

董事會特徵與企業合資投資之財富效果

Board Characteristics and the Valuation Effects of Corporate Joint Venture Investments

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摘要

本文旨在探討董事會特徵對企業合資投資財富效果之影響。儘管實務上董事普遍涉及合資決策，但現存文獻對於董事會如何影響企業合資成效依舊缺乏。因經理人可能基於自利動機追求合資，故董事在公司合資時扮演重要監控角色；而董事之資訊與資源提供可減輕合資遭遇之困難，故董事亦扮演諮詢的角色。本研究依據代理成本理論及資源依賴理論探討董事會相關變數對企業合資績效的影響。研究結果顯示董事的合資經驗對合資具有正面財富效果，此外，董事會召開次數及董事所持有股權對董事經驗與績效關係強度有正向的影響。然而，董事會大小及外部董事的比率並未具有顯著之解釋能力。因董事在合資產業所獲得之產業經驗並未能普遍提升合資績效，本研究進一步針對投資在異業的合資樣本作分析，發現在此子群中，董事之合資產業經驗對合資績效有正向顯著影響。本研究結果指出研究董事會特徵與企業投資績效之關聯性時，採取整合性觀點之重要性，此一觀點長期以來為相關董事文獻所忽視。故藉由探討董事會對合資決策之影響，本研究發現為現存文獻存在著董事不一致影響之結論有所貢獻。

【關鍵字】董事會、合資、公司治理

Abstract

This study investigates the valuation effect of board characteristics in corporate Joint Venture (JV) investments. Despite the prevalence of a board's involvement in JV decisions in practice, extant literature is mute concerning how the board adds value to JV outcomes. Investigation into board contribution in JVs is insightful due to executives' self-serving behaviors that may underlie their JV pursuits and boards' resource provision that may mitigate critical JV challenges. The former (latter) sheds light on the board's monitoring (advisory) role in a firm's JV engagement. Drawing on agency theory and resource dependence theory, this study investigates the value of representative board characteristics underscored by these two theoretical perspectives. Our results show that the two conventional board measures, board size and outside director ratio, do not have a significant explanatory power. In contrast, director experience associated with JV decisions and gained from within relevant industries are found to positively impact JV outcomes. Moreover, both board meeting frequency and director ownership have favorable moderating effects on the strength of the experience-value relationship. However, these two variables *per se* do not independently determine a JV's value. Our research results indicate the importance of taking an integrative view to the investigation of board effectiveness, a perspective which has long been neglected in board research. The findings of the present study contribute to the mixed findings of extant studies on board influence from an uninvestigated domain, JV.

【Keywords】 board of directors, joint venture, corporate governance

1. Introduction

TORONTO, March 19 /PRNewswire-FirstCall/ - Global Alumina Corporation (the "Company") (TSX: GLA.U) today announced that its board of directors will meet within this week to approve the establishment of a joint venture among an affiliate of BHP Billiton, Dubai Aluminium Company Limited ("DUBAL"), Mubadala Development Company PJSC ("Mubadala") and the Company to develop and operate the Company's alumina refinery project in the Republic of Guinea. Signing of the joint venture agreements would follow board approval (PR Newswire, 2007).

Tata Global Beverages Ltd. announced that the Board of the Company had approved the signing of a non binding Memorandum of Understanding with PepsiCo Inc, with the intention of forming a Joint Venture (JV) in the area of non carbonated ready-to-drink beverages, focused on health and enhanced wellness, Tata Global Beverages Ltd has informed BSE that the Board at its meeting held on October 28, 2010, approved the execution of a Joint Venture Agreement between Tata Global Beverages Ltd. and PepsiCo India Holdings Pvt. Ltd. Following the approval of the Board, the Parties have signed the Joint Venture Agreement, which sets forth the vision of developing the business in India and internationally (Reuters Significant Developments, 2010).

The board of directors is increasingly involved in setting firm strategies, and holds a prominent role in corporate JV decision making, as highlighted in the two news-clips above. In fact, over the past decades, governance researchers have noted the board's role has gone through a significant transition, evolving from nominally rubber stamping executives' decisions (as described in managerial hegemony theory), to passively ratifying and verifying their proposals (Agency Theory), and now to actively shaping and guiding corporate strategic frameworks (Resource Dependence Theory) (Pugliese, Bezemer, Zattoni, Huse, Van den Bosch, and Volberda, 2009). However, while both anecdotal and public news reports have indicated the prevalence of the board's involvement in a firm's JV decision making process, academic research has largely ignored the value of the board for a firm's JV engagement. Investigation of board's contribution to this vital firm strategy is informative in light of the findings that show executives may engage in JVs out of self-interests (Keown, Laux, and Martin, 2005; Min and Prather, 2001), and also in view of the transactional uncertainties that characterize most partnership activities (Park and Ungson, 2001; Reuer and Koza, 2000). In the following analyses, we first describe the agency problem found in JVs related to the presence of free cash flow, as identified in prior research. We then discuss the challenges in recognizing reliable and competent partners as firms pursue JVs. These two concerns indicate the need for both monitoring and advising executives in their JV engagements, both being tasks that fall under the responsibility of the board (Fama and

Jensen, 1983; Weisbach, 1988). By providing vigilant oversight and insightful counsel, a functional board would presumably better secure shareholder interests in a firm's JV investments.

To systematically address the board issue in JVs, we construct our research framework by bringing together the two dominant theoretical perspectives in corporate governance research – agency theory and resource dependence theory (Hillman and Dalziel, 2003). We first examine the valuation effect of board size and board independence following agency-based governance studies (Gillan, 2006; Cheng, 2008; Boone, Field, Karpoff, and Raheja, 2007; Coles, Daniel, and Naveen, 2008). Next, we assess the value of director experience relevant to JV undertakings as suggested by resource dependence theory (Hillman, Cannella, and Paetzold, 2000; Kor and Misangyi, 2008; Kor and Sundaramurthy, 2009). The investigation into director experience may supplement agency-based studies which view board independence as the foremost determinant of board effectiveness, without considering directors' individual dissimilarity in governance capabilities (Hillman and Dalziel, 2003). We lastly postulate that both board activities and incentives significantly augment the contribution of director experience, as the former (latter) may enhance the enforcement (commitment) of a firm's directors. To this end we include the moderating effects of board meeting frequency and director equity ownership into our research framework. Our research results show that both board size and outside director ratio do not significantly influence the value creation in JVs. Instead, director experience, assessed by their prior involvements in JV decisions or in JV industries outside of firms' own affiliation, instead significantly enhances a JV's value in all models. Moreover, both the frequency of board meetings and ownership by directors positively moderate the experience-value relationship. However, these two variables per se are, for the most part, insignificantly associated with stock market valuation of JVs in respective models. Our results are not sensitive to different event windows, measures of board member experience, problem of endogeneity, and are robust under different model specifications.

We note here that the results of our work may have important implications for corporate governance and JV literature, as the question of how the board of directors contributes to a firm's JV decisions has never been investigated in the literature. Addressing the board issue in JVs is critical due to directors' increasing involvement in JV decision making. Moreover, managerial self-serving behaviors in JVs, along with inherent transactional uncertainty in firms' JV undertakings, have been identified (Keown et al., 2005; Min and Prather, 2001; Park and Ungson, 2001), both of which underscore the prominence of the board in a firm's

JV decisions. Our investigation into the board mechanism differs from prior JV studies which predominantly focus on transaction-level analyses in evaluating the determinants of the valuation effects of JVs, from perspectives such as transaction cost economies (Hennart, 1988), the resource based and knowledge based views (Das and Teng, 2000), and real options theory (Reuer and Tong, 2005). The inconclusive findings based on existing theories to date, however, suggest that more theoretical perspectives need to be included (Reuer and Ragozzino, 2006). By looking into board mechanism of JV partnering firms, the current study investigates an organization-level consideration that has not yet been examined. Our study of this under-explored, but essential aspect facilitates a more complete understanding of the determinants of JV value creation.

Our study also adds to the corporate governance literature by extending the exploration of the board's influence into an under-researched topic: JVs. The appropriate domain of board governance and director influence is currently the subject of debate in both finance and management literatures. By exhibiting the extent to which board mechanisms influence JV value creation independently or interactively, findings from this work can help enhance our understanding of a board's influence on firm investments in broader context. Our integrative view which takes together agency theory and resource dependency theory cautions against agency-based research which regards independence and incentive of directors as the foremost determinant of board effectiveness, without considering their heterogeneous governance capabilities. Our finding of significant impact of director experience on JV outcome suggests that overlooking variance in director expertise may result in an incorrect assessment of a board's value in firm decisions. This result corresponds to recent governance studies which find a significant gap that may exist between directors' ability and what they are obligated to achieve (Carter and Lorsch, 2004; Kor and Sundaramurthy, 2009; Roy, 2011). The results of the present study therefore offer an alternate view to agency-based research that has long argued a direct relationship between board incentive/diligence and governance effectiveness.

The remainder of the paper is organized as follows. Section 2 reviews the literature on corporate governance and JVs, and develops the hypotheses. Section 3 outlines the sample and research methodology. Section 4 presents the empirical findings, and section 5 discusses the findings and draws some conclusions.

2. Literature Review and Hypothesis Development

2.1 The Dual Roles of the Board of Directors

Governance research has viewed the board of directors as the lynchpin of corporate governance (Fama and Jensen, 1983; Weisbach, 1988). With expertise and experience, the board stands at the apex of an internal control system and is obligated by shareholders to prompt top management to put forth the agreed-upon effort rather than pursue private objectives (Jensen and Meckling, 1976). Agency scholars note that the boards can exert control over executives through their involvement in the articulation of the firm's mission, development of strategic initiatives, setting of guidelines for implementation, and assessment of the implementation results of the chosen strategies (e.g., Pugliese et al., 2009; Hillman and Dalziel, 2003). In addition to their monitoring obligations, boards also play the role of advisors and counselors to executives. Specifically, they actively formulate firms' strategies by shaping important decisions and guiding their content, context, and conduct (Brauer and Schmidt, 2008). Their external relational ties may also bring valuable information and resources which are critical to firm success, thereby securing firm prosperity from the threat of environmental uncertainty (Pfeffer and Salancik, 1978; Boone et al., 2007; Kor and Misangyi, 2008). The dual role of boards as both monitors and resource providers has important implications for assessing the efficacy of boards in improving JV decision quality. In the following section, we address this issue by the presence of agency problem in JVs and the resources that boards may confer.

2.2 Agency Problems in JV Investments and the Quest for Board Resource

First, in regard to the agency problem, studies show that executives may misuse JVs to privilege their own interests at the expense of shareholders. In particular, managers have been found to take advantage of JVs to over-expand firms (Keown et al., 2005), particularly when firms are endowed with large amounts of free cash flow but constrained by limited growth opportunities (Min and Prather, 2001). A higher debt ratio has been also associated with more positive stock market reactions to JV announcements (Chang and Chen, 2002). According to Jensen (1986), debt financing can lessen the agency problem stemming from free cash flow by committing executives to generate cash to meet interests and principle obligations. The disciplining role of debt obligation therefore can reduce the overinvestment hazard of JVs. Furthermore, less interest-aligned managers, with low levels of stockholdings, have been found to overdevelop JV portfolios in comparison to managers who hold a larger

number of shares (Reuer and Ragozzino, 2006). This finding is consistent with agency theory, and suggests that interest-misaligned managers may abuse firm capital to indulge in empire building through ill-advised JVs. In sum, existing evidence shows that inferior JV decisions can be caused by managers seeking self-benefits at the expense of shareholders. As the board resides at the apex of internal control, tasked with supervising executives' decision-makings on behalf of shareholders, the presence of agency problems in JVs calls for investigation into the efficacy of board mechanisms.

Aside from their monitoring duty, the resource provision function of directors also signifies their prominence in a firm's JV decision. Researchers note that firms considering entering into JV relationships usually encounter severe uncertainties regarding whether their partner's resources compliment their own (Reuer and Koza, 2000), and whether the partner will exploit their vulnerabilities in the cooperation process (Park and Ungson, 2001). The quest for information about potential partners' competence and trustworthiness sheds light on the resource provision role of directors, as their external relational ties could increase a firm's access to critical information and resources, thereby facilitating the search for credible and capable partners (Gulati and Westphal, 1999). Furthermore, managers may also tap into directors' knowledge pool to obtain expertise regarding JV management, which can then be applied in their JV engagements. The superior ability of the board in bringing in critical resources/knowledge provides another rationale for assessing the valuation effects of board mechanisms in JVs.

2.3 The Influence of the Board on Value Creation in JVs

2.3.1 Board Size

To assess the influence of the board of directors on JV value creation, this study begins by evaluating the impact of board size on directors' monitoring abilities. Studies on the monitoring role of the board argue that large boards tend to be ineffective monitors of management. A large board can have difficulty in communication and coordination due to the great number of interactions among group members. This in turn slows down the decision making process and results in compromise between the diverging views of directors instead of achievement of optimal choices (Cheng, 2008). Having a large number of directors also hinders cohesion and participation, a situation that often characterizes large decision-making groups (Coles et al., 2008). Moreover, the cost of individual director's shirking on monitoring executives falls as a board increases in size, leading to more severe free-riding problem (Harris and Raviv, 2008). A small board, on the contrary, is more likely

to be effective at monitoring and disciplining management (Yermack, 1996), because it is more cohesive and tends to facilitate discussions among members, promote debate, and prevent social loafing. In conclusion, due to its efficient monitoring, a small board is expected to be more effective than a large board in controlling managers' misbehaviors in their JV pursuits.

Despite its inefficient monitoring, however, a large board may be better able to provide constructive counsel and access to a wider range of resources. Diverse opinions from a large number of directors enable the board to pool individual information and combine knowledge, which in turn stimulates synthetic solutions and generates innovative idea, whereas a small board is prone to confined thinking. Moreover, boards with more directors, by virtue of being better networked, increase firms' access to valuable resources and key stakeholders (Hillman et al., 2000; Kor and Misangyi, 2008; Kroll, Walters, and Wright, 2008; Pfeffer and Salancik, 1978); this in turn creates more leads to promising partnership opportunities and superior information to assess the prospective partners. The competing arguments pertaining to the effect of board size on JV value creation leads to the following hypothesis:

Hypothesis 1: The relationship between board size and value creation in JVs is inconclusive.

2.3.2 Outside Director Ratio

From the agency theory perspective, an effective board is one that is dominated by outside directors who are capable of acting independently. Due to their freedom from relationships with managers, outside directors are perceived less beholden to CEOs than inside directors (Xie, Davidson, and DaDalt, 2003; Klein, 2002), and would be more willing to challenge proposals put forth by executives. In situations where conflicts of interest between managers and shareholders occur, decisions on behalf of shareholders can be better assured when outsiders hold a relatively large portion of board seats. The preference for greater outsider representation on boards is supported by a fair amount of empirical studies. Chen (2011) finds that a higher proportion of outside directors increases executives' risk-taking willingness in their internationalization efforts. Cai, Kevin, and Helen (2006) find a positive association between the proportion of outside directors and the level of voluntary disclosure. Ameer, Ramli, and Zakaria (2010) observe that in widely owned firms a higher proportion of board seats held by outsiders reduces underinvestment problems. Iqbal, Wang, and Sewon (2011) find that stockholder reactions to the adoption of backdating are positive when the board has a majority of outside directors, and negative when it does not. Overall,

the existing research on boards suggests that a greater representation of outside directors is more capable of checking and monitoring managers' behaviors. Considering the agency problems associated with JV decision-making, a board comprising of more outsiders can be expected to be more functional.

In addition to providing vigilant monitoring, an outsider-dominated board can be instrumental in bringing external resources to contribute to JV success. Resource dependence theory argues that firms may appoint outsiders to the board to tap into their resources and provide a buffer against adverse environmental changes (Pfeffer and Salancik, 1978). Presumably, the demand for outside directors' resources is stronger under an uncertain transactional situation, such as a JV decision which is characterized by severe information asymmetry. Studies show that firms considering entering into a JV relationship usually face uncertainties about the trustworthiness of prospective partners and the breadth and extent of their resources (Reuer and Koza, 2000). However, information about the competencies and opportunistic inclinations of candidate partners is usually confidential and not readily revealed outside of close relationships (Gulati, 1995). Under such circumstances, managers can rely on outside directors' external relational ties to obtain access to these private, critical information (Gulati and Westphal, 1999), thereby alleviating difficulties in searching for reliable and competent partners. Taken together, the foregoing arguments pertaining to the benefits which outside directors bring to a firm lead to the following hypothesis:

Hypothesis 2: A board comprising of more outside directors is better able to provide vigilant monitoring and extensive resources for a firm's JV investments, and has a more favorable valuation effect.

The above analyses on the influence of board size and board independence follow conventional corporate governance research. However, several recent governance researchers have indicated that these two variables can only indirectly represent the resource provided by a board (Haynes and Hillman, 2010; Kroll et al., 2008), since they cannot capture the nuance of director experience, expertise, knowledge and other resources which directors may apply to monitor and advise executives' JV undertakings. Therefore, in the following analyses, consideration is given to board experience with JV decisions and industries where JVs are established, in order to obtain a direct measure of the board resources that directors may employ to assist in JV decision making.

2.3.3 Board Experience with Joint Ventures

Directors who have been involved in JV decisions, or have undertaken JVs, are more

likely to be instrumental in bringing in valuable counsel and supervision for a firm's JV decisions. According to behavioral learning research, learning takes place by doing and by obtaining performance feedback on what is done (Nelson and Winter, 1982; Greve, 2003). From the process of repeated engagements, individuals capitalize on lessons learned through their experiences and thus accumulate relevant knowledge and develop better skills, thereby becoming more enabled and further engaged in successive undertakings because of increased confidence in the promotion of firm advantage. Directors versed in JV experience are therefore better equipped to contribute to JV decision makings because of the wealth of knowledge they have accumulated from prior "doing" and performance feedback. Experienced directors with learned knowledge may offer better counsel on critical issues in JVs, such as how to judge the commitment and trustworthiness of candidate partners and how to design cooperative contracts to protect the firm from being vulnerable to a partner's opportunistic misbehaviors. Directors who have previously been involved in JV decisions or undertaken JVs, by virtue of being better networked (Gulati, 1995), can also broaden the range of strategic options considered by managers by providing more information nodes through which to identify promising partnership opportunities. Moreover, as experience can develop a director's knowledge set associated with JVs, experienced directors are more able to detect the self-satisfying intentions of executives, thereby better securing shareholder wealth in firms' JV investments. Collectively, a board with more directors experienced in JVs is presumably more able to successfully lead the management in undertaking value-enhancing JVs than a board with less experienced directors. The foregoing discussion leads to the following hypothesis:

Hypothesis 3: A board with more directors having previously participated in JV decisions or undertaken JVs is better able to help firms maximize the value of their JV investments than a board with fewer JV-experienced directors.

2.3.4 Board Experience with JV Industries

Expertise literature establishes that individuals accumulate knowledge in a particular domain to the extent that they have been previously involved (Ericsson and Charness, 1994; Ericsson and Lehmann, 1996). Directors may therefore gain industry specific experience from serving as executives or board members in other firms that operate in the prospective JV's target industry. Such directors are presumably more able to give valuable advice and better contest managerial proposals in relation to JV decisions. By tapping into the directors'

industrial insights, managers can learn about important elements of industry environment surrounding JVs, including investment opportunities, competitive conditions, regulations, and so forth (Kor and Misangyi, 2008). Directors' awareness of industry recipes, such as entry barriers, threat of substitutes, and intensity of rivalry also helps management to more objectively deliberate on partnership prospects and foresee critical challenges. Furthermore, since new developments in an industry follows path-dependent patterns (Arthur, 1994), directors' knowledge of prior industry conditions can help managers to better understand an industry's current dynamics and prospective technology transfers; managers are therefore better able to detect emerging opportunities in the industry, and then capitalize on these growth opportunities via efficient JV moves. Finally, directors' industry experience can generate important social capital that can bring in valuable information, providing firms with access to promising partnership chances. Directors' acquaintance with industry players can also provide informative knowledge that can be applied when judging prospective partner's creditability and capabilities (Kor, 2003). Taken together, the above arguments suggest that directors having experience in JV industries may provide insightful knowledge and valuable connections that can help facilitate the establishment of successful JVs in the industry. This inference leads to the next hypothesis:

Hypothesis 4: A board with more directors who have experience in the industry where JVs are established is better able to help firms maximize the value of their JV investments than a board with fewer directors having such industry experience.

2.3.5 Moderating Effect of Director Ownership

The above statement highlights the importance of director experience in generating expertise that can contribute to a firm's JV decisions. However, directors with expertise can finally offer little help if they are not appropriately motivated (Hillman and Dalziel, 2003; Leung and Horwitz, 2010). Jensen (1993) states that directors are also agents in the sense that shareholders need to prompt them to put forth the agreed-upon governance effort; without this prompting, they may shirk on their fiduciary responsibilities. Therefore, when a JV decision is governed by a board whose members have little equity in the firm, the increasing divergence of interests between shareholders and directors may discourage directors from fully devoting themselves to decision making (Jensen and Meckling, 1976). Conversely, substantial shareholdings may prompt directors to be diligent in both monitoring and advising firm strategies, since inappropriate governance proportionally impairs their own

interests (Kroll et al., 2008). Hence, we anticipate that when directors versed in JV and industry experiences are compensated by more shares, they may better guide management in making wise JV decisions. The positive interaction effect postulated between director ownership and experience leads to the following hypotheses:

Hypothesis 5a: Board member ownership positively moderates the relationship between director JV experience and value creation in JVs.

Hypothesis 5b: Board member ownership positively moderates the relationship between director industry experience and value creation in JVs.

2.3.6 Moderating Effect of Board Meeting Frequency

We propose that, in addition to director ownership, the frequency of board meetings is another salient moderator of the relationship between director experience and the value that JVs bring to a firm. Researchers note that board meetings serve as key forums for directors to discuss and dispute important issues facing firms. Boards that hold meetings more frequently provide more opportunities for directors to confer counsel, institute strategies, and manage operational affairs (Vafeas, 1999). By displaying substantial, timely and relevant information, a board with a high meeting frequency is perceived to be more functional at disputing major management issues (Payne, Benson, and Finegold, 2009). Moreover, frequent board meetings can build trust and consensus among board members, increasing their willingness to engage in open dialogue and contribute expertise (Hillman et al., 2000).¹ Summing up the above discussion, this study argues that an active board may augment the positive impact resulting from the assistance of directors with JV and industry experience by their more willingness to contribute their expertise as well as their diligence and vigilance to govern the actions of top management (Payne et al., 2009; Xie et al., 2003). Conversely, directors with applicable expertise may offer limited help if the board seldom meets.

The proposition that a high frequency of board meetings can enhance the efficacy of director experience has important implications for a JV scenario. Presumably, boards should increase the frequency of meetings whenever a high level of counsel and control is required (Payne et al., 2009; Sharma, Naiker, and Lee, 2009). Since JVs, which are prevalent in

1 Empirical evidence shows that frequent board meetings can be a signal of increased diligence in governing the conduct of top executives. Xie et al. (2003) found that boards meeting more often have lower levels of discretionary current accruals. Vafeas (1999) reported that boards tend to respond to poor performance by increasing their meeting frequency, and that this move is associated with improved firm performance in subsequent years.

changing environments, are more frequently undertaken than larger-scaled investments such as acquisitions, frequent board meetings are appropriate in that they facilitate intense and reactive discussions of managerial proposals; conversely, infrequent board meetings may fail to provide a timely response to focal JV conditions. Furthermore, since JVs are inherently a dynamic process that emerges and evolves as the environment changes (Reuer and Tong, 2005), frequently held board meetings seem favorable as the board is thus better able to give opportune advice and provide oversight that guides the ongoing JV activities. This guidance may include counsel on when and how to modify the cooperative arrangement to cope with environmental shocks, conduct buyouts of partner shares, or conversely withdraw from the JV relationship. The argument that board meeting frequency plays a key role in mediating the relationship between director experience and JV value creation leads to the following hypotheses:

Hypothesis 6a: Board meeting frequency positively moderates the relationship between director JV experience and value creation in JVs.

Hypothesis 6b: Board meeting frequency positively moderates the relationship between director industry experience and value creation in JVs.

3. Sample and Methodology

3.1 Sample Design

To conduct our investigation, an initial sample of joint ventures made by U.S. corporations is taken from the *Security Data Corporation's (SDC) Mergers and Corporate Transactions* database. To be selected, a JV must have been made by a publicly held firm and has been completed. We then search for the announcement date from both *Lexis/Nexis* database (including the *Business Wire*, *PR Newswire*, *Southwest Newswire*, *Reuters*, and *United Press International*) and the *Dow Jones News Retrieval Service* database (including the *Dow Jones News Wire* and the *Wall Street Journal*) for the 2001-2008 period. In most cases, the announcement dates from these two databases are the same. When there is a discrepancy, we use the earlier date as the initial announcement date for our analysis. Other information about JV such as investment amount and proposal detail is also identified from the above news databases. We obtain board member biographical data from *14As* (Proxy Statements), *10Ks* (Audited Annual Reports), *Standard & Poors Register of Corporations*, *Who's Who in America*, and *Dun & Bradstreet's Reference Book of Corporate Management*.

In order to be included in the final sample, the joint venture has to meet several

additional criteria: (1) daily stock return information is available from the Center for Research in Securities Prices (CRSP) returns files; (2) additional JV announcements are not made by the firms within fifteen days before or after the initial announcement date, to avoid the confounding effect that could distort the measurement of the valuation effects; (3) announcing firms must have financial and operating data from the *Compustat* files; (4) the announcement is not made by financial institutions (Standard Industrial Classification; SIC, codes 60-69). Following these requirements, our search identifies 408 announcements of joint ventures made by US firms.

Panel A of Table I presents the sample distribution by calendar year. There is some clustering of announcements during 2005-2007. However, on a daily basis, the announcements are non-contemporaneous. Panel B reports industry classification of our sample firms. The JV partnering firms are distributed over more than 15 industries, based on their two-digit SIC codes. Among the industries, the most commonly represented industry is Chemicals and allied products (12.01%), followed by Business services (11.28%) and Transportation equipment (8.33%).

3.2 Dependent Variable

The standard event-study method is employed to estimate Cumulative Abnormal Returns (CARs), which serves as our dependent variable. Event-study methodology measures the effect of unexpected event on the expected stock returns of firms associated with that event. This approach is based on the efficient market hypothesis (Fama, 1970), which argues that in an informationally efficient market, any new information will be incorporated into security prices. Thus, change in price of a security reflects the market's unbiased estimate of the economic value creation associated with that event (Brown and Warner, 1985).² The event study approach has been a popular performance measure of vital firm investments such as acquisitions, R&D expenditure, and alternative forms of capital expenditure (e.g., Chang and Chen, 2002; Chang, Chen, and Lai, 2008; Masulis, Wang, and Xie, 2007). It as well has been widely used in corporate governance research to assess valuation effects of various governance mechanisms.

2 The Event-study methodology examines the value implications of corporate events from the perspectives of shareholder wealth (for a review, see McWilliams and Siegel, 1997). Yet some researchers are concerned that the initial stock market responses to the announcement of a specific event may not truly reflect the actual long-run performance of firms (e.g., Ravenscraft and Scherer, 1987). Countering this doubt, recent research has provided evidence of a strong link between the initial stock market reaction and the long-run benefits realized by the firm (Healy, Palepu, and Ruback, 1992; Kaplan and Norton, 1992; Kale, Dyer, and Singh, 2002).

Table 1 Sample Distribution of Joint Venture Announcements by Time Profile and Industry Classification

Panel A. Sample distribution by year			
Year	Number of Announcements	Percent of Sample (%)	
2001	46	11.27	
2002	39	9.56	
2003	40	9.80	
2004	36	8.82	
2005	51	12.50	
2006	52	12.75	
2007	105	25.74	
2008	39	9.56	
Total	408	100.00	

Panel B. Sample distribution by industry			
Two-digit SIC code	Industry group	Number of Announcements	Percent of Sample (%)
20	Food and kindred products	28	6.86
28	Chemicals and allied products	49	12.01
33	Primary metal industries	17	4.17
35	Industrial and commercial machinery and computer equipment	28	6.86
36	Electronics and other electrical equipment and components, except computer equipment	28	6.86
37	Transportation equipment	34	8.33
38	Measuring, analyzing, and controlling instruments; photographic, medical and optical goods	16	3.92
49	Electric, gas, and sanitary services	18	4.41
70	Hotels, rooming houses, camps, and other lodging places	13	3.19
73	Business services	46	11.28
87	Engineering, accounting, research, management, and related services	14	3.43
other ³		117	28.68
	Total	408	100.00

3 Sample Size less than 10 is categorized as "other."

To measure the abnormal stock return to announcements of JVs, we follow Brown and Warner (1985) by using the market model to obtain estimates of expected returns. This model captures a firm's stock price change after adjusting for general market-wide factors and the firm's systematic risk. The abnormal return for firm i on day t , AR_{it} , is computed by:

$$AR_{it} = R_{it} - E(R_{it} / I_{t-1}), \quad (1)$$

where R_{it} is firm i 's actual returns on day t , and I_{t-1} represents the information set available to the market about the firm at time $t-1$.

The expected return for firm i on day t is estimated by:

$$E(R_{it} / I_{t-1}) = \alpha_i + \beta_i R_{mt}. \quad (2)$$

where R_{mt} is the return for the market portfolio on day t , α_i is the intercept, and β_i measures the risk or sensitivity of the firm's returns relative to the market portfolio. We define Day 0 ($t=0$) as the initial announcement date. We use the value-weighted CRSP Index as the proxy for the market portfolio. The parameters α_i and β_i are estimated using data for the period of 210 to 11 days before the initial announcement date (i.e., days -210 to -11). Finally the dependent variable of two-day cumulative abnormal returns, $CAR(-1, 0)$, is estimated by summing the daily abnormal returns over the window of days -1 and 0.

We then investigate the impact of board mechanism on the market reactions to the JV announcements with the following regression:

$$CAR(-1, 0) = f(x_1, x_2, z) \quad (3)$$

where x_1 is a vector of independent variables measuring board characteristics; x_2 is a vector of moderators; and z is a vector of control variables. That is,

$X_1 \in$ (*Board Size, Outside Director Ratio, Director JV Experience, Director Industry Experience*)

$X_2 \in$ (*Director Ownership, Board Meeting Frequency*)

$Z \in$ (*Firm Size, Debt Ratio, Firm Profitability, Tobin's Q, Year Dummy, Industry Dummy*)

We define independent variables, moderators and control variables in the following sections.

3.3 Independent Variables and Moderators

Board member experience with joint ventures We apply Kroll et al.'s (2008) measure of director experience with JVs by calculating the number of directors on the board who have experienced JV investments or decisions. To do this, we first collect biographical information on outside directors (dated back 5 years from the announcement date of the investment) from Section 14A of the Securities Exchange Act, which pertains to proxy statements, and from Section 10K, which pertains to audited annual reports. Included in the data collection are companies where the director is employed as a CEO, board member or top management team member. To be acknowledged as JV-experienced, a director must have been engaged in JV investments or involved in JV decisions during his/her service as a manager or board member at another firm. Hence, a director is coded as having JV experience if he/she has presided over JVs within a five year window preceding the focal JV. We then total the number of JV-experienced directors to derive the final number for this independent variable, which is labeled, "*Director JV experience.*"

Board member experience with JV's industry We use a similar method as Kroll et al. (2008) to calculate the number of directors that have experience associated with a JV's industry, and apply this as the measure of director experience with the JV's industry. Specifically, we first limit the time period for experience to the five years prior to the focal JV announcement, and define the industry affiliation for a firm and its JV activity by the primary two-digit SIC code. We then classify directors into those with industry experience and those without, judged by the investing firm's industry affiliation. Thus, for a director to be considered as having industry experience, he/she must have served as a CEO, TMT, or board member in a firm affiliated to the industry of the investing firm's focal JV. Finally, we add up the number of directors with industry experience on the investing firm's board to calculate this independent variable, which is labeled, "*Director industry experience.*"

The other independent variables and moderators additional to experience variables include *Board Size*, *Outside director ratio*, *Director ownership* and *Board meeting frequency*. We measure *Board size* by the total number of directors on the board (Coles et al., 2008). *Outside director ratio* is measured by the ratio of outside directors to the total number of directors of a company, where outside directors are those without an executive position in the firm either presently or in the past, and are unrelated to an executive (Boone et al., 2007; Chen, 2011). *Director ownership* is the percentage of common equity held by board members (de Villiers, Naiker, and van Staden, 2011). *Board meeting frequency* is the number of board meetings held annually (Vafeas, 1999). Following prior corporate governance

research, we measure these variables by using their values for the fiscal year preceding the JV announcement.

3.4 Control Variables

We also include several control variables suggested in the literature that may affect the market reaction to JV announcements. First, we control for the size of the announcing firm. Large firms tend to be more closely followed by financial analysts, and may have less unanticipated information than those of small firms (Hertzel and Smith, 1993). As a result, smaller firms are more likely to cause a variation in the market reaction. We measure *Firm size* by the firm's market capitalization for the fiscal year preceding the announcement. Next, we control for a firm's debt ratio. Jensen (1986) states that firms with more free cash flow would choose a capital structure with higher level of debt as a credible pre-commitment to pay out the excess cash flow and mitigate the free cash flow problem. We measure *Debt ratio* as the ratio of the book value of long-term debt to the book value of total assets one year prior to the announcement (Chang and Chen, 2002; Lai, Chang, and Chen, 2010). Third, we control for a firm's profitability. Glaister and Buckley (1996) state that more profitable partners are likely to commit more resources to cooperative relationships; they therefore have less to gain than less profitable partners who have a better chance of improving their resources. We measure *Firm profitability* by a firm's Return On Assets (ROA) for the year preceding the JV announcement. Fourth, we control for a firm's growth opportunity. Studies indicate that the organizational flexibility inherent in JVs, which facilitates trials of combinations with alternative resources, is particularly valuable when firms have better growth opportunities (Chan, Kensinger, Keown, and Martin, 1997). We use *Tobin's Q* to measure a firm's growth opportunity with the average ratio of the market-to-book value of the firm's assets over the three years before the announcement (Chang et al., 2008). Finally, since our sample is obtained over a multiple-year period and from different industries, we use *Year dummy*⁴ and *Industry dummy* to control for the respective effects.

Table 2 presents the descriptive statistics and the correlations matrix. As can be seen, some of the correlations between the independent and control variables prove significant. In order to ensure we do not suffer from the severe problem of multicollinearity, we

4 To ensure that our results are not subject to structural changes due to time-specific events, we substitute the original seven year dummy variables with four time period dummies to control for potential influences from the September 11, 2001 attacks, SRAS, Subprime Mortgages and the Financial Crisis. The results are similar to those using year dummies.

respectively regress our dependent variables on these measures. We find that the Variance Inflation Factor (VIF) values estimated in conjunction with our regression models do not suggest a problem with multicollinearity, as all the independent as well as the control variables have VIF values below the 5.0 criterion advocated by Marquardt and Snee (1975).

Table 2 Descriptive Statistics and Correlations

Variables	Mean	S.D.	2	3	4	5	6	7	8	9	10
1. CAR (-1, 0)	0.007	0.041									
2. Firm size	7.772	2.142	1.000								
3. Debt ratio	0.570	0.216	0.113	1.000							
4. Firm profitability	0.009	0.175	0.387	-0.112	1.000						
5. Tobin' s Q	2.045	1.485	0.080	-0.276	-0.276	1.000					
6. Board size	9.870	2.581	0.552	0.237	0.273	-0.151	1.000				
7. Outside director ratio	0.812	0.125	0.377	0.134	0.188	-0.098	0.286	1.000			
8. Director JV experience	2.453	2.314	0.546	0.239	0.111	-0.011	0.561	0.268	1.000		
9. Director industry experience	1.890	1.982	0.069	-0.076	-0.028	-0.087	0.149	0.009	0.124	1.000	
10. Director ownership	0.006	0.009	-0.341	-0.085	-0.081	0.072	-0.181	-0.344	-0.205	-0.031	1.000
11. Board meeting frequency	6.865	2.856	0.113	0.045	0.046	-0.112	0.060	0.174	0.089	0.086	-0.058

Note: This table presents the descriptive statistics and bivariate correlation matrix for the variables used in the regression models. The two-day announcement-period (-1, 0) abnormal return is estimated by summing up abnormal returns from the day before (day -1) to the announcement date (day 0). If the absolute value of the correlation is greater than 0.13, the correlation is significant at the 0.01 level.

4. Empirical Results

4.1 Analysis of Subsamples

Table 3 compares the announcement period abnormal return of JV investing firms based on the board characteristics studied. For each cell, we report the mean abnormal return, the median abnormal return and, in parentheses, the t-statistics, the p-value for the Wilcoxon z-statistics and the number of observations. For the comparison of means, we report the mean difference, the t-statistics in parentheses and the p-value for the nonparametric Kruskal-Wallis statistics in square brackets.

Panel A of Table 3 shows a comparison based on board size. Hypothesis 1 infers an inconclusive relationship between board size and the valuation effect of JVs due to the competing effects of the board's monitoring and resource provision function. We divide our samples according to whether the partnering firms have a board size greater or less than the sample median. An insignificant difference in the abnormal returns of JV announcements is found between these two subsamples. This result is consistent with Hypothesis 1 and

suggests the possibility of competing effects associated with board size due to the board's dual role in monitoring and advising a firm's JV decisions.

Panel B shows the influence of the outside director ratio on the valuation effect of JV announcements. Again, the sample is stratified according to whether a firm's outside director ratio is greater or lower than the sample median. Hypothesis 2 predicts a favorable impact of a board with more outside directors due to its ability to both monitor executives and provide critical resources. It is found that the mean (median) announcement-period abnormal returns for the high-outsider ratio subsample are positive and statistically significant at the 5% (1%) level. However, in the low-outsider ratio subsample, the abnormal returns are also significantly different from zero. Furthermore, two mean difference tests, the t-statistic and the nonparametric Kruskal-Wallis statistic, show an insignificant difference between the two subsamples. This result does not support Hypothesis 2, which predicts a better valuation effect from a board dominated by outsiders. One reason for the insignificant impact of *Outside director ratio* might be that this variable performs as gross proxy for board resources in a firm's JV engagements.⁵ The result might also be explained by contingency theory, which argues that under the condition of incomplete information, outside directors cannot effectively govern executive actions (Coles et al., 2008). Since JVs are usually smaller in size than large-scale investments, such as acquisitions, they tend to receive much less press coverage and are also regulated by less exacting requirements on accounting disclosures (Reuer and Ragozzino, 2006). Due to this inaccessibility of information, outside directors may be less efficient in monitoring managerial conduct in JV activities. Several studies have reported similar findings on the insignificant association between outside director ratio and firm value or performance (Coles et al., 2008; Dalton, Daily, Ellstrand, and Johnson, 1998; Daily, Dalton, and Cannella, 2003).

Panel C of Table 3 shows the effect of board member experience on JV value creation. As this panel shows, the sample is divided according to the number of directors with JV experience on the JV investing firm, using the sample median as the dividing line. JV-experienced (JV-inexperienced) firms are those having more (fewer) JV-experienced directors on the board than the sample median. We find that the JV-experienced subsample has both positive average and median announcement-period abnormal returns which are statistically significant at the 1% level. By contrast, the inexperienced subsample receives an

5 A more detailed discussion of this explanation is found in the regression analysis section beginning on page 29.

insignificant average (median) abnormal return of 0.4% (0.3%). Furthermore, the t-statistic of mean difference test between the abnormal returns for these two groups is statistically significant. This result is robust to possible deviations from non-normality, since it also holds for the nonparametric Kruskal-Wallis test statistic. Thus, the result provides preliminary support for Hypothesis 3, which suggests that the stock market's responses to JV announcements are more favorable for those firms having more JV-experienced directors on the board.

Panel D shows comparisons of JV investing firms based on the number of board members with JV industry experience (i.e., those greater and fewer than the sample median). Directors with JV industry experience are those who have served as managers or board members of firms having the same 2-digit industry SIC code as the industry where JVs are established. Industry-experienced (industry-inexperienced) firms are those whose board members with JV industry experience number above (below) the sample median. We find that the abnormal return of the industry-experienced subsample is significantly greater than zero in both the t-test (t-statistic=3.253) and Wilcoxon test (p-value <0.001). Conversely, the inexperienced subgroup does not receive a significant abnormal return. However, the abnormal returns for these two subsamples are not significantly different at the conventional levels. Therefore, the result does not support Hypothesis 4, which postulates a favorable impact of director experience in a JV industry.

To explore the reason for the insignificant advantage of director industry experience, we create another subsample limited to those firms that have a JV activity in an industry other than the firm's focal industry. The rationale for this analysis stems from resource dependence theory, which contends that assistance from directors is vital when firms' relevant resources are scant (Pfeffer and Salancik, 1978; Hillman et al., 2000). As such, when firms establish JVs in their own industries, they may rely on in-house knowledge to judge competitive dynamics and set up JVs to time the emerging investment chances. In contrast, when firms establish JVs in industries outside their core business area, their shortage of industry knowledge hinders them from correctly assessing the JV's value. In addition, lack of industry ties hampers firms' access to valuable information and resource networks within the industry (Kor and Misangyi, 2008). However, with assistance from directors with relevant industry experience, firms can be better equipped to avoid making critical mistakes and also reduce the probability of missing potential partnership opportunities.

To test the contingent importance of director industry experience, we begin by reducing the sample firms to those that have a 2-digit industry SIC code different from that of the

industries where JVs are established. We then classify the subsample into an industry-experienced group versus an industry-inexperienced group by the median value of director industry experience. The industry-experienced (industry-inexperienced) group are firms with board members having JV industry experience above (below) the sample median. Panel E shows the result of this subsample analysis. We find that firms in the industry-experienced subgroup receive significant announcement-period abnormal returns (t -statistic=2.488, Wilcoxon p -value=0.011), while those in the industry-inexperienced subgroup do not. The mean difference test finding lends further support to the validity of director industry experience in situations where firms incur unfamiliarity with an industry. Both the t -test (t -statistic=2.87) and nonparametric Kruskal-Wallis test (p -value=0.006) show significantly higher abnormal returns in the industry-experienced group than in the industry-inexperienced group. This result suggests a contingent value of director industry experience applying to firms that set up JVs outside of their own industries.

4.2 Analysis of Moderating Effects

To test whether an interactive effect exists between director incentives and experience, we construct a 2 X 2 table (Panel A, Table 4) which divides the sample firms into four subsamples based on the simultaneous determination of director JV experience and ownership. High-ownership/experienced firms are those with ownership and experience value above the sample median, and low-ownership/inexperienced firms are those with ownership and experience value below the sample median. Agency theorists argue that the incentives given to directors are the foremost prerequisite for an effective board, whereas resource dependence theorists maintain that director experience and expertise constitute the foremost determinant of board effectiveness. Taking together the two theoretical lenses suggests that the possession of incentives without experience, and vice-versa, can be insufficient to achieve optimal board functioning.

The result in Panel A of Table 4 lends support to Hypothesis 5, which pertains to the advantage that incentivized directors who are experienced, and therefore competent, bring to a firm's JV pursuits. As Panel A shows, the subsample of high-ownership/experienced firms has a significantly positive average (median) abnormal return of 1.8% (0.9%), the highest among the four subsamples. Moreover, the results of the mean difference test show that the greatest mean difference in abnormal returns among the subsamples occurs between high-ownership/experienced and high-ownership/inexperienced firms (t -statistic=2.21, nonparametric Kruskal-Wallis p -value=0.003). This finding suggests that compensating

Table 3 Mean and Median 2-Day Announcement Period Abnormal Returns for Subsamples Stratified by Board Characteristics

Panel A. Analysis of subsamples based on board size		
Large board size	Small board size	Mean difference
Mean abnormal return = 0.008	Mean abnormal return = 0.006	0.001
Median abnormal return = 0.006	Median abnormal return = 0.003	(0.36)
(3.817***, <0.001, 209)	(1.790*, 0.174, 199)	[0.169]
Panel B. Analysis of subsamples based on outside director ratio		
High outside director ratio	Low outside director ratio	Mean difference
Mean abnormal return = 0.005	Mean abnormal return = 0.010	0.005
Median abnormal return = 0.005	Median abnormal return = 0.005	(0.12)
(2.284**, 0.006, 215)	(2.711***, 0.013, 193)	[0.840]
Panel C. Analysis of subsamples based on directors with or w/o JV experience		
JV-experienced	JV-inexperienced	Mean difference
Mean abnormal return = 0.011	Mean abnormal return = 0.004	0.007
Median abnormal return = 0.007	Median abnormal return = 0.003	(1.86)*
(4.939***, <0.001, 167)	(1.394, 0.310, 241)	[0.008]
Panel D. Analysis of subsamples based on director with or w/o industry experience		
Industry-experienced	Industry-inexperienced	Mean difference
Mean abnormal return = 0.008	Mean abnormal return = 0.004	0.004
Median abnormal return = 0.006	Median abnormal return = 0.004	(0.97)
(3.253***, <0.001, 281)	(0.169, 0.286, 127)	[0.241]
Panel E. Analysis of subsamples based on director with or w/o industry experience in firm's unrelated industry		
Industry-experienced	Industry-inexperienced	Mean difference
Mean abnormal return = 0.011	Mean abnormal return = -0.005	0.016
Median abnormal return = 0.008	Median abnormal return = -0.003	(2.87)***
(2.488**, 0.011, 90)	(-1.479, 0.175, 67)	[0.006]

Note: The two-day announcement-period (-1, 0) abnormal return is estimated by summing up abnormal returns from the day before (day -1) to the announcement date (day 0). The firms in a subsample are classified in either the "high" or "low" subgroup according to various board characteristics, including board size, outside director ratio, JV experience and JV industry experience, the cutoff points of "high" or "low" group are the median value of each variable. Industry relatedness is judged by 2-digit SIC code. For each cell, we reported the mean abnormal return, and, in parentheses, the number of observations and the number of firms. For each cell, we report the mean abnormal return, the median abnormal return, and, in parentheses, the t-statistic, the p-value for the Wilcoxon z-statistic, and the number of observations. For the comparison of means, we report mean difference, the t-statistic in parentheses and the p-value for the nonparametric Kruskal-Wallis statistic in square brackets. "****", "***" and "**" represent 1%, 5% and 10% significance levels using a two-tailed test, respectively.

directors with substantial shareholdings is insufficient to achieve director effectiveness. Without relevant experience, directors make a limited contribution even if they have been well motivated with lots of stock grants.

Similar evidence is found in Panel B, which examines the interactive effects of director JV experience and board meeting frequency. Here again, we divide our sample firms into four subsamples according to the sample median of these two variables. High-meeting frequency/experienced (low-meeting frequency/inexperienced) firms are those with a meeting frequency and experience value above (below) the sample median. The results show that the subsample of high-meeting frequency/experienced firms receives the highest average (1.4%) and median (0.9%) abnormal return, and also has the most significant statistic values (t -statistic=4.368, Wilcoxon p -value<0.001). The most significant mean difference in abnormal returns among the subgroups occurs between high-meeting frequency/experienced firms and high-meeting frequency/inexperienced firms (t -statistic=2.63, nonparametric Kruskal-Wallis p -value=0.001). Within these two group firms that both have high meeting frequency, the abnormal returns for the experienced subsample are positive and statistically significant at the 1% level, whereas for the inexperienced subsample they are not significantly different from zero. The mean difference in abnormal returns between the two subgroups is 1.5%, which is the greatest mean difference value among the four paired comparisons (i.e., subsamples). This finding suggests that an active board represents a necessary but insufficient condition for optimal board contribution to JV value creation. Director experience and expertise are also necessary; otherwise, boards achieve limited efficacy even though they may have a high frequency of meetings.

4.3 Cross-sectional Regression Analysis

Although the univariate results in Tables 3 and 4 support the notion that board characteristics have an influence on JV value creation, these tests do not control for other important factors that may determine the abnormal returns of JV announcements. To isolate the influence of board characteristics, we employ multivariate regression analysis to control for the effect of other determinants of JV value creation as suggested in prior studies.

Table 5 presents cross-sectional regression analyses of the announcement-period abnormal returns for our sample firms involved in JV investments. Model 1 regresses abnormal returns against board size after controlling for *Firm size*, *Debt ratio*, *Firm Profitability*, *Tobin's Q*, year dummies and industry dummies. With anticipated influence direction documented in the literature (e.g., Glaister and Buckley, 1996; Hertzels and Smith,

Table 4 Mean and Median 2-Day Announcement Period Abnormal Returns for Subsamples Stratified by Director JV Experience and Director Ownership as Well as Board Meeting Frequency

Panel A. Analysis of subsamples based on director with or w/o JV experience and ownership			
	Experienced	Inexperienced	Mean difference
High ownership	Mean abnormal return =0.018	Mean abnormal return =0.004	0.0142
	Median abnormal return =0.009 (4.018***, <0.001, 66)	Median abnormal return = -0.001 (0.763, 0.954, 138)	(2.21)** [0.003]
Low ownership	Mean abnormal return=0.007	Mean abnormal return =0.005	0.002
	Median abnormal return=0.007 (2.987***, 0.001, 101)	Median abnormal return =0.004 (1.535,0.072, 103)	(0.47) [0.480]
Mean difference	0.011	-0.001	
	(2.16)** [0.245]	(0.26) [0.197]	

Panel B. Analysis of subsamples based on director with or w/o JV experience and meeting frequency			
	Experienced	Inexperienced	Mean difference
High meeting frequency	Mean abnormal return =0.014	Mean abnormal return = -0.001	0.015
	Median abnormal return =0.009 (4.368***, <0.001, 83)	Median abnormal return = -0.001 (-0.215, 0.951, 103)	(2.63)*** [0.001]
Low meeting frequency	Mean abnormal return = 0.008	Mean abnormal return = 0.008	0.0002
	Median abnormal return =0.004 (2.620**, 0.017, 84)	Median abnormal return = 0.004 (2.105**, 0.194, 138)	(0.04) [0.518]
Mean difference	0.006	-0.009	
	(1.30) [0.067]	(1.50) [0.377]	

Note: The two-day announcement-period (-1, 0) abnormal return is estimated by summing up abnormal returns from the day before (day -1) to the announcement date (day 0). The firms in a subsample are classified in either the "high" or "low" subgroup according to JV experience, ownership and board meeting frequency. The cutoff points of "high" or "low" group are the median value of each variable. For each cell, we reported the mean abnormal return, and, in parentheses, the number of observations and the number of firms. For each cell, we report the mean abnormal return, the median abnormal return, and, in parentheses, the t-statistic, the p-value for the Wilcoxon z-statistic, and the number of observations. For the comparison of means, we report mean difference, the t-statistic in parentheses and the p-value for the nonparametric Kruskal-Wallis statistic in square brackets. "***", "**" and "*" represent 1%, 5% and 10% significance levels using a two-tailed test, respectively.

1993; Chang et al., 2008; Lai et al., 2010), these control variables are found to be significantly related to the abnormal returns of JV announcements. The results show that the coefficient of *Board Size* is positive but insignificant,⁶ just as the univariate analysis results indicated in Panel A of Table 3. Corporate governance researchers note that a small board is more capable of monitoring managerial actions, whereas a large board provides more resources and information. We infer that the competing effects of a board's monitoring and resource provisions may neutralize the relationship between board size and JV value creation.

To test Hypothesis 2 in Model 2 we add the variable *Outside director ratio* into the regression model. As with the univariate findings in Panel B of Table 3, this variable is found to be insignificantly related to a firm's JV investment value. Therefore, Hypothesis 2 is not supported in the regression analysis findings. The insignificant impact of *Outside director ratio* suggests that it represents at most an indirect indicator of board resources. Although greater outsider representation on the board is traditionally perceived as making the board more capable of providing vigilant monitoring and diligent counsel, this variable does not measure director knowledge associated with JVs; therefore it may provide a misleading evaluation of the value of board resources applicable to a firm's JV engagements.⁷ To obtain direct evidence of the efficacy of director expertise associated with JVs, in Model 3 we evaluate the value of director experience with JV investments or decisions. The result shows a significantly positive association between *Director JV experience* and JV value creation ($p < 0.01$), which corroborates the results in Panel C of Table 3. The consistent findings in univariate and regression analyses provide strong support for the contribution of director expertise in a firm's JV move.

Model 4 evaluates the value of directors' expertise in terms of their prior involvement in industries where JVs are established. The insignificant coefficient of *Director industry experience* fails to support Hypothesis 4. This finding suggests that the directors' knowledge

6 We also use the natural log of the total number of directors on the board as an alternative measure of board size; the results are similar to those reported above.

7 Prior board research usually use "outside director proportion" as proxy for board experience associated with firms' specific strategies. For example, Tihanyi, Johnson, Hoskisson, and Hitt (2003) state that "outside directors often have experience with international diversification as managers for other firms and thus are knowledgeable about the positive effects of this strategy on firm performance." (p. 199). Lu, Xu, and Liu (2009) state that "the education and experience of outside directors may lead them to be concerned more with long-term strategies, including internationalization. They may play service roles in the decision-making process, and their knowledge and international vision may help firms to deal with managerial challenges associated with internationalization." (p. 459). Both studies use outside director ratio as proxy for board experience with internationalization and foreign investments.

and social ties in JV industries do not universally generate significant advantages for firms' JV pursuits.

To examine the possibility that the directors' contribution to a firm's JV engagements may simultaneously depend on their experience and incentive, in Model 5 we add *Director ownership* into regression model and examine its interaction effect with director experience. To minimize collinearity, we subtract each variable from its mean value before forming interaction terms (Aiken and West, 1991). The result shows that the coefficient of the interaction term is statistically significant at the 1% level, suggesting that incentive is a key moderating factor between director expertise and firm value. This result confirms the univariate findings in Panel A of Table 4, and lends further support to Hypothesis 5 which posits the necessity of combining incentives and competence to maximize the directors' contribution.

Hypothesis 6 contends that board meeting frequency is another important moderator of the experience/value relationship. To test this proposition, in Model 6 we evaluate its influence and its interaction effect with director experience. We find a significant interaction effect between *Board meeting frequency* and *Director JV experience* (t-statistics=1.962), which is consistent with univariate results in Panel B of Table 4. This finding suggests that more frequent interaction between board members with relevant experience enables the board to better monitor and advise managerial JV pursuits.⁸ To confirm the independent nature of the moderating effects of director ownership and board meeting frequency, in Model 7 we jointly include the variables that are separately evaluated in Models 5 and 6. The results remain similar to those obtained earlier.

Finally, to test the robustness of our findings, in Model 8 we incorporate all the independent variables and interaction terms in the separate models of Table 5 to isolate their respective effects. The results remain unchanged from those in Models 1 to 7, and confirm the salience of *Director JV experience* and the moderating effects of *Director ownership* and *Board meeting frequency*. It is noted that the "main effects" of *Director JV experience* remain robust in all of the models with the addition of the interaction terms. Compared to the lower level of significance and insignificance of *Director ownership* and *Board meeting frequency*, respectively, the finding of significant impact of *Director JV experience* suggests that being experienced and knowledgeable, rather than having incentive or being devoted, is

8 We also perform analyses in which the measure of board meeting frequency is replaced the by natural log value of the number of board meetings held annually. The results are highly robust for this alternative specification.

the foremost determinant of a board's strategic value.

Table 5 Regression Analysis

Variables/ Models	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	0.006 (0.467)	0.006 (0.470)	0.008 (0.653)	0.008 (0.646)	0.011 (0.886)	0.011 (0.859)	0.014 (1.151)	0.011 (1.085)
Firm size	-0.001 (-0.637)	-0.001 (-0.768)	-0.003 (-1.813)*	-0.003 (-1.811)*	-0.003 (-2.044)**	-0.002 (-1.830)*	-0.003 (-1.965)*	-0.002 (-1.749)*
Debt ratio	0.021 (2.033)**	0.020 (1.972)**	0.018 (1.709)*	0.018 (1.686)*	0.018 (1.752)*	0.016 (1.566)	0.016 (1.552)	0.016 (1.561)
Profitability	-0.058 (-4.259)***	-0.058 (-4.278)***	-0.053 (-3.851)***	-0.053 (-3.806)***	-0.052 (-3.877)***	-0.052 (-3.829)***	-0.051 (-3.808)***	-0.050 (-3.722)***
Tobin' s Q	0.004 (2.443)**	0.004 (2.473)**	0.004 (2.547)**	0.004 (2.526)**	0.004 (2.324)**	0.004 (2.557)**	0.004 (2.290)**	0.004 (2.267)**
Board size	0.001 (0.811)	0.001 (0.748)	-0.001 (-0.191)	-0.001 (-0.194)				-0.001 (-0.334)
Board independence		0.012 (0.661)	0.006 (0.342)	0.006 (0.343)				0.009 (0.480)
Director JV experience			0.003 (2.804)***	0.003 (2.792)***	0.004 (3.805)***	0.003 (2.842)***	0.004 (3.761)***	0.004 (3.532)***
Director industry experience				0.001 (0.042)				0.001 (0.075)
Director ownership					0.459 (1.694)*		0.517 (1.913)*	0.545 (1.978)**
Meeting frequency						0.001 (0.070)	0.001 (0.305)	0.001 (0.271)
Director JV experience X Director ownership					0.377 (3.054)***		0.420 (3.379)***	0.409 (3.306)***
Director JV experience X Meeting frequency						0.001 (1.962)*	0.001 (2.460)**	0.001 (2.514)**
Year and Industry Dummy	YES							
F value	3.42***	3.22***	3.56***	3.35***	4.23***	3.85***	4.14***	4.37***
Adj R ²	0.077	0.076	0.092	0.089	0.113	0.101	0.122	0.123
N	408	408	408	408	408	408	408	408

Note: This table presents cross-sectional regression analyses of the two-day announcement-period (-1, 0) abnormal returns. T-value is in parentheses. “***”, “**” and “*” represent 1%, 5% and 10% significance levels using a two-tailed test, respectively.

The insignificant effect of director experience with JV industries found in Panel D of Table 3 and Model 4 of Table 5 suggests that the value of directors' industry experience may depend on whether or not firms have relevant industry resources.⁹ The univariate analysis in Panel E of Table 3 provides preliminary support for this contention: director experience with

9 A detailed discussion of this rationale is provided in section 4.1, page 25.

JV industries makes a significant contribution when firms undertake JVs outside of their industries. To ensure that our univariate findings are not driven by other important factors, we conduct a regression analysis on the subsample of firms that pursue JVs in industries with a 2-digit SIC code different from that of their own (Models 1-4 of Table 6). We find that in this cross-industry subsample, a JV investing firm's share price response is significantly positively related to *Director industry experience*. This relationship holds after including moderating factors and controlling for other important factors that could affect a JV's value. For comparison, we also report the effect of *Director industry experience* on firms' within-industry JV investments in a full model (Model 5 of Table 6). As shown, *Director industry experience* is insignificantly associated with the announcement returns of JVs after controlling for other factors. The findings above are consistent with those in Panel E of Table 3, and lend further support to the contention that director industry experience presents a contingent benefit when firms incur the liability of newness in a different industry.

4.4 Robustness Tests

To ensure the robustness of our findings, we conduct several supplementary analyses. First we examine whether our results are altered by alternative measures of director experience. In the above analysis we define director JV (industry) experience by the number of directors that have experience with JV decisions (JV industries). To test if our findings of effect of director experience robustly hold, we alter director experience measure by summing up the number of managerial or board member positions all of the directors have held in firms that have engaged in JV investments or operated in industry of JV activities, within the 5 year period previous to focal JV announcement (Kor and Sundaramurthy, 2009). Table 7 shows the regression analyses results under this alternative experience measures. We still find favorable impacts from both director JV and industry experiences, and significant moderating effects from *Director ownership* and *Board meeting frequency*. Thus, our previous findings on the value of director experience are not sensitive to the alternative experience measure.

Second, we examine if our findings are sensitive to the choice of event window. Following previous JV studies and strategic literature, which show that share prices generally immediately adjust in response to announcements of significant corporate events (Ryngaert and Netter, 1990), we use the event window of day -1 to day 0 (one day previous to and also the announcement date). Nevertheless, to catch potential prior leaks and the gradual post diffusion of information, we recalculate our dependent variable, CARs, with

Table 6 Regression Analysis

Subsample Variables/ Models	Cross-industry				Within- industry
	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	0.027 (1.273)	0.029 (1.438)	0.025 (1.183)	0.026 (1.274)	0.001 (0.036)
Firm size	0.001 (0.530)	0.001 (0.353)	0.001 (0.555)	0.001 (0.377)	-0.000 (-0.025)
Debt ratio	-0.029 (-1.472)	-0.024 (-1.263)	-0.030 (-1.517)	-0.026 (-1.377)	0.041 (3.225)***
Firm profitability	-0.052 (-1.990)**	-0.055 (-2.182)**	-0.051 (-1.945)*	-0.054 (-2.104)**	-0.056 (-3.387)***
Tobin' s Q	-0.002 (-0.582)	-0.001 (-0.121)	-0.002 (-0.651)	-0.001 (-0.175)	0.005 (2.571)**
Director industry experience	0.004 (1.869)*	0.005 (2.309)**	0.004 (1.933)*	0.005 (2.420)**	-0.001 (-0.574)
Director ownership		0.137 (0.347)		0.183 (0.455)	0.304 (0.968)
Board meeting frequency			0.001 (0.006)	0.001 (0.475)	-0.000 (-0.154)
Director industry experience X Director ownership		0.860 (3.586)***		0.884 (3.633)***	0.05 (0.353)
Director industry experience X Meeting frequency			0.001 (0.550)	0.001 (0.760)	-0.000 (-1.286)
Year and industry dummy	YES	YES	YES	YES	YES
F value	1.50	2.27***	1.32	2.04**	3.15***
Adj R ²	0.043	0.116	0.032	0.107	0.134
N	157	157	157	157	251

Note: This table presents cross-sectional regression analyses of the two-day announcement-period (-1, 0) abnormal returns. T-value is in parentheses. “***”, “**” and “*” represent 1%, 5% and 10% significance levels using a two-tailed test, respectively.

longer event windows of day -2 to day +1. The extended CARs yield essentially similar results to the 2 day window.¹⁰ Our findings therefore are robust for different window lengths for the announcement-period returns. We also re-perform Table 5 with an industry dummy reclassified by a 3-digit SIC code. Although not reported, the results are qualitatively the same under this alternative definition.

Third, we examine whether our results are sensitive to the problem of reverse causality. The corporate governance literature has often identified an endogeneity problem of reverse causality between board member recruitment policies and corporate strategies (Masulis et al., 2007). The problem pertains to firms whose criteria for director election are based on the anticipation of forthcoming strategic undertakings. To examine whether this possible endogeneity between director experience and corporate JV undertakings mediates the study results, we exclude sample directors who are recruited within the two-year window prior to the focal JV decision (Gujarati, 2003), and re-conduct the analyses in Tables 5 and 6 with this new sample. The results are essentially unchanged, indicating that the previous findings are not driven by reverse causality.

Fourth, we test whether our findings are subject to an omitted variable bias wherein influence of board governance reflects management quality (Masulis et al., 2007), or firm quality (Ahn, Jiraporn, and Kim, 2010). The management quality of a JV partnering firm is measured by its industry-adjusted operating income growth over the 3 years prior to the JV announcement (Morck, Shleifer, and Vishny, 1990; Masulis et al., 2007), and firm quality is judged by a dummy variable which equals to one if the firm is included in the S&P 500 Index and zero otherwise (Ahn et al., 2010). The results are not sensitive to the inclusion/exclusion of the two variables, suggesting that omitted variable bias may not be a concern in this study.

Fifth, we re-conduct the regression analyses using Weighted Least Squares (WLS), with the weights equal to the inverse of the standard deviation of the market-model residual (Chang et al., 2008). The results remain qualitatively the same, thereby suggesting the efficiency of our estimates (Lang, Stulz, and Walkling, 1991). We also conduct Durbin–Watson tests for autocorrelation. None of our models evidence significant Durbin–Watson results. Finally we examine whether our results are subject to the potential bias of data skewness. We normalize each variable and re-perform regression analyses. The findings remain unchanged.

¹⁰ The results are available upon request.

Table 7 Regression Analysis

Variables/ Models	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	0.009 (0.735)	0.011 (0.871)	0.011 (0.897)	0.013 (1.071)	0.025 (1.272)
Firm size	-0.003 (-1.808)*	-0.003 (-1.844)*	-0.002 (-1.797)*	-0.003 (-1.822)*	0.001 (0.259)
Debt ratio	0.019 (1.767)*	0.019 (1.890)*	0.027 (2.185)**	0.017 (1.686)*	-0.019 (-1.027)
Firm Profitability	-0.052 (-3.715)***	-0.052 (-3.842)***	-0.053 (-3.986)***	-0.051 (-3.772)***	-0.048 (-1.944)*
Tobin' s Q	0.004 (2.604)***	0.004 (2.374)**	0.004 (2.727)***	0.004 (2.334)**	0.001 (0.228)
Board size	0.000 (-0.019)				
Outside director ratio	0.007 (0.404)				
Director JV experience	0.003 (2.604)***	0.003 (3.172)***	0.003 (3.082)***	0.003 (3.219)***	
Director industry experience	0.001 (0.099)				0.006 (3.753)***
Director ownership		0.265 (0.990)		0.311 (1.161)	0.442 (1.098)
Board meeting frequency			-0.001 (-0.080)	0.001 (0.115)	0.001 (0.632)
Director JV experience X Director ownership		0.179 (1.772)*		0.209 (2.039)**	0.934 (4.349)***
Director industry experience X Meeting frequency			0.001 (1.720)*	0.001 (1.935)*	0.001 (0.711)
Year and Industry Dummy	YES	YES	YES	YES	YES
F value	3.28***	3.71***	3.83***	3.53***	2.66***
Adj R ²	0.087	0.096	0.100	0.101	0.161
N	408	408	408	408	157

Note: This table presents cross-sectional regression analyses of the two-day announcement-period (-1, 0) abnormal returns. T-value is in parentheses. “***”, “**” and “*” represent 1%, 5% and 10% significance levels using a two-tailed test, respectively.

5. Conclusion

Our study is motivated by a desire to address a key gap in the literatures on corporate governance and firm investments. Although previous studies have examined relationships between board characteristics and firm strategies, none have done so in the context of JVs.

Investigation into how a board can impact a firm's JV success is critical in view of the board's active participation in setting JV strategies. To the best of our knowledge, our study represents the first empirical work that explores the influence of board mechanisms on firms' JV value creation. Findings from the present study can advance understanding of how the board of directors, the highest authority of an organization's internal governance system (Fama and Jensen, 1983; Weisbach, 1988), contributes to this important firm investment. Below, we discuss the implications of our findings related to the respective board characteristics.

First, board size is found to be insignificantly related to the abnormal returns associated with JV announcements. This result neither supports agency theory, which advocates a small board because it would lead to fewer bureaucratic problems, nor resource dependence theory, which favors a large board as it would contribute more resources. However, since directors serve as both the monitors and advisors of management, the effect of their dual role could neutralize the negative/positive influence of board size. Next, for the valuation effect of the outside director ratio, although both agency theory and resource dependency theory contend a preferable board structure with a higher outside director ratio, our results do not support this contention in the context of JVs. Several meta-analyses yield similar findings of an inconclusive relationship between the outsider ratio of a board and firm value (Dalton et al., 1998; Daily et al., 2003). It's possible that such an inconclusive finding is attributed to outside director ratio which represents an indirect indicator of board resources. In our cases, although a greater outsider representation on the board presumably may expand a firm's knowledge pool, it does not necessarily ensure that directors' knowledge associated with JV management can be proportionally enhanced. The insignificant impact of the outside director ratio found in this study corresponds to recent calls of board researchers for a direct measure of director experience and expertise (Haynes and Hillman, 2010; Kroll et al., 2008).

In contrast to the insignificant effect of board size and board independence, the two experience measures in this study show a favorable impact on JV outcomes. Director experience in JV decisions and in JV industries unrelated to that of the firm significantly enhance shareholder value. This finding suggests that the board may abstain from monitoring or advising executives when they lack the relevant experience needed for contributing to the decision making process. This result indicates the necessity to take into account the heterogeneity of directors' governance capabilities to assess board effectiveness, a view which has long been ignored in governance studies based on agency theory. It is noteworthy that while the significance of director ownership and board meeting frequency are not

consistently supported in all models, they both significantly moderate the favorable effect of the two experience measures. Therefore, although diligent governance stemming from active board meetings and increased director shareholding *per se* may be beneficial, it does not independently lead to better JV outcomes. This result contrasts with the findings on experience, which exhibits a robust, independent influence throughout all model specifications, suggesting that director experience has the greatest influence. The combined results support the findings of behavioral scientists, who contend that the primary prerequisite of task performance is not incentive or dedication, but rather the capability of an individual (Becker and Huselid, 1992).

We argue that the way we construct our research framework can advance studies on board mechanisms. To date, research seldom takes an integrative view to assess the efficacy of board mechanisms. Extant corporate governance studies are predominated by agency theory and a focus on investigating incentive variables and board structure. However, given the significance of the board's monitoring and advisory role in a firm's JV move, a different approach is required. Thus, our study departs from traditional agency-based studies and, instead, simultaneously investigates board characteristics identified by both agency theory and resource dependence theory. Our research finding that the greatest influence comes from director experience reminds governance researchers of the bias of overlooking directors' heterogeneous governance abilities. While in practice more boards acquire the structural power needed to influence firm operations, it appears vital to develop models of board effectiveness that predicts whether boards also have the capability to exercise their duties. In this regard, we see our work as representing an important step towards a better understanding of how various board characteristics influence investment outcomes with the illustration of JV investments. Future research can extend our study to other unexplored strategic contexts for a more thorough exploration and completely specified model of board effectiveness.

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