REFRESHING THE AUDIT COMMITTEE: ROTATION VERSUS NEW BLOOD

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

REFRESHING THE AUDIT COMMITTEE: ROTATION VERSUS NEW BLOOD

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I. INTRODUCTION

Audit committees (ACs) play a vital role in overseeing and monitoring the processes and procedures that management and auditors perform to issue financial statements (e.g. SEC 1999; SEC 2015; Glass Lewis 2015). Prior research extensively examines how AC member characteristics, such as accounting or industry expertise, lead to greater AC effectiveness (e.g., Bedard et al., 2004; Zhang et al., 2007; Krishnan et al., 2011; Cohen et al., 2014). Other research examines how poor AC effectiveness leads to turnover of AC members (e.g., Srinivasan 2005; Gal-Or et al. 2014; Kachelmeier et al. 2015). This study extends the AC literature by examining how boards refresh through the assignment of new AC members, whether prompted by prior poor performance or prompted by more routine reasons, such as retirements.

In their 2014 annual survey of boards, consulting firm Spencer Stuart finds that two-thirds of boards consider refreshing the board an important corporate governance practice (Corporate Board Member 2014). Yet, we know little about how organizations refresh the AC. Organizations could refresh the AC either by rotating an existing board member onto the committee (rotated director) or by adding a new member to the board and the AC simultaneously (new director). This study compares the relative efficacy of each approach on AC effectiveness.

Theoretically, rotated directors and new directors provide different potential costs and benefits to the audit committee. New directors offer a fresh set of eyes and could also possess accounting expertise that may not be available from other board members.[1] During the initial learning process, new directors offer new perspectives and ways of

[1] If a board member has accounting expertise, they are generally placed on the AC. As a result, little additional accounting expertise resides in the rest of the board. In the sample, approximately eleven percent of board members not on the AC, on average, have accounting expertise.

thinking, potentially leading to the discovery of items that may have been overlooked or missed. However, as new members on the board, new directors lack firm-specific expertise.

Recognizing the importance of firm-specific knowledge, public accounting firms and corporate governance organizations recommend implementing director rotation policies, where tenured directors change committee assignment through internal board transfers (e.g. Audit Committee Leadership Network in North America, 2013; KPMG Europe LLP, 2013; Deloitte, 2015).[2] Theoretically, firms rotate directors to enhance AC effectiveness because rotated directors possess greater knowledge of the firm's strategies, operations, and top management team garnered through experience on the full board and other committees (e.g. Andrews, 1980; Jensen 1993; Brickley and Zimmerman, 2010). In addition to increasing firm-specific knowledge, board tenure increases power, enabling rotated directors to better stand up to management compared to new directors. However, board tenure may also increase the likelihood of friendly relationships with management, resulting in rotated directors over-trusting managements' ability and assessments (e.g. Kesner 1988; Wade et al. 1990; Boeker and Goodstein 1993). Lastly, prior experience with the financial reporting process through the full board lessens the fresh perspective added by a rotated director compared to a new director.

To assess the relation between refreshing the AC and monitoring effectiveness, I utilize measures of financial reporting quality to proxy for AC effectiveness (e.g. Abbott, Parker, and Peters, 2004; Srinivasan 2005; Larcker et al., 2007; Krishnan et al., 2011;

[2] For this study, rotation includes informal policies. For example, Target Brands, Inc. states in their corporate governance guidelines that directors are rotated periodically with no specific details on the terms or frequency (http://investors.target.com/phoenix.zhtml?c=65828&p=irol-govguidelines).
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Cohen et al., 2014). Greater financial reporting quality is consistent with greater monitoring effectiveness. Specifically, I use signed discretionary accruals, accruals estimation errors, and financial statement misstatements. As monitoring effectiveness increases, I expect smaller discretionary accruals, lower accruals estimation errors, and a lower incidence of misstatements. Using information reported in the firm's proxy statement, I identify directors rotated to the AC and new AC directors based on the year the director joins the board and the year the director is assigned to the AC. If a director joins the board in a previous year and is assigned to the AC in the current year, the director is classified as a rotated director. If a director joins the board and is assigned to the AC simultaneously, the director is classified as a new director.

Overall, I find that rotated directors improve financial reporting quality, consistent with firm-specific knowledge improving AC monitoring effectiveness. The proportion of rotated directors to the total number of AC members is negatively associated with signed discretionary accruals, accruals estimation error, and the likelihood of a misstatement. For new directors, I do not find a consistent association between the proportion of new directors to the total number of AC members and the financial reporting quality proxies, suggesting the benefits of a fresh perspective do not out-weigh a lack of firm-specific knowledge. In addition to the financial reporting quality measures, I analyze internal control weaknesses. Refreshing the AC increases the likelihood of reporting an internal control weakness, regardless of refreshing through rotation or a new director. I interpret these findings as refreshed ACs are more likely to report an internal control weakness when warranted and less likely to be swayed by management.

To provide additional insights into why organizations refresh the AC, I also examine the determinants of rotated directors and new directors. Consistent with poor performance leading to increased AC turnover (e.g., Srinivasan 2005; Gal-Or et al. 2014; Kachelmeier et al 2015), I find that prior losses and current year new CEOs are associated with refreshing the AC. In addition, I find that, compared to firms hiring a new director, firms are more likely to rotate a director to the AC when the AC already has accounting expertise, the board is larger, and the board is more independent.

Based on the determinants analysis, I perform cross-sectional analyses of financial reporting quality using sub-samples of director tenure, accounting experience, and CEO experience of the rotated directors relative to the remaining AC directors. I find the negative association between financial reporting quality measures and rotated directors is only significant when rotated directors have longer tenure compared to the other directors on the AC, again consistent with firm-specific knowledge contributing to a director's ability to monitor. I similarly find significant results when the rotated directors have more accounting expertise relative to the other directors on the AC, consistent with prior studies on accounting expertise and suggesting that AC members with appropriate qualifications, experience, and training are more effective directors (e.g. Bedard et al. 2004; Zhang et al. 2007). The last rotated director characteristic I examine is prior experience as a CEO. Similar to the results on accounting expertise, I find my results, for two of the three financial reporting quality measures, are significant only when the rotated directors have relatively more CEO experience compared to the other AC members. In addition, I perform cross-sectional analyses of financial reporting quality using sub-samples of prior board experience, accounting expertise, and CEO

experience of the new directors. Regardless of the new directors' expertise or experience, I do not find a relation between AC new directors and financial reporting quality.

I perform several sensitivity analyses to address board endogeneity related to self-selection bias. First, I estimate my results using a two-step Heckman selection model and a firm fixed-effects model. Both the Heckman selection model and firm fixed-effects model address endogeneity concerns from unobservable firm characteristics. Second, to address concerns about endogeneity from observable firm characteristics, I create matched samples of organizations with rotated directors to organizations without rotated directors using coarsened exact matching and propensity score matching. The Heckman model, firm fixed-effects model and the matched samples consistently show a negative association between financial reporting quality and AC rotation, substantiating my main findings.

In other robustness tests, I control for general board rotation and new directors. I also re-estimate my results using a –pre-post analysis, and find quantitatively and qualitatively consistent results for rotated directors. Alternatively, I replace the rotation and new director variables with count and indicator variables, and find my results are robust to this alternative specification. I also exclude firm-year observations with both a rotated and new director, and continue to find similar results. Lastly, I examine the persistence and find that the primary effects occur in the year of rotation.

I provide several contributions to the literature. First, the results of my study suggest that firms benefit from adopting AC policies that stress the importance of gaining firm-specific knowledge before assuming a role on the AC. For example, firms might consider implementing board policies requiring new directors to serve on the board prior

to AC assignment. This would allow directors time to gain the necessary firm-specific knowledge before joining the AC. While some firms may have such policies in place, there is little evidence supporting the implementation of such policies. This study provides empirical evidence that firm-specific knowledge benefits AC effectiveness.

Furthermore, previous AC research has focused on AC expertise, but limited research examines refreshing the AC through rotated directors versus new directors. My study extends current literature by examining the impact of refreshing the AC and the role of firm-specific expertise. Tenure is a common proxy for firm-specific knowledge because firm-specific knowledge accumulates as tenure builds. Consistent with firm-specific knowledge facilitating effectiveness, prior research finds that the negative relationship between board independence and financial statement fraud is strengthened with longer tenure (Beasley 1996), the average tenure of independent audit committee members is negatively associated with abnormal accruals (Bédard et al., 2004), and AC tenure is associated with lower earnings management (Yang and Krishnan, 2005). This study further supports the benefits of firm-specific knowledge through the use of rotation and is consistent with rotated directors being a means of maintaining firm-specific knowledge when the AC experiences turnover.

This study also contributes to the growing literature on audit committee effectiveness. The AC roles and responsibilities continue to grow in the wake of increased scrutiny, regulation, and business complexity. As the demands on the AC increase, AC effectiveness becomes more difficult and the mix of knowledge and ability become more important. This study expands and adds to extant literature on the

effectiveness of the AC, board policies, firm-specific knowledge, and assignment of members to the AC.

II. LITERATURE REVIEW AND HYPOTHESES

Under agency theory, the board of directors monitors management on behalf of shareholders (Jensen and Meckling, 1976). Within the board of directors, the AC plays a crucial monitoring role because they oversee the financial reporting and internal control processes, including the hiring, compensation, and oversight of the external auditor. (e.g. Blue Ribbon Committee, 1999; SEC, 1999; SEC, 2015). Over the past several years, the AC's role has been expanding in response to regulatory pressure to improve financial report quality and a changing, complex, risk environment (SEC, 2015). In fact, the expanding AC role has created such intense demands on the AC members that directors perceive the AC as overwhelming and unattractive, referring to the AC as the 'kitchen junk drawer' (Rapoport and Lubin, 2015).

The AC is regarded as the top monitor of the financial reporting process by the Blue Ribbon Committee (1999). There are three channels through which effective AC monitoring impacts financial reporting quality. First, the AC oversees the external auditor. Due to this oversight role, the external auditor is required to communicate to the AC matters regarding financial reporting quality, internal controls, fraud, illegal acts, corrected and uncorrected misstatements, and disagreements the external auditor has with management (PCAOB, 2012). When the AC supports the external auditor and their proposed adjustments to the financial statements, the AC influences financial reporting decisions (e.g. Knapp, 1987; DeZoort and Salterio, 2001; DeZoort et al., 2003). Second, an effective internal audit function regularly communicates with the AC and, in many cases, reports to the AC (e.g. McHugh and Raghunandan, 1994; Gramling and Hermanson, 2006). A close relationship between the AC and the internal audit function

improves the status and power of internal audit to improve financial reporting processes and internal control (Abbott et al., 2010). Lastly, the AC directly reviews financial statements and related disclosures prior to filing with the SEC. The AC's review of the financial statement and related disclosures creates an opportunity for the AC to ask questions and further delve into the firm's operations and financial reporting processes. To ensure AC review, recent SEC regulation mandates that the AC will attest to their review within the firm's SEC filing (SEC, 2015).

To improve the AC's ability to monitor management, boards implement various corporate governance policies and best practices, such as refreshing the AC. For instance, the 2014 Spencer Stuart board survey finds that a majority of boards perceive refreshing the board as an important corporate governance strategy (Corporate Board Member 2014). The AC refreshes by changing their members to keep them sharp and provide new insights. There are two approaches a firm can take to refresh the AC. The first approach is to internally transfer, or rotate, a director to the AC from another board committee. The other approach is to hire a new director and assign them to the AC. ACs benefit from a rotated director through their firm-specific knowledge and expertise, whereas ACs benefit from new directors through their fresh perspectives and their outside expertise, such as accounting or industry knowledge.

Rotated directors have firm-specific expertise due to their prior tenure on the board.[3] Prior studies posit that as tenure builds, directors gain firm-specific knowledge,

[3] The concept of AC rotation is closely related to the management technique of job rotation. Job rotation is the lateral movement of employees between positions in a firm. Proponents for job rotation argue that rotation is a learning mechanism, allowing individuals to gain experience and acquire knowledge in several roles and areas of the firm (e.g. Mintzberg 1973; Campion et al. 1994; Ortega, 2001). As individuals become exposed to various positions, they accumulate a deeper understanding of the firm and become more versatile in their experience. Job rotation is also viewed as a way to enhance career development and limit complacency and boredom (e.g. Miller et al., 1973).

increasing the effectiveness of the board (e.g. Pfeffer, 1983; Kosnik, 1990; Hermalin and Weisbach, 1991; Vafeas 2003). Directors read materials provided by management, attend board and committee meetings, and meet with management throughout every year of board service. Over time, these board related activities enable directors to accumulate firm-specific information. Directors with firm-specific expertise understand the firm's business, including its operations, strategies, business risks, significant accounting policies, and industry, translating into in-depth knowledge of the firm's accounting transactions and associated firm risks. Furthermore, it is important for AC members to have the background knowledge of the management team and understand how the management team operates in order to properly assess fraud and earnings management risks (AICPA, 2002).

Consistent with firm-specific expertise building with tenure, Beasley (1996) finds that the negative relationship between board independence and financial statement fraud is strengthened with longer tenure. Bédard et al. (2004) find that average tenure of independent AC members is negatively associated with abnormal accruals, and Yang and Krishnan (2005) find AC tenure is associated with lower earnings management. Furthermore, Kim et al. (2014) find that longer director tenure enables directors to better perform both advisory and monitoring roles.

Another benefit of longer tenure is it allows AC members to be stronger counterweights to management. As tenure builds, a director's status and power on the board increases. Thus, longer tenure reflects a director's ability to influence situations and outcomes (e.g. D'Aveni, 1990; Polluck et al., 2010; Badolato et al., 2014; Beck and

Mauldin, 2014). Directors can use this power to exert more authority to stand up to and monitor management.

Longer tenure builds firm-specific knowledge and power; however, longer tenure also facilitates the development of friendships between directors and management. When the board and management have a friendly relationship, management is able to use their friendship and exercise greater influence over the board, compromising the board's ability to effectively monitor management (U.S. Senate, 2002). For instance, prior literature suggests that directors with longer tenure are more likely to back management decisions that do not align with shareholder interests (Kesner 1988; Wade et al. 1990; Boeker and Goodstein 1993). Also, consistent with the existence of social ties between management and the board, Anderson et al. (2004) find that board tenure is positively associated with yield spreads, and Sharma and Iselin (2012) find a positive relation between AC tenure and misstatements.

Due to the consequences of longer tenure, studies argue that hiring new directors mitigates the risk of friendly relationships, and therefore new directors are more independent and objective. Moreover, new directors provide fresh thinking and new ways to critically assess the firm (Vafeas, 2001; Vafeas, 2003). During the initial learning process, new directors ask questions in an attempt to further their understanding of the firm and the financial statements. It is during this questioning process that new directors offer new perspectives and ways of thinking, potentially leading to the discovery of overlooked items and the change to more effective processes. The fresh perspective argument is not a new concept. For example, proponents of mandatory audit firm rotation

argue that a fresh perspective gives the opportunity to point out items that may have been missed (e.g. POB 2002).[4]

A firm's decision to hire a new director will also be influenced by expertise gaps on the AC. Several U.S. stock exchanges require one financial expert on the AC and that all AC members be financially literate (NASDAQ 2009; NYSE 2013). As AC turnover occurs, firms may be forced to hire new directors to comply with these financial expertise and knowledge requirements. Furthermore, firms may desire additional expertise, such as accounting, industry, or legal expertise, because AC members with appropriate qualifications, experience, and training are more effective directors (e.g., Bedard et al., 2004; Zhang et al., 2007; Krishnan et al., 2011; Cohen et al., 2014), and thus, firms hire new directors to bring such expertise to the AC.

The biggest drawback of hiring a new director, over rotating a director, is the lack of firm-specific knowledge. KPMG board leadership guidance states that 'For any new director – particularly when joining the audit committee (AC) – a learning curve comes with the territory. Just how steep that learning curve is, however, and how quickly a new director is able to contribute meaningfully to the work of the board and its committees, can hinge directly on the quality of the onboarding process" (KPMG 2015). The expanding and burdensome role of the AC and increasingly complex business environment make it challenging to bring new directors up to speed quickly. Therefore,

[4]Opponents of mandatory auditor rotation argue that mandatory rotation is costly, that legal liability facing auditors provides strong incentives to remain independent, and that longer auditor tenure increases firm-specific knowledge and expertise needed to perform the audit. Consistent with the opposing views of mandatory audit firm rotation, extant literature has found mixed evidence. For instance, Myers et al. 2003 finds that longer auditor tenure is associated with higher earnings quality, while the fresh perspective argument has been found to ensure auditor independence and prevent opinion shopping (Crabtree, Brandon, & Maher, 2006; Lu & Sivaramakrishnan, 2009).

unless new directors are able to quickly gain firm-specific knowledge, they may not be able to effectively monitor management.

There are several benefits and drawbacks to rotating a director to the AC versus hiring a new director for the AC. Rotating a director to the AC may improve AC effectiveness because rotated directors possess firm-specific expertise and have more power to stand up to management. However, rotating a director to the AC may decrease AC effectiveness through friendly relationships with management. New directors offer a fresh perspective and outside expertise, but they lack the necessary firm knowledge. Thus, it is unclear how refreshing the AC, either through rotating directors or hiring a new director, impacts financial reporting quality, and it is an empirical question. Because of the potential offsetting effects for both rotated and new directors on financial reporting quality, I state my hypotheses in the null.

H1: Rotating directors to the AC does not impact financial reporting quality.

H2: Assigning new directors to the AC does not impact financial reporting quality.

III. SAMPLE SELECTION AND METHODOLOGY

Sample

To begin my sample, I obtain AC and board data from Audit Analytics' Morningstar corporate governance databases (Morningstar). I obtain misstatement and external auditor information from Audit Analytics and firm-level characteristics from Compustat. I begin my sample in 2005 to eliminate any lingering effects of the stricter AC independence requirements imposed by Section 301 of the Sarbanes-Oxley Act of 2002 (SOX).[5] The increased independence and financial expertise requirements forced companies to hire new directors in order to comply with the regulation. After removing observations with missing variable information and firms in regulated and financial industries, my final sample size includes 20,089 firm-year observations from 2005 to 2013. I end my sample in 2013 to allow time for misstatements to be subsequently reported.

Refreshing Variables

I calculate refreshing the AC variables using the Morningstar databases that include information at the director-committee-firm-year level. To identify members that rotated on to the AC, I use the first fiscal year each director joins the board and the first fiscal year each director is assigned to the audit committee. If the first board year is before the first AC year, the director is identified as a rotated director. If the first board year and the first AC year are the same, the director is identified as a new director on the audit committee. I calculate the *AC Rotate* (*AC New Dir)* variable as the sum of AC directors identified as a rotated (new) directors in year *t* divided by the total number of

[5] Around the same time, both the New York Stock Exchange and NASDAQ created independence and financial expertise requirements for the audit committees of firms listed on their stock exchanges (NASDAQ 2009; NYSE 2013).

AC directors. To measure total refreshing of the AC (*AC Refresh*), I use the sum of the rotated and new directors divided by the total number of AC directors.

Table 1, Panel A presents annual descriptive statistics of *AC Refresh*, *AC Rotate* and *AC New Dir*. Overall, refreshing the AC occurs frequently with approximately 36 percent of the sample refreshing the AC through either rotation or hiring a new director. When *AC Refresh* is disaggregated into rotated and new directors, new directors are used more often to refresh than rotation. Rotation has been relatively stable over the sample period with approximately 14 percent of the sample observations rotating directors to the AC. The average number of rotated directors for each firm-year observation is 1.33, suggesting that the majority of the firms rotate one director to the AC at a time.[6] AC new directors are more common with approximately 25 percent of the sample hiring a new director for the AC. The number of AC new directors has slightly decreased over time, from 29 percent in 2005 to 27 percent in 2013. This is most likely a continued consequence of the AC independence and financial expertise requirements imposed by SOX and the NYSE and NASDAQ stock exchanges in the early years of the sample period. As shown in the last columns of Panel A, only four percent of the firm-year observations have both AC rotated and new directors in the same year.

In addition to the annual statistics, Table 1, Panel B presents the number of times a firm rotates or hires a new director within the sample period. The majority of firms that rotate or hire a new director do so one time over the sample period. However, the majority of new directors correspond to firms with multiple new director hires.

[Insert Table 1 Here]

Refreshing the AC Director Characteristics

[6] Calculated as 3,881/2,910=1.33

Table 2 presents the mean and median values of director characteristics for both rotated and new directors. The last column in Table 2 shows the difference in means. Rotated directors have longer tenure, are older, are assigned to more committees, and are more likely to have experience as a CEO or legal expert. Consistent with firms hiring new directors to fill specific expertise gaps, new directors are more likely to have accounting expertise and industry expertise. The director characteristics presented in Table 2 suggests that the method of refreshing depends on the knowledge and experience of the directors. This is also reflected in the corporate governance policies and procedures that firms post to their websites. For example, in Coca-Cola's Board of Directors Guidelines on Significant Corporate Governance Issues, it states that "…consideration should be given to rotating Committee members periodically to ensure diversity of Board member experience and variety of perspectives across committees, but rotation should not be mandated as a policy. Moreover, the value of rotation should be weighed carefully against the benefit of committee continuity and experience".[7]

[Insert Table 2 Here]

Monitoring Effectiveness

Following prior literature, I use financial reporting quality variables to proxy for monitoring effectiveness (e.g. Abbott et al., 2004; Srinivasan 2005; Larcker, et al., 2007; Krishnan et al., 2011; Cohen et al., 2014) where higher financial reporting quality is consistent with greater AC monitoring effectiveness. Specifically, I use three financial reporting quality measures: signed discretionary accruals, accruals estimation errors and misstatements.

[7] See Appendix A for additional excerpts of corporate governance guidelines regarding director assignment and rotation policies from selected firms.

My first financial reporting quality measure, discretionary accruals, is estimated by industry and year using the following modified Jones' model (Jones 1991; Dechow et al. 1995) and controlling for firm performance (Kothari et al. 2005):

$$TA = \beta_0 + \beta_1(1/ASSETS) + \beta_2(\Delta SALES - \Delta AR) + \beta_3 PPE + \beta_4 ROA + \varepsilon \quad (1)$$

where total accruals (TA) is calculated as income before extraordinary items less cash flows from operations, ΔAR is the change in accounts receivable, and *ROA* is the return on assets. Industry is defined using the 48 Fama and French (1997) industry classifications. All variables are scaled by lagged total assets. Consistent with prior studies, industries with fewer than 10 firm-year observations are removed from the sample. *Signed Dis Acc* is defined as the residual from the model, where higher values are interpreted as lower financial reporting quality (Warfield et al. 1995).

Accrual estimation errors is my second financial reporting quality proxy, calculated using the Dechow and Dichev (2002) model and modified by McNichols (2002) and Francis et al. (2005). The change in working capital (ΔWC) is regressed on prior year operating cash flows (CF_{t-1}), current year cash flows (CF_t), next year cash flows (CF_{t+1}), the change in sales ($\Delta SALES$), and gross property, plant and equipment (*PPE*).[8]

$$\Delta WC = \beta_0 + \beta_1 CF_{t-1} + \beta_2 CF_t + \beta_3 CF_{t+1} + \beta_4 \Delta SALES + \beta_5 PPE + \varepsilon \quad (2)$$

Equation 2 is estimated by industry and year, where industry is defined using the 48 Fama and French (1997) industry classifications. All variables are scaled by average total assets. Because this study examines annual changes, I use an annual measure of accruals

[8] ΔWC =[- (RECCH + INVCH + APALCH + TXACH + AOLOCH)] / Avg_AT

quality. I calculate the accruals quality measure, *DD Resid*, using the industry mean-adjusted absolute residual from Equation (1) (Dechow el al., 2011). The industry mean-adjusted absolute residual is calculated by taking the absolute value of the residual less the mean absolute value of the residual for each industry-year. Larger values of *DD Resid* indicate lower accruals quality.

My last measure of financial reporting quality is misstatements. Prior research argues that misstatements indicate weak governance and weak monitoring effectiveness (Abbott et al., 2004; Srinivasan 2005). I obtain misstatement data from the Audit Analytics database. Using the misstatement period within the database, I identify misstatements in year *t* if the financial statements from that year are subsequently restated. Thus, *Misstatement* is an indicator variable that equals 1 in year *t* if that year's annual financial statements are subsequently restated, and 0 otherwise.

Research Model

For the two measures of accruals quality, *Signed Dis Acc* and *DD Resid*, I estimate an OLS regression. For the misstatement analysis, I estimate a logit model. For all three financial reporting quality measures, I include the same control variables and use the following model:

$$FRQ = \beta_0 + \beta_1 AC\ Var + Controls + Industry\ FE + Year\ FE + \varepsilon \quad (3)$$

where *FRQ* equals *Signed Dis Acc*, *DD Resid* or *Misstatement* and *AC Var* equals *AC Rotate*, *AC New Dir* or *AC Refresh*.

I control for several firm, auditor and board characteristics based on prior literature (e.g. Larcker et al., 2007; Krishnan et al., 2011; Cohen et al., 2014). A

comprehensive listing of variable definitions is provided within Appendix B. To account for firm size, I include *LnAssets* and *Sales Growth*. *LnAssets* is calculated as the natural logarithm of total assets. *Sales Growth* is the change in sales divided by prior year sales. To control for financial risk, I include *Leverage* and *Loss*. *Leverage* is total debt scaled by lagged total assets. *Loss* equals 1 if the firm records net income below zero, and zero otherwise. I include lagged discretionary accruals, *Lag Signed Dis Accruals*, to account for prior year discretionary accruals. The calculation of discretionary accruals is discussed in detail above. For operating risk, I control for current and prior year *ROA*, and current year *MTB* and *Issue*. *MTB* is the market to book ratio. *Issue* is an indicator variable that equals 1 if the company issued debt or equity greater than five percent of total assets, and zero otherwise. To control for volatility in operations, I include the volatility in cash flows, *CF Vol*, and the volatility in sales, *Sales Vol*. Both *CF_Vol* and *Sales_Vol* are calculated using the standard deviation over the years t-2, t-1, and t. I also include *New CEO*, a dummy variable set equal to 1 if the CEO started during the current or prior fiscal year.

Because auditors can impact financial reporting quality, I include two auditor level control variables: *Big4* and *Aud Chg*. *Big4* equals 1 if the firm is audited by a Big 4 auditor, and zero otherwise. *Auditor Chg* equals 1 if the current year is the auditors first year on the engagements, and zero otherwise. I also include *IC Weak* to control for internal control weaknesses. *IC Weak* equals 1 if there a material weakness is reported in the current year, and zero otherwise.

I also control for several audit committee and board level factors. For AC specific variables, I include *AC Size*, *Avg AC Tenure*, *AC CEO Experience*, and *AC Acct Expert*.

AC Size equals the total number of AC members. *AC Avg Tenure* is the average AC member board tenure at the firm. For the two expertise variables (CEO experience and accounting expertise), I use the director's biography from the Morningstar database to define expertise. A director is classified as having CEO experience if they are a former or current CEO and an accounting expertise if they have a Certified Public Accountant (CPA) license or they are a former or current Chief Financial Officer (CFO). Both of the expertise variables are calculated using the proportion of AC members with the expertise to the total number of AC members. For board level variables, I control for *BD Size*, *BD Meet*, *BD Independence* and *CEO Duality*. *BD Size* is the total number of board members. *BD Meet* equals the total number of board meetings. *BD Independence* is the percent of independent board members, and *CEO Duality* is an indicator variable that equals 1 when the CEO is also the chairman of the board, and zero otherwise.

To mitigate the concern of extreme values, all continuous variables are winsorized at the 1st and 99th percent levels. Lastly, both industry and year fixed-effects are included in the model with robust standard errors clustered by firm.

IV. RESULTS

I report the descriptive statistics for my final sample in Table 3. The variable *AC Refresh* has a mean value of 0.141, *AC Rotate* has a mean value of 0.055 and *AC New Dir* has a mean value of 0.086, consistent with firms refreshing the AC on a relatively frequent basis and hiring new AC directors more often than rotating directors. All other variables are consistent with prior literature (e.g. Abbott et al., 2004; Srinivasan 2005; Larcker et al., 2007; Krishnan, Wen, and Zhao, 2011; Cohen et al., 2014).

[Insert Table 3 here]

Table 4 presents correlation coefficients. *Signed Dis Acc* and *DD Resid* are positively correlated, suggesting that these financial reporting quality measures capture a similar construct. *AC Refresh* is not significantly correlated with *Signed Dis Acc* or *Misstatement*, but is positively correlated with *DD Resid*. *AC Rotate* is not significantly correlated with any of the three financial reporting quality measures. However, *AC New Dir* is positively correlated with two of the financial reporting quality variables, consistent with diminished monitoring effectiveness when new directors are present without firm-specific expertise. *AC Rotate* and *AC New Dir* are positive and significantly correlated with *AC Refresh* by construction, and the correlation between *AC Rotate* and *AC New Dir* is negative, consistent with little overlap between the two methods of refreshing the AC. Because these are univariate tests, I do not draw any conclusions from these correlations.

[Insert Table 4 here]

Hypothesis Tests

Table 5 reports the *Signed Dis Acc* regression results for model (3). The first column includes the *AC Rotate* variable, the second column replaces *AC Rotate* with *AC New Dir*, the third column includes both *AC Rotate* and *AC New Dir*, and the last column includes *AC Refresh*. Both the first and third columns show a negative and significant coefficient on *AC Rotate* at the $p < 0.05$ level, suggesting that firm-specific knowledge of rotated directors improves AC monitoring effectiveness. The coefficient in the third column of -0.0589 suggests that a one standard deviation increase in *AC Rotate* is associated with a decrease in *Signed Dis Acc* of 0.009. Given a mean *Signed Dis Acc* value of -0.058, this represents a 15.5% decrease. Both the second and third columns show an insignificant coefficient on *AC New Dir*, suggesting that the benefits of a fresh perspective is offset by a lack of firm-specific knowledge. The insignificant coefficient on *AC Refresh* further confirms the difference between *AC Rotate* and *AC New Dir*. To directly compare *AC Rotate* to *AC New Dir*, I conduct an F-test between the two coefficients in the third column. The results of this test show an F-statistic of 6.8, significant at the $p<0.01$ level, providing additional evidence of a significant difference between rotated and new directors.

[Insert Table 5 here]

Table 6 reports the *DD Resid* regression results for model (3). Similar to Table 5, *AC Rotate* is negative and significant in both the first and third columns. The negative coefficient on *AC Rotate* of -0.013 in the third column suggests that a one standard deviation increase in *AC Rotate* is associated with decrease in *DD Resid* of 3.8%. The coefficient on *AC New Dir* is positive and significant at the $p<0.10$ level in both the second and third columns, implying new directors lack firm-specific knowledge that

limits their ability to effectively monitor. Consistent with opposing results on *AC Rotate* and *AC New Dir*, the coefficient on *AC Refresh* is not significant. Lastly, I compare the *AC Rotate* and *AC New Dir* coefficients in the third column using an F-test, and find that the coefficients are significantly different from each other at the $p<0.01$ level (F-statistic of 7.45).

[Insert Table 6 here]

The *Misstatements* model regression results are presented in Table 7. Consistent with the results presented in Tables 5 and 6, the coefficient on *AC Rotate* is negative and significant, further confirming improved financial reporting quality with rotated directors. The third column *AC Rotate* coefficient of -0.4313 implies a one standard deviation increase in *AC Rotate* decreases the probability of a misstatement by 0.55 percent, which corresponds to a 6 percent decrease compared to the mean misstatement rate.[9] Furthermore, the coefficient on *AC New Dir* is not significant. The last column shows a negative and significant coefficient on *AC Refresh*, providing some evidence that, overall, refreshing the AC improves financial reporting quality. Specifically, refreshing the AC is associated with a lower incidence of misstatements. A chi square test of the difference between the *AC Rotate* and *AC New Dir* coefficients in the third column does not show a statistically significant difference.

[Insert Table 7 here]

Taken together, the results in Tables 5, 6, and 7 suggest that refreshing the AC, in general, reduces the likelihood of a misstatement, but does not improve accruals quality. The rotated director portion of refreshing the AC improves financial reporting quality

[9] The marginal significance was calculated based on setting all other variables in the model equal to their mean values.

across all three measures, consistent with firm-specific knowledge playing a crucial role in a director's ability to effectively monitor. Refreshing the AC through hiring a new director does not seem to consistently impact financial reporting quality. Furthermore, if poor performance prompts AC turnover, and my results are driven by changes made in response to poor performance, then I would expect improved financial reporting quality to be associated with both rotated and new directors. However, the results only support an association between AC rotated directors and greater financial reporting quality.

To better understanding the relationship between refreshing the AC and financial reporting, I examine internal control weaknesses. To do this, I estimate a logit model with *IC Weak* as the dependent variable.[10] I include the same control variables as the financial reporting quality model, except I replace the *IC Weak* control variable with *Restatement Announcement*, an indicator variable that equals 1 if the firm announces a restatement during the current year, and a 0 otherwise. The results are presented in Table 8. Both *AC Rotate* and *AC New Dir* have positive and significant coefficients. Because internal control weaknesses go unreported when the AC is lenient towards management and less supportive of the external auditor (Naiker and Sharma 2009; Bruynseels and Cardinaels 2014), I interpret these results as providing further evidence of improved monitoring effectiveness when the AC is refreshed.

[Insert Table 8 here]

Refreshing the AC Determinants

While the above results support rotation improving financial reporting quality, we know little about the reasons that prompt refreshing the AC or how those reasons differ in

[10] IC Weak is identified using the Audit Analytics SOX 404 database. For firms without an auditor internal control assessment, management's internal control assessment was used.

a decision to use rotation versus hire a new director. To provide further insights into the decisions to refresh, I develop the following determinants model:

$$\textit{AC Indicator Var} = \beta_0 + \textit{Poor Firm Performance} + \textit{Poor AC Performance} + \textit{AC Characteristics} + \textit{BD Characteristics} + \textit{Industry FE} + \textit{Year FE} + \varepsilon \quad (4)$$

where the dependent variable, *AC Indicator Var*, indicates if a firm rotates a director(s) to the AC (*AC Rotate Dummy*), a firm hires a new director(s) for the AC (*AC New Dir Dummy*), or a firm either rotates a director(s) to the AC or hires a new director(s) for the AC (*AC Refresh Dummy*).

Because prior research suggests AC turnover is often triggered by prior firm events and outcomes, I include several variables in my determinants model to account for poor firm performance and poor AC performance. (Srinivasan 2005; Gal-Or et al. 2014; Kachelmeier et al 2015). For poor firm performance, I include prior (*Lag*) year firm size (*LnAssets*), sales growth (*Sales Growth*), signed discretionary accruals (*Signed Dis Acc*), loss (*Loss*), return on assets (*ROA*), and current year new CEO (*New CEO*). For poor AC performance, I include current year auditor change (*Auditor Chg*), prior (*Lag*) year internal control weakness (*IC Weak*) and restatement announcement (*Restatement Announcement*).

AC and board level characteristics are also included because the firm's decision to rotate a director versus hire a new director will be largely dependent upon the knowledge and experience of the AC and the pool of directors. For example, a firm may be more likely to hire a new director to fill a lack of accounting expertise on the AC or a firm may be more likely to rotate directors to the AC when there are more directors to rotate. To

account for the AC characteristics, prior (*Lag*) year size (*AC Size*), retirements (*AC Retire*), age (*AC Avg Age*), tenure (*AC Avg Tenure*), busy directors (*AC Busy Dir*), CEO experience (*AC CEO Experience*), accounting expertise (*AC Acct Expert*), industry expertise (*AC Ind Expert*), and legal expertise (*AC Legal Expert*). *AC Retire* is the number of AC members over 70 years old and it is their last year on the board. *AC Avg Age* is the average AC member age. *AC Busy Dir* captures the proportion of AC members that hold three or more board positions. Using the director's biography from Morningstar, industry expert directors are identified if their prior positions or other board experiences are within the same two-digit SIC code as the firm, and legal expert directors are identified if they have a law degree or have prior work experience as a lawyer or general counsel. These two variables are calculated using the proportion of the AC member with the expertise to the total number of AC members. In terms of board characteristics, I add prior (*Lag*) year size (*BD Size*), meetings (*BD Meet*), independence (*BD Independence*), and CEO duality (*CEO Duality*) to the model.

All continuous variables are winsorized at the 1st and 99th percent levels, and I include both industry and year fixed-effects. Standard errors are clustered at the firm-level.

Table 9 presents the determinants model results. The sample decreases to 19,409 firm-year observations because observations with missing lagged variables are dropped. The first column represents the *AC Rotate Dummy* determinants model using a sample of only firm-year observations with a director rotation to the AC or a new AC director. This column shows that when firms refresh, they are more likely to rotate a director when the AC has longer tenure, accounting expertise, and CEO experience. Thus, new directors are

used when the AC does not have accounting expertise to fill gaps in the AC expertise. Furthermore, firms are more likely to rotate when the board is larger and more independent, implying that the pool of directors impacts a firm's ability to rotate directors to the AC.

Columns 2 through 4 show the results on the full sample for *AC Rotate Dummy*, *AC New Dir Dummy*, and *AC Refresh Dummy*. The positive coefficient on *Lag Loss* and *New CEO* and the negative coefficient on *Lag ROA* provide additional evidence that poor performance prompts AC turnover. *Lag AC CEO Experience* is positive and significant in the *AC Rotate Dummy* model and *Lag AC Acct Expert* is negative and significant in the *AC New Dir Dummy* model, both suggesting that new directors are hired when expertise on the AC is lacking. Across all three models, *BD Size* and *BD Independence* are positive and significant, implying that larger and more independent boards refresh more. Lastly, the coefficient on *Lag Signed Dis Acc* is not significant across any of the models, alleviating concerns that high discretionary accruals prompt AC refreshing, and thus, discretionary accruals in the next period are systematically lower.

Cross-sectional Tests Based on Director Characteristics

To further analyze the impact of a rotated director on financial reporting quality, I examine the specific director characteristics identified in Table 2 and Table 9. As director tenure with the firm is the most significant difference between rotated and new directors, tenure is the first director characteristic I analyze. In addition to tenure, I examine accounting expertise and prior CEO experience because these director characteristics qualify directors as financial experts under the SEC's definition (SEC 2003), and are the

characteristics that arguably enable directors to be the most effective monitors for the AC.

As the benefits and consequences of rotated directors align with longer tenure, I expect the effects of rotated directors to be more pronounced when the rotated director(s) has longer tenure. For example, if rotated directors improve financial reporting quality due to their firm-specific knowledge, and firm-specific knowledge builds with longer tenure, then I expect the relation between rotated directors and financial reporting quality to be more pronounced for rotated directors with longer tenure. To test this prediction, I compare the average director tenure of the non-rotated AC directors to the average director tenure for the rotated AC directors. If the rotated directors have longer (shorter) average director tenure than the average non-rotated director tenure, then the rotated directors are classified as having long (short) relative tenure. *AC Rotate Relative Long (Short) Tenure* is calculated as rotated directors classified as having long (short) tenure divided by the total number of AC members. Table 10, Panel A presents the results when *AC Rotate* is divided into the two tenure categories. The coefficient on *AC Rotate Relative Long Tenure* is negative and significant across all three financial reporting quality measures, whereas the coefficient on *AC Rotate Relative Short Tenure* is not significant, consistent with firm-specific knowledge accumulating over time with tenure.

Accounting expertise and prior CEO experience are the next director characteristics I examine. Extant empirical research focuses on directors with accounting and/or financial expertise, arguing that AC members with appropriate qualifications, experience, and training are more effective directors (e.g. Bedard et al. 2004 and Zhang et al. 2007). Based on this, the effectiveness of refreshing the AC through rotated directors

may depend on the directors' level of expertise. If refreshing the AC through rotation improves financial reporting quality, then finance and accounting expertise will accentuate the relation.

For accounting expertise, if the rotated director(s) increases the proportion of AC directors with accounting expertise, then *AC Rotate Relative Acct Expert* equals the number of rotated directors scaled by the total number of AC members. However, if the rotated director(s) decreases or does not change the proportion of AC directors with accounting expertise, then *AC Rotate Relative NonAcct Expert* equals the number of rotated directors scaled by the total number of AC members. As predicted, Table 10, Panel B shows the association between rotated directors and financial reporting quality is most pronounced for rotated directors with accounting expertise.

Similarly, for prior CEO experience, if the rotated director(s) increases the proportion of AC directors with prior CEO experience, then *AC Rotate Relative CEO Exp* equals the number of rotated directors scaled by the total number of AC members. If the rotated director(s) decreases or does not change the proportion of AC directors with prior CEO experience, then *AC Rotate Relative Non CEO Exp* equals the number of rotated directors scaled by the total number of AC members. As presented in Table 10, Panel C, the coefficient on *AC Rotate Relative CEO Exp* is more pronounced in the *Signed Dis Acc* and *DD Resid* models. However, the coefficient on *AC Rotate Relative Non CEO Exp* is more pronounced in the Misstatement model.

[Insert Table 10 here]

I use similar director characteristics to further analyze the relation between AC new directors and financial reporting quality. Specifically, I examine board experience, accounting expertise and CEO experience.

Board experience distinguishes new directors who have served on a different firm's board from new directors who do not have any board experience. Because knowledge is gained through experience and previous board service gives new directors experience in monitoring and advising (Lorsch and MacIver 1989; Kroll et al. 2008), I expect that the relation between financial reporting quality and AC new directors will depend on prior board experience of the new director. If new directors provide fresh perspectives and prior board experience enables directors to provide additional insights, then new directors on the AC with prior board experience will improve financial reporting quality. However, as shown in Table 11, Panel A, whether or not a new director has prior board experience does not affect the relationship between AC new directors and financial reporting quality.

Consistent with the arguments in the rotated director characteristic analysis, I expect that the expertise of the new director will impact the director's ability to impact financial reporting quality. Similarly, I calculate the AC New Dir accounting expertise and CEO experience relative to the other AC members. Table 11, Panels B and C present the results when I classify the AC new directors based on their relative expertise. I do not find that the expertise of the new directors improves financial reporting quality.

[Insert Table 11 here]

Endogeneity Tests

As with most corporate governance studies, self-selection bias is a concern. Firms may have better financial reporting quality because of better corporate governance

practices, or the higher financial reporting quality firms may choose to have better corporate governance practices. To address these endogeneity concerns, I re-estimate my main results using a Heckman selection model (Heckman 1979). In addition, I re-estimate my main results using matched samples based on propensity score matching and coarsened exact matching. The Heckman selection and firm fixed-effects models address selection bias stemming from unobservable firm characteristics, whereas the matched samples address selection bias stemming from observable firm characteristics.

Heckman Model

A Heckman selection model is the first method I use to address endogeneity. For the Heckman model, I estimate the first stage choice model as the probability of rotating a director to the AC and include all control variables identified in Model 3 plus an additional exogenous, independent variable (aka exclusion variable). For the exclusion variable, I use the average age of the AC members (*Avg AC Age*). As shown in Table 9, *Avg AC Age* is a statistically significant determinant of rotation. The older the average AC member age, the lower the likelihood of rotated a member to the AC. Furthermore, average director age should not affect financial reporting quality. Because *Avg AC Age* is associated with rotation and not associated with the effectiveness of the AC, it is appropriate to use as the exclusion variable for the Heckman model (Little 1985). The exclusion variable choice is critical to the implementation of the Heckman model. If the exclusion variable is not exogenous or if omitting the exclusion variable from the second stage model is not valid, then the inverse Mill's ratio may be biased and may not appropriately control for the endogenous component (e.g. Little 1985; Lennox et al. 2012).

Table 12, Panel A show the results of the first stage choice model. As predicted, the coefficient on *Avg AC Age* is statistically significant. Using this first stage choice model, I compute the inverse Mill's ratio and include it as an additional control variable in the second stage model. As shown in Panel B of Table 12, the coefficients on *AC Rotate* continue to be negative and significant. Also, the inverse Mill's ratio, *InvMills*, is not significant, suggesting that the results are not driven by selection bias. [Insert Table 12]

Firm Fixed-Effects

A firm fixed-effects model controls for time-invariant, unobservable firm characteristics, mitigating concerns of omitted variables. However, there are limitations of a firm fixed-effect model, including a lack of power for explanatory variables with little fluctuation and the potential endogeneity of the within-firm time-series variations of the explanatory variables (Zhou 2001; Masulis et al. 2012). For the firm fixed-effects model, I replace industry fixed-effects with firm fixed-effects. I continue to include year fixed-effects and re-estimate the financial reporting quality results. As shown in Table 13, the coefficient on *AC Rotate* is statistically consistent with those previously presented. The coefficient on the *AC New Dir* variable continues to be insignificant.

[Insert Table 13]

Matched Sample

Changes to the AC are often prompted by poor performance, as evidenced in Table 9. Because management will also make changes in response to poor performance, such as create more conservative estimates or implement additional controls, it is difficult to disentangle the effect of AC refreshing from other changes made by management. To

mitigate the risk that my results are driven by changes made in response to poor performance, I create two sets of matched samples. One matched sample based on coarsened exact matching (King et al. 2011; DeFond et al. 2015) and one matched sample based on propensity score matching (Rosenbaum and Rubin 1983). For both matching techniques, I use *LnAssets*, *Lag Loss*, *New CEO*, *Lag Restate Announcement*, industry membership and year to create the matched sample.[11] *Lag Loss*, *New CEO* and *Lag Restate Announcement* were identified as the poor performance variables based on the results of the rotation determinants model in Table 9.

Table 14 reports the results for coarsened exact matching. Panel A, Table 14 shows a significant mean difference for the matching variables between rotation firms and non-rotation firms using the full sample. However, the matched sample, by construction, no longer reports significant mean differences. Panel B of Table 14 shows the main regression results using the coarsened exact matching sample. All three financial reporting quality variables remain negative and significant. Although, the coefficient on *AC Rotate* in the *Misstatatement* model is now significant at the 10% level.

[Insert Table 14]

Table 15, Panel A shows the matching success using propensity score matching. The mean differences of the matching variables between the rotation firms versus the non-rotation firms are not significantly different for the matched sample. Furthermore, Panel B continues to show a negative and significant coefficient on the AC Rotate variable. Based on the coarsened exact matching and propensity score matching results, the findings in this paper are not driven by changes prompted by poor performance.

[11] For coarsened exact matching, rotation firms are matched with non-rotation firms based on exact industry and year. For propensity score matching, rotation firms are matched with non-rotated firms using industry and year fixed-effects.

[Insert Table 15]

Robustness Tests

To better evaluate the relationship between AC rotation and financial reporting quality, I perform several untabulated robustness tests.

Controlling for non-AC Rotation and New Directors

AC Rotate and *AC New Dir* may capture a general board effect, and therefore, I add controls for the proportion of non-AC member rotations and new directors. Because directors can serve on multiple committees, I calculate the non-AC member rotations and new directors by summing the total number of rotated and new directors on the board and subtracting the AC rotated and new directors. After controlling for the non-AC board effect, the coefficient on *AC Rotate* is negative and significant at the $p<0.05$ level across all three financial reporting quality models.

Pre-Post Analysis

I perform a pre-post analysis and limit the sample to rotation firms to allow the firm to act as its own control. To be included in the rotation sample, firms must have a rotation in year t, and no rotation in years t-2, t-1, and t+1. Years t-2, t-1, t, and t+1 comprise the sample. Instead of *AC_Rotate*, I use an indicator variable equal to one in years t and t+1, and zero in the years prior to rotation. The untabulated results show a negative and significant coefficient on the post-rotate variable, further validating my main results and conclusions. I do the same analysis for AC new directors, but do not find a significant association between the post-new director variable and the financial reporting quality variables.

Alternative Rotation Measurements

In my main results, I calculate *AC Rotate* and *AC New Dir* as percentages of the AC. As alternative measurements, I use both a count of rotated and new directors as well as an indicator variable for rotation firms and new director firms. The results are qualitatively and quantitatively similar to those previously presented.

Excluding Firms with Both Rotated and New Directors

Table 1, Panel A indicates that the sample includes firms with both rotated directors and new directors on the AC. To further tease out the individual effect of rotation versus new directors, the firm-year observations with both a rotation and a new director are removed from the sample. I re-estimate the financial reporting quality results and find statistically similar results to those previously presented.

Persistence

The results in this paper document the contemporaneous effect of refreshing the AC and financial reporting quality. To understand if the relation between AC rotation (AC new directors) and financial reporting quality persists or changes in future periods, I replace the AC rotation and AC new director variables with lagged variables. I do not find a significant association between the lagged AC refreshing variables and financial reporting quality. Thus, the primary effects of AC rotation appear to occur early after rotation, consistent with the importance of rotating directors every couple of years.

V. CONCLUSION

The AC oversees the financial reporting processes and procedures, a vital role in monitoring management. Prior research examines the expertise of the individual AC members or the events leading to AC turnover (e.g., Bedard et al., 2004; Zhang et al., 2007; Krishnan et al., 2011; Cohen et al., 2014; Srinivasan 2005; Gal-Or et al. 2014; Kachelmeier et al 2015). This study extends prior research by examining AC refreshing through rotating directors to the AC from another board committee or hiring a new director for the AC.

Through their prior service on the board, a rotated director has firm-specific knowledge and power that facilitates monitoring effectiveness. On the other hand, new directors offer a fresh perspective and new ways of thinking, but lack firm-specific knowledge. Consistent with firm-specific knowledge assisting monitoring, I find that rotated directors improve financial reporting quality, whereas, I do not find an association between financial reporting quality and new directors. Because change on the AC is often prompted by poor performance, improved financial reporting quality after AC refreshing may be systematic. If this were the case, I would expect greater financial reporting quality to be associated with both rotated directors and new directors. However, the results only support improved financial reporting quality for rotated directors, and thus, the results do not appear to be driven by systematic change.

In cross-sectional analyses, I find the relation between rotated audit committee directors and financial reporting quality is more evident for directors with longer tenure, accounting expertise and prior experience as a CEO. I continue to find no association between audit committee new directors and financial reporting quality after considering

the new directors' prior experience on other board, accounting expertise and prior experience as a CEO.

I perform several tests to address board endogeneity, including using the Heckman selection model, firm fixed-effects model and matched samples. My results continue to show an association between rotated directors and improved financial reporting quality, and no association between new directors and financial reporting quality. In additional to the endogeneity tests, my results are robust to controlling for non-audit committee director rotations and new directors, estimating a pre-post analysis, using alternative rotated director measures, and removing firm-year observations with both rotated and new directors.

Overall, the results of this study suggest that firms benefit from refreshing the audit committee through rotation over new directors. Due to their prior board service, rotated directors have firm-specific knowledge, and therefore, firms should consider adopting board policies that stress the importance of gaining firm-specific knowledge. For example, firms should consider rotating directors or requiring experience on the board prior to AC assignment. This study also contributes to the growing literature on audit committee tenure and audit committee effectiveness, and expands the study of AC member expertise.

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Appendix A: Corporate Governance Guidelines Examples

The Coca-Cola Company

The following information is from the Board of Directors Guidelines on Significant Corporate Governance Issues As of December 17, 2013, and obtained through the company's website at http://ir.cokecce.com/phoenix.zhtml?c=117435&p=irol-govguidelines.

> ***Assignment and Rotation of Committee Members***
> *The Governance and Nominating Committee is responsible, after consultation with the Chairman, Chief Executive Officer and Presiding Director, for recommending the assignment of Board members to various committees (and committee chairs) at least annually, with consideration of the desires and skills of individual Board members; the need for continuity; subject matter expertise; applicable SEC, NYSE and IRS requirements; emerging good governance practices; and length of tenure.*
>
> *It is the sense of the Board that consideration should be given to rotating Committee members periodically to ensure diversity of Board member experience and variety of perspectives across the committees, but that rotation should not be mandated as a policy. Moreover, the value of rotation should be weighed carefully against the benefit of committee continuity and experience (for example, with the Audit Committee).*

Nordstrom, Inc.

The following information is from the Corporate Governance Guidelines (as amended May 7, 2014) and obtained through the company's website at http://investor.nordstrom.com/phoenix.zhtml?c=93295&p=irol-govguidelines.

> ***Selection of Committee Members and the Chairman of the Board***
> *The Board has five committees - an Audit Committee, a Compensation Committee, a Corporate Governance and Nominating Committee, a Finance Committee and a Technology Committee. Only independent directors, as defined in Annex I, may serve on these committees. Committee members and the Chairman of the Board shall be recommended by the Corporate Governance and Nominating Committee and appointed by the Board. The Board may, from time to time, establish or maintain additional committees as it deems appropriate and in the best interests of the Company.*
>
> *In recommending the appointment of the directors to serve on various committees and the Chairman of the Board, the Corporate Governance and Nominating Committee shall take into account each director's particular experience, educational background, knowledge of the Company's business, preferences and any other factors it deems appropriate. While the rotation of committee members and the Chairman of the Board is not required because there are significant benefits attributable to continuity and experience gained in service overtime,*

rotation should be periodically considered with a view toward balancing the benefits derived from continuity against the benefits derived from the diversity of experience and viewpoints of the various directors. Each of the Board's committees shall operate pursuant to its own written charter. These charters shall set forth the purposes and goals of the particular committee, the necessary qualifications and responsibilities of its members, the procedures for committee member appointment and removal, committee structure and operations, as well as reporting procedures to the Board. The charters of these committees shall also provide for an annual evaluation of each committee's performance.

Chevron Corporation

The following information is from the Governance Guidelines dated September 30, 2015, and obtained through the company's website at http://www.chevron.com/investors/corporategovernance/governanceguidelines/.

Number and Composition of Board Committees

The Board has four committees: Audit, Board Nominating and Governance, Management Compensation and Public Policy. All Committees are comprised solely of independent Directors and members of the Audit, Board Nominating and Governance and Management Compensation committees are independent Directors, as defined by the New York Stock Exchange. In addition, all Audit Committee members meet the requirement that they may not directly or indirectly receive any compensation from the Corporation other than their Directors' compensation.

Each committee is chaired by an independent Director who determines the agenda, the frequency and length of the meetings and who has unlimited access to management, information and independent advisors, as necessary and appropriate. Each independent Director generally serves on one or two committees. Committee members serve staggered terms enabling Directors to rotate periodically to different committees. Four- to six-year terms for committee chairpersons facilitate rotation of committee chairpersons while preserving experienced leadership.

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Appendix B: Variable Definitions	
Dependent Variables	
Variable	Definition
Signed Dis Acc	The residual from the regression of total accruals on (1/Assets), (Δ Sales - Δ Accounts Receivable), Property Plant and Equipment and Return on Assets. This regression is estimated separately by industry and year.
DD Resid	The industry-mean adjusted absolute residual from the regression of working capital accruals on prior year Operating Cash Flow, current year Operating Cash Flow, next year Operating Cash Flow, Δ Sales and Propert Plant and Equipment. This regression is estimated separately by industry and year.
Misstatement	1 if the financial statements in year t are subsequently restated, and 0 otherwise. This includes all restatements identified within the Audit Analytics database.
Variables of Interest	
AC Refresh Count	The sum of *AC Rotate Count* and *AC New Dir Count* in year t.
AC Refresh	*AC Refresh Count* divided by *AC Size*.
AC Refresh Dummy	1 if *AC Refresh* is greater than 0, 0 otherwise.
AC Rotate Count	The number of directors who are internally transferred to the audit committee in year t.
AC Rotate	*AC Rotate Count* divided by *AC Size*.
AC Rotate Dummy	1 if *AC Rotate* is greater than 0, 0 otherwise.
AC New Dir Count	The number of new directors assigned to the audit committee .
AC New Dir	*AC New Director Count* divided by *AC Size*.
AC New Dir Dummy	1 if *AC New Dir* is greater than 0, 0 otherwise.
Control Variables	
LnAssets	Natural logarithm of total assets in year t.
Sales Growth	Change in sales from year t-1 to year t, divided by sales in year t-1.
Leverage	Total debt in year t, scaled by lagged total assets.
Loss	1 if the firm records net income below zero in year t, 0 otherwise.
ROA	Net income scaled by total assets in year t.
MTB	Market to book ratio in year t.
Issue	1 if the company issued debt or equity greater than 5 percent of total assets in year t, and 0 otherwise.
CF Vol	Standard deviation of cash flows from operations scaled by total assets for years t-2, t-1, and t.
Sales Vol	Standard deviation of sales scaled by total assets for years t-2, t-1, and t.
New CEO	1 if the firm has a new CEO in year t or in year t-1, 0 otherwise.

Appendix B Continued	
Big4	1 if the firm is audited by a Big 4 auditor in year t, 0 otherwise.
Auditor Chg	1 if the firm changed auditors in year t, 0 otherwise.
IC Weak	1 if a material weakness is reported in year t, 0 otherwise.
Restate Announcement	1 if the firm announces a restatement during year t, 0 otherwise.
AC Size	The number of audit committee members in year t.
AC Retire Count	Total number of members on the audit committee who are 70 years old or older and it is their last year on the board in year t.
AC Retire	*AC Retire Count* divided by *AC Size*.
Avg AC Age	The average age of the audit committee members in year t.
Avg AC Tenure	The average director tenure of the audit committee members in year t.
AC Busy Dir Count	The number of audit committee members who serve on 3 or more boards in year t.
AC Busy Dir	*AC Busy Dir Count* divided by *AC Size*.
AC CEO Experience Count	The number of audit committee members with prior or curret CEO experience in year t.
AC CEO Experience	*AC CEO Experience Count* divided by *AC Size*.
AC Acct Expert Count	Total number of accounting experts on the audit committee in year t.
AC Acct Expert	*AC Acct Expert Count* divided by *AC Size*.
AC Ind Expert Count	The number of industry experts on the audit committee in year t.
AC Ind Expert	*AC Ind Expert Count* divided by *AC Size*.
AC Legal Expert Count	The number of legal experts on the audit committee in year t.
AC Legal Expert	*AC Legal Expert Count* divided by *AC Size*.
BD Size	The number of board members in year t.
BD Meet	The number of board meetings in year t.
BD Independence	The number of outside directors divided by total number of board members in year t.
CEO Duality	1 if the CEO is the chairman of the board in year t, 0 otherwise.

TABLE 1

Refreshing the AC Frequency

Panel A: Frequency by Year

		AC Refresh			AC Rotate			AC New Dir			AC Rotate and New Dir	
Year	Total No. Firms	Total No. Directors	Total No. Firms	Percent of Firms	Total No. Directors	Total No. Firms	Percent of Firms	Total No. Directors	Total No. Firms	Percent of Firms	Total No. Firms	Percent of Firms
2005	1,523	849	603	40%	288	229	15%	561	439	29%	65	4%
2006	1,760	933	653	37%	374	272	15%	559	464	26%	83	5%
2007	2,382	1,186	874	37%	361	295	12%	825	656	28%	77	3%
2008	2,682	1,253	923	34%	434	364	14%	819	661	25%	102	4%
2009	2,476	1,186	825	33%	464	354	14%	722	573	23%	102	4%
2010	2,443	1,211	830	34%	550	389	16%	661	532	22%	91	4%
2011	2,382	1,116	807	34%	423	314	13%	693	574	24%	81	3%
2012	2,153	1,018	761	35%	378	298	14%	640	534	25%	71	3%
2013	2,288	1,384	905	40%	609	395	17%	775	609	27%	99	4%
Total	20,089	10,136	7,181	36%	3,881	2,910	14%	6,255	5,042	25%	771	4%

Panel B: Frequency by the number of years a firm refreshes the AC

	AC Rotate			AC New Dir		
	Directors	Firm Obs	Unique Firms	Directors	Firm Obs	Unique Firms
One Year	1,638	1,185	1,185	1,512	1,199	1,199
Two Years	1,295	982	491	1,865	1,490	745
Three or More Years	948	743	221	2,878	2,353	674
Total	3,881	2,910	1,897	6,255	5,042	2,618

TABLE 2								
Refreshing the AC Director Characteristics								
	AC Rotate Directors			**AC New Directors**			**Difference in Means**	
	N	Mean	Median	N	Mean	Median	Difference	t-stat
Tenure	3,881	7.160	5.000	6,255	0.000	0.000	7.160***	93.10
Age	3,881	60.363	61.000	6,255	56.000	57.000	4.363***	25.11
AC Chair	3,881	0.123	0.000	6,255	0.123	0.000	-0.000	-0.03
No. Directorships	3,881	1.582	1.000	6,255	1.622	1.000	-0.040**	-2.09
No. Committees	3,881	2.577	2.000	6,255	2.105	2.000	0.471***	19.83
CEO Experience	3,881	0.452	0.000	6,255	0.407	0.000	0.045***	4.43
Accounting Expert	3,881	0.179	0.000	6,255	0.334	0.000	-0.155***	17.20
Industry Expert	3,881	0.069	0.000	6,255	0.130	0.000	-0.061***	9.69
Legal Expert	3,881	0.101	0.000	6,255	0.083	0.000	0.018***	3.05

TABLE 3						
Descriptive Statistics						
	N	**Mean**	**Std**	**1st Quartile**	**Median**	**3rd Quartile**
Signed Dis Acc	20,089	-0.058	0.403	-0.142	-0.032	0.049
DD Resid	20,089	-0.053	0.158	-0.104	-0.040	-0.002
Misstatement	20,089	0.094	0.292	0.000	0.000	0.000
AC Refresh Count	20,089	0.505	0.823	0.000	0.000	1.000
AC Refresh	20,089	0.141	0.231	0.000	0.000	0.250
AC Rotate Count	20,089	0.193	0.551	0.000	0.000	0.000
AC Rotate	20,089	0.055	0.159	0.000	0.000	0.000
AC New Dir Count	20,089	0.311	0.605	0.000	0.000	1.000
AC New Dir	20,089	0.086	0.171	0.000	0.000	0.125
LnAssets	20,089	6.254	2.190	4.755	6.233	7.716
Sales Growth	20,089	0.159	0.544	-0.032	0.079	0.218
Leverage	20,089	0.214	0.240	0.006	0.158	0.328
Loss	20,089	0.333	0.471	0.000	0.000	1.000
ROA	20,089	-0.046	0.307	-0.038	0.034	0.077
MTB	20,089	2.879	5.268	1.172	2.011	3.544
Issue	20,089	0.462	0.499	0.000	0.000	1.000
CF Vol	20,089	0.075	0.127	0.020	0.038	0.075
Sales Vol	20,089	0.140	0.165	0.042	0.087	0.171
New CEO	20,089	0.148	0.355	0.000	0.000	0.000
Big4	20,089	0.733	0.443	0.000	1.000	1.000
Auditor Chg	20,089	0.062	0.241	0.000	0.000	0.000
IC Weak	20,089	0.068	0.252	0.000	0.000	0.000
Restatement Announcement	20,089	0.078	0.268	0.000	0.000	0.000
AC Size	20,089	3.523	0.894	3.000	3.000	4.000
AC Retire Count	20,089	0.065	0.264	0.000	0.000	0.000
AC Retire	20,089	0.017	0.071	0.000	0.000	0.000
Avg AC Age	20,089	60.050	6.677	56.667	60.667	64.000
Avg AC Tenure	20,089	6.612	3.963	3.800	6.000	8.500
AC Busy Dir Count	20,089	0.590	0.842	0.000	0.000	1.000
AC Busy Dir	20,089	0.158	0.219	0.000	0.000	0.333
AC CEO Experience Count	20,089	1.458	1.120	1.000	1.000	2.000
AC CEO Experience	20,089	0.403	0.283	0.250	0.333	0.667
AC Acct Expert Count	20,089	1.074	0.822	1.000	1.000	2.000
AC Acct Expert	20,089	0.311	0.240	0.143	0.333	0.500
AC Ind Expert Count	20,089	0.264	0.573	0.000	0.000	0.000
AC Ind Expert	20,089	0.078	0.172	0.000	0.000	0.000
AC Legal Expert Count	20,089	0.324	0.561	0.000	0.000	1.000
AC Legal Expert	20,089	0.094	0.164	0.000	0.000	0.200
BD Size	20,089	8.343	2.535	7.000	8.000	10.000
BD Meet	20,089	7.461	4.055	5.000	6.000	9.000
BD Independence	20,089	0.824	0.099	0.778	0.857	0.889
CEO Duality	20,089	0.433	0.498	0.000	0.000	1.000
For variable definitions, see Appendix B.						

TABLE 4

Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1 *Signed Dis Acc*																
2 *DD Resid*	**0.110**															
3 *Misstatement*	0.000	0.010														
4 *AC Refresh*	0.014	**0.036**	-0.011													
5 *AC Rotate*	-0.011	0.012	-0.016	**0.676**												
6 *AC New Dir*	**0.029**	**0.038**	0.000	**0.727**	-0.015											
7 *LnAssets*	**-0.091**	**-0.148**	**0.036**	**-0.027**	**-0.033**	-0.006										
8 *Sales Growth*	-0.017	**0.083**	-0.006	0.017	0.004	0.020	**-0.057**									
9 *Leverage*	-0.002	**0.054**	**0.037**	**0.040**	**0.038**	0.019	**0.169**	-0.008								
10 *Loss*	**0.115**	**0.039**	0.007	**0.082**	**0.049**	**0.065**	**-0.379**	-0.008	**0.107**							
11 *ROA*	**-0.174**	**-0.165**	0.002	**-0.099**	**-0.073**	**-0.067**	**0.425**	-0.019	**-0.217**	**-0.564**						
12 *MTB*	-0.019	0.007	-0.014	-0.001	-0.002	0.001	-0.018	**0.100**	**-0.109**	-0.014	**0.043**					
13 *Issue*	0.022	0.014	**0.034**	**0.035**	0.016	**0.033**	**0.072**	**0.102**	**0.331**	**0.101**	**-0.156**	**0.042**				
14 *CF Vol*	**0.109**	**0.254**	-0.013	**0.076**	**0.055**	**0.051**	**-0.437**	**0.147**	**0.090**	**0.296**	**-0.605**	**0.031**	**0.088**			
15 *Sales Vol*	**0.055**	**0.166**	0.005	**0.054**	**0.027**	**0.048**	**-0.281**	**0.047**	0.013	**0.136**	**-0.189**	0.000	0.004	**0.333**		
16 *New CEO*	**0.032**	**0.038**	0.006	**0.103**	0.018	**0.123**	**-0.092**	0.016	0.018	**0.145**	**-0.119**	-0.008	0.011	**0.096**	**0.067**	
17 *Big4*	**-0.042**	**-0.085**	**0.045**	**-0.032**	**-0.029**	-0.017	**0.562**	**-0.040**	**0.059**	**-0.192**	**0.207**	**0.026**	**0.026**	**-0.232**	**-0.174**	**-0.039**
18 *Auditor Chg*	0.018	**0.027**	-0.019	0.022	0.016	0.016	**-0.143**	0.014	-0.009	**0.084**	**-0.067**	**-0.028**	-0.009	**0.052**	**0.054**	**0.034**
19 *IC Weak*	0.023	**0.057**	**0.105**	**0.061**	**0.027**	**0.057**	**-0.159**	**0.031**	**0.030**	**0.109**	**-0.128**	-0.007	0.019	**0.109**	**0.083**	**0.052**
20 *Restatement Announcement*	0.016	0.018	**0.082**	0.015	0.001	0.020	-0.014	0.009	**0.031**	**0.050**	**-0.028**	-0.008	0.023	0.011	0.018	**0.036**
21 *AC Size*	-0.018	**-0.049**	-0.004	**0.041**	-0.007	**0.063**	**0.435**	**-0.070**	0.021	**-0.197**	**0.181**	-0.017	-0.011	**-0.187**	**-0.112**	**-0.061**
22 *AC Retire*	0.008	0.010	-0.008	-0.002	0.004	-0.007	0.010	-0.018	-0.005	0.001	0.000	0.003	-0.005	-0.008	-0.006	-0.006
23 *AC Avg Age*	-0.020	**-0.032**	-0.018	**-0.138**	-0.023	**-0.166**	**0.082**	**-0.065**	-0.020	**-0.113**	**0.104**	**-0.031**	**-0.032**	**-0.106**	**-0.075**	**-0.105**
24 *AC Avg Tenure*	**-0.033**	**-0.032**	-0.019	**-0.245**	-0.001	**-0.332**	-0.014	**-0.088**	**-0.079**	**-0.126**	**0.115**	**-0.030**	**-0.089**	**-0.095**	**-0.078**	**-0.173**
25 *AC Busy Dir*	-0.004	**-0.059**	-0.006	-0.009	-0.012	-0.001	**0.294**	-0.020	**0.062**	**-0.060**	**0.065**	**0.028**	**0.028**	**-0.080**	**-0.060**	0.008
26 *AC CEO Experience*	-0.001	**-0.039**	0.011	-0.005	0.002	-0.009	**0.188**	-0.018	**0.025**	**-0.037**	**0.038**	0.009	0.014	**-0.048**	**-0.045**	0.010
27 *AC Acct Expert*	-0.013	-0.009	0.013	0.005	**-0.027**	**0.032**	0.012	0.002	0.009	-0.006	0.017	0.000	0.016	**-0.025**	0.013	**0.046**
28 *AC Ind Expert*	0.005	**-0.045**	-0.017	**0.056**	0.004	**0.072**	**-0.039**	**0.061**	**-0.032**	**0.128**	**-0.120**	**0.048**	**0.050**	**0.128**	-0.015	**0.051**
29 *AC Legal Expert*	0.006	-0.011	-0.013	-0.005	0.005	-0.011	**-0.086**	0.018	0.020	**0.040**	**-0.030**	0.000	0.004	0.020	0.005	-0.002
30 *BD Size*	**-0.031**	**-0.082**	0.003	**0.032**	-0.001	**0.044**	**0.649**	**-0.052**	**0.103**	**-0.201**	**0.189**	0.009	**0.049**	**-0.221**	**-0.175**	-0.022
31 *BD Meet*	0.016	-0.019	**0.040**	**0.082**	0.015	**0.097**	**0.068**	-0.003	**0.043**	**0.124**	**-0.076**	-0.019	**0.064**	**0.024**	0.003	**0.147**
32 *BD Independence*	-0.004	**-0.065**	0.011	**0.039**	0.017	**0.036**	**0.291**	**-0.046**	**0.029**	**-0.051**	**0.083**	0.014	0.018	**-0.100**	**-0.066**	**0.031**
33 *CEO Duality*	-0.012	-0.007	0.010	**-0.048**	**-0.035**	**-0.032**	**0.074**	0.003	0.023	**-0.104**	**0.077**	-0.010	-0.017	**-0.057**	-0.019	**-0.165**

Coefficients in bold indicate significant at p < .01. All variables are defined in Appendix B.

TABLE 4 Continued

Correlations

	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
18 *Auditor Chg*	**-0.235**															
19 *IC Weak*	**-0.144**	**0.091**														
20 *Restatement Announcement*	-0.001	**0.061**	**0.148**													
21 *AC Size*	**0.250**	**-0.073**	**-0.089**	**-0.026**												
22 *AC Retire*	-0.011	0.014	-0.002	0.001	**0.080**											
23 *AC Avg Age*	-0.002	-0.010	**-0.080**	-0.018	**0.103**	**0.189**										
24 *AC Avg Tenure*	**-0.053**	-0.008	**-0.056**	-0.021	**0.033**	**0.130**	**0.446**									
25 *AC Busy Dir*	**0.233**	**-0.085**	**-0.072**	-0.010	**0.161**	-0.010	**0.051**	**-0.052**								
26 *AC CEO Experience*	**0.152**	**-0.046**	**-0.063**	0.000	**0.145**	-0.004	**0.050**	**-0.034**	**0.190**							
27 *AC Acct Expert*	**0.057**	-0.015	-0.017	0.008	**-0.105**	**-0.026**	**-0.089**	**-0.178**	**0.026**	**-0.089**						
28 *AC Ind Expert*	**0.072**	-0.023	**-0.031**	-0.016	**-0.063**	-0.019	**-0.067**	**-0.153**	**0.164**	**0.063**	**0.117**					
29 *AC Legal Expert*	**-0.089**	**0.037**	**0.045**	0.005	**-0.040**	0.003	**0.044**	**0.032**	**-0.069**	**-0.073**	**-0.078**	**-0.064**				
30 *BD Size*	**0.392**	**-0.097**	**-0.117**	**-0.032**	**0.493**	**0.064**	**0.046**	-0.019	**0.221**	**0.138**	-0.014	**-0.035**	**-0.079**			
31 *BD Meet*	**0.077**	0.001	**0.032**	**0.059**	**0.037**	-0.001	**-0.065**	**-0.136**	**0.049**	**0.054**	**0.056**	**0.053**	-0.003	**0.036**		
32 *BD Independence*	**0.274**	**-0.071**	**-0.073**	-0.014	**0.240**	**0.035**	**-0.028**	**-0.090**	**0.175**	**0.139**	**0.081**	**0.068**	**-0.070**	**0.308**	**0.142**	
33 *CEO Duality*	-0.002	0.003	0.000	-0.003	**0.057**	-0.003	0.015	**0.054**	-0.001	-0.009	**-0.030**	**-0.066**	-0.017	**-0.025**	**-0.091**	**-0.129**

Coefficients in bold indicate significant at p < .01. All variables are defined in Appendix B.

TABLE 5
Refreshing the AC and Signed Discretionary Accruals

Dedependent Variable = *Signed Dis Acc*								
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
AC Rotate	-0.0594**	(-2.45)			-0.0589**	(-2.44)		
AC New Dir			0.0168	(0.98)	0.0151	(0.88)		
AC Refresh							-0.0216	(-1.44)
LnAssets	-0.0097***	(-3.51)	-0.0095***	(-3.47)	-0.0096***	(-3.50)	-0.0097***	(-3.54)
Sales Growth	-0.0155	(-1.54)	-0.0154	(-1.54)	-0.0154	(-1.54)	-0.0155	(-1.55)
Leverage	-0.1305***	(-6.32)	-0.1313***	(-6.35)	-0.1303***	(-6.31)	-0.1314***	(-6.36)
Lag Signed Dis Acc	0.0634***	(5.07)	0.0634***	(5.06)	0.0633***	(5.07)	0.0636***	(5.08)
Loss	0.0375***	(4.63)	0.0373***	(4.60)	0.0375***	(4.62)	0.0374***	(4.62)
Lag ROA	-0.1648***	(-7.31)	-0.1634***	(-7.24)	-0.1646***	(-7.30)	-0.1643***	(-7.27)
ROA	-0.1432***	(-5.68)	-0.1421***	(-5.61)	-0.1431***	(-5.68)	-0.1425***	(-5.63)
MTB	0.0001	(0.10)	0.0001	(0.10)	0.0001	(0.10)	0.0001	(0.09)
Issue	0.0173***	(2.86)	0.0174***	(2.87)	0.0173***	(2.86)	0.0174***	(2.87)
CF Vol	0.0316	(0.61)	0.0315	(0.61)	0.0317	(0.62)	0.0312	(0.61)
Sales Vol	-0.0245	(-1.01)	-0.0256	(-1.06)	-0.0249	(-1.02)	-0.0245	(-1.01)
New CEO	-0.0001	(-0.01)	-0.0005	(-0.06)	-0.0005	(-0.06)	0.0004	(0.05)
Big4	0.0153	(1.50)	0.0160	(1.57)	0.0155	(1.52)	0.0153	(1.50)
Auditor Chg	0.0081	(0.72)	0.0080	(0.71)	0.0081	(0.72)	0.0080	(0.71)
IC Weak	-0.0177	(-1.24)	-0.0185	(-1.28)	-0.0180	(-1.25)	-0.0176	(-1.22)
AC Size	0.0017	(0.51)	0.0012	(0.36)	0.0014	(0.41)	0.0021	(0.62)
Avg AC Tenure	-0.0016*	(-1.82)	-0.0014	(-1.52)	-0.0014	(-1.51)	-0.0020**	(-2.17)
AC CEO Experience	0.0144	(1.20)	0.0146	(1.22)	0.0146	(1.22)	0.0139	(1.17)
AC Acct Expert	-0.0204	(-1.46)	-0.0188	(-1.34)	-0.0202	(-1.44)	-0.0199	(-1.42)
BD Size	0.0041**	(2.47)	0.0040**	(2.42)	0.0040**	(2.44)	0.0041**	(2.51)
BD Meet	0.0012	(1.51)	0.0011	(1.43)	0.0012	(1.47)	0.0012	(1.54)
BD Independence	0.0955**	(2.32)	0.0938**	(2.27)	0.0956**	(2.33)	0.0942**	(2.29)
CEO Duality	0.0035	(0.54)	0.0040	(0.62)	0.0035	(0.55)	0.0038	(0.60)
Constant	-0.0036	(-0.10)	-0.0080	(-0.21)	-0.0052	(-0.14)	-0.0031	(-0.08)
Industry Fixed Effects	Yes		Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm		by Firm	
N	20,089		20,089		20,089		20,089	
Adj. R2	0.116		0.116		0.116		0.116	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 6
Refreshing the AC and Accural Estimation Errors

Dedependent Variable = *DD Resid*								
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
AC Rotate	-0.0134**	(-2.01)			-0.0130*	(-1.95)		
AC New Dir			0.0122*	(1.81)	0.0118*	(1.75)		
AC Refresh							-0.0005	(-0.10)
LnAssets	-0.0042***	(-4.26)	-0.0042***	(-4.19)	-0.0042***	(-4.20)	-0.0042***	(-4.24)
Sales Growth	0.0160***	(5.18)	0.0161***	(5.19)	0.0161***	(5.19)	0.0160***	(5.18)
Leverage	0.0052	(0.71)	0.0051	(0.70)	0.0053	(0.73)	0.0049	(0.68)
Lag Signed Dis Acc	-0.0213***	(-4.97)	-0.0212***	(-4.95)	-0.0213***	(-4.96)	-0.0212***	(-4.95)
Loss	-0.0099***	(-3.29)	-0.0099***	(-3.31)	-0.0099***	(-3.30)	-0.0099***	(-3.30)
Lag ROA	-0.0551***	(-5.96)	-0.0547***	(-5.92)	-0.0549***	(-5.95)	-0.0548***	(-5.94)
ROA	-0.0190**	(-2.19)	-0.0188**	(-2.16)	-0.0190**	(-2.19)	-0.0188**	(-2.16)
MTB	0.0004*	(1.68)	0.0004*	(1.69)	0.0004*	(1.69)	0.0004*	(1.67)
Issue	-0.0035	(-1.57)	-0.0035	(-1.57)	-0.0035	(-1.58)	-0.0035	(-1.57)
CF Vol	0.2244***	(11.18)	0.2245***	(11.17)	0.2245***	(11.20)	0.2243***	(11.15)
Sales Vol	0.0579***	(6.17)	0.0575***	(6.12)	0.0577***	(6.14)	0.0578***	(6.15)
New CEO	0.0018	(0.56)	0.0015	(0.47)	0.0015	(0.47)	0.0018	(0.57)
Big4	-0.0044	(-1.35)	-0.0041	(-1.27)	-0.0042	(-1.30)	-0.0043	(-1.32)
Auditor Chg	0.0051	(1.13)	0.0051	(1.12)	0.0051	(1.13)	0.0051	(1.12)
IC Weak	0.0056	(1.19)	0.0053	(1.12)	0.0054	(1.15)	0.0056	(1.18)
AC Size	0.0005	(0.35)	0.0002	(0.14)	0.0002	(0.17)	0.0005	(0.33)
Avg AC Tenure	-0.0002	(-0.80)	-0.0000	(-0.08)	-0.0000	(-0.07)	-0.0002	(-0.83)
AC CEO Experience	-0.0084**	(-2.11)	-0.0081**	(-2.06)	-0.0081**	(-2.06)	-0.0084**	(-2.12)
AC Acct Expert	-0.0030	(-0.61)	-0.0025	(-0.51)	-0.0028	(-0.57)	-0.0027	(-0.55)
BD Size	-0.0009	(-1.33)	-0.0010	(-1.40)	-0.0009	(-1.39)	-0.0009	(-1.33)
BD Meet	-0.0001	(-0.27)	-0.0001	(-0.39)	-0.0001	(-0.36)	-0.0001	(-0.29)
BD Independence	-0.0111	(-0.80)	-0.0115	(-0.82)	-0.0111	(-0.79)	-0.0115	(-0.83)
CEO Duality	-0.0014	(-0.66)	-0.0013	(-0.61)	-0.0014	(-0.66)	-0.0013	(-0.61)
Constant	0.0613***	(3.11)	0.0594***	(3.01)	0.0600***	(3.04)	0.0608***	(3.09)
Industry Fixed Effects	Yes		Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm		by Firm	
N	20,089		20,089		20,089		20,089	
Adj. R2	0.292		0.292		0.292		0.292	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 7
Refreshing the AC and Misstatements

Dedependent Variable = *Misstatement*								
	Estimate	z-stat	Estimate	z-stat	Estimate	z-stat	Estimate	z-stat
AC Rotate	-0.4258**	(-2.46)			-0.4313**	(-2.49)		
AC New Dir			-0.1790	(-1.16)	-0.1900	(-1.23)		
AC Refresh							-0.3001**	(-2.57)
LnAssets	0.0722**	(2.54)	0.0720**	(2.53)	0.0718**	(2.52)	0.0716**	(2.51)
Sales Growth	-0.0269	(-0.50)	-0.0294	(-0.54)	-0.0283	(-0.52)	-0.0294	(-0.54)
Leverage	0.1181	(0.77)	0.1092	(0.72)	0.1168	(0.76)	0.1138	(0.75)
Lag Signed Dis Acc	-0.0573	(-0.75)	-0.0561	(-0.73)	-0.0572	(-0.75)	-0.0569	(-0.74)
Loss	0.1258	(1.59)	0.1252	(1.58)	0.1261	(1.59)	0.1260	(1.59)
Lag ROA	-0.1466	(-1.14)	-0.1431	(-1.11)	-0.1506	(-1.16)	-0.1508	(-1.16)
ROA	0.0124	(0.10)	0.0226	(0.19)	0.0123	(0.10)	0.0153	(0.13)
MTB	-0.0047	(-0.86)	-0.0048	(-0.88)	-0.0048	(-0.87)	-0.0048	(-0.88)
Issue	0.1986***	(3.23)	0.1998***	(3.25)	0.1987***	(3.23)	0.1991***	(3.24)
CF Vol	-0.1545	(-0.41)	-0.1548	(-0.42)	-0.1588	(-0.43)	-0.1600	(-0.43)
Sales Vol	0.1565	(0.78)	0.1583	(0.79)	0.1592	(0.79)	0.1604	(0.80)
New CEO	-0.0178	(-0.20)	-0.0142	(-0.16)	-0.0125	(-0.14)	-0.0101	(-0.12)
Big4	0.3468***	(3.18)	0.3466***	(3.18)	0.3441***	(3.16)	0.3433***	(3.15)
Auditor Chg	-0.2942**	(-2.57)	-0.2933**	(-2.56)	-0.2939**	(-2.57)	-0.2936**	(-2.57)
IC Weak	1.1778***	(13.89)	1.1771***	(13.91)	1.1817***	(13.95)	1.1827***	(13.96)
AC Size	-0.0381	(-0.80)	-0.0353	(-0.73)	-0.0349	(-0.72)	-0.0331	(-0.69)
Avg AC Tenure	-0.0022	(-0.23)	-0.0051	(-0.50)	-0.0051	(-0.50)	-0.0068	(-0.68)
AC CEO Experience	0.0885	(0.70)	0.0856	(0.68)	0.0855	(0.68)	0.0839	(0.66)
AC Acct Expert	0.1398	(0.91)	0.1467	(0.95)	0.1368	(0.89)	0.1380	(0.90)
BD Size	-0.0406**	(-2.05)	-0.0404**	(-2.04)	-0.0401**	(-2.02)	-0.0399**	(-2.01)
BD Meet	0.0218***	(3.14)	0.0219***	(3.15)	0.0222***	(3.19)	0.0223***	(3.20)
BD Independence	0.1667	(0.49)	0.1426	(0.42)	0.1648	(0.49)	0.1571	(0.47)
CEO Duality	0.0559	(0.75)	0.0582	(0.79)	0.0560	(0.76)	0.0567	(0.76)
Constant	-2.1197***	(-5.19)	-2.0977***	(-5.13)	-2.0948***	(-5.11)	-2.0813***	(-5.07)
Industry Fixed Effects	Yes		Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm		by Firm	
N	20,089		20,089		20,089		20,089	
Pseudo R2	0.048		0.047		0.048		0.048	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 8
Refreshing the AC and 404 Internal Control Weakness

Dedependent Variable = *IC Weak*								
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
AC Rotate	0.3604**	(2.08)			0.3831**	(2.21)		
AC New Dir			0.5634***	(3.43)	0.5770***	(3.51)		
AC Refresh							0.4831***	(3.96)
LnAssets	-0.2016***	(-5.85)	-0.1992***	(-5.79)	-0.1985***	(-5.77)	-0.1988***	(-5.77)
Sales Growth	0.0586	(1.27)	0.0646	(1.39)	0.0639	(1.38)	0.0628	(1.36)
Leverage	0.3347**	(2.39)	0.3521**	(2.51)	0.3439**	(2.46)	0.3399**	(2.44)
Lag Signed Dis Acc	-0.0136	(-0.16)	-0.0146	(-0.17)	-0.0145	(-0.17)	-0.0144	(-0.17)
Loss	0.3517***	(4.00)	0.3550***	(4.03)	0.3548***	(4.03)	0.3541***	(4.03)
Lag ROA	-0.0960	(-0.77)	-0.0975	(-0.78)	-0.0882	(-0.71)	-0.0870	(-0.70)
ROA	-0.0193	(-0.14)	-0.0228	(-0.16)	-0.0143	(-0.10)	-0.0127	(-0.09)
MTB	-0.0030	(-0.59)	-0.0029	(-0.56)	-0.0029	(-0.56)	-0.0029	(-0.57)
Issue	-0.0387	(-0.52)	-0.0390	(-0.52)	-0.0370	(-0.50)	-0.0368	(-0.49)
CF Vol	-0.1303	(-0.41)	-0.1306	(-0.41)	-0.1220	(-0.38)	-0.1210	(-0.38)
Sales Vol	0.3954**	(2.08)	0.3857**	(2.02)	0.3851**	(2.02)	0.3868**	(2.03)
New CEO	-0.4607***	(-4.62)	-0.4531***	(-4.54)	-0.4515***	(-4.52)	-0.4526***	(-4.53)
Big4	0.6643***	(7.06)	0.6656***	(7.09)	0.6636***	(7.05)	0.6633***	(7.04)
Auditor Chg	1.1817***	(13.94)	1.1835***	(13.99)	1.1876***	(14.02)	1.1878***	(14.02)
Restatement Announcement	-0.0778	(-1.40)	-0.0898	(-1.63)	-0.0882	(-1.60)	-0.0859	(-1.56)
AC Size	-0.1828	(-1.18)	-0.1793	(-1.15)	-0.1680	(-1.08)	-0.1674	(-1.08)
Avg AC Tenure	-0.0384***	(-3.25)	-0.0267**	(-2.20)	-0.0271**	(-2.23)	-0.0293**	(-2.49)
AC CEO Experience	-0.0521**	(-2.19)	-0.0547**	(-2.29)	-0.0548**	(-2.30)	-0.0544**	(-2.28)
AC Acct Expert	0.0305***	(3.91)	0.0290***	(3.69)	0.0288***	(3.67)	0.0291***	(3.70)
BD Size	-0.5314	(-1.31)	-0.4965	(-1.22)	-0.5175	(-1.28)	-0.5256	(-1.30)
BD Meet	0.1044	(1.36)	0.0970	(1.26)	0.0997	(1.30)	0.1014	(1.32)
BD Independence	0.2534***	(2.61)	0.2275**	(2.34)	0.2235**	(2.30)	0.2277**	(2.34)
CEO Duality	-0.2641	(-0.40)	-0.3487	(-0.53)	-0.3680	(-0.56)	-0.3559	(-0.54)
Constant	-0.2641	(-0.40)	-0.3487	(-0.53)	-0.3680	(-0.56)	-0.3559	(-0.54)
Industry Fixed Effects	Yes		Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm		by Firm	
N	20,089		20,089		20,089		20,089	
Pseudo R2	0.132		0.133		0.133		0.133	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 9
Refreshing the AC Determinants

Dedependent Variable =	*AC Rotate Dummy*		*AC Rotate Dummy*		*AC New Dir Dummy*		*AC Refresh Dummy*	
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
Lag LnAssets	-0.0363*	(-1.92)	-0.0003	(-0.02)	0.0525***	(3.86)	0.0362***	(2.83)
Lag Sales Growth	-0.0029	(-1.07)	-0.0014	(-0.72)	0.0001	(0.99)	0.0000	(0.05)
Lag Signed Dis Acc	-0.1146	(-1.32)	-0.0909	(-1.40)	0.0196	(0.40)	-0.0352	(-0.76)
Lag Loss	0.1196*	(1.71)	0.1676***	(2.79)	0.0573	(1.22)	0.1202***	(2.73)
Lag ROA	0.0796	(0.70)	-0.0531	(-0.58)	-0.2033***	(-2.83)	-0.1527**	(-2.31)
New CEO	-0.1012	(-1.41)	0.1999***	(3.08)	0.4336***	(9.05)	0.4194***	(9.02)
Auditor Chg	0.0171	(0.16)	0.0431	(0.45)	0.0171	(0.24)	0.0372	(0.56)
Lag IC Weak	-0.1763*	(-1.72)	-0.1304	(-1.44)	0.1129*	(1.68)	0.0266	(0.42)
Lag Restate Announcement	-0.1609	(-1.44)	-0.2063**	(-2.18)	-0.0388	(-0.57)	-0.1170*	(-1.87)
Lag AC Size	-0.2611***	(-7.11)	-0.4429***	(-12.02)	-0.2005***	(-7.27)	-0.3337***	(-12.20)
Lag AC Retire	0.0851	(1.09)	0.9587***	(12.38)	1.2174***	(17.64)	1.6346***	(21.39)
Lag AC Avg Age	-0.0172***	(-3.70)	-0.0239***	(-5.68)	-0.0090***	(-2.98)	-0.0146***	(-4.99)
Lag AC Avg Tenure	0.0430***	(5.58)	0.0307***	(4.50)	-0.0109**	(-2.08)	-0.0000	(-0.00)
Lag AC Busy Dir	-0.0570	(-0.45)	0.0464	(0.40)	0.1895**	(2.22)	0.1477*	(1.82)
Lag AC CEO Experience	0.3225***	(3.36)	0.3365***	(3.94)	0.0557	(0.85)	0.1465**	(2.30)
Lag AC Acct Expert	0.4478***	(3.84)	0.0986	(0.96)	-0.4847***	(-6.24)	-0.3073***	(-4.12)
Lag AC Ind Expert	-0.0470	(-0.28)	-0.1459	(-0.98)	-0.1566	(-1.31)	-0.1650	(-1.54)
Lag AC Legal Expert	0.3091*	(1.91)	0.2174	(1.45)	-0.1089	(-0.95)	-0.0183	(-0.17)
Lag BD Size	0.1070***	(7.25)	0.1597***	(11.66)	0.0712***	(6.66)	0.1222***	(11.48)
Lag BD Meet	-0.0059	(-0.90)	0.0162***	(3.03)	0.0278***	(6.43)	0.0291***	(6.87)
Lag BD Independence	1.4775***	(4.74)	1.9701***	(7.24)	0.4215**	(2.18)	1.1198***	(6.16)
CEO Duality	-0.0017	(-0.03)	0.0062	(0.13)	0.0246	(0.68)	0.0190	(0.55)
Constant	-1.1502*	(-1.94)	-2.7250***	(-5.69)	-1.2638**	(-2.57)	-1.2001**	(-2.49)
Industry Fixed Effects	Yes		Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm		by Firm	
N	6,632		19,409		19,409		19,409	
Pseudo R2	0.050		0.050		0.041		0.059	

*,**,*** *Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in the Appendix B.*

TABLE 10
AC Rotate Director Characteristics Relative to Non-Rotate AC Members

Panel A: Relative Tenure						
Dedependent Variable =	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC Rotate Relative Long Tenure	-0.070**	(-2.47)	-0.018**	(-2.38)	-0.456**	(-2.38)
AC Rotate Relative Short Tenure	-0.015	(-0.43)	0.007	(0.60)	-0.339	(-0.99)
AC New Dir	0.016	(0.95)	0.013*	(1.95)	-0.184	(-1.19)
Controls Included	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Adj. R2 / Pseudo R2	0.116		0.292		0.048	
Panel B: Relative Accounting Expertise						
Dedependent Variable =	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC Rotate Relative Acct Expert	-0.114***	(-2.72)	-0.024**	(-2.27)	-0.611**	(-2.21)
AC Rotate Relative Non Acct Expert	-0.018	(-0.67)	-0.005	(-0.57)	-0.319	(-1.42)
AC New Dir	0.014	(0.81)	0.012*	(1.82)	-0.189	(-1.22)
Controls Included	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Adj. R2 / Pseudo R2	0.116		0.292		0.048	
Panel C: Relative Prior CEO Experience						
Dedependent Variable =	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC Rotate Relative CEO Exp	-0.089***	(-2.66)	-0.024***	(-2.80)	-0.363	(-1.58)
AC Rotate Relative Non CEO Exp	-0.025	(-0.79)	-0.000	(-0.02)	-0.500**	(-2.05)
AC New Dir	0.014	(0.79)	0.012*	(1.79)	-0.187	(-1.21)
Controls Included	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Adj. R2 / Pseudo R2	0.116		0.292		0.048	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 11
AC New Director Characteristics Relative to Non-New Dir AC Members

Panel A: Prior Board Experience						
Dedependent Variable =	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC New Dir - Prior BD Experience	0.0336	(1.26)	0.0196*	(1.93)	-0.3980	(-1.59)
AC New Dir - No prior BD Experience	0.0030	(0.14)	0.0082	(1.00)	-0.0665	(-0.34)
AC Rotate	-0.0590**	(-2.44)	-0.0130*	(-1.95)	-0.4284**	(-2.48)
Controls Included	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Adj. R2 / Pseudo R2	0.116		0.292		0.048	

Panel B: Relative Accounting Expertise						
Dedependent Variable =	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC New Dir Relative Acct Expert	0.0435*	(1.77)	0.0208**	(2.12)	-0.1769	(-0.84)
AC New Dir Relative Non Acct Expert	-0.0087	(-0.41)	0.0057	(0.72)	-0.1974	(-1.01)
AC Rotate	-0.0589**	(-2.43)	-0.0130*	(-1.94)	-0.4293**	(-2.48)
Controls Included	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Adj. R2 / Pseudo R2	0.116		0.292		0.048	

Panel C: Relative Prior CEO Experience						
Dedependent Variable =	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC New Dir Relative CEO Exp	0.0142	(0.55)	0.0201**	(2.37)	-0.3447	(-1.58)
AC New Dir Relative Non CEO Exp	0.0143	(0.71)	0.0067	(0.79)	-0.0765	(-0.40)
AC Rotate	-0.0589**	(-2.44)	-0.0129*	(-1.93)	-0.4317**	(-2.49)
Controls Included	Yes		Yes		Yes	
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Adj. R2 / Pseudo R2	0.116		0.292		0.048	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 12 Endogeneity: Heckman Selection Model		
Panel A: First Stage		
Dependent Variable = *Pr(AC Rotate Dummy)*		
	Estimate	t-stat
Avg AC Age	-0.0085***	(-4.30)
AC New Dir	-0.0565**	(-2.05)
LnAssets	-0.0097	(-1.00)
Sales Growth	-0.0052	(-0.23)
Leverage	0.0344	(0.64)
Lag Signed Dis Acc	-0.0452	(-1.41)
Loss	0.0407	(1.34)
ROA	-0.1208**	(-2.15)
Lag ROA	-0.1318**	(-2.26)
MTB	-0.0005	(-0.23)
Issue	0.0135	(0.56)
CF Vol	-0.1322	(-1.01)
Sales Vol	0.0361	(0.48)
Big4	-0.0080	(-0.24)
Auditor Chg	0.0287	(0.62)
IC Weak	0.0336	(0.74)
AC Size	0.1483***	(9.04)
AC Acct Expert	-0.1806***	(-3.49)
Avg AC Tenure	0.0059*	(1.70)
BD Size	0.0134*	(1.92)
BD Meet	0.0072***	(2.60)
BD Independence	0.5179***	(3.81)
CEO Duality	-0.0571**	(-2.33)
New CEO	0.1213***	(3.48)
Constant	-1.6605***	(-7.30)
Industry Fixed Effects	Yes	
Year Fixed Effects	Yes	
Std Errors Clustered	by Firm	
N	20,089	
Pseudo R2	0.024	

TABLE 12 Continued						
Panel B: Second Stage						
Dependent Variable=	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC Rotate	-0.0587**	(-2.42)	-0.0131*	(-1.95)	-0.4332**	(-2.51)
AC New Dir	0.0086	(0.46)	0.0135*	(1.78)	-0.1389	(-0.81)
LnAssets	-0.0097***	(-3.49)	-0.0043***	(-4.27)	0.0782***	(2.68)
Sales Growth	-0.0157	(-1.57)	0.0161***	(5.22)	-0.0274	(-0.50)
Leverage	-0.1289***	(-6.21)	0.0050	(0.69)	0.1032	(0.67)
Lag Signed Dis Acc	0.0613***	(4.76)	-0.0208***	(-4.72)	-0.0375	(-0.46)
Loss	0.0396***	(4.65)	-0.0103***	(-3.24)	0.1085	(1.28)
ROA	-0.1702***	(-7.17)	-0.0539***	(-5.70)	-0.0992	(-0.69)
Lag ROA	-0.1497***	(-5.52)	-0.0176*	(-1.91)	0.0656	(0.44)
MTB	0.0001	(0.08)	0.0005*	(1.69)	-0.0046	(-0.85)
Issue	0.0180***	(2.92)	-0.0037	(-1.63)	0.1921***	(3.07)
CF Vol	0.0262	(0.50)	0.2256***	(11.26)	-0.1035	(-0.27)
Sales Vol	-0.0227	(-0.93)	0.0573***	(6.07)	0.1416	(0.69)
Big4	0.0155	(1.52)	-0.0043	(-1.34)	0.3493***	(3.20)
Auditor Chg	0.0094	(0.83)	0.0049	(1.09)	-0.3066***	(-2.64)
IC Weak	-0.0165	(-1.12)	0.0053	(1.10)	1.1630***	(13.14)
AC Size	0.0083	(0.92)	-0.0012	(-0.35)	-0.0936	(-0.91)
AC Acct Expert	-0.0305*	(-1.80)	-0.0002	(-0.03)	0.2038	(1.05)
Avg AC Tenure	-0.0014	(-1.56)	-0.0000	(-0.04)	-0.0057	(-0.55)
BD Size	0.0046**	(2.47)	-0.0010	(-1.40)	-0.0458**	(-2.13)
BD Meet	0.0015*	(1.68)	-0.0002	(-0.50)	0.0194**	(2.31)
BD Independence	0.1239**	(2.40)	-0.0176	(-0.98)	-0.0520	(-0.11)
CEO Duality	0.0009	(0.12)	-0.0011	(-0.44)	0.0776	(0.96)
New CEO	0.0073	(0.65)	-0.0019	(-0.40)	-0.0987	(-0.83)
InvMills	0.0592	(0.79)	-0.0113	(-0.41)	-0.5365	(-0.66)
Constant	-0.1479	(-0.80)	0.0876	(1.26)	-0.7888	(-0.39)
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Pseudo R2/ Adj. R2	0.116		0.292		0.048	
,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*						

TABLE 13
Endogeneity: Firm Fixed-Effects

Dependent Variable=	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat
AC Rotate	-0.0149**	(-2.13)	-0.0489**	(-2.01)	-0.0280**	(-2.17)
AC New Dir	0.0084	(1.12)	0.0222	(1.19)	-0.0312**	(-2.42)
LnAssets	-0.0224***	(-6.07)	-0.0279**	(-2.45)	0.0391***	(5.85)
Sales Growth	0.0171***	(5.20)	-0.0261**	(-2.50)	-0.0033	(-0.91)
Leverage	0.0175	(1.32)	0.0355	(1.01)	0.0060	(0.32)
Lag Signed Dis Acc	-0.0174***	(-3.79)	-0.1361***	(-7.82)	-0.0016	(-0.26)
Loss	-0.0004	(-0.12)	0.0167*	(1.85)	0.0108	(1.51)
Lag ROA	-0.0529***	(-5.37)	-0.1434***	(-5.62)	-0.0110	(-1.00)
ROA	0.0033	(0.33)	-0.0915***	(-3.43)	-0.0201	(-1.52)
MTB	0.0002	(0.64)	-0.0002	(-0.27)	-0.0000	(-0.07)
Issue	-0.0018	(-0.71)	0.0172**	(2.50)	0.0080	(1.58)
CF Vol	0.1492***	(6.89)	-0.0456	(-0.69)	0.0473*	(1.78)
Sales Vol	0.0245**	(2.08)	-0.0149	(-0.45)	0.0148	(0.81)
New CEO	0.0034	(0.94)	0.0017	(0.18)	-0.0046	(-0.61)
Big4	-0.0012	(-0.17)	0.0188	(0.93)	-0.0342**	(-2.24)
Auditor Chg	0.0050	(1.00)	0.0123	(1.00)	-0.0342***	(-4.06)
IC Weak	0.0044	(0.90)	-0.0108	(-0.70)	0.0749***	(5.38)
AC Size	0.0006	(0.29)	0.0039	(0.70)	0.0009	(0.20)
Avg AC Tenure	-0.0003	(-0.56)	-0.0004	(-0.24)	-0.0010	(-0.90)
AC CEO Experience	-0.0052	(-0.73)	0.0155	(0.68)	0.0032	(0.21)
AC Acct Expert	-0.0108	(-1.25)	0.0145	(0.63)	-0.0544***	(-3.06)
BD Size	-0.0013	(-1.18)	0.0022	(0.78)	-0.0026	(-1.36)
BD Meet	0.0001	(0.43)	0.0017*	(1.66)	0.0004	(0.49)
BD Independence	-0.0173	(-0.80)	0.1111*	(1.94)	-0.0706*	(-1.91)
CEO Duality	0.0004	(0.10)	-0.0004	(-0.05)	0.0054	(0.73)
Constant	0.1240***	(4.40)	-0.0457	(-0.49)	-0.0141	(-0.27)
Firm Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	20,089		20,089		20,089	
Adj. R2	0.338		0.243		0.261	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 14
Endogeneity: Coarsened Exact Matching

Panel A: Matching Descriptives

	Full Sample			Matched Sample		
	N	Mean Diff	t-stat	N	Mean Diff	t-stat
LnAssets	20,089	-0.136**	(-2.97)	4,226	0.009	(0.14)
Lag Loss	20,089	-0.051***	(-5.27)	4,226	0.000	(0.00)
New CEO	20,089	-0.031***	(-4.12)	4,226	0.000	(0.00)
Lag Restate Announcement	20,089	0.011*	(2.28)	4,226	0.000	(0.00)

Panel B: Regression Results

Dependent Variable=	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC Rotate	-0.0836**	(-2.30)	-0.0236**	(-2.43)	-0.4850*	(-1.84)
AC New Dir	0.0668*	(1.65)	0.0080	(0.54)	-0.4698	(-1.15)
LnAssets	-0.0107*	(-1.80)	-0.0019	(-0.93)	0.0354	(0.61)
Sales Growth	-0.0091	(-0.39)	0.0187***	(3.06)	0.0718	(0.66)
Leverage	-0.0984**	(-2.43)	-0.0109	(-0.77)	0.1476	(0.45)
Lag Signed Dis Acc	0.1701***	(5.63)	-0.0194*	(-1.92)	-0.0805	(-0.41)
Loss	0.0546***	(2.95)	-0.0134**	(-2.04)	0.0878	(0.45)
ROA	-0.1368***	(-3.10)	-0.0540***	(-3.23)	-0.4370	(-1.55)
Lag ROA	-0.0764	(-1.55)	-0.0338**	(-2.33)	0.4308	(1.40)
MTB	-0.0021	(-1.09)	-0.0000	(-0.05)	0.0065	(0.60)
Issue	0.0084	(0.62)	0.0061	(1.25)	0.3577**	(2.55)
CF Vol	0.2042**	(2.28)	0.2262***	(6.69)	-0.7856	(-0.97)
Sales Vol	0.0204	(0.38)	0.0805***	(4.68)	0.0616	(0.14)
Big4	0.0153	(0.71)	-0.0038	(-0.59)	0.6350***	(2.98)
Auditor Chg	0.0301	(1.18)	0.0066	(0.65)	-0.3159	(-1.03)
IC Weak	-0.0252	(-0.71)	0.0016	(0.15)	1.0742***	(4.87)
AC Size	-0.0015	(-0.20)	-0.0013	(-0.46)	-0.0301	(-0.33)
Percent AC Acct Expert	-0.0604*	(-1.84)	-0.0090	(-0.86)	0.1931	(0.64)
Avg AC Tenure	-0.0031	(-1.52)	0.0005	(0.58)	-0.0159	(-0.75)
BD Size	0.0041	(1.09)	-0.0003	(-0.18)	-0.0678*	(-1.65)
BD Meet	0.0003	(0.18)	0.0004	(0.72)	0.0401***	(2.96)
BD Independence	0.1384	(1.32)	0.0102	(0.34)	-0.1656	(-0.23)
CEO Duality	0.0147	(1.05)	-0.0026	(-0.62)	0.1701	(1.13)
New CEO	0.0301	(1.38)	-0.0104	(-1.07)	0.0694	(0.26)
Constant	0.1285	(1.06)	0.0056	(0.22)	0.0189	(0.01)
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	4,226		4,226		4,226	
Pseudo R2/ Adj. R2	0.110		0.294		0.065	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in Appendix B.*

TABLE 15
Endogeneity: Propensity Score Matching

Panel A: Matching Descriptives

	Full Sample			Matched Sample		
	N	Mean Diff	t-stat	N	Mean Diff	t-stat
LnAssets	20,089	-0.136**	(-2.97)	5,174	-0.073	-1.15
Lag Loss	20,089	-0.051***	(-5.27)	5,174	-0.018	(-1.34)
New CEO	20,089	-0.031***	(-4.12)	5,174	-0.018	(-1.73)
Lag Restate Announcement	20,089	0.011*	(2.28)	5,174	0.001	(0.12)

Panel B: Regression Results

Dependent Variable=	*Signed Dis Acc*		*DD Resid*		*Misstatement*	
	Estimate	t-stat	Estimate	t-stat	Estimate	z-stat
AC Rotate	-0.0801***	(-2.83)	-0.0177**	(-2.08)	-0.5031**	(-2.46)
AC New Dir	-0.0305	(-0.91)	0.0002	(0.02)	0.0996	(0.31)
LnAssets	-0.0063	(-1.28)	-0.0056***	(-3.05)	0.0899**	(2.04)
Sales Growth	-0.0004	(-0.02)	0.0177***	(3.34)	0.0478	(0.51)
Leverage	-0.1652***	(-4.48)	0.0052	(0.38)	0.1336	(0.51)
Lag Signed Dis Acc	0.1473***	(5.52)	-0.0142	(-1.54)	0.1771	(0.97)
Loss	0.0563***	(3.48)	-0.0192***	(-3.21)	0.0105	(0.07)
ROA	-0.2066***	(-5.13)	-0.0463***	(-2.91)	-0.2509	(-0.95)
Lag ROA	-0.0689	(-1.49)	-0.0364**	(-2.31)	0.1445	(0.54)
MTB	-0.0019	(-1.11)	0.0001	(0.25)	0.0029	(0.29)
Issue	0.0176	(1.46)	0.0017	(0.41)	0.2258**	(2.00)
CF Vol	0.1412*	(1.69)	0.1888***	(5.81)	0.0768	(0.12)
Sales Vol	-0.0719*	(-1.74)	0.0463***	(2.59)	-0.5419	(-1.32)
Big4	0.0233	(1.21)	-0.0115**	(-1.96)	0.3078*	(1.74)
Auditor Chg	0.0327	(1.53)	0.0093	(0.96)	0.0578	(0.26)
IC Weak	0.0194	(0.80)	0.0151	(1.61)	1.3371***	(8.06)
AC Size	-0.0018	(-0.27)	-0.0004	(-0.17)	-0.1294*	(-1.77)
Percent AC Acct Expert	-0.0151	(-0.56)	-0.0030	(-0.32)	-0.0760	(-0.31)
Avg AC Tenure	-0.0014	(-0.85)	0.0005	(0.78)	0.0061	(0.35)
BD Size	0.0027	(0.82)	0.0002	(0.15)	-0.0822***	(-2.74)
BD Meet	0.0015	(0.98)	0.0006	(1.23)	0.0299**	(2.45)
BD Independence	0.1308	(1.49)	0.0079	(0.29)	0.8851	(1.46)
CEO Duality	0.0023	(0.20)	-0.0017	(-0.43)	0.0304	(0.24)
New CEO	-0.0007	(-0.05)	-0.0071	(-1.17)	-0.0716	(-0.40)
Constant	-0.0269	(-0.33)	0.0472*	(1.82)	-2.6394***	(-3.42)
Industry Fixed Effects	Yes		Yes		Yes	
Year Fixed Effects	Yes		Yes		Yes	
Std Errors Clustered	by Firm		by Firm		by Firm	
N	5,174		5,174		5,174	
Pseudo R2/ Adj. R2	0.144		0.288		0.071	

,,*** Significance at 0.10, 0.05, and 0.01 respectively (two-tailed). Variables are defined in the Appendix B.*

VITA

Anne Albrecht is a Ph.D. candidate in the School of Accountancy at the University of Missouri, Trulaske College of Business. She expects to graduate in May 2016. Prior to entering the Ph.D. program, Anne attended the University of Kansas, receiving her undergraduate degree in Accounting in May 2008 and master's degree in Accounting in May 2009, and worked as an auditor at Deloitte & Touche LLP in Kansas City, MO. Anne holds an active CPA license in the state of Missouri. After three years working as a certified public accountant, Anne applied and received the Accounting Doctoral Scholars (ADS) scholarship. The ADS program was formed to increase the number of accounting professors with audit and tax experience and was created by the AICPA Foundation in conjunction with the biggest public accounting firms. As an ADS scholar, Anne pursued her Ph.D. at the University of Missouri beginning August 2012.

Because of her background as a CPA, Anne's research and teaching interests include audit, corporate governance, fraud, and financial reporting. Anne has taught both introductory accounting and auditing courses at the University of Missouri. Currently, she has several working papers within the auditing and corporate governance fields. After graduation, Anne plans on continuing her success in both research and teaching as a tenured-track faculty member at Texas Christian University.