11) Total Number of Journalist Reports ('000)	0.10	0.13	0.29	-0.04	-0.09	0.34	-0.04	-0.02	0.11	-0.07	-0.05	-0.06											
(12) Negativity of Journalist Reports	0.02	0.01	0.05	-0.12	-0.16	0.17	-0.01	0.01	0.08	-0.06	-0.01	-0.01	0.16										
(13) Posivity of Journalist Reports	0.03	0.01	-0.02	-0.12	0.02	0.06	0.04	-0.04	-0.04	-0.03	-0.12	0.14	-0.11	0.45									
(14) Variance in Negativity of Journalist Reports	0.01	0.00	-0.08	0.01	-0.13	0.01	0.00	-0.01	0.05	0.03	0.09	-0.02	0.06	0.52	0.00								
(15) Triadic Closure between Analysts and Journalists ('00)	0.10	0.19	0.10	-0.04	-0.11	0.24	-0.05	-0.02	0.08	0.04	0.01	-0.09	0.75	0.17	-0.07	0.09							
(16) Triadic Closure, High Circulation Media ('00)	0.01	0.05	0.26	-0.12	-0.03	0.31	0.03	0.04	0.00	0.04	-0.04	-0.14	0.47	0.13	0.03	-0.09	0.39						
(17) Triadic Closure, Company Following Analysts ('00)	0.02	0.05	0.10	-0.06	-0.12	0.17	0.01	-0.03	0.10	-0.10	-0.04	-0.08	0.47	0.15	-0.02	0.07	0.59	0.29					
(18) Triadic Closure, Prestigious Analysts ('00)	0.06	0.14	0.09	-0.03	-0.10	0.22	-0.04	-0.02	0.06	0.07	0.04	-0.10	0.73	0.15	-0.06	0.08	0.97	0.40	0.49				
(19) Triadic Closure, Prestigious Media ('00)	0.01	0.04	0.23	-0.10	-0.06	0.32	0.00	0.01	0.04	0.03	-0.03	-0.14	0.68	0.17	-0.01	0.00	0.77	0.74	0.44	0.77			
(20) Triadic Closure, National Business Media ('00)	0.02	0.04	0.06	-0.02	-0.05	0.18	-0.03	0.00	0.06	0.06	0.03	-0.07	0.66	0.13	-0.05	0.08	0.88	0.31	0.40	0.88	0.79		
(21) Triadic Closure, National Non-Business Media ('00)	0.01	0.03	0.25	-0.09	-0.08	0.30	0.00	0.03	0.05	0.06	-0.02	-0.14	0.71	0.15	-0.02	-0.01	0.78	0.78	0.41	0.78	0.90	0.73	
(22) Triadic Closure, Local Media ('00)	0.03	0.06	-0.02	0.03	-0.13	0.14	-0.11	-0.05	0.05	0.06	0.06	-0.05	0.61	0.13	-0.09	0.13	0.89	0.20	0.47	0.86	0.55	0.75	0.58

**[Table 8] Negative Binomial Panel Regression Analysis of Strategic Change Efforts (H1)**

Strategic Change Efforts of the Focal Company	Control Variables		H1a	H1b			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Independent Variables							
Firm Performance (ROA)	-0.0108 (-1.44)	-0.00407 (-0.57)	-0.00173 (-0.24)	0.0114 (1.14)	0.0135 (1.34)	0.0129 (1.26)	0.0139 (1.35)
Firm Performance (MBR)	0.00995 (1.37)	0.0143* (1.95)	0.0152** (2.04)	-0.00744 (-0.38)	-0.00537 (-0.27)	-0.00517 (-0.26)	-0.0125 (-0.65)
Firm Size (Log of Total Assets)	0.154*** (4.29)	0.151*** (4.27)	0.134*** (3.66)	0.147*** (3.39)	0.137*** (3.41)	0.144*** (3.52)	0.152*** (4.36)
Financial Distress (Debt Equity Ratio)	-0.00232* (-1.90)	-0.00222* (-1.83)	-0.00229* (-1.87)	-0.00180 (-0.59)	-0.00185 (-0.62)	-0.00209 (-0.69)	-0.00196 (-0.67)
New CEO		0.179** (2.15)	0.159* (1.91)	0.172 (1.30)	0.201 (1.54)	0.202 (1.56)	0.153 (1.25)
CEO Board Tenure		-0.00978 (-1.49)	-0.00990 (-1.51)	-0.00788 (-0.70)	-0.0102 (-0.94)	-0.00874 (-0.80)	-0.0107 (-1.03)
CEO Chairman of the Board		-0.0621 (-0.73)	-0.0747 (-0.88)	-0.120 (-0.89)	-0.0876 (-0.67)	-0.104 (-0.79)	-0.122 (-1.03)
Independent Director Ratio		-0.873** (-2.24)	-0.874** (-2.25)	-2.117*** (-3.47)	-1.947*** (-3.42)	-2.011*** (-3.46)	-1.953*** (-4.17)
Total Number of Journalist Reports			-0.00959 (-0.04)	-0.0761 (-0.29)	-0.106 (-0.42)	-0.0966 (-0.39)	-0.227 (-1.02)
Negativity of Journalist Reports			17.41** (2.42)	18.93 (1.26)	19.27 (1.30)	19.81 (1.33)	17.72 (1.27)
Variance in Negativity of Journalist Reports			-10.24 (-1.22)	7.403 (0.33)	8.831 (0.41)	5.945 (0.27)	-0.649 (-0.03)
Positivity of Journalist Reports			-5.326 (-1.14)	-17.55* (-1.68)	-19.17* (-1.83)	-18.85* (-1.80)	-24.10** (-2.35)
Internal Attribution of Journalist Reports				-0.214 (-0.93)		-0.208 (-0.93)	-0.203 (-0.83)
External Attribution of Journalist Reports					0.184* (1.67)	0.185* (1.66)	0.241** (2.56)
New CEO X Internal Attribution of Journalist Reports							-1.883*** (-2.82)
New CEO X External Attribution of Journalist Reports							2.548*** (3.01)
Selection Parameter (Negative Stock Recommendation)	0.0677 (1.14)	0.0677 (1.14)	0.0646 (1.08)	0.0490 (0.46)	0.0624 (0.62)	0.0485 (0.47)	0.0507 (0.56)
Selection Year,2002	1.077** (2.18)	1.494*** (2.87)	1.509*** (2.91)	0.133 (0.15)	0.0904 (0.10)	0.136 (0.15)	0.162 (0.19)
Selection Year,2003	1.766*** (3.70)	2.039*** (4.05)	2.037*** (4.06)	0.432 (0.65)	0.305 (0.47)	0.352 (0.54)	0.197 (0.33)
Selection Year,2004	1.986*** (4.17)	2.335*** (4.61)	2.338*** (4.62)	1.602** (2.33)	1.448** (2.18)	1.497** (2.24)	1.387** (2.26)
Selection Year,2005	1.999*** (4.21)	2.281*** (4.55)	2.277*** (4.54)	1.089 (1.61)	0.970 (1.47)	1.028 (1.55)	1.010 (1.64)
Selection Year,2006	1.770*** (3.74)	2.093*** (4.13)	2.108*** (4.16)	1.381** (1.96)	1.255* (1.85)	1.343** (1.96)	1.311** (2.08)
Selection Year,2007	1.809*** (3.78)	2.188*** (4.27)	2.181*** (4.26)	1.151 (1.64)	1.039 (1.53)	1.086 (1.59)	0.855 (1.37)
Selection Year,2008	1.779*** (3.71)	2.110*** (4.14)	2.086*** (4.10)	0.980 (1.44)	0.867 (1.31)	0.913 (1.38)	0.770 (1.26)
_Cons	-0.803 (-1.29)	-0.102 (-0.15)	0.133 (0.19)	3.229* (1.86)	2.814** (2.13)	2.926** (2.06)	2.806*** (2.75)
_N	585	585	585	167	167	167	167
Log Likelihood	-1281.9	-1271.3	-1268.4	-359.5	-358.6	-358.2	-354.9
Chi Square	73.14	98.59	105.9	117.1	128.8	130.6	203.1

t statistics in parentheses (\* p<0.10, \*\* p<0.05, \*\*\* p<0.01)

**[Table 9] Negative Binomial Panel Regression Analysis of Strategic Change Efforts (H2/H3)**

Strategic Change Efforts of the Focal Company	H2			H3a	H3b		H3c	H3d		
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Firm Performance (ROA)	-0.00389 (-0.54)	-0.00168 (-0.23)	-0.00195 (-0.27)	-0.00127 (-0.18)	0.000407 (0.06)	-0.00190 (-0.26)	-0.00130 (-0.18)	-0.00180 (-0.25)	-0.000628 (-0.09)	-0.00172 (-0.24)
Firm Performance (MBR)	0.0143* (1.94)	0.0152** (2.04)	0.0150** (2.01)	0.0154** (2.08)	0.0151** (1.99)	0.0150** (2.01)	0.0154** (2.08)	0.0152** (2.04)	0.0164** (2.20)	0.0151** (2.02)
Firm Size (Log of Total Assets)	0.149*** (4.04)	0.134*** (3.65)	0.132*** (3.54)	0.125*** (3.42)	0.139*** (3.78)	0.134*** (3.69)	0.125*** (3.34)	0.134*** (3.66)	0.125*** (3.33)	0.133*** (3.66)
Financial Distress (Debt Equity Ratio)	-0.00215* (-1.76)	-0.00229* (-1.86)	-0.00229* (-1.86)	-0.00236* (-1.89)	-0.00222* (-1.77)	-0.00231* (-1.89)	-0.00233* (-1.86)	-0.00229* (-1.87)	-0.00205 (-1.64)	-0.00227* (-1.86)
New CEO	0.177** (2.11)	0.159* (1.91)	0.162* (1.94)	0.161* (1.94)	0.136 (1.62)	0.158* (1.90)	0.166** (2.00)	0.160* (1.91)	0.168** (2.02)	0.158* (1.90)
CEO Board Tenure	-0.00973 (-1.47)	-0.00985 (-1.50)	-0.00954 (-1.44)	-0.0119* (-1.81)	-0.00846 (-1.29)	-0.00992 (-1.52)	-0.0115* (-1.75)	-0.00981 (-1.50)	-0.0119* (-1.80)	-0.0102 (-1.56)
CEO Chairman of the Board	-0.0619 (-0.73)	-0.0747 (-0.88)	-0.0742 (-0.87)	-0.0868 (-1.03)	-0.0996 (-1.16)	-0.0749 (-0.89)	-0.0790 (-0.93)	-0.0743 (-0.87)	-0.0811 (-0.95)	-0.0727 (-0.86)
Independent Director Ratio	-0.859** (-2.19)	-0.869** (-2.23)	-0.867** (-2.21)	-0.861** (-2.24)	-0.776** (-1.99)	-0.898** (-2.31)	-0.853** (-2.20)	-0.874** (-2.25)	-0.852** (-2.20)	-0.884** (-2.28)
Total Number of Journalist Reports	-0.0682 (-0.21)	-0.0449 (-0.14)	-0.0444 (-0.14)	-0.197 (-0.77)	-0.266 (-1.06)	0.140 (0.46)	-0.387 (-1.31)	0.0341 (0.12)	-0.414 (-1.38)	0.0867 (0.31)
Negativity of Journalist Reports		17.23** (2.36)	19.07** (2.44)	17.04** (2.38)	14.78** (2.04)	18.07** (2.49)	16.29** (2.26)	17.53** (2.43)	16.43** (2.28)	17.92** (2.48)
Variance in Negativity of Journalist Reports		-10.12 (-1.20)	-10.95 (-1.29)	-8.771 (-1.05)	-8.647 (-1.04)	-10.74 (-1.27)	-8.704 (-1.04)	-10.34 (-1.23)	-8.534 (-1.02)	-10.34 (-1.23)
Positivity of Journalist Reports		-5.337 (-1.15)	-5.267 (-1.13)	-5.981 (-1.29)	-5.170 (-1.12)	-5.240 (-1.13)	-5.776 (-1.25)	-5.300 (-1.14)	-5.744 (-1.24)	-5.358 (-1.15)
Triadic Closure (Ties Between Analysts and Journalists)	0.130 (0.54)	0.0392 (0.16)	0.461 (0.68)							
Negativity of Journalist Reports X Triadic Closure			-20.40 (-0.67)							
Triadic Closure High Circulation Media				1.054* (1.87)						
Triadic Closure Company Following Analysts					1.083** (2.49)					
Triadic Closure Prestigious Analysts						-0.246 (-0.75)				
Triadic Closure Prestigious Media							2.206** (2.10)			
Triadic Closure National Business Media								-0.258 (-0.26)		
Triadic Closure National Non-Business Media									2.744** (2.17)	
Triadic Closure Local Media										-0.424 (-0.64)
Selection Parameter (Negative Stock Recommendation)	0.0680 (1.14)	0.0648 (1.09)	0.0664 (1.11)	0.0574 (0.97)	0.0688 (1.16)	0.0647 (1.09)	0.0615 (1.03)	0.0641 (1.08)	0.0553 (0.93)	0.0633 (1.06)
Selection Year, 2002	1.473*** (2.82)	1.504*** (2.89)	1.483*** (2.85)	1.540*** (2.98)	1.447*** (2.80)	1.532*** (2.96)	1.524*** (2.95)	1.508*** (2.91)	1.525*** (2.95)	1.536*** (2.96)
Selection Year, 2003	2.036*** (4.04)	2.037*** (4.06)	2.043*** (4.06)	2.044*** (4.09)	2.010*** (4.02)	2.038*** (4.07)	2.071*** (4.13)	2.032*** (4.05)	2.050*** (4.09)	2.041*** (4.07)
Selection Year, 2004	2.339*** (4.61)	2.341*** (4.62)	2.351*** (4.63)	2.355*** (4.67)	2.326*** (4.61)	2.331*** (4.61)	2.390*** (4.72)	2.330*** (4.60)	2.383*** (4.71)	2.334*** (4.62)
Selection Year, 2005	2.287*** (4.55)	2.280*** (4.54)	2.287*** (4.55)	2.255*** (4.51)	2.279*** (4.56)	2.265*** (4.52)	2.296*** (4.58)	2.269*** (4.52)	2.283*** (4.55)	2.264*** (4.52)
Selection Year, 2006	2.094*** (4.13)	2.108*** (4.16)	2.120*** (4.17)	2.120*** (4.23)	2.064*** (4.08)	2.105*** (4.16)	2.163*** (4.26)	2.099*** (4.14)	2.148*** (4.24)	2.101*** (4.15)
Selection Year, 2007	2.192*** (4.27)	2.183*** (4.26)	2.193*** (4.27)	2.186*** (4.29)	2.151*** (4.22)	2.176*** (4.25)	2.221*** (4.34)	2.173*** (4.24)	2.202*** (4.31)	2.173*** (4.25)
Selection Year, 2008	2.114*** (4.14)	2.088*** (4.10)	2.097*** (4.11)	2.091*** (4.13)	2.066*** (4.07)	2.079*** (4.09)	2.123*** (4.17)	2.078*** (4.08)	2.105*** (4.14)	2.079*** (4.09)
Constant	-0.0844 (-0.12)	0.133 (0.19)	0.143 (0.20)	0.285 (0.40)	0.153 (0.21)	0.146 (0.21)	0.272 (0.38)	0.137 (0.19)	0.326 (0.45)	0.138 (0.19)
N	585	585	585	585	585	585	585	585	585	585
Log Likelihood	-1271.1	-1268.3	-1268.1	-1266.7	-1265.5	-1268.1	-1266.2	-1268.3	-1266.1	-1268.1
Chi Square	98.57	105.8	105.5	110.6	113.9	107.2	109.8	106.2	110.1	106.9

t statistics in parentheses (\* p<0.10, \*\* p<0.05, \*\*\* p<0.01)

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