Multiple directorships, industry relatedness, and corporate governance effectiveness

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Abstract

Purpose – *The purpose of this paper is to investigate the relationship between the industry relatedness of directors' multiple directorships and corporate governance effectiveness. The authors posit that a director gains "beneficial experience" by serving on outside boards of companies in related industries, with a resulting increase in governance effectiveness. Conversely, they predict a decrease in governance effectiveness when directors serve on outside boards of companies in unrelated industries.*

Design/methodology/approach – *Using publicly available data, a Tobit regression model is used to examine the effect of the industry relatedness of board members' multiple directorships on corporate governance effectiveness.*

Findings – *The results demonstrate a significant positive correlation between the industry relatedness of directors' multiple directorships and corporate governance effectiveness. It was found that this industry relatedness effect is stronger for directors of small companies than large company directors. The paper also documents a significant negative effect on governance effectiveness for small firms whose directors increase their board service on non-industry-related boards.*

Originality/value – *Prior research has examined the "Busyness Hypothesis" and the "Experience Hypothesis" as mutually exclusive hypotheses. This paper extends prior research by examining the possibility that the two hypotheses are not competing, but rather that both an experience effect and a busyness effect may be present for directors serving on multiple boards, and that one of the effects will dominate the other, based on certain company-specific characteristics.*

Keywords *Corporate governance, Board effectiveness, Industry relatedness, Multiple directorships*

Paper type *Research paper*

1. Introduction

Members of a board of directors of a public company have numerous responsibilities, including an ethical duty to "represent the interests of the investors/shareholders" and to "oversee the financial well-being of the organization" (Ethics Resource Center, 2002). When a director simultaneously serves on the boards of more than one company (i.e. holds "multiple directorships"), that service has the potential to either add to or subtract from the director's effectiveness in fulfilling his or her ethical responsibility to each company.

The practice of corporate directors holding multiple directorships is a common occurrence in the USA. However, there is considerable debate in the extant academic literature about whether multiple directorships enhance or inhibit corporate governance effectiveness. In addition, various US organizations and regulatory bodies have expressed grave concerns about the possible negative effects of allowing corporate directors to serve on multiple boards. Many of these organizations have made recommendations which are intended to decrease the potential problems caused by "overboarding" (i.e. when directors are on too many boards). For example, the Council of Institutional Investors (2014) suggests that directors who are employed full-time should be limited to two outside board positions in the absence of unusual and/or special circumstances. In a similar fashion, the National Association of Corporate Directors recommends that directors allow at least four 40-hour

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weeks of service per board assignment and that corporate executives should limit their number of board memberships (NACD, 1996).

Our primary research question is whether multiple directorships are in fact detrimental or whether they are beneficial in certain circumstances. Numerous recent research efforts have explored similar issues. For example, papers entitled "Are Busy Boards Detrimental?" (Field *et al.*, 2013), "Are Multiple Directorships Beneficial in East Asia?" (Lee and Lee, 2014) and "Multiple Board Appointments: Are Directors Effective?" (Hashim and Rahman, 2011) illustrate the timeliness and significance of these issues in contemporary corporate governance research.

The majority of prior researchers have tested competing hypotheses in an effort to understand the relationship between multiple directorships and corporate governance effectiveness. Specifically, two distinct hypotheses have evolved from prior research. On one hand, the "Busyness Hypothesis" states that serving on multiple boards leads to distracted and/or overcommitted directors, which leads to a decrease in corporate governance effectiveness. The Busyness Hypothesis reflects the negative effects of the "overboarding" concept described earlier. Conversely, the "Experience Hypothesis" posits that serving on multiple boards provides a director with a wide range of valuable experiences, which in turn leads to increased governance effectiveness.

Most prior research has assumed that these hypotheses are mutually exclusive and that empirical results would support either one or the other of the two hypotheses. In this study, however, we explore the possibility that these are not mutually exclusive effects, but rather that both effects occur simultaneously. Further, we hypothesize that the experience effect will dominate the busyness effect for directors who gain what we label "beneficial experience" from serving on multiple boards, while the busyness effect will be dominant for directors whose multiple directorships do not provide such beneficial experience. We operationalize this beneficial experience construct by examining the "industry relatedness" of the outside companies for which a particular director serves on the board. If these multiple directorships lead to an increase in beneficial experience (i.e. if the director's other board memberships are in the same industry as the company under examination), we hypothesize that the experience effect will dominate, leading to an increase in governance effectiveness. Conversely, if the multiple directorships do not add any beneficial experience (i.e. if the director's other board memberships are not in the same industry as the company under examination), then we hypothesize that the busyness effect will dominate, leading to a decrease in governance effectiveness.

We further hypothesize that serving on boards of companies in a related industry will aid directors of small companies more than directors of large companies. In effect, we are proposing that the beneficial experience gained by serving on a related-industry board will be greater for directors of small companies, as these directors are typically less experienced than directors of large corporations, and they would therefore have more to gain from the outside experience. Thus, we posit that the relationship between beneficial experience and governance effectiveness will be more positive for directors of smaller firms than for directors of larger firms.

In the empirical tests, we collect and analyze data for a large sample of US companies. In the analysis, we use the number of internal control weaknesses reported by a company as a proxy for corporate governance effectiveness. We then use Tobit regression analysis to detect statistically the degree of association between the industry relatedness of the directors' multiple directorships and governance effectiveness. In the analysis, we attempt to control for other relevant determinants of a board's ability to govern effectively. The results provide empirical support for the hypothesized relationships. In particular, we find that a company's number of reported internal control weaknesses decreases when its board members serve on other boards in the same industry. Thus, the experience effect tends to dominate the busyness effect for such firms. As hypothesized, we also find that this

beneficial experience effect is stronger for directors of small firms than for directors of large firms. Also as predicted, we document a decrease in corporate governance effectiveness for small companies when directors of such firms increase their board service on non-industry-related boards.

An implication of these results in the US context is that both a busyness effect and an experience effect appear to be present as corporate directors accept additional board positions, and that one of the effects may dominate the other based on company-specific characteristics. A second implication is that corporate governance may be enhanced by allowing (and even encouraging) board members to sit on the boards of other companies in a related industry. This enhanced governance especially holds true for smaller companies. These results should be of interest to investors, management, board members and other stakeholder groups that are concerned about whether board members should pursue additional board positions, and under what circumstances outside directorships are beneficial.

2. Prior literature and hypothesis development

There has been considerable research that explores the relationship between directors serving on multiple boards and corporate governance effectiveness. Prior research has examined both the potential benefits and the potential negative consequences from having directors that serve on multiple boards. A convenient way to categorize the prior research is to classify it into studies that examine the Experience Hypothesis, the Busyness Hypothesis and the possibility that both an experience effect and a busyness effect may be present and that one effect may dominate the other based on firm-specific characteristics.

2.1 The Experience Hypothesis

Early proponents of the Experience (or Reputational Capital) Hypothesis assert that serving on multiple boards is a signal of director quality (Fama and Jensen, 1983). Subsequent researchers (Gilson, 1990; Kaplan and Reishus, 1990; Vafeas, 1999) further contend that the number of boards that a director serves on is related to the level of that director's reputational capital. They therefore propose that only high-quality directors receive the opportunity to serve on multiple boards, and that these highly qualified directors are effective in their governance efforts. Implicit in the Experience Hypothesis is the idea that serving on multiple boards provides a director valuable experiences in varied regulatory environments and/or industries. Proponents of the Experience Hypothesis therefore suggest that a director with such a wide range of experiences will likely be more effective in monitoring management and other important governance tasks.

A number of studies have provided empirical support for the Experience Hypothesis. For example, Harris and Shimizu (2004) document a positive association between the proportion of "overboarded" directors and abnormal returns. In other words, they find that multiple directorships are correlated with increased abnormal security returns. Based on these results, they conclude that companies may seek out already busy directors because such directors are likely to add value to the firm.

Bacon and Brown (1974), Booth and Deli (1996) and Carpenter and Westphal (2001) each report findings consistent with the notion that the decision by an executive to accept an outside directorship may increase shareholder value of his/her primary employer if that executive gains knowledge related to differing management styles and/or strategies that are used by other companies. In a similar vein, Sarkar and Sarkar (2009) document that multiple directorships by independent directors are positively correlated with firm value. They document that independent directors with multiple directorships tend to attend more board meetings and are also more likely to attend a firm's annual meeting. These findings provide support for what they label the "quality hypothesis", which states that busy outside directors tend to be better directors. Sarkar and Sarkar's (2009) results also support what they call the "resource dependency hypothesis", which states that directors who hold

multiple directorships are better networked, which helps the various companies to create important linkages with external constituencies.

2.2 The Busyness Hypothesis

Other research, however, has found evidence that multiple directorships detract from a director's corporate governance effectiveness. For example, Ferris *et al.* (2003) explore whether directors who hold multiple directorships are effective in their attempts to monitor management. They test empirically what they label the "Busyness Hypothesis". Their Busyness Hypothesis proposes that:

> [. . .] serving on multiple boards overcommits an individual. As a consequence, such individuals shirk their responsibilities as directors. For example, overcommitted directors might serve less frequently on important board committees such as the audit or the compensation committees. If boards play an important role in firm performance, the implication of the Busyness Hypothesis is that the presence of multiple directors on a firm's board reduces oversight of management and, as a result, the firm's market value. Additionally, reduced monitoring by these busy directors might exacerbate other forms of agency costs, such as increased litigation exposure for the firm (Ferris *et al.*, 2003, p. 1088).

Fich and Shivdasani (2006) provide empirical support for the Busyness Hypothesis. They report that firms with busy boards, which they define as those where a majority of the outside directors hold at least three directorships, are correlated with measures that indicate weak corporate governance. They find that firms with busy boards demonstrate weaker profitability, possess lower market-to-book ratios and have lower sensitivity of CEO turnover to firm performance. They also document that when directors acquire an additional board membership, the other companies for which they serve as directors experience negative abnormal returns.

Ahn *et al.* (2010) discover that directors who hold multiple directorships have time constraints and reduced attention capacities that might affect their ability to provide sound counsel. This might adversely affect their ability to effectively contribute to discussions relating to major strategic decisions (e.g. merger and acquisition deliberations). Jiraporn *et al.* (2009b) test whether holding multiple directorships diminishes a director's ability to effectively monitor company management. They document that directors with multiple directorships tend to serve on fewer board committees, including the compensation and audit committees.

Prior research has also found that directors who hold multiple directorships display an increased tendency to miss meetings of the board (Jiraporn *et al.*, 2009a). This result indicates the potential for reduced corporate governance effectiveness, as research has shown that effective board meetings contribute to firm performance (Vafeas, 1999). Still other prior research efforts have demonstrated the potential for multiple directorships to lessen outside directors' effectiveness as corporate monitors (Core *et al.*, 1999; Shivdasani and Yermack, 1999).

2.3 Recent research

A recent line of research has proposed that the Busyness Hypothesis and the Experience Hypothesis are not mutually exclusive, but rather that both an experience effect and a busyness effect will be present for directors that hold multiple directorships. For example, as a board member engages in additional outside directorships, those additional board memberships add a level of busyness (and distraction) that have the potential to reduce his/her governance effectiveness. However, at the same time, these additional directorships also have the potential to increase his/her experience and knowledge, which could enhance governance effectiveness. Recent research has proposed that an experience effect and a busyness effect may occur simultaneously, and that one of the effects will dominate the other, based on certain firm-specific characteristics.

For example, Lee and Lee (2014, p. 1) posit that "the benefits and costs of multiple directorships are conditional on firm characteristics". They document a positive association between firm valuation and multiple directorships for firms with high advising and high external financing needs. In a similar vein, Clements *et al.* (2013) postulate that the busyness effect will dominate the experience effect for directors of small companies. They predict that for small company directors, the distractions and/or time constraints caused by additional board appointments will outweigh any experience benefits gained by the additional directorships. The rationale behind this prediction is that directors of small companies will not typically be appointed to the boards of larger, more complex organizations where significant beneficial experience effects would likely occur. Conversely, they predict that the experience effect will dominate the busyness effect for large firm directors. Clements *et al.* (2013) provide empirical support for these hypotheses.

The current paper falls in this recent line of research in that we recognize that both a busyness effect and an experience effect will be present as directors engage in additional outside board services, and that one effect may dominate the other based on firm-specific characteristics. We extend prior research by examining whether the relationship between corporate governance effectiveness and multiple directorships is affected by whether the additional directorships are in industry-related or non-industry-related firms.

2.4 Hypothesis development

Our first hypothesis is that the experience effect will dominate the busyness effect for firms whose directors gain what we refer to as "beneficial experience" from serving on multiple boards. In other words, we contend that corporate governance effectiveness will increase as a firm's directors acquire experience that is beneficial to their governance activities. Likewise, we contend that when the director does not gain significant beneficial experience from serving on multiple boards, the busyness effect will dominate, leading to a decrease in governance effectiveness. In this study, we operationalize beneficial experience as the experience gained from serving on the boards of companies in the same industry. Our use of the "industry relatedness" of outside board memberships as a measure of beneficial experience is based on prior research documenting the relevance of information flows that occur in a related industry environment.

In particular, the Experience Hypothesis discussed earlier argues that outside directorships may provide the director with information and experience that is beneficial to the company. We argue that to the extent this "information flow" is more relevant to the company at hand, the more effective the director will be in corporate governance activities. For example, evidence from prior research on multiple directorships supports the view that directors from other boards provide a potentially important conduit for information flows about business practices and policies (Mizruchi, 1996). Directors that are involved in outside directorships can obtain information about the implementation and efficiency of different practices by observing the consequences of management decisions (Haunschild, 1993). Directors can also learn about a variety of policy approaches through their communications with other directors in board meetings (Davis, 1991). In addition, sitting on an outside board offers opportunities for directors to learn about different management styles and strategies used in other firms, to establish a network and to monitor business relationships (Booth and Deli (1996); Carpenter and Westphal (2001); Loderer and Peyer (2002)).

We contend that this "information flow" results in a director gaining beneficial experience when the board member's outside directorships provide experiences that are more relevant to the company at hand. Prior research has supported the view that increased relevance occurs when the outside directorships are in a similar industry. For example, Chen (2008) argues that firms engaging in diversifying acquisitions face elevated levels of information asymmetry and, as a result, can benefit from having outside directors with specific knowledge or understanding of the target's industry and ways of doing business.

Chen's study examines the relationship between acquirer returns during diversifying acquisitions and outside directors with directorships in the same target industry. Chen's results indicate that outside directors with directorships in the same target industry are associated with higher two-day cumulative abnormal returns in diversifying acquisitions involving private targets. Thus, the study concludes that outside directorships in similar industries can provide beneficial information to the director.

Similarly, Perry and Peyer (2005) analyze post-announcement returns for companies following an announcement of a board member joining the board of directors of an outside firm. They find significant positive abnormal returns when the outside firm is in the same two-digit SIC classification as the sending firm, and they conclude that by joining the board of a firm in a similar industry, the executive can benefit the sender firm through industry-specific knowledge transfer between the two firms and by learning about new technologies, products or management innovation.

We therefore posit that when a director of one company is appointed to the board of another company in a similar industry, he/she has the opportunity to learn different monitoring techniques and/or operational strategies used by a company with a similar operating environment. These new techniques and strategies can potentially be transferred more easily to the other companies for which he/she serves as a director, as the companies are similar in operating characteristics.

Even though there will be time constraints as the number of outside board memberships increases, we suggest that the experience factor will outweigh the busyness factor for directors of industry-related firms. In other words, the potential benefit gained from being on multiple boards in the same industry (the beneficial experience effect) would outweigh any negative effects resulting from the busyness factor because of the nature of the outside boards that the directors serve on. Therefore, we hypothesize that the experience effect would dominate, leading to a direct relationship between corporate governance effectiveness and the number of industry-related outside directorships.

In the empirical tests, we use a firm's number of reported material internal control weaknesses as a proxy for directors' governance effectiveness. We use this measure as a proxy for governance effectiveness for two reasons. First, the proxy is appropriate, given that the Sarbanes–Oxley Act of 2002 holds directors responsible for a firm's effective internal control environment. As a result, the SEC amended the rules and regulations related to the Securities and Exchange Act of 1934 (17 CFR § 240.13a-15(f)). The amendment defines the term "internal control over financial reporting" as a process designed by, or under the supervision of, the registrant's principal executive and financial officers, "and effected by the registrant's board of directors". The purpose of internal control is to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements. Ultimately, through their corporate governance activities, directors are required to have a direct impact on the effectiveness of a company's internal controls. Thus, there should be a direct relationship between corporate governance effectiveness and the effectiveness of internal controls. This relationship has been confirmed by prior research. For example, an increase in the effectiveness of internal controls is associated with improved earnings quality (Ashbaugh-Skaife *et al.*, 2008). Improved internal controls have also been found to be associated with reduced management forecast errors (Feng *et al.*, 2009). An increase in the effectiveness of internal controls would be measured by a decrease in the number of reported weaknesses in internal control.

Second, previous research efforts also support the choice of this proxy for corporate governance effectiveness. Doyle *et al.* (2007, p. 202) state that they "expect a well-governed firm to exhibit fewer material weaknesses, all else equal". Support for this expectation is provided by Johnstone *et al.* (2011, p. 333), who state that "the limited related research in this area reports a positive association between levels of internal control

quality and superior corporate governance". This position is also supported by the findings of Krishnan (2005), Zhang *et al.* (2007) and Hoitash *et al.* (2009), who each document that reported internal control weaknesses are less likely for companies with high-quality audit committees of the board. In addition, Elbannan (2009) examines disclosures of internal control weaknesses and documents that corporate governance strength is positively correlated with internal control quality. Finally, the number of internal control weaknesses has specifically been used as the dependent variable in logistic regression models examining the relationship between director quality and the quality of internal control. For example, Krishnan (2005) finds that the quality of an entity's internal controls is a function of the quality of its control environment that includes the board of directors and the audit committee, and specifically, he finds that independent audit committees and audit committees with financial expertise are significantly less likely to be associated with the incidence of internal control problems, as measured by internal control weaknesses.

Thus, prior research has found that the number of reported internal control weaknesses decreases as corporate governance effectiveness increases. We consequently hypothesize an inverse relationship between a firm's number of industry-related directorships and the number of reported internal control weaknesses. The first hypothesis is therefore:

H1. There will be a negative correlation between the number of industry-related outside boards on which each director serves and the number of reported material weaknesses in internal control.

Our second hypothesis is that the previously hypothesized positive relationship between the industry relatedness of multiple directorships and corporate governance effectiveness will be stronger for directors of small companies than for directors of large companies. The reasoning behind this hypothesis is that directors of large companies would typically already have a wide range of experiences from being on the corporate board of a large company, and would therefore experience less "marginal benefit" from serving on industry-related boards. Conversely, the directors of smaller companies typically would not have such extensive past experiences, and would therefore have more beneficial experience to gain from being on the board of an industry-related company. Therefore, the second hypothesis is:

H2. The negative correlation between the number of industry-related outside boards on which each director serves and the number of reported material weaknesses in internal control will be stronger for small firms than for large firms.

For smaller firms, we predict a significant negative correlation between the industry relatedness of their directors' multiple directorships and reported internal control weaknesses. In essence, we are predicting a strong beneficial experience effect that outweighs any busyness effect. For larger firms, we predict a smaller negative correlation between the industry relatedness of the boards that their directors serve on and internal control weaknesses. In effect, we are proposing that for directors of larger firms, the experience benefit gained by being on a related industry board is offset (at least partially) by a busyness effect. We are predicting that for directors of large firms, being on an additional industry-related board will only provide limited incremental beneficial experience and will not outweigh the negative effects of the time constraints and potential distractions that arise from serving on an additional board (i.e. the busyness effect).

Our third hypothesis is that the busyness effect will dominate the experience effect for firms whose directors do not gain "beneficial experience" from serving on multiple boards. In other words, we propose that corporate governance effectiveness will decrease as a firm's directors increase the number of boards they serve on, if such additional board service does not provide them enough beneficial experience to offset the negative busyness effects. We suggest that such a situation would occur when a director accepts an additional board assignment for an outside company in an unrelated industry. Even though

each new board assignment will provide new experiences for a director, we predict a reduced experience effect if the new company is in an unrelated industry. Much of the new knowledge gained will likely not be easily transferred to non-industry-related firms. Thus, we hypothesize that the negative busyness effects will more than offset the experience effects and will result in a decrease in corporate governance effectiveness. Using reported material internal control weaknesses as a proxy for the effectiveness of corporate governance, the third hypothesis is therefore:

H3. There will be a positive correlation between the number of outside non-industry-related boards on which each director serves and the number of reported material weaknesses in internal control.

3. Research design

3.1 Data and descriptive statistics

We gathered all required data from the *Audit Analytics* database. It is important to note that the database only includes data for US companies. Therefore, the results of this study are only generalizable to US firms. We accessed both the Audit Data and Corporate Governance subsets of *Audit Analytics* for the years 2004 through 2012. For each company, we collected the following annual data: the number of material weaknesses in internal control reported in a particular year (MWIC), the total number of board members (MEMBERS), firm size as measured by the natural log of sales (SIZE), the total number of outside board memberships held by the board members (BOARDS), the average number of outside board memberships held by board members in a similar industry (SAMEIND), the average number of outside board memberships held by board members in a different industry (DIFFIND), the stock exchange on which the company's stock is traded (EXCHG) and the name of the company's auditor (AUDITOR). A total of 28,977 firm-year observations were collected.

In the primary regression analysis, the dependent variable is labeled MWIC, which signifies a company's number of reported material weaknesses in internal control in a given year. Of the total of 28,977 firm-year observations, the average number of material internal control weaknesses was 0.13 per firm-year, with a range from 0 to 18. Table I provides descriptive statistics on the dependent variable, along with descriptive statistics for the control variables and for the independent variables of interest. Panel A of Table I provides descriptive statistics for the full sample of firms, while Panels B and C provide statistics for the subsets of "small" firms and "large" firms, respectively.

Panel A also reveals detailed information about the primary independent variable of interest, which we label SAMEIND. This variable is defined as the average number of outside board memberships held by a company's board of directors that are in a similar industry. We classified companies into industry groupings by using two-digit codes utilized by the North American Industry Classification System (NAICS). For a given company, we first determined the number of outside boards that each director served on during a particular year that were in that company's same two-digit NAICS code. We then computed the average number of such industry-related boards the directors sat on for each year. Therefore, SAMEIND is defined as the average number of industry-related outside board appointments for a firm's directors in a given year. If a particular company's board of directors each served only on that company's board and had no outside board appointments, then the SAMEIND variable for that observation would equal zero. The variable would also equal zero if the company's board members served on outside boards, but those board appointments were in unrelated industries. SAMEIND would exceed zero if at least one of the company's directors was also a director of a company in a related/similar industry. If, for example, SAMEIND = 1.5 for a particular firm-year observation, that would indicate that the company's directors each served on 1.5 outside boards (on average) in a related industry. Panel A of Table I shows that the mean of the primary independent variable (SAMEIND) is 0.14.

Table I Descriptive statistics for interval regression variables

Variable	*Mean*	*SD*	*Median*	*Minimum*	*Maximum*
Panel A: Descriptive statistics for full sample (N = 28,977)					
MWIC	0.13252	0.65229	0.00	0.00	18.00
MEMBERS	8.88815	2.99377	9.00	1.00	54.00
SIZE	19.86950	2.74538	20.00	3.85	31.98
BOARDS	13.03479	6.26865	12.00	1.00	62.00
SAMEIND	0.13771	0.22853	0.00	0.00	3.00
DIFFIND	0.30402	0.35476	0.20	0.00	8.50
Panel B: Descriptive statistics for "small" firms (N = 14,488)					
MWIC	0.19319	0.77557	0.00	0.00	17.00
MEMBERS	7.75752	2.64393	7.00	1.00	23.00
SIZE	17.82654	2.02212	18.31	3.85	20.00
BOARDS	9.84014	3.90452	9.00	1.00	36.00
SAMEIND	0.10854	0.20597	0.00	0.00	3.00
DIFFIND	0.16574	0.26918	0.00	0.00	8.50
Panel C: Descriptive statistics for "large" firms (N = 14,489)					
MWIC	0.07185	0.49208	0.00	0.00	18.00
MEMBERS	10.01870	2.89464	10.00	1.00	54.00
SIZE	21.91232	1.62435	21.53	20.00	31.98
BOARDS	16.22921	6.55262	15.00	1.00	62.00
SAMEIND	0.16688	0.24562	0.08	0.00	2.50
DIFFIND	0.44231	0.37549	0.38	0.00	3.17

Notes: MWIC = number of material weaknesses in internal control; MEMBERS = total number of board members; SIZE = natural log of sales (proxy for firm size); BOARDS = total number of board memberships held by board members; SAMEIND = average number of outside board memberships held by board members in an industry similar to the company of interest; DIFFIND = average number of outside board memberships held by board members in an industry different than the company of interest; "Small" firms = firms with a size less than the median size of firms in the full sample; "Large" firms = firms with a size greater than or equal to the median size of firms in the full sample

Table I also provides descriptive statistics on an alternative independent variable that we label DIFFIND. This variable is defined as the average number of outside board memberships held by a company's board of directors that are not in a similar/related industry. Panel A shows that the mean DIFFIND is 0.30, with values ranging from 0 to 8.50. Thus, the directors in the sample, on average, tended to serve on more unrelated industry boards than related industry boards.

Table I also presents descriptive statistics on the variables that we use in the regression models to control for the effects of extraneous influences such as firm size on the relationship between the industry relatedness of outside board appointments and the number of material internal control weaknesses reported. We utilize a firm's total number of board members (MEMBERS), the natural log of sales (SIZE) and the total number of board memberships held by the company's board members (BOARDS) as control variables. It is interesting to note that the sample firms had a mean board size of approximately nine members; however, board size ranged from a low of 1 to a high of 54 members. In terms of total board memberships, including outside directorships, Panel A reveals a mean of approximately 13, with values ranging from 1 to 62.

Table II presents descriptive statistics for two categorical variables that we utilize as control variables in the regression models. In the models, we control for the effects of both stock exchange differences (EXCHG) and auditor type (AUDITOR) on the relationship between the industry relatedness of outside board appointments and reported material internal control weaknesses. Both the firms' auditor and exchange listing could affect a company's effectiveness in monitoring internal controls, and we therefore use these two variables as a control for such potential effects. As might be expected, the data indicate that for the sample firms that larger companies tend to be listed on a major exchange and are typically

Table II Descriptive statistics for categorical regression variables (number of observations within each category)

Variable	*Full sample (%)*	*"Small" firms (%)*	*"Large" firms (%)*
EXCHG = 0	3,083 (10.6)	2,991 (20.6)	92 (0.6)
EXCHG = 1	25,894 (89.4)	11,497 (79.4)	14,397 (99.4)
AUDITOR = 0	7,327 (25.3)	6,689 (46.2)	638 (4.4)
AUDITOR = 1	21,650 (74.7)	7,799 (53.8)	13,851 (95.6)

Notes: EXCHG = stock exchange: equals 1 if firm is listed on NYSE, AMEX or NASDAQ, 0 otherwise; AUDITOR = auditor code: equals 1 if the firm's auditor is "Big Four" audit firm, 0 otherwise; "Small" firms = firms with a size less than the median size of firms in the full sample; "Large" firms = firms with a size greater than or equal to the median size of firms in the full sample

audited by either a "Big Four" or national auditing firm. However, as evidenced in Table II, there appears to be sufficient cross-representation of exchange listings, auditor representation and firm size for the regression results to be robust.

3.2 Regression model

To test the hypotheses relating the industry relatedness of multiple directorships to corporate governance effectiveness, we use a Tobit regression model. Tobit is an appropriate methodology in this case because the dependent variable cannot be less than zero. In other words, the dependent variable (number of reported internal control weaknesses) is truncated. In such cases, a Tobit regression model fits the data better than an ordinary least squares model or a model such as logit that assumes a binary dependent variable (McDonald and Moffitt, 1980). However, to test the robustness of our model, we also performed the analysis using both an ordinary least squares regression model and a logit model (after converting the dependent variable to a binary outcome). In both cases, there were no significant differences in our results or conclusions. Therefore, we present our results using the Tobit model.

The Tobit model used in our analysis is as follows:

$$\text{MWIC} = \beta_0 + \beta_1\,\text{MEMBERS} + \beta_2\,\text{SIZE} + \beta_3\,\text{EXCHANGE} + \beta_4\,\text{AUDITOR} + \beta_5\,\text{BOARDS} + \beta_6\,\text{SAMEIND} + \varepsilon$$

where,

- MWIC = The number of reported material internal control weaknesses;
- MEMBERS = A company's total number of board members;
- SIZE = The natural log of sales;
- EXCHG = Coded 1 if the firm is listed on the NYSE, AMEX or NASDAQ and 0 otherwise;
- AUDITOR = Coded 1 if the firm's auditor is a "Big Four" or National firm and 0 otherwise;
- BOARDS = The total number of board memberships held by the company's board members; and
- SAMEIND = The average number of outside board memberships held by board members in a similar industry.

We first estimated the regression model for the entire sample of 28,977 firm-year observations (Table III) and then separately for "large" firm and "small" firm subsamples (Tables IV and V). The small firm subsample consists of the 14,488 firm-year observations that were below the median of the SIZE variable, while the large firm subsample contains the 14,489 observations at or above the median SIZE value.

The Tobit regression model includes four control variables. Each of these variables is included in an attempt to control for factors that potentially affect a company's number of reported internal control weaknesses but that are unrelated to whether outside

Table III Regression results examining the relationship between internal control weaknesses and director membership on outside boards in similar industries

Variable	*Coefficient*	*SE*	*z-value*	P > *z*
Panel A: Results examining quantity of outside board memberships ("BOARDS")				
MEMBERS	−0.153168	0.029019	−5.28	0.000
SIZE	−0.122189	0.023909	−5.11	0.000
EXCHG	−1.093656	0.153225	−7.15	0.000
AUDITOR	−0.699225	0.125005	−5.59	0.000
BOARDS	−0.080742	0.015943	−5.06	0.000
Panel B: Results examining industry relatedness of outside board memberships ("SAMEIND")				
MEMBERS	−0.259757	0.021231	−12.23	0.000
SIZE	−0.144437	0.023636	−6.11	0.000
EXCHG	−1.048286	0.153721	−6.82	0.000
AUDITOR	−0.740589	0.124335	−5.96	0.000
SAMEIND	−1.071381	0.244991	−4.37	0.000
Panel C: Results examining industry relatedness after controlling for quantity of outside memberships				
MEMBERS	−0.180203	0.031476	−5.73	0.000
SIZE	−0.127343	0.024056	−5.29	0.000
EXCHG	−1.075251	0.153524	−7.00	0.000
AUDITOR	−0.678131	0.125346	−5.41	0.000
BOARDS	−0.060574	0.018196	−3.33	0.001
SAMEIND	−0.611360	0.280605	−2.18	0.029

Notes: MWIC = β_0 + βn (MEMBERS, SIZE, EXCHG, AUDITOR, BOARDS, SAMEIND); where: MWIC = number of material weaknesses in internal control; MEMBERS = total number of board members; SIZE = natural log of sales (proxy for firm size); EXCHG = stock exchange: equals 1 if firm is listed on NYSE, AMEX or NASDAQ, 0 otherwise; AUDITOR = auditor code: equals 1 if the firm's auditor is "Big Four", 0 otherwise; BOARDS = total number of board memberships held by board members; SAMEIND = average number of outside board memberships held by board members in an industry similar to the company of interest

Table IV Regression results examining the relationship between internal control weaknesses and director membership on outside boards in similar industries (small vs large firms)

Variable	*Coefficient*	*SE*	*z-value*	P > *z*
Panel A: Results for "small" firms				
MEMBERS	−0.280488	0.043414	−6.46	0.000
SIZE	−0.124184	0.030315	−4.10	0.000
EXCHG	−0.765062	0.157000	−4.87	0.000
AUDITOR	−0.652674	0.133426	−4.89	0.000
BOARDS	−0.035578	0.031867	−1.12	0.264
SAMEIND	−1.132969	0.388474	−2.92	0.004
Panel B: Results for "large" firms				
MEMBERS	0.041164	0.055263	0.74	0.456
SIZE	−0.137002	0.066209	−2.07	0.039
EXCHG	−3.843668	0.697664	−5.51	0.000
AUDITOR	−0.578280	0.381601	−1.52	0.130
BOARDS	−0.127298	0.027050	−4.71	0.000
SAMEIND	0.282027	0.457317	0.62	0.537

Notes: MWIC = β_0 + βn (MEMBERS, SIZE, EXCHG, AUDITOR, BOARDS, SAMEIND); where: MWIC = number of material weaknesses in internal control; MEMBERS = total number of board members; SIZE = natural log of sales (proxy for firm size); EXCHG = stock exchange: equals 1 if firm is listed on NYSE, AMEX or NASDAQ, 0 otherwise; AUDITOR = auditor code: equals 1 if the firm's auditor is "Big Four", 0 otherwise; BOARDS = total number of board memberships held by board members; SAMEIND = average number of outside board memberships held by board members in an industry similar to the company of interest; "Small" firms = firms with a size less than the median size of firms in the full sample; "Large" firms = firms with a size greater than or equal to the median size of firms in the full sample

Table V Regression results examining the relationship between internal control weaknesses and director membership on outside boards in different industries

Variable	*Coefficient*	*SE*	*z-value*	P > *z*
Panel A: Results for the full sample				
MEMBERS	−0.057579	0.048543	−1.19	0.236
SIZE	−0.139499	0.035054	−3.98	0.000
EXCHG	−0.620835	0.243776	−2.55	0.011
AUDITOR	−0.665809	0.174008	−3.83	0.000
BOARDS	−0.095469	0.028279	−3.38	0.001
DIFFIND	0.317945	0.289420	1.10	0.272
Panel B: Results for "small" firms				
MEMBERS	−0.070876	0.067847	−1.04	0.296
SIZE	−0.035232	0.052162	−0.68	0.499
EXCHG	−0.313643	0.259425	−1.21	0.227
AUDITOR	−0.693594	0.185425	−3.74	0.000
BOARDS	−0.122957	0.045611	−2.70	0.007
DIFFIND	0.809638	0.360765	2.24	0.025
Panel C: Results for "large" firms				
MEMBERS	−0.049181	0.072071	−0.68	0.495
SIZE	−0.243734	0.088532	−2.75	0.006
EXCHG	−4.860285	0.782291	−6.21	0.000
AUDITOR	−0.232444	0.478017	−0.49	0.627
BOARDS	−0.054253	0.040205	−1.35	0.177
DIFFIND	−0.324801	0.468008	−0.69	0.488

Notes: MWIC = β_0 + βn (MEMBERS, SIZE, EXCHG, AUDITOR, BOARDS, DIFFIND); where: MWIC = number of material weaknesses in internal control; MEMBERS = total number of board members; SIZE = natural log of sales (proxy for firm size); EXCHG = stock exchange: equals 1 if firm is listed on NYSE, AMEX or NASDAQ, 0 otherwise; AUDITOR = auditor code: equals 1 if the firm's auditor is "Big Four", 0 otherwise; BOARDS = total number of board memberships held by board members; DIFFIND = average number of outside board memberships held by board members in an industry different than the company of interest; "Small" firms = firms with a size less than the median size of firms in the full sample; "Large" firms = firms with a size greater than or equal to the median size of firms in the full sample

directorships are in a similar or dissimilar industry. In essence, all four control variables measure the construct of company size, as larger companies are typically well-established companies with long histories of having a system of internal controls in place and national or international auditing firms testing the efficacy of the controls. Specifically, larger companies (as measured by the natural log of sales and number of board members) are predicted to have a better system of internal controls in place and hence have lower reported material internal control weaknesses. Similarly, companies that utilize large national and international auditing firms and are traded on major stock exchanges are predicted to have lower reported material internal control weaknesses.

4. Results

Table III provides the regression results using the entire sample of 28,977 firm-year observations. The results reported in Panel A are provided as a comparison to prior research that does not hypothesize different results based on the industry relatedness of outside board memberships. Panel A reveals a significant negative correlation between the total number of board memberships held by a company's board (BOARDS) and reported internal control weaknesses (MWIC). These results are consistent with the notion that corporate governance effectiveness increases as multiple directorships increase. Hence, these overall results are consistent with the Experience Hypothesis as tested in prior research, but do not test for an industry effect.

In Panel B of Table III, we examine the relationship between the industry relatedness of outside board memberships and reported material internal control weaknesses, but without

controlling for the total number of board memberships held by a company's board (BOARDS). The results demonstrate a strong negative correlation between the average number of outside industry-related board memberships and internal control weaknesses. These results provide support for *H1*, which predicts a direct relationship between corporate governance effectiveness and the number of industry-related outside directorships. However, the Panel B results do not control for the experience effect documented in Panel A and in previous research.

Panel C of Table III reports the results of estimating the complete model, which includes a control variable for the total quantity of board memberships held by a company's board. The Panel C results demonstrate a negative correlation (significant at the 0.05 level) between the industry relatedness of outside board memberships (the SAMEIND variable) and reported internal control weaknesses. Therefore, the industry effect (SAMEIND) remains significant even after controlling for the overall experience effect (BOARDS) documented in Panel A. These results support *H1*, which predicts that corporate governance effectiveness increases as the industry relatedness of outside board memberships increases.

In all three panels, the four control variables are each negatively associated with the number of reported internal control weaknesses. This result is not surprising, as each of the control variables measures a different aspect of company size and larger companies are predicted to have less internal control weaknesses.

Taken together, the results provided in Table III strongly support the hypothesis that an increase in outside board memberships in related industries is significantly correlated with an increase in corporate governance effectiveness. This result holds even after controlling for firm size, the size of the board and the total number of directorships held by the company's directors. Therefore, the experience effect documented in prior research appears to be largely driven by an industry effect, with experience in a related industry providing an increased benefit.

Table IV provides the results of the test of *H2*. That hypothesis predicts that the relationship between the industry relatedness of outside board memberships and corporate governance effectiveness will be stronger for small firms than for large firms. In Table IV, we divide the sample at the median of the SIZE variable and estimate the regression models separately for those observations below the median value ("small" companies) and for those at or above the median value ("large" companies).

Panel A reports the results for small firms. As predicted by *H2*, we find a strong negative correlation (significant at the 0.004 level) between the industry relatedness of the outside directorships held by a company's directors (SAMEIND) and internal control weaknesses. Consistent with the results reported in Table III, each of the four control variables is negatively correlated (significant at less than the 0.001 level) with reported internal control weaknesses. Again, larger companies are demonstrated to have stronger internal control environments than smaller companies. This result is consistent across all of the empirical tests.

In Panel B, we report the results for large companies. While the SAMEIND variable has a positive coefficient for the large company sample, the relationship is not statistically significant. Thus, the results provided in Table IV support the hypothesis that serving on the board of a company in a related industry is more valuable for directors of small companies than it is for directors of large companies. These results are consistent with the idea that directors of small companies gain more "beneficial experience" than directors of large companies when sitting on the board of a company in a related industry.

In Table V, we provide the results of the tests of *H3*. *H3* states that corporate governance effectiveness will decrease as directors accept additional board assignments that are not in a related industry. In effect, this hypothesis predicts that the busyness effect will dominate the experience effect when non-industry-related board assignments are

accepted. In Table V, the independent variable of interest is labeled DIFFIND, which is defined as the average number of outside board memberships held by board members in an industry different from the company of interest. *H3* predicts a positive relationship between the number of outside board memberships in non-related industries (the DIFFIND variable) and reported internal control weaknesses.

In Panel A of Table V, we provide the regression results for the entire sample. Results indicate a positive, but insignificant relationship between DIFFIND and the number of material internal control weaknesses. *H3*, which predicts that corporate governance effectiveness will decrease as directors accept additional board assignments in unrelated industries, is therefore not supported by the data in Panel A, at least in regards to the full sample. Rather than documenting a busyness effect as predicted, the results are consistent with an offsetting of positive experience effects and negative busyness effects when additional directorships in unrelated industries are added.

Panels B and C of the table present the results for small and large companies, respectively. When examining "small" firms (those below the median of the SIZE variable), we find a positive and significant correlation between the average number of outside board memberships in unrelated industries (DIFFIND) and internal control weaknesses. The coefficient for the DIFFIND variable has a *z*-value of 2.24, which is significant at the 0.025 level. Thus, *H3*, which predicts that corporate governance effectiveness decreases as directors accept additional board assignments in unrelated industries, is supported for the sample of small firms. When directors of small companies sit on outside boards in unrelated industries, the busyness effect appears to dominate, indicating that serving on boards in unrelated industries provides "beneficial experience" insufficient to counteract the negative effects of increased "busyness". The results reported in Panels C for "large" firms (those at or above the median of the SIZE variable), however, show insignificant results for the DIFFIND variable. Therefore, neither the busyness effect nor the experience effect appears to dominate the other when large firm directors sit on additional boards in unrelated industries. The results reported in Table V are consistent with the idea that the busyness effect is more pronounced for small firm directors than for large firm directors.

5. Conclusions and implications

The empirical results support the view that corporate governance effectiveness may be enhanced by allowing (and even encouraging) directors to accept additional board positions if the new board assignment is in a similar industry where information flows may be more relevant, and therefore more beneficial to the company. It should be noted, however, that our conclusions are based on analysis that uses internal control weaknesses as a proxy for corporate governance effectiveness. However, as discussed previously, prior research has also found this relationship to be valid and has used internal control weaknesses as a proxy for corporate governance effectiveness.

We also find that the increase in governance effectiveness holds true to a greater extent for directors of small companies than for directors of large companies. We therefore document a strong "experience effect" when industry-related multiple directorships are held, and this relationship is stronger for directors of small companies than for directors of large companies. In addition, we document a significant negative impact on corporate governance effectiveness as non-industry-related board memberships are added for board members of small firms. Therefore, corporate governance effectiveness is enhanced mainly when an industry-related board membership is added.

There are two primary implications of these results. First, the results are consistent with the notion that both a busyness effect and an experience effect are present as corporate directors accept additional board assignments, and that one of the effects may dominate the other based on firm-specific characteristics. These results have implications for corporate policies that restrict the number of outside directorships.

For example, The Council of Institutional Investors (2014) has published corporate governance policies that establish goals and guidelines for the effective governance of publicly traded corporations. Among those policies, the Council states:

> Absent unusual, specified circumstances, directors with full-time jobs should not serve on more than two other boards. Currently serving CEOs should not serve as a director of more than one other company, and then only if the CEO's own company is in the top half of its peer group. No other director should serve on more than five for-profit company boards.

The above policy assumes that any additional outside board memberships by directors only decrease governance effectiveness (i.e. that only a "busyness" effect occurs). This assumption also seems to guide the Board of Director policies of many large publicly traded companies. For example, the Guidelines on Significant Corporate Governance Issues for Aflac Incorporated state that, "Directors are encouraged to limit the number of boards of other companies on which they serve, taking into account potential board attendance, participation and effectiveness on these boards" (Aflac Incorporated, 2014). Similarly, News Corp, in their Statement of Corporate Governance, states that, "Without approval from the Board, other members of the Board shall not be a member of the board of directors of more than five (5) other public companies" (News Corp, 2014). Similar policies can be found in the Board of Director guidelines for numerous other public companies. These restrictions on outside board memberships assume that only a "busyness" effect is present. The current paper demonstrates, however, that both a busyness effect and an experience effect can simultaneously be present, and that the experience effect can dominate based on certain characteristics of the outside board memberships.

A second implication of the current paper is that the results demonstrate (in a US context) that corporate governance may be enhanced by allowing (and even encouraging) board members to sit on the boards of other industry-related companies. This increased governance result especially holds true for smaller companies. The results documented here should be of interest to management, board members, investors, as well as other stakeholders that are concerned about whether board members should accept additional board memberships, and under what circumstances outside directorships are beneficial or detrimental.

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Further reading

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