

An Empirical Analysis of the Effects of Accounting Expertise in Audit Committees on Non-GAAP Earnings Exclusions

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SYNOPSIS: U.S. stock exchanges and lawmakers rely on audit committees to help safeguard the accuracy and reliability of corporate GAAP and non-GAAP financial information. However, there are gaps in our knowledge of how audit committees perform, especially with respect to companies' non-GAAP financial information. Unlike companies' GAAP-based financial measures, non-GAAP numbers are voluntary, not well defined, and unaudited. Non-GAAP measures thus provide a particularly rich setting to examine the efficacy of audit committee performance. In this study we examine the association between audit committee appointments of accounting experts (relative to appointments of nonaccounting experts) and the company's non-GAAP earnings numbers. We find a larger decline in non-GAAP earnings exclusions following the appointment of accounting (rather than nonaccounting) experts to audit committees. We also find that accounting experts are associated with higher-quality post-appointment non-GAAP earnings exclusions.

Keywords: non-GAAP earnings; accounting expertise; audit committee.

JEL Classifications: M4; G30.

Data Availability: Data are available from the sources indicated in the paper.

INTRODUCTION

U.S. stock exchanges and lawmakers rely on audit committees to help safeguard the accuracy and reliability of the corporate financial reporting process. Thus, since 1999, the NYSE and the NASDAQ stock market have required listed companies to include in their audit committees an individual with accounting or related financial management expertise. A

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similar requirement was mandated for all public companies by Section 407 of the Sarbanes Oxley Act of 2002 (SOX).¹ Yet there are gaps in our knowledge of how audit committee financial experts perform, especially with respect to companies' non-GAAP financial disclosures. In this study, we attempt to fill the gap by examining the association between the type of audit committee appointments and the characteristics of the company's subsequent non-GAAP earnings numbers.

Non-GAAP earnings numbers are alternate measures of performance usually calculated by excluding from GAAP earnings certain items, deemed by management, as transitory or nonrecurring.² Increasingly, companies have voluntarily and publicly disclosed non-GAAP earnings information, justifying the practice on the grounds that these alternative numbers provide useful supplemental information about the company and more transparency about the measures used internally in performance evaluation and management compensation.³

Unlike the GAAP-based earnings numbers that companies are required to report, non-GAAP earnings numbers are unaudited (Bruce and Bradshaw 2004; Frankel, McVay, and Soliman 2011). Moreover, non-GAAP measures are not well defined and have few uniform characteristics across firms or even across quarters of the same firm (Bhattacharya, Black, Christensen, and Mergenthaler 2004; Marques 2006). Consequently, along with research that lends credence to managers' justifications for voluntarily reporting non-GAAP numbers (see, e.g., Bradshaw and Sloan 2002; Bhattacharya, Black, Christensen, and Larson 2003; Frankel and Roychowdhury 2005), prior research also finds opportunism associated with managers' exclusion choices (Bhattacharya et al. 2003; Doyle, Lundholm, and Soliman 2003; Bowen, Davis, and Matsumoto 2005; Lougee and Marquardt 2004; Entwistle, Feltham, and Mbagwu 2006; Black and Christensen 2009). Related research by Frederickson and Miller (2004) and Allee, Bhattacharya, Black, and Christensen (2007) find that non-GAAP or pro forma earnings numbers affect the judgments of less-sophisticated investors. In response to concerns about the widespread practice and potential misuses of non-GAAP reporting, the SEC adopted Regulation G as part of Section 401(b) of SOX. Regulation G requires public companies to reconcile non-GAAP financial measures to the most comparable GAAP financial measures when companies disclose material non-GAAP financial measures. Despite this SEC intervention, there are ongoing concerns about companies' use of non-GAAP numbers to obscure GAAP-based measures.⁴

¹ Section 407 of SOX requires every public company either to include a financial expert in its audit committee or to explain the reasons for not meeting the requirement. Effectively, the board of directors determines whether the audit committee has or should have a financial expert.

² See Securities and Exchange Commission (SEC) 17 CFR PARTS 228, 229, 244, and 249 for a general definition and examples of non-GAAP earnings measures.

³ For example, on July 27, 2010, Entegris, Inc. (NASDAQ: ENTG) reported several non-GAAP financial measures including non-GAAP second quarter earnings per share of \$0.16. The company's earnings press release states, "We provide non-GAAP financial measures in order to better assess and reflect operating performance. Management believes the non-GAAP measures help indicate our baseline performance before certain gains, losses, or other charges that may not be indicative of our business or future outlook. We believe these non-GAAP measures will aid investors' overall understanding of our results by providing a higher degree of transparency for certain expenses and providing a level of disclosure that will help investors understand how we plan and measure our business."

⁴ For instance, in 2009 alone, 20 percent of the SEC comment letters were related to non-GAAP reporting problems (Johnson 2010). Also, in 2009, the SEC brought the first Regulation-G enforcement action against SafeNet because the company improperly excluded significant amounts of recurring and operating expenses from its non-GAAP earnings (SEC 2009). Likewise, the SEC discussed its continuing concerns about non-GAAP reporting in the December 2010 CPA conference and again at the 2011 "SEC Speaks" event. A recent case on point involves Groupon Inc. According to the *Wall Street Journal*, the SEC has been investigating the "financial gymnastics" of Groupon Inc., a social buying site valued at around \$30 billion (Rusli and De La Merced 2011), for its non-GAAP measure called "adjusted consolidated segment operating income," which apparently helped turn a \$456 million GAAP loss into a \$60 million non-GAAP profit in 2010 (De La Merced 2011).

We address these concerns by focusing on the audit committee's role in monitoring companies' non-GAAP financial disclosures. Specifically, we examine whether, and how, the appointment of an accounting expert to a company's audit committee affects the magnitude and quality of the company's subsequent "non-GAAP earnings exclusions," defined as the difference between its non-GAAP earnings per share, obtained from I/B/E/S, and GAAP earnings per share, obtained from Compustat (Doyle et al. 2003; Gu and Chen 2004; Kolev, Marquardt, and McVay 2008).⁵ To warrant their classification and exclusion as nonrecurring, the excluded items should ideally have no association with future GAAP operating income. Accordingly, following Frankel et al. (2011), we define high- (low-) quality exclusions as those that are less (more) associated with future GAAP operating income. If managers use non-GAAP earnings exclusions opportunistically, and audit committee accounting experts monitor and mitigate such opportunism, we should find associated with the appointment of an audit committee accounting expert, both a reduction in the magnitude and an improvement in the quality of non-GAAP earnings exclusions. We test this proposition empirically.

Following DeFond, Hann, and Xu (2005), among others, we classify an audit committee appointment as an accounting expert if the appointee meets the SEC's initially proposed definition of a financial expert;⁶ otherwise, the appointment is considered to be a nonaccounting expert appointment (see, e.g., Dhaliwal, Naiker, and Navissi 2010; Krishnan, Wen, and Zhao 2011; Krishnan and Visvanathan 2008). We then test whether the change in the magnitude of non-GAAP earnings exclusions from one year before to one year and two years after the audit committee appointment is associated with the type of audit committee appointment. Prior research (i.e., Doyle et al. 2003; Kolev et al. 2008) finds that non-GAAP earnings exclusions are negatively related to future GAAP operating income, indicating that the exclusions contain expenses that are not entirely transitory. We also find this negative association, but test whether its strength is moderated by the type of audit committee appointment. We also test the sensitivity of our findings to an alternative, broader definition of financial experts by reclassifying nonaccounting expert appointments into two sub-groups: (1) supervisory expert appointments, and (2) other appointments. Supervisory experts meet the Commission's broadened final definition of audit committee financial experts,⁷ but do not meet the accounting expert definition. Other appointments meet neither the accounting expert nor the supervisory expert definitions.

Our results and conclusions are based primarily on a sample of 800 audit committee appointments made between 1998 and 2005 by 521 S&P 1500 companies (hence, all are listed on the NYSE or the NASDAQ stock market).⁸ We find significantly smaller non-GAAP earnings exclusions following the appointment of accounting experts than nonaccounting experts. We also find that the association between future GAAP operating income and non-GAAP earnings exclusions is significantly less negative for companies appointing accounting experts than for

⁵ Alternatively, non-GAAP earnings exclusions can also be calculated by subtracting Compustat EPS from non-GAAP earnings per share disclosed in managements' earnings releases. We later test the sensitivity of our results to this alternative measure of non-GAAP earnings exclusions. Our results on the quality of non-GAAP exclusions are not sensitive to whether the non-GAAP earnings per share are hand-collected or obtained from the I/B/E/S database.

⁶ The initially proposed definition requires expertise in applying accounting principles, preparing financial statements, or experience in internal controls. See Section II (A) 4(a) of the SEC rule (17 CFR PARTS 228, 229, and 249) for more details of the originally proposed definition of a financial expert. Available at: <http://www.sec.gov/rules/final/33-8177.htm>

⁷ See Section II (A) 4(c) of the SEC final rule (17 CFR PARTS 228, 229, and 249) for more details of the broadened final definition of a financial expert. Available at: <http://www.sec.gov/rules/final/33-8177a.htm>

⁸ Although the NYSE and the NASDAQ stock markets required listed companies to include audit committee accounting experts from 1999, their requirement was based on recommendations made public by the Blue Ribbon Committee in 1998; hence, our sample starts in 1998.

nonaccounting experts, i.e., we find that accounting experts are associated with higher-quality post-appointment non-GAAP earnings exclusions. When we restrict our sample to accounting and supervisory expert appointments (by excluding other appointments) and re-run our tests, we continue to find significantly smaller non-GAAP earnings exclusions following the appointment of accounting experts than nonaccounting experts. Likewise, we continue to find that accounting expert appointments are associated with higher-quality non-GAAP earnings exclusions than supervisory expert appointments. However, we are unable to find any significant difference in the magnitude or quality of non-GAAP earnings exclusions between supervisory expert appointments and other appointments.

Our study contributes in three primary ways. First, we add to the literature on the impact of audit committee accounting experts on financial reporting quality by focusing on a company's non-GAAP earnings numbers. Prior studies have focused on a company's GAAP-based financial reporting system (see, e.g., Turley and Zaman 2004; Cohen, Krishnamoorthy, and Wright 2004; Krishnan and Visvanathan 2008; Haka and Chalos 1990; U. Hoitash, R. Hoitash, and Bedard 2009; Dhaliwal et al. 2010). Reviewing and overseeing the company's GAAP and non-GAAP financial information are primary audit committee responsibilities (Warner 2006).⁹ However, only non-GAAP numbers are free from the confounding monitoring effects of the external audit process.¹⁰ In effect, tests of the efficacy of audit committees on the quality of GAAP-based financial measures are joint tests of the effect of the external audit process and the audit committee monitoring process on the quality of the financial reporting process. Furthermore, relative to GAAP-based financial measures, non-GAAP numbers are not well defined, and the associated exclusion amounts and items are chosen by managers at their discretion. Non-GAAP numbers thus provide greater scope for managerial opportunism. In short, non-GAAP numbers provide a richer setting to test the effectiveness of audit committee monitoring on the financial reporting process.

Second, one of the controversial aspects of the audit committee financial expertise requirement concerns the definition of a financial expert (see, e.g., DeFond et al. 2005; Davidson, Xie, and Xu 2004). SOX initially proposed a narrow definition of financial experts to include only accounting experts; however, responding to criticisms that the proposed definition was too restrictive, the SEC and the U.S. stock exchanges adopted a broad definition to generally include those with experience in supervising employees with financial responsibilities.¹¹ Previous studies have contributed to the debate by focusing on the effect of audit committee financial expert qualifications on GAAP-based financial reporting quality (Dhaliwal et al. 2010; DeFond et al. 2005; Anderson, Mansi, and Reeb 2004; Lee, Mande, and Ortman 2004; Bédard, Chtourou, and Courteau 2004; Carcello and Neal 2003; Raghunandan, Read, and Rama 2001). By focusing on non-GAAP earnings information, free from the confounding effects of the external audit process, and using alternative definitions of audit committee financial experts, we bring fresh perspective to the ongoing debate of the importance of accounting financial experts on the audit committee.

Our third contribution concerns Regulation G. Empirical evidence regarding this SEC action is mixed. For example, Heflin and Hsu (2008) and Frankel et al. (2011) find that Regulation G may have helped curb opportunism associated with non-GAAP earnings disclosures. However, Kolev et

⁹ The requirement that audit committees review non-GAAP financial disclosures is mandated by most major stock exchanges. See, e.g., Section 303A.07(b)(iii)(H) of the NYSE Listed Company Manual, which specifically requires audit committees to review "pro forma," or "adjusted" non-GAAP information.

¹⁰ Although auditing standards require auditors to read information outside of financial statements to ensure material consistency, auditing standards do not explicitly require auditors to report their assurance on non-GAAP related information in auditor opinions. The Public Company Accounting Oversight Board (PCAOB) has been considering additional auditor assurance standards on non-GAAP information (PricewaterhouseCoopers 2012).

¹¹ See Section 4(a)(b) of the SEC 17 CFR PARTS 228, 229, and 249 for both the proposed and final rules concerning the definition of financial experts. Available at: <http://www.sec.gov/rules/final/33-8177a.htm>.

al. (2008), who find that post-Regulation G non-GAAP exclusions are more transitory, also find that management adapted to the new environment by misclassifying potentially recurring items as nonrecurring, transitory items. Our study examines and highlights the continuing role of accounting experts in audit committees on the quality of post-Regulation G non-GAAP earnings numbers.

In the next section, we further develop our hypotheses related to the magnitude and quality of non-GAAP earnings exclusions. The research design and results are presented in the third and fourth sections, respectively. We summarize the major findings and conclude with some caveats and study limitations in the fifth section.

HYPOTHESES DEVELOPMENT

As suggested earlier, managers may exclude recurring expenses from non-GAAP earnings by opportunistically classifying them as one-time or nonrecurring. The motivation for such behavior may arise, for example, by management's desire to meet or beat analysts' expectations, to avoid earnings decreases (Bhattacharya et al. 2004), or to meet earnings targets before selling shares (Frankel et al. 2011). Effective corporate governance in the form of a more independent board of directors has been shown to curb opportunism associated with non-GAAP earnings exclusions (Frankel et al. 2011).

Another focal point of the corporate governance system is the audit committee, which is charged with independently reviewing and overseeing the financial reporting process (SEC 2003). For the following reasons, heightened audit committee accounting expertise should serve to curb opportunism associated with non-GAAP earnings exclusions. First, relative to nonaccounting experts, audit committee accounting experts should have more economic incentive to mitigate the risk of litigation that may arise with respect to misleading non-GAAP earnings information and consequent damage to their reputation capital (see, e.g., Bryan-Low 2002; Krishnan and Visvanathan 2008). Second, because of their specialized knowledge base, and given the ever-increasing volume and complexity of disclosure requirements, accounting experts enable audit committees to conduct more rigorous reviews and thorough discussions of the non-GAAP earnings numbers and exclusions put forth by management. As stated by the SEC, the audit committee helps to ensure that "procedures are in place to objectively assess management's practices" (SEC 2003). Accounting experts enable audit committees to assess management's practices with respect to non-GAAP reporting with more skepticism and objectivity than nonaccounting experts. Last, for the aforementioned reasons, management may be less likely to opportunistically propose non-GAAP earnings exclusions following the appointment of an accounting expert.

However, a functional audit committee reflects more than just technical skills. Industry experience at the proper level, stature and presence, diversity of thought and personal experiences, the ability to work cohesively in small groups, and the ability to respect and work well with others are some of the factors that, if absent, could weaken the effectiveness of an audit committee (see, e.g., Trautman 2012). Also, experts may perform their duties as mere formalities, in a ceremonial fashion (Kalbers and Fogarty 1998; Cohen, Krishnamoorthy, and Wright 2008). In such instances, there will be no meaningful association between accounting expert appointments and subsequent non-GAAP disclosures.

Our first hypothesis deals with the magnitude of non-GAAP earnings exclusions. If non-GAAP exclusions are in fact nonrecurring, there should be no association between their magnitude and the type of audit committee appointment. Conversely, if managers use non-GAAP earnings exclusions opportunistically (Doyle et al. 2003; Kolev et al. 2008) and accounting experts moderate such opportunism, we should find that accounting experts are associated with a greater post-appointment reduction in non-GAAP earnings exclusions than nonaccounting experts. Therefore, the first hypothesis stated in alternate form is as follows:

H1: The magnitude of non-GAAP exclusions declines more following the appointment of an accounting expert than a nonaccounting expert.

H1 does not distinguish between a scenario where accounting experts moderate both the recurring and nonrecurring components of non-GAAP earnings exclusions from one where they moderate only the recurring component of non-GAAP earnings exclusions. In other words, even if empirical tests support H1, the question of whether the quality of non-GAAP earnings exclusions has increased would still be unaddressed.

We address the quality issue via our second hypothesis. Non-GAAP earnings exclusions that are recurring should not be excluded from non-GAAP earnings numbers; whereas, the exclusion of non-recurring expenses would be consistent with management's appropriate rationale and justification. Consequently, we should find that accounting expert appointments are associated with a larger reduction in only the recurring components of non-GAAP earnings exclusions. A factor complicating a direct test of this quality issue, however, is that managers can use either component opportunistically (Kolev et al. 2008) and sometimes misclassify recurring expenses as nonrecurring charges (McVay 2006). Accordingly, to gauge the quality of non-GAAP exclusions, we examine the strength of their association with future GAAP operating income.

As noted earlier, to justify their exclusion from non-GAAP earnings as transitory or nonrecurring, non-GAAP earnings exclusions should ideally have no association with future GAAP operating income. However, prior researchers (Doyle et al. 2003; Gu and Chen 2004; Kolev et al. 2008) document a negative association between non-GAAP earnings exclusions and future GAAP operating income, implying that these exclusions are not entirely transitory. If audit committee accounting experts serve to improve the quality of non-GAAP earnings exclusions, then we should find that their appointments are followed by a moderation in any negative relation between non-GAAP exclusions and future operating income (see, e.g., Doyle et al. 2003; Kolev et al. 2008). Therefore our second hypothesis in alternate form is:

H2: The quality of non-GAAP exclusions increases more following the appointment of an accounting expert than a nonaccounting expert.

DATA AND METHOD

Data

Our data come from various sources. First, the names of company audit committee members are obtained from the Corporate Library. Next, we hand-collect appointment dates and biographical information for audit committee members. Appointment dates come from the Factiva and Lexis-Nexis databases, and the biographical information originates from press releases, corporate proxy statements, and the Corporate Library. To eliminate the impact of potentially confounding major corporate events, we eliminate appointment announcements that coincide with earnings announcements, dividend distribution related events, merger and acquisition announcements, proxy filings, annual meetings, and CEO changes.¹² Next, we read the biographies of the audit committee members and determine whether they are accounting experts. Accounting data are obtained from Compustat, stock prices and returns from CRSP, merger and acquisition announcements from Securities Data Company (SDC), analyst information from I/B/E/S, institutional ownership from Compact Disclosure and Thomson Reuters, and corporate governance related data from Institutional Shareholder Services or company proxy statements. Our final

¹² When we conduct sensitivity analysis by including the appointments that were deleted as a result of confounding corporate events, we find that our main results are qualitatively similar, but statistically weaker.

samples contain 800 audit committee appointments made during 1998 to 2005 in 521 S&P 1500 companies. Descriptive sample statistics are presented later.

As already noted, we measure non-GAAP earnings exclusions as the difference between non-GAAP earnings per share and GAAP EPS. Consistent with prior research (e.g., Bradshaw and Sloan 2002; Doyle et al. 2003; Kolev et al. 2008), we use earnings per share values in I/B/E/S to proxy for non-GAAP earnings per share.¹³ GAAP EPS are earnings per share before extraordinary items and discontinued operations in Compustat (Compustat item #19).¹⁴

Method

In our sample, each audit committee appointment is either an accounting expert appointment or a nonaccounting expert appointment. We thus treat each appointment as a deliberate intervention and focus on the differential effects of such interventions (rather than on the effects of changes in the level of accounting expertise following an audit committee appointment). Although not without limitation, our design has the potential to provide more direct evidence of the impact of an accounting expert appointment on non-GAAP exclusions (DeFond et al. 2005; Engel 2005).¹⁵ First, we measure the change in the magnitude and quality of non-GAAP exclusions from before to after an appointment. Second, we compare the change in the magnitude and quality of non-GAAP exclusions associated with an accounting expert appointment relative to the corresponding change associated with a nonaccounting expert appointment. In other words, we compare the change in the magnitude and quality of non-GAAP exclusions before and after an accounting expert appointment with the corresponding change before and after a nonaccounting expert appointment.

Research Model

Change in Magnitude of Non-GAAP Earnings Exclusions

Our specification for testing H1 concerning the change in the magnitude of non-GAAP earnings exclusions following audit committee member appointments is as follows:

$$NONGAAP_CHG_{PMP} = \alpha + \gamma \times AEXPERT + \Sigma(\phi_i \times \Delta CONTROLS_i) + \varepsilon, \quad (1)$$

where:

¹³ We use Compustat EPS and I/B/E/S actual earnings per share as GAAP EPS and non-GAAP earnings per share, respectively, for the following reasons: (1) Corporate earnings press releases from newswires (Dow Jones, PR Newswire, NewsEdge, etc.) are the sources for I/B/E/S actual earnings per share (Thomson Financial 2004); (2) Several prior studies have used I/B/E/S actual earnings per share as a proxy for non-GAAP earnings per share and Compustat EPS before extraordinary items and discontinued operations as a proxy for GAAP EPS (e.g., Doyle et al. 2003; Heflin and Hsu 2008; Kolev et al. 2008); and (3) We compare the numbers obtained from actual press releases per Marques (2006) with the numbers from our approach of using I/B/E/S data. Examining the press releases for the S&P 500 companies between 2001 and 2003, Marques (2006) reports that non-GAAP earning measures were disclosed in 1,900 out of 4,234 quarterly earnings announcements (i.e., 45 percent of firm-quarters had non-GAAP disclosures). Examining the I/B/E/S data for the S&P 1500 companies for the same 2001–2003 period, we find 41 percent of firm-quarters have non-GAAP earnings disclosures. We feel that the two numbers are comparable and, hence, this test alleviates the concern about using I/B/E/S data to proxy for managers' press releases of non-GAAP earnings information. Research shows that, on average, managers' exclusions are more aggressive and larger than I/B/E/S exclusions (Bhattacharya, Black, Christensen, and Mergenthaler 2007). That is, while our proxy may have noise, the noise will bias our results toward non-rejection of our null hypothesis. Nevertheless, we later test the sensitivity of our findings to a smaller sample of hand-collected actual earnings press release data to derive an alternate measure of non-GAAP earnings exclusions.

¹⁴ Following Kolev et al. (2008), we scale the variables relating to GAAP earnings and non-GAAP earnings or exclusions by total assets.

¹⁵ The limitation of our design is that it does not account for simultaneous audit committee member departures, if any. We later perform several additional tests to check the sensitivity of our findings to our research design.

$NONGAAP_CHG_{PMP}$ = the change in the non-GAAP exclusions from year $t-1$ to year $t+1$ (or year $t+2$); and

$AEXPERT = 1$ if it is an accounting expert appointment, and 0 if it is a nonaccounting expert appointment.

We set the year in which a member is appointed to the audit committee as Year 0. The dependent variable is measured as the change in its value from Year -1 to Year $+1$ and Year $+2$. Similar to Kolev et al. (2008), we include in $CONTROLS_i$: size, leverage, sales growth, and a loss indicator to control factors known to be correlated with non-GAAP earnings exclusions. $SIZE$ is the log of annual total assets at the beginning of the year t . $LEVERAGE$ represents interest-bearing debt divided by annual total assets at the beginning of the year. $SALE_GROWTH$ is the percentage change in annual total sales from year $t-1$ to year t . $LOSS$ is 1 if net income at year t is negative, and 0 otherwise. The coefficient γ for $AEXPERT$ will be negative if, relative to the appointments of nonaccounting experts, accounting expert appointments are associated with reductions in the magnitude of non-GAAP earnings exclusions.

We control for other corporate governance characteristics and for regulations. Because board independence may be correlated with non-GAAP earnings exclusions (Frankel et al. 2011), we include board size, board independence, audit committee size, audit committee independence, shareholders' rights G-index (Gompers, Ishii, and Metrick 2003), and institutional ownership (DeFond et al. 2005), each as a separate variable in the regressions.¹⁶ We also control for whether a CEO chairs the board ($CEOCHAIR$), and for whether accounting experts exist in the audit committee before the new appointment ($EXTANTAE$). Additionally, we control for the risk of litigation, book-to-market, as well as industry and year fixed effects, and include an indicator variable, SOX , to distinguish the period after 2002, when SOX was enacted. All continuous variables are measured as change variables.

Change in Quality of Non-GAAP Earnings Exclusions

Based on Doyle et al. (2003) and Gu and Chen (2004), we test for the change in the quality of non-GAAP earnings exclusions, H2, with the following specification:

$$\begin{aligned}
 OI_{t+1} = & \alpha + \beta_1 \times NONGAAPEXCL_t + \beta_2 \times AEXPERT + \beta_3 \times POST \\
 & + \beta_4 \times NONGAAPEXCL_t \times AEXPERT + \beta_5 \times NONGAAPEXCL_t \times POST \\
 & + \beta_6 \times AEXPERT \times POST + \gamma \times NONGAAPEXCL_t \times AEXPERT \times POST \\
 & + \sum(\phi_i \times CONTROLS_i) + \varepsilon,
 \end{aligned} \tag{2}$$

where:

OI = the future GAAP operating income (Compustat data item No. 177) in year $t+1$;

$NONGAAPEXCL$ = the non-GAAP total exclusions in the current year t ;

$AEXPERT = 1$ if it is an accounting expert appointment, and 0 if it is a nonaccounting expert appointment;

$POST = 1$ for observations in the period after an appointment, and 0 for observations in the period before an appointment; and

¹⁶ Our results are unaffected if we include only the GOV variable in our regressions and tables. Summary governance variable GOV is developed by DeFond et al. (2005) to control for board independence, as well as other corporate governance characteristics. GOV is 1 if the sum of six dichotomous governance variables is greater than the sample median, and 0 otherwise. The six governance variables are board size, board independence, audit committee size, audit committee independence, shareholders' rights G-index (Gompers et al. 2003), and institutional ownership.

CONTROLS = all control variables defined in the previous specification for testing H1 in addition to current non-GAAP earnings (Kolev et al. 2008).

We estimate Equation (2) for the years before and after an audit committee appointment as follows. If the year of the audit committee appointment were 1998, for example, then the *NONGAAPEXCL* used in the regression would be for 1995 and 1996, which are before the appointment, and for 1999 and 2000, which are after the appointment. For each such year (i.e., 1995, 1996, 1999, and 2000) of non-GAAP total exclusions, we have a corresponding one-year-ahead (i.e., 1996, 1997, 2000, and 2001) future operating income *OI*.

Consistent with previous research (Doyle et al. 2003; Kolev et al. 2008), we expect the coefficient β_1 to be negative, which would then imply that the non-GAAP earnings exclusions are not entirely transitory. If this expected negative association is moderated by the appointment of an audit committee accounting expert, the interaction term coefficient γ will be positive. A positive coefficient for γ implies that, relative to the appointment of nonaccounting experts, the appointment of accounting experts is associated with a subsequent increase in the quality of non-GAAP earnings exclusions (i.e., they become less recurring or more transitory).

DATA ANALYSIS AND MAIN RESULTS

Descriptive Data and Main Results

Table 1, Panel A shows the frequency distribution of accounting expert and nonaccounting expert appointments by year. Audit committee appointments peaked in 2004, making up 22 percent of all appointments in the sample period. The frequency of accounting expert appointments was lower than that of nonaccounting expert appointments in the years before 2003, and higher since then. Table 1, Panel B shows the average change in non-GAAP exclusions by year and by appointment types. Except for 1998, the change in non-GAAP exclusions is lower for accounting expert appointments than for nonaccounting expert appointments in each year during the sample period. Our untabulated data indicate that, except for relatively fewer financial and services firms, the industry distribution of our primary sample is similar to that of the S&P 1500 index firms.¹⁷

Table 2 presents the descriptive statistics and main variable definitions. The average company size is \$2.4 billion for firms appointing an accounting expert and \$3.5 billion for firms appointing a nonaccounting expert.¹⁸ Firms with accounting expert appointments have relatively lower sales growth and lower return on assets than firms with nonaccounting expert appointments. Note that non-GAAP earnings exclusions have decreased (increased) for companies appointing accounting experts (nonaccounting experts) to their audit committees. The median of 0 for *NONGAAP_CHG* indicates that the number of firms with increasing non-GAAP exclusions is close to the number of firms with decreasing non-GAAP exclusions around an appointment. For any given year, if *NONGAAPEXCL* is 0, it means that the firm reports non-GAAP earnings equal to GAAP earnings. Firms may do so because non-GAAP earnings can be used to evaluate top management performance or help investors predict future earnings (e.g., see, footnote 3). In an untabulated correlation matrix we find, as expected, that *AEXPERT* is significantly negatively correlated to *NONGAAPEXCL*.

We present our main results in Tables 3 and 4. In Table 3, consistent with H1, the coefficient on *AEXPERT* is negative and significant (p-value < 0.01) for both one year ahead and two years ahead. Thus, compared to nonaccounting expert appointments, accounting expert appointments are associated with a significantly greater reduction in the magnitude of non-GAAP earnings

¹⁷ Industry portfolio details are available at: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

¹⁸ The numbers here are computed by raising *e* to the power of the value in the *SIZE* variable.

TABLE 1
Audit Committee Appointments and Non-GAAP Exclusions

Panel A: Appointment Types by Year

	<u>Accounting Experts</u>	<u>Nonaccounting Experts</u>
1998	7	42
1999	7	40
2000	12	63
2001	20	89
2002	27	88
2003	40	39
2004	90	83
2005	78	75
Total	281	519

Panel B: Change in Non-GAAP Exclusions by Year

	<u>Accounting Experts</u>	<u>Nonaccounting Experts</u>
1998	-1.15	-1.60
1999	-1.27	-0.29
2000	1.02	2.96
2001	-0.42	1.91
2002	-2.40	-0.53
2003	-1.02	-0.78
2004	-1.34	-0.26
2005	-0.25	0.89

This table shows audit committee appointments and the change in non-GAAP exclusions each year.

Panel A shows the number of accounting and nonaccounting expert appointments each year.

Panel B shows the average change in non-GAAP exclusions each year by accounting and nonaccounting experts.

exclusions. The reductions occur within one year of accounting expert appointments and persist into the second year.

Table 3 also shows that the coefficient for the control variable *LOSS* is highly significantly positive, consistent with the idea that loss firms tend to highlight their recurring earnings to investors in the face of one-time write-downs, or that loss firms use non-GAAP earnings exclusions to manage the unfavorable assessment by investors. The positive coefficient on *SOX* is consistent with the ongoing concerns about companies' use of non-GAAP numbers to obscure GAAP performance (discussed earlier) and with how managers may have adapted to Regulation G "by shifting more recurring items into special items" (Kolev et al. 2008).

Table 4 shows that the coefficient on our main variable of interest, $NONGAAPEXCL \times AEXPERT \times POST$, is positive and significant (p -value < 0.02). Thus, the appointment of audit committee accounting experts is associated with a significant moderation in the negative relation between non-GAAP earnings exclusions and future GAAP operating income. Put differently, companies that appoint accounting experts are associated with higher-quality future non-GAAP earnings exclusions than companies that appoint nonaccounting experts.

TABLE 2
Primary Sample Descriptive Statistics

	All Appointments		Accounting Expert		Nonaccounting Expert	
	Mean	Median n = 800	Mean	Median n = 281	Mean	Median n = 519
<i>SIZE</i>	8.02	7.89	7.79	7.61	8.15***	8.04***
<i>ROA</i>	0.06	0.05	0.05	0.05	0.06**	0.05
<i>LEVERAGE</i>	0.22	0.22	0.22	0.22	0.22	0.21
<i>FIRM_AGE</i>	2.93	3.14	2.94	3.14	2.92	3.14*
<i>SALE_GROWTH</i>	11.50	7.89	11.41	7.57	11.49	8.18
<i>SOX</i>	0.51	1	0.74	1	0.38***	0***
<i>AEXPERT</i>	0.35	0	1.00	1	0.00***	0***
<i>NONGAAP_CHG</i>	-0.06	0.00	-0.92	0.00	0.47***	0.00**
<i>NONGAAP_EXCL</i>	0.83	0.00	0.50	0.00	1.09***	0.00

*, **, *** Indicates significance at the 0.10, 0.05, and 0.01 levels, respectively, for t-test (Z-test) differences in means (medians) between accounting expert appointment firms and nonaccounting expert appointment firms. Means and medians are provided.

Variable Definitions:

SIZE = log of annual total assets at the beginning of the year;

ROA = annual net income divided by annual total assets at the beginning of the year;

LEVERAGE = interest-bearing debts divided by annual total assets at the beginning of the year;

FIRM_AGE = natural log of firm age;

SALE_GROWTH = percentage change in annual total sales from year $t-1$ to year t ;

SOX = 1 if appointment was announced after 2002, and 0 otherwise;

AEXPERT = 1 if it is an accounting expert appointment, and 0 if it is a nonaccounting expert appointment;

NONGAAP_CHG = change in the non-GAAP exclusions from Year -1 to Year $+1$; and

NONGAAP_EXCL = non-GAAP total exclusions in Year $+1$.

Robustness Checks

General Robustness Checks

In this section, we conduct several tests to verify the robustness of the findings reported earlier. First, to capture the potential effects of accounting experts in the year of their appointments, we run a change regression for Year -1 to Year 0. The untabulated results for this alternative specification remain similar to those reported in Table 3, and the hypothesized coefficient is significantly negative at the 0.01 level. This result suggests that our inferences are not driven by potential misspecification on event year choices in Equation (1). Second, in our main tests, we treated companies that appointed both accounting experts and other experts *in the same year* as separate observations. There are 56 such multiple appointments, i.e., 7 percent of the 800 appointments. To examine whether our results are robust to multiple appointments, we eliminate these observations and re-run the analyses for Tables 3 and 4. Results, untabulated, are similar to our main results (p -value < 0.05). Third, to mitigate any potential omitted variable problem, we re-run Equations (1) and (2) with the following additional control variables that could affect non-GAAP earnings exclusions: the number of audit committee meetings, audit committee tenure, other directorships held by audit committee members, size of the external auditor, multiple directorships of board of directors, reputational concerns, management shareholding, and outside director shareholding. The results (untabulated) are similar to those reported in Tables 3 and 4. Specifically, the coefficients on *AEXPERT* are significantly negative at the 0.02 level for one-year-ahead and two-years-ahead non-

TABLE 3
OLS Regression of Non-GAAP Exclusions on Accounting Expert Appointments and Governance Characteristics
Dependent Variable: *NONGAAP_CHG*

Independent	Pred. Sign	Non-GAAP Exclusions Change			
		(1)		(2)	
		From Year -1 to Year +1		From Year -1 to Year +2	
		Coeff.	p-value	Coeff.	p-value
<i>AEXPERT</i>	-	-0.948***	(0.006)	-0.832***	(0.009)
<i>SIZE_CHG</i>		2.509**	(0.024)	1.688**	(0.020)
<i>LEVERAGE_CHG</i>		5.574***	(0.009)	0.719	(0.628)
<i>SALE_GROWTH_CHG</i>		-0.009	(0.282)	-0.011	(0.192)
<i>LOSS</i>	+	4.874***	(< 0.001)	3.107***	(< 0.001)
<i>SOX</i>		1.423**	(0.011)	1.267**	(0.028)
<i>B2M_CHG</i>		1.622	(0.238)	0.447	(0.686)
<i>INDDIR_PCT_BD_CHG</i>		-1.862	(0.269)	-1.535	(0.401)
<i>INDDIR_PCT_AUD_CHG</i>		-0.310	(0.777)	-0.397	(0.698)
<i>CEOCHAIR</i>		-0.090	(0.762)	0.033	(0.919)
<i>LITIGATIONRISK</i>		1.398*	(0.093)	1.831**	(0.017)
<i>OWN_INST_CHG</i>		-0.011	(0.535)	-0.017	(0.335)
<i>BDSIZE_CHG</i>		0.059	(0.676)	0.005	(0.964)
<i>AUDSIZE_CHG</i>		-0.078	(0.658)	-0.151	(0.288)
<i>EXTANTAE</i>		-0.505	(0.141)	-0.433	(0.214)
<i>GINDEX_CHG</i>		0.135	(0.667)	0.129	(0.609)
Adjusted R ²		18.3%		12.6%	
Number of Firm Appointments		800		800	

*, **, *** Indicates significance at the 0.10, 0.05, and 0.01 levels, respectively, one-tailed for *AEXPERT* and two-tailed for the other independent variables. The table controls for industry and year fixed effects. Intercepts, industry, and year indicators are not shown. Unless otherwise noted, p-values, in parentheses, are based on clustered standard errors.

Variable Definitions:

NONGAAP_CHG = change in the non-GAAP exclusions from Year -1 to Year +1 if in Model (1); the change in the non-GAAP exclusions from Year -1 to Year +2 if in Model (2);

_CHG = this suffix indicates the variable is a change variable;

AEXPERT = 1 if it is an accounting expert appointment, and 0 if it is a nonaccounting expert appointment;

SIZE = log of annual total assets at the beginning of the year;

LEVERAGE = interest-bearing debts divided by annual total assets at the beginning of the year;

SALE_GROWTH = percentage change in annual total sales from year $t-1$ to year t ;

LOSS = 1 if the net income at year t is negative, and 0 otherwise;

SOX = 1 if appointment was announced after 2002, and 0 otherwise;

B2M = book-to-market;

INDDIR_PCT_BD = percentage of independent directors among board members;

INDDIR_PCT_AUD = percentage of independent directors among audit committee;

CEOCHAIR = 1 if CEO is also the chairman of the board, and 0 otherwise;

LITIGATIONRISK = 1 if a firm is in one of the industries in the following SIC codes: 2833–2836, 8731–8734, 3570–3577, 7370–7374, 3600–3674, or 5200–5961, and 0 otherwise;

OWN_INST = percentage of institutional shareholdings;

BDSIZE = board size;

AUDSIZE = audit committee size;

EXTANTAE = 1 if a firm has an existing accounting expert before the new audit committee appointment, and 0 otherwise;

and

GINDEX = shareholder rights index defined by Gompers et al. (2003).

TABLE 4
OLS Regression of Future GAAP Operating Income on Non-GAAP Exclusions and Accounting Expert Appointments
Dependent Variable: *OI*

Independent	Pred. Sign	From Year -3 to Year +3	
		Coeff.	p-value
<i>NONGAAPEXCL</i>	–	–0.062	(0.422)
<i>AEXPERT</i>		–0.004	(0.127)
<i>POST</i>		+0.000	(0.822)
<i>NONGAAPEXCL</i> × <i>AEXPERT</i>		–0.132	(0.164)
<i>NONGAAPEXCL</i> × <i>POST</i>		–0.109	(0.222)
<i>AEXPERT</i> × <i>POST</i>		–0.003	(0.418)
<i>NONGAAPEXCL</i> × <i>AEXPERT</i> × <i>POST</i>	+	0.279**	(0.016)
<i>NONGAAPEARNING</i>	+	0.714***	(<0.001)
<i>SIZE</i>		–0.002**	(0.020)
<i>LEVERAGE</i>		0.001	(0.929)
<i>SALE_GROWTH</i>		–0.000	(0.442)
<i>LOSS</i>		0.004	(0.369)
<i>SOX</i>		–0.002	(0.451)
<i>B2M</i>		–0.037***	(<0.001)
<i>INDDIR_PCT_BD</i>		–0.013	(0.116)
<i>INDDIR_PCT_AUD</i>		0.002	(0.762)
<i>CEOCHAIR</i>		–0.005**	(0.025)
<i>LITIGATIONRISK</i>		–0.003	(0.609)
<i>OWN_INST</i>		+0.000	(0.775)
<i>BDSIZE</i>		–0.000	(0.287)
<i>AUDSIZE</i>		0.001	(0.206)
<i>EXTANTAE</i>		0.001	(0.468)
<i>GINDEX</i>		+0.000	(0.222)
Adjusted R ²		65.0%	
Number of Firm Years		3,200	

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively, one-tailed for the interaction *NONGAAPEXCL* × *AEXPERT* × *POST* and two-tailed for the other independent variables.

The table controls for industry and year fixed effects. Intercepts, industry, and year indicators are not shown. Unless otherwise noted, p-values, in parentheses, are based on clustered standard errors.

Variable Definitions:

OI = future GAAP operating income (Compustat data item #177) in year *t*+1;

NONGAAPEXCL = non-GAAP total exclusions in the current year *t*;

AEXPERT = 1 if it is an accounting expert appointment, and 0 if it is a nonaccounting expert appointment;

NONGAAPEARNING = I/B/E/S actual earnings per share;

POST = 1 if year *t* is in the period after an appointment, and 0 if year *t* is in the period before an appointment;

SIZE = log of annual total assets at the beginning of the year;

LEVERAGE = interest-bearing debts divided by annual total assets at the beginning of the year;

SALE_GROWTH = percentage change in annual total sales from year *t*–1 to year *t*;

LOSS = 1 if the net income at year *t* is negative, and 0 otherwise;

SOX = 1 if appointment was announced after 2002, and 0 otherwise;

B2M = book-to-market;

INDDIR_PCT_BD = percentage of independent directors among board members;

INDDIR_PCT_AUD = percentage of independent directors among audit committee;

CEOCHAIR = 1 if CEO is also the chairman of the board, and 0 otherwise;

(continued on next page)

TABLE 4 (continued)

LITIGATIONRISK = 1 if a firm is in one of the industries in the following SIC codes: 2833–2836, 8731–8734, 3570–3577, 7370–7374, 3600–3674, or 5200–5961, and 0 otherwise;
OWN_INST = percentage of institutional shareholdings;
BDSIZE = board size;
AUDSIZE = audit committee size;
EXTANTAE = 1 if a firm has an existing accounting expert before the new audit committee appointment, and 0 otherwise;
 and
GINDEX = shareholder rights index defined by Gompers et al. (2003).

GAAP exclusion changes, and the coefficient on $NONGAAP_{EXCL} \times AEXPERT \times POST$ is significantly positive at the 0.03 level.

Finally, to test the sensitivity of our findings to the use of earnings per share values in I/B/E/S to proxy for managers' non-GAAP earnings per share, we hand-collect non-GAAP earnings data for a small subsample of 422 firms from our original sample. After screening for data availability, we are left with 205 audit committee appointments for 161 firms that report non-GAAP earnings in press releases in the two-year pre- and post-appointment periods.¹⁹ For these observations, we follow a methodology similar to that outlined in Brown, Christensen, Elliott, and Mergenthaler (2012) to separate total exclusions into their recurring and non-recurring components.²⁰ More specifically, we subtract GAAP operating EPS from the non-GAAP earnings per share as reported by companies in their press releases to calculate the recurring component of exclusions, *MGR_RECUR*. We focus on this recurring portion of exclusions because our hypotheses assume that audit committee accounting experts are more likely to monitor recurring exclusions. We then re-estimate Equation (1) using the change in *MGR_RECUR* as the dependent variable and *AEXPERT* as the main independent variable of interest. Likewise, we re-estimate Equation (2) using $MGR_RECUR \times AEXPERT \times POST$ as the main independent variable of interest. In untabulated results, for Equation (1), we find that the coefficient on *AEXPERT* is negative, as predicted, and statistically significantly at the 0.05 level for one-year-ahead exclusions, and at the 0.10 level for two-year-ahead exclusions.²¹ For Equation (2), the coefficient on $MGR_RECUR \times AEXPERT \times POST$ is positive, as predicted, and significant at the 0.01 level. These findings are generally consistent with our main conclusions based on I/B/E/S earnings per share data.

Pre- and Post-Regulation G

As suggested earlier, there is a large increase in the appointment of accounting experts following the enactment of SOX and Regulation G. Consequently, it may be that we are unintentionally attributing the effects of Regulation G to the appointment of accounting experts. To alleviate this concern, we re-run regressions for Table 3 for both the pre- and post-Regulation G periods. Untabulated results are consistent with those in Table 3. The coefficients of *AEXPERT* are -1.024 (-0.799) and -0.849 (-0.987) for one-year-ahead and two-year-ahead non-GAAP exclusion changes, respectively in the pre- (post-) Regulation G period. They are also statistically significant (p -value < 0.09 for pre-Regulation G, and p -value < 0.03 for post-Regulation G). Next,

¹⁹ We do a keyword search, using the keywords listed in Bhattacharya et al. (2003). We eliminate observations in cases where companies do not report non-GAAP earnings. Our subsample covers audit committee appointments in the time period 1998–2003.

²⁰ See, also, Black and Christensen (2009), and Christensen (2007).

²¹ Note that, as opposed to the levels specification in Equation (2), Equation (1) is a change specification in which we lose 50 percent of our already small number observations.

we do the same for the regressions in Table 4. Untabulated results are consistent with Table 4 results. The coefficients of $NONGAAPEXCL \times AEXPERT \times POST$ are 0.408 and 0.378, respectively in the pre- and post-Regulation G period. They are also statistically significant (p-value < 0.06 for pre-Regulation G; and p-value < 0.03 for post-Regulation G). These tests results are consistent with the notion that our inferences are not solely driven by the enactment of SOX or the implementation of Regulation G.

Level of Accounting Expertise

In our main tests, we treat each accounting expert appointment as a *deliberate* intervention and examine how *that* intervention impacts (or incrementally impacts) non-GAAP exclusions. Because accounting expert appointments may coincide with simultaneous accounting expert departures, we examine the effect of changes in the level of accounting expertise in audit committees on non-GAAP exclusions per Equations (3) and (4):

$$\Delta NONGAAPEXCL = \alpha + \beta \times \Delta AEXPERTPCT + \Sigma(\phi_i \times \Delta CONTROLS_i) + \varepsilon, \quad (3)$$

where $\Delta AEXPERTPCT$ is the change in the percentage of accounting experts from year $t-1$ to year t for each year (t) of an audit committee appointment in our sample. In other words, $\Delta AEXPERTPCT = AEXPERTPCT_t - AEXPERTPCT_{t-1}$. Likewise, we measure the change in the magnitude of non-GAAP exclusions from year $t-1$ to year t . Thus, $\Delta NONGAAPEXCL = NONGAAPEXCL_t - NONGAAPEXCL_{t-1}$. All continuous control variables are measured as change variables. The coefficient, β , should be negative if increases in the level of accounting expertise are associated with reductions in the magnitude of non-GAAP earnings exclusions.

Equation (4) examines how $\Delta AEXPERTPCT$ affects the association between non-GAAP exclusions and future operating income (Compustat data item No. 177):

$$\Delta OI = \alpha + \beta_1 \times \Delta NONGAAPEXCL + \beta_2 \times \Delta AEXPERTPCT + \beta_3 \times \Delta NONGAAPEXCL \times \Delta AEXPERTPCT + \Sigma(\phi_i \times \Delta CONTROLS_i) + \varepsilon, \quad (4)$$

where $\Delta NONGAAPEXCL = NONGAAPEXCL_t - NONGAAPEXCL_{t-1}$, and $\Delta OI = OI_{t+1} - OI_t$. All continuous control variables are measured as change variables. As discussed earlier, if non-GAAP exclusions are truly transitory, there should be no association between such exclusions and future operating income. Consequently, there should be no association between changes in non-GAAP exclusions and changes in future operating income. However, previous research finds that non-GAAP earnings exclusions are negatively correlated with future operating income, indicating that these exclusions are not entirely transitory. Accordingly, in a change model, if exclusions increase opportunistically, future operating income should decrease. We thus expect the coefficient, β_1 , to be negative. If this expected negative association is moderated by increases in the percentage of accounting experts, the interaction term coefficient, β_3 , will be positive. The results for Equations (3) and (4) (see, Table 5, Panels A and B) are consistent with this interpretation (p-value < 0.10).

Accounting Experts and Supervisory Experts

Consistent with a stream of previous research (e.g., [Ragunandan et al. 2001](#); [Bédard et al. 2004](#)), in our main tests, we defined accounting experts according to the SEC's *proposed* (strict) definition of a financial expert.²² In response to criticisms that the proposed definition of financial experts was too narrow, the SEC's final rule defines audit committee financial experts more broadly

²² See Section II (A) 4(a) of the SEC rule (17 CFR PARTS 228, 229, and 249) for more details of the originally proposed definition of financial experts. Available at: <http://www.sec.gov/rules/final/33-8177.htm>

TABLE 5
Change in Accounting Expert Percentage

Panel A: OLS Regression of Change in Non-GAAP Exclusions on Change in Accounting Expert Percentage and Governance Characteristics (Dependent Variable: *NONGAAPEXCL_CHG*)

Independent	Pred. Sign	<i>NONGAAPEXCL_CHG</i>	
		Coeff.	p-value
<i>AEXPERTPCT_CHG</i>	–	–1.972*	(0.087)
<i>SIZE_CHG</i>		6.589***	(<0.001)
<i>LEVERAGE_CHG</i>		8.680***	(0.005)
<i>SALE_GROWTH_CHG</i>		–0.021**	(0.021)
<i>LOSS</i>	+	4.483***	(<0.001)
<i>SOX</i>		0.919*	(0.072)
<i>B2M_CHG</i>		0.314	(0.775)
<i>INDDIR_PCT_BD_CHG</i>		–1.772	(0.357)
<i>INDDIR_PCT_AUD_CHG</i>		–1.798	(0.246)
<i>CEOCHAIR</i>		0.425	(0.225)
<i>LITIGATIONRISK</i>		0.700	(0.371)
<i>OWN_INST_CHG</i>		+0.000	(0.979)
<i>BDSIZE_CHG</i>		0.073	(0.615)
<i>AUDSIZE_CHG</i>		0.051	(0.751)
<i>EXTANTAE</i>		–0.003	(0.993)
<i>GINDEX_CHG</i>		0.554	(0.222)
Adjusted R ²		18.4%	
Number of Firm Appointments		800	

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively, one-tailed for *AEXPERTPCT_CHG* and two-tailed for the other independent variables.

The table controls for industry and year fixed effects. Intercepts, industry, and year indicators are not shown. Unless otherwise noted, p-values, in parentheses, are based on clustered standard errors.

Variable Definitions:

NONGAAPEXCL_CHG = change in the non-GAAP exclusions from year $t-1$ to year t ;

_CHG = suffix indicating the variable is a change variable;

AEXPERTPCT = percentage of audit committee members who are accounting experts;

SIZE = log of annual total assets at the beginning of the year;

LEVERAGE = interest bearing debts divided by annual total assets at the beginning of the year;

SALE_GROWTH = percentage change in annual total sales from year $t-1$ to year t ;

LOSS = 1 if the net income at year t is negative, and 0 otherwise;

SOX = 1 if appointment was announced after 2002, and 0 otherwise;

B2M = book-to-market;

INDDIR_PCT_BD = percentage of independent directors among board members;

INDDIR_PCT_AUD = percentage of independent directors among audit committee;

CEOCHAIR = 1 if CEO is also the chairman of the board, and 0 otherwise;

LITIGATIONRISK = 1 if a firm is in one of the industries in the following SIC codes: 2833–2836, 8731–8734, 3570–3577, 7370–7374, 3600–3674, or 5200–5961, and 0 otherwise;

OWN_INST = percentage of institutional shareholdings;

BDSIZE = board size;

AUDSIZE = audit committee size;

EXTANTAE = 1 if a firm has an existing accounting expert before the new audit committee appointment, and 0 otherwise;

GINDEX = shareholder rights index defined by Gompers et al. (2003).

(continued on next page)

TABLE 5 (continued)

Panel B: OLS Regression of Change in Future GAAP Operating Income on Change in Non-GAAP Exclusions and Change in Accounting Expert Percentage (Dependent Variable = *OI_CHG*)

Independent	Pred. Sign	<i>OI_CHG</i>	
		Coeff.	p-value
<i>NONGAAPEXCL_CHG</i>	–	0.052	(0.424)
<i>AEXPERTPCT_CHG</i>		–0.013	(0.286)
<i>NONGAAPEXCL_CHG</i> × <i>AEXPERTPCT_CHG</i>	+	0.549**	(0.016)
<i>NONGAAPEARNING_CHG</i>	+	–0.117	(0.192)
<i>SIZE_CHG</i>		–0.052***	(<0.001)
<i>LEVERAGE_CHG</i>		–0.022	(0.107)
<i>SALE_GROWTH_CHG</i>		+0.000	(0.636)
<i>LOSS</i>		0.016***	(0.010)
<i>SOX</i>		–0.001	(0.827)
<i>B2M_CHG</i>		–0.048***	(<0.001)
<i>INDDIR_PCT_BD_CHG</i>		0.006	(0.764)
<i>INDDIR_PCT_AUD_CHG</i>		0.003	(0.818)
<i>CEOCHAIR</i>		–0.003	(0.329)
<i>LITIGATIONRISK</i>		0.012**	(0.035)
<i>OWN_INST_CHG</i>		+0.000*	(0.088)
<i>BDSIZE_CHG</i>		–0.003*	(0.051)
<i>AUDSIZE_CHG</i>		–0.000	(0.737)
<i>EXTANTAE</i>		0.003	(0.285)
<i>GINDEX_CHG</i>		–0.000	(0.942)
Adjusted R ²		16.5%	
Number of Firm Years		800	

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 levels, respectively, one-tailed for the interaction *NONGAAPEXCL_CHG* × *AEXPERTPCT_CHG* and two-tailed for the other independent variables.

The table controls for industry and year fixed effects. Intercepts, industry, and year indicators are not shown. Unless otherwise noted, p-values, in parentheses, are based on clustered standard errors.

Variable Definitions:

OI_CHG = change in future GAAP operating income (Compustat data item #177) from year *t* to year *t*+1;

NONGAAPEXCL_CHG = change in non-GAAP total exclusions from year *t*–1 to year *t*;

_CHG = suffix indicating the variable is a change variable;

AEXPERTPCT = percentage of audit committee members who are accounting experts;

NONGAAPEARNING = I/B/E/S actual earnings per share;

SIZE = log of annual total assets at the beginning of the year;

LEVERAGE = interest-bearing debts divided by annual total assets at the beginning of the year;

SALE_GROWTH = percentage change in annual total sales from year *t*–1 to year *t*;

LOSS = 1 if the net income at year *t* is negative, and 0 otherwise;

SOX = 1 if appointment was announced after 2002, and 0 otherwise;

B2M = book-to-market;

INDDIR_PCT_BD = percentage of independent directors among board members;

INDDIR_PCT_AUD = percentage of independent directors among audit committee;

CEOCHAIR = 1 if CEO is also the chairman of the board, and 0 otherwise;

LITIGATIONRISK = 1 if a firm is in one of the industries in the following SIC codes: 2833–2836, 8731–8734, 3570–3577, 7370–7374, 3600–3674, or 5200–5961, and 0 otherwise;

OWN_INST = percentage of institutional shareholdings;

BDSIZE = board size;

AUDSIZE = audit committee size;

EXTANTAE = 1 if a firm has an existing accounting expert before the new audit committee appointment, and 0 otherwise;

and
GINDEX = shareholder rights index defined by Gompers et al. (2003).

to include, for example, those with any experience in supervising employees with financial responsibilities.²³ To further investigate the distinction between accounting experts and supervisory experts, we reclassify the nonaccounting expert appointments in our primary sample into two sub-groups: supervisory expert appointments and other appointments.

We then run regressions to compare (1) accounting experts with supervisory experts, and (2) supervisory experts with the other appointments. First, in comparing accounting experts with supervisory experts, we re-run the regressions in Tables 3 and 4 by replacing *AEXPERT* with a new variable, *AEXPERT** (1 if accounting expert, and 0 if supervisory expert). Untabulated results show that the coefficient for *AEXPERT** is significantly negative at the 0.01 level, and that the coefficient for *NONGAAPEXCL* × *AEXPERT** × *POST* is significantly positive at the 0.03 level. These results indicate that, relative to supervisory experts, audit committee accounting experts are associated with a greater reduction in non-GAAP exclusions and more moderation in the negative relation between non-GAAP earnings exclusions and future GAAP operating income. Next, to compare supervisory experts with the other appointments, we re-run Table 3 and Table 4 replacing *AEXPERT* with *SUPEXP* (1 if supervisory expert, and 0 if other appointment). Untabulated results show that the coefficient for *SUPEXP* is insignificant at conventional levels, and that the coefficient for *NONGAAPEXCL* × *SUPEXP* × *POST* is insignificant at conventional levels. Taken together, these findings are generally consistent with previous research (see, e.g., Dhaliwal et al. 2010) that establishes a stronger association between the narrow, proposed definition of accounting experts and GAAP-based financial reporting quality.

Accounting Experts and Board Independence

Prior research documents that board independence is also associated with improvements in the quality of non-GAAP exclusions (Frankel et al. 2011). In order to further examine the robustness of our results and further distinguish our study from prior research, we compare our results with Frankel et al. (2011). First, we hand-collect additional director profile data for each firm year between 1998 and 2005 for all firms in our primary sample. By reading the director profiles, we then identify existing accounting experts and construct variable *AEXPERTPCT*—the percentage of audit committee members who are accounting experts. After obtaining all relevant variables for running the tests, we are left with 3,835 firm-year observations.

Using a model similar to Frankel et al. (2011), we run the following regression with an interaction term between *AEXPERTPCT* and *NONGAAPEXCL*, and another interaction term between board independence *INDDIR_PCT_BD* and *NONGAAPEXCL*, where *INDDIR_PCT_BD* is the percentage of independent directors among board members:

$$\begin{aligned}
 OI_{t+1} = & \alpha + \beta_1 \times \text{NONGAAPEXCL}_t + \beta_2 \times \text{AEXPERTPCT} + \beta_3 \times \text{INDDIR_PCT_BD} \\
 & + \beta_4 \times \text{NONGAAPEXCL}_t \times \text{AEXPERTPCT} \\
 & + \beta_5 \times \text{NONGAAPEXCL}_t \times \text{INDDIR_PCT_BD} + \Sigma(\phi_i \times \text{CONTROLS}_i) + \varepsilon. \quad (5)
 \end{aligned}$$

Untabulated results show that the coefficients on both *NONGAAPEXCL* × *AEXPERTPCT* and *NONGAAPEXCL* × *INDDIR_PCT_BD* are positive and statistically significant (p-value < 0.08). The implication is that the percentage of accounting experts on audit committees is associated with higher-quality non-GAAP earnings even after controlling for board independence. Put differently, accounting experts on audit committees have incremental value beyond what board independence can provide in association with the quality of non-GAAP exclusions.

²³ See Section II (A) 4(c) of the SEC final rule (17 CFR PARTS 228, 229 and 249) for more details of the final broad definition of financial experts. Available at: <http://www.sec.gov/rules/final/33-8177.htm>

SUMMARY AND CONCLUSIONS

U.S. lawmakers and stock exchanges rely on audit committees to help safeguard the integrity of the financial reporting process. However, relatively little is known about how well audit committees perform their oversight and review function, especially with respect to a company's non-GAAP earnings information. Non-GAAP earnings measures are not subjected to the external audit process. Moreover, these measures are relatively ill defined, and the associated exclusion amounts and items are chosen by managers at their discretion. Non-GAAP earnings measures thus provide a rich setting to test the effectiveness of the audit committee monitoring process. In this study, we examine the association between the types of audit committee appointments and the company's non-GAAP earnings numbers.

We define three types of audit committee appointments: accounting expert appointments, supervisory expert appointments, and other appointments. Accounting experts meet the SEC's originally proposed rule for audit committee financial experts. Supervisory experts meet the SEC's broadened final definition of an audit committee financial expert, but do not meet the accounting expert definition, and other appointments meet neither the accounting expert nor the supervisory expert definitions. As hypothesized, we find a larger decline in non-GAAP earnings exclusions following the appointment of accounting experts to audit committees than supervisory experts. We also find that accounting experts are associated with higher-quality post-appointment non-GAAP earnings exclusions than supervisory experts.

We conduct a battery of robustness tests to verify our findings. Nevertheless, our current results should be interpreted cautiously, because future research could incorporate other variables and shed a different light on our conclusions. For example, industry experience, stature and presence, diversity of thought and personal experiences, the ability to work cohesively in small groups, and the ability to respect and work well with others are all factors that could potentially affect the functioning of the audit committee (see, e.g., [Trautman 2012](#)). Moreover, we do not directly measure an appointee's level of understanding of the nuances and complexities of financial reporting. Thus, our results do not necessarily imply a cause-and-effect relation between the appointment of accounting experts and the characteristics of subsequent non-GAAP earnings numbers. Subject to these caveats, our study suggests that financial experts with appropriate actual hands-on accounting and auditing experience tend to be associated with higher-quality non-GAAP earnings numbers than those with only supervisory experience over the financial reporting function.

Our findings should be particularly informative to regulators and boards of directors in their evaluation of the desirable attributes for audit committee financial experts. Our study suggests that the audit committee financial expert designation is likely best held by a director who brings to the table more than just supervisory experience over the financial reporting function; lessons gained from actually performing financial accounting functions seem to enhance the audit committee's ability to monitor management's non-GAAP financial measures and rationale for excluding charges as infrequent, unusual, or nonrecurring.

REFERENCES

- Allee, K. D., N. Bhattacharya, E. L. Black, and T. E. Christensen. 2007. Pro forma disclosure and investor sophistication: External validation of experimental evidence using archival data. *Accounting, Organizations and Society* 32 (3): 201–222.
- Anderson, R., S. Mansi, and D. Reeb. 2004. Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting & Economics* 37 (3): 315–342.
- Bédard J., S. Chtourou, and L. Courteau. 2004. The effect of audit committee expertise, independence, activity on aggressive earnings management. *Auditing: A Journal of Practice & Theory* 23 (2): 13–35.

- Bhattacharya, N., E. Black, T. Christensen, and C. Larson. 2003. Assessing the relative informativeness and permanence of pro forma earnings and GAAP operating earnings. *Journal of Accounting & Economics* 36 (1-3): 285–319.
- Bhattacharya, N., E. Black, T. Christensen, and R. D. Mergenthaler. 2004. Empirical evidence on recent trends in pro forma reporting. *Accounting Horizons* 18 (1): 27–43.
- Bhattacharya, N., E. Black, T. Christensen, and R. D. Mergenthaler. 2007. Who trades on pro forma earnings information? *The Accounting Review* 82 (3): 581–619.
- Black, D. E., and T. E. Christensen. 2009. U.S. managers' use of "pro forma" adjustments to meet strategic earnings targets. *Journal of Business Finance & Accounting* 36 (3-4): 297–326.
- Bowen, R., A. Davis, and D. Matsumoto. 2005. Emphasis on Street versus GAAP earnings in quarterly press releases: Determinants, SEC intervention, and market reactions. *The Accounting Review* 80 (4): 1011–1038.
- Bradshaw, M., and R. Sloan. 2002. GAAP versus the Street: An empirical assessment of two alternative definitions of earnings. *Journal of Accounting Research* 40 (1): 41–66.
- Brown, N., T. Christensen, W. Elliott, and R. Mergenthaler. 2012. Investor sentiment and pro forma earnings disclosures. *Journal of Accounting Research* 50 (1): 1–40.
- Bruce, B., and M. Bradshaw. 2004. *Analysts, Lies, and Statistics: Cutting through the Hype in Corporate Earnings Announcements*. 1st edition. New York, NY: Institutional Investor Books.
- Bryan-Low, C. 2002. Defining moment for SEC: Who's a financial expert? *Wall Street Journal* (December 9).
- Carcello, J. V., and T. L. Neal. 2003. Audit committee characteristics and auditor dismissals following "new" going-concern reports. *The Accounting Review* 78 (1): 95–117.
- Christensen, T. E. 2007. Discussion of: Another look at GAAP versus the street: An empirical assessment of measurement error bias. *Review of Accounting Studies* 12 (2): 305–321.
- Cohen, J., G. Krishnamoorthy, and A. M. Wright. 2004. The corporate governance mosaic and financial reporting quality. *Journal of Accounting Literature* 23: 87–152.
- Cohen, J., G. Krishnamoorthy, and A. M. Wright. 2008. Form versus substance: The implications for auditing practice and research of alternative perspectives on corporate governance. *Auditing: A Journal of Practice & Theory* 27 (2): 181–198.
- Davidson W. N., III, B. Xie, and W. Xu. 2004. Market reaction to voluntary announcements of audit committee appointments: The effect of accounting expertise. *Journal of Accounting and Public Policy* 23 (4): 279–293.
- DeFond, M., R. Hann, and W. Xu. 2005. Does the market value accounting expertise on audit committees of boards of directors? *Journal of Accounting Research* 43 (2): 153–193.
- De La Merced, M. J. 2011. The Groupon I.P.O.: What is adjusted CSOI? *The New York Times* (June 2).
- Dhaliwal, D., V. Naiker, and F. Navissi. 2010. The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees. *Contemporary Accounting Research* 27 (3): 787–827.
- Doyle, J., R. Lundholm, and M. Soliman. 2003. The predictive value of expenses excluded from pro forma earnings. *Review of Accounting Studies* 8 (2-3): 145–174.
- Engel, E. 2005. Discussion of "Does the market value financial expertise on audit committees of boards of directors?" *Journal of Accounting Research* 43 (2): 195–204.
- Entwistle, G., G. Feltham, and C. Mbagwu. 2006. Financial reporting regulation and the reporting of pro forma earnings. *Accounting Horizons* 20 (1): 39–55.
- Frankel, R., and S. Roychowdhury. 2005. *Testing the Clientele Effect: An Explanation for Non-GAAP Earnings Adjustments Used to Compute I/B/E/S Earnings*. Working paper, Washington University and Massachusetts Institute of Technology.
- Frankel, R., S. McVay, and M. Soliman. 2011. Non-GAAP earnings and board independence. *Review of Accounting Studies* 16 (4): 719–744.
- Frederickson, J., and J. Miller. 2004. The effects of pro forma earnings disclosures on analysts' and nonprofessional investors' equity valuation judgments. *The Accounting Review* 79 (3): 667–686.

- Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate governance and equity prices. *Quarterly Journal of Economics* 118 (1): 107–155.
- Gu, Z., and T. Chen. 2004. Analysts' treatment of nonrecurring items in street earnings. *Journal of Accounting & Economics* 38 (December): 129–170.
- Haka, S., and P. Chalos. 1990. Evidence of agency conflict among management, auditors, and the audit committee chair. *Journal of Accounting and Public Policy* 9 (4): 271–292.
- Heflin, F., and C. Hsu. 2008. The impact of the SEC's regulation of non-GAAP disclosures. *Journal of Accounting & Economics* 46 (2-3): 349–365.
- Hoitash, U., R. Hoitash, and J. C. Bedard. 2009. Corporate governance and internal control over financial reporting: A comparison of regulatory regimes. *The Accounting Review* 84 (3): 839–867.
- Johnson, S. 2010. Nonplussed by Non-GAAP. *CFO Magazine* (March 1).
- Kalbers, L. P., and T. J. Fogarty. 1998. Organizational and economic explanations of audit committee oversight. *Journal of Managerial Issues* 10 (2): 129–150.
- Kolev, K., C. Marquardt, and S. McVay. 2008. SEC scrutiny and the evolution of non-GAAP reporting. *The Accounting Review* 83 (1): 157–184.
- 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): 827–857.
- Krishnan, J., Y. Wen, and W. Zhao. 2011. Legal expertise on corporate audit committees and financial reporting quality. *The Accounting Review* 86 (6): 2099–2130.
- Lee, H. Y., V. Mande, and A. R. Ortman. 2004. The effect of audit committee and board of director independence on auditor resignation. *Auditing: A Journal of Practice & Theory* 23 (2): 131–146.
- Lougee, B., and C. Marquardt. 2004. Earnings informativeness and strategic disclosure: An empirical examination of “pro forma” earnings. *The Accounting Review* 79 (3): 769–795.
- Marques, A. 2006. SEC interventions and the frequency and usefulness of non-GAAP financial measures. *Review of Accounting Studies* 11 (4): 549–574.
- McVay, S. 2006. Earnings management using classification shifting: An examination of core earnings and special items. *The Accounting Review* 81 (3): 501–531.
- PricewaterhouseCoopers. 2012. *Point of View: PCAOB Proposed Auditor Reporting Model Changes*. Available at: <http://www.pwc.com/us/en/point-of-view/assets/pov-assurance.pdf>
- Ragunandan, K. K., W. J. Read, and D. V. Rama. 2001. Audit committee composition, “gray directors,” and interaction with internal auditing. *Accounting Horizons* 15 (2): 105–118.
- Rusli, E. M., and M. J. De La Merced. 2011. Groupon plans I.P.O. with \$30 billion valuation. *The New York Times* (June 2).
- Securities and Exchange Commission (SEC). 2003. *Final Rule*. Release Nos. 33-8220; 34-47654; IC-26001; File No. S7-02-03. Available at: <http://www.sec.gov/rules/final/33-8220.htm>
- Securities and Exchange Commission (SEC). 2009. *Securities and Exchange Commission v. SafeNet, Inc., et. al.*, Civil Action No. 09-2117. Litigation Release No. 21290/November 12, 2009. Available at: <http://www.sec.gov/litigation/litreleases/2009/lr21290.htm>
- Thomson Financial. 2004. *A Guide to Understanding Thomson Financial Terms and Conventions for the First Call and I/B/E/S Estimates Databases*. Available at: http://www.lib.nccu.edu.tw/Eserv/IBES_Glossary200605.pdf
- Trautman, L. J. 2012. *Who Qualifies as an Audit Committee Financial Expert under SEC Regulations and NYSE Rules?* Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2137747
- Turley, S., and M. Zaman. 2004. The corporate governance effects of audit committees. *Journal of Management and Governance* 8 (3): 305–332.
- Warner, J. 2006. Earnings: To guide or not to guide. *Directorship* (July/August): 22–23.

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