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Board Reputation and Financial Reporting Quality

Dan SEGAL
Singapore Management University, dsegal@smu.edu.sg

Citation

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Amir Rubin and Dan Segal*

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Abstract

This study uses a new measure of board reputation that is based on the market value of other companies on which board members serve, and examines whether board reputation has a causal effect on monitoring as reflected in financial statement reporting quality. A negative causal effect is expected if reputable directors are ineffective monitors because they are too busy or they choose to cater to management, whereas a positive causal effect is expected if reputable directors are more experienced and subject to significant reputation penalties in the case of a financial reporting failure. An alternative explanation is that reputation does not affect financial reporting quality, but rather is a characteristic of the market for directorship, where the equilibrium relation between reputation and financial reporting quality is determined by the demand for and supply of reputable directors. Our results suggest that financial reporting quality is not an important determinant of the market for directorship. Rather, we document that reputation has a positive causal effect on monitoring and results in higher quality financial reporting.

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* Rubin is from Simon Fraser University and IDC (arubin@sfu.ca). Segal is from IDC (dsegal@idc.ac.il).

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1. Introduction

On March 12, 2009, the *Wall Street Journal* reported the appointment of Jerry Grundhofer, former chief executive of U.S. Bancorp, as an independent director at Citigroup.[1] The *Journal* stated that this change followed months of pressure from federal officials and was part of a deal that would include an increase in the government's stake in the bank. Importantly, Mr. Grundhofer was not expected to resign from his directorship at Ecolab, a Minnesota-based public company with a market capital of $11 billion; rather, Mr. Grundhofer would serve as a director on both boards. Mr. Grundhofer's appointment reflects the increasingly popular notion amongst investors and regulators that the appointment of "Superstar" independent directors can benefit companies because of their experience as internal decision makers.

Despite the logical appeal of the argument that board-sitting experience may be of value to companies, the academic literature has questioned whether such experience can provide value to firms and shareholders. The controversy centers not on whether multi-board sitting is beneficial, but rather on whether it harms firm performance. For instance, while Ferris et al. (2003) argue that sitting on multiple boards is not associated with reduced monitoring, Fitch and Shivdasani (2006) and Fahlenbrach et al. (2010a) provide evidence that multi-board sitting is associated with weaker corporate governance.

The lack of evidence on the benefits of multi-board sitting seems to be at odds with how efficient directorship markets should work, as one would think that prior experience serving on boards should matter. To shed light on this puzzle, in this study we examine the relation between the reputation of board members (and by extension, of the board as a whole) and monitoring quality, as proxied by earnings quality, incidence of restatements, and internal control effectiveness.[2] We measure director reputation as the sum of the market value of the other companies on which the director serves as an independent director, and board reputation as the mean of the outside directors' reputation.

We develop and test three hypotheses on the relation between board reputation and financial reporting quality. The *skilled director hypothesis* posits that reputable directors have a positive impact on monitoring. This hypothesis builds on Fama (1980) and Fama and Jensen

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[1] Citigroup to nominate new board members as part of revamp, *Wall Street Journal*, March 12, 2009.
[2] Existing empirical evidence on the impact of outside directors on firm performance is mixed. Rosenstein and Wyatt (1990), Core et al. (1999), and Nguyen and Nielsen (2009) find a positive effect of outside directors on firm performance measures. In contrast, Hermalin and Weisbach (1991), Agrawal and Knoeber (1996), Klein (1998), and Bhagat and Black (1997, 2002) find no evidence that outside directors affect firm value.

(1983), who argue that reputable directors have more experience as officers of the firm and hence have a stronger incentive to maintain their standing as expert businesspersons by monitoring diligently. In addition, compared to other directors, reputable directors have more to lose in terms of reputation capital and thus are expected to exert more monitoring effort or establish better monitoring processes to reduce the probability of financial reporting failure, the consequences of which include loss of directors' board seats (Srivivasan 2005, Helland 2006, and Fich and Shivdasani 2007) and litigation.

In contrast to the skilled director hypothesis, the *ineffective director hypothesis* posits that reputation has a negative causal effect on earnings quality because reputable directors are less vigilant or too busy to monitor effectively. For instance, CEOs may have a preference for directors who are less vigilant monitors and more likely to allow the CEO to obtain excessive compensation (Core et al. 1999), consume perquisites, and engage in other activities that run counter to maximizing shareholder value (Hermalin and Weisbach 1998). According to this view, directors who sit on several boards (and achieve high reputation) are those directors who are weak and less vigilant monitors. Further, serving on additional boards makes the director more occupied rendering her ineffective monitor (Fich and Shivdansi 2006)..

The two hypotheses above suggest a causal relation between reputation and monitoring, whereby reputation affects monitoring either positively or negatively. However, a key issue in any empirical work on the effect of a board characteristic on firm governance quality or value is whether the board characteristic itself is an outcome of the equilibrium in the market for directors (Hermalin and Weisbach 1998). This alternative explanation can be formalized as *the market for directorship hypothesis*, which posits that the relation between reputation and earnings quality is shaped by the demand for and supply of reputable directors. On the one hand, reputable directors are a unique subgroup of directors whose marginal benefit from serving on an additional board is less than that of other directors,[3] while their marginal cost is higher because they have more to lose in terms of reputation capital in the case of financial reporting failure. This implies that, compared to other potential directors, reputable directors are likely to be more selective when deciding on which boards to sit and therefore likely to serve on boards of firms

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[3] The benefit from sitting on the board includes enhanced business connections, reputation, and compensation (Lorsch and MacIver 1989; Fama and Jensen 1983; Yermack 2004; Perry 2000; Linn and Park 2005).

with high financial reporting quality.[4] On the other hand, the demand for reputable directors is likely to be higher for firms that operate in volatile business environments and as a result have low earnings quality. Because of the nature of their operations, these firms require the business experience of a reputable CEO (Francis et al. 2008) and thus may also require the skills of reputable directors who can provide valuable advice to management. In such instances the value of a director is not in her monitoring skills but rather in her business experience and connections. Hence, if a director's experience is a major demand consideration in the market for directorship, the relation between reputation and earnings quality is likely to be negative.

We distinguish between the market for directorship, skilled director, and ineffective director hypotheses using changes and levels analyses. We first analyze the relation between the reputation of newly appointed directors and earnings quality in the previous year. The results suggest that earnings quality is not a factor in the appointment of a reputable director to the company. Rather, reputable directors are appointed to large companies with lower operating risk and to companies where the board of directors already comprises high reputation directors. The lack of a significant association between the reputation of newly appointed directors and earnings quality suggests that reputable directors are not chosen by CEOs of firms with poor reporting quality, nor is reporting quality an important factor in a director's decision to sit on a board. However, the finding that the reputation of new directors is positively (negatively) associated with size (operating risk) suggests that earnings quality may affect the decision of reputable directors, albeit indirectly because innate earnings quality is positively (negatively) related to size (operating risk).

We next examine the relation between changes in board reputation and monitoring quality in subsequent periods. We find that a positive change in board reputation leads to improved financial reporting quality and monitoring effectiveness. In particular, firms exhibit higher earnings quality, a lower likelihood of restatement, and more effective internal controls following a positive change in board reputation. We find similar results when we focus on the reputation of newly appointed directors, ignoring the reputation of directors who left the

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[4] Fahlenbrach et al. (2010a) show that CEOs are more likely to join boards of large established firms. Prior evidence also shows that directors try to avoid firms in distress: Yermack (2004) finds that directors resign following poor performance, and Gupta and Fields (2009), Asthana and Balsam (2009), and Bar Hava and Segal (2010) find that directors resign when they expect future poor performance. Taken together these studies show that directors prefer to sit on the boards of certain firms, but it is not clear whether reporting quality is an important characteristic in their decision.

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company (as the resignation of directors is not expected to reduce the effectiveness of monitoring and reporting procedures already in place). These findings suggest that changes in reputation that are attributed primarily to the reputation of new directors are positively associated with changes in financial reporting quality in subsequent periods. We further corroborate these results using the change in listing requirements in 2002, which required firms to have a majority of independent directors by fiscal 2004. The change affected primarily firms that did not have a majority of independent directors in 2002, and therefore, these firms typically increased substantially the number of independent directors resulting in greater proportion of outside directors as well as increase in mean board reputation. Using difference-in-difference approach, we find that while the change in the number of outside directors is not associated with change in earnings quality, the change in mean board reputation is positively associated with change earnings quality. These results suggest that the degree of board independence by itself is not an important factor of the quality of monitoring. Rather, director reputation is critical in determining the effectiveness of the board of directors vis a vie financial reporting quality.

To complement the changes analyses above, we examine the association between the levels of board reputation and earnings quality. While endogeneity between reputation and earnings quality may exist, our proxy for board reputation does not appear to be subject to bi-directional causality or endogeneity concerns. This is because board reputation is based on the market value of *other* firms in which the board members serve and hence there should not be a direct causal effect of firm characteristics on reputation. Nevertheless, to alleviate endogeneity concerns we also estimate the relation between earnings quality and reputation using three- stage least squares (3SLS). Both methodologies indicate that earnings quality is increasing in the level of board reputation, and the 3SLS regression indicates that reputation is not affected by earnings quality.

Taken together, the results are consistent with the skilled director hypothesis: a positive change in reputation is associated with a positive change in earnings quality in subsequent periods, and the level of earnings quality is positively related to the level of reputation.

This study makes two important contributions to the literature. First, it adds to the literature on the monitoring role of outside directors. Wiesbach (1988) finds that outside directors are proactive in replacing non-performing CEOs. Numerous studies in the U.S., U.K., and Australia also find that outside directors are associated with reduced earnings manipulation, fraud, or earnings management (for example, Dechow et al. 1996; Beasley 1996; Xie et al. 2003; Peasnell

et al. 2005; Mather and Ramsay 2006). However, within the group of outside board members, the literature is silent on the relation between characteristics of outside directors and monitoring performance. This study recognizes that 1) not all outside directors are the same (as some may have multiple appointments), and 2) within the group of multi-directors, some directors may have a higher reputation than others (as serving on the boards of several small companies may not carry the same reputation as serving on the boards of two large companies). Our analysis reveals that multi-directors have a positive causal effect on reporting quality.

Second, the paper adds to the literature on the relation between reputation and earnings quality. Francis et al. (2010) document a negative association between CEO reputation and earnings quality because firms that operate in a more volatile operating environment require more talented CEOs. Cao et al. (2011) find a positive association between firm reputation and earnings quality, as reputable firms are less likely to misstate their financial statements and have higher earnings quality. Our study complements this line of research by investigating the impact of directors' reputation on earnings quality.

The remainder of the study proceeds as follows. Section 2 develops the hypotheses and discusses our proxy for director reputation. Section 3 describes the data and reports univariate results. Section 4 presents the main empirical results – the analysis of changes in board composition, and the levels analysis where reporting quality and reputation are jointly determined. Section 5 concludes.

2. Hypotheses and Proxy for Reputation

2.1 Hypotheses

2.1.1. The Skilled Director Hypothesis

Fama (1980) and Fama and Jensen (1983) argue that the market for outside directorships serves as an important source of incentives for outside directors to develop their reputation as monitoring specialists. According to this view, outside directors' decision- making and monitoring quality can be assessed based on their accumulated reputation capital, which is reflected in the number and size of firms in which they serve as directors. A director's reputation capital thus indicates her monitoring skills and work experience as a director and officer of the firm. These monitoring skills and work experience give the director the tools needed to monitor management effectively and in turn ensure high earnings quality.

Reputable directors not only have the experience and knowledge needed to monitor effectively, but also have strong incentives to ensure high quality monitoring because reputation capital and the likelihood of additional board appointments are affected by reporting quality, especially in cases of financial reporting failure. Srivivasan (2005) documents a high rate of director turnover in firms that restate earnings downwards. Similarly, Helland (2006) finds that directors of restating firms lose other directorship positions, and Fich and Shivdasani (2007) show that following a financial fraud lawsuit outside directors experience a decline in other board seats. The evidence therefore implies that reputable directors have an incentive to exert more effort and be more vigilant monitors compared to non-reputable directors because they have more to lose in terms of reputation capital.[5]

Overall, the skilled director hypothesis posits a positive correlation between reputation and earnings quality because reputable directors have both the ability and the incentives to monitor management effectively.

2.1.2. The Ineffective Director Hypothesis

In contrast to the skilled director hypothesis, the ineffective director hypothesis posits that director reputation is negatively associated with reporting quality. This negative association is attributed to two factors that may affect the quality of monitoring by reputable directors. First, directors who hold several directorship positions, i.e. reputable directors, may be more attractive to CEOs to the extent that they are more likely to allow the CEO to obtain excessive compensation (see Bebchuk and Fried 2006 for a comprehensive discussion on the subject of directors and CEO compensation), to ignore poor CEO performance, and to allow the CEO to consume perquisites and engage in other activities that run counter to maximizing shareholder value (Hermalin and Weisbach 1998). Thus, according to this view, directors can gain additional board seats, and in turn reputation capital, by not being effective monitors. Second, serving on

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[5] Prior literature also provides evidence that director reputation is affected by firm performance. Gilson (1990) finds that the turnover of outside directors in firms that experience financial distress is much higher than the average director turnover. Kaplan and Reishus (1990) show that if a firm reduces its dividend then the likelihood of its executives gaining an additional outside directorship falls. And Ferris et al. (2003) and Yermack (2004) find that company performance affects the number of boards seats held by its outside directors in subsequent years. The literature further suggests that directors are aware of reputation penalties and take actions to avoid such penalties. Asthana and Balsam (2009) document that outside directors are likely to resign when they expect the company to have financial difficulties. Similarly, Bar Hava and Segal (2010) and Fahlenbrach et al. (2010b) find that resignations of outside directors are associated with poor financial and operating performance both before and after the resignation.

multiple boards can make directors too busy to be effective monitors. Consistent with the busy argument, Beasley (1996) finds that the probability of being involved in accounting fraud is increasing in the average number of directorships held by outside directors. Fich and Shivdansi (2006) further show that busy boards, defined as boards where more than 50% of the directors are considered busy, are associated with weak corporate governance.

Taken together, the above arguments suggest that if reputable directors are busy or weak monitors, high reputation is associated with ineffective monitoring and hence lower earnings quality.

2.1.3. The Market for Directorship Hypothesis

The two hypotheses above posit that the relation between reputation and financial reporting quality is directional, that is, reputation affects reporting quality. However, any relation that exists between reputation and financial reporting may be a result of the equilibrium in the market for directorship, with the relation between reputation and earnings quality shaped by the determinants of the demand for and supply of reputable directors.

On the supply side, the significant negative consequences of financial reporting failure on reputation imply that directors in general have an incentive to serve on the boards of those firms with an ex-ante low risk of financial reporting failure. However, given their high reputation capital, reputable directors are more likely to choose to serve on boards of firms with high quality financial reporting because the marginal benefit (cost) of serving on another board is lower (higher) for them compared to that for non-reputable directors. The relation between reputation and earnings quality is therefore expected to be positive.

Turning to the demand side, the demand for reputable directors is potentially higher for firms with low *innate* earnings quality. Francis et al. (2005) shows that earnings quality consists of two components , innate and discretionary, with the innate component determined largely by the firm's operating environment and the discretionary component determined by management's financial reporting choices. Firms that operate in volatile markets are expected to have low earnings quality because reported financial information is less useful for predicting future cash flows. Because of the nature of these firms' operations, they are likely to require the business experience and skills of a reputable CEO (Francis et al. 2008). As a result, these firms may also require reputable directors who can provide valuable advice to management. In such instances

the value of reputable director rests not in her monitoring skills but rather in her business experience and connections. Hence, the relation between reputation and earnings quality is expected to be negative.

2.1.4. The Three Hypotheses: Summary
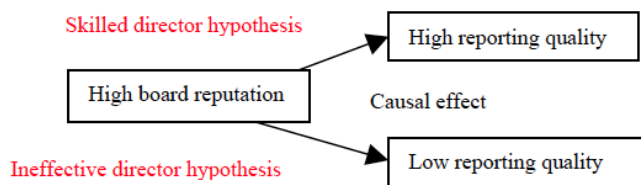
The three hypotheses, and their relationship to the market of outside directors, are depicted in the following two diagrams:

Equilibrium Diagram of Market for Directorship Hypothesis

High board reputation

Demand for high reputation directors   Supply for high reputation directors

High reporting quality   Low reporting quality
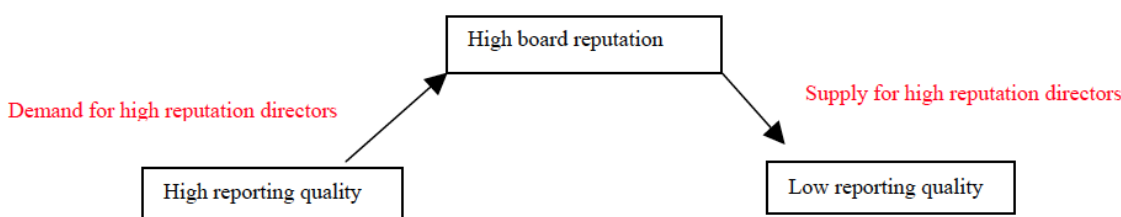
Off - Equilibrium Diagram – Board Reputation Casual Effect

Skilled director hypothesis   High reporting quality

High board reputation   Causal effect

Ineffective director hypothesis   Low reporting quality

The top diagram represents a possible equilibrium in the market for directorship. Under this scenario, a positive correlation may exist if the supply effect dominates (reputable directors choose firms with high reporting quality), whereas a negative correlation is expected if the demand effect dominates in the market for directorship (low earnings quality firms demand reputable directors that can help management navigate a firm's challenging operating environment).

The bottom diagram shows the off-equilibrium outcomes, where board reputation has a causal effect on reporting quality. The skilled director hypothesis predicts improved reporting quality because reputable directors have greater knowledge and experience than non-reputable directors. The ineffective director hypothesis predicts the opposite. The challenge of the paper's empirical design is to differentiate between the three hypotheses.

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2.2 Reputation and Empirical Proxies

Reputation refers to the position one occupies or the standing one has in others' opinion with respect to achievement, integrity, and the like. Though it is well understood what is meant by reputation, measuring the reputation of an individual is a non-trivial exercise. Milbourn (2003) presents evidence that highlights the problem with using any one empirical proxy. He suggests several proxies for measuring a CEO's reputation (tenure, whether the CEO is appointed from outside the firm, number of business-related articles in which the CEO's name appears) and finds that the correlation between the different proxies is very low, making it hard to interpret the economic meaning behind the empirical findings associated with a particular proxy.[6]

At first glance, it may seem that if measuring the reputation of a CEO is challenging, it should be even more difficult to measure the reputation of outside directors, who are not frequently quoted in the press. The most popular measure of director reputation is the number of directorships held by the director (e.g., Gilson 1990; Ferris et al. 2003; Yermack 2004). We argue that the reputation of multi-board directors can be captured by the sum of the market values of the *other* firms on which they serve as independent directors (i.e., firms other than the specific firm for which the director's reputation is measured). This measure is likely to be a better proxy for reputation for two reasons. First, it allows for variation in reputation across directors who hold the same number of directorship positions. Second, it recognizes that serving on the boards of large firms may result in different reputation capital than serving on the boards of small firms and therefore allows for different incentives vis-a-vis monitoring quality.[7]

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[6] Measuring CEO reputation by cumulating the number of articles has become common practice in many studies (e.g., Rajgopal et al. 2006; Francis et al. 2008).

[7] Note that arguabley the best reputation variable for a CEO would be the market value of the firm she runs. However, because size is typically a control variable, it is usually not possible to use size as a reputation variable. This problem is circumvented here because reputation of the directors is based on *other* firms.

3. Data and Univariate Analyses

3.1 Data

We obtain director data from RiskMetrics, a provider of corporate governance data. The data include a range of variables related to individual board directors such as gender, employment, age, and tenure, and cover primarily S&P 1500 companies and pertain to the 1996 through 2009 period.

The initial dataset comprises 206,939 director-years. We measure director reputation as the sum of the beginning-of-year market value of all *other* public companies in RiskMetric's database where the director serves as an independent director. If the director does not appear on the board of any other company in the database, we assign a value of zero to the reputation variable.[8] The reputation measure therefore excludes the market value of the firm of interest to avoid a spurious correlation between board reputation and size. To be able to compute director reputation, we require non-missing Director ID identifier and beginning-of-year market value of equity. These restrictions reduce the sample to 133,931 director-years. [merge]We also exclude firm-years with missing reputation data for more than 50% of the directors, and small companies with market value of equity of less than $50 million, resulting in sample of 132,815 (13,957) director-years (firm-years) for the 1996 through 2009 period.

3.2 Director Reputation and Director Characteristics

Table 1 provides descriptive statistics on the relation between reputation and director characteristics. We partition the sample of independent directors into those that have a reputation value that is larger than zero (i.e., serve on at least one other public company's board), and those that have a reputation value of zero (i.e., serve only on the respective company's board). Reputable directors serve on an average of 2.45 boards and are a bit older than non-reputable boards (average age of 61.7 compared to 60.9 for non-reputable directors). Interestingly, the proportion of females among reputable directors (14.1%) is significantly higher than that among non-reputable directors (11.9%). This indicates that boards consist largely of men, and that women have a higher likelihood of serving on a board if they serve on other boards. Reputable directors are less likely to serve on the audit committee, potentially because audit committees

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[8] Our reputation measure does not consider reputation related to companies not included in the S&P 1500, private companies, trusts, public sector organizations, etc.

require greater time and effort, and membership in audit committee imposes greater reputation risk on directors (Srinivasan 2005).[9] However, reputable directors tend to serve on and chair the compensation committee, consistent with Bebchuk and Fried (2003) and Core et al. (1999), who claim that managers prefer to appoint multiple-board directors to the compensation committee. The rationale for such appointments is that these directors are associated with interlocked boards (which tend to provide personal favors to the CEO) or are simply too busy to effectively monitor the high pay of the CEO. The latter explanation is also consistent with the ineffective director hypothesis.

We further find that a quarter of the independent reputable directors are CEOs and/or serve as chairman of the board of other public companies. This result indicates that high reputation is closely related to managerial experience, as CEOs and board chairmen are highly experienced individuals. Reputable directors can therefore use their experience in other firms to help improve internal controls and monitoring mechanisms within the firm, as well as consult and provide the firm business relationships. Finally, we find that a larger proportion of reputable directors tend to miss board meetings, consistent with reputable directors being busy and having less time to devote to the firm.

Overall, Table 1 provides evidence that reputable directors are more experienced business managers but are busier.

3.3 Board Reputation and Firm Characteristics

Using the individual director reputation data, we compute board-year reputation as the log of one plus mean director reputation. We also use IRRC data to compute other board characteristics. We obtain financial data from Compustat and CRSP, and restatement and internal control effectiveness data from Audit Analytics. Since the restatement data in Audit Analytics starts in 2000, we restrict the data to the 2000 to 2009 period, which reduces the sample to 10,824 firm-years. In addition, we exclude financial services firms and other regulated companies (930 observations), observations with missing accruals quality measures (2,791 observations), and observations with a missing value for any of the other control variables used in the analysis (1,293 observations), bringing the sample size to 5,814 firm-years for 955 firms.

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[9] While reputable directors are less likely than non-reputable directors to serve on the audit committee, a significant proportion of reputable directors does serve on the committee (>53%). Note also that reputable directors are as likely to serve as Chairman of the audit committee.

Table 2, Panel A provides descriptive statistics for financial reporting quality as well as firm and board characteristics. We use four proxies for financial reporting quality: accruals quality (AQ), performance-matched absolute discretionary accruals (DA), a restatement indicator variable that takes the value of one if the firm-year was restated and zero otherwise, and an effective internal controls indicator variable that takes the value of one if the firm had effective internal controls and zero otherwise. We estimate AQ based on the Dechow and Dichev (2002) model as modified by McNichols (2002) and Francis et al. (2005). We estimate the absolute value of performance-matched discretionary accruals based on the Jones (1991) model as modified by Dechow et al. (1995), with the performance matching based on Kothari et al. (2005). Appendix A describes the estimation procedures for AQ and DA. Importantly, AQ and DA are negatively correlated with earnings quality – higher values indicate lower earnings quality. Appendix B describes how we compute the other variables that are used in this study.

As can be seen in Panel A, mean (median) board reputation is $7.82 billion ($1.29 billion), which is comparable to the mean market value of equity. With respect to the financial reporting quality proxies, about 10% of the firm-year observations were restated, while effective internal controls exist in most firm-year observations (94%). Mean AQ (DA) is 0.036 (0.039), which is broadly consistent with the findings in the literature.

The results on the firm characteristic variables indicate that the sample firms are skewed in terms of size: mean (median) equity value is $8.32 billion ($1.7 billion). Mean market-to-book is 3.03, and mean equity return volatility is 2.8%. Although 69% of the observations are associated with negative earnings realizations over the past five years, mean return on assets is 4.5%, and 52% of the observations are associated with firms that pay dividends. Book leverage is on average 20%.

The median number of board members is nine, of which an average of 72% are independent directors. The average proportion of busy directors (i.e., directors who serve on two or more boards)[10] is 30%, and 18.8% of the firm-year observations are classified as having busy boards (i.e., the majority of directors on the board are busy). In our sample, 58% of firm-year observations have a CEO who also chairs the board. Directors' mean tenure is 8.7 years, the

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[10] Fitch and Shivdasani (2006) define directors as busy if they serve on three or more boards. However, Linck et al. (2009), among others, provide empirical evidence that the Sarbanes-Oxley Act of 2002 has caused a shift in the demand and supply of directors and that there are far fewer multiple directorships in recent years. In our sample we find that only a few directors have three or more directorships and hence we use the two directorships threshold.

mean director's age is 61.2, and the mean equity ownership of directors is 1.3%. Finally, on average almost one director per board is also a CEO in another firm.

Table 2, Panel B shows the mean firm and board characteristics separately for firm-years with zero board reputation and for firm-years with positive board reputation.[11] The results indicate that the two groups are associated with different firm and board characteristics. Specifically, firms with reputable boards have higher financial reporting quality – lower accruals quality, lower discretionary accruals, lower incidence of restatements, and higher effective internal controls, although the difference in the latter is not statistically significant. These firms are also larger in terms of market value of equity, have a higher market-to-book ratio, are more profitable, are less risky (have lower return volatility), and are more likely to pay dividends. Turning to the board characteristics, the results indicate that firms with reputable boards have larger boards and a greater proportion of independent directors, which is consistent with better governance. However, 25% of the reputable board firm-years are characterized as having a busy board, and CEOs are more like to be board chairman in thse firms than in firms with zero board reputation.

Overall, the results in Table 2, Panel B indicate that there is a positive association between reputation and monitoring, consistent with both the market for directorship hypothesis, which posits that reputable directors choose firms with better reporting quality, and the skilled director hypothesis, which posits that high reporting quality is attributed in part to reputable directors.

4. Empirical Results

To overcome the empirical difficulty of disentagling causality from market equilibrium, a recent line of corporate finance research analyzes causality by employing an event study methodology (see Yermack (2006) for a survey). Using this methodology, Fich and Shivdansani (2006) find that shareholders react more positively to the resignation of a director who serves on multiple boards compared to a director who does not, which suggests that reputable directors are perceived to be ineffective monitors. However, while the event study methodology mitigates endogeneity concerns, an underlying assumption of this methodology is that the market rationally anticipates the effect of a reputable director on firm performance. In addition, one

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[11] We obtain similar results when we partition the sample into high (above-median) and low (below -median) reputation firms.

cannot use this methodology to gauge the impact of reputable directors on monitoring since monitoring quality is typically measured over a long period of time. In this study we analyze our hypotheses following a different approach. Because a director must be appointed before he can affect reporting quality, we first analyze the equilibrium phenomenon, that is, we analyze the characteristics associated with the appointment of new reputable directors. Aside from allowing us to test the market for directorship hypothesis, this step allows us to gauge the research design methodology for testing the skilled vs. ineffective director hypotheses. Finding that a reputable director's decision to join a company depends on financial reporting quality would require controlling for endogeneity when testing the impact of reputation on monitoring.

4.1 Appointment of Reputable Directors and Firm Characteristics

In this section we examine which firm characteristics are important in the appointment decision, and in particular, whether the firm's financial reporting quality is a determinant of the market for directorship.

We begin by examining the relation between the reputation of new directors and firm characteristics. New Reputation is measured as the mean reputation of the directors who joined the company during the year. We ignore the effect of director resignations on board reputation because resignations are typically due to personal reasons (e.g., Bar Hava and Segal 2011). We examine the relation between New Reputation and firm characteristics in the year prior to joining the board to eliminate any impact that new directors may have on the firm in their first year.

Table 3, Panel A compares firm characteristics in the year prior to the appointment of reputable directors and non-reputable directors. The results indicate that new reputable directors are more likely to join firms with better reporting quality, as can be seen from the lower accruals quality and lower discretionary accruals (the difference in discretionary accruals is significant at 10.7%). New reputable directors are also associated with firms with higher market value of equity, lower stock return volatility, higher incidence of dividend payments, lower incidence of losses, and higher return on assets. Further, they tend to be appointed to firms with a larger board, larger proportion of independent directors, and larger proportion of CEOs among the independent directors, as well as to firms that already have high board reputation. Thus, consistent with the supply argument of the market for directorship hypothesis, the univariate

statistics indicate that new reputable directors choose to join firms with high earnings quality and low operating risk.

Panel B of Table 3 presents the multivariate regression results. The dependent variable is New Reputation (measured as the log of one plus the mean reputation of directors that joined during the year) and the independent variables are firm and board characteristics measured as of the year prior to the appointment. Given the non-negative distribution of the dependent variable, we estimate the regressions using the Tobit regression methodology.

Column 1 presents the regression results using accruals quality as the proxy for earnings quality. The coefficient on accruals quality is not significant, suggesting that reporting quality is not a determinant of reputable directors' decision to serve on a board. However, the results also indicate that reputable directors are attracted to large and less volatile firms that already have a high reputation board, suggesting that reputable directors choose companies with lower operating risk that are likely to maintain or enhance the directors' own reputation and business connections. Thus, although the coefficient on accruals quality is not significant, the coefficients on size and return volatility suggest that financial reporting risk does affect the decision of reputable directors, albeit indirectly.

To further explore this possibility, we separate accruals quality into its innate and discretionary components. Following the extant literature we regress accruals quality on factors previously shown to be related to innate earnings quality: firm size, measured as market value of equity; investment opportunity set and growth prospects, both of which are captured by the market-to-book ratio; cash flow (sales) variability, measured as the standard deviation of operating cash flows (total sales) scaled by total assets over the past five years; operating cycle, measured as the sum of inventory and accounts receivable days; and the incidence of losses (negative income before extraordinary items) over the past five years. The predicted value (residual) of the regression is the innate (discretionary) component of accruals quality. Column 2 presents the results. We find that the results are virtually identical to those in Column 1. Specifically, the coefficients on size, volatility, and existing board reputation have the same sign and remain significant, while all other coefficients (including the innate and discretionary components of accruals quality) are not significant. These results provide additional support to the view that reporting quality is not a determinant of reputable directors' decision to join a company. Columns 3 and 4 replicate the regressions in Columns 1 and 2, respectively, using

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discretionary accruals as the proxy for financial reporting quality. The results are very similar and again indicate that reporting quality is not directly related to the level of new reputation.[12]

Overall, the results in Table 3 suggest that there is no direct relation between new reputation and earnings quality. However, since earnings quality is negatively (positively) related to size (operating risk), the positive (negative) association between new reputation and size (return volatility) indicates that we cannot rule out the possibility that reputable directors choose to serve on the boards of firms with ex-ante lower financial reporting risk.

4.2 Causal Effect of New Appointments on Monitoring

There are two competing hypothesis concerning the causal effect of reputation on monitoring. The skilled director hypothesis posits that reputation indicates better monitoring ability, which implies that the appointment of reputable directors should enhance monitoring quality. In contrast, the ineffective director hypothesis suggests that reputable directors are not effective monitors because they have less time to monitor effectively or they choose to cater to management, which implies that earnings quality should decrease following the appointment of reputable directors. We investigate the impact of change in board reputation on monitoring using two research designs. In the first, we compute the change in monitoring proxies following change in board reputation that is attributed to new directors or departure of existing directors. In the second research design, we examine the effect of the new rules by major stock exchanges in 2002 requiring all listed firms to have a majority of independent directors among board members by fiscal year 2004. The new rule had particular impact on companies where the proportion of outside directors in 2002 was less than 50%. To comply with the new rules, these companies typically added new independent directors to the board. Hence, the change in regulation provides a setting to examine the impact of change board independence and board reputation on monitoring, where the change in board composition is exogenous to the firm as it is attributed to new regulation.

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[12] Since new reputation may be non-linearly related to firm and board characteristics, we estimate the regression using the Probit methodology where the dependent variable is an indicator variable coded as one if the director has a positive reputation and zero otherwise. The results are virtually identical to those reported.

4.2.1 Impact of New Appointments on Monitoring

To examine the impact of changes in board reputation on monitoring, we first identify the firm-years in which there was a change in board composition. We then measure the overall change in board reputation that is attributed to the reputation of the directors who joined or left the firm. In particular, we measure the change in board reputation as the sum of the reputation of the new directors minus the sum of reputation of the directors who left the firm.[13] We next classify the sample of firm-years that experienced a change in board reputation into three groups: negative change in reputation (i.e., the reputation of the directors who left is greater than the reputation of the directors who joined the firm), zero change in reputation (typically applies to firms that have zero board reputation, i.e., none of the directors of the company serves on another public firm's board), and positive change in reputation.

Table 4, Panel A compares firm and board characteristics in the year prior to the change in reputation across the three categories of change in reputation. Comparing firm and board characteristics across the positive and negative change-in-reputation groups, we find that firms with a positive change in reputation have higher accruals quality, suggesting weaker earnings quality, but the differences in discretionary accruals, restatements, and internal control effectiveness are not significant. In addition, firms with a positive change in reputation are less likely to pay dividends and appear to have worse corporate governance given they have a smaller board size, a lower independent director ratio, and fewer CEO-directors. These firms also have lower board reputation.

A distinguishing characteristic between the zero change-in-reputation group and the non-zero (negative and positive) change-in-reputation groups is that the level of the latter groups' reputation is higher. This is because the zero change-in-reputation group largely includes cases in which the new and/or departing directors have zero reputation (i.e., serve only on the respective firm's board). Untabulated results indicate that the positive and negative groups have higher earnings quality (lower accruals quality and lower discretionary accruals), higher board reputation, and busier boards. These results support the skilled director hypothesis and are

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[13] In other words, we do not consider changes in board reputation due to changes in existing directors' reputation. Recall that director reputation is measured as the sum of the market value of all other public companies where she serves as director. As a result, director reputation changes constantly. We therefore focus on changes in board reputation that are driven by changes in board composition.

inconsistent with the ineffective director hypothesis. Specifically, while firms with a positive or negative change in reputation have busier boards, they also have higher earnings quality.

Panel B of Table 4 provides direct evidence on the effect of a change in reputation on monitoring by comparing the proxies for financial reporting quality in the periods before and after the change in reputation.[14] Since the proxies show improvement over time we de-mean and de-trend them to avoid spurious correlation between the proxies and change in reputation.[15] The results indicate that the companies that experience a positive change in reputation exhibit higher earnings quality, as evident by lower accruals quality and discretionary accruals, fewer restatements, and more effective internal controls, after the change. These results provide direct support for the skilled director hypothesis: a positive change in board reputation leads to improved monitoring, consistent with the conjecture that experienced directors are more effective monitors.

Table 4 also shows that companies with zero change in reputation experience an increase in accruals quality, implying that they exhibit lower earnings quality in the subsequent period. However, there is no change in discretionary accruals, incidence of restatements, and internal effective controls. Interestingly, companies with a negative change in reputation show improvement in earnings quality – accruals quality and discretionary accruals are lower in the years after the change in reputation – but there is no change in the number of restatements or in the effectiveness of internal controls. While this result may appear to contradict the skilled director hypothesis, the hypothesis implies that an increase in reputation should lead to better monitoring but not the opposite. That is, there is no reason to assume that the decrease in reputation should lead to deterioration in monitoring for two reasons: first, while these firms experienced a negative change in reputation, they still have high reputation capital (see Table 4, Panel A). Second, monitoring is facilitated by internal controls and procedures that, once in place, are less dependent (at least in the short term) on the composition of the board.

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[14] Some firms experience a change in reputation in more than one year during the sample period. To mitigate the impact of confounding effects we include in the analysis the first change in reputation only. For example, suppose we have data for a certain firm from 2000 through 2009, and the firm experiences a change in board reputation in 2003 and in 2004. For the purpose of our analysis we ignore the change in reputation in 2004, and gauge the impact of the change in reputation on monitoring by comparing the financial reporting quality in 2004-2009 (post-period) to that in 2000-2002 (pre-period).

[15] Untabulated results show that monitoring has improved over time – there are fewer restatements towards the end of the sample and fewer cases in which firms have ineffective internal controls. Discretionary accruals and accruals quality have also been decreasing over the sample period. We therefore use the residual from the regression of each monitoring proxy on a time variable.

Table 4, Panel C replicates the analysis in Panel B for companies with positive and zero New Reputation. Here we ignore the impact of directors who resigned during the year, allowing us to focus on the impact of new reputation on earnings quality and monitoring effectiveness. The results are virtually identical to those reported in Panel B. Companies with a positive new reputation have lower discretionary accruals and better accruals quality, fewer restatements, and more effective internal controls in the period subsequent to the change in reputation, whereas companies with zero new reputation have higher accruals quality following the change in board composition and no change in the other proxies for financial reporting quality.

Overall, the results in Table 4 indicate that an increase in board reputation leads to higher financial reporting quality, consistent with the skilled director hypothesis and inconsistent with the ineffective director hypothesis.

4.2.2 Impact of Change in Board Reputation following Change in Listing Rules

In response to the accounting scandals in 2001 and 2002, the New York Stock Exchange (NYSE) and the National Association of Securities Dealers (Nasdaq) proposed several changes to listing requirements in 2002. One of the proposed changes was that all listed firms must have majority of independent directors.[16] The SEC approved the proposed changes in 2003, and all firms had to comply with the new rules by October 2004. The new rule affected primarily firms that did not have a majority of independent directors in 2002, and therefore, these firms typically increased substantially the number of independent directors resulting in greater proportion of outside directors as well as increase in mean board reputation. This setting therefore allows examining the impact of changes in board independence and board reputation on monitoring. One of the major advantages of using this setting is that the change in board composition was exogenous as it was mandated by new regulation.[17]

Following Chhaochharia and Grinstein (2009) and Guthrie et al. (2010), we examine the impact of change in reputation on earnings quality using difference-in-differences approach for a

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[16] Another major requirement was that the members of the auditing, compensation and nominating committees would comprise of independent directors only.

[17] Several recent studies use this setting to examine the impact of outside directors on performance and CEO compensation. Chhaochharia and Grinstein (2009) finds a significant decrease in CEO compensation for firms that were more affected by the requirements, consistent with outside directors being better monitors. However, Guthrie et al. (2010) provide evidence that the findings in Chhaochharia and Grinstein (2009) are attributed to two outliers, and conclude that the changes in board independence had no impact on CEO compensation. Duchin et al. (2011) shows that increase in board independence improves performance when the cost of acquiring information is low.

sample of compliant and non-compliant firms, where the former (latter) sample comprises of firms with proportion of outside directors greater (less or equal) than 50% in 2002. Specifically, we restrict the sample to companies which have non-missing data in 2002 and 2005, and identify the compliant and non-compliant firms using the proportion of outside directors in 2002. This procedure results in a sample of 464 firms, of which 69 firms are classified as non-compliant. For each firm we compute the change in mean board reputation between 2002 and 2005. We then examine the change in earnings quality from the pre regulation period (2000-2002) to the post regulation period (2003-2005) for the compliant and non-compliant firms controlling for the change in board reputation.

Table 5, Panel A provides the mean of the number and proportion of independent directors, and the board reputation for the sample of compliant and non-compliant firms. The sample of non-compliant firms experienced increase in the number of independent directors from 3.6 in 2002 to 5.6 in 2005, and concomitant increase in the proportion of independent directors from 0.43 to 0.66 and in the mean board reputation from 3.245 in 2002 to 5.013 in 2005. These changes are statistically and economically significant. In contrast, while complaint firms experienced increase in these variables as well, the changes are not statistically or economically significant.[18]

Since non-compliant firms experienced significant increase in the number of independent directors and in the mean board reputation, we hypothesize that the impact of change in board reputation on monitoring would be more pronounced for these firms. We therefore test whether the change in earnings quality from the pre regulation period (2000-2002) to the post regulation period (2003-2005) is associated with the change in mean board reputation for the sample of compliant and non-compliant firms.

Table 5, Panel B shows the regression results. The regressions are estimated using OLS with industry fixed effects; the standard errors correct for firm clustering. The coefficients on the proxies for the innate portion of earnings quality have the predicted signs and are generally significant. Specifically, earnings quality is lower for smaller firms and firms that have higher

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[18] Most non-compliant firms became compliant in 2003 as the mean proportion of independent directors increased to 0.54. In addition, although these firms experienced monotonic increase in the number of independent directors (and as a result in the proportion of independent directors and board reputation) through 2005, the largest change in the number of independent directors was in fiscal 2003. These statistics justify the choice of the pre and post periods to examine the impact of the change in board reputation on monitoring.

market-to-book, greater operating cash flows and sales volatility, a longer operating cycle, and a greater incidence of losses.

The Accrual Quality column shows that the coefficient on mean board reputation is negative and marginally significant (p-value=0.104) indicating that companies with higher board reputation have higher earnings quality, consistent with the skilled director hypothesis. The other coefficients indicate that while accrual quality did not change significantly in the post period for either compliant or non-compliant firms in general, the change in accrual quality in the post period for non-compliant firms is negatively and significantly (p-value=0.09) associated with the change in mean board reputation. Put differently, the results indicate that the impact of the change in board independence on earnings quality for non-compliant firms depends on the change in board reputation; a mere increase in board independence is not likely to affect earnings quality unless the new directors have positive reputation. The results for discretionary accruals are similar. Specifically, the coefficient on the level of mean board reputation is negative and significant (p-value=0.079), and the coefficient on the change in board reputation for the non-compliant firms in the post period is negative and significant (p-value=0.017). In contrast to the Accrual Quality regression, the coefficient on the dummy period is negative and significant (p-value<0.01) indicating lower discretionary accruals in the post period for compliant and non-compliant firms. However, the level of discretionary accruals in the post period increases with the overall change in board reputation (p-value=0.08). Although this result is not consistent with our findings, the magnitude of the coefficient (0.15) suggests that the overall change in board reputation in the post period has little economic impact as the overall mean of the change in board reputation is 0.3 and the median is 0. Hence, evaluating the impact of the change in board reputation in the post period on discretionary accruals at the mean indicates an increase of 0.05, whereas discretionary accruals decreased in the post period by 0.66.

Taken together, the results indicate that the increase in the number of independent directors by itself in the post period has no impact on monitoring. This finding is consistent with Guthrie et al. (2010) which shows that the changes in board independence had no impact on CEO compensation. However, the results also indicate that change in board reputation due to new reputable directors joining the firm is associated with higher earnings quality, in line with the skilled director hypothesis.

4.3 Levels Analysis: Reputation and Financial Reporting Quality

In this section we perform levels analysis to see whether accruals quality is related to board reputation. Although the board composition change analysis of Section 4.2.1 would seem to be well suited for analyzing causality effects, it suffers from a major drawback compared to a levels analysis. Many of the sample firm-year observations are not associated with changes in board composition or are associated with zero change in reputation because the appointees and retirees have zero reputation. Similarly, the change in regulation related to the proportion of outside directors affected relatively few companies. Yet the mean board reputation variable is dynamic and changes from year to year when existing directors are appointed to additional boards or when the market value of the other companies on which they serve changes. A levels analysis is able to capture variation across firms with a non-zero reputation level regardless of whether these firms experience a change in board composition. Further, a levels analysis allows us to control for the determinants of financial reporting quality. Given the finding that earnings quality is not a determinant of reputable directors' decision to join a company, we first analyze the relation between reputation and earnings quality using OLS. To the extent that reputation and earnings quality are endogenously determined, we also present and discuss the results of a three-stage least squares (3SLS) analysis.

We distinguish between the skilled and ineffective director hypotheses using the sign of the coefficient on board reputation. Because our earnings quality proxies are negatively correlated with earnings quality, a negative (positive) coefficient on board reputation would indicate that we cannot reject the skilled (ineffective) director hypothesis. Following Fich and Shivdansi (2006), in a sensitivity analysis we also control for the business of the board as measured by Fich and Shivdansi.

The parameter estimates and their p-values are presented in Table 6, Panel A. The regressions are estimated using OLS with industry and year fixed effects; the standard errors correct for firm clustering. The coefficients on the proxies for the innate portion of earnings quality have the predicted signs and are generally significant. In particular, earnings quality is lower for smaller firms and firms that have higher market-to-book, greater operating cash flows and sales volatility, a longer operating cycle, and a greater incidence of losses (although the coefficient on losses is not significant in the discretionary accruals regressions).

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More importantly, Column 1 indicates that the coefficient on board reputation is negative but not significant (p-value=0.166, two tailed). When we include the busy board indicator (Column 2), the coefficient on mean board reputation remains negative and is marginally significant (p-value=0.108),[19] and the coefficient on the busy board variable is positive but not significant (p-value=0.312). To the extent that the relation between accruals quality and board reputation is not linear, we replicate the regressions in Columns 1 and 2 replacing mean board reputation with High Board Reputation, an indicator variable that equals one if the firm's mean board reputation is higher than the median and zero otherwise.[20] Column 3 shows that the coefficient on high board reputation is negative and highly significant (p-value<0.01). The coefficient remains negative and significant (p-value<0.01) when we include the busy board variable in Column 4. Similar to Column 2, the coefficient on busy board is positive but not significant (p-value=0.124). The results are similar when we use discretionary accruals as the proxy for earnings quality. The coefficient on mean board reputation and the high board reputation dummy are negative and significant at the 10% level whether we control for the busy board variable or not. The coefficient on busy board is positive but not significant. Taken together, the results in Table 6, Panel A provide further evidence that board reputation is associated with better earnings quality.

In the previous section we document that financial reporting risk, and in particular earnings quality, is not a determinant of reputable directors' decision to join a company. The relation between monitoring and reputation is thus not likely to be affected by endogeneity concerns. Nevertheless, we cannot rule out completely the possibility that there is an indirect relation between reputation and earnings quality through common factors that are potentially related to both variables. To address this concern, we estimate the relation between reputation and monitoring using three-stage-least-square analysis.

Table 6, Panel B presents the regression results of mean board reputation on firm and board characteristics. We include among the firm characteristics the predicted values of accruals quality (Column 1) and discretionary accruals (Column 2). The predicted values come from

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[19] When we include the busy board indicator without controlling for board reputation, the coefficient on the busy board variable is not statistically significant.
[20] While High Board Reputation (HBR) is highly correlated with the busy board indicator (0.43), the two variables are distinct. The busy board variable takes the value of one if the majority of the board members serve on additional boards, regardless of the market value of these companies, while HBR takes the value of one if the mean board reputation is higher than the median board reputation. Theoretically, HBR can take the value of one if one board member has an additional directorship, provided that she sits on the board of a high market cap firm.

regressions of accruals quality and discretionary accruals, respectively, on the proxies for the innate portion of earnings quality and the busy board indicator with industry and year fixed effects. The coefficients on the predicted values are positive but not significant, indicating that board reputation is not associated with the proxies for earnings quality. The coefficients on the firm characteristics suggest that firms with reputable boards are larger and more likely to pay dividends, and that they have higher leverage and lower profitability. Turning to the board characteristics, the results indicate that firms with reputable boards tend to have larger and busier boards, a higher proportion of independent directors, and more CEO-directors.

Table 6, Panel C shows the regression results of the earnings quality proxies on the proxies for the innate portion of earnings quality and the predicted value of mean board reputation, which we obtain from a regression of mean board reputation on firm and board characteristics. The coefficients on the control variables are very similar to those reported in Table 5, Panel A. More importantly, the coefficient on the predicted value of board reputation is not significant in the accruals quality regression, but is negative and significant (p-value=0.038) in the discretionary accruals regression. The coefficient on the busy board indicator variable is positive in both regressions but not significantly different from zero.

Overall, the results of the 3SLS analysis are also consistent with the skilled director hypothesis, which predicts that reputable directors improve reporting quality.

5. Conclusion

This study examines whether board reputation has positive or negative implications for monitoring performance, and in particular earnings quality. We examine the association between reputation and monitoring by testing three hypotheses. The *market for directorship hypothesis,* which assumes that any correlation between board reputation and earnings quality is a result of equilibrium in the market for directorship, posits that the relation between reputation and financial reporting quality will be positive if reputable directors are prudent and choose to serve on boards of firms that are less susceptible to fraud, misreporting, or poor financial reporting. A negative correlation may arise, however, if the demand for reputable directors comes primarily from firms that operate in a volatile business environment and therefore need experienced directors who can provide valuable advice to management.

While the market for directorship hypothesis may have its merits, it is also possible that board reputation has a causal effect on monitoring performance. Reputable directors have strong incentives to maintain their standing as business experts and monitors because such standing can help them obtain additional board seats and the accompanying compensation and connections. Furthermore, directors lose reputation capital if a firm they are associated with is involved in a financial reporting failure. The *skilled director hypothesis* therefore predicts that reputable directors are associated with better monitoring performance. However, contrary to this perspective, CEOs may prefer directors who are less vigilant monitors, in which case directors who serve on several boards may be weak monitors. In addition, serving on many boards may make a director too busy to be an effective monitor. The *ineffective director hypothesis* thus predicts that reputable directors are associated with poor monitoring performance.

The empirical analysis is based on measuring directors' reputation by the market value of all firms in which they serve as directors excluding the firm for which director reputation is measured. We then analyze the relation between mean board reputation, measured as the mean of the independent directors' reputation, and different measures of financial reporting and monitoring quality using changes and levels analyses. The results indicate that reputable directors choose companies with lower operating risk and companies that are likely to maintain or enhance the directors' own reputation and business connections. We do not find that financial reporting quality is a direct determinant of directors' decision to serve on a board.

The changes and levels analyses provide support for the skilled director hypothesis and reject the ineffective director hypothesis. More specifically, we find that positive changes in board reputation resulting from the appointment of reputable directors to the board lead to improvements in financial reporting quality – better accruals quality, lower incidence of restatements, and more effective internal controls – in subsequent periods. Similar results are obtained when we examine the change in earnings quality for a sample of firms that added new independent directors in order to comply with the change to listing requirements in 2002. In particular, the impact of new independent directors on earnings quality is positively associated with the reputation of the new directors.

These results provide direct evidence on the positive impact of directors' reputation on monitoring quality and in turn financial reporting quality. Similarly, the levels analysis shows that earnings quality increases with the level of board monitoring. This result is confirmed using

a three-stage least squares analysis where reputation level and monitoring performance are jointly determined.

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Appendix A: Measurement of Earnings Quality Proxies

We measure earnings quality using accruals quality and the absolute value of performance-matched discretionary accruals.

Accruals Quality

Accruals Quality (AQ) is measured as the extent to which current accruals map into cash flows. We follow the extant literature and estimate AQ based on Dechow and Dichev's (2002) model as modified by McNichols (2002) and Francis et al. (2005). Specifically, accruals quality is the standard deviation of the residual from cross-sectional regressions of working capital accruals on cash flows from operations in the current, prior, and future periods, change in revenues, and gross PPE; all variables are scaled by average total assets.

The regression model is as follows:

$$TCA_{j,t} = \alpha_j + \alpha_{1j}CFO_{j,t-1} + \alpha_{2,j}CFO_{j,t} + \alpha_{3,t}CFO_{j,t+1} + \alpha_{4,j}\Delta SALE_{j,t} + \alpha_{5,j}PPEGT_{j,t} + v_{j,t},$$

where $TCA_{j,t}$ is total current accruals of firm j in year t, calculated as the change in ($ACT_{j,t} -$ $LCT_{j,t} - CHE_{j,t} + DLC_{j,t}$) between years t and t-1, in which $ACT_{j,t}$ is total current assets, $LCT_{j,t}$ is total current liabilities, $CHE_{j,t}$ is cash and cash equivalents, and $DLC_{j,t}$ is short-term debt; $CFOj,t$ is cash flow from operations, calculated as $IB_{j,t} - TAj,t$, in which IB is income before extraordinary items and TA is total accruals as given by $TCA_{j,t}$-$DP_{j,t}$, where DP is depreciation expense; $\Delta SALE_{j,t}$ is change in revenues between years t−1 and t; and $PPEGT_{j,t}$ is gross value of property, plant, and equipment.

We estimate the regression by industry based on Fama and French (1997) industry classifications for each year, requiring a minimum of 20 observations in each industry-year. We compute AQ as the standard deviation of firm j's residuals over years t-4 through t. A higher AQ value indicates greater volatility in the mapping of accruals to cash flow, suggesting in turn lower earnings quality. Thus, AQ is negatively associated with the quality of accounting information.

Absolute Value of Performance-Matched Discretionary Accruals

Our second measure of earnings quality is the absolute value of performance-matched discretionary accruals, which are estimated based on the Jones (1991) model as modified by Dechow et al. (1995), with the performance matching based on Kothari et al. (2005). The model

aims to estimate "normal" accruals based on total accruals, the change in sales, and the level of property, plant, and equipment. Performance-matched discretionary accruals are then computed as the difference between the firm's discretionary accruals (unexplained portion of total accruals) and the median discretionary accruals for the firm's industry return-on-assets decile.

Specifically, for each of the 48 Fama and French (1997) industries with at least 20 firms in year t, we estimate the following model:

$$TA_{j,t} = \alpha_j (1) + \alpha_{1,j} \Delta SALE\text{-}\Delta REC_{j,t} + \alpha_{2,j} PPEGT_{j,t} + v_{j,t},$$

where ΔREC is the change in gross receivables and all other variables are as defined above. All variables are scaled by lagged total assets. We measure discretionary accruals in year t as the difference between total accruals and the predicted value from the regression above. We then compute performance-adjusted discretionary accruals as the difference between firm j's discretionary accruals and the median value of discretionary accruals for the firm's industry return-on-assets decile. To the extent that the model correctly depicts the accruals generating process, large negative or positive values of performance-adjusted discretionary accruals indicates a greater likelihood of low quality accruals. Thus, the absolute value of performance-matched discretionary accruals is negatively correlated with the quality of accounting information.

Appendix B: Variable Definitions

Director Reputation – sum of beginning-of-year market value of all *other* public companies included in the RiskMetrics' database in which the director serves as an independent director (Data Source: RiskMetrics);

Mean Board Reputation – log of 1 + mean independent directors' reputation (Data Source: RiskMetrics);

Restatement Indicator - equals one if the firm-year was restated and zero otherwise (Data Source: Audit Analytics);

Effective Internal Control Indicator - equals one if the firm had effective internal controls during the year and zero otherwise (Data Source: Audit Analytics);

Market Value of Equity - market value (in $MM) of equity at fiscal year-end (MKVALT) (Data Source: Compustat);

Market-to-Book - market-to-book ratio, computed as market value of equity at fiscal year-end (MKVALT) divided by stockholders equity (CEQ) (Data Source: Compustat);

Equity Return Volatility - standard deviation of daily returns during the year (Data Source: CRSP);

Dividend Indicator - equals one if the firm pays dividends (DVC) during the year and zero otherwise (Data Source: Compustat);

Losses - incidence of negative income before extraordinary items (IBT) realizations over the past five years (Data Source: Compustat);

Return on Assets - income before extraordinary items (IBT) divided by total assets (AT) (Data Source: Compustat);

Book Leverage - sum of short-term and long-term debt (DLC and DLTT, respectively) divided by total assets (Data Source: Compustat);

Board Size – number of directors on the board (Data Source: RiskMetrics);

Independent Directors Ratio – number of independent directors divided by total number of directors (Data Source: RiskMetrics);

Proportion of Busy Directors – number of independent directors who serve on more than one board of directors divided by total number of directors (Data Source: RiskMetrics);

Busy Board Indicator – equals one if the Proportion of Busy Directors is greater than 50% (Data Source: RiskMetrics);

CEO Chairman of the Board Indicator – equals one if the CEO is the chairman of the board and zero otherwise (Data Source: RiskMetrics);

Mean Directors Tenure – average tenure of independent directors (Data Source: RiskMetrics);

Mean Directors Age – average age of independent directors (Data Source: RiskMetrics);

Director Ownership – total number of shares held by independent directors divided by number of shares outstanding (Data Source: RiskMetrics);

Number of Directors who are CEO – number of independent directors who serve as CEO of another firm (Data Source: RiskMetrics).

Table 1: Reputation and Director Characteristics

	Zero Reputation (n=63,022)	Positive Reputation (n=29,251)	Difference
Director Reputation	0	26,639	26,639***
Number of Boards	1.000	2.448	1.448***
Director Age	60.874	61.726	0.852***
Female	0.119	0.141	0.022***
Audit Committee Member	0.583	0.531	-0.051***
Audit Committee Chair	0.168	0.169	0.001
Compensation Committee Member	0.543	0.562	0.020***
Compensation Committee Chair	0.159	0.180	0.022***
Employment – CEO	0.143	0.260	0.116***
Employment – Chairman of Board	0.121	0.241	0.120***
Employment – CFO	0.023	0.010	-0.013***
Board Meeting Attendance<75%	0.022	0.025	0.004***

The table shows mean director characteristics for directors with zero and positive reputation. Director Reputation is measured as the sum of the market values of all other public companies in which the director serves. Female is an indicator variable that equals one if the director is female, and zero otherwise. Audit Committee Member (Chair) takes the value of one if the director is a member (the chair) of the audit committee and zero otherwise. Compensation Committee Member (Chair) is defined similarly with respect to the compensation committee. Employment – CEO, Employment – Chairman of Board, and Employment – CFO are indicator variables that equal one if the director serves as CEO, Chairman of the Board, or CFO of another firm, respectively, and zero otherwise. Board Meeting Attendance<75% is an indicator variable that equals one if the director attended less than 75% of the board meetings, and zero otherwise. *****, ******, and ******* indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Table 2: Firm-Level Descriptive Statistics

Panel A: Descriptive Statistics of Firm-Level Variables

	Mean	Q1	Median	Q3	Sum
Mean Board Reputation	7,824	76	1,287	7,048	
Financial Reporting Quality:					
Accruals Quality	0.036	0.018	0.028	0.046	
Discretionary Accruals	0.039	0.012	0.027	0.052	
Restatement Indicator	0.104	0	0	0	607
Effective Internal Controls Indicator	0.939	1	1	1	2992
Firm Characteristics:					
Market Value of Equity	8,320	701	1,701	5,295	
Market-to-Book	3.025	1.564	2.301	3.557	
Equity Return Volatility	0.028	0.019	0.025	0.034	
Dividend Indicator	0.521	0	1	1	3032
Losses	0.693	0	0	1	4032
Return on Assets	0.045	0.021	0.054	0.091	
Book Leverage	0.204	0.056	0.200	0.310	
Board Characteristics:					
Board Size	8.973	7	9	10	
Independent Directors Ratio	0.722	0.625	0.750	0.846	
Proportion of Busy Directors	0.307	0.125	0.286	0.500	
Busy Board Indicator	0.188	0	0	0	1092
CEO Chairman of the Board Indicator	0.575	0	1	1	3344
Director Ownership	0.013	0.001	0.004	0.009	
Number of Directors who are CEOs	0.896	0	1	1	5208

Panel B: Mean Variables by High/Low Mean Board Reputation

	Zero Board Reputation (n=1,342)	Positive Board Reputation (n=4,472)	Difference
Mean Board Reputation	0	10,173	10,172***
Financial Reporting Quality:			
Accruals Quality	0.043	0.034	-0.008***
Discretionary Accruals	0.044	0.038	-0.006***
Restatement Indicator	0.117	0.101	-0.016***
Effective Internal Controls Indicator	0.911	0.945	0.034
Firm Characteristics:			
Market Value of Equity	6.746	7.874	1.128***
Market-to-Book	2.716	3.118	0.402***
Equity Return Volatility	0.032	0.027	-0.005***
Dividend Indicator	0.334	0.578	0.244***
Losses	0.808	0.659	-0.149***
Return on Assets	0.043	0.045	0.002***
Book Leverage	0.164	0.216	0.053***
Board Characteristics:			
Board Size	7.668	9.364	1.697***
Independent Directors Ratio	0.627	0.750	0.124***
Proportion of Busy Directors	0.000	0.399	0.399***
Busy Board Indicator	0.000	0.244	0.244***
CEO Chairman of the Board Indicator	0.527	0.590	0.063***
Director Ownership	0.014	0.013	0.000**
Number of Directors who are CEOs	0.451	1.029	0.578***

Panel A provides descriptive statistics for the sample firms; Panel B shows the mean of firm and board characteristics for firms with zero and positive board reputation. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Table 3: Directors Joining the Firm

Panel A: Mean Firm and Board Characteristics for Zero and Positive "New" Board Reputation

	New Reputation>0 n=930	New Reputation=0 n=1421	Difference
Accruals Quality	0.034	0.037	-0.003***
Discretionary Accruals	0.037	0.040	-0.003
Log Market Value of Equity	8.309	7.522	0.787***
Market-to-Book	3.308	3.052	0.256**
Equity Return Volatility	0.024	0.027	-0.003***
Dividend Indicator	0.646	0.512	0.134***
Losses	0.590	0.716	-0.125***
Return on Assets	0.055	0.047	0.008**
Book Leverage	0.225	0.207	0.019***
Board Size	9.541	8.787	0.754***
Independent Directors Ratio	0.726	0.699	0.027***
Busy Board Indicator	0.302	0.172	0.130***
CEO Chairman of the Board Indicator	0.626	0.569	0.057***
Director Ownership	0.010	0.013	-0.003**
Number of Directors who are CEOs	1.086	0.866	0.220***
Log Board Reputation	7.405	5.850	1.555***

Panel B: Determinants of the Decision to Join Company

	Accrual Quality Measure			
	Accruals Quality (1)	Accruals Quality (2)	Discretionary Accruals (3)	Discretionary Accruals (4)
Constant	-9.619***	-9.526***	-9.415***	-9.582***
	(0.000)	(0.000)	(0.000)	(0.000)
Log Market Value of Equity	1.313***	1.324***	1.300***	1.320***
	(0.000)	(0.000)	(0.000)	(0.000)
Market-to-Book	-0.114	-0.121	-0.109	-0.108
	(0.168)	(0.145)	(0.187)	(0.189)
Equity Return Volatility	-87.72***	-96.94***	-82.97***	-92.12***
	(0.002)	(0.000)	(0.003)	(0.0012)
Dividend Indicator	0.158	0.209	0.142	0.166
	(0.762)	(0.689)	(0.785)	(0.749)
Losses	0.253	0.205	0.328	0.290
	(0.319)	(0.475)	(0.188)	(0.265)
Return on Assets	-1.528	-1.692	-1.533	-1.641
	(0.619)	(0.581)	(0.618)	(0.593)
Book Leverage	0.170	0.288	-0.0759	0.0364
	(0.908)	(0.846)	(0.958)	(0.980)
Accruals Measure	13.80		4.407	
	(0.128)		(0.384)	
Discretionary Component		15.44		2.482
		(0.112)		(0.664)
Innate Component		22.68		14.43
		(0.262)		(0.417)
Board Size	0.131	0.122	0.121	0.109
	(0.276)	(0.311)	(0.312)	(0.365)
Independent Directors Ratio	0.976	0.643	1.187	0.826
	(0.546)	(0.693)	(0.461)	(0.612)
Busy Board Indicator	0.705	0.607	0.698	0.611
	(0.204)	(0.276)	(0.209)	(0.273)
CEO Chairman of the Board Indicator	0.345	0.418	0.355	0.408
	(0.435)	(0.345)	(0.422)	(0.357)
Director Ownership	-5.608	-3.094	-5.295	-2.814
	(0.392)	(0.652)	(0.420)	(0.682)
Number of Directors who are CEOs	-0.146	-0.145	-0.163	-0.153
	(0.516)	(0.521)	(0.469)	(0.498)
Log Board Reputation	0.291***	0.307***	0.294***	0.309***
	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo R2	0.034	0.035	0.034	0.035
Observations	2351	2330	2351	2330

Panel A shows the mean of firm and board characteristics for firms with new directors whose reputation is zero compared to firms with new directors whose reputation is greater than zero. Panel B presents Tobit regression results where the dependent variable is the log of (1+New Reputation), which is computed as the mean reputation of new directors joining the company. The independent variables are lagged one year.

The Accruals Measure in Columns 1 and 2 (3 and 4) is Accruals Quality (Performance-Matched Discretionary Accruals). The Discretionary Component (Innate Component) is the residual (predicted value) from a regression of the Accruals Measure on factors that have been shown to affect innate earnings quality. These factors include size (log of market value of equity), market-to-book, standard deviation of operating cash flows and standard deviation of total sales scaled by total assets, both computed based on the most recent 5 years, operating cycle, which is measured as the sum of inventory and accounts receivable days, and industry fixed effects.

Two-tailed p-values are in parentheses. The regressions are estimated using Tobit. *****, ******, and *******
indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.
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Table 4: Change in Monitoring Following Real Changes in Board Reputation

Panel A: Mean Variables by Change in Board Reputation

	ΔReputation<0 n=565	ΔReputation =0 n=1498	ΔReputation >0 n=812	Difference Positive-Negative
Change in Reputation	-44,201	0	31,375	
Accruals Quality	0.031	0.038	0.034	0.003**
Discretionary Accruals	0.035	0.040	0.038	0.004
Log Market Value of Equity	8.243	7.459	8.216	-0.027
Market-to-Book	3.150	3.016	3.281	0.131
Equity Return Volatility	0.025	0.027	0.025	0.000
Dividend Indicator	0.681	0.487	0.622	-0.059**
Losses	0.646	0.740	0.600	-0.046
Return on Assets	0.049	0.045	0.055	0.006
Book Leverage	0.228	0.201	0.223	-0.005
Board Size	10.170	8.774	9.399	-0.771***
Independent Directors Ratio	0.775	0.699	0.717	-0.059***
Busy Board Indicator	0.434	0.128	0.267	-0.166***
CEO Chairman of the Board Indicator	0.635	0.561	0.626	-0.010
Director Ownership	0.013	0.013	0.011	-0.003
Number of Directors who are CEOs	1.308	0.803	1.073	-0.235***
Log Board Reputation	8.815	5.468	7.091	-1.724***
Annual Return	0.053	0.091	0.086	0.033

Panel B: Change in Monitoring Following Change in Board Reputation

	ΔReputation <0			ΔReputation =0			ΔReputation >0		
	Pre	Post	Post-Pre	Pre	Post	Post-Pre	Pre	Post	Post-Pre
Accruals Quality	-0.003	-0.004	-0.002*	-0.003	0.000	0.003***	-0.001	-0.003	-0.002*
Discretionary Accruals	0.000	-0.004	-0.004***	-0.001	0.000	0.001	0.001	-0.003	-0.004**
Restatement	-0.011	0.001	0.012	0.005	0.006	0.000	0.031	0.000	-0.031**
Effective Internal Controls Indicator	0.019	0.006	-0.013	-0.005	-0.002	0.003	-0.029	0.011	0.041**

Panel C: Change in Monitoring Following New Reputation

	New_Reput=0			New_Reput>0		
	Pre	Post	Post-Pre	Pre	Post	Post-Pre
Accruals Quality	-0.002	0.000	0.002*	-0.001	-0.003	-0.002*
Discretionary Accruals	0.000	0.000	0.000	0.001	-0.003	-0.003*
Restatement	0.009	0.006	0.003	0.021	0.000	-0.021*
Effective Internal Controls Indicator	-0.025	-0.002	0.023	-0.024	0.011	0.035**

Panel A shows the mean of firm and board characteristics for groups formed on the basis of a change in reputation, which is computed as the sum of the reputations of directors that joined the company during the year minus the sum of the reputations of directors that left the company during the year. Annual return is the change in share price during the calendar year. Panel B shows the change in monitoring proxies for companies that experience a negative, zero, and positive change in reputation. The monitoring proxies in this panel are demeaned and de-trended. Panel C replicate the analysis in Panel B for companies with new directors whose reputation is zero and firms with new directors whose reputation is greater than zero.
*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Table 5: Change in Monitoring Following Change in Listing Requirements

Panel A: Mean of Selected Variables for Compliant and Non-Compliant firms

	Number of Outside Directors 2002	Number of Outside Directors 2005	Proportion of Outside Directors 2002	Proportion of Outside Directors 2005	Mean Board Reputation 2002	Mean Board Reputation 2005
Compliant (N=395)	6.592	6.851	0.714	0.736	6.287	6.666
Non-Compliant (N=69)	3.609	5.551	0.436	0.662	3.245	5.013

Panel B: Regressions of Earnings Quality Proxies on Change in Reputation

	Accruals Quality	Discretionary Accruals
Constant	1.517*	5.134**
	(0.082)	(0.024)
Log Market Value of Equity	-0.237***	-0.150*
	(0.000)	(0.051)
Market-to-Book	0.066**	0.177***
	(0.026)	(0.004)
Operating Cycle	0.509***	0.088
	(0.003)	(0.674)
Losses	0.145	-0.215*
	(0.122)	(0.056)
σ(operating cash flows$_{t,t-4}$)	22.463***	21.240***
	(0.000)	(0.000)
σ(Sales$_{t,t-4}$)	2.142***	2.408***
	(0.000)	(0.001)
Mean Board Reputation	-0.035	-0.048*
	(0.104)	(0.079)
Change in Mean Board Reputation	0.022	-0.040
	(0.583)	(0.529)
Non-Compliant (02)	-0.161	-0.245
	(0.597)	(0.489)
Dummy Period (03-05)	0.057	-0.662***
	(0.600)	(0.001)
Non-Compliant (00-02)*Dummy Period (03-05)	0.105	0.077
	(0.755)	(0.866)
Dummy Period (03-05)*Change in Mean Board Reputation	0.022	0.149*
	(0.610)	(0.079)
Non-Compliant (00-02)*Dummy Period (03-05)*Change in Mean Board Reputation	-0.120*	-0.221**
	(0.088)	(0.017)
Observations	2,586	2,586
R-squared	0.427	0.135

Panel A presents the mean of the number and proportion of outside directors in 2002 and 2005, as well as the change in mean board reputation from 2002 to 2005, for the sample of compliant and non-compliant firms. N is the number of firms. Panel B shows regressions of Accruals Quality and Discretionary Accruals on factors that have been shown to affect innate earnings quality and board reputation. σ(operating cash flows$_{t,t-4}$) and σ(Sales$_{t,t-4}$) are the standard deviation of operating cash flows and total sales scaled by total assets, respectively, over the most recent 5 years; Operating Cycle is measured as the sum of inventory and accounts receivable days. Change in Mean Board Reputation is the difference between mean board reputation in 2005 and 2002. Non_Compliant (02) is a dummy variable that equals one if the firm did not have a majority of independent directors on the board in 2002 and zero otherwise. Dummy Period (03-05) is a dummy variable that equals one if the observation is in the 2003-2005 period. Two-tailed p-values are in parentheses. All regressions are estimated using OLS including with robust standard errors corrected for firm clustering. The regressions control for industry (Fama-French 1997) fixed effect. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.

Table 6: The Relation between Earnings Quality and Board Reputation

Panel A: OLS Regressions

Dependent Variable	Accruals Quality				Discretionary Accruals			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	1.191	1.242	1.067	1.129	1.976**	1.987**	1.904**	1.914**
	(0.138)	(0.124)	(0.181)	(0.158)	(0.039)	(0.037)	(0.048)	(0.045)
Log Market Value of Equity	-0.224***	-0.231***	-0.208***	-0.219***	-0.145***	-0.147***	-0.148***	-0.150***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.003)	(0.001)	(0.002)
Market-to-Book	0.058***	0.058***	0.057***	0.058***	0.149***	0.149***	0.149***	0.149***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.000)	(0.000)	(0.000)	(0.000)
Operating Cycle	0.531***	0.530***	0.532***	0.531***	0.357**	0.357**	0.359**	0.358**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.034)	(0.034)	(0.033)	(0.033)
Losses	0.192***	0.191***	0.195***	0.194***	-0.055	-0.055	-0.055	-0.055
	(0.003)	(0.003)	(0.002)	(0.003)	(0.501)	(0.500)	(0.496)	(0.494)
$\sigma(\text{operating cash flows}_{t,t-4})$	18.267***	18.269***	18.211***	18.204***	16.514***	16.514***	16.456***	16.454***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$\sigma(\text{Sales}_{t,t-4})$	2.764***	2.761***	2.781***	2.783***	3.709***	3.709***	3.743***	3.744***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Busy Board Indicator		0.112		0.166		0.024		0.028
		(0.312)		(0.124)		(0.874)		(0.849)
Mean Board Reputation	-0.021	-0.024			-0.032*	-0.033*		
	(0.166)	(0.108)			(0.077)	(0.081)		
High Board Reputation			-0.268***	-0.311***			-0.239*	-0.246*
			(0.009)	(0.002)			(0.053)	(0.055)
Observations	5,783	5,783	5,783	5,783	5,783	5,783	5,783	5,783
R-squared	0.386	0.386	0.387	0.387	0.126	0.126	0.126	0.126

Panel B: 3SLS Analysis – Relation between Reputation and Predicted Earnings Quality

	(1)	(2)
Constant	-7.606***	-7.756***
	(0.000)	(0.000)
Log Market Value of Equity	0.762***	0.769***
	(0.000)	(0.000)
Market-to-Book	-0.027	-0.033
	(0.191)	(0.130)
Equity Return Volatility	0.795	0.277
	(0.818)	(0.937)
Dividend Indicator	0.275*	0.277*
	(0.068)	(0.065)
Losses	0.037	0.036
	(0.539)	(0.522)
Return on Assets	-1.769***	-1.725***
	(0.001)	(0.001)
Book Leverage	0.706*	0.729*
	(0.073)	(0.062)
Predicted Accruals Quality	0.010	
	(0.808)	
Predicted Discretionary Accruals		0.034
		(0.424)
Board Size	0.264***	0.265***
	(0.000)	(0.000)
Independent Directors Ratio	5.965***	5.986***
	(0.000)	(0.000)
Busy Board Indicator	1.208***	1.213***
	(0.000)	(0.000)
CEO Chairman of the Board Indicator	0.018	0.019
	(0.851)	(0.839)
Director Ownership	-2.182	-2.174
	(0.168)	(0.169)
Number of Directors who are CEOs	0.114**	0.112**
	(0.013)	(0.014)
Observations	5,783	5,783

Panel C: 3SLS Analysis – Relation between Earnings Quality and Predicted Reputation

Dependent Variable	Accrual Quality	Discretionary Accruals
Constant	1.227	1.804*
	(0.131)	(0.058)
Log Market Value of Equity	-0.228***	-0.052
	(0.001)	(0.503)
Market-to-Book	0.057**	0.142***
	(0.012)	(0.000)
Operating Cycle	0.527***	0.335**
	(0.000)	(0.047)
Losses	0.189***	-0.042
	(0.004)	(0.610)
$\sigma(\text{operating cash flows}_{t,t-4})$	18.254***	16.499***
	(0.000)	(0.000)
$\sigma(\text{Sales}_{t,t-4})$	2.773***	3.654***
	(0.000)	(0.000)
Busy Board Indicator	0.088	0.149
	(0.515)	(0.402)
Predicted Mean Board Reputation	-0.024	-0.120**
	(0.612)	(0.038)
Observations	5,783	5,783
R-squared	0.385	0.126

Panel A shows regressions of Accruals Quality and Discretionary Accruals on factors that have been shown to affect innate earnings quality and board reputation. All variables are as defined before.

Panels B and C report the coefficient estimates and p-values from estimating 3SLS regressions. Panel B shows the regression of mean board reputation on firm and board characteristics and the predicted values of Accruals Quality and Discretionary Accruals; Panel C provides the parameter estimates of regressions of Accruals Quality and Discretionary Accruals on the factors that affect innate earnings quality and the predicted value of Mean Board Reputation.

Two-tailed p-values are in parentheses. All regressions are estimated using OLS with robust standard errors corrected for firm clustering. The regressions include industry and year fixed effects. *****, ******, and ******* indicate statistical significance at the 10%, 5%, and 1% levels (two-tailed), respectively.