

STRUCTURE AND VOTING BEHAVIOR OF THE BOARD OF DIRECTORS: THEORETICAL AND EXPERIMENTAL EVIDENCES

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Abstract

We examine the value of outsiders by voting behavior of boards. Our model proves that boards with a majority of trustworthy but uninformed outsiders can implement institutionally preferred policies and augment corporate performance by upgrading resource allocation. Our laboratory experiments strongly support this conclusion that higher proportion of appointed outsiders yields more efficient boards. We also find outsider-dominated boards, given enough time, will reduce information asymmetry among directors and thereby execute institutionally preferred policies.

Keywords: Outside directors; Voting behavior; Corporate governance

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1. Introduction

A board is the core of corporate governance, entrusted by shareholders to manage the corporation. It is designed to mitigate conflicts of interest between privately informed insiders and owners. Scandals at Enron and WorldCom raised issues about reducing moral hazards of insiders and increasing function of the board of directors through several mechanisms of corporate governance. These have become major concerns of investors, experts and government. Appointing outsiders has been regarded as one of the best way to boost effectiveness of boards.

However, advocacy of outsiders is surprising as research has produced weak or mixed results on effectiveness of outsiders on boards. Some researches see no obvious evidence that employing outsider directors bring significant benefits to corporation and shareholders.¹³ But due to empirical difficulty, these studies show two blatant shortcomings: [1] whether outsiders are truly or nominally independent and [2] lack of deep exploration of actually operation of outsiders on boards. Since secondary data to implement empirical study spawns difficulty, this

research employs experimental method and theoretical view to explore effects of appointing outsiders to boards.

We construct a theoretical model to explain the effect of different proportion of outsiders to the voting behavior of the board. Our model shows that insiders approved the project regardless of its quality when their private benefits are larger, and outsiders and insiders, those who have smaller private benefits, only approved good quality project. Owing to lack of private information, outsiders only observe the information transmitted by the behavior of insiders and make reasonable expectation. We suggest outsiders have two possible types of reasonable expectation: [1] insider information transmission¹⁴ and [2] preventing value discounted¹⁵.

Then we design the experiment of the voting behavior of directors following the model. We verify that the higher the proportion of appointed outsiders, the more efficient the board and the higher the possibility to adopt institutionally preferred policies

¹³ Results fail to prove that employing outside directors will afford large benefits to corporations and shareholders. See Patton and Baker, 1987; Weisbach, 1988; Hermalin and Weisbach, 1991; Mangel and Singh, 1993; Shivdasani, 1993; Mehran, 1995; Yermack, 1996; Agrawal and Knoeber, 1996; Romano, 1998; Klein, 1998; Bhagat and Black, 2002; Lin et al., 2003; Park and Shin, 2004; Howton, 2006.

¹⁴ The reasonable expectation of insider information transmission means outsiders believe information transmitted by insiders and judge the quality of project base on the information.

¹⁵ Reasonable expectation of preventing value discounted means outsiders believe that insiders transmit dishonest information and mislead their judgment. Especially if the quality of project is bad, insiders may transmit dishonest information for private benefits. So, outsiders will prevent corporation value destroyed and result in voting against regardless of the project's quality.

advantageous to corporate development and raising corporate value. We find that outsider-dominated boards with necessary time, which will reduce information asymmetry among directors, are more likely prefer employing reasonable expectation of insider information transmission and to execute institutionally preferred policies.

The remainder of this paper is organized as follows. Section 2 cites prior literature that explores the role played by outside directors in corporate governance. Section 3 describes a theoretical model of outside directors with independence, to state voting behavior of directors. Section 4 presents experimental design of voting behavior and analyzes experimental results. Section 5 discusses conclusions drawn from this study.

2. Literature Review

2.1 Outsiders Have Positive Effects on Corporation and Shareholders

Due to its monitoring role, the appointed outside directors are an important implement to reduce agency costs and hence it has a direct impact on corporate performance through they can be used effectively to align benefits of stockholders. Consequently, the outside directors are an important governance mechanism. Many agency theorists show that outsiders are important monitors of management and providers of relevant expertise and as such are central to the effective resolution of agency problems between managers and shareholders (Fama, 1980; Fama and Jensen, 1983; and Singh and Harianto, 1989). Fama and Jensen (1983) find that outside directors compete in the outside directors' labor market. Consequently, Outside directors have incentives to develop personal reputations as experts in monitoring management because the value of their human capital depends primarily on their performance as monitored senior management of other enterprises. Such empirical evidence on monitoring efficacy finds that independent directors protect external shareholders in specific cases where there is an agency problem between managers and shareholders (Brickley and James, 1987; Weisbach, 1988; Byrd and Hickman, 1992; Lee et al., 1992; Barnhart and Rosenstein, 1998; Davidson et al., 1998; Fields and Keys, 2003; Benkel et al., 2006).

Baysinger and Butler (1985), Fiegner (2005), and Luan and Tang (2007) find that outsider directors can increase firm value. Higher ratio of independent outside directors on boards, with more independence and fewer conflicts of interest, enhances firm performance (Rosenstein and Wyatt, 1990; Pearce and Zahra, 1992; Dobrzynski, 1993; Ezzamel and Watson, 1993; Alshimmiri 2004). Superior governance will result to the extent that director and shareholder interests are aligned. Board composition affects alignment. Outsider directors are assumed to effectively represent the interests of the shareholders

because they are considered to be independent of management, lack of self-benefit behavior, and promoting shareholders wealth (Fama, 1980; Kesner and Dalton, 1986; Rechner, 1989; Baysinger and Hoskisson, 1990).

Denis and Sarin (1999), Coles and Hesterly (2000), along with Peasnell et al. (2005) suggest that monitoring value of outside directors is contingent on the extent of the firm's agency problems. Greater firm agency problems mean more benefit from outside directors. Perry and Shivdasani (2005) document how boards with a majority of outsiders are more likely to initiate performance-increasing restructuring program.

2.2 Outsiders Have Not Positive Effects on Corporation and Shareholders

Some studies do not support that the appointment of outsider directors may actually solve the agency problem between managers and shareholders, and increase firm performance. Scandals involving firms such as Enron and WorldCom, as well as other widespread cases of bankruptcy, have raised important questions with regard to the effectiveness of board monitoring and the high compensations that directors' receive.¹⁶ In fact, this is a coalition of private benefit both insiders and outsiders. Jensen (1993) suggests that boards of directors often fail to monitor a firm's management effectively, in that board culture inhibits constructive criticism, and because of the great emphasis on politeness and courtesy at the expense of truth and frankness in boardrooms. Brick et al. (2006) show excessive compensation via mutual back scratching or cronyism.

When the managers are involved in the director selection process, especially if managers serve on the board's nominating committee, the director is more likely to be an affiliated rather than independent outsider. As a result, outsider can not to perform their monitoring duties effectively (Mangel and Singh, 1993; Shivdasani and Yermack, 1999). Outside directors, by virtue of their business, previous employees of the related company, or other links with the firm, may tend to identify more closely with interests of management than of the shareholders. Though some directors may be classified as independent, they may rely on top management kindness in tricky ways: e.g., acting as paid advisors or consultants to the company. These directors are reluctant to resist top management's request and make resulting in less rigorous monitoring (Lin et al., 2003; Gillette et al., 2003). Outside directors' lack of sufficient incentives, time, and expertise to perform their monitoring duties effectively has led many commentators to express doubts about their ability to make a meaningful contribution to promoting

¹⁶ *The New York Times* (16 December 2001) reported that the compensation for each Enron director ranked them as the seventh highest paid directors in the United States.

shareholder wealth (Patton and Baker, 1987; Lin et al., 2003).

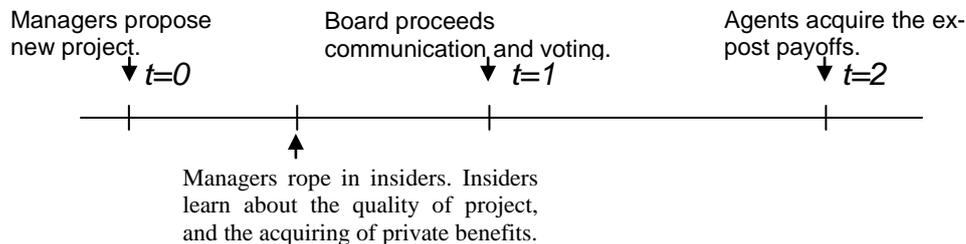
Several empirical studies document that that shareholders do not benefit from the appointment of outside directors. Hermalin and Wesibach (1991), Mehran (1995), Klein (1998), Romano (1998), Bhagat and Black (2002), and Cho and Kim (2007) all report no systematic relation between measures of firm performance and fraction of outside directors. Agrawal and Knoeber (1996) document that more outside directors on a board negatively impact firm performance. Yermack (1996) found that there is a negative relationship between percentage of outside directors and firm performance measured by Tobin's Q. Outside directors, as a whole, may not improve governance or increase shareholder welfare. Only directors classified as venture capitalists, equity block holders and suppliers of debt finance as affiliated outsiders with strong monitoring incentives, can benefit shareholders (Shivdasani, 1993; Lin et al., 2003; Park and Shin, 2004). Howton (2006) finds that the presence of outside directors does not increase survival chances of the firms.

Outsiders may actually receive penalties if they fail to monitor firm management effectively or to promote interests of shareholders. Studies find outsiders associated with underperforming firms and/or perceived as ineffective monitors at one firm likely to hold additional outside directorships (Gilson,

1990; and Kaplan and Reishus, 1990; Brickley et al., 1999). Evidence shows likelihood of financial reporting failure dropping with more outsiders on boards (Beasley, 1996; Dechow et al., 1996; Agrawal and Chadha, 2005; Farber, 2005; Srinivasan, 2005). In sum, views concerning value of outside directors are mixed. Our study's theoretical view and laboratory analysis enable us to address confounding problems, to explore effects of outsiders on boards.

3. Model

In the model, there are three time point ($t = 0, 1, 2$), and managers, insiders, and outsiders as agents, and managers also may be insiders. A board is constituted of two groups of insiders and outsiders. Together, they must decide whether to accept a new project. The project's fate is decided by majority vote. Among them, the i th insider's equity ownership proportion of holding is α_i . The model assumes regardless of the project's quality that it can provide private benefits of managers and insiders, those who incentives are misaligned with shareholders. Relatively, the benefits of outsider are aligned with shareholders. All agents in deciding, whether the project is approved or not, is based on satisfying they maximum expect payoffs of target. Sequence of the theoretical model as following:



At $t=0$, managers propose new project and insiders have the private information of the project's quality; outsiders do not. At $t=1$, board calls meeting, and insiders and outsiders will proceed communication. Outsiders are unable to discriminate between value-increasing and -decreasing projects; insiders have private information enabling them to distinguish between these types of projects. Outsiders observe the transmitted signal by behavior of insiders as a basis for voting. After communication, a board proceeds with voting immediately and knows the outcome soon. At $t=2$, expected payoff of all agents is fulfilled. If a project is rejected at $t=1$, expected value of agents is unchanged. If the project is accepted at $t=1$, agents will acquire the ex-post payoffs.

3.1. Agent's Payoffs and Information

We present here our model of voting behavior of board of directors. We assume that the firm has the amount of cash I , which it invests in a project with the gross rate of return R . The firm has no costs, so the

profits are RI . Not all of the profits are distributed to shareholders on a pro rata basis. New project will increase the profits $D_{\tilde{s}} \cdot RM$, where M is the scale of new project investment; \tilde{s} denotes an information signal whether the new project is good (G) or bad (B). The signal variable $D_{\tilde{s}}$ which is equal to 1 as $\tilde{s} = G$, otherwise -1 as $\tilde{s} = B$. As a result, project acceptance is value increasing for corporation if the observed signal is G and destroys value when it is B. Thus, we can write the ex-post payoffs of insider i which we represent by I_i as follows:

$UI_i^N = \alpha_i \cdot RI + PV_i(I)$	Reject new project
$UI_i^{\tilde{s}} = \alpha_i \cdot (RI + D_{\tilde{s}} \cdot RM) + PV_i(I, M)$	Approved new project
where the first term is his share of cash flows (or dividends), whilst the remaining terms are his private benefits from controlling right, $PV_i(\cdot)$. In the same,	
$UO_j^N = \lambda \cdot RI$	Reject new project
$UO_j^{\tilde{s}} = \lambda(RI + D_{\tilde{s}} \cdot RM)$	Approved new project

where λ is constant, $\lambda > 0$, and outsiders lack of private benefits and payoffs of each is equal.

Moreover, we believe that the rankings of ex-post payoffs of outsiders exhibit consensus regardless of the new project's quality because outsider incentives are aligned with those of the firm's shareholders. Similarly, the rankings of ex-post payoffs of insiders also exhibit consensus following a good quality project because it will increase firm value and insider private benefits. However, the rankings of ex-post payoffs of insiders have not exhibited consensus following a bad quality project because it will increase insider private benefits and destroyed firm value. Consequence, given in the above result, we reasonably believe that the rankings of the payoffs are as follows:

$$UI_i^G > UI_i^N;$$

and the rankings of UI_i^B and UI_i^N are uncertain. $i = 1, 2, \dots, i$
 $UO_j^G > UO_j^N > UO_j^B$, $j = 1, 2, \dots, j$

3.2. Agent's Voting Behavior and Strategy

The model assumes the quality of proposed project has good and bad of the two types. Insiders have private information to know the project's quality; yet outsiders only can reasonably expect the quality of the project. Whether the project will be approved or not depends on the majority vote of board. The model assumes that there are n_i insiders and n_j outsiders in board. There are two stages of board meeting, which are communication stage and voting stage. Outsiders, lack of private information, will utilize communication stage to observe the information transmitted by the behavior of insiders and reasonably expect the quality of the project. After the communication stage, meeting proceeds to the voting stage. The project will be accepted if the affirmative vote is majority. But the project will be rejected if the voting is not in favor, including against and abstentions. Below is the explanation of the communication process and employ strategy of insiders and outsiders.

3.2.1. Information Transmission and Employ Strategy of Insiders

The model assumes that the probability of good quality project is g , where $g = 0.5$. Therefore, the probability of good and bad quality project are equal, and it also is as prior belief of outsiders. Owing to the rankings of ex-post payoffs of insiders exhibit consensus following a good quality, the speaking of insiders unanimously, using CON to represent, support the project in the communication stage and to vote supporting the project in voting stage when the signal of \tilde{s} is G. Contrary, when the signal of \tilde{s} is B, the speaking of insiders does not exhibit consensus using NCON to represent in the communication stage, and the vote action of insiders is different as well. Moreover, in special condition, all insiders have larger private benefits when the signal of \tilde{s} is B, and

the speaking of insiders unanimously support the project as well. The probability of special condition is far less than 0.5. As a result, below are the probabilities of prior belief of outsiders and information transmission of insiders as

$$p(G) = p(G) = g = 1/2$$

$$p(CON|G) = 1 ; p(NCON|G) = 0$$

$$p(NCON|B) = q ; p(NCON|B) = 1 - q , q \ll \frac{1}{2}$$

3.2.2. Reasonable Expectation and Employ Strategy of Outsiders

The model assumes that outsiders have the unanimous voting because the rankings of ex-post payoffs of outsiders exhibit consensus regardless of the new project's quality. Owing to lack of private information, outsiders only observe the information transmitted by the behavior of insiders and make reasonable expectation. We suggest that outsiders have two possible types of reasonable expectation, including the reasonable expectation of insider information transmission and the reasonable expectation of preventing value discounted. The reasonable expectation of insider information transmission means outsiders to believe that the information is transmitted by insiders and judge the quality of project base on the information. The reasonable expectation of preventing value discounted represents outsiders to believe that insiders transmit dishonest information and mislead the judgment of them. Especially if the quality of project is bad, insiders may transmit dishonest information for private benefits. So, outsiders will prevent corporation value discounted and result in voting against regardless of the project's quality.

A. Outsiders employ the reasonable expectation of insider information transmission.

We employ both the probabilities of prior belief of outsiders and information transmission of insiders, to calculate the probabilities of posterior belief of outsiders by the Perfect Bayesian Equilibrium as

$$p(G|CON) = \frac{p(CON|G)p(G)}{p(CON|G)p(G) + p(CON|B)p(B)} = \frac{g}{g + q(1-g)} \gg \frac{2}{3}$$

$$p(B|CON) = \frac{p(CON|B)p(B)}{p(CON|G)p(G) + p(CON|B)p(B)} = \frac{q(1-g)}{g + q(1-g)} \ll \frac{1}{3}$$

$$p(G|CON) \gg p(B|CON) ; p(G|CON) \cdot UO_j^G + p(B|CON) \cdot UO_j^B > UO_j^B$$

Based upon the above results, outsiders make a good quality reasonable expectation and to vote approved the project when the speaking of insiders unanimously supports the project.

$$p(G|NCON) = \frac{p(NCON|G)p(G)}{p(NCON|G)p(G) + p(NCON|B)p(B)} = \frac{0}{0 + (1-q)(1-g)} = 0$$

$$p(B|NCON) = \frac{p(NCON|B)p(B)}{p(NCON|G)p(G) + p(NCON|B)p(B)} = \frac{(1-q)(1-g)}{0 + (1-q)(1-g)} = 1$$

Based upon the above results, outsiders make a bad quality reasonable expectation and to vote rejected the project when the speaking of insiders does not exhibit consensus to supports the project.

B. Outsiders employ the reasonable expectation of preventing value discounted.

A coalition between manager and insider may occur when they hope to obtain more private benefits from investment even if it destroys firm value. Thus, all outsiders vote to reject the project in order to prevent corporate value discounted. If outsiders employ the reasonable expectation of preventing value destroyed, it shows that insiders use dishonest information transmission to mislead outsiders, and result in outsiders distrust information by insider transmission and vote against the project regardless of its quality.

3.2.3. Outcome of Board Voting

We can find that there are two type outcomes of board voting, including the institutionally preferred outcome and the institutionally undesirable outcome. Now, we define the institutionally preferred outcome as efficient outcome that accepts the project only when it is a good quality project, and rejects the project only when it is bad quality project, otherwise as the institutionally undesirable outcome which is inefficient outcome.

Further, combining the employ strategy of outsiders and insiders which can be supported by Nash equilibrium, we find that outsider-dominated boards are more likely to execute institutionally preferred outcome and only approve good quality project when outsiders prefer employing the reasonable expectation of insider information transmission. Next, when outsiders prefer employing the reasonable expectation of preventing value discounted, outsider-dominated boards also are more likely to execute the institutionally preferred outcome and always reject bad projects, preventing a coalition of insiders from destroying firm value via investments in poor projects, however, the institutionally undesirable outcome cannot be completely eliminated relating to reject good project. What is Outsider's decision-making? Below of this section, we employ experimental method to confirm the decision-making of outsiders and explore the effects of appointed outsiders on board. In a word, our experiments provide strong evidence that outsider-dominated boards are more like to implement institutionally preferred policies.

4. Experimental Design

We examine board effectiveness using an experiment research technique that enables us to address many confounding problems of the faced. The experiment consists of four central factors. Each central factor involved one experimental session and lasted 10 rounds. Similar experimental method can be found extensively in experimental literature, and its purpose is by limited experimenter to obtain multiple observations in short game experiment. The experimental subjects were MBA and EMBA students to major in finance. The subjects were told they would have an opportunity to earn money in a research

experiment involving group decision-making. Every subject participated in only one experimental session.

4.1. Basic Design

Before experiment, subjects read a set of instructions (see appendix I) to understand the regulations of experiment, completed assigned worksheets, and were given the opportunity to ask questions to assure the subjects can fully realize the game rules. The term "board", "outsiders", and "insiders" were never mentioned in the instructions during the experiment to avoid unnecessary experiment bias with in advance expectance of subjects.

Jensen (1993) believes the board size should be limited to seven or eight members, so that the marginal cost of coordination and processing problems does not exceed the marginal benefit. According to Gillette et al. (2003), they also think seven members is the best. Then, this study adopts this type of seven persons a group as well. After experiment starts, the monitors randomly divided the subjects into seven persons a group. Subjects were randomly drawn for agent's type. There are seven balls in the bucket, in which there are yellow and blue balls. Those who draw a yellow ball will be insider and those who draw a blue ball will be outsider.

Moreover, we divide the experiment, which can be categorized based on the number of outsider in board, into four central factors (sessions): (1) no outsider factor, that is each group involved seven insiders and no outsider, using NO to represent; (2) two outsiders factor, that is each group involved five insiders and two outsiders, using O2 to represent; (3) three outsiders factor, that is each group involved four insiders and three outsiders, using O3 to represent; (4) four outsiders factor, that is each group involved three insiders and four outsiders, using O4 to represent.

At each session, subjects will play the same role in 10 rounds experiments after by drawing to decide playing the role of insiders or outsiders. Because Eckel and Holt (1989) believe that different grouping ways will affect the outcome. Then, the study will employ two types of random and repeated as the method to divide group. In first five rounds, each member was decided by random. It means using a draw to decide new group after the end of each round. Comparatively, in second five rounds, each member is unchanged. This design may also catch the real world that the condition of board members of changed or repeated has any difference the outcomes of voting.

Milgrom and Roberts (1996) believe that the design of different communication way will affect the function of board. Farrell and Rabin (1996), Forsythe et al. (1999), and Charness and Grosskopf (2004) find simple conversation can increase the effectiveness of communication and the efficiency of decision. So, each round, this experimental design requires communication in advance before voting of each group and the communication divides into two stages. In the first stage, a communication will be held

between sub-group of insiders and outsiders among each group, and the place of communication between sub-groups will be isolated. Before inside directors start to discuss, monitors will draw a ball from the bucket to indicate the project is good (white ball) or bad (black ball). The bucket will contain fifty white balls and fifty black balls. After each drawing the ball will be returned to the bucket, thus each ball has an equal chance of being selected in each stage. The time for the meeting is limited to four minutes in the first stage. If the preceding outcome of drawing is white ball, then omit the following activities. If black ball is drawn out, it indicates that the quality of project is bad, then each insider still have to proceed to draw again, in order to further divide into two sub-group type I_1 and I_2 : I_1 means the private benefits of insider is larger, which is $UI_i^B > UI_i^0, i \in 1, 2, 3, \dots, n_i$; I_2 means the private benefits of insider is smaller, which is $UI_i^B < UI_i^0, i \in 1, 2, 3, \dots, n_i$. The bucket will contain sixty red balls and thirty green balls. After each drawing the ball will be returned to the bucket. Those who draw a red ball will be type I_1 and those who draw a green ball will be type I_2 . The proportion is mainly according to the result from induction of model $p(B|con) \ll 1/3$, which shows that if insiders have x person, $x=3,4,5,7$ and if the chance of drawing black ball of each individual is y , then the probability of insider drawing black ball is $(y)^x \ll 1/3$. Therefore, y at least is close to $2/3$, indicating the appropriate proportion of black ball to white ball is 2:1. The time for the meeting is limited to four minutes in the first stage.

Next, insiders return to group and proceeded communication among entire group in four minutes. During communication, insiders can not reveal the outcomes of all drawing. Besides, according to Cooper et al. (1989, 1994), Forsythe et al. (1999), they state that the discussion without restrictions will affect the outcome of the experiment. Then, during the all stages, this experiment adds some restrictions to regulate the communication must obey the following rules: (1) there will be no speech of having nothing to do with the voting; (2) there will be no discussion of bodily threats; (3) there will be no discussion of other payments; (4) there will be no discussion between groups.

Following the communication time, voting will then take place. The subjects can cast either a vote of "Yes" or "No" for the project to be taken. After voting, the monitor will return to each group their group's majority vote and the project's quality. Earning of subjects will be calculated. In addition, this experiment discovers all participants can obey the rules and they also don't feel the limitation and insufficient of communication time.

In accordance with the rankings of agents' payoffs in section 3.1, payoffs were designed to ensure that I_1 of insiders, as obtaining larger the private benefits, preferred to accept the project regardless of the

outcome. They received at least \$0.7 following project be accepted, compared with a \$0.5 following its rejection. Contrary, the I_2 of insiders, as obtaining smaller the private benefits, preferred to accept the good project. They could receive \$0.8 following a good project be accepted, compared with a \$0.4 following a bad project be accepted, and to earn \$0.5 from rejection as well. The outsider payoffs were designed to ensure that they preferred to accept the project if it was good. They could expect to earn \$0.6 from acceptance the project conditional on a good project, to only earn \$0.1 from acceptance it following a bad project, and to earn \$0.4 from rejection. Below are the payoffs for each subject type for all possible outcomes in Tables 1-3.

<Table 1 is inserted about here>

<Table 2 is inserted about here>

<Table 3 is inserted about here>

4.2. Central Factors and Treatments

We employ four central factors and eight treatments to examine the effect of different proportion of outsiders to the voting behavior of the board. The central factors can be categorized, which were based on the number of outsider on seven members of board, into four central factors: no outsider factor, NO; two outsiders factor, O2; three outsiders factor, O3; four outsiders factor, O4. The treatments can be categorized based on the mixing protocols employ random mixing (RA), where group membership was changed after every round but subjects retained their agent-type for the entire session, and repeated groups (RE), where group composition remained unchanged for the duration of the session. Each central factor was divided into two treatments of the random mixing and repeated groups. So, we obtain eight treatments included RANO, RENO, RAO2, REO2, RAO3, REO3, RAO4, and REO4.

4.3. Results

We now examine results from the central factors and treatments along two dimensions including the incidence of the institutionally preferred outcome and outsiders voting patterns. When the higher the proportions of appointed outsiders, the results show that the incidences of the institutionally preferred outcome enjoy greater predictive success.

4.3.1. Data

In Table 1, we described the four central factors and eight treatments, including the mixing protocols employing, the communication protocol, the number of groups employing, the distribution of draws, and the average payoffs of insiders and outsiders for each central factors and treatment. The average payoffs of insiders are \$0.71, \$0.69, \$0.67, and \$0.58 in four central factors, NO, O2, O3, and O4 respectively. The average payoffs of insiders also are gradually to decrease in eight treatments. Then, we perform an

ANOVA on these means, which difference are significant at 1% level. The results indicate outsiders can better perform on effective monitoring of insiders, and to reduce private benefits of insiders. Contrary, the average payoffs of outsiders are gradually to increase in four central factors and eight treatments. We also perform an ANOVA on these means, which difference are significant at 1% level as well. The results show that the higher proportions of appointed outsiders can promote shareholders wealth because outsiders' benefits are aligned with shareholders.

<Table 4 is inserted about here>

4.3.2. Incidence of the Institutionally Preferred Outcome in the Central Factors

Table 5 presents the frequency with which the institutionally preferred outcome occurred in the central factors. In central factor NO, following all draws, the institutionally preferred policy is adopted only 54.44 percent of the time compared with 73.33 percent, 83.33 percent, and 88.89 percent in central factors O2, O3, and O4. In fact, following good draws, in three central factors with insider-dominated boards, the project is rejected never occurred because insiders have private information that enables them to distinguish between the two types of projects. Moreover, following bad draws, the project is rejected only 3 in 46 bad draws in the central factors NO. Contrary, the project is rejected 19 in 44 bad draws, 33 in 48 bad draws, and 44 in 44 bad draws in central factors O2, O3, and O4. These differences can be attributed primarily to the effect of outsiders be introduced to board. Further, when the boards increase the proportions of appointed outsiders, it will gradually tend to implement institutionally preferred outcome which is advantageous to corporate development, and increase corporate value. Especially, outsider-dominated boards obviously carry out institutionally preferred outcome.

We used Chi-squared statistics to examine differences in the institutionally preferred outcome distributions across central factors. Panel A of Table 6, following all draw, reports the significant differences at the 1% levels of NO with other three central factors, and O2 with O4. Following bad draws in Panel C of Table 6, the results of Chi-squared statistics indicate the significant differences at the 1% levels among central factors. The results confirm that the effect of appointed outsiders significantly influence the adoption of the institutionally preferred policy, suggesting that the higher proportions of appointed outsiders can significantly improve resource allocation. Following good draws, differences were significant only O4 with other three central factors in Panel B of Table 6. Results prove that outsider-dominated boards always block acceptance of the project, preventing a coalition of insiders from destroying firm value via investments in poor projects.

<Table 5 is inserted about here>

<Table 6 is inserted about here>

4.3.3. Incidence of the Institutionally Preferred Outcome in the Treatments

Table 7 depicts the frequency with which the institutionally preferred outcome occurred in the treatments. Further, we also use Chi-squared statistics to examine these differences in Table 8. The results verify that these differences were significant across treatment of different type central factors, consist with the result of Table 5 and 6. In particular, following good draws, in six treatments with insider-dominated boards, RANO, RENO, RAO2, REO2, RAO3, and REO3, the institutionally preferred policy is adopted to achieve 100 percent of the time compared with only 69.56 percent, and 86.95 percent in treatments RAO4, and REO4. Comparatively, following bad draws, in six central factors with insider-dominated boards, the project are rejected only 12.5 percent, 9.09 percent, 35 percent, 52.17 percent, 69.56 percent, and 68 percent of the time compared with 100 percent in treatments RAO4, and REO4. The results indicate that outsider-dominated boards are more like to reject the project. Especially, when the project is a bad quality, outsider-dominated boards obviously to execute the institutionally preferred outcome and always reject project preventing firm value discounted.

However, we now focus on analyzing the difference across treatment of the same type central factors, for example, between RANO, and RENO. We only find that the difference of RAO4 and REO4 is significant following good draws. Contrary, these differences, RANO and RENO, RAO2 and REO2, and RAO3 and REO3, are insignificant following good and bad draws. We believe that the members of board are repeated group to encourage outsiders employed the reasonable expectation of trust information transmitted by the behavior of insiders, and to alter their voting behavior increasing frequency of institutionally preferred outcome follow good draws. Results suggest tenure of outsiders has a positive impact on outsiders' effective monitoring of insiders

In contrast to the preceding theoretical model, results show outsider-dominated boards having strong function in fraud-proof when outsiders prefer to employ the reasonable expectation of preventing value discounted. Outsiders are inclined to vote against preventing a bad quality project destroying corporate value, when they doubt the message transmitted by inside directors. If outsider-dominated boards want to prevent the risk of rejected good policy, outsiders must possess necessary time. Outsiders with necessary tenure, reducing information asymmetry among directors, are more likely alter reasonable expectation employing reasonable expectation of insider information transmission and to execute institutionally preferred policies regardless of a project's quality.

<Table 7 is inserted about here>

<Table 8 is inserted about here>

4.3.4 Outsiders Voting Patterns

Table 9 presents outsider votes consistent with the institutionally preferred, which is outsider votes “Yes” to accept if the project is good and votes “No” to reject if it is bad. Percentage of outsider votes consistent with institutionally preferred outcome are 75.56 percent, 88.89 percent, and 87.22 percent following good in central factors O2, O3, and O4, respectively. Central factor O2 obviously differs from O3 and O4, attributable to outsiders voting to reject the project following bad draws. In fact, in central factor NO, following bad draws, institutionally preferred policy is adopted to vote again only 64.58 percent versus 97.92 percent and 98.86 percent in central factors O3, and O4. These show that lower proportions of appointed outsiders mean less possibility to adopt institutionally preferred policies.

Table 10 presents Chi-square statistics for outsiders’ voting consistency with institutionally preferred across central factors. Following all and bad draws, differences of outsider votes were significant at the 1% levels of O2 with O3 and O4 in Panel A and C of Table 10. These tests highlight the impact the effect of the high proportions of appointed outsiders have on board performance, as they indicate that the presence of higher proportions of outsiders significantly affected they voting following bad draws. When proportion of outsiders is low, for example, the proportion only 28.57%, we suggest that outsiders unable to affect policy of the voting result sometimes will follow intentions of insiders and relinquish their duty to cast vote for a bad quality project, even if it destroys firm value. We document effect of the higher proportions of appointed outsiders significantly altering distribution of outsider votes: boards more likely to execute institutionally preferred policies and increase corporate performance by improving resource allocation.

<Table 9 is inserted about here>

<Table 10 is inserted about here>

5. Conclusions

Arguments concerning the value of outsiders are mixed results. We suspect that the mixed results are due to impediments to empirical research. These impediments include difficulties in measuring day-to-day effect of board composition on corporate performance, poor disclosure regarding board meeting of institutions, and defective proxies for the level of outsider independence. Our model and experiments contribute to research exploring true value of outsiders on board by laying groundwork that can control for such impediments and ensure that outside directors are truly independent.

We construct a theoretic model to explain the effect of different proportion of appointed outsiders to the voting behavior of the board. Then, according to the model, we design the experiment of the voting

behavior to examine board effectiveness. We verify that the higher the proportions of appointed outsiders, the more efficient of the board and the higher the possibility to adopt institutionally preferred policies, which increase corporate performance by improving its resource allocation.

Especially, outsider-dominated boards, those who employ reasonable expectation of preventing value discounted, obviously execute institutionally preferred outcome and always reject bad quality projects, preventing an insider coalition from destroying firm value via investments in poor projects. Institutionally undesirable outcome, which means a good quality project rejected, however, cannot be entirely eliminated. Our experiments indicate that outsiders with adequate time to alleviate information asymmetry among directors, are more likely to alter their voting behavior employing the reasonable expectation of insider information transmission and to prevent the risk of rejected good policies.

With proportion of appointed outsiders low, we find outsiders unable to affect the policy of the voting result sometimes will follow the intention of insiders to vote and give up their duty. Higher proportions of outsiders significantly alter to opportunistic behavior of outsiders, and the institutionally preferred allocations are more likely arising. In East Asia, most countries require listed companies to appoint at least certain proportion of outsider. However, the proportions of outsiders required weight be lower, we suggest that outsider-dominated boards more likely achieve improvement in governance practice.

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Appendix I

This appendix I contains instructions and worksheet. Subjects must read a set of instructions, and they completed assign worksheets and are given the opportunity to ask questions.

Instructions

You are ready to participate in an experiment of group decision-making. If you understand the instructions and make careful decisions, you may earn a great amount of money. Earnings will be paid to you, at the end of the experimental session. There will be a number of decision-making rounds. In each round, you will vote to express whether you approve or reject a project. The majority vote by members of your group, will determine the outcome for the round.

In each session, before experiments of group decision-making, monitors randomly divided participants into groups of seven. Next, participants were randomly drawn for participant type: three Type A and four Type B. Each group, prior to voting in each round, will there is a communication time, which consists of three communication stages, as follows:

1. In the first stage, a communication will be held between sub-group of Type A and B among each group, and the place of communication between sub-groups will be isolated. Before sub-group Type A starts to discuss, monitors will draw a ball from the bucket to indicate the project as Draw I (white ball) or Draw II (black ball). Time for the meeting is limited to four minutes in the first stage.
2. Second, Type A return to group and proceed discussing among entire group in four minutes. During communication, Type A cannot reveal the outcome of drawing. During these communication periods all aspects of the voting choices may be communicated, subject to the following restrictions applied: no speech unrelated voting, no bodily threats, no other payments, and no communication among groups. Private ballots were cast following this communication. After voting, the monitor will return to the group their group's majority vote and a breakdown of votes by participant type. Earnings will be calculated, then you may be randomly selected into a different group or remained unchanged group for the next round. However, you stay the same participant type throughout the experiment session. Participants can either vote "Yes" or "No" for the project to be taken.

Draw:

1. After dividing into groups, participants are randomly drawn for participant type. The monitor comes to each group with a bowl containing seven small balls. There will be three yellow and four blue balls. Those drawing yellow balls will be Type A, those drawing blue balls Type B participants.

- Each round, the draw type of project is determined by monitor randomly drawing a poker ball from a bucket. The bucket contains fifty white and fifty black balls. A white ball represents Draw I, black ball Draw II. After each drawing the ball will be returned to the bucket; thus Draw I and Draw II have an equal chance of being selected in each period.
- If the preceding outcome of drawing is white ball, then omit the following activities. If black ball is drawn out, then Type A participants still proceed to draw again, in order to further divide into two sub-group Type I₁ and I₂. The bucket will contain sixty red balls and thirty green balls. After each drawing the ball will be returned to the bucket. Those who draw a red ball will be Type I₁ and those who draw a green ball will be Type I₂.

Majority vote:

Whether the project is taken on or not for any group depends on the majority vote of that group. The project is undertaken if the Yes votes outnumbered the No votes, at least four Yes votes. When the Yes votes equal or less than the three votes, the project is rejected.

Earnings:

Your earnings depend on three events: (1) participant type, a Type I₁, Type I₂, or Type B; (2) draw type of project, a Draw I or Draw II; (3) the project is approved or rejected. Below are payoffs for each participant type for all possible outcomes.

Payoffs of Type I₁ of Type A Participant

US \$

Quality of Project Majority Vote		Good	Bad	
		Yes	0.8	0.7
		No	0.5	0.5

Payoffs of Type I₂ of Type A Participant

US \$

Quality of Project Majority Vote		Good	Bad	
		Yes	0.8	0.4
		No	0.5	0.5

Payoffs of Type B Participant

US \$

Quality of Project Majority Vote		Good	Bad	
		Yes	0.6	0.1
		No	0.4	0.4

Worksheet

Fill in the blanks below. If you have questions, please raise your hand; monitors will come to assist you.

	Your Vote	Other Group Members' Vote	Majority Vote	Project Type	Type A Earnings	Type B Earnings
1.	Yes	3 Yes ; 3 No	_____	I	_____	_____
2.	Yes	2Yes ; 4 No	_____	II	_____	_____
3.	No	3 Yes ; 3 No	_____	I	_____	_____
4.	No	4Yes ; 2 No	_____	II	_____	_____

Fill in the blanks below, answer either "Yes" or "No", below question 5~8.

- If the project type is Draw I, the Type A (B) participants, as a subgroup, are consensus to vote ____ (____).
 - If the project type is Draw II, the Type A participants further divide into two sub-group Type I₁ and I₂, and Type I₁ (I₂) are consensus to vote ____ (____), and the Type B participants are consensus to vote ____.
- This is the end of the instructions. If you have any questions please raise your hand and ask them at this time.

Table 1. Payoffs of Insider I₁ Type Subjects

US \$

Quality of Project		Good	Bad
Majority Vote	Yes	0.8	0.7
	No	0.5	0.5

Table 2. Payoffs of Insider I₂ Type Subjects

US \$

Quality of Project		Good	Bad
Majority Vote	Yes	0.8	0.4
	No	0.5	0.5

Table 3. Payoffs of Outsider Type Subjects

US \$

Quality of Project		Good	Bad
Majority Vote	Yes	0.6	0.1
	No	0.4	0.4

Table 4. Description of the Central Factors and Treatments

This table describes the four central factors and eight treatments, including the number of groups employing, the distribution of draws, and the number of bribe occurrence for each factors and treatment. The central factors can be categorized, which were based on the number of outsider on seven members of board, into four central factors: no outsider factor, NO; two outsiders factor, O2; three outsiders factor, O3; four outsiders factor, O4. The treatments can be categorized based on the mixing protocols employed random mixing (RA), where group membership was changed after every round but subjects retained their agent-type for the entire session, and repeated groups (RE), where group composition remained unchanged for the duration of the session. Each central factor was divided into two treatments of the random mixing and repeated groups. So, we obtain eight treatments included RANO, RENO, RAO2, REO2, RAO3, REO3, RAO4, and REO4. The subgroup-group communication protocol (SG) was used in all treatments, that is, before the voting for project, first subjects were permitted to communicate only with other agents of their type (outsiders or insiders) after which the entire group was permitted to communicate. Average payoffs of insiders (outsiders) (\$) denote average payoffs of each subject in each round, according to the subjects type are insiders (outsiders).

	Central Factors				Treatments							
	NO	O2	O3	O4	RANO	RENO	RAO2	REO2	RAO3	REO3	RAO4	REO4
Grouping protocol	Mix	Mix	Mix	Mix	RA	RE	RA	RE	RA	RE	RA	RE
Members in each group	7	7	7	7	7	7	7	7	7	7	7	7
Number of outsiders	0	2	3	4	0	0	2	2	3	3	4	4
Mode of communication	Verbal	Verbal	Verbal	Verbal	Verbal	Verbal	Verbal	Verbal	Verbal	Verbal	Verbal	Verbal
Communication protocol	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG
Number of groups	9	9	9	9	9	9	9	9	9	9	9	9
Number of draws	90	90	90	90	45	45	45	45	45	45	45	45
Number of good draws	44	47	42	46	21	23	25	22	22	20	23	23
Average payoffs of insiders (\$)	0.71	0.69	0.67	0.58	0.71	0.70	0.69	0.69	0.68	0.65	0.60	0.57
Average payoffs of outsiders (\$)	NA	0.37	0.42	0.45	NA	NA	0.39	0.34	0.41	0.42	0.44	0.45

Table 5. Adoption of the Institutionally Preferred Outcome in the Central Factors

This table presents the frequency of the institutionally preferred outcome, which accepts if the project is good and rejects if it is bad, in the central factors. The central factors can be categorized, which were based on the number of outsider on seven members of board, into four central factors: no outsider factor, NO; two outsiders factor, O2; three outsiders factor, O3; four outsiders factor, O4. The proportions of appointed outsiders are 0.0 percent, 28.6 percent, 42.9 percent, and 57.1 percent in the central factors NO, O2, O3, and O4 respectively. This information is showed for all project-quality draws and by type of draw. The percentage of the institutionally preferred outcome for draws of each type is provided in parentheses.

Central Factors	Project-quality Draws		
	All	Good	Bad
No Outsider, 0.00%; NO	49 out of 90 (54.44%)	44 out of 44 (100%)	5 out of 46 (10.86%)
Two Outsiders, 28.6%;O2	66 out of 90 (73.33%)	47 out of 47 (100%)	19 out of 43 (44.19%)
Three Outsiders, 42.9%;O3	75 out of 90 (83.33%)	42 out of 42 (100%)	33 out of 48 (68.75%)
Four Outsiders, 57.1%, O4	80 out of 90 (88.89%)	36 out of 46 (78.26%)	44 out of 44 (100%)

Table 6. Differences in Occurrence of Institutionally Preferred Outcome across Central Factors

This table presents Chi-squared statistics for incidence of the institutionally preferred outcome, which accepts if a project is good and rejects if it is bad, across the central factors. For each test, outcomes are categorized as either institutionally preferred or not. Panel A provides Chi-squared statistics following all draws, Panel B provides Chi-squared statistics following good draws and Panel C provides statistics following bad draws. The term UD signifies Chi-squared statistic undefined. Significance levels for Chi-squared statistics are: $\chi^2_{(1,0.1)} = 2.71$ $\chi^2_{(1,0.05)} = 3.84$ $\chi^2_{(1,0.01)} = 6.63$. Significance at the 10 percent, 5 percent and 1 percent confidence levels is denoted by “*”, “**”, “***”, respectively.

Central Factors	Central Factors		
	NO	O2	O3
Panel A : Following All Draws			
Two Outsiders, 28.6%;O2	6.96***		
Three Outsiders, 42.9%;O3	17.52***	2.65	
Four Outsiders, 57.1%, O4	26.29***	7.12***	1.16
Panel B : Following Good Draws			
Two Outsiders, 28.6%;O2	UD		
Three Outsiders, 42.9%;O3	UD	UD	
Four Outsiders, 57.1%, O4	11.45***	10.76***	10.33***
Panel C : Following Bad Draws			
Two Outsiders, 28.6%;O2	12.53***		
Three Outsiders, 42.9%;O3	32.68***	5.59**	
Four Outsiders, 57.1%, O4	72.03***	33.92***	16.43***

Table 7. Adoption of the Institutionally Preferred Outcome in the Treatments

This table presents the frequency of the institutionally preferred outcome, which accepts if the project is good and rejects if it is bad, in the treatments. The treatments can be categorized based on the mixing protocols employed random mixing (RA), where group membership was changed after every round but subjects retained their agent-type for the entire session, and repeated groups (RE), where group composition remained unchanged for the duration of the session. Each central factor was divided into two treatments of the random mixing and repeated groups. So, we obtain eight treatments included RANO, RENO, RAO2, REO2, RAO3, REO3, RAO4, and REO4. This information is showed for all project-quality draws and by type of draw. The percentage of the institutionally preferred outcome for draws of each type is provided in parentheses.

Treatments	Project-quality Draws		
	All	Good	Bad
No Outsider and Random; RANO	24 out of 45 (53.33%)	21 out of 21 (100%)	3 out of 24 (12.50%)
No Outsider and Repeated; RENO	25 out of 45 (55.56%)	23 out of 23 (100%)	2 out of 22 (9.09%)
Two Outsiders and Random; RAO2	32 out of 45 (71.11%)	25 out of 25 (100%)	7 out of 20 (35.00%)
Two Outsiders and Repeated; REO2	34 out of 45 (75.56%)	22 out of 22 (100%)	12 out of 23 (52.17%)
Three Outsiders and Random; RAO3	38 out of 45 (84.44%)	22 out of 22 (100%)	16 out of 23 (69.56%)
Three Outsiders and Repeated; REO3	37 out of 45 (82.22%)	20 out of 20 (100%)	17 out of 25 (68.00%)
Four Outsiders and Random; RAO4	38 out of 45 (84.44%)	16 out of 23 (69.56%)	22 out of 22 (100%)
Four Outsiders and Repeated; REO4	42 out of 45 (93.33%)	20 out of 23 (86.95%)	22 out of 22 (100%)

Table 8. Tests for Differences in Occurrence of Institutionally Preferred Outcome across Treatments

This table presents Chi-squared statistics for occurrence of the institutionally preferred outcome, which accepts if the project is good and rejects if it is bad, across the treatments. For each test, outcomes are categorized as either institutionally preferred or not. Panel A provides Chi-squared statistics following all draws, Panel B Chi-squared statistics following good draws and Panel C Chi-squared statistics following bad draws. The term UD signifies Chi-squared statistic undefined. Significance levels for Chi-squared statistics are: $\chi^2_{(1,0.1)} = 2.71$ $\chi^2_{(1,0.05)} = 3.84$ $\chi^2_{(1,0.01)} = 6.63$. Significance at the 10 percent, 5 percent and 1 percent confidence levels is denoted by “*”, “**”, “***”, respectively.

Treatments	Treatments						
	RANO	RENO	RAO2	REO2	RAO3	REO3	RAO4
Panel A : Following All Draws							
No Outsider and Repeated; RENO	0.05						
Two Outsiders and Random; RAO2	3.02*	2.76*					
Two Outsiders and Repeated; REO2	4.85**	3.99**	2.23				
Three Outsiders and Random; RAO3	10.16***	8.94***	2.31	1.11			
Three Outsiders and Repeated; REO3	8.60***	7.47***	1.55	0.60	0.08		
Four Outsiders and Random; RAO4	10.16***	8.94***	2.31	1.11	UD	0.08	
Four Outsiders and Repeated; REO4	18.41***	16.88***	7.60**	5.41**	1.80	2.59	1.80
Panel B : Following Good Draws							
No Outsider and Repeated; RENO	UD						
Two Outsiders and Random; RAO2	UD	UD					
Two Outsiders and Repeated; REO2	UD	UD	UD				
Three Outsiders and Random; RAO3	UD	UD	UD	UD			
Three Outsiders and Repeated; REO3	UD	UD	UD	UD	UD		
Four Outsiders and Random; RAO4	7.60***	8.27***	8.91***	7.93***	7.93***	7.27***	
Four Outsiders and Repeated; REO4	2.94*	3.21*	3.48*	3.08*	3.08*	2.83*	2.74*

Panel B : Following Good Draws							
No Outsider and Repeated; RENO	1.14						
Two Outsiders and Random; RAO2	3.12*	4.18**					
Two Outsiders and Repeated; REO2	8.51***	9.74***	1.28				
Three Outsiders and Random; RAO3	15.88***	17.13***	5.14**	1.46			
Three Outsiders and Repeated; REO3	15.61***	16.86***	4.86**	1.26	0.14		
Four Outsiders and Random; RAO4	35.42***	36.67***	20.71***	13.93***	7.93**	8.48**	
Four Outsiders and Repeated; REO4	35.42***	36.67***	20.71***	13.93***	7.93**	8.48**	UD

Table 9. Outsiders Voting Consistency with Institutionally Preferred Outcomes in the Central Factors

This table presents the number of outsider votes that are consistent with the institutionally preferred, which is insider votes “Yes” to accept if the project is good and votes “No” to rejects if it is bad. The central factors can be categorized, which were based on the number of outsider on seven members of board, into four central factors: no outsider factor, NO; two outsiders factor, O2; three outsiders factor, O3; four outsiders factor, O4. The proportions of appointed outsiders are 28.6 percent, 42.9 percent, and 57.1 percent in the central factors O2, O3, and O4 respectively. This information is showed for all project-quality draws and by type of draw in the central factors. The percentage of insider votes consistent with institutionally preferred outcome for draws of each type is provided in parentheses.

Central Factors	Project-quality Draws		
	All	Good	Bad
Two Outsiders, 28.6%;O2	136 out of 180 (75.56%)	74 out of 94 (78.73%)	62 out of 96 (64.58%)
Three Outsiders, 42.9%;O3	244 out of 270 (88.89%)	99 out of 126 (78.57%)	141 out of 144 (97.92%)
Four Outsiders, 57.1%, O4	314 out of 360 (87.22%)	140 out of 184 (76.09%)	174 out of 176 (98.86%)

Table 10. Tests for Differences in the Outsiders’ Voting Consistency with Institutionally Preferred Outcomes across the Central Factors

This table presents Chi-squared statistics for outsiders’ voting consistency with institutionally preferred across the central factors. That is, insider votes “Yes” to accept if the project is good and votes “No” to rejects if it is bad. The central factors can be categorized, which were based on the number of outsider on seven members of board, into four central factors: no outsider factor, NO; two outsiders factor, O2; three outsiders factor, O3; four outsiders factor, O4. The proportions of appointed outsiders are 28.6 percent, 42.9 percent, and 57.1 percent in the central factors O2, O3, and O4 respectively. For each test, outsider vote are categorized as either consistency with institutionally preferred or not. Panel A provides Chi-squared statistics following all draws, Panel B provides Chi-squared statistics following good draws and Panel C provides Chi-squared statistics following bad draws.. The significance levels for the Chi-squared statistics are as follows: $\chi^2_{(1,0.1)} = 2.71$ $\chi^2_{(1,0.05)} = 3.84$ $\chi^2_{(1,0.01)} = 6.63$. Significance at the 10 percent, 5 percent and 1 percent confidence levels is denoted by “*”, “**”, “***”, respectively.

Central Factors	Central Factors	
	Two Outsiders,28.6%; O2	Three Outsiders, 42.9%;O3
Panel A : Following All Draws		
Three Outsiders, 42.9%;O3	18.05***	
Four Outsiders, 57.1%, O4	11.76***	1.51
Panel B : Following Good Draws		
Three Outsiders, 42.9%;O3	0.02	
Four Outsiders, 57.1%, O4	1.16	1.16
Panel C : Following Bad Draws		
Three Outsiders, 42.9%;O3	49.08***	
Four Outsiders, 57.1%, O4	63.57***	0.46