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Audit Committee Composition and Effectiveness: A Review of Post-SOX Literature

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Audit Committee Composition and Effectiveness: A Review of Post-SOX Literature

Abstract:

The Sarbanes-Oxley Act (SOX) was enacted to strengthen corporate governance practices in the United States; since SOX enactment, the audit committee has received increasing emphasis in accounting research. The objective of this study is to review and synthesize the growing volume of audit committee literature in the post-SOX era. While summarizing the post-SOX literature, this study also focuses on selected pre-SOX studies to compare the research issues and findings of pre- and post-SOX literature and to show how governance reforms shape the literature's domain. The extant audit committee literature reflects an enormous body of knowledge. Both the pre- and post-SOX literature establishes the notion that independent and expert audit committees enhance the effectiveness of audit committee monitoring processes and improve the quality of financial reporting and auditing. These findings supplement the scholarly support for SOX requirements. In the post-SOX era, researchers have focused on issues driven by SOX. However, other issues that are not addressed in SOX have also emerged, including audit committee compensation and committee members' social ties with the chief executive officer and supervisory or other expertize of the audit committee members. While the literature contains predominantly experimental research, there is ample room for future research that can shed light on more theoretical issues. Future researchers can investigate unanswered questions by establishing an implicit understanding of existing findings and developing theories in this area.

1.0 Introduction

In response to major financial scandals, the Sarbanes-Oxley Act of 2002 (SOX) was enacted to strengthen corporate governance systems to protect shareholders from fraudulent accounting practices. SOX enhances the power and responsibility of audit committees, which play a crucial role in ensuring reliable financial reporting, internal controls, external auditing, and risk management through their diligent oversight efforts. Shortly after SOX was enacted, researchers began to investigate the effectiveness of its requirements regarding audit committee composition and monitoring processes. This study provides a thorough review of the post-SOX audit committee literature that uses exclusively post-SOX data and investigates the effectiveness of SOX with regard to audit committee monitoring processes. While summarizing the post-SOX research, this study also focuses on selected pre-SOX studies to compare the trends and findings in the pre- and post-SOX audit committee literature.

Post-SOX audit committee literature has addressed several aspects of audit committees and their impact on oversight processes. Even in the pre-SOX era, the issue of audit committee effectiveness received enormous importance in the accounting literature. Before 2002, legislators and regulators also emphasized the need to improve audit committee effectiveness by issuing, for example, the Blue Ribbon Committee Report of 1999, Securities and Exchange Commission (SEC) disclosure rules 1999b, and the 2000 National Association of Corporate Directors (NACD) report on audit committees. Thus, the issue of audit committee effectiveness has been important in both the pre- and post-SOX eras.

Based on the time line, in this study I have classified the audit committee-related research to date into two groups: (1) pre-SOX literature, which includes papers published before 2002 and papers published after 2002 using data from before 2002 and (2) post-SOX literature, which uses exclusively post-SOX data (data from after 2002). The classification was based on interest in determining how SOX requirements have affected the trends and findings in audit committee research. Exhibit 1 shows the time line classification of the audit committee literature.

[Insert Exhibit 1]

This study has three objectives. First is to summarize the audit committee-related research and provide an overview of the principal findings of post-SOX researchers that used exclusively data from after 2002. This will help future researchers establish a precise understanding of what has already been investigated. The second objective is to compare pre- and post-SOX research trends and findings. This comparison will help in understanding how SOX has influenced the path of scholarly investigation. The third objective is to identify the gaps and inconsistencies in the existing literature, which will help in identifying promising opportunities for future research. Thus, this paper will contribute by evaluating existing theories and findings in audit committee-related research in the post-SOX era.

The post-SOX literature presents substantial evidence that SOX requirements play a significant role in enhancing audit committees' quality, power, and effectiveness. The thrust of this research is the theory that firms can improve financial reporting, audit quality, and internal control by complying with audit committee-related SOX requirements. The studies reviewed within this paper were based on empirical, analytical, and experimental research conducted after 2002. To assess the post-SOX audit committee research, this review focused on studies published in top-ranked mainstream accounting and auditing journals: *The Accounting Review* (TAR), *Journal of Accounting Research* (JAR), *Journal of Accounting and Economics* (JAE), *Contemporary Accounting Research* (CAR), *Review of Accounting Studies* (RAST), *Journal of*

Accounting and Public Policy (JAPP), *Accounting, Organizations, and Society* (AOS), and *Auditing: A Journal of Practice and Theory* (AJPT). The keyword 'audit committee' was used to search for relevant studies. As part of the article search for this review, titles and/or abstracts of articles found in these journals were carefully examined for relevant research. Unpublished working papers were not included in the review. However, two conference papers were included for two reasons. First, the research issues discussed in those papers are directly relevant to audit committee-related SOX requirements. Second, these papers are the continuation or part of a series of other papers discussed in this study.

The remainder of the paper is organized as follows. Section 2 discusses audit committee-related sections in SOX. In section 3, the domain and a classification of audit committee research in relation to SOX is discussed. Section 4.1 provides a summary of the post-SOX literature that focuses on audit committee effectiveness and external auditing. Section 4.2 focuses on the financial reporting process. Section 4.3 highlights earning management issues and section 4.4 reviews audit committee studies that focused on internal control deficiencies. Section 4.5 provides a summary of other issues, including litigation risks, market reaction, and the audit committee oversight process. Finally, section 4 provides concluding remarks and directions for future research.

2.0 The Audit Committee and SOX

The audit committee has been defined in several ways in several contexts. In Sec. 2, SOX offers the following definition:

"The term 'audit committee' means a committee (or equivalent body) established by and amongst the board of directors of an issuer for the purpose of overseeing the accounting and

financial reporting processes of the issuer and audits of the financial statements of the issuer; and if no such committee exists with respect to an issuer, the entire board of directors of the issuer."

In light of this definition, it is obvious that the ultimate goal of the audit committee is to ensure financial reporting quality and independent external auditing. Audit committee composition (expertise, independence, integrity, objectivity) and other characteristics (well-defined responsibilities, access to management, incentives) of audit committees are the most significant issues related to achieving this goal.

The SEC requires all public companies to maintain a standing audit committee that is responsible for carrying out its duties in the manner prescribed by SOX. Under section 301 of SOX, each audit committee of a listed company is to be "directly responsible for the appointment, compensation, and oversight" of the outside auditor, and the auditors are to report directly to the audit committee. Section 301(3) also emphasizes independence of the audit committee. According to SOX, each member of the audit committee should be independent. To be independent, an audit committee member should not "accept any consulting, advisory, or other compensatory fee" from the firm.

Section 407 of SOX requires all public companies to disclose the financial expertise of audit committee members. In defining "financial expert," the act considers a member's qualifications through his or her "education and experience as a public accountant or auditor or a principal financial officer, comptroller, or principal accounting officer." An "understanding of generally accepted accounting principles, and experience in preparing or auditing of financial statements" can also be considered "financial expertise" according to the act.

3.0 The Domain of Post-SOX Audit Committee Literature

To organize the literature review, I classify the area of post-SOX audit committee research into five main domains: external auditing, financial reporting process, internal control deficiencies, earnings management, and other studies. Exhibit 2 provides a simplified classification of the domain of post-SOX audit committee literature. Most researchers have investigated the impacts of audit committee composition criteria and the effectiveness of financial reporting and auditing quality. Overall, the post-SOX literature establishes the notion that independent and expert audit committees help in reducing earnings management and internal control deficiencies and improve financial reporting and audit quality. These findings supplement the significance and implications of SOX. Researchers have also documented a causal link between audit committee compensation and financial reporting quality, as well as audit committee expertise and positive stock price reaction.

[Insert Exhibit 2]

SOX emphasizes the authority and responsibility of audit committees in monitoring external auditors. Post-SOX audit committee research has mainly focused on audit committee composition criteria (e.g., independence, expertise, multiple directorships, compensation) and their impact on internal and external auditing quality. The issues addressed in this area include auditor-client negotiation, audit fees, non-audit services provided by external auditors, and auditors' restatement recommendations, among others. Audit committee members should understand the financial reporting process since the committee's main responsibility is to ensure the integrity of the company's financial reporting. SOX requires that audit committee members have financial and accounting expertise and independence. Therefore, post-SOX literature has investigated the independence and expertise of the audit committee and its impact on financial reporting quality. Earnings management and internal control deficiencies are two other important areas addressed in the post-SOX audit committee literature. Using post-SOX data, researchers have investigated how audit committee composition criteria (especially independence and expertise) are associated with firms' earning management practices and internal control problems. The post-SOX audit committee literature also highlights other issues, such as audit committee expertise and market reaction, audit committee oversight processes, and audit committee criteria and litigation risk.

[Insert Exhibit 3]

Exhibit 3 illustrates the domain of post-SOX audit committee literature. As defined by SOX, the main responsibility of the audit committee is to monitor the auditor and the management of the company. To ensure an effective monitoring process, SOX focuses on the criteria for composition (especially independence), which can be considered the 'determinants' or 'input' of an effective monitoring process. Though the issue of audit committee compensation is not addressed in SOX, an incentive policy plays an important role in audit committees' monitoring processes. The post-SOX literature documents how cash or stock-based compensation is associated with the audit committee oversight process. The audit committee serves as the watchdog to protect shareholders' interests from any opportunistic behavior of management or auditors. The 'effectiveness' or 'output' of the audit committees' oversight process can be judged by examining whether firms have independent audit reports and quality financial reporting or whether they practice earnings management or have internal control problems. The post-SOX audit committee literature delineates both the 'input' (determinants) and 'output' (effectiveness) of the audit committee monitoring process.

Although most of the issues discussed in the post-SOX literature are also addressed in the pre-SOX era, in some cases the findings and interpretations differ. For example, using pre-SOX data, DeZoort et al. (2003) documented that audit committee members' support for the auditor in a dispute with management was often contingent on contextual factors such as whether the financial statement adjustment was related to an annual or quarterly report. However, after SOX, DeZoort et al. (2008) replicated their pre-SOX study and found that audit committee members who are certified public accountants (CPAs) (accounting expertise) always support the auditors in case of auditor management disputes. Thus, the domain of audit committee research is similar in the pre- and post-SOX eras, but in some cases the findings and implications differ. The area of post-SOX study is mainly SOX centered and relates to the implications of SOX for audit committees' effectiveness. Exhibit 4 lists the post-SOX audit committee studies discussed in this study. While reviewing these post-SOX studies, I also compared the findings and implications of selected pre-SOX research that addressed the same issue.

[Insert Exhibit 4]

4.1 External and Internal Auditing

External auditing has received enormous emphasis in both pre- and post-SOX audit committee research. This emphasis is reasonable since the main purpose of appointing an audit committee is to oversee the quality and independence of auditing. As mandated by SOX Sec. 202, all auditing and non-auditing services provided by external auditors must be preapproved by the audit committee. SOX also addresses widespread concerns about auditor appointment. Sec. 301 states that the audit committee is responsible for the appointment, compensation, and oversight of the work of external auditors employed by the firm. The responsibilities of the audit committee also include resolution of disagreements between management and the auditor. The audit committee is also supposed to obtain written documents that detail the relationship between the auditor and management. Sec. 204 requires external auditors to report to the audit committees all accounting policies and alternative treatments of financial information and the treatment preferred by the auditors.

SOX extends the power and responsibility of the audit committee. However, the role of the audit committee in monitoring auditors was extensively discussed even before the law's enactment. Using pre-SOX data, researchers investigated the link between different auditing issues and audit committee effectiveness. For example, several researchers have discussed the complementary role of audit committees in the internal auditing process (Raghunandan et al., 2001; Goodwin, 2003; Abbott et al., 2007). Although internal auditing was considered important in pre-SOX literature, post-SOX literature mostly concentrates on external auditing. The reason for fewer studies on the audit committee and internal auditing in the post-SOX era may be attributed to SOX highlighting the audit committee's responsibility to oversee external auditors only. The other issue extensively discussed in the pre-SOX literature is the association between audit and non-audit fees and audit committee composition criteria, though the findings are mixed. For example, Krishnan and Visvanathan (2008) found a negative association, whereas Carcello et al. (2002) and Abbott et al. (2003) showed a positive association between audit fees and audit committees' independence and expertise. Abbott et al. (2003) found that non-audit fees are negatively associated with audit committee independence and expertise. A number of pre-SOX audit committee studies focused on auditor selection, auditor-client negotiation, and auditor resignation issues (Abbott and Parker, 2000; DeZoort et al., 2003; DeZoort and Salterio, 2001; Lee et al., 2004; Ng and Tan, 2003; Cohen et al., 2002; Raghunandan and Rama, 2003).

Researchers have also shown that audit committee composition criteria have significant impacts on auditors' going-concern audit reports (Carcello and Neal, 2000; Carcello and Neal, 2003).

In the post-SOX era, researchers have investigated new issues, such as auditors' restatement recommendations, audit committee members' multiple directorships, audit committees' compensation, and audit committees' preapproval decisions for audit and non-audit services. Since SOX Sec. 202 requires that all audit and non-audit services provided by an external auditor be pre-approved by the audit committee, the question arises as to what factors motivate audit committee members to approve auditors' joint service (audit and non-audit) provision. In a post-SOX study, Gaynor et al. (2006) investigated whether audit committees consider the non-audit service effects on audit quality and to what extent the mandated disclosures affect audit committees' pre-approval decisions. In their experimental study, the authors found that audit committee members recommend unaffiliated firms for non-audit services when they see that joint provisions hamper auditors' objectivity. They also documented that audit committees are less likely to approve joint service provisions when public disclosures are required. The findings of this paper support the contention that audit committees are taking the pre-approval process very seriously as part of their responsibilities under SOX. As mandated by SOX Sec. 301, an audit committee member must be a member of the company's board of directors and must be independent as defined. In a post-SOX study, Hunton and Rose (2008) investigated whether members with multiple directorships are more likely to compromise their independence. Their experimental study found that directors holding multiple directorships are less likely to accept auditors' restatement recommendations than directors with a single directorship. Analysis of post-experiment debriefing revealed that members serving on multiple boards are less willing to support restatements due to the potential adverse effects on reputation.

SOX requires external auditors to report “all critical accounting policies” and “all alternative treatments of financial information within GAAP [generally accepted accounting principles] that have been discussed with management” and “the treatment preferred by the registered public accounting firm” (Sec. 204) to the audit committee. This requirement provides audit committee members with additional information about the range of potential outcomes of accounting resolutions. Pomrey (2010) evaluated audit committee members’ investigation of financial reporting decisions. His post-SOX experimental analysis found that negotiation knowledge influences audit committee members’ discomfort, but does not increase the extent of investigations. However, he also documented that audit committee members investigate more extensively as accounting decisions become increasingly aggressive and committee members have increased accounting experience. The findings provide support for audit committee members’ financial expertise and accounting experience having a strong influence on their ability to investigate significant accounting decisions. Vermeer et al. (2009) examined audit committees’ effectiveness in auditing for non-profit firms. In their survey, they showed that external audit fees are positively associated with audit committee independence and expertise.

In an archival study, Engel et al. (2010) investigated the issue of audit committee compensation. Their data reflected both pre- (2000 to 2001) and post-SOX periods (2002 to 2004). They showed that total compensation for audit committees increased significantly in the post-SOX era, with notable increases in the cash retainer and meeting fee components. This increase in compensations reflects the SOX requirement for better monitoring and the demand for independent and expert committee members. Another post-SOX study that focused on audit committee compensation and audit committee effectiveness was conducted by Bierstaker et al.

(2012). The authors found that audit committee members are more likely to support the auditor in a disagreement when audit committee compensation includes long-term stock options.

As an extension of their previous study (Cohen et al., 2002), Cohen et al. (2010) conducted an experimental study in the post-SOX era investigating how the interaction between the external auditor and audit committee affects the firm's audit process and audit environment. They reported that relative to the pre-SOX period, there has been a shift in auditor experience in the post-SOX period. They argued that one potential explanation for this shift is that post-SOX audit committee members perceive an increased threat of legal liability associated with being on the committee that necessitates audit committee members taking their monitoring roles much more seriously. Through their semi-structured interviews, they found that the corporate governance environment has improved considerably in the post-SOX era with audit committees that are substantially more active, diligent, knowledgeable, and powerful.

Norman et al. (2011) conducted one of the few post-SOX studies that has focused on internal auditing and audit committee effectiveness. However, in this study, the authors failed to find evidence that increased expertise and increases in audit committee members' perceived powers cause internal auditors to be less willing to waive misstatements. In another post-SOX study, Baura et al. (2010) argued that audit committee members' expertise in auditing and their firm-specific knowledge may have substitution effects on the investment in internal auditing. They found that the investment in internal auditing is negatively related to the presence of auditing experts on the committee and the average tenure of audit committee members, but positively related to the number of audit committee meetings (a proxy for diligence).

In theoretical research, Schöndube-Pirchegger and Schöndube (2011) offered a model that explains the herding equilibrium in which the audit committee ‘‘herds’’ and follows the auditor’s judgment no matter what its own insights suggest. Their result is maintained even when audit committee members are held liable for detected failure. However, they added that performance-based bonus payments induce truthful reporting at least in some cases. In another post-SOX study, Brown-Liburd and Wright (2011) investigated the potential effect of a past client relationship and the strength of the audit committee in the auditor negotiation process. Their findings confirmed the importance of the strength of the audit committee and past client relationships on auditors’ negotiation planning judgments. Overall, the findings of pre- and post-SOX audit committee literature that focused on auditing are reasonably consistent. However, SOX opens new avenues of research and the findings of these scholarly works reestablish the need for SOX to increase audit committee effectiveness. Table 1 offers a summary of post-SOX studies that focused on auditing and audit committee composition and effectiveness.

[Insert Table 1]

4.2 Financial Reporting Process

In Sec. 2, SOX defines the audit committee as a committee established by the board of directors to oversee the accounting and financial reporting processes of the firm. In Sec. 407, SOX gives special importance to the financial expertise of audit committee members. The audit committee serves as the watchdog for shareholders to protect the integrity of a company’s financial reporting. Both pre- and post-SOX researchers have highlighted the impact of audit committee effectives on firms’ financial reporting processes. In general, the findings from pre-SOX studies provide that the audit committee may have underutilized its potential to ensure quality reporting. Less experienced and less financially expert committee members in the pre-SOX era account for this. In the post-SOX period, researchers have considered new issues, such as Internet financial reporting, social ties with the chief executive officer (CEO), and reporting quality. A number of pre-SOX studies examined how audit committee expertise improves financial reporting quality (McDaniel et al., 2002; DeZoort et al., 2003). Krishnan and Visvanathan (2008) showed that only accounting and financial expertise is associated with conservative reporting, but this finding does not hold for non-accounting and non-financial experts. By using pre-SOX data, researchers have also documented how audit committee independence positively affects the financial reporting process (Abbott et al., 2004; Bronson et al., 2009; Gendron et al., 2004).

In the post-SOX period, researchers have also investigated the effectiveness of audit committee expertise and independence on firms' financial reporting processes. However, researchers have introduced new issues that could have potential impacts on financial reporting quality and audit committee effectiveness. For example, Kelton and Yang (2008) examined the relationship between audit committee criteria and reporting transparency, which is measured by the level of Internet financial reporting. As compared to traditional, paper-based reporting disclosures, Internet financial reporting allows companies to disseminate financial information in a more timely manner to a broader audience. The authors hypothesized that SOX's enhancement of audit committee power could also influence firms' Internet reporting behavior.

SOX's emphasis on the audit committee's role suggests an increased need for theory regarding the impact of audit committee members' compensation. Magilke et al. (2009) investigated whether stock-based compensation of audit committee members has any impact on firms' financial reporting process. Their experiments showed that audit committee members prefer biased reporting when receiving stock-based compensation. They also found that audit committee members who do not receive stock-based compensation are the most objective; however, this finding differs from the findings of pre-SOX research reporting that participants in similar roles tended to support biased reporting (Mayhew et al., 2001; Mayhew and Pike, 2004). SOX Sec. 301 states that independent audit committee members will not accept any consulting, advisory, or other compensatory fee from the company. However, in addition to this conventional idea of independence, factors such as social ties with the CEO and compensation parameters are likely to affect the audit committee's monitoring behavior. Dey and Liu (2010) examined whether an independent director's past and present social connections and professional similarities with the firm's CEO are related to the functioning of the audit committee. They reported that a change in audit committee composition to being fully independent is associated with a significant increase in the quality of reporting and a significant decrease in the probability of restatements. In contrast to the findings of Magilke et al. (2009), their results suggested that when an audit committee's stock-based compensation increases, the quality of financial reporting also increases. In another post-SOX archival study, MacGregor (2012) investigated the effects of audit committee members' equity holdings on financial reporting processes. He documented that the influence of audit committee equity holdings on the likelihood that a firm meets the prior year's earnings level varies with the CEO's equity incentives and the level of high-risk assets. Collectively, his results suggested that equity holdings enhance audit committee effectiveness and financial reporting quality. The only post-SOX analytical research that focused on audit committee effectiveness and reporting quality was conducted by Caskey et al. (2010). In this study, the authors modeled a reporting process that includes both manager and audit committee and examined reporting quality and investors' pricing effects. Their model showed how a manager privately reports earnings to an independent audit committee that, after its own due diligence, modifies the report for public release to investors. The audit committee alters the reporting and valuation dynamics by attempting to remove the manager's reporting bias, but then presents the information it has collected with its own bias. Table 2 summarizes post-SOX studies that focused on audit committee effectiveness and financial reporting quality.

[Insert Table 2]

4.3 Earning Management and Accounting Frauds

Managements have incentives to manipulate earnings to achieve pre-determined benchmarks or stockholders' expectations. An independent and expert audit committee member can help mitigate earnings management and misreporting. The link between earnings management and audit committee members' multiple directorships, social ties between the CEO and audit committee members, and firms' earnings manipulations are among the new issues discussed in the post-SOX era.

In a frequently cited pre-SOX study, Klein (2002) highlighted the relationship between audit committee independence and earning management. She found a negative relationship between audit committee independence and abnormal accruals. By using pre-SOX data, Bedard et al. (2004) documented that aggressive earning management is negatively related to the financial and governance expertise of audit committees. In another pre-SOX study, Vafeas (2005) argued that audit committee characteristics are related to earning quality in a manner that is generally consistent with the predictions of agency theory. Srinivasan (2005) showed that when companies experience accounting restatements, penalties for the audit committee members from lawsuits and SEC actions are limited. However, audit committee members experience significant labor market penalties. Farber (2005) documented that fraud firms have fewer audit committee meetings and less financial expertise in the audit committee. Archambeault et al. (2008) reported a positive association between both short-term and long-term stock option grants for audit committee members and the likelihood of accounting restatements. Thus, researchers have extensively investigated the issues of earnings management, restatement, and accounting fraud by using pre-SOX data.

In Sec. 407(a) SOX states that every company must disclose whether or not the audit committee has at least one ‘financial expert.’ In Sec. 407(b), SOX defines financial expert as a person who has thorough education and experience as a public accountant, auditor, or principal financial officer or is from a position involving an understanding of GAAP and financial statements. Though neither SOX nor pre-SOX research addressed the issue of industry expertise, in a post-SOX study, Cohen et al. (2010) found a significant negative association between earning management and audit committee industry expertise. They argued that audit committee members should have industry-specific expertise to evaluate the unique accounting judgments in that industry. They showed that industry expertise combined with accounting or supervisory financial expertise contributes to a lower likelihood of restatement.

By using post-SOX data, Dhaliwal et al. (2010) extended some pre-SOX studies. Consistent with pre-SOX findings, they documented that audit committee accounting expertise is positively associated with accruals quality, a commonly used proxy for earning management, and this association is stronger when accounting expert audit committee members are independent, hold fewer multiple directorships, and have lower tenure in their firms. However, supervisory expertise has no impact on the effectiveness of audit committees. Given the significant increase in the number of accounting experts serving on audit committees in the post-SOX period, these findings highlight the narrowness of the SOX definition of expertise and the importance of controlling expertise-specific characteristics.

While defining independence in Sec. 407(b), SOX mentions only economic ties between the firm and audit committee members. However, the influence of the CEO through social ties on audit committee members could hamper the committee's independence, and this issue has been investigated in post-SOX studies. For example, Cohen et al. (2011) showed that auditors consider CEO influence over the audit committee's independence when making difficult audit judgments under varying risk scenarios with respect to management's incentives to manage earnings. The only analytical post-SOX study that has addressed the issue of earning management and audit committee effectiveness was conducted by Laux and Laux (2009). In their model, they showed that the magnitude of earning management in the firm depends on both the CEO's level of manipulation and the audit committee's level of monitoring. They argued that there is a positive spillover effect of the pay-performance sensitivity of CEO compensation on the audit committee's incentive to engage in monitoring when the board's responsibilities for setting CEO pay (compensation committee) and monitoring (audit committee) are separated. Table 3 offers a summary of the post-SOX audit committee research that has focused on earnings management, earnings restatements, and accounting frauds.

[Insert Table 3]

4.4 Internal Control Weakness

According to SOX Sec. 302, managers must disclose all internal control problems. Sec. 404 states that managers must assess the effectiveness of internal control over financial reporting and that the attestation must be published in 10-Ks. Since the audit committee has power over managers and auditors, it can play a central role in remediation of internal control problems. In the pre-SOX period, it was difficult to determine the details of internal control weakness due to the unavailability of data. Therefore, in the pre-SOX period, researchers had almost no interest in the audit committee's effectiveness or internal control problems. As SOX mandated the disclosure of information, in the post-SOX period researchers have emphasized the investigation of how audit committee expertise influences identification, disclosure, and remediation of internal control weaknesses. Researchers have collected internal control disclosure data from 8-Ks and 10-Ks, as mandated by SOX Sec. 302 and Sec. 404.

In the only pre-SOX study, conducted after SOX but using pre-SOX data, Krishnan (2005) first addressed the issue of audit committee characteristics and their association with the incidence of internal control problems. Although information on the quality of internal control was not available in the pre-SOX period, companies that changed auditors were required to disclose internal control problems pointed out by the predecessor auditors. In this study, the author showed that independent and financial expert audit committees are significantly less likely to be associated with the incidence of internal control problems. By using post-SOX data, Zhang et al. (2007) extended Krishnan's (2005) investigation. They took advantage of the detailed information on internal control unleashed by SOX and constructed a bigger sample of firms with internal control problems from mandated disclosures in the firms' 10-Q and 10-K filings. They found that firms are more likely to be identified with an internal control weakness if their audit committees have less financial expertise, more specifically, less accounting financial expertise. In another post-SOX study, Hoitash et al. (2009) documented that a lower likelihood of disclosing Sec. 404 material weaknesses is associated with more audit committee members who have accounting and supervisory experience. More specifically, they found that accounting experts are associated with better control over processes directly related to financial reports, while supervisory experts are associated with better control over management processes. They also documented a positive association between number of audit committee meetings and material weaknesses. This contradicts prior findings reporting that more frequent meetings have a better impact (McMullen and Raghunandan, 1996; Beasley et al., 2000; Farber, 2006; Archambeault and DeZoort, 2001). They argued that more frequent meetings may be a reaction to the discovery of problems in internal controls, rather than increased diligence to ensure better control over financial reporting.

Using post-SOX data, Goh (2009) focused on audit committee expertise and the remediation of material weaknesses. He examined firms' timeliness in the remediation of material weaknesses on the basis of how fast the firms receive a subsequent unqualified SOX Sec. 404 opinion. The findings revealed that the proportion of audit committee members with financial expertise is positively associated with firms' timeliness in the remediation of material weaknesses. However, this result holds only for non-accounting financial expertise and not for accounting financial expertise. He also documented that firms with larger audit committees are more likely to take steps to remedy material weaknesses in a timely manner. Taken together, the findings shed light on the efficacy of SOX with regard to the composition of the audit committee. However, the study did not find a significant association between audit committee independence and material weaknesses.

Naiker and Sharma (2009) investigated whether affiliated former audit firm employees serving on the audit committee influence the quality of internal control. Though SOX does not directly address the appointment of former audit firm employees to a client's board of directors, the SEC imposes a three-year "cooling-off" period before a former audit firm employee is considered independent and able to serve on a client's board and subcommittee, including the audit committee. Based on a sample of 1,225 firms making SOX Sec. 404 internal control disclosures, Naiker and Sharma (2009) showed a negative relationship between internal control deficiencies and the presence of former audit partners on the audit committee who are affiliated and unaffiliated with the firm's external auditor. This result suggests that imposing restrictions such as the three-year "cooling-off" period on appointing qualified and experienced experts affiliated with former audit partners to the audit committee inhibits the SOX objective of enhancing the audit committee's oversight of internal control over financial reporting; it also suggests that there is no adverse "revolving-door" effect of former audit partners’ being appointed to the audit committee. In another archival study, Johnstone et al. (2011) provided a significant extension of contemporaneous research on internal control remediation, particularly in terms of closely related studies by Goh (2009) and Li et al. (2010). However, unlike Goh (2009), their results showed that improvement in audit committee influence, competence, and incentives is positively associated with internal control material weakness remediation. Table 4 summarizes post-SOX audit committee studies that have focused on internal control problems.

[Insert Table 4]

4.5 Other Post-SOX Audit Committee Studies

Researchers have established that reporting quality is positively associated with audit committees’ accounting financial expertise. However, even after SOX implementation, most audit committee financial experts have non-accounting financial expertise (DeFond et al., 2005; Davidson et al., 2004). Using post-SOX data, Krishnan and Lee (2009) examined the determinants of firms’ choices of accounting and non-accounting financial experts on audit committees. They found that firms with higher litigation risks are more likely to have accounting financial experts on their audit committee. In a post-SOX study, Beasley et al. (2009) provided extensive information about the audit committee oversight process obtained from in-depth interviews of 42 individuals actively serving on audit committees. In their survey, the authors found that audit committee members strive to provide effective monitoring of financial reporting and seek to avoid serving on ceremonial audit committees. They also found that many responses varied with time of appointment (pre-SOX versus post-SOX) of the audit committee members.

Defond et al. (2005) investigated market reactions to the appointment of financial expert audit committee members. Because it is controversial whether SOX should define financial experts narrowly to just include accounting financial experts (as initially proposed) or more broadly to include non-accounting financial experts (as ultimately passed), Defond et al. (2005) separately examined the appointments of each type of expert. They found a positive market reaction (three-day cumulative abnormal returns) to the appointment of accounting financial experts to the audit committee but no reaction to the appointment of non-accounting financial experts. Davidson et al. (2004) conducted a similar study and documented a positive stock price reaction when new members of the audit committee have more financial expertise. In another post-SOX study, Ronen and Berman (2004) argued that although SOX significantly enhances the role of audit committees it fails to address the major financial scandal problems, such as agency cost and management entrenchment. In their survey study, they argued that audit committee members' independence is just a myth since regulatory mechanisms impose penalties ex-post, and ex-post mechanisms are nowhere as effective as ex-ante mechanisms.

After implementation of SOX, researchers addressed some new issues, such as how earnings forecasts, cost of debt, and interactions among different committees are linked to audit committee composition criteria. However, several researchers used pre-SOX data while investigating these new issues. For example, by using pre-SOX data, Dey (2008) showed that firms with a higher level of agency conflicts have higher audit committee independence and expertise. By using pre-SOX data, Gendron and Bedard (2006) documented that audit committee effectiveness depends on the background of audit committee members, ceremonial features of audit committee meetings, and reflective interpretations of substantive practices and activities taking place during the meetings. DeZoort (2008) argued that experienced audit committee members make more consistent judgments and provide more technical content in reporting. Vafeas (2001) explained how the likelihood of audit committee appointment increases with the degree of outside director independence and decreases with compensation committee membership and length of board tenure. Beasley and Salterio (2002) reported that inclusion of more outside directors on the audit committee than the mandated minimum is associated with a larger and more independent board. In another study, by using pre-SOX data, Karamanou and Vafeas (2005) found that firms with effective audit committees are more likely to make or update earnings forecasts; their forecasts are also more accurate and elicit a more favorable market response. Anderson et al. (2004) found that fully independent audit committees are associated with a significantly lower cost of debt financing. Thus, after the implementation of SOX, researchers expanded the literature addressing new issues derived from SOX. However, in most cases the authors used pre-SOX data. Even so, one can assume that the findings would not differ significantly if the authors of those studies had used post-SOX data. Table 5 summarizes other post-SOX audit committee studies that are not discussed in previous sections.

[Insert Table 5]

5.0 Concluding Remarks

Overall, the audit committee literature is extensive and contributes an enormous body of knowledge. The arguments and findings established by the pre- and post-SOX researchers are reasonably consistent. However, in the post-SOX period, researchers have investigated new research issues that are mostly driven by SOX. These issues include the role of the audit committee in the firm's internal control weaknesses, the role of financial accounting expert audit committee members in limiting misreporting, and market reactions to the appointment of expert audit committee members, among others. This literature review examines the conjecture, documented in both the pre- and post-SOX eras, that audit committee independence and expertise increase audit committee effectiveness. However, the definitions of independence and expertise given in SOX are narrow and insufficient to accomplish the goals of the oversight process. The SEC has published its own rule that defines audit committee expertise in a more elaborate manner. In the post-SOX era, researchers have differentiated the types of expertise and demonstrated how different expertise (e.g., financial, supervisory, accounting, non-accounting, industry) differently affect the audit committee's monitoring process. These studies have reported that type of expertise matters in audit committees' oversight process, which implies a limitation of SOX regarding the definition of audit committee expertise. Further studies may address how the expertise and independence of audit committees differ in regulated versus unregulated industries.

The relevant dominance of archival and experimental research in the post-SOX era suggests the need for more theoretical approaches that strengthen the underlying assumptions of audit committee composition and the committee's effectiveness with regard to the monitoring process. Another potential area of future research is audit committee compensation criteria.

Though in post-SOX literature, researchers have addressed how different forms of compensation affect audit committees' monitoring processes, the findings are inconclusive. Future research should focus on how compensation interacts with other attributes of audit committees and what forms of compensation interact with independence and expertise to make audit committees most effective.

The audit committee is an effective corporate governance mechanism. However, the power of the audit committee can be affected by other governance players, such as the board of directors and institutional investors. Future studies should highlight how the audit committee interacts with the board of directors and acts as a complement to the governance process. Since the board empowers and selects the audit committee, strong board support is a requisite for audit committee effectiveness. Researchers can inspect how the audit committee's reliance on the board varies and how it is associated with the audit committee's monitoring process. Another future research area might be the interactions between management and the audit committee in the post-SOX environment. Since it is difficult to observe management-audit committee interaction, controlled experiments may help to investigate how SOX requirements increase audit committee activities in terms of audit committee interaction with required parties. Future research can investigate whether the ability to attract competent and expert audit committee members varies with company characteristics such as company reputation, size, agency conflicts, and audit committee compensation policy, among others. Future research can also examine how other regulatory reforms interact with SOX and influence audit committee effectiveness.

Although in the post-SOX era researchers have extended the audit committee literature, the generalizability of post-SOX audit committee research needs to be assessed. Almost all studies have been conducted in the U.S. context. Future research should focus on international settings to investigate whether the findings hold where different regulatory requirements like SOX are in effect. In such settings, one can examine whether cultural and economic differences affect audit committee composition and effectiveness or whether the findings vary due to act-specific criteria. Last, but not least, this study suggests the need to investigate two fundamental questions: To what extent is SOX successful in empowering audit committees? Is the role of the audit committee a myth, as claimed by some researchers?

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Exhibit 1

Timeline of Audit Committee Research:

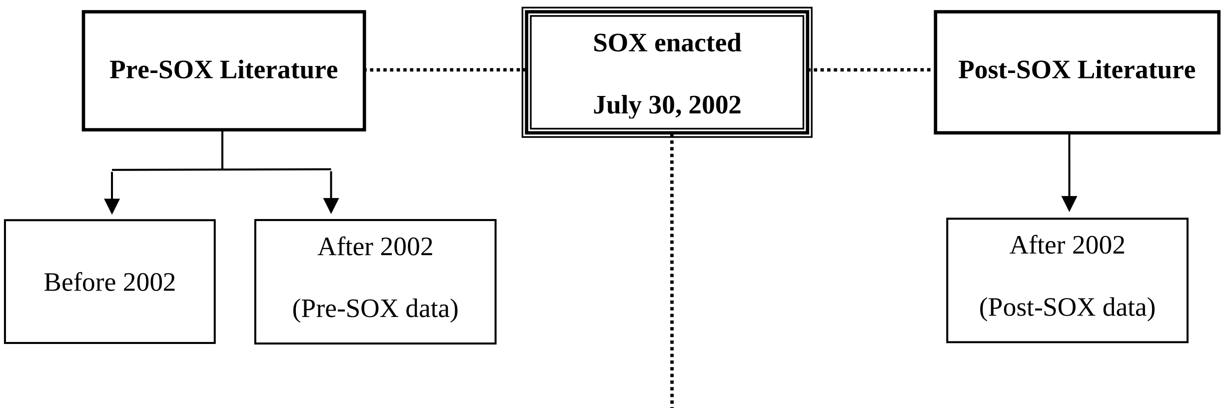

Exhibit 2

Classification of Post-SOX Audit Committee Research

Post-SOX Audit Committee Literature

Internal and External Audit Quality

1) Audit committee Composition
   - a) Independence (+)
   - b) Expertise (+)
2) Multiple directorships (-)
3) Audit Committee Compensation (+)
4) Audit Committee Effectiveness (+)

Financial Reporting Process Quality

1) Audit committee Composition
   - a) Independence (+)
   - b) Expertise (+)
2) Audit Committee Compensation
   - a) Cash (?)
   - b) Equity (+)

Internal Control

1) Audit committee Expertise
   - a) Accounting expertise (+)
   - b) Supervisory expertise (?)
2) Audit Committee Affiliations (-)

Less Earnings Management

1) Audit committee Composition
   - a) Independence (+)
   - b) Expertise (+)
2) Audit Committee Effectiveness (+)

Other (litigation risk, market reaction)

1) Audit committee Expertise (+)
2) Audit Committee Oversight Process (+)

Exhibit 3

The SOX Act and the Domain of Post-SOX Audit Committee Literature

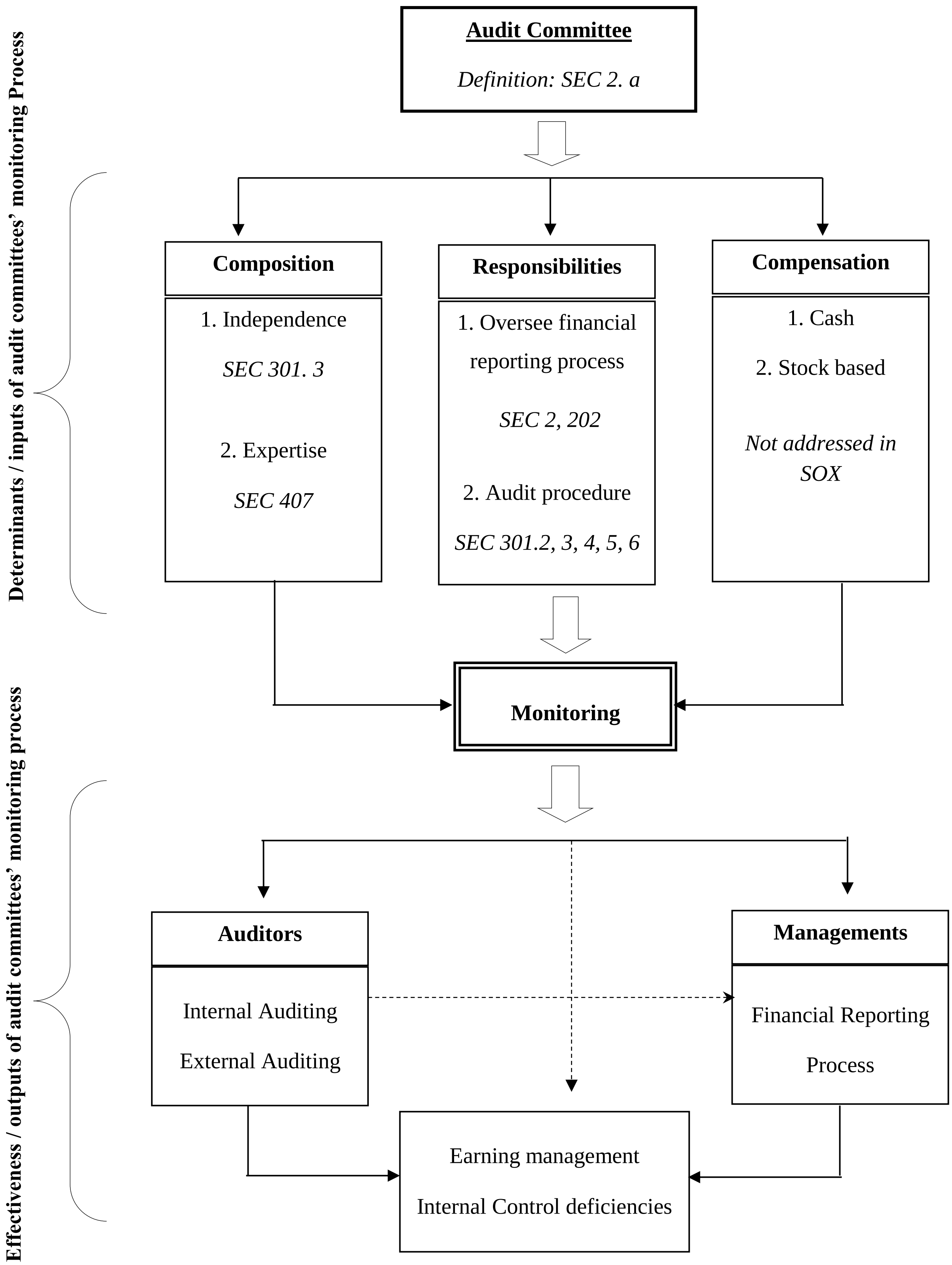

Exhibit 4

Selected Post-SOX Audit Committee Studies

1. *"Musings on Post-Enron Reforms"* **Ronen and Berman (2004),** Journal of Accounting, Auditing and Finance
2. *"Does the market value financial expertise on audit committees of boards of directors?"* **Defond, Hann and Hu (2005),** Journal of Accounting Research
3. *"The effects of joint provision and disclosure of non-audit services on audit committee members' decisions and investors preferences"* **Gaynor, McDaniel and Neal (2006)**, The Accounting Review
4. *"Audit committee quality, auditor independence, and internal control weaknesses"* **Zhang, Zhou and Zhou (2007),** Journal of Accounting and Public Policy
5. *"The impact of corporate governance on Internet financial reporting"* **Kelton and Yang (2008),** Journal of Accounting and Public Policy
6. *"Can directors' self-interests influence accounting choices?"* **Hunton and Rose (2008),** Accounting, Organizations and Society
7. *"The audit committee oversight process"* **Basely, Carcello, Hermanson and Neal (2009),** Contemporary Accounting Research
8. *"Audit Committees, Boards of Directors and Remediation of Material Weaknesses in Internal Control"* **Goh (2009),** Contemporary Accounting Research
9. *"Audit committee financial expertise, litigation risk and corporate governance"* **Krishnan and Lee (2009),** Auditing: A Journal of Practice & Theory
10. *"Audit fees at U.S. non-profit organizations",* **Vermeer, Raghunandan and Forgione (2009),** Auditing: A Journal of Practice & Theory
11. *"Corporate governance and internal control over financial reporting: A comparison of regulatory regimes"* **Hoitash, Hoitash and Bedard (2009),** The Accounting Review

12. *"Board committee, CEO compensation and earning management"* **Laux and Laux (2009),** The Accounting Review
13. *"Are Independent Audit Committee Members Objective? Experimental Evidence"* **Magilke, Mayhew and Pike (2009),** The Accounting Review
14. *"Former audit partners on the audit committee and internal control deficiencies"* **Naiker and Sharma (2009),** The Accounting Review
15. *"Reporting bias with an audit committee"* **Caskey, Nagar& Petacchi (2010),** The Accounting Review
16. *"Audit committee compensation and the demand for monitoring of the financial reporting process"* **Engel, Hayes and Wang (2010),** Journal of Accounting and Economics
17. *"Audit committee member investigation of significant accounting decisions"* **Pomeroy (2010),** Auditing: A Journal of Practice &Theory
18. *"The association between audit committee industry expertise and financial restatements"* **Cohen, Hoitash, Krishnamoorthry and Wright (2010),** Working Paper
19. *"Social connections, stock-based compensation and director oversight"* **Dey and Liu (2010),** Working Paper
20. *"The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees"* **Dhaliwal, Naiker and Navissi (2010),** Contemporary Accounting Research
21. *"Audit committee characteristics and investment in internal auditing"* **Baura, Rama and Sharma (2010),** Journal of Accounting and Public Policy
22. *"Corporate Governance in the post Sarbanes-Oxley Era: Auditors' experience"* **Cohen, Krishnamoorthy and Wright (2010),** Contemporary Accounting Research

23. *“The effects of disclosure type and audit committee expertise on Chief Audit Executives’ tolerance for financial misstatements”* **Norman, Rose and Suh (2011)**, Accounting, Organization and Society

24. *“Changes in corporate governance associated with the revelation of internal control material weaknesses and their subsequent remediation”* **Johnstone, Li and Rupley (2011),** Contemporary Accounting Research

25. *“The impact on auditor judgments of CEO influence on audit committee independence and management incentives”* **Cohen, Gaynor, Krishnamoorthy and Wright (2011),** Auditing: A Journal of Practice & Theory

26. *“Reputation concerns and herd behavior of audit committees: A corporate governance problem”* **Schondube-Pirchegger and Schondube (2011),** Journal of Accounting and Public Policy

27. *“The effect of past client relationship and strength of the audit committee on auditor negotiations”* **Brown-Liburd and Wright (2011),** Auditing

28. *“Audit committee equity holdings, the risk of reporting problems and the achievement of earnings thresholds”* **MacGregor (2012)**, Journal of Accounting and Public Policy

29. *“Audit committee compensation, fairness and the resolution of accounting disagreements”* **Bierstaker, Cohen, DeZoort and Hermanson (2012),** Auditing

Table 1: Post-SOX Audit Committee Literature focusing on Auditing

Authors	Journal	Domain	Method	Sample	Time period	Dependent variable	Independent variable	Results	Limitations / Future research
Hunton and Rose (2008)	AOS	Auditor's recommendation and multiple directorship	Experiment	88 Audit committee members	2004 - 2005	Agreement with auditor proposed adjustments	Audit Issue, Director status	Audit committee members are less likely to accept auditor's restatement recommendation than adjustment recommendations. Directors with multiple directorships are less willing to support restatements due to the potential adverse effects on their reputation.	N/A
Pomeroy (2010)	Auditing	Auditor – management negotiation for accounting decisions and audit committee's expertise	Experiment	77 Business professionals	2004 - 2005	Audit committee members' comfort	Audit committee members' knowledge	Audit committee members investigate more extensively as accounting decisions become increasingly aggressive and audit committee members with accounting experience are particularly through their investigations	Sample does not consist completely of corporate directors, binary variable to examine experience may be criticized as subjective
Vermeer, Raghunandan and Forgione (2009)	Auditing	Complement of auditing and audit committee effectiveness	Archival	125 largest non-profit organization	2003	Audit fees	Donation, debt, size, asset, audit committee independence	Good audit committee and internal audit are complement not substitute for monitoring external auditors	Future research can test whether the audit fee model applies to smaller non-profits

Authors	Journal	Domain	Method	Sample	Time period	Dependent variable	Independent variable	Results	Limitations / Future research
Engel, Hayes and Wang (2010)	JAE	Audit fees and audit committee's compensation	Archival	Random firm ExecuComp (3,295 firm-year)	2000-2004	Audit committee compensation (cash, stock, fees, option)	Audit fees, meeting, expertise, size, leverage	Total compensation and cash retainers paid to audit committees are positively correlated with audit fees and the impact of the Sarbanes-Oxley	Future research – how compensation incentives interact with reputation incentives to impact effectiveness of the audit committees in monitoring financial reporting.
Gaynor, McDaniel and Neal (2006)	TAR	Audit and non-audit service	Experiment	100 corporate directors	2003	Whether Audit committee members provide non-audit service	Joint provision of non-audit will improve audit quality, disclosure	The pre-approval decision for joint (audit & non-audit) service provision is influenced by whether the audit committee believes audit quality improves. Audit committees are less likely to approve joint service provision when public disclosures are required.	Future research could be to examine the types of risks audit committees view as associated with fees disclosure.

Authors	Journal	Domain	Method	Sample	Time period	Dependent variable	Independent variable	Results	Limitations / Future research
Cohen, Krishnamoorthy and Wright (2010)	CAR	Audit committee effectiveness	Semi-structured survey based experiment	30 experienced audit partners and manages	2006	N/A	N/A	Corporate governance environment has improved considerably in the post-SOX era with audit committees that are substantially more active, diligent, knowledgeable, and powerful.	Future research can examine how the litigation regime in various countries potentially affects the role that audit committees play
Norman, Rose and Suh (2011)	AOS	Audit committee expertise	Experiment	73 Chief Audit Executives and deputy Chief Audit Executives	2006	N/A	N/A	The results do not indicate that increased audit committee expertise and associated increases in audit committee members' perceived powers cause internal auditors to be less willing to waive misstatements.	N/A
Bierstaker, Cohen, DeZoort and Hermanson (2012)	Auditing	Audit committee compensation and accounting disagreement	Experiment	56 public company audit committee members	N/A	Whether audit committee members support for the auditor / management in accounting disagreement	Short term compensation, long term compensation, fairness, no. of years served in the committee,	Audit committee members are more likely to support the auditor in an accounting disagreement when audit committee compensation includes long-term stock options and when members perceive that the failure to record the auditor's adjustment is less fair to shareholders.	Future study should look which component of fairness explain committee member's decision to support/oppose auditor management negotiations.

Authors	Journal	Domain	Method	Sample	Time period	Dependent variable	Independent variable	Results	Limitations / Future research
Schondube -Pirchegger and Schondube (2011)	JAPP	Reputation concerns and herd behavior of audit committee	Modeling					A herding equilibrium exists in which the audit committee ‘‘herds’’ and follows the auditor’s judgment no matter what its own insights suggest.	N/A
Brown-Liburd and Wright (2011)	Auditing	Past client relationship	Experiment	42 audit managers and 21 audit partners	N/A	How extreme auditor’s first offer is, as compared to preferred write-down	Audit committee strength, past negotiation relationship	Auditors are contending when both the audit committee is strong and the past relationship is contending.	Future research can examine the extent to which auditors are adaptive in the choice of negotiation.
Baura, Rama and Sharma (2010)	JAPP	Audit committee expertise	Archival	181 firms	2001 - 2003	Log of the internal audit budget	Total assets, debt, inventory, operating cash flow, audit fees, restatement, no. of audit committee member, tenure and expertise of audit committee	The investment in internal auditing is negatively related to the presence of auditing experts on the committee and the average tenure of audit committee members, but positively related to the number of audit committee meetings (a proxy for audit committee diligence).	

Table 2: Post-SOX Audit Committee Literature focusing on Financial Reporting Quality

Authors	Journal	Domain	Method	Sample	Time period	Dependent variables	Independent variables	Results	Limitations / Future research
Kelton and Yang (2008)	JAPP	Internet Financial Reporting and Audit committee Expertise, audit committee diligence	Archival	284 firms listed in NASDAQ	2003	Content, presentation format, governance disclosure	Governance index, financial expertise, number of meetings	Firms with a diligent audit committee and a higher percentage of audit committee members with financial expertise are more likely to engage in Internet financial reporting which reflects reporting quality and disclosure transparency	Future research could examine whether different audit committee expertise are also associated with various criteria of IFR, such as information quality and reporting frequency.
Caskey, Nagar and Petacchi (2010)	TAR	Financial Reporting bias of Audit committee	Modeling					From audit committee's perspective, the manager's financial reporting bias is a source of noise. The audit committee attempts to remove this noise, but then presents its report with its own bias.	N/A
Magilke, Mayhew and Pike (2009)	TAR	Financial Reporting bias and Audit committee stock compensation	Experiment	Student participants	2005	Current or Future stock based compensation	Reporting accuracy, bonus paid to committee	Audit committee members compensated with current stock-based compensation prefer aggressive reporting and audit committee members compensated with future stock-based compensation prefer overly conservative reporting	The major limitation- audit committees make decisions as a group not as individual, they suppress liability-based incentives and the interaction between committee and auditor

Authors	Journal	Domain	Method	Sample	Time period	Dependent variables	Independent variables	Results	Limitations / Future research
Dey and Liu (2010)	Working Paper	Financial Reporting quality and Audit committee Independence and Compensation	Archival	210 firms, 2,238 firm year, 20,791 director year	1996 - 2006	ROA, Excess return, accrual quality, restatement or not	Investment by CEO, size, return, operating volatility, independent director	Firms with increases in independent audit committee directors with social and professional connections to the firm's CEO are associated with lower operating performance and poorer financial reporting quality. Financial reporting quality increases with audit committee's stock based compensation.	The study cannot completely mimic SOX definition of audit committee independence due to data limitations
Engel, Hayes and Wang (2010)	JAE	Audit fees and audit committee's compensation	Archival	Random firm ExecuComp (3,295 firm-year)	2000-2004	Audit committee compensation (cash, stock, fees, option)	Audit fees, meeting, expertise, size, leverage	There is positive relation between audit committee compensation and the demand for monitoring of the financial reporting process. Total compensation and cash retainers paid to audit committees are positively correlated with audit fees.	Future research can investigate how compensation incentives interact with reputation incentives to impact the effectiveness of the audit committees in monitoring financial reporting.
MacGregor (2012)	JAAP	Audit committee incentives and achievement of earnings threshold	Archival	1370 and 2389 firm-observations for two sets of analysis	2000 - 2003	Meet earnings threshold	Audit committee equity holding, size, tenure, interaction terms	Equity holdings enhance audit committee effectiveness by increasing a committee’s responsiveness to risk factors.	Future studies - how social relation between audit committee and executives influence committee’s decisions.

Table 3: Post-SOX Audit Committee Literature focusing on Earning Management and Accounting Frauds

Authors	Journal	Domain	Method	Sample	Time period	Dependent variable	Independent variable	Results	Limitations / Future research
Laux and Laux (2009)	TAR	Audit committee effectiveness	Modeling					The increase in CEO equity incentives does not necessarily lead to a higher level of earning management because the audit committee will adjust its oversight effort in response to a change in CEO incentives.	N/A
Cohen, Gaynor, Krishnamoorthy and Wright (2011)	Auditing	CEO influence on Audit committee	Experimental	65 auditors	2008	Audit adjustment	CEO influence on audit committee independence (high vs. low)	When management's incentives for earning management are high, auditors are less likely to waive as much of an adjustments when the CEO has less influence over the audit committee's independence than when the CEO's influence is greater.	Future study could examine how auditors trade-off audit committee independence and financial as well as industry expertise in resolving difficult reporting issues
Cohen, Hoitash, Krishnamoorthy and Wright (2010)	Working Paper	Audit Committee Industry Expertise	Archival	606 public limited firms, 2,584 audit committee members	2005	Company announces financial restatements	Industry expert, financial expert, size of committee, independence, board criteria	A significant lower likelihood of restatement is found when the audit committee has an industry expert. Both industry expertise and accounting or supervisory financial expertise contributes to lower likelihood of restatement.	Future research can employ experimental methods to determine the accounting issues and risk assessments that would benefit from audit committee industry expertise

Authors	Journal	Domain	Method	Sample	Time period	Dependent variable	Independent variable	Results	Limitations / Future research
Dhaliwal, Naiker and Navissi (2010)	CAR	Accruals quality and Audit committee expertise and independence	Archival		2004 - 2006	Accrual quality	Accounting expertise, non accounting expertise, independence, multiple directorship	A positive relationship exists between accruals quality and audit committee accounting experts who are independent, hold fewer multiple directorship and have lower tenure in their firms. The most positive effect of accounting expertise is achieved when it is combined with finance expertise whereas supervisory expertise has no incremental impact on committee's effectiveness.	Limitations – the study rely on the historical employment data of directors disclosed by firms. The results may be biased by the extent of historical employment coverage. The accruals quality may be affected by other requirements of SOX during the sample period.

Table 4: Post-SOX Audit Committee Literature focusing on Internal Control Weakness

Authors	Journal	Domain	Method	Sample	Time period	Dependent variables	Independent variables	Results	Limitations / Future Research
Goh (2009)	CAR	Remediation of material weaknesses and Audit committee Expertise	Archival	208 firms with Material Weakness	2003 - 2004	Firms remediates MW with first / second SOX 404	Independence, expertise, size of committee, no. of meeting, board criteria	Positive relation is found between non-accounting financial expertise and timeliness in the redemption of material weaknesses. Firms with larger audit committees are more likely to remediate material weaknesses in a timely manner.	The sample in this study comprises firms with material weaknesses and may thus be biased in favor of firms with relatively ineffective audit committees.
Zhang, Zhou and Zhou (2007)	JAPP	Audit committee Financial Expertise	Archival	208 firms with Material Weakness	2004	Conditional probability of internal control weaknesses	Expertise, Independence, auditor, acquisition, restructure	Firms are more likely to be identified with an internal control weakness, if audit committees have less financial expertise or, have less accounting financial expertise and non-accounting financial expertise. They are more likely to be identified with an internal control weakness, if the audit committee members are more independent.	N/A

Authors	Journal	Domain	Method	Sample	Time period	Dependent variables	Independent variables	Results	Limitations / Future Research
Hoitash, Hoitash and Bedard (2009)	TAR	Disclosure of material weakness and Audit committee Experience	Archival	5,480 firm year, 19,673 audit committee members	2004 - 2006	Disclosure of material weaknesses	Financial and supervisory expertise, committee size, meeting, board	Lower likelihood of disclosing 404 material weaknesses is associated with relatively more audit committee members having accounting and supervisory experience. The nature of material weaknesses varies with the type of experience. A positive association exists between the number of audit committee meetings and material weaknesses.	They assess the association of audit committee expertise with internal control in two years after implementation of SOX. Future research should investigate it in subsequent periods, as companies take time to adapt regulatory change.
Naiker and Sharma (2009)	TAR	Audit committee affiliation	Archival	1,225 firms	2004	Disclosure of internal control deficiencies	Audit committee affiliation with past /current auditor, expertise, independence, meeting, size	A negative relation exists between internal control deficiencies and presence of former audit partners on the committee who are affiliated and unaffiliated with firm's external auditor. Imposing restrictions of three years "cooling-off" rule inhibits SOX's objective to appoint expert committee members.	Due to lack of data, they are unable to test whether former audit partners who actually worked on the audit of a client are as effective as former audit partners who have not worked on the audit of the client.

Authors	Journal	Domain	Method	Sample	Time period	Dependent variables	Independent variables	Results	Limitations / Future Research
Johnstone, Li and Rupley (2011)	CAR	Audit committee effectiveness	Archival	868 firms	2004 - 2007	Internal control remediation	Audit committee and board members turnover, change in firm characteristics, nature and extent of internal control problem	Improvements in audit committee influence, competence and incentives are each positively associated with internal control material weaknesses remediation.	Limitations - there is a possibility that ICMW remediation and changes in governance factors may be simultaneously driven by other factors.

Table 5: Other Post-SOX Audit Committee Literature

Authors	Journal	Domain	Method	Sample	Time period	Dependent variables	Independent variables	Results	Limitations / Future Research
Krishnan and Lee (2009)	Auditing	Litigation risk and Audit committee Expertise	Archival	Fortune 1000 firms	2004	Financial expert on audit committee	Litigation risk, governance index, , board size, holding by institutional independence,	Firms with higher litigation risk are more likely to have accounting financial experts on their audit committee. However, the association between litigation risk and the likelihood of appointing accounting financial experts occurs for firms with strong governance but not for those with weak governance.	Limitations – the sample consists of Fortune 1000 companies. So the results may not be generalizable to the population of other firms.
Defond, Hann and Hu (2005)	JAR	Market reaction & audit committee expertise	Archival	509 firms and 702 audit committee members	2002	Three-days cumulative abnormal returns	Financial expertise of audit committee, other governance attributes	Positive market reaction exists between appointment of accounting financial experts to audit committee but no reaction to non-accounting financial experts assigned to audit committee	N/A

Authors	Journal	Domain	Method	Sample	Time period	Dependent variables	Independent variables	Results	Limitations / Future Research
Beasley, Carcello, Hermanson and Neal (2009)	CAR	Audit Committee oversight process	Survey	42 Audit committee members	2004 - 2005			Many audit committee members strive to provide effective monitoring of financial reporting and seek to avoid serving on ceremonial audit committees.	Future research could be to find what factors improves audit committee's ability to identify and respond to high risk fraud condition.
Ronen and Berman (2004)	JAAF	SOX and audit committee effectiveness	Descriptive		2003			Audit committee member's independence is a myth which cannot be easily made to happen. SOX has failed to address the major financial scandal problem - such as agency cost and management entrenchment problem,	N/A