LITERATURE REVIEW

Internal Control Quality and Audit Quality

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KEY TAKE-AWAYS

This literature review highlights the role of internal controls in the audit process. We find that internal controls are of high economic importance for both the auditor and the client firm, as audit failure has severe consequences on both sides. In general, auditors can reduce the negative effects of weak internal controls on corporate financial reporting quality through increasing audit effort, which is associated with an increase in audit fees. However, increased effort does not fully preclude financial misstatements, i.e., a substantial risk of financial misstatement remains. While the reasons for this are not fully clear, the audit of internal controls is an extremely complex matter. In addition, auditors are subject to significant time and personnel constraints during the audit. This leads us to believe that the use of additional sources of private information on internal control quality could have strong positive consequences for both the auditor and, subsequently, the client firm. We suggest that financial analysts, their discussions during earnings conference calls and the…

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1. Introduction: Internal Controls and the Audit Process

The relevance of internal control quality for the audit process is well documented (Chalmers et al. 2019; DeFond and Zhang 2014; Hogan and Wilkins 2008). Several regulations concerning the audit of internal controls were put into place after the large accounting scandals of firms such as Enron or WorldCom in the early 2000s, primarily the *Sarbanes-Oxley Act (SOX)*. SOX section 404 introduced the mandatory audit of a firm's internal control system by the auditor. This follows the logic that the auditor needs to ensure that the client's internal control system is working well before relying on the results of this system. The *Public Company Accounting Oversight Board (PCAOB)* has a similar understanding of the role of internal control quality during the audit. Following the PCAOB's Audit Risk Model (PCAOB 2010), the auditor first assesses the joint risk of misstatement induced by the firm's inherent risk and the risk that weak internal controls do not prevent or correct a misstatement. While the auditor may rely on strong internal controls during testing, weak internal controls need to be compensated by additional auditor effort. Similarly, International Standard on Auditing (ISA) 315 states that the auditor should have a thorough understanding of the firm's internal controls in order to assess the risk of material misstatement. ISA 330 requires the auditor to obtain more audit evidence if misstatement risk for a specific control has been assessed as high. In theory, this process should lead to a risk of misstatement that the auditor can set at a given level through careful assessment of control risk and subsequent choice of audit effort.

However, among others, Hoag and Hollingsworth (2011) and Hogan and Wilkins (2008) have found that firms with weak internal control systems generally have lower quality audits. When auditors find material weaknesses in internal controls (ICMW),

the likelihood of a restatement in the next years is higher than it is for comparable firms without such a weakness.

These findings illustrate that internal control quality is a complex topic and of high relevance for auditors and management alike. When auditors do not manage to prevent serious misstatements, they may face consequences such as reputational damage, being fired by their client (Mande and Son 2013), and litigation (Hennes et al. 2014). However, despite the topic's importance, there is a lack of studies which examine the overall impact of internal control quality on audit quality. This is likely due to the complex constructs involved in the audit process and the difficulties in measuring these constructs using public data. The measurement error induced by the use of such data would quickly add up over the course of subsequent analyses. In contrast, the data provided by the *Foundation for Auditing Research (FAR)* allow us to construct much more precise variables and analyze the entire audit process with low measurement error.

This document provides an overview of literature on the association between internal control quality and audit quality. First, we examine the existence and relevance of internal control weaknesses in firms. Second, we characterize auditor's assessment of internal controls and the consequences of audit failure for both the auditor and the client firm. Finally, we analyze the role of financial analysts as a potential information source for auditors to assess the quality of firms' internal control systems.

2. Consequences of Weak Internal Controls for Firms

Extensive work has been done on the role of internal control weaknesses in firms. In general, internal control systems are meant to ensure that the firm will reach its objectives through an efficient accounting system and clear control procedures (COSO 2013). In particular, internal control over financial reporting ensures that a firm's

financial statements are accurate and free of errors. Following DeFond and Zhang (2014), internal controls play an important role in maintaining investor trust in financial markets.

If a firm's internal control system is weak, due to either erroneous conception or inefficient execution, the likelihood of fraud and misstatements increases. This has consequences for both the firm and its investors. Literature in the field has produced strong evidence that weak internal control systems negatively affect both the firm's operations and its performance on capital markets.

Within the firm, internal investment efficiency is lower when internal controls are weak, suggesting that lower information quality hinders efficient decision-making and allocation of capital. Sun (2016) examines firm investment levels following the disclosure of internal control weaknesses. The author's results provide evidence that the firm's operations are directly affected by weak internal controls. Following ICMW disclosure, firms invest significantly less; once control weaknesses are solved, investment levels increase again. Cheng et al. (2013) find similar evidence on firms' investment efficiency after the disclosure of ICMWs. They find that, dependent on financial constraints, firms overinvest or underinvest in the year leading up to ICMW disclosure, and that this misallocation disappears in the years afterwards. Brown et al. (2014) provide evidence that increased earnings quality leads to more efficient capital investment. They show that a mandatory increase in internal control quality increases the timeliness of loss recognition and reduces earnings smoothing, increasing investment efficiency.

On a more fundamental level, Feng et al. (2015) investigate the effect of weak internal control over financial reporting on firm operations. The authors find that firms with inventory-related ICMWs have lower inventory turnover and report more

inventory impairments. In addition, remediation of such ICMWs increases operational performance, as turnover, sales, and gross margins improve. The authors interpret these results as strong evidence that effective internal control over financial reporting has an economically significant positive effect on a firm's operations and profitability.

Taken together, these results suggest that firms have strong economic incentives to a) have effective internal control and b) discover and remediate any weakness as fast as possible in order to maintain efficient operations.

In addition, weak controls increase the investment risk for *outside* investors, as the firm's performance becomes more difficult to assess. In general, the disclosure of internal control weaknesses informs investors that the firm's financial reporting quality is low (Beneish et al. 2008). Ashbaugh-Skaife et al. (2009) examine market reactions to disclosure of internal control deficiencies (ICDs)[1]. Such deficiencies increase information risk for investors because weak internal controls signal a lower credibility of financial statement information. Consequently, the authors find a significant increase in cost of equity for firms with ICDs. Similarly, Li et al. (2016) examine the market valuation of firms with internal control weaknesses and find that such firms have a valuation that is lower by 13% on average. This is mainly driven by underperformance in the year leading up to the disclosure, again suggesting that firms' operations are negatively affected by weak internal controls. The authors interpret their result as evidence that the market has already priced in the negative consequences of internal control weaknesses before they are disclosed, suggesting that investors are able to anticipate the disclosure of ICMWs after observing their negative consequences for operational efficiency. In contrast, Ogneva et al. (2007) find that the higher cost of

[1] Following the PCAOB's definition, ICDs exist when controls do not allow the timely prevention or detection of misstatements. In contrast, ICMWs are ICDs (or combinations of ICDs) which allow a *reasonable possibility* of a *material* misstatement.

equity for firms with ICMWs disappears when controlling for firm fundamentals and analyst forecast bias.

Ashbaugh-Skaife et al. (2008) analyze the accruals of firms that disclose internal control deficiencies and document how well these accruals relate to actual operating cash flows. Their results indicate that such firms have significantly lower accrual quality, and that this is likely a result of accidental misstatements and accounting errors rather than malicious behavior. In addition, remediation of internal control deficiencies leads to a "quick" increase in accrual quality. Li et al. (2008) find that an increase in accrual quality, driven by regulatory reforms, is valued by capital markets. A more direct negative effect of ICMWs is identified by Hammersley et al. (2008), who find a significantly negative return after ICMW disclosure, which they interpret as investor concern about the expenses needed to remediate the weakness.

While ample evidence exists that shareholders react to weak internal controls, the firm's cost of debt and relationship to banks are also affected. In response to the increased uncertainty of firms with ICMWs, banks may change the conditions of cooperation. For example, Costello and Wittenberg-Moerman (2011) use internal control deficiencies to analyze the association between financial reporting quality and debt contracting mechanisms. They find that lenders increase covenant tightness and monitor managerial behavior more closely when internal controls are weak. Similarly, El-Gazzar et al. (2011) analyze the effect of ICMW disclosure on corporate debt rating. The authors argue that ICMWs signal lower reliability and higher transparency risk to the rating agencies that use financial statement information to evaluate the firm's short and long-term solvency. Their results indicate that bond ratings decrease significantly following ICMW disclosure as firms are viewed as less reliable and more risky.

Overall, these results indicate that it is important for firms to have internal control systems of high quality, and that any deviations from a supposedly high quality are detected by the auditor. However, setting up and maintaining internal controls of high quality is costly. Thus, firms likely trade off the negative consequences of weak internal controls and the additional costs of paying auditors for an increase in audit effort.

3. Auditor Assessment of Internal Control Quality

In 2002, Section 404 of the Sarbanes-Oxley Act made the audit of internal controls mandatory. Both management and auditors are required to detect deficiencies in internal controls, i.e., flaws in design or operation of control systems that prevent the systems from preventing or detecting misstatements in a timely manner. Auditors are then required to disclose any deficiency, or combination of deficiencies, that constitute a material weakness, i.e., that introduce a reasonable possibility of a material misstatement (PCAOB 2010).

Depending on how reliable the auditor judges the firm's internal controls to be, the auditor needs to conduct more thorough and substantive tests of firm processes. The Audit Risk Model (PCAOB 2010) states that a firm's auditor should increase audit effort when internal control deficiencies are discovered. There exists ample evidence that this model is used in practice. Ruhnke and Schmidt (2014) provide evidence that auditors systematically adjust their processes in response to internal control quality. Hogan and Wilkins (2008) find that auditors increase audit fees when internal control deficiencies are present, and that this increase scales with the severity of the deficiency. Similarly, Raghunandan and Rama (2006) analyze the effect of introducing the Sarbanes-Oxley Act in 2004. They find that firms with internal control weaknesses paid significantly higher fees in 2004, but not in 2003. This suggests that auditors started adjusting audit

effort and fees when they were required to test internal controls. Hoitash et al. (2008) find similar results which they interpret as higher audit effort being required to audit firms with weak internal controls.

Previous literature has analyzed the effectiveness of internal control audits in the wake of SOX. The consensus is that, during the audit process, auditors find significantly more internal control weaknesses than the firm. Bedard and Graham (2011) use confidential auditor data to examine auditors' success rate in detection and disclosure of internal control deficiencies. They find that auditors detect significantly more deficiencies than firms, and that a significant number of deficiencies are misclassified in their severity by the client. This suggests that either a) auditors are better at finding severe control flaws or that b) firms seek to downplay the severity of their control problems. Auditors are also more likely to find severe deficiencies when they perform more substantive tests or commit more time to the testing process. Additionally, a significant number of deficiencies are detected even though no previous misstatement resulted from the control flaw in question, suggesting that the auditor is able to find deficiencies in internal control before they have materially affected the firm's financial statements.

Rice and Weber (2012) address the impact of firm and auditor incentives on ICMW detection and disclosure. The authors use a sample of restating firms which originally had misstatements due to ineffective control systems and analyze the conditions for reporting these control weaknesses. They find that higher audit fees increase the likelihood of a reported weakness, which is consistent with the notion that these fees represent higher effort. The authors also find that control weaknesses are more likely to be reported in years where management or auditor have changed, as both parties may deflect blame on their predecessors. These results underline the importance

of incentives to both detect and report control weaknesses. In summary, auditors are generally successful at detecting internal control weaknesses, even if the firm itself did not and the weakness did not result in a misstatement. Auditors also adjust their effort level in the presence of weaknesses and continue to do so for some time after remediation, suggesting that they view a past ICMW as a risk factor for future audits.

A shortcoming in this literature is the reliance on audit fees as a proxy for audit effort. Hogan and Wilkins (2008) acknowledge the possibility that increased audit fees reflect a risk premium that is not captured in their model. Indeed, Bae et al. (2020) find that in addition to higher audit effort, ICMWs also lead to a risk premium which might suggest a deadweight loss to the client. Similarly, the use of restatements or discretionary accruals as a measure of audit quality may lead to validity problems, since both variables are part of more complex constructs of which audit quality is only one aspect.

4. Consequences of Weak Internal Controls for the Audit Process

While the audit of internal controls is mandatory, it is also of high economic relevance for the auditor. The quality of internal control systems is an important input for auditors when assessing audit risk and planning audit effort. Low quality internal controls generally decrease the reliability of financial records (Ashbaugh-Skaife et al. 2008). If the auditor does not correctly assess the low quality of internal controls, the risk of material misstatements in audited financial statements increases, potentially leading to costly litigation and reputational damage. High quality internal controls, on the other hand, allow the auditor to rely on the results of internal control procedures and to allocate audit effort on more urgent matters. In either case, correct and efficient assessment of internal control quality has economic benefits for auditors.

Continuing research on the consequences of ICMWs for auditors, Hoag and Hollingsworth (2011) examine how internal control weaknesses and their remediation affects audit fees over several years. They find that the audit fee premium paid in the presence of control deficiencies is sticky even after the deficiency has been removed. The authors offer two explanations for this result: that audit firms are slow in adjusting their processes after control deficiencies have been remediated, or that firms with control deficiencies in the past still pose a higher risk to the auditor and thus are charged a premium. Blankley et al. (2012) provide further evidence that auditors increase their fees when internal control weaknesses are present. They find a highly significant fee premium of 30% for weak internal controls, which is interpreted as the result of additional audit effort. Bae et al. (2020) use more granular data to confirm that audit hours increase in the presence of ICMWs, signaling higher audit effort. In addition, the authors find a significant increase in audit fees per hour which can be viewed as a risk premium. Hoag and Hollingsworth (2011) also find an ICMW audit fee premium, which is significantly higher for entity-wide control weaknesses than for account-specific weaknesses. Overall, these findings suggest that auditor reaction to ICMWs is twofold: auditors increase their effort as mandated by the audit risk model, but also increase audit fees by a risk premium to factor in litigation risk. The stickiness of these fee premiums indicates that auditors do not expect firms to be able to solve internal control problems quickly. Munsif et al. (2011) confirm this finding as firms with ICMWs pay higher audit fees for an average of four years.

As outlined above, auditors generally find a substantial amount of ICMWs and adjust their processes accordingly, as mandated by the audit risk model. Consequently, the increased audit effort that results from the detection of an ICMW is expected to keep audit quality constant, that is, reduce the added risk of misstatement that arises from a control weakness. Blankley et al. (2012) provide some evidence for this relationship.

The authors find that the abnormal audit effort induced by internal control weaknesses is linked to a significantly lower likelihood of future restatements. Lobo and Zhao (2013) find that added audit fees, as a proxy for audit effort, have a positive effect on future reporting quality.

These results indicate that auditors are able to reduce the risk of future misstatements upon detecting weak internal controls. However, some evidence suggests that weak internal controls still have a negative effect on audit quality. Doyle et al. (2007) analyze the financial reporting quality of firms with internal control weaknesses and find that it is significantly lower. Firms with weak controls have higher discretionary accruals, lower accruals quality, and restate more often. In an audit context, this result suggests either that auditors did not adjust their effort level for firms with weak controls, or that they did not correctly assess these controls in the first place.

Chi and Sun (2014) examine the reoccurrence of restatements and find that it is less likely when firms improve their internal controls after issuing a restatement. This can be viewed as evidence that internal control quality influences audit quality.

In conclusion, literature on the consequences of weak internal controls for the audit shows that auditors are unable to fully prevent the negative results of ICMWs. While auditors adjust their effort and have a positive impact on reporting quality when an ICMW is detected, the likelihood of financial misstatements remains significantly higher. This is a problem of economic significance for both parties: The auditor runs the risk of costly litigation and client loss, and market reaction for firms with restatements is generally negative, implying real costs to the client (Palmrose et al. 2004).

5. The Information Role of Financial Analysts for the Auditor

The relevance of financial analysts as information intermediaries in the market has been well documented. Literature has provided ample evidence that financial analysts do not only summarize and distribute public information, but provide additional private information as well. For example, Brown et al. (1987) document that financial analysts are better than average at forecasting firm prospects, and Kross et al. (1990) find a general information advantage of analysts. More recent research suggests that analysts' access to management is an important factor in their information advantage relative to the market (Green et al. 2014). Consistently, Huang et al. (2014) provide evidence that financial analysts' reports provide information beyond contemporaneously released management information, which is valued by capital markets.

Hutton et al. (2012) suggest that financial analysts' unique working environment gives them an advantage above management as well. The authors find that financial analysts' forecasts are more accurate than management forecasts when macroeconomic factors are more relevant for the firm, while management generally has the upper hand concerning firm-specific information. This is consistent with the notion that financial analysts have expert knowledge concerning macroeconomic movement and uncertainty. This information advantage implies that financial analysts' reports can be useful for auditors, who gain their expert knowledge from management. In addition, Behn et al. (2008) suggest that analysts benefit from high audit quality as well: the authors show that analyst forecast accuracy is higher for firms audited by Big 4 auditors and auditors with higher industry specialization.

In the context of the auditing process, financial analysts may play an important informational role. Intuitively, financial analysts and auditors share core components of their work environment and their incentives. For both groups, understanding the firm

and its operations is critical for success. Following Hong and Kubik (2003), inaccurate forecasts increase the likelihood that an analyst is fired, while misstatements in audited financial statements can lead to litigation of the auditor, reputational damage, and loss of clients (Palmrose and Scholz 2000; Skinner and Srinivasan 2012). In addition, both groups have exclusive access to firm insiders: Financial analysts generate information from meetings with upper management, while auditors are able to inspect internal documents during the audit process. Consequently, it is reasonable that both groups can learn from each other. PCAOB AS 12 makes this connection explicit by stating that the work of financial analysts is one of the external information sources that auditors should make use of when assessing the risk of material misstatement. Similarly, AS 12 lists transcripts of earnings conference calls as valuable sources of information.

Some recent literature has examined this suggestion. Newton (2019) finds that the work of financial analysts is of value for auditors. The author interprets differences between auditor earnings expectations and analyst forecasts as an indicator of increased misstatement risk. In these cases, auditors increase effort which mitigates the increased risk. This result suggests that the information provided by financial analysts can be useful for auditors to get a better estimate of firm risk.

The use of analyst reports to assess a firm's inherent risk is supported both by regulatory and empirical evidence. However, comparatively little research has been done on analysts' usefulness in assessing control risk. Xu and Tang (2012) find that financial analysts' forecast precision decreases when firms disclose internal control weaknesses, and increases when these weaknesses are remediated. This suggests that, much like auditors, financial analysts have strong incentives to correctly assess the internal control quality of a firm they are following. Sarens and D'Onza (2016) interview financial analysts with regards to internal control systems. Their answers

indicate that the level of information inherent in mandatory disclosure is too vague for analysts, and that they prefer to understand a firm's internal control and fraud risk at a more fundamental level. This indicates that financial analysts likely have specific knowledge about firms' internal controls in excess of what these firms disclose in their annual statements.

Research on the use of conference call transcripts in the audit process is even more scarce. However, a recent string of literature has found evidence that earnings conference calls are informative about the firm, its performance, and potential risks it faces. Larcker and Zakolyukina (2012) use lists of words and sentiments in managers' speeches during conference calls to predict financial restatements. The authors argue that CEOs and CFOs likely know when financial statements are being manipulated, and that their choice of words is consequently affected. This manifests in more references to general knowledge, the use of fewer non-extreme positive emotion words, and fewer references to shareholder value. It stands to reason that auditors could use such a list of verbal criteria to increase the accuracy of their fraud risk assessment.

In addition to the information content of *what* is being said during conference calls, literature suggests that *how* it is said also matters. Hobson et al. (2012) generate a measure of cognitive dissonance in management speech that is able to predict financial misstatements. The authors explicitly state the usefulness of such a measure for auditors who might use it to better assess a firm's risk of misstatement. Hobson et al. (2017) expand on this by providing experimental evidence that auditors are better at detecting fraud when instructed to detect cognitive dissonance. Mayew and Venkatachalam (2012) also provide evidence that manager's vocal cues during earnings calls provide information about the firm's fundamentals.

6. Conclusion

This literature review highlights the role of internal controls in the audit process. We find that internal controls are of high economic importance for both the auditor and the client firm, as audit failure has severe consequences on both sides. In general, auditors can reduce the negative effects of weak internal controls on corporate financial reporting quality through increasing audit effort, which is associated with an increase in audit fees. However, increased effort does not fully preclude financial misstatements, i.e., a substantial risk of financial misstatement remains. While the reasons for this are not fully clear, the audit of internal controls is an extremely complex matter. In addition, auditors are subject to significant time and personnel constraints during the audit. This leads us to believe that the use of additional sources of private information on internal control quality could have strong positive consequences for both the auditor and, subsequently, the client firm. We suggest that financial analysts, their discussions during earnings conference calls and the information provided in their reports may be a valuable source of information for auditors. In particular, financial analysts' assessment of fraud risk may help auditors to more efficiently and accurately assess internal control quality.

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