

Executive Team Financial Expertise and the Influence on Financial Reporting

by

Patrick G. Badolato

Department of Business Administration  
Duke University

Date: \_\_\_\_\_

Approved:

\_\_\_\_\_  
Katherine Schipper, Supervisor

\_\_\_\_\_  
Shane Dikolli

\_\_\_\_\_  
Rick Larrick

\_\_\_\_\_  
William Mayew

\_\_\_\_\_  
Mohan Venkatachalam

Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor of Philosophy in the Department of Business  
Administration in the Graduate School of Duke University

2010

ABSTRACT

Executive Team Financial Expertise and the Influence on Financial Reporting

by

Patrick G. Badolato

Department of Business Administration  
Duke University

Date: \_\_\_\_\_

Approved:

\_\_\_\_\_  
Katherine Schipper, Supervisor

\_\_\_\_\_  
Shane Dikolli

\_\_\_\_\_  
Rick Larrick

\_\_\_\_\_  
William Mayew

\_\_\_\_\_  
Mohan Venkatachalam

An abstract of a dissertation submitted in partial  
fulfillment of the requirements for the degree of Doctor of Philosophy in the Department  
of Business Administration in the Graduate School of Duke University

2010

Copyright by  
Patrick G. Badolato  
2010

## **Abstract**

While a considerable body of research examines the determinants of financial reporting decisions, much of the heterogeneity in financial reporting outcomes is not explained by firm and industry factors. Guided by the Upper Echelons perspective of Hambrick and Mason (1984), I examine the relation between the presence of a financial expert, defined as either a CEO or a CFO with an accounting background and earnings quality. I propose that the coupling of decision rights and domain-specific knowledge supports the team's influence discretionary reporting choices, controlling for incentives, corporate governance and firm-specific factors. I find that in the pre Sarbanes Oxley era, executive teams with financial expertise have higher discretionary earnings quality as measured by smaller absolute abnormal accruals; however, this relation is eliminated in the period following Sarbanes Oxley. Building on research that proposes that accruals management and real activities management are substitutes, I examine four proxies for real activities management and do not find evidence of a relation between firms with executive teams with financial expertise and these proxies for real activities management.

# Contents

Abstract .....	iv
List of Tables .....	vii
List of Figures .....	viii
Acknowledgements .....	ix
1. Introduction .....	1
2. Motivation and Related Literature .....	7
2.1 The Upper Echelons Perspective .....	7
2.2 Earnings Quality .....	10
2.3 Executive Teams .....	13
2.4 Financial Expertise .....	14
3. Hypotheses .....	17
3.1 Executive Team Financial Expertise and Earnings Quality .....	17
3.1.1 Executive Team Financial Expertise and Earnings Quality: Changes in the External Environment .....	18
3.2 Executive Team Financial Expertise and Real Activities Management .....	20
4. Variable Choice .....	23
4.1 Test Variable: Accounting Expertise .....	23
4.2 Dependent Variables .....	25
4.2.1 Financial Reporting Quality: Earnings Quality .....	25
4.3 Financial Reporting Quality: Real Activities .....	27
4.4 Control Variables .....	30

5. Research Design .....	33
5.1 Earnings Quality .....	33
5.2 Real Activities .....	35
6. Sample Selection.....	37
6.1 BoardEx.....	37
6.2 Executive Teams .....	39
6.3 Earnings Quality Sample.....	40
6.4 Real Activities Sample .....	41
7. Descriptive Statistics and Correlations .....	42
7.1 Time Series Analysis of Executive Team Financial Expertise .....	42
7.2 Descriptive Statistics .....	45
7.3 Correlations.....	47
8. Results.....	50
8.1 Test of H1: Executive Team Financial Expertise and Earnings Quality .....	50
8.2 Test of H2: Executive Team Financial Expertise and Real Activities Management .....	54
8.3 Additional Tests.....	60
9. Conclusion .....	65
Appendix A Description of Variables .....	67
References .....	74
Biography .....	79

## List of Tables

Table 1: Sample Selection.....	38
Table 2: Descriptive Statistics.....	46
Table 3: Correlations of Test, Dependent, and Controls Variables.....	49
Table 4: Test of H1a: Financial Expertise and Earnings Quality.....	52
Table 5: Test of H1b: Financial Expertise and Earnings Quality: Pre-SOX.....	53
Table 6: Test of H2a: Financial Expertise and Real Activities Management.....	56
Table 7: Test of H2b: Financial Expertise and Real Activities Management: Post-SOX....	58
Table 8: Financial Expertise, Other Backgrounds, and Earnings Quality.....	63

## List of Figures

Figure 1: Percent Change of Firms with Executive Teams with Financial Expertise. ....	43
Figure 2: Percent Change of Firms with CFOs with Financial Expertise. ....	43
Figure 3: Percent Change of Firms with CEOs with Financial Expertise. ....	44



## **Acknowledgements**

I am indebted to my dissertation committee, Katherine Schipper (Chair), Shane Dikolli, Rick Larrick, Bill Mayew, and Mohan Venkatachalam, for their feedback, guidance, and support. I appreciate the assistance with the BoardEx database provided by Jacqueline Higgins. I thank the other faculty members at Duke University's Fuqua School of Business for their advice and helpful comments. I also thank my fellow doctoral students at Duke University's Fuqua School of Business, especially Sam Melessa, Justin Murfin, and Jason Roos, for their assistance and insightful perspectives.

# 1. Introduction

A considerable body of research examines the determinants and quality of firms' reporting and disclosure outcomes (e.g., Lo 2008; Fields, Lys, and Vincent 2001; Healy and Palepu 2001). Results of this research indicate that much of the heterogeneity in financial reporting outcomes is not explained by firm-level characteristics, measures of corporate governance, and executive incentives (Bertrand and Schoar 2003; Bamber, Jiang, and Wang 2008; Francis, Huang, Rajgopal, and Zang 2008). I extend this research by examining how manager characteristics, specifically financial reporting expertise, affect financial reporting outcomes.

As Lo (2008, p. 352-353) discusses in his review of earnings management and earnings quality, although the financial reporting process requires the input of managers, the role of individual managers is under-explored. In addition, Strategic theory, including the *Upper Echelons* perspective of Hambrick and Mason (1984), proposes an association between the characteristics of top management teams and firm outcomes. From a methodological standpoint, this literature proposes the analysis of demographic information to understand firm outcomes, especially the domain-specific backgrounds or experiences of managers with both responsibility for and discretion over firm decisions (Hambrick 2007).

In this study, I examine the relation between executive teams with financial expertise and financial reporting quality. I define financial expertise as both the ability to understand the

transactions and implications of accounting choices and the ability to make critical accounting judgments. I categorize an executive team that has either a CEO or CFO with training or experience in accounting as an executive team with financial expertise. I extend previous research by focusing on the financial expertise of the executive *team*; previous research that examines how managerial characteristics influence financial reporting outcomes examines individuals.<sup>1</sup> The analysis of the financial expertise of executive teams provides a powerful setting to investigate the relation between the “actors” at the firm level and financial reporting quality because executives with decision rights and domain-specific knowledge are expected to have responsibility for and influence financial reporting outcomes.

In my main analysis, using a sample of over 1,500 US publicly traded firms from 1995 through 2007, I examine whether earnings quality differs between firms with executive teams with and without a financial expert, controlling for firm-specific factors, the incentives of the executive team, and the independence and financial expertise of the board of directors.

I also examine whether the relation between executive teams with financial expertise and earnings quality changed around the passage of the Sarbanes Oxley Act of 2002 (hereafter, SOX). This test is motivated by research that finds a shift in the usage of discretionary accruals around the passage of SOX and attributes these changes to increased scrutiny of the usage of

---

<sup>1</sup> For example, Bertrand and Schoar (2003); Ge, Matsumoto, and Zhang (2010); Masunaga and Yeung (2008); Bamber, Jiang, and Wang (2010); Hribar and Yang (2006); and Francis et al. (2008) all examine how characteristics of individual executives influence financial reporting outcomes but do not examine the characteristics of the executive team.

discretionary accruals (Cohen, Dey, and Lys 2008; Koh, Matsumoto, and Rajgopal 2008; Bartov and Cohen 2006). In addition, the legal accountability of both CEOs and CFOs changed around the passage of SOX, irrespective of an executive's area of expertise. I include this test as I predict that the increased reputational consequences of faulty financial reporting outcomes alter the relation between financial expertise and earnings quality.

To capture earnings quality I use two proxies: the absolute value of abnormal accruals (Jones 1991; as modified by Dechow, Sloan, and Sweeney 1995; Collins and Hribar 2002; Kothari, Leone, and Wasley 2005) and accruals quality (Dechow and Dichev 2002). Based on prior literature, I control for factors reported to affect the innate level of earnings quality (Dechow and Dichev 2002; Francis et al. 2005; Hribar and Nichols 2007). I control for innate factors to focus on the extent to which executives exert discretion over the financial reporting process through accrual decisions.

I find evidence that firms with executive teams with financial expertise have higher earnings quality, measured as smaller absolute abnormal accruals, in the period preceding SOX and this relation does not exist in the period following SOX. These results are consistent with an efficient contracting perspective. I find no relation between firms with executive teams with financial expertise and accruals quality.

Research suggests that the management of accruals and real activities management are substitutes (Zang 2006; Cohen, Dey, and Lys 2008) and CFO survey evidence of Graham,

Harvey, and Rajgopal (2005) suggests that following SOX, executives are reluctant to engage in accruals management and are inclined to manage real activities. Therefore, I examine the relation between firms with executive teams with financial expertise and real activities management. I examine the real activities management via the management of discretionary expenses, production costs, sales, and the sale of assets (following Roychowdhury 2006; Gunny 2009; and Zang 2006). I do not find a relation between firms with executive teams with financial expertise and the four proxies for real activities management.

I also document an increase in the aggregate level of executive team financial expertise 1995 to 2008 for a sample of over 4,000 US publicly traded firms. For example, the percent of executive teams with financial expertise increases from 54% to 66% between 1995 and 2008. This trend affects CEOs (Chief Executive Officers) and CFOs (Chief Financial Officers) as the percent of newly hired CEOs (CFOs) with financial expertise increases from 5% (52%) to 10% (63%) between 1995 and 2008. The increasing prevalence of both CEOs and CFOs with accounting expertise is consistent with a labor market preference for financial expertise.

I also examine the differences between firms with and without executive teams with financial expertise. Dechow and Dichev (2002) hypothesize and find that the complexity of a firm's operating environment increases the difficulty of estimating accruals. Therefore, I examine the relation between a firm's operating environment and the presence of a financial expert on the executive team. To measure operating environment, I follow Dechow and Dichev

(2002) and Francis, Lafond, Olsson, and Schipper (2005) and examine six factors that are associated with the volatility of operations: firm size, the length of the operating cycle, the volatility of sales, the volatility of cash flows, the opportunity for growth, and the frequency of losses. I find evidence that firms with executive teams with financial expertise are more volatile. These results are consistent with firms choosing executives with knowledge or accounting expertise to deal with the complexity of their operating environments.

In summary, the main results show an association between firms with executive teams with financial expertise and smaller levels of absolute discretionary accruals in the period preceding SOX, but no relation in the period following SOX or between executive teams with financial expertise and accruals quality. In addition, this study does not provide evidence of an association between firms with executive teams with financial expertise and four proxies for real activities management. Further, I find a relation between firms with executive teams with financial expertise and six factors associated with higher levels of operating volatility.

My study is subject to several caveats and limitations. First, my study is subject to the same criticisms of other studies that use these proxies for earnings quality. Second, while I allow the expertise of executive teams to differ, I assume that all financial expertise is the same. Determining whether heterogeneity *within* financial expertise sharpens the relation between

expertise and financial reporting outcomes is beyond the scope of this analysis.<sup>2</sup> Third, this analysis does not speak to the relation between accounting training and financial reporting; rather it examines the relation between financial expertise for a subset of individuals who become CEOs or CFOs. Moreover, while I provide evidence of a relation between a financial expertise and earnings quality, I do not provide evidence of the psychological and social processes that drive this relation. Therefore, similar to commentary of Hambrick (2007), in this study, I am unable to address the “black box problem” and determine what causes these behaviors.

The remainder of the study follows this organization: Section 2 describes the motivation and reviews prior literature. Section 3 develops my hypotheses. Section 4 describes the selection and creation of my variables. Section 5 discusses my research design and presents the equations for this analysis. Section 6 describes my sample and Section 7 presents descriptive statistics and univariate results. Section 8 presents my main results and discusses some additional tests. Finally, Section 9 concludes this analysis.

---

<sup>2</sup> For example, I neither examine the difference between experience as an auditor of financial information (i.e., employment at a public accounting firm) and experience as a preparer of financial information (i.e., employment as a corporate controller) nor do I examine the difference between an accounting degree, which may not have ethical requirements and a professional distinction such as a CPA or CA, which have ethical requirements.

## **2. Motivation and Related Literature**

### ***2.1 The Upper Echelons Perspective***

Organizational theorists, population ecologists, and neoclassical economists propose a limited role for managerial characteristics to influence firm outcomes because firm and environmental factors limit the scope of managerial actions (Hambrick and Mason 1984; Bertrand and Schoar 2003). Strategic theory, beginning with the Upper Echelons perspective of Hambrick and Mason (1984), proposes that uncertainty and complexity provide the opportunity for managers to influence firm outcomes.

The Upper Echelons perspective focuses on three main points (Hambrick and Mason 1984; Cannella, Hambrick, and Pettigrew 2001). First, this theory proposes an association between the characteristics, backgrounds, and biases of top managers and firm outcomes, incremental to factors specific to the firm and its operating environment. Second, this theory proposes that, incremental to the characteristics of the CEO, the characteristics of the executive team explain heterogeneity in organizational outcomes. Third, as a methodological point, this theory proposes that demographic characteristics or observable characteristics are suitable proxies for physiological dimensions or dispositions of executives.

Empirical research provides evidence of a relation between individual executives and firm outcomes incremental to firm and industry-specific factors. For example, Bertrand and Schoar (2003) use a manager-firm matched panel dataset to track executives across firms over



time and find that manager fixed effects affect several corporate decisions including acquisition, diversification, dividend and cost-cutting policies, and interest coverage. Bamber, Jiang, and Wang (2008) find that manager fixed effects explain a substantial portion of the heterogeneity in the frequency, precision, bias, accuracy, and news conveyed in voluntary earnings forecasts. Similarly, Ge, Matsumoto, and Zhang (2010) find that CFO fixed effects explain a portion of the heterogeneity in the level of income increasing discretionary accruals, the use of off-balance sheet operating leases, the use of aggressive estimated rates of return on pension assets, the extent of earnings smoothing, the ability to meet analysts' expectations by small amounts, and the likelihood of an accounting misstatement.

Empirical research also provides evidence of a relation between managerial characteristics and firm outcomes incremental to firm and industry-specific factors. For example, Bamber, Jiang, and Wang (2008) find that firms whose CEOs, CFOs, and general counsels have finance or accounting backgrounds (MBA degrees) issue more precise (accurate) forecasts. Further, when those holding these positions are older, the firms issue fewer forecasts. Matsunaga and Yeung (2008) find that CEOs with previous experience as CFOs have more income decreasing accruals, lower forecast errors, and less forecast dispersion. Hribar and

Yang (2006) find that overconfident CEOs are more likely to miss their own earnings forecasts and use income increasing discretionary accruals.<sup>1</sup>

While this literature provides evidence that managers influence financial reporting outcomes and evidence of associations between managers' characteristics and firm outcomes, it does not examine whether executive teams influence financial reporting outcomes. The focus on executive teams is an important component of the Upper Echelons perspective and an extension of the dominant collation concept of Cyert and March (1963). Specifically, as Hambrick and Mason (1984) discuss, while CEOs, as firm leaders, retain considerable power over firm decisions, they also share tasks with other executives. Further, empirical studies that include the influence of executives in addition to the CEO yield greater explanatory power for a variety of firm outcomes (Bantel and Jackson 1989; Wiersema and Bantel 1992; Carpenter and Fredrickson 2001). Specifically, Bantel and Jackson (1989) find that the demographic composition of top management teams (education, tenure, age) affects the number of innovation adoptions (which they define as the number of technological or administrative products, programs, or services adopted by the firm) in their sample of 199 banks. Wiersema and Bantel (1992) examine similar executive team demographics for a subset of Fortune 500 firms and find that the demographic composition of top management teams affects firms'

---

<sup>1</sup> Other studies provide evidence of an association between executive characteristics and firm outcomes. For example, Malmendier and Tate (2002) examine CEO overconfidence and firm performance and Liu and Yermack (2007) examine firm performance and CEO house size.

corporate strategies (which they define as the absolute level of change in a firm's diversification strategy). Similarly, Carpenter and Fredrickson (2001) examine 207 firms in the S&P 500 index between 1984 and 1996 and find that the top management team's demographics (functional backgrounds, location of previous experience) affect the firm's global strategic posture (which they define as the degree to which the firm depends on foreign markets for customers and production and the geographical dispersion of the firm's markets). Moreover, refinements to the Upper Echelons perspective suggest a specific focus on the subgroups that are primarily responsible for certain firm decisions or processes (Hambrick 2007).

In addition, the Upper Echelons theory stresses the importance of examining domain-specific actions and the related functional backgrounds or skill sets (Finkelstein 1992; Hambrick 2007). Therefore, to add to the literature I focus on two aspects of this theory. First, I focus on the "powerful actors" and examine the executive team. Second, I examine whether domain-specific backgrounds influence related firm outcomes. In particular, I examine whether executive teams with financial expertise (that is, accounting expertise) influence earnings quality. I elaborate on these main additions and discuss how this study differs from the extant literature in the following sections.

## ***2.2 Earnings Quality***

Research on earnings quality stresses that earnings quality reflects aspects that arise from firm operations and business environments *and* the discretion of managers involved in the

financial reporting process. For example, Francis, Olsson, and Schipper (2008, p. 2) note, “We view earnings quality as comprising both an innate, relatively stable component that is driven by factors intrinsic to business models and operating environments and a relatively more discretionary and fluctuating component that is driven or influenced by management’s financial reporting decisions.”

Previous research proposes proxies to control for innate firm factors (Dechow and Dichev 2002; Francis, Lafond, Olsson, and Schipper 2004, 2005; Hribar and Nichols 2007), thereby providing a method to separate the innate and discretionary portions of earnings quality. Using these proxies, I focus my analyses on the discretionary component of earnings quality.

Recent studies examine the relation between CEO or CFO financial expertise and financial reporting outcomes; however, these studies focus on only the CEO or the CFO and present mixed results with respect to the relation between individual managers with financial expertise and earnings quality. For example, Aier, Comprix, Gunlock, and Lee (2005) find that firms whose CFOs have MBA degrees, CPAs, or more experience as a CFO are less likely to have a restatement. Similarly, Li, Sun, and Ettredge (2009) find that the likelihood a firm receives an adverse Sarbanes Oxley Section 404 opinion is higher for firms with less-qualified

CFOs and these opinions improve only when firms hire a more-qualified CFO.<sup>2</sup> Conversely, Feng, Ge, Lou, and Shevlin (2010) find CFOs of firms with accounting irregularities are more likely to have CPAs than the CFOs of firms that do not have accounting irregularities.

Moreover, Ge, Matsumoto, and Zhang (2010) examine CFO characteristics and do not find a relation between their set of observable CFO characteristics (including age, gender, and an MBA degree or CPA distinction) and their set of financial reporting outcomes (including income increasing accruals, the choice of operating or capital leases, the estimated rate of return on pension assets, earnings smoothing, the ability to meet analysts' expectations by small amounts, and the likelihood of an accounting misstatement).

Other studies focus on the relation between CEO expertise and earnings quality. For example, Koh (2007) finds a positive association between CEO expertise (winning high-profile media awards) and earnings quality (less income increasing accruals, more timely recognition of losses), while Francis et al. (2008) find a negative association between CEO expertise (greater coverage by the media) and earnings quality (accruals quality and abnormal accruals).<sup>3</sup>

Moreover, Matsunaga and Yeung (2008) do not find a relation between CEOs with previous

---

<sup>2</sup> Li, Sun, and Ettredge (2009) categorize CFOs with a CPA, past employment at a public accounting firm, or more experience as a CFO as better qualified.

<sup>3</sup> These studies use media coverage and media awards as a proxy for expertise. For example, Francis et al. (2008, p 110) state "we expect that reputed CEOs—to the extent that they are more knowledgeable than CEOs without established reputations—avoid actions that result in higher costs of capital for their firms."

experience as CFOs and absolute abnormal accruals or the market's reaction to earnings surprises.

### **2.3 Executive Teams**

To incorporate the dominant coalition or top management team aspects of the Upper Echelon's perspective, I include both the CEO and the CFO in my analysis of how executive teams influence financial reporting. I propose that both individuals affect the financial reporting process for the following reasons. First, CEOs oversee major transactions and set the tone at the top. Similarly, CFOs have responsibility for overseeing financial reporting including accounting policy choices. While others are involved in the reporting and recording of transactions, I assume the CEO and CFO oversee their decisions. Both research and anecdotal evidence supports the decision to consider the CEO and CFO as a team. First, research provides evidence of a relation between financial reporting outcomes and the careers and compensation of both the CEO and the CFO (Fee and Hadlock 2004; Mian 2001; Mergenthaler, Rajgopal, and Srinivasan 2009).

Second, the perspective of executives themselves suggests that the CEO and CFO jointly influence financial reporting outcomes. For example, Bob Davis, the CFO of Computer Associates, expressed that one major worry of a CFO is whether "he has a CEO who is spending a disproportionate amount of time on finance when he should be thinking about strategy (Frieswick 2005)." Others, including Kevin Dotts, the CFO of Earthlink whose CEO, Gary Betty,

“calls himself ‘obsessive’ about accounting details, and actually reads Financial Accounting Standards Board pronouncements,” see CEO expertise in a good light, as Dotts affirms, “‘I certainly don't feel there is infringement...it's a cohesive relationship’ (Frieswick 2005).”

Recent studies examine both the CEO and the CFO on the same executive team; assuming a homogeneous distribution of skills within CEOs and CFOs groups. That is, they do not examine whether financial expertise differs within CEOs or CFOs. For example, Geiger and North (2006) find following the appointment of a new CFO, but not the appointment of a CEO, firms use more income decreasing discretionary accruals. Similarly, Brochet, Faurel, and McVay (2008) find that newly appointed CFOs temporarily halt earnings guidance and issue less precise guidance, while newly appointed CEOs do not alter the properties of forecasts but change forecasting policies.

## **2.4 Financial Expertise**

Francis, Olsson, and Schipper (2008, p. 19) note, “accounting guidance *requires* managers to make numerous implementation decisions which affect the reporting component of earnings quality.” These decisions, in turn, require that the decision maker is knowledgeable about accounting guidance, the options available, and the consequences of these options. Therefore, I examine the financial expertise of the executive team. The motivation for examining financial expertise follows the literature on financial literacy. In particular, Coates, Marais, and Weil (2007) stress that financial literacy involves a sound understanding of the firm’s business model

and how that model maps into accounting choices. As I discuss in more detail in Section 4.1, I define financial expertise as the ability to understand, oversee, and *make choices* with respect to critical accounting judgments, accounting issues, and accounting estimates.

Additional motivation for focusing on accounting expertise comes from research that finds specific types of expertise differently affect the ability of audit committees to monitor financial reporting outcomes. Specifically, Krishnan and Visvanathan (2008) find an association between audit committees with accounting expertise and greater conservatism, their proxy for earnings quality. Similarly, Coates, Marais, and Weil (2007) find an association between improvements in audit committee accounting expertise and positive abnormal returns between 2000 and 2004, and Defond, Hann, and Hu (2004) find positive abnormal returns around the appointment of accounting experts. These studies distinguish among accounting expertise, finance expertise, and the absence of expertise. Further, these studies do not find a relation between their dependent variables and audit committees without accounting expertise. These studies suggest that accounting expertise improves the ability to monitor accounting decisions; I test the relation between accounting expertise, which I refer to as financial expertise, and earning quality.

I extend prior research, which considers how characteristics of individual managers or their experiences influence financial reporting outcomes and various determinants of earnings quality, by examining CEO-CFO executive teams. My specific focus is the association between



the accounting knowledge of the executive team and earnings quality. I begin my analysis by examining the relation between firms with executive teams with financial expertise and discretionary earnings quality and then extend this to examine the relation between firms with executive teams with financial expertise and real activities management. I discuss each of my hypotheses in the following section.

## **3. Hypotheses**

### ***3.1 Executive Team Financial Expertise and Earnings Quality***

Firms with executive teams with financial expertise would have better earnings quality for the following reasons. First, following the Upper Echelon's perspective, executives have the ability to influence financial reporting outcomes. That is, while I presume that all firms have employees with financial expertise, I expect a relation between executive teams with financial expertise as the individuals who comprise these teams (the CEO and the CFO) have financial reporting decision rights and therefore have the ability to influence firm outcomes. Second, all else constant, executive teams with financial expertise make fewer errors and make better accounting estimates and judgments and therefore their firms have better earnings quality. Third, boards know the backgrounds of their executives and their areas of expertise; executives with financial expertise have more to lose, in terms of their own human capital, if they engage in accounting decisions that result in poor earnings quality. I predict that, with the consideration of reputation and career concerns, the net benefits to better earnings quality are greater than the net benefits of decreasing earnings quality for personal gain for executive teams with financial expertise. This perspective is consistent with an efficient contracting setting.

A plausible counter argument for this relation is as follows. Corporate executives with greater financial expertise may be better able to turn various dials, to manipulate reporting for financial gain. Research presents evidence consistent with executives with financial expertise

engaging in more accounting manipulations. For example, Feng et al. (2009) find that the likelihood of an accounting misstatement is higher for firms with CFO with CPAs. Similarly, the survey evidence of Graham, Harvey, and Rajgopal (2005) suggests that while executives are concerned with their reputations, they are willing (and presumably able) to engage in earnings management to achieve certain targets. Therefore, while I expect that firms with executive teams with financial expertise have higher earnings quality, this relation is unknown a priori. I state my first hypothesis in the alternative form as follows.

**H1<sub>A</sub>: Controlling for innate factors, incentives, and governance factors, firms with executive teams with financial expertise have better discretionary earnings quality.**

### **3.1.1 Executive Team Financial Expertise and Earnings Quality: Changes in the External Environment**

The passage of the Sarbanes Oxley Act (SOX) in 2002 was intended to restore confidence in capital markets through additional oversight and regulation of the corporate financial reporting process,<sup>1</sup> including increased requirements for auditor independence; a requirement that principal officers personally certify and attest to the accuracy and integrity of financial reports; requirements for additional disclosures on the adequacy of internal controls; new rules

---

<sup>1</sup> The stated purpose of SOX is "To protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes (SOX 2002)."

pertaining to the expertise and independence of audit committees; and the establishment of the Public Company Accounting Oversight Board (PCAOB), which is charged with regulating registered public accounting firms (SOX 2002).

Research suggests that SOX and other, contemporaneous events increased the scrutiny over the intervention into financial reporting via discretionary accruals, one of my two proxies for earnings quality, and finds that following the passage of SOX, the management of accruals has decreased (Cohen, Dey, and Lys 2008; Koh, Matsumoto, and Rajgopal 2008; Bartov and Cohen 2006). Moreover, Graham, Harvey, and Rajgopal (2005), conduct surveys and interviews after the passage of SOX and find that executives are hesitant to manage accruals.

The legal accountability of CEOs and CFOs changed with the passage of SOX. The SEC passed the New Exchange Act Rule 13a-1, which requires executives to certify the completeness and accuracy of their financial statements, on July 27, 2002. On July 30, 2002, former President George Bush signed the Sarbanes-Oxley Act; Section 302 of SOX requires that executives certify and personally attest to the accuracy of their financial filings and Section 802 of SOX states that executives can be held criminally liable for violations of SOX with punishments that include fines and imprisonment (SOX 2002).

These changes were intended to heighten the career, reputation, and legal concerns of all CEOs and CFOs, irrespective of their backgrounds or areas of expertise. In addition, these changes, such as additional verification of internal controls serve as substitutes for financial

expertise. To test whether financial experts altered their intervention into discretionary accruals surrounding the passage of SOX, I examine the relation between firms with executive teams with financial expertise and earnings quality before and after the passage of SOX. I state the second part of my first hypothesis in the alternative form as follows.

**H1<sub>B</sub>: The relation between firms with executive teams with accounting expertise and earnings quality is weaker following the passage of the Sarbanes Oxley Act of 2002.**

### ***3.2 Executive Team Financial Expertise and Real Activities Management***

Research also shows that managers intervene into the financial reporting process by managing real activities (Bushee 1998; Roychowdhury 2006; Zang 2006). For example, managers can alter earnings by offering more lenient credit terms to customers or changing the amount that the firm spends on R&D. Moreover, research presents evidence that accruals management and real activities management are substitutes (Zang 2006; Cohen, Dey, and Lys 2008). As I note above, research finds that following the passage of SOX, the management of accruals has decreased and real activities management has increased (Cohen, Dey, and Lys 2008). Similarly, the survey evidence of Graham, Harvey, and Rajgopal (2005) suggests that executives are more inclined to engage in real activities management than accruals management. Further, these executives state that real activities management requires a thorough knowledge of the business and the impact of accounting decisions. For example, as

Graham, Harvey, and Rajgopal (2005, p. 40) discuss, “One CFO states that while it is preferable to manage earnings via real actions rather than accounting choices, it is also more difficult. That is, a CFO must understand the operations up and down the organization to effectively manage earnings via real actions. This CFO refers to earnings management via accounting actions as ‘laziness on the part of the CFO’ because much more effort is necessary to understand all aspects of the business to manage earnings via real actions.”

Accordingly, it is possible that executives with financial expertise feel pressure not to engage in the accruals management and use their expertise to avoid the costs associated with this type of earnings management. Further, executives with financial expertise are able to use their expertise, as suggested by the quote above, to manage real activities, which are more challenging to manage but also harder to detect. To test whether financial experts are more inclined to engage in real activities management, I examine the relation between firms with executive teams with financial expertise and real activities management. I state the first part of my second hypothesis in the alternative form as follows.

**H2a<sub>4</sub>: Controlling for innate factors, incentives, and governance factors, firms with executive teams with financial expertise engage in more real activities management.**

Finally, as studies that examine real activities management suggest that the preference for real activities management increased following the passage of SOX, I examine whether the

relation between firms with executive teams with financial expertise and real activities management changed around the passage of SOX. I state the second part of my second hypothesis in the null form as follows.

**H2 $b_0$ : There is no change in the relation between executive teams with financial expertise and real activities management following the passage of the Sarbanes Oxley Act of 2002.**

## 4. Variable Choice

### 4.1 Test Variable: Accounting Expertise

My test variable, financial expertise, represents the ability to understand, oversee, and *make choices* with respect to critical accounting judgments, transactions, and estimates. This definition is similar to the discussion of financial literacy of Coates, Marias, and Weil (2007) and Stickney, Weil, Schipper, and Francis (2007, p. 869-870) who define financial literacy as follows: “Financial literacy requires the ability to understand the transactions used in critical accounting judgments or estimates; the accounting issues and choices for these judgments; what management chose, and why; and what opportunities management’s choices provide for earnings management.”

Studies analyzing audit committee examine financial expertise or financial literacy. The SOX requirement (Sections 406 and 407) that audit committees have a financial expert increased attention to the financial literacy of audit committees (Coates, Marias and Weil 2007; Krishnan and Visvanathan 2008). Research on audit committees finds that the relation between audit committee financial expertise and firm outcomes depends on the specific type of financial expertise. In particular, studies that examine the financial literacy of audit committees find that the presence or addition of an individual with an accounting background increases both conservatism (Krishnan and Visvanathan 2008) and positive abnormal returns (Coates, Marias,



and Weil 2007; Defond, Hann, and Hu 2004); these results, however, do not hold for individuals without accounting backgrounds.

For each CEO and CFO in my sample, I determine whether the individual has financial expertise prior to the year he or she started in his or her position. Executives have financial expertise if they have previous work experience for an accounting firm; an advanced degree or professional certification in accounting (e.g., Certified Public Accountant [CPA], a chartered accountant [CA]<sup>1</sup> or a Masters in Accounting); or held a previous position related to accounting or financial reporting (e.g., Auditors, Controllers, or Heads of Accounting). Appendix A lists the positions and degrees that represent financial expertise. The indicator variable, *Exec\_FE*, equals one if either the CEO or the CFO has financial expertise in year *t-1* relative to the first year of employment (year *t*) for firm *i*.

Following Krishnan and Visvanathan (2008) and Coates, Marias, and Weil (2007), I exclude general exposure to business or finance. For example, while 55% of the CFOs in my sample have financial expertise, I do not consider the CFO position, without other qualifications, as financial expertise. This choice differentiates my study from other research, which assumes homogeneity of financial expertise among CFOs (Jiang, Petroni, and Wang 2010; Matsunaga and Yeung 2008; Geiger and North 2006). My reason for this follows the rationale of

---

<sup>1</sup> A CA is the CPA equivalent in Canada, the United Kingdom, India, South Africa, Australia, New Zealand, Pakistan, and Sri Lanka. While my examination focuses on US firms, many US executives have non-US backgrounds (Bertrand 2009).

Krishnan and Visvanathan (2008) and Coates, Marias, and Weil (2007, p. 177): “In the course of our work, we have learned that not all CFOs demonstrate accounting literacy. There are several career paths to the position of CFO ...Only the controller and public accountant have career paths ensuring accounting literacy. The treasurer understands corporate finance, such as how to raise funds and how to talk to the financial press or analysts, but typically hasn't had a need to understand accounting. The investment banker understands how to raise funds, but ...typically hasn't had a need to understand accounting.”

## ***4.2 Dependent Variables***

### **4.2.1 Financial Reporting Quality: Earnings Quality**

I examine two accrual based proxies for earnings quality. First, I examine absolute abnormal accruals from the Jones (1991) model, adjusted for accounts receivable (Dechow, Sloan, and Sweeney 1995) and performance (Kothari, Leone, and Wasley 2005). Second, I examine the portion of the variance in working capital accruals that is not explained by cash flows in the previous, current, and following years using the Dechow and Dichev (2002) model of accruals quality. For both measures, larger amounts indicate poorer earnings quality. I obtain the data to estimate these measures from Compustat.

Following the literature, I estimate the modified Jones (1991) model of absolute accruals (equation 1) for each of the 48 industry groupings of Fama and French (1997) with at least fifteen observations for each fiscal year. This method controls for industry-specific factors that

affect total accruals and allows the coefficients to vary across time. This method assumes that the coefficients are the same within each Fama and French (1997) industry and year group.

$$\frac{TACC_{i,t}}{Assets_{i,t-1}} = k_0 + k_{1,t} \frac{1}{Assets_{i,t-1}} + k_{2,t} \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + k_{3,t} \frac{PPE_{i,t}}{Assets_{i,t-1}} \quad (1)$$

In equation 1, following the statement of cash flows approach of Collins and Hribar (2002),  $TACC_{i,t}$  are total accruals for firm  $i$  at period  $t$ , the difference between cash flows from operations and income before extraordinary items and discontinued operations.  $Assets_{i,t-1}$  are firm  $i$ 's total Assets at period  $t-1$ .  $\Delta Sales_{i,t}$  is firm  $i$ 's change in revenue between period  $t$  and period  $t-1$ .  $PPE_{i,t}$  is firm  $i$ 's gross property plant and equipment at period  $t$ . I include a constant term,  $k_0$ , following Kothari, Leone, and Wasley (2005).

I use the predicted values from equation 1 to estimate the firm and year specific levels of normal accruals in equation 2. In equation 2, I adjust revenue for changes in accounts receivable ( $\Delta AR_{i,t}$ ) following Dechow, Sloan, and Sweeney (1995). Discretionary accruals are the difference between the firm's total accruals for the period and the expected accruals from equation 2. Following Kothari, Leone, and Wasley (2005), I calculate the median level of discretionary accruals for each return on asset decile for each Fama and French (1997) industry and year grouping. Next, I performance-adjust each firm's discretionary accruals by subtracting the median level of discretionary accruals for the relevant industry, year, and return on asset decile.

$$\frac{NA_{i,t}}{Assets_{i,t-1}} = \hat{k}_0 + \hat{k}_{1,t} \frac{1}{Assets_{i,t-1}} + \hat{k}_{2,t} \frac{(\Delta Sales_{i,t} - \Delta AR_{i,t})}{Assets_{i,t-1}} + \hat{k}_{3,t} \frac{PPE_{i,t}}{Assets_{i,t-1}} + \varepsilon_{i,t} \quad (2)$$

My second measure of earnings quality is based on the mapping of current accruals to past, present, and future cash flows from Dechow and Dichev (2002). Here, the unexplained portion of working capital accruals is an inverse measure of total earnings quality. I estimate equation 3 for each of the 48 industry groupings of Fama and French (1997) with at least fifteen observations for each fiscal year. This method controls for industry-specific changes that may affect total accruals and allows the coefficients to vary across time; this method also assumes that the coefficients are the same within each Fama and French (1997) industry and year group.

$$\frac{TCA_{i,t}}{Assets_{i,t}} = x_0 + x_{1,t} \frac{CFO_{i,t-1}}{Assets_{i,t}} + x_{2,t} \frac{CFO_{i,t}}{Assets_{i,t}} + x_{3,t} \frac{CFO_{i,t+1}}{Assets_{i,t}} + V_{i,t} \quad (3)$$

In equation 3,  $TCA_{i,t}$  are firm  $i$ 's year  $t$  total current accruals, which are the change in current assets minus the change in current liabilities minus the change in cash plus the change in current debt for firm  $i$  in year  $t$ . CFO is cash flows from operations for firm  $i$  in years  $t-1$ ,  $t$ , and  $t+1$ . In equation (3), the standard deviation of the residual,  $V_{i,t}$  (for the current and previous four years), forms my second earnings quality measure, accruals quality.

### **4.3 Financial Reporting Quality: Real Activities**

Following previous research on real earnings management, I consider abnormal discretionary expenses, abnormal production costs, abnormal gains and losses on the sales of

assets, and abnormal cash flows as measures of real activities management (Roychowdhury 2006; Zang 2006; Gunny 2009; Cohen, Dey, and Lys 2008). Roychowdhury (2006), Zang (2006), and Gunny (2009) provide evidence of the construct validity of these measures.

I assume each of these measures captures managerial decisions that affect earnings. For example, decreasing discretionary expenses (advertising, R&D, and selling general and administrative expenses) boosts current period income, possibly at the expense of future performance. In this scenario, abnormal discretionary expenses will be lower. Similarly, increasing current production may decrease costs of goods sold (and increase earnings) for the current period as fixed costs can now be spread over more units; however, total production costs as a percent of sales will be higher. In this scenario, abnormal production costs will be higher. Abnormal gains or losses on the sale of assets occur when management times the sale of assets to increase earnings, not necessarily when the sale results in the greatest gain. Finally, the acceleration of sales through increased discounts or lenient credit terms will temporarily increase sales volume but these will also result in lower cash flows for the period. In this scenario, abnormal cash flows will be lower. As these measures capture different aspects of operations, I include all of them to increase the chance of detecting real activities management. I do not predict which, if any, real activities management are preferred, relative to the others. I obtain the necessary data for each measure from Compustat.

I use the following cross-sectional regressions for each Fama and French (1997) industry grouping and fiscal year to obtain the expected levels of total discretionary expenses, production costs, gains and losses on the sales of assets, and cash flows from operations. Following previous studies, I require at least fifteen observations for each industry-year regression.

$$\frac{DEXP_{i,t}}{Assets_{i,t-1}} = a_{1,t} \frac{1}{Assets_{i,t-1}} + a_{2,t} \frac{Sales_{i,t-1}}{Assets_{i,t-1}} + \gamma_{i,t} \quad (4)$$

$$\frac{PROD_{i,t}}{Assets_{i,t-1}} = b_{1,t} \frac{1}{Assets_{i,t-1}} + b_{2,t} \frac{Sales_{i,t}}{Assets_{i,t-1}} + b_{3,t} \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + b_{4,t} \frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} + \varphi_{i,t} \quad (5)$$

$$\frac{GLA_{i,t}}{Assets_{i,t-1}} = c_{1,t} \frac{1}{Assets_{i,t-1}} + c_{2,t} \frac{S\_PPE_{i,t}}{Assets_{i,t-1}} + c_{3,t} \frac{S\_IV_{i,t}}{Assets_{i,t-1}} + \omega_{i,t} \quad (6)$$

$$\frac{CFO_{i,t}}{Assets_{i,t-1}} = c_{1,t} \frac{1}{Assets_{i,t-1}} + c_{2,t} \frac{Sales_{i,t}}{Assets_{i,t-1}} + c_{3,t} \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \mu_{i,t} \quad (7)$$

In equations 4, 5, 6, and 7,  $CFO_{i,t}$  represents firm  $i$ 's total cash flows from operations for period  $t$ .  $PROD_{i,t}$  represents firm  $i$ 's total production costs, the sum of costs of goods sold and the change in inventories for period  $t$ .  $DEXP_{i,t}$  represents firm  $i$ 's total discretionary expenses for period  $t$ , which include R&D, advertising, and selling, general and administrative expenses.  $Assets_{i,t-1}$  are firm  $i$ 's total assets at period  $t$ .  $Sales_{i,t}$  are firm  $i$ 's revenue for period  $t$ .  $\Delta Sales_{i,t-1}$  is firm  $i$ 's change in revenue between period  $t-1$  and period  $t-2$ . I run these regressions for each Fama and French (1997) industry grouping to obtain the industry and year coefficients. I apply

firm i's actual values for each right-hand side variable to obtain the fitted values of each of my measures of real activities management. The abnormal levels of DEXP, PROD, GLA, and CFO (abDEXP, abPROD, abGLA, and abCFO, respectively) are the differences between the actual and fitted values for each measure of real activities management for each firm.

#### **4.4 Control Variables**

Previous research has identified firm-specific factors associated with the quality of accruals (Dechow and Dichev 2002; Francis et al. 2005; Hribar and Nichols 2007). I include these variables to control for the relation between operating environment and accruals, independent of management's reporting decisions. By controlling for these innate factors, I am able to examine the relation between firms with executive teams with financial expertise and discretionary earnings quality. I follow previous research (Dechow and Dichev 2002; Hribar and Nichols 2007; Francis et al. 2005; Jiang, Petroni, and Wang 2010; Francis et al. 2008) and include the following control variables. Size is the logarithm of the firm's total assets. MtoB is the firm's market value of equity divided by its book value of equity. Std\_CFO is the standard deviation of the firm's cash flows from operations. Std\_Rev is the standard deviation of the firm's total revenue. OperCycle is the logarithm of the firm's days accounts receivable plus days inventory (receivables divided by revenue multiplied by 365 plus inventory divided by cost of goods sold multiplied by 365). Loss is an indicator for whether the firm had negative net income. I obtain the data for the control variables from Compustat.

As I measure abnormal accruals for each year, I measure firm size, loss incidence, and operating cycle for each year in tests based on abnormal accruals. Because I measure accruals quality over a five-year window, I measure the incidence of losses, the length of the operating cycle, and firm size as a rolling average of the current year and the past four years. I measure the volatility of cash flows and the volatility of revenues as the standard deviation of cash flows and revenues, respectively, from the current and past four years for all of my tests.

I control for equity incentives following research that finds a relation between compensation-related equity incentives and financial reporting decisions (Bergstressor and Philippon 2006; Cheng and Warfield 2005; Jiang, Petroni, and Wang 2010). I measure the change in equity-based compensation as a percent of total compensation, using the equity incentive ratio of Bergstressor and Philippon (2006). This ratio captures the effect of a one percentage point increase in a firm's stock price on the value of the firm's shares held by that executive, scaled by the executive's total equity and cash pay. That is, this measure represents the change in wealth for a 1% change in stock price. Specifically,  $Incentive = \frac{OnePct}{(OnePct + Salary + Bonus)}$  and  $OnePct = (0.01 \times Share\ Price \times Shares\ excluding\ options) + (0.01 \times Share\ Price \times the\ value\ of\ newly\ granted,\ unexercised-exerciseable,\ and\ unexercised-unexerciseable\ options)$ . I obtain the data to construct the incentive variable from Execucomp.<sup>2</sup>

---

<sup>2</sup> Jiang, Petroni, and Wang (2010) find an association between CFO, but not CEO, equity incentives and indicators of earnings management; therefore, I also include separate variables for both CEO and CFO equity incentives. In



Based on research (Klein 2002) that provides evidence of an association between independent directors and earnings quality, I include the percent of outside directors (OutsidePct). Based on research that provides evidence that financial expertise of the board influences other financial reporting outcomes (Coates, Marias, and Weil 2007; Krishnan and Visvanathan 2008; Defond, Hann, and Hu 2005), I control for the board's financial expertise. Specifically, I include whether there is an independent board member with financial expertise; I determine board members with financial expertise in the same manner as I discuss in Section 4.1 (Board\_FE). I construct these variables with data from BoardEx.

---

unreported results, I find that the inclusion of the incentives-based compensation for both the CEO and the CFO does not change any of the inferences from my analysis.

## 5. Research Design

### 5.1 Earnings Quality

My first hypothesis predicts a relation between firms with executive teams with financial expertise and earnings quality, measured as accruals quality and the absolute value of abnormal accruals. I test this hypothesis with the following equation (I suppress firm and year subscripts):

$$\begin{aligned} \text{Earnings Quality} &= a_0 + x_1 \text{Exec\_FE} + x_2 \text{Incentive} + x_3 \text{Board\_Info} + x_4 \text{OutsidePct} \\ &+ x_5 \text{Board\_FE} + x_6 \text{Size} + x_7 \text{MtoB} + x_8 \text{Std\_CFO} + x_9 \text{Std\_Rev} \\ &+ x_{10} \text{OperCycle} + x_{11} \text{Loss} + \epsilon \end{aligned} \tag{8}$$

The right-hand side variables are discussed in Section 4. My test variable, Exec\_FE, is an indicator equal to one if either the CEO or the CFO has accounting expertise. I use the following control variables in each of my main equations: size, market to book ratio, the standard deviation of cash flows, the standard deviation of revenue, the length of the operating cycle, the percent of losses, the percent of outside directors, the presence of a financial expert on the board, and the equity incentives of the executive team. I winsorize the continuous variables at the 1st and 99th percentiles; in unreported tests, I find that my results are not sensitive to this winsorization procedure. As not all of my firms have information about their board of directors, I include an indicator variable to track firms with missing board information (Board\_Info) and interact this with the percent of outside directors and board financial

expertise. A significant negative coefficient on Exec\_FE variable ( $x_1$ ) indicates that earnings quality is better for firms with executive teams with financial expertise. I present results in Table 4 and discuss them in Section 8.1.

I use a panel dataset in each of my analyses; therefore, it is possible that the residuals and the control variables exhibit time-series dependence; I follow Peterson (2009) and cluster standard errors by firm. I also include industry and year indicator variables to mitigate bias arising from correlations among firms in the same year or in the same industry. I do not cluster my standard error by both firm and year, as Peterson (2009) suggests that insufficient time clustering (for example, 10 years) can produce biased standard errors. Following Peterson (2009), I cluster by the more frequent cluster, individual firms.<sup>1</sup>

The second part of my first hypothesis examines whether the passage of SOX (and/or the surrounding events) affects the relation between firms with executive teams with financial expertise and earnings quality. I test this hypothesis by examining equation 8 with an indicator variable for the passage of SOX (for observations after 2002) and interact the SOX indicator variable with each of the independent variables. As SOX passed during 2002 and may have been anticipated before its passage, in untabulated tests, I remove observations from the year 2002 from my analyses and find that the inferences from my tests do not change with the

---

<sup>1</sup> In his discussion of two-way clustering, Peterson offers, “When there are only a few clusters in one dimension, clustering by the more frequent cluster yields results that are almost identical to clustering by firm and time [that is, two dimensions]” (Peterson 2009, p. 460).

exclusion of observations from 2002. I do not include year fixed effects in these tests. I present results in Table 5 and discuss them in Section 8.1.

## 5.2 Real Activities

My second hypothesis examines the relation between firms with executive teams with financial expertise and real activities management. I test this hypothesis with the following equation:

### *Real Activities Management*

$$\begin{aligned}
 &= \alpha_0 + x_1 \mathit{Exec\_FE} + x_2 \mathit{Incentive} + x_3 \mathit{Board\_Info} + x_4 \mathit{OutsidePct} \\
 &+ x_5 \mathit{Board\_FE} + x_6 \mathit{Size} + x_7 \mathit{MtoB} + x_8 \mathit{Std\_CFO} + x_9 \mathit{Std\_REV} \\
 &+ x_{10} \mathit{OperCycle} + x_{11} \mathit{Loss} + \epsilon
 \end{aligned}$$

(9)

As I discuss in Section 4.3, I use the following variables as proxies for real activities management: abnormal discretionary expenses (abDEXP), abnormal production costs (abPROD), abnormal sales of assets (abGLA), and abnormal cash from operations (abCFO). For comparability, I change the sign of abnormal discretionary expenses and abnormal cash flows so that for each of my four variables, larger values indicate more real activities management. I use the same test and control variables for my analyses of real activities as I do for the abnormal accruals test, and I cluster my standard errors by firm and include year and industry indicator variables. In these tests, I exclude firms in the utilities and financial services industries as firms

in these industries have fundamentally different assets (Roychowdhury 2006). A significant positive coefficient on Exec\_FE indicates that real activities management is higher for firms with executive teams with financial expertise. I present results in Table 6 and discuss them in Section 8.2.

The second part of my second hypothesis examines whether the passage of SOX (and/or the surrounding events) affects the relation between firms with executive teams with financial expertise and real activities management. I test this hypothesis by examining equation 9 with an indicator variable for the passage of SOX (for observations after 2002) and interact the SOX indicator variable with each of the independent variables. As SOX passed during 2002 and may have been anticipated before its passage, in untabulated tests, I remove observations from the year 2002 from my analyses and find that the inferences from my tests do not change with the exclusion of observations from 2002. I do not include year fixed effects in these tests. I present results in Table 7 and discuss them in Section 8.2.

## 6. Sample Selection

### 6.1 BoardEx

I use BoardEx to identify the firms in my sample. BoardEx offers extensive coverage of public and private firms in US and European markets.<sup>1</sup> I use BoardEx to identify CEOs and CFOs for each of the US publicly traded firms in the BoardEx database. BoardEx obtains information about educational backgrounds, professional certifications, work experiences, and information about each firm's Board of Directors through an extensive search and verification process conducted by over 500 research analysts.

---

<sup>1</sup> "BoardEx is a unique business networking service. Our relationship analysis helps executives connect with over 380,000 of the world's most important business and organization leaders" (BoardEx Corporate Website, "BoardEx, <http://www.boardex.com/>, accessed July 24, 2010). BoardEx has recently been used to measure social networks and connections among executives and directors (e.g. Engelberg, Gao, and Parsons 2009). BoardEx discusses the process through which it obtains data on its website and these processes were verified with conversations with a BoardEx representative.

**Table 1: Sample Selection.**

<b>BoardEx Database</b>	<b># of Obs</b>	<b>Firms</b>	<b>Unique</b>	
			<b>CEOs</b>	<b>CFOs</b>
Total observations	34,427	4,511	6,849	7,283
Observations with complete BoardEx data	22,208	4,426	6,092	6,501
<b>Abnormal Accruals Sample</b>		<b># of Obs</b>	<b>Firms</b>	
Observations complete Compustat information	16,027	3,311		
Observations with complete Execucomp information	7,978	1,447		
Observations preceding SOX	3,174	923		
Observations following SOX	4,804	1,339		
<b>Accruals Quality Sample</b>		<b># of Obs</b>	<b>Firms</b>	
Observations with complete Compustat information	12,583	2,903		
Observations with complete Execucomp information	6,698	1,310		
Observations preceding SOX	2,982	862		
Observations following SOX	3,716	1,196		
<b>Real Activities Sample</b>		<b># of Obs</b>	<b>Firms</b>	
Observations with complete Compustat information	13,493	2,786		
Observations with complete Execucomp information	6,878	1,224		
Observations preceding SOX	2,748	785		
Observations following SOX	4,130	1,140		

Continues from Table 1.

**BoardEx Sample:** A firm-year observation with complete data in BoardEx meets the following criteria (1) the firm is publicly traded on a US exchange for that year; (2) the firm has one CEO and one CFO for the year; (3) the CEO and the CFO have identifiable start years and identifiable prior work experience or educational/professional certification; (4) the CEO and the CFO have worked at the firm for at least one year; and (5) the firm name and/or ticker symbol can be linked to a Compustat firm. The analyses include observations from 1995-2007. The pre-SOX sample includes observations from 1995-2002.

**Abnormal Accruals Sample:** Observations in the abnormal accruals sample have all of the BoardEx data as well as sufficient Compustat and Execucomp data to calculate the variables for the abnormal accruals tests of H1 (equation 8).

**Accruals Quality Sample:** Observations in the accruals quality sample have all of the BoardEx data as well as sufficient Compustat and Execucomp data to calculate the variables for the accruals quality tests of H1 (equation 8).

**Real Activities:** Observations in the real activities sample have all of the BoardEx data as well as sufficient Compustat and Execucomp data to calculate the variables for the real activities tests of H2 (equation 9). These tests exclude observations from the financial (SIC codes 6000-6999) and utilities sectors (SIC codes 4400-4999). The tests of abnormal gains and losses from the sale of assets require that the firm has a gain or loss on the sale of assets in the current year.

## **6.2 Executive Teams**

From the BoardEx Database I have information on 6,849 CEOs and 7,283 CFOs employed by 4,511 US publicly traded firms during the period from 1995 to 2007. I code executives with “CEO” (“CFO”) in their role description as CEOs (CFOs) and examine all job titles to ensure that I include all CEOs and CFOs and exclude executives who are not CEOs or CFOs. I remove individuals who are assistant, deputy, honorary, emeritus, group, or regional CEOs/CFOs as well as co-executives (i.e., Co-CFO). From this, I pair CEOs and CFOs who have overlapping firm tenure and have available information with respect to their previous work



experience, education, and professional credentials. I remove any firm-year observations for which either the CEO's or the CFO's tenure is less than one full fiscal year or for which there is no previous education or work information on either the CEO or the CFO. I also remove firms whose name or ticker symbol cannot be linked to a ticker symbol or company name in Compustat. This step results in 4,426 unique firms and 22,208 total observations (see Table 1).

### **6.3 Earnings Quality Sample**

In my main tests, I examine the relation between firms with executive teams with financial expertise and both absolute abnormal accruals and accruals quality. The requirement that firms have Compustat data reduces my sample to 16,027 observations (3,311 firms). Further, 1,770 firms do not have the necessary variable from Execucomp, which reduces my sample to 7,978 observations (1,447 firms). The data requirements for examining accruals quality are more restrictive as this test requires seven years of Compustat and Execucomp data. The sample for these tests includes 6,698 observations (1,310 firms). For the abnormal accruals test, there are 3,174 observations in the period preceding SOX and 4,804 observations in the period that follows SOX. For the accruals quality test, there are 2,982 observations in the period preceding SOX and 3,716 observations in the period that follows SOX.

## **6.4 Real Activities Sample**

In my second set of tests, I examine the relation between executive teams with financial expertise and four types of real activities management: production costs, discretionary expenses, operating cash flows, and gains and losses on the sale of assets. Elimination of firms with missing test or control variables reduces my sample to 13,493 observations (2,786 firms). Missing data from Execucomp reduces my sample to 6,878 observations (1,221 firms). In addition, for this analysis, following the literature (Roychowdhury 2006), I exclude firms in the utilities and financial industries (SIC codes between 4400 and 4999 and between 6000 and 6999, respectively) as these firms have fundamentally different assets and liabilities. For the real activities management tests, there are 2,748 observations in the period preceding SOX and 4,130 observations in the period that follows SOX.

## **7. Descriptive Statistics and Correlations**

### ***7.1 Time Series Analysis of Executive Team Financial Expertise***

Figure 1 presents the change in executive teams with a CEO or CFO with prior financial expertise at his or her start date for the unrestricted sample of 4,426 firms and 22,208 observations with complete BoardEx data (see Table 1). The percent of executive teams with financial expertise declines between 1996 and 2000 and increases thereafter. Figure 2 presents the change in CFOs with prior financial expertise at their start date; the percent of CFOs with financial expertise declines between 1996 and 2000 and increases thereafter. Figure 3 presents the change in CEOs with prior financial expertise at their start date; the percent of CEOs with financial expertise increases between 1996 and 2008.

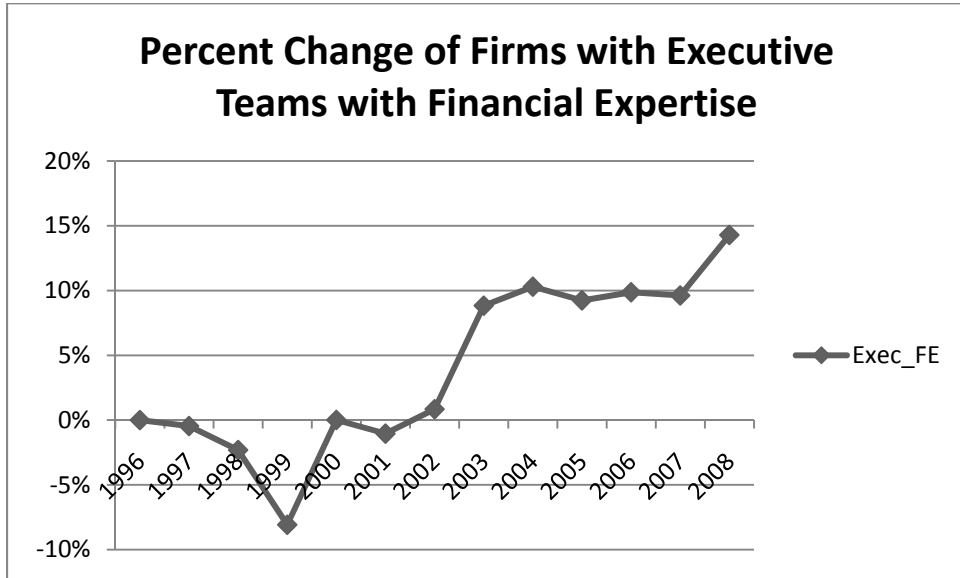


Figure 1: Percent Change of Firms with Executive Teams with Financial Expertise.

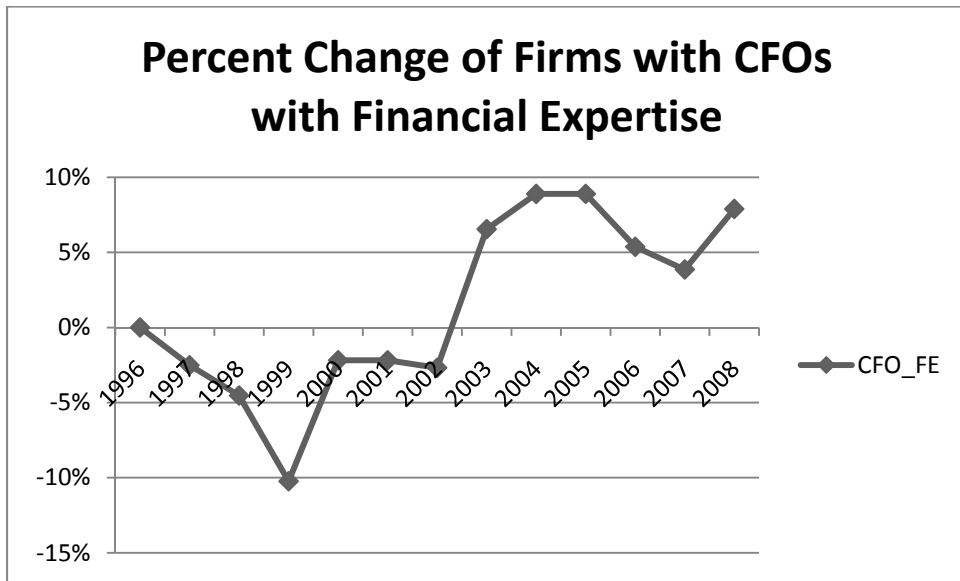


Figure 2: Percent Change of Firms with CFOs with Financial Expertise.

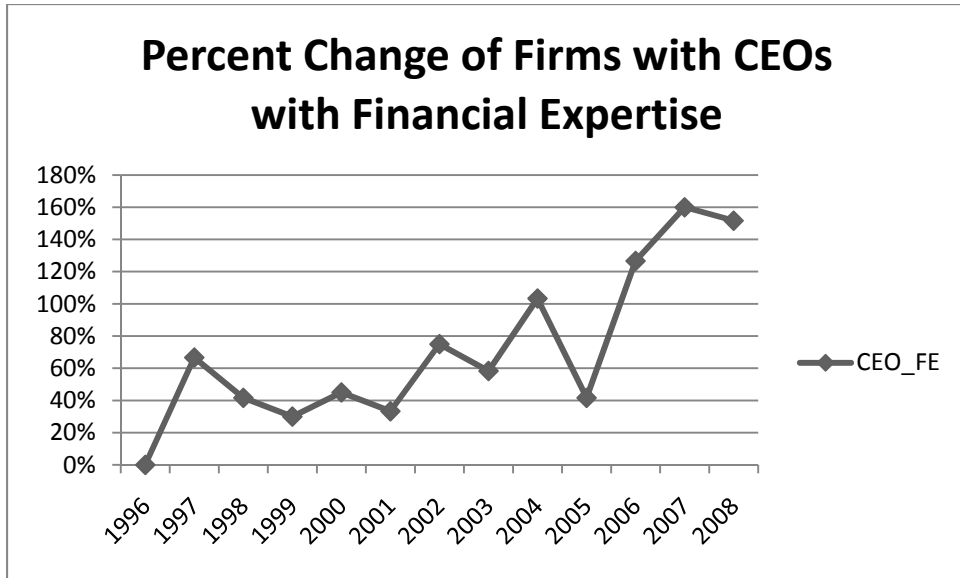


Figure 3: Percent Change of Firms with CEOs with Financial Expertise.

## **7.2 Descriptive Statistics**

Table 2 presents descriptive statistics for my analyses. I discuss the descriptive statistics for the abnormal accruals sample. As noted in Table 2, 56% of the observations have either a CEO or a CFO with accounting expertise, 54% of the observations have a CFO with financial expertise, and 7% have a CEO with financial expertise. Further, 5% of my observations have both a CEO and a CFO with financial expertise. My firms have a high percent of independent directors as the mean (median) percent of independent directors is 65% (83%). In addition, 38% of my firms have an external financial expert on their board.

My analyses include larger firms as the observations in these analyses have a mean (median) asset value of \$4,937 million (1,346) and a mean (median) market value of \$5,121 (1,419) million for the period 1995-2007. In unreported t-tests of means, both of these measures are significantly greater (at the 1% level) than the Compustat population for this period, which has a mean (median) asset value of \$2,493 million (\$141) and a mean (median) market value of \$1,515 million (\$105). The mean (median) volatility of my firms cash flows and revenues are 0.05 (.04) and 0.15 (0.11), respectively.

**Table 2: Descriptive Statistics.**

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>Std Dev</b>	<b>1%</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>99%</b>
<b>Test Variable</b>								
Exec_FE	7,978	0.56	0.50	0.00	0.00	1.00	1.00	1.00
<b>Exec. Team Statistics</b>								
CEO_FE	7,978	0.07	0.25	0.00	0.00	0.00	0.00	1.00
CFO_FE	7,978	0.54	0.50	0.00	0.00	1.00	1.00	1.00
CEO and CFO FE	7,978	0.05	0.21	0.00	0.00	0.00	0.00	1.00
Incentive-CFO	7,978	0.28	0.22	0.01	0.12	0.22	0.38	0.97
Incentive-CFO	7,978	0.15	0.12	0.00	0.06	0.12	0.20	0.62
<b>Firm Statistics</b>								
Assets	7,978	4,937	9,682	73.71	510	1,346	4,077	52,150
Market Value	7,978	5,121	10,652	42.43	546	1,419	4,186	62,523
<b>Dependent Variables</b>								
<b><u>Earnings Quality</u></b>								
Abnormal Accruals	7,978	0.05	0.06	0.00	0.01	0.03	0.06	0.29
Accruals Quality	6,698	0.05	0.04	0.01	0.03	0.04	0.06	0.24
<b><u>Real Activities</u></b>								
AbDEXP	6,878	0.09	0.24	(0.62)	(0.03)	0.09	0.23	0.71
AbPROD	6,878	(0.06)	0.21	(0.64)	(0.17)	(0.05)	0.05	0.52
AbGLA	4,560	0.00	0.01	(0.05)	0.00	0.00	0.00	0.02
AbCFO	6,878	(0.10)	0.15	(0.55)	(0.17)	(0.08)	(0.01)	0.25
<b>Controls</b>								
Incentive	7,978	0.25	0.20	0.01	0.11	0.19	0.34	0.89
OutsidePct	7,978	0.65	0.39	0.00	0.40	0.83	1.00	1.00
Board_FE	7,978	0.38	0.48	0.00	0.00	0.00	1.00	1.00
Board_Info	7,978	0.76	0.43	0.00	1.00	1.00	1.00	1.00
<b><u>Innate Factors</u></b>								
Size	7,978	7.32	1.52	4.30	6.23	7.20	8.31	10.86
MtoB	7,978	3.04	3.43	(6.58)	1.48	2.27	3.68	19.44
Std_CFO	7,978	0.05	0.05	0.01	0.02	0.04	0.06	0.23
Std_Rev	7,978	0.15	0.13	0.01	0.06	0.11	0.19	0.68
OperCycle	7,978	4.69	0.73	2.44	4.29	4.74	5.10	6.76
Loss	7,978	0.16	0.25	0.00	0.00	0.00	0.20	1.00

Appendix A contains a description of each variable.

These results are similar to Jiang, Petroni, and Wang (2010, Table 2) who examine Compustat/Execucomp firms between 1993 and 2006 and report mean (median) volatility of cash flows and revenues as 0.05 (.04) and 0.16 (0.12), respectively. The mean (median) incentives of my CEO and CFO are 0.28 (.22) and 0.15 (0.12), respectively. These are similar to Jiang, Petroni, and Wang (2010, Table 1) who report mean (median) CEO and CFO incentives as 0.24 (.16) and 0.11 (0.07), respectively. These incentives capture the change in wealth for a 1% change in stock price.

### **7.3 Correlations**

Table 3 presents the Pearson (Spearman) below (above) diagonal correlation coefficients among my test, control, and dependent variables. I focus on the correlations between my test variable, Exec\_FE, and firm characteristics that relate to operating volatility. Dechow and Dichev (2002) hypothesize and find that firm size, cash flow volatility, revenue volatility, the length of operating cycle, and loss incidence are associated with the innate portion of accruals quality; therefore, I examine the relation between firms with executive teams with financial expertise and these firm characteristics.

As Table 3 displays, Exec\_FE is positively (negatively) correlated with each of the control variables that represent the higher (lower) volatility of the firm's operating environment. Specifically, Exec\_FE is positively correlated with Std\_CFO, Std\_Rev, Loss, and OperCycle and negatively correlated with Size and the MtoB. In addition, there is a positive



correlation between Exec\_FE and Accruals Quality. This correlation is consistent with an inverse relation between innate earnings quality (as lower levels of accruals quality represent higher earnings quality) and firms with executive teams with financial expertise. Combined, these univariate correlations are consistent with a matching between firms with executive teams with financial expertise and higher levels of operating volatility.

**Table 3: Correlations of Test, Dependent, and Controls Variables.**

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Exec_FE		-0.02 *	0.06 ***	-0.02 **	-0.01	0.00	0.00	-0.08 ***	-0.01	0.05 ***	-0.09 ***	-0.03 ***	0.03 **	0.05 ***	0.03 ***
2 Abs. Ab. Accruals	-0.01		0.01	0.04 ***	0.14 ***	-0.05 ***	-0.17 ***	-0.08 ***	0.00	0.02	0.02	-0.12	0.02	0.05 ***	-0.03
3 Accruals Quality	0.06 ***	0.10 ***		0.06 ***	0.00	-0.04 **	-0.02	-0.13 ***	-0.07 ***	0.01	-0.37 ***	0.07 ***	0.53 ***	0.38 ***	0.13 ***
4 AbDEXP	-0.02	0.05 ***	0.08 ***		-0.40 ***	-0.06 ***	-0.31 ***	-0.06 ***	0.00	-0.01	-0.12 ***	0.02	0.04 ***	0.06 ***	-0.06 ***
5 AbPROD	0.02	0.11 ***	0.03 **	-0.45 ***		-0.03 *	-0.45 ***	-0.21 ***	0.01	0.05 ***	0.10 ***	-0.35 ***	-0.05 ***	0.13 ***	-0.21 ***
6 AbGLA	0.01	-0.06 ***	-0.02	-0.03 **	0.00		0.07 ***	-0.01	0.04 **	0.03 *	-0.01	0.00	0.01	-0.03 *	0.00
7 AbCFO	-0.01	-0.13 ***	-0.07 ***	-0.32 ***	-0.45 ***	0.02		0.30 ***	0.00	-0.06 ***	-0.02	0.38 ***	0.06 ***	-0.12 ***	0.20 ***
8 Incentive	-0.09 ***	-0.05 ***	-0.11 ***	-0.02 *	-0.18 ***	0.00	0.25 ***		0.03 **	-0.03 ***	0.26 ***	0.42 ***	-0.11 ***	-0.12 ***	0.02 ***
9 OutsidePct	0.00	-0.01	-0.08 ***	0.00	-0.02	0.02	0.02	-0.01		0.15 ***	0.18 ***	0.00	-0.11 ***	-0.09 ***	-0.01
10 Board_FE	0.05 ***	0.01	0.02	0.00	0.05 ***	0.02	-0.07 ***	-0.05 ***	0.17 ***		0.03 **	-0.06 ***	-0.03 ***	0.00	-0.05 ***
11 Size	-0.09 ***	-0.01	-0.32 ***	-0.15 ***	0.09 ***	0.05 ***	0.01	0.25 ***	0.14 ***	0.03 **		-0.02	-0.41 ***	-0.29 ***	-0.04 ***
12 MtoB	-0.04 ***	-0.05 ***	0.06 ***	0.06 ***	-0.23 ***	0.00	0.24 ***	0.29 ***	-0.02 *	-0.07 ***	-0.03 **		0.11 ***	0.07 ***	0.04 ***
13 Std_CFO	0.03 ***	0.11 ***	0.49 ***	0.13 ***	-0.04 ***	-0.02	0.01	-0.09 ***	-0.08 ***	-0.05 ***	-0.38 ***	0.15 ***		0.48 ***	0.06 ***
14 Std_Rev	0.04 ***	0.12 ***	0.32 ***	0.06 ***	0.13 ***	-0.02	-0.11 ***	-0.08 ***	-0.07 ***	0.02 **	-0.21 ***	0.07 ***	0.32 ***		-0.13 ***
15 OperCycle	0.02 *	-0.01	0.06 ***	-0.07 ***	-0.20 ***	0.01	0.19 ***	0.00	0.03 **	-0.04 ***	0.04 ***	0.00	0.02 *	-0.18 ***	
16 Loss	0.02 **	0.05 ***	0.28 ***	-0.02	0.08 ***	-0.03 *	-0.09 ***	-0.21 ***	-0.07 ***	-0.01	-0.25 ***	-0.04 ***	0.35 ***	0.14 ***	-0.02 *

\* Significant at the 10 percent level, \*\* Significant at the 5 percent level, \*\*\* Significant at the 1 percent level.

## **8. Results**

### ***8.1 Test of H1: Executive Team Financial Expertise and Earnings Quality***

Table 4 provides results of the analysis of the relation between firms with executive teams with financial expertise and earnings quality, proxied by the absolute value of abnormal accruals and the level of accruals quality. These results show no relation between either proxy for earnings quality and firms with executive teams with financial expertise. In addition, each of my innate controls loads in the expected direction, except that size in the abnormal accruals equation and MtoB in the accruals quality test have insignificant coefficients. The results to the tests of H1a do not change if I separate the incentive control variable into CEO and CFO incentives (following Jiang, Petroni, and Wang 2010). In addition, inferences from my abnormal accruals tests do not change if I use five-year averages for the control variables.

Table 5 provides results of the analysis of the relation between firms with executive teams with financial expertise and earnings quality with a series of interaction variables to examine the difference before and after the passage of SOX. I separately examine the pre- and post-SOX periods based on prior research that finds that SOX and the surrounding events increased the scrutiny of accruals management and increased the reputation, career, and legal costs to executives involved in the accounting irregularities.

As Table 5 reports, I find that the presence of a financial expert on the executive team improves earnings quality in the period 1995-2002 as the coefficient on Exec\_FE is negative and significant (coefficient: -0.007, t-stat 2.26). Further, the relation between executive teams with a financial expert and earnings quality is eliminated following the passage of SOX as the coefficient of Exec\_FE interacted with a SOX indicator variable is positive and significant (coefficient: 0.008, t-stat 2.02). These results are consistent with reputation and career concerns leading executive teams with financial experts to enhance the quality of their earnings, an effect that was eliminated when the reputation, career, and legal concerns changed for all executives following the passage of SOX.

The results to the tests of H1b do not change if I exclude observations from 2002 as part of the pre-SOX period. As Table 5 reports, there is no relation between Exec\_FE and accruals quality either before or after the passage of SOX.

**Table 4: Test of H1a: Financial Expertise and Earnings Quality.**

		<b>Coeff.</b>	<b>S. E.</b>	<b>T-Stat.</b>		<b>Coeff.</b>	<b>S. E.</b>	<b>T-Stat.</b>
<b>Dep. Variable:</b>		<b>Abnormal Accruals</b>				<b>Accruals Quality</b>		
<b>Intercept</b>		-0.030	0.021	-1.42		0.004	0.013	0.32
<b><u>Test Variables:</u></b>								
<b>Exec_FE</b>	-	-0.002	0.002	-0.81		0.001	0.001	0.74
<b><u>Controls:</u></b>								
<b>Incentive</b>	-	-0.005	0.006	-0.80		-0.003	0.003	-1.00
<b>OutsidePct</b>	-	-0.003	0.008	-0.34		-0.004	0.005	-0.85
<b>Board_FE</b>	-	0.001	0.002	0.58		0.003	0.001	2.28 **
<b>Board_Info</b>		-0.001	0.008	-0.12		-0.005	0.005	-0.93
<b>Size</b>	-	-0.001	0.001	-0.66		-0.002	0.001	-3.62 ***
<b>MtoB</b>	-	-0.001	0.000	-2.23 **		0.000	0.000	0.14
<b>Std_CFO</b>	+	0.176	0.041	4.33 ***		0.289	0.036	8.08 ***
<b>Std_Rev</b>	+	0.038	0.011	3.46 ***		0.070	0.011	6.14 ***
<b>OperCycle</b>	+	0.005	0.002	2.43 **		0.009	0.002	5.39 ***
<b>Loss</b>	+	0.012	0.006	2.08 **		0.021	0.004	5.21 ***
<b>Industries</b>		<b>YES</b>				<b>YES</b>		
<b>Years</b>		<b>YES</b>				<b>YES</b>		
<b>Cluster</b>		<b>Firm</b>				<b>Firm</b>		
<b># of Obs.</b>		7,978				6,698		
<b>R-Square</b>		0.04				0.34		
<b>Adj. R-Square</b>		0.03				0.33		

\* Significant at the 10 percent level, \*\* Significant at the 5 percent level, \*\*\* Significant at the 1 percent level. Table 4 presents the results of the test of H1a (equation 8) for two proxies for Earnings Quality: Abnormal Accruals and Accruals Quality. Abnormal Accruals are calculated with the modified Jones (1991) model as discussed in Section 4.2 and determined with equations 1 and 2. Accruals Quality are calculated with the Dechow and Dichev (2002) model as discussed in Section 4.2 and determined with equation 3. For the accruals quality tests, Size, MtoB, OperCycle, and Loss are calculated as the average for the current and past four years. For the abnormal accruals tests, Size, MtoB, OperCycle, and Loss are calculated as of the current fiscal year. Std\_Rev and Std\_CFO are calculated for the current and past four years. In these tests, the standard errors are clustered by firm (Compustat's GVKEYs) and industry and year indicators are included following Peterson (2009), as discussed in Section 5.1. Appendix A contains a description of each variable.

**Table 5: Test of H1b: Financial Expertise and Earnings Quality: Pre and Post SOX.**

Dep. Variable:	Abnormal Accruals				Accruals Quality			
	Coeff.	S. E.	T-Stat.		Coeff.	S. E.	T-Stat.	
Intercept	-0.058	0.023	-2.54	**	-0.014	0.016	-0.92	
<b>Test Variables:</b>								
Exec_FE	-0.007	0.003	-2.26	**	0.000	0.002	-0.12	
SOX x Exec_FE	0.008	0.004	2.02	**	0.002	0.003	0.83	
<b>Controls:</b>								
Incentive	0.009	0.009	0.99		0.001	0.006	0.14	
Board_Info	0.011	0.014	0.79		-0.002	0.007	-0.33	
OutsidePct	0.000	0.006	0.07		0.005	0.003	1.44	
Board_FE	-0.009	0.010	-0.85		0.003	0.006	0.60	
Size	-0.001	0.001	-0.44		-0.003	0.001	-3.00	***
MtoB	-0.001	0.001	-2.04	**	0.000	0.000	0.07	
Std_CFO	0.219	0.071	3.07	***	0.219	0.065	3.36	***
Std_Rev	0.007	0.015	0.46		0.099	0.020	4.85	***
OperCycle	0.010	0.003	3.83	***	0.011	0.002	5.11	***
Loss	0.016	0.010	1.50		0.032	0.008	3.78	***
<b>SOX Interactions</b>								
SOX	0.033	0.017	1.91	*	0.026	0.012	2.13	**
Incentive	-0.019	0.011	-1.71	*	-0.010	0.007	-1.39	
Board_Info	-0.014	0.016	-0.90		-0.004	0.007	-0.57	
OutsidePct	0.001	0.006	0.19		-0.002	0.003	-0.53	
Board_FE	0.005	0.013	0.35		-0.007	0.007	-1.11	
Size	0.000	0.001	0.09		0.001	0.001	0.88	
MtoB	0.001	0.001	0.77		0.000	0.000	0.14	
Std_CFO	-0.056	0.094	-0.59		0.100	0.067	1.50	
Std_Rev	0.043	0.021	2.11	**	-0.043	0.020	-2.16	**
OperCycle	-0.007	0.002	-2.80	***	-0.003	0.002	-1.54	
Loss	-0.006	0.012	-0.48		-0.014	0.009	-1.64	
Industries	YES				YES			
Years	No				No			
Cluster	Firm				Firm			
# of Obs.	7,978				6,698			
R-Square	0.04				0.34			
Adj. R-Square	0.03				0.33			

Continues from Table 5.

\* Significant at the 10 percent level, \*\* Significant at the 5 percent level, \*\*\* Significant at the 1 percent level. Table 5 presents the results of the test of H1b (equation 8) for two proxies for Earnings Quality: Abnormal Accruals and Accruals Quality with the addition of an indicator variable interacted with each of the variables from equation 8. The post-SOX period includes the years 2003-2007. Abnormal Accruals are calculated with the modified Jones (1991) model as discussed in Section 4.2 and determined with equations 1 and 2. Accruals Quality are calculated with the Dechow and Dichev (2002) model as discussed in Section 4.2 and determined with equation 3. For the accruals quality tests, Size, MtoB, OperCycle, and Loss are calculated as the average for the current and past four years. For the abnormal accruals tests, Size, MtoB, OperCycle, and Loss are calculated as of the current fiscal year. Std\_Rev and Std\_CFO are calculated for the current and past four years. In these tests, the standard errors are clustered by firm (Compustat's GVKEYs) and industry indicators are included following Peterson (2009), as discussed in Section 5.1. Appendix A contains a description of each variable.

## ***8.2 Test of H2: Executive Team Financial Expertise and Real Activities Management***

Table 6 provides results of the analysis of the relation between firms with executive teams with financial expertise and real activities with four proxies for real activities management: abnormal discretionary accruals, abnormal production costs, abnormal gains or losses on the sale of assets, and abnormal levels of cash flows. I find no relation between the proxies for real activities management and firms with executive teams with financial expertise.

Table 7 provides results of the analysis of the relation between firms with executive teams with financial expertise and with four proxies for real activities management with a series of interaction variables to examine the difference before and after the passage of SOX. I separately examine the pre- and post-SOX periods based on

prior research which finds that the scrutiny of accruals management increased following the passage of SOX and the real activities management increased (Cohen, Dey, and Lys 2008; Graham, Harvey, and Rajgopal 2005). As Table 7 reports, I find no relation between the proxies for real activities management and firms with executive teams with financial expertise before or after the passage of SOX.



**Table 6: Test of H2a: Financial Expertise and Real Activities Management.**

Dep. Variable:	Coeff.	S. E.	T-Stat.		Coeff.	S. E.	T-Stat.		Coeff.	S. E.	T-Stat.		Coeff.	S. E.	T-Stat.
	Discretionary Expenses				Production Costs				Sales of Assets				Cash from Sales		
<b>Intercept</b>	-0.028	0.095	-0.30		0.010	0.103	0.10		-0.004	0.005	-0.83		-0.155	0.047	-3.33 ***
<b>Test Variables:</b>															
Exec_FE	0.015	0.010	1.46		0.007	0.010	0.77		0.000	0.000	0.65		0.002	0.005	0.41
<b>Controls:</b>															
Incentive	-0.089	0.030	-3.02 ***		-0.124	0.027	-4.55 ***		-0.001	0.001	-1.32		-0.089	0.016	-5.66 ***
OutsidePct	-0.014	0.036	-0.39		-0.050	0.030	-1.66 *		-0.001	0.001	-0.59		-0.031	0.020	-1.57
Board_FE	0.000	0.010	0.04		0.002	0.009	0.22		0.000	0.000	0.71		0.005	0.005	1.08
Board_Info	0.031	0.029	1.08		0.043	0.025	1.69		0.001	0.001	0.77		0.003	0.016	0.19
Size	0.036	0.004	8.78 ***		0.024	0.004	6.49 ***		0.000	0.000	1.41		0.002	0.002	0.97
MtoB	-0.010	0.002	-6.06 ***		-0.009	0.002	-4.19 ***		0.000	0.000	0.50		-0.003	0.001	-2.63 ***
Std_CFO	-0.596	0.128	-4.67 ***		0.058	0.179	0.32		-0.002	0.004	-0.45		0.083	0.127	0.65
Std_Rev	0.002	0.048	0.05		0.129	0.053	2.44 **		0.000	0.001	-0.13		0.061	0.027	2.31 **
OperCycle	-0.037	0.015	-2.47 **		-0.063	0.014	-4.52 ***		0.000	0.000	0.59		-0.005	0.005	-1.05
Loss	-0.026	0.020	-1.33		0.076	0.019	3.98 ***		-0.002	0.001	-1.63		0.104	0.012	8.71 ***
Industries	YES				YES				YES				YES		
Years	YES				YES				YES				YES		
Cluster	Firm				Firm				Firm				Firm		
# of Obs.	6,878				6,878				4,560				6,878		
R-Square	0.27				0.18				0.03				0.38		
Adj. R-Square	0.26				0.18				0.02				0.37		

Continues from Table 6.

\* Significant at the 10 percent level, \*\* Significant at the 5 percent level, \*\*\* Significant at the 1 percent level. Table 6 presents the results of the test of H2a (equation 9) for four proxies for real activities management: Abnormal Discretionary Expenses, Abnormal Production Costs, Abnormal Gains and Losses on the Sale of Assets, and Abnormal Levels of Cash Flows. These proxies for real activities management are calculated following Roychowdhury (2006) and Zang (2006) as discussed in Section 4.2 and determined with equations 4, 5, 6, and 7. Size, MtoB, OperCycle, and Loss are calculated as of the current fiscal year. Std\_Rev and Std\_CFO are calculated for the current and past four years. In these tests, the standard errors are clustered by firm (Compustat's GVKEYs) and industry and year indicators are included following Peterson (2009), as discussed in Section 5.1. Appendix A contains a description of each variable.

Table 7: Test of H2b: Financial Expertise and Real Activities Management: Pre and Post SOX.

Dep. Variable:	Coeff.	S. E.	T-Stat.	Coeff.	S. E.	T-Stat.	Coeff.	S. E.	T-Stat.	Coeff.	S. E.	T-Stat.
	Discretionary Expenses			Production Costs			Sales of Assets			Cash from Sales		
Intercept	0.173	0.107	1.61	-0.047	0.112	-0.42	-0.001	0.006	-0.13	-0.330	0.052	-6.39 ***
<b>Test Variables:</b>												
Exec_FE	0.010	0.015	0.67	-0.003	0.016	-0.23	0.000	0.001	0.37	0.006	0.007	0.84
SOX x Exec_FE	0.005	0.016	0.32	0.017	0.015	1.08	0.000	0.001	-0.03	-0.005	0.008	-0.56
<b>Controls:</b>												
Incentive	-0.003	0.037	-0.09	-0.063	0.047	-1.33	-0.001	0.002	-0.57	-0.104	0.025	-4.23 ***
Board_Info	-0.063	0.045	-1.41	-0.043	0.039	-1.11	-0.001	0.002	-0.27	-0.016	0.024	-0.66
OutsidePct	-0.001	0.019	-0.03	-0.013	0.019	-0.72	0.000	0.001	0.39	0.001	0.008	0.10
Board_FE	0.079	0.034	2.31 **	0.007	0.029	0.25	0.001	0.002	0.40	-0.023	0.019	-1.25
Size	0.033	0.006	5.68 ***	0.031	0.005	5.60 ***	0.000	0.000	0.81	0.006	0.003	2.19 **
MtoB	-0.013	0.003	-5.15 ***	-0.012	0.004	-3.13 ***	0.000	0.000	-0.89	-0.002	0.002	-1.14
Std_CFO	0.020	0.168	0.12	0.397	0.406	0.98	0.006	0.010	0.62	0.069	0.268	0.26
Std_Rev	0.147	0.055	2.64 ***	0.200	0.082	2.43 **	-0.005	0.003	-1.64	0.060	0.041	1.44
OperCycle	-0.065	0.017	-3.82 ***	-0.064	0.016	-4.07 ***	0.000	0.001	-0.57	0.015	0.006	2.34 **
Loss	-0.045	0.036	-1.26	0.158	0.047	3.40 ***	-0.004	0.002	-1.72 *	0.133	0.023	5.77 ***
<b>SOX Interactions</b>												
SOX	-0.177	0.074	-2.40 **	0.076	0.067	1.13	-0.005	0.004	-1.50	0.188	0.038	4.97 ***
Incentive	-0.137	0.044	-3.10 ***	-0.095	0.048	-2.00 **	0.000	0.002	0.13	0.025	0.030	0.82
Board_Info	0.023	0.051	0.45	-0.015	0.043	-0.36	0.000	0.002	0.20	-0.005	0.030	-0.16
OutsidePct	-0.008	0.018	-0.43	0.017	0.018	0.96	0.000	0.001	-0.10	0.010	0.009	1.03
Board_FE	-0.013	0.043	-0.31	0.049	0.037	1.33	0.001	0.002	0.43	0.018	0.025	0.70
Size	0.004	0.006	0.68	-0.008	0.005	-1.50	0.000	0.000	-0.25	-0.005	0.003	-1.58
MtoB	0.005	0.003	1.78 *	0.003	0.004	0.86	0.000	0.000	1.36	-0.001	0.002	-0.30
Std_CFO	-0.814	0.207	-3.93 ***	-0.490	0.414	-1.18	-0.011	0.010	-1.08	-0.021	0.234	-0.09
Std_Rev	-0.206	0.065	-3.17 ***	-0.111	0.083	-1.34	0.006	0.003	1.78 *	-0.005	0.045	-0.11
OperCycle	0.041	0.011	3.61 ***	0.001	0.010	0.07	0.001	0.001	1.24	-0.031	0.006	-5.40 ***
Loss	0.036	0.039	0.92	-0.105	0.048	-2.17 **	0.003	0.002	1.38	-0.040	0.025	-1.61
Industries	YES			YES			YES			YES		
Years	No			No			No			No		
Cluster	Firm			Firm			Firm			Firm		
# of Obs.	6,878			6,878			4,560			6,878		
R-Square	0.26			0.19			0.03			0.36		
Adj. R-Square	0.25			0.18			0.02			0.35		

Continues from Table 7.

\* Significant at the 10 percent level, \*\* Significant at the 5 percent level, \*\*\* Significant at the 1 percent level. Table 7 presents the results of the test of H2b (equation 9) for four proxies real activities management: Abnormal Discretionary Expenses, Abnormal Production Costs, Abnormal Gains and Losses on the Sale of Assets, and Abnormal Levels of Cash Flows with the addition of an indicator variable interacted with each of the variables from equation 9. The post-SOX period includes the years 2003-2007. These proxies for real activities management are calculated following Roychowdhury (2006) and Zang (2006) as discussed in Section 4.2 and determined with equations 4, 5, 6, and 7. Size, MtoB, OperCycle, and Loss are calculated as of the current fiscal year. Std\_Rev and Std\_CFO are calculated for the current and past four years. In these tests, the standard errors are clustered by firm (Compustat's GVKEYs) and industry indicators are included following Peterson (2009), as discussed in Section 5.1. Appendix A contains a description of each variable.

### **8.3 Additional Tests**

I focus on the relation between financial expertise (which I define as accounting expertise) and discretionary earnings quality as I expect that executives with both decision rights and domain-specific knowledge (i.e., accounting and financial reporting knowledge) have the greatest ability to influence discretionary earnings quality. However, other studies examine different types of expertise or other backgrounds. For example, Francis et al. (2008) examine the coverage of CEOs by the media and Koh (2007) examines executives who win high-profile media awards. Many other studies examine MBA degrees (e.g., Graham, Harvey, and Rajgopal 2005; Bamber, Jiang, and Wang 2008; Bertrand and Schoar 2003; Ge, Matsumoto, and Zhang 2010) or combine finance and accounting backgrounds into one category (Matsunaga and Yeung 2008; Bamber, Jiang, and Wang 2008). Following this literature, I extend my analysis and examine the relation between firms with executives with financial (non-accounting) expertise and earnings quality. Specifically, I examine firms with CEOs or CFOs who have MBAs or finance (non-accounting) backgrounds (including CFO experience) and who are not financial (that is, accounting) experts.<sup>1</sup>

---

<sup>1</sup> As I detail in Appendix A, executives with both an MBA and an accounting background or both a finance and an accounting background are financial experts, while those with only an MBA or only a finance (non-accounting) background are not. That is, I designate executives who have both a CPA and an MBA or those who worked as an auditor and then became a CFO as financial experts and not as executives with MBAs or

I find that these backgrounds exhibit a degree of substitutability as financial (accounting) expertise is negatively correlated with both the MBA and the finance (non-accounting) backgrounds, with correlation coefficients of -0.36 and -0.26, respectively (untabulated), which are significant (at the 0.001 level).

As Table 8 reports, when I include the Exec\_MBA and Exec\_FIN variables and interact these variables with an indicator for SOX, the relation between executive teams with financial expertise and absolute abnormal accruals does not change. Specifically, the coefficient on Exec\_FE remains negative and significant (coefficient: -0.010, t-stat 2.73) and coefficient on Exec\_FE interacted with SOX remains positive and significant (coefficient: 0.008, t-stat 2.13). Further, the coefficients on Exec\_MBA, Exec\_MBA interacted with SOX, and Exec\_FIN interacted with SOX are insignificant. The coefficient on the Exec\_FIN variable is significant (coefficient: -0.008, t-stat 1.97). The coefficients on Exec\_MBA and Exec\_FIN are insignificant in the tests of accruals quality as well.

In my examination of the relation between firms with executive teams with financial expertise and earnings quality, I designate firms with a financial expert as

---

finance (non-accounting) backgrounds. Therefore, the MBA and Finance (non-accounting) samples include only the individuals with MBAs or finance backgrounds and no accounting experience.

having financial expertise. This designation is a sufficiency condition. To extend this analysis, I also examine the interaction effect from both a CEO and a CFO with financial expertise. This specification allows an incremental effect from two executives with decision rights and financial knowledge. In unreported tests, I find that the interaction term is in the same direction but statistically insignificant for each of my tests of earnings quality. Specifically, for the Abnormal Accruals analysis, the coefficient on the interaction term in the period preceding SOX is -0.018 and the t-stat is 0.20.

**Table 8: Financial Expertise, Other Backgrounds, and Earnings Quality.**

Dep. Variable:	Coeff.	S. E.	T-Stat.		Coeff.	S. E.	T-Stat.	
	<b>Abnormal Accruals</b>				<b>Accruals Quality</b>			
<b>Intercept</b>	-0.055	0.023	-2.39	**	-0.015	0.015	-0.94	
<b>Test Variables:</b>								
Exec_FE	-0.010	0.004	-2.73	***	0.000	0.003	-0.13	
SOX x Exec_FE	0.009	0.004	2.13	**	0.003	0.003	0.97	
Exec_FIN	-0.008	0.004	-1.97	**	0.002	0.004	0.62	
SOX x Exec_FIN	0.008	0.005	1.48		0.000	0.004	0.09	
Exec_MBA	-0.004	0.003	-1.29		-0.001	0.003	-0.57	
SOX x Exec_MBA	0.001	0.004	0.19		0.001	0.003	0.27	
<b>Controls:</b>								
Incentive	0.007	0.009	0.81		0.001	0.006	0.14	
Board_Info	0.010	0.014	0.77		-0.002	0.007	-0.32	
OutsidePct	0.001	0.006	0.13		0.005	0.003	1.42	
Board_FE	-0.008	0.010	-0.83		0.003	0.006	0.57	
Size	0.000	0.001	-0.11		-0.003	0.001	-2.89	***
MtoB	-0.001	0.001	-1.97	**	0.000	0.000	0.13	
Std_CFO	0.219	0.071	3.08	***	0.220	0.065	3.38	***
Std_Rev	0.007	0.015	0.46		0.098	0.020	4.84	***
OperCycle	0.009	0.003	3.74	***	0.011	0.002	5.11	***
Loss	0.016	0.010	1.57		0.031	0.008	3.79	***
<b>SOX Interactions</b>								
SOX	0.032	0.017	1.83	*	0.025	0.012	2.12	**
Incentive	-0.018	0.011	-1.59		-0.009	0.007	-1.36	
Board_Info	-0.014	0.016	-0.88		-0.004	0.007	-0.57	
OutsidePct	0.001	0.006	0.15		-0.002	0.003	-0.52	
Board_FE	0.004	0.013	0.32		-0.007	0.007	-1.11	
Size	0.000	0.002	-0.10		0.001	0.001	0.81	
MtoB	0.001	0.001	0.74		0.000	0.000	0.09	
Std_CFO	-0.056	0.094	-0.60		0.099	0.067	1.49	
Std_Rev	0.043	0.021	2.09	**	-0.043	0.020	-2.15	**
OperCycle	-0.007	0.002	-2.70	***	-0.003	0.002	-1.52	
Loss	-0.006	0.012	-0.52		-0.014	0.008	-1.62	
Industries	YES				YES			
Years	No				No			
Cluster	Firm				Firm			
# of Obs.	7,978				6,698			
R-Square	0.04				0.34			
Adj. R-Square	0.03				0.33			



Continues from Table 8.

\* Significant at the 10 percent level, \*\* Significant at the 5 percent level, \*\*\* Significant at the 1 percent level. Table 8 presents the results to the test of H1b (equation 8) with the inclusion of variables for the existence of a CEO or CFO on the executive team with an MBA or a finance (non-accounting) background. Table 8 presents the results of the test of H1b (equation 8) for two proxies for Earnings Quality: Abnormal Accruals and Accruals Quality with the addition of an indicator variable interacted with each of the variables from equation 8. The post-SOX period includes the years 2003-2007. In these tests, the standard errors are clustered by firm (Compustat's GVKEYs) and industry indicators are included following Peterson (2009), as discussed in Section 5.1. Appendix A contains a description of each variable.

## 9. Conclusion

In this study, I examine the relation between executive teams with financial expertise and earnings quality and real activities management. While a considerable body of research examines the determinants of financial reporting decisions (Lo 2008; Field, Lys, and Vincent 2001; Healy and Palepu 2001), much of the heterogeneity in financial reporting outcomes is not explained by firm and industry factors (Bamber, Jiang, and Wang 2008). Guiding my analysis, the Upper Echelons perspective stresses the importance of examining executives to understand firm outcomes, of examining executives teams (beyond a single executive), of analyzing domain-specific expertise, and the benefits of using observable background characteristics when examining the relation between executive teams and firm outcomes. I propose that the coupling of decision rights and domain-specific knowledge (i.e., accounting expertise) provides the greatest opportunity for executives to influence discretionary reporting choices. Therefore, I examine the relation between executive teams with financial expertise and earnings quality. Following the literature that examines the financial expertise of audit committees (Coates, Marias, and Weil 2007; Krishnan and Vishvanathan 2008), I define financial expertise as work experience, educational credentials, or professional distinctions in accounting.

In my main tests, I find that in the pre-SOX period, firms with executive teams with financial expertise have higher discretionary earnings quality as measured by lower levels of abnormal accruals, but this relation is eliminated in the post-SOX period. This result is consistent with reputation concerns (that is, concerns related to reputations for financial reporting quality) driving financial experts to enhance financial reporting quality in the pre-SOX period. Moreover, these results suggest that the increased reputational and legal concerns for all executives that accompanied the Sarbanes Oxley Act (and other, contemporaneous events) eliminated this relation.

As research proposes that the intervention into the accruals and real activities are substitutes (Graham, Harvey, and Rajgopal 2005; Zang 2006; Cohen, Dey, and Lys 2008;), I examine four proxies for real activities management (abnormal levels of discretionary expenses, abnormal levels of production costs, abnormal levels of cash flows, and abnormal gains or losses on the sale of assets). I do not find evidence of a relation between firms with executive teams with financial expertise and these measures of real activities management.

## Appendix A: Description of Variables

### Executive Team Characteristics

#### FINANCIAL EXPERTISE

<b>Exec_FE</b>	Indicator =1 if either the CEO or the CFO has financial expertise as described in the four categories below and on the next page.
<b>CEO_FE</b>	Indicator =1 if the CEO has financial expertise as described as described in the four categories below and on the next page.
<b>CFO_FE</b>	Indicator =1 if the CFO has financial expertise as described as described in the four categories below and on the next page.
<b>CEO and CFO FE</b>	Indicator =1 if the CEO and CFO have financial expertise as described as described in the four categories below and on the next page.
<b>Education</b>	The executive is designated as a financial expert if, after removing spaces and punctuation, he or she has an education degree that contains one of the following terms: MAINACCOUNTING MACC MSINACCOUNT MASTEROFACCOUNT MASTEROFPUBLICACCOUNT MASTERSDEGREEINACCOUNTING MASTERSACCOUNTING MBAINACCOUNT MMINFINANCEANDACCOUNTING
<b>Professional Distinction</b>	The executive is designated as a financial expert if, after removing spaces and punctuation, he or she has a professional distinction that contains one of the following terms: CA CMA CPA CERTIFIEDACCOUNTANT CERTIFIEDMANAGEMENTACC CERTIFIEDMANAGERIALACC CERTIFIEDPUBLICAC CHARTEREDACCOUNTANT CHARTEREDMANAGEMENTACC CHARTEREDCERTIFIEDACC

Appendix A: Description of Variables (continued)

**Executive Team Characteristics**

**FINANCIAL EXPERTISE**

**Work Experiences: Role** The executive is designated as a financial expert if, after removing spaces and punctuation, he or she has a past job title that contains one of the following terms: ACCOUNTANT ACCOUNTING CONTROLLER COMPTROLLER CORPORATECONTR AUDIT CHIEFACCOUNTANT CHIEFAUDITOR CHIEFINTERNALCONTROLOF PRINCIPALACCOUNT FINANCIALREPORT

**Work Experiences: Company** The executive is designated as a financial expert if, after removing spaces and punctuation, he or she worked at a previous employer whose name contains one of the following terms: ANDERSENDELANY ARTHURANDERSEN ERNSTYOUNG ARTHURYOUNG ERNSTWHINNEY ERNSTERNST WHINNEYMURRAY WHINNEYSMITHWHINNEY ERNSTANDYOUNG COOPERSLYBRAND COOPERSBROTHERS LYBRANDROSS PRICEWATERHOUSE DELOITTEHASK HASKINSELLS TOUCHEROSS ROSSTOUCHE GEORGEATOUCHE TOUCHENIVEN TOHMATSU KPMG PEATMARWICK BARCLAYPEAT MARWICKMITCHELL KMG KLYNVELDMAINGOERDELER THOMSONMCLINTOCK MAINLAFRENZE BDOSEIDMAN GRANTTHORTON RSMCGLADREY CROWECHIZEK BKDLLP PLANTEMORAN

Appendix A: Description of Variables (continued)

**Executive Team Characteristics**

**MBA**

**Exec\_MBA** Indicator =1 if the CEO or the CFO has an MBA (and no financial expertise) as described below.

**Education** The executive is designated as a financial expert if, after removing spaces and punctuation, he or she has an education degree that contains one of the following terms: MBA  
EXECUTIVEMASTERSINBUS MAINBUSINESS  
MSINBUSINESS MSCINMANAGEMENTSCIENC  
MASTERDEGREEINBUSINES MASTERINBUSINESSADMIN  
MASTERINBUSINESSANDA MASTEROFBUSINESSADMIN  
MASTEROFBUSINESSSCIEN MASTEROFMANAGEMENT  
MASTEROFSCIENCEINBUS MASTERSDEGREEINBUSINE  
MASTERSINBUSINESS MASTERSOFBUSINESS  
PHDINBUSINESS PHDINMANAGEMENTANDEC  
PHDININDUSTRIALORGA

Appendix A: Description of Variables (continued)

**Executive Team Characteristics**  
**FINANCE (non ACCOUNTING)**

<b>Exec_FIN</b>	Indicator =1 if the CEO or the CFO has strict finance experience (and no financial expertise) as described below.
<b>Professional Distinction</b>	The executive is designated as a FINANCE expert if, after removing spaces and punctuation, he or she has a professional distinction that contains one of the following terms: CFA CERTIFIEDFINANCIALANAL CHARTEREDFINANCIALANAL
<b>Education</b>	The executive is designated as a FINANCE expert if, after removing spaces and punctuation, he or she has an education degree that contains one of the following terms: MAINECONOMICS MAINFINANCE MAINBANKINGANDFINANC MSINECONOMICS MSCINAPPLIEDECONOMICS MASTEROFBANKING MASTERSDEGREEINECONOM MASTERSDEGREEINFINANC MSMINFINANCE PHDINECONOMETRICS PHDINECONOMICS PHDINFINANCE MBAINFIN MBAINANALYTICALFIN MBAINANALYTICFIN MBAINCORPORATEFIN MBAINSTRATEGYANDFIN
<b>Work Experiences: Role</b>	The executive is designated as a FINANCE expert if, after removing spaces and punctuation, he or she has a past job title that contains one of the following terms and they are not designated as having financial expertise: CFO FINANCEMANAG MANAGERFIN VPFIN CORPORATEFIN DIRECTORFIN PRINCIPALFIN PRESIDENTFIN MDFINANC EDFINANC CHIEFFIN HEADOFFIN EXECUTIVEFIN FINANCIALOFF FINANCECHAIR FINANCEDIRECT ANALYST TREASUR INVESTMENT DIRECTORINVE BANKER BANKINGCENTEROFFICER CHIEFBANKIN CHIEFECON CHIEFINVES CHIEFLOAN CHIEFLENDIN ECONOMIST CHIEFRISK

Appendix A: Description of Variables (continued)

**Earnings Quality**

<b>TACC</b>	Total Accruals: the difference between cash flows from operations and income before extraordinary items.
<b>PPE</b>	Gross property, plant and equipment.
<b><math>\Delta</math>Sales</b>	The difference in revenue between the current and preceding fiscal year.
<b>Assets</b>	Total Assets
<b>NA</b>	The normal level of total accruals from equation 2.
<b><math>\Delta</math> AR</b>	The difference in accounts receivable between the current and preceding fiscal year.
<b>Discretionary Accruals</b>	The residual from equation 2.
<b>Abnormal Accruals</b>	The absolute value of the (Kothari, Leone and Wasley 2005) performance-adjusted discretionary accruals (the residual from equation 2)
<b>Accruals Quality</b>	The standard deviation from equation 3 for the current and preceding four years.



Appendix A: Description of Variables (continued)

**Real Activities**

<b>DEXP</b>	Total discretionary expenses for period t, which include R&D, Advertising and Selling, General and Administrative expenses.
<b>PROD</b>	Total production costs, which are the sum of costs of goods sold and the change in inventories for the period.
<b>GLA</b>	The total net gain and loss on the sale of investment and property plant and equipment assets.
<b>CFO</b>	Total cash flows from operations (excluding extraordinary and discontinued operations) for the period.
<b>abDEXP</b>	The abnormal level of discretionary expenses--the difference between the fitted value and the actual value in equation 4.
<b>abPROD</b>	The abnormal level of production costs--the difference between the fitted value and the actual value from equation 5.
<b>abGLA</b>	The abnormal level of discretionary accruals--the difference between the fitted value and the actual value in equation 6.
<b>abCFO</b>	The abnormal level of cash flows from operations--the difference between the fitted value and the actual value in equation 7.

Appendix A: Description of Variables (continued)

**Controls**

**SOX** An indicator set equal to 1 for firm-years after 2002.

**Incentives**

**Incentive**  $\text{OnePct} / (\text{OnePct} + \text{Salary} + \text{Bonus})$

**OnePct**  $(0.01 \times \text{Share Price} \times \text{Shares excluding options}) + (0.01 \times \text{Share Price} \times (\text{the value of newly granted options, the value of unexercised-exerciseable options, and the value of unexercised-unexerciseable options}))$ .

**Firm Controls**

**Size** The natural logarithm of the firm's assets; average assets for the tests of accruals quality.

**MtoB** The firm's Market to Book Ratio; the average Market to Book ratio for the tests of accruals quality.

**Std\_CFO** The standard deviation of the firm's cash flows for the current and preceding four years.

**Std\_Rev** The standard deviation of the firm's revenues for the current and preceding four years.

**OperCycle** The natural logarithm of the length of the firm's operating cycle; the average operating cycle for the tests of accruals quality.

**Loss** Whether the firm incurs a loss in the current year; the percent of losses in the current and past four years for the accruals quality tests.

**Board Controls**

**Board\_Info** Indicator=1 if information is available for the firm's board of directors.

**Board\_FE** Indicator =1 if a member of the Board has had financial expertise as described in this Appendix.

**OutsidePct** The percent of members of the Board of Directors that are not employees of the firm.

## References

- AICPA. 2005. The White Paper CPAs as CFOs: Why You Should Have a CPA in Your C-Suite. <http://www.aicpa.org/pages/default.aspx>.
- Aier, J.K., J. Comprix, M.T. Gunlock, and D. Lee. 2005. The financial expertise of CFOs and accounting restatements. *Accounting Horizons* 19(3):123.
- Bamber, L., J. Jiang, and I. Wang. 2008. What's my style? The influence of top managers and their personal backgrounds on voluntary corporate financial disclosure. Working paper.
- Bartov, E., and D.A. Cohen. 2006. Mechanisms to meet/beat analyst earnings expectations in the pre-and post-Sarbanes-Oxley eras. Working paper.
- Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics* 33(2):173–204.
- Bergstresser, D., and T. Philippon. 2006. CEO incentives and earnings management. *Journal of Financial Economics* 80(3):511–529.
- Bertrand, M., and A. Schoar. 2003. Managing with style: The effect of managers on firm policies. *Quarterly Journal of Economics* 118(4):1169–1208.
- Bertrand, Marianne. 2009. CEOs. *Annual Review of Economics* 1:121–150.
- Brochet, F., L. Faurel, and S. McVay. 2008. Earnings guidance around CFO turnover. Working paper.
- Bushee, B.J. 1998. The influence of institutional investors on myopic R&D investment behavior. *Accounting Review* 305–333.
- Cannella, A., and K. Starkey. 2001. Donald Hambrick and Andrew Pettigrew on executives and strategy. *The Academy of Management Executive* 15(3):36–47.
- Carpenter, M.A., and J.W. Fredrickson. 2001. Top management teams, global strategic posture, and the moderating role of uncertainty. *The Academy of Management Journal* 44(3):533–545.
- Cheng, Q., and T. Warfield. 2005. Stock-Based Compensation, Earnings Management and the Informativeness of Earnings. *The Accounting Review* 80(2):441–476.
- Coates, D.J., M.L. Marais, and R.L. Weil. 2007. Audit committee financial literacy: A work in progress. *Journal of Accounting, Auditing and Finance* 22(2):175.

- Cyert, R.M., and J.G. March. 1963. *A behavioral theory of the firm*, vol. 1.
- Dechow, P.M., and I.D. Dichev. 2002. The quality of accruals and earnings: The role of accrual estimation errors. *Accounting Review* 77:35–59.
- Dechow, P.M., R.G. Sloan, and A.P. Sweeney. 1995. Detecting earnings management. *Accounting Review* 70(2):193–225.
- DeFond, M.L., R.N. Hann, and X. Hu. 2005. Does the market value financial expertise on audit committees of boards of directors? *Journal of Accounting Research* 43:153–193.
- Engelberg, J., P. Gao, and C.A. Parsons. 2009. The value of a rolodex: CEO pay and personal networks. Working paper.
- Fee, C.E., and C.J. Hadlock. 2004. Management turnover across the corporate hierarchy. *Journal of Accounting and Economics* 37(1):3–38.
- Feng, M., W. Ge, S. Luo, and T.J. Shevlin. 2009. Why do CFOs become involved in material accounting manipulations? Working paper.
- Fields, T.D., T.Z. Lys, and L. Vincent. 2001. Empirical research on accounting choice. *Journal of accounting and economics* 31(1-3):255–307.
- Finkelstein, S. 1992. Power in top management teams: Dimensions, measurement, and validation. *The Academy of Management Journal* 35(3):505–538.
- Francis, J., A.H. Huang, S. Rajgopal, and A.Y. Zang. 2008. CEO reputation and earnings quality. *Contemporary Accounting Research* 25(1).
- Francis, J., R. LaFond, P. Olsson, and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39(2):295–327.
- Francis, J., R. LaFond, P.M. Olsson, and K. Schipper. 2004. Costs of equity and earnings attributes. *Accounting Review* 79(4):967–1010.
- Francis, J., P. Olsson, and K. Schipper. 2008. *Earnings quality*. Now Publishers Inc.
- Frieswick, K. 2005. What does your CFO really know? *CFO Magazine* May 1.
- Ge, W., D.A. Matsumoto, and J.L. Zhang. 2010. Do CFOs have styles of their own? An empirical investigation of the effect of individual CFOs on financial reporting practices. Working paper.
- Geiger, M.A., and D.S. North. 2006. Does hiring a new CFO change things? An investigation of changes in discretionary accruals. *The Accounting Review* 81:781.

- Graham, J.R., C.R. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40(1-3):3–73.
- Gunny, K. 2009. What are the consequences of real earnings management? Working paper.
- Hambrick, D.C. 2007. Upper echelons theory: An update. *Academy of Management Review* 32(2):334.
- Hambrick, D.C., and P.A. Mason. 1984. Upper echelons: The organization as a reflection of its top managers. *The Academy of Management Review* 9(2):193–206.
- Healy, P.M., and K.G. Palepu. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics* 31(1-3):405–440.
- Hribar, P., and D.W. Collins. 2002. Errors in estimating accruals: Implications for empirical research. *Journal of Accounting Research* 40(1):105–134.
- Hribar, P., and D.C. Nichols. 2007. The use of unsigned earnings quality measures in tests of earnings management. *Journal of Accounting Research* 45(5):1017–1053.
- Hribar, P., and H. Yang. 2006. CEO confidence, management earnings forecasts, and earnings management. Working paper.
- Jiang, J.X., K.R. Petroni, and I.Y. Wang. 2010. CFOs and CEOs: who has the most influence on earnings management? *Journal of Financial Economics* 96(3):513–526.
- Jones, J.J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29(2):193–228.
- Klein, A. 2002. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics* 33(3):375–400.
- Koh, K., D.A. Matsumoto, and S. Rajgopal. 2008. Meeting or beating analyst expectations in the post-scandals world: Changes in stock market rewards and managerial actions. *Contemporary Accounting Research* 25(4):1067–1098.
- Koh, W.L.K. 2007. The impact of superstar CEOs on financial reporting practices and firm performance. Ph.D. thesis, University of Washington.
- Kothari, SP, A.J. Leone, and C.E. Wasley. 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39(1):163–197.

- Krishnan, G.V., and G. Visvanathan. 2008. Does the SOX definition of an accounting expert matter? The association between audit committee directors' accounting expertise and accounting conservatism. *Contemporary Accounting Research* 25(3):827–858.
- Li, C., L. Sun, and M. Ettredge. 2009. Financial executive qualifications, financial executive turnover, and adverse SOX 404 opinions. Working paper.
- Liu, C. H. and D. Yermack. 2007. Where are the Shareholders' Mansions? CEOs' Home Purchases, Stock Sales, and Subsequent Company Performance. Working paper.
- Lo, K. 2008. Earnings management and earnings quality. *Journal of Accounting and Economics* 45(2-3):350–357.
- Malmendier, Ulrike and G.A. Tate. 2002. CEO Overconfidence and Corporate Investment. Working paper.
- Malmendier, U., and G. Tate. 2007. Superstar CEOs. Working paper.
- Matsunaga, S.R., and E. Yeung. 2008. Evidence on the Impact of a CEO's Financial Experience on the Quality of the Firm's Financial Reports and Disclosures. Working paper.
- Mergenthaler Jr, R., S. Rajgopal, and S. Srinivasan. 2009. CEO and CFO career penalties to missing quarterly analyst forecasts. Working paper.
- Mian, S. 2001. On the choice and replacement of chief financial officers. *Journal of Financial Economics* 60(1):143–175.
- Petersen, M.A. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22(1):435.
- Roychowdhury, S. 2006. Earnings management through real activities manipulation. *Journal of Accounting and Economics* 42(3):335–370.
- Smith, A., S.M. Houghton, J.N. Hood, and J.A. Ryman. 2006. Power relationships among top managers: Does top management team power distribution matter for organizational performance? *Journal of Business Research* 59(5):622–629.
- SOX. 2002. The Sarbanes-Oxley Act: A Guide to the Sarbanes Oxley Act of 2002: <http://www.soxlaw.com/>.
- Wiersema, M.F., and K.A. Bantel. 1992. Top management team demography and corporate strategic change. *Academy of Management Journal* 35(1): 91–121.

Zang, A.Y. 2006. Evidence on the tradeoff between real manipulation and accrual manipulation. Ph.D. thesis, Duke University.

## **Biography**

Patrick G. Badolato was born a few miles outside of Philadelphia, Pennsylvania. He graduated from Villanova University in 2003 and obtained degrees in Economics and Accounting. After receiving his undergraduate degrees, he spent a summer working with teenagers in inner city Chicago, worked for two years at Ernst & Young's Philadelphia office in the Assurance and Tax divisions, and then spent another summer volunteering in rural Kentucky before beginning his studies at Duke University's Fuqua School of Business. Patrick is a licensed CPA in the state of Pennsylvania.