Auditors’ Perceptions of the Risks
Associated with Disclosing Material Weaknesses

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1. Introduction

The SEC states that companies’ internal controls over financial reporting (ICFR) should “ensure that information required to be disclosed by the issuer…is recorded, processed, summarized and reported, within the time periods specified in the Commission’s rules and forms” (SEC, 2002). Deficiencies in ICFR fall into three categories that indicate a progressively increasing probability of failing to prevent or detect misstatements of financial information: control deficiencies, significant deficiencies and material weaknesses (MW) (AS No. 5). The Sarbanes-Oxley Act (SOX; U.S. Congress 2002) requires a company’s management and its auditor to formally evaluate ICFR and publically disclose any control deficiencies that rise to the level of the MW, but not the two less severe categories.

In 2007, the Public Company Accounting Oversight Board (PCAOB) adopted Auditing Standard No. 5. (AS5), which mandates that auditors disclose MW by issuing adverse opinions on a client’s internal control over financial reporting. In describing the “principles-based approach” in AS5, the Board stated that “auditor judgment is imperative in determining whether a deficiency is a material weakness” (AS5 A4 – 9). These judgments are made more difficult by both the imprecise definitions in the auditing standards (e.g., the probability phrases associated with the likelihood of misstatements) and audit guidance that includes criteria that are difficult to interpret (e.g., the wording of internal control weakness classifications).

Companies that disclose MW face potentially severe adverse economic consequences. MW necessarily indicate the presence of control problems that are likely to lead to material financial statement misstatements that, if subsequently detected, result in large stock price declines (Palmrose et al. 2004, Hammersley et al. 2007). In private debt contracting, firms that disclose MW face increases in lending costs and more stringent securitization requirements (Kim
et al. 2011). In addition, there is some evidence of a connection between MW disclosure and implied cost of capital (Ogneva et al. 2007; Ashbaugh-Skaife et al. 2009) suggesting higher information risk. Overall, the potential adverse economic consequences should compel management to avoid disclosing control deficiencies as MW.

Auditors and their clients face divergent consequences from improperly disclosing a control deficiency as a MW. Auditors are exposed to potential economic damage and reputational losses when they do not require disclosure of a control deficiency, subsequently judged to have been a MW, (Ettredge et al. 2001). Conversely, client companies face risks from being required to unnecessarily disclose a control deficiency as a MW. It is auditors’ perceptions of the risks that they and their clients face as they determine whether a control deficiency is a MW that are the focus of this study.

It is in the setting where auditors must balance liability concerns against client retention where they must first detect control weaknesses then use ambiguous audit standards to make the critical severity classification (Leone 2007). For most items, whether to require disclosure is not in dispute; the item either clearly should be disclosed or not. However, there is a set of items for which the economic circumstances and/or authoritative guidance are sufficiently ambiguous that the proper decision for the auditor is unclear. For example, an IT control weakness may be discovered during control testing, but it has yet to fail. In cases such as these, the conflicting risks that auditors and their clients face and the substantial judgment involved in determining whether a control weakness represents a MW drives the need for negotiation between auditors and their clients (Brown and Wright 2008). Prior research models this negotiation process in terms of three phases: pre-negotiation, negotiation and post-negotiation (Bame-Aldred and Kida 2007; Brown and Wright 2008). This study focuses on the auditors’ risk assessments in the pre-
negotiation phase where the auditors first assess possible outcomes, anticipate the client’s position and arguments and then formulate responses to the anticipated arguments (Brown and Wright 2008).

Traditionally, risky decisions, such as the MW determination auditors face, have been modeled in an expected utility framework comprised of anticipated outcomes and their probability of occurrence (Libby and Fishburn 1977; Lipe 1998). More recently, decision-makers’ emotional reactions experienced while making risky decisions have been found to significantly influence the decision making process (Loewenstein et al. 2001; Slovic et al. 2004). In their “risk-as-feelings” model, Loewenstein et al. (2001) not only represent decision-makers’ risky decisions in terms of their expectations across potential outcomes and related subjective probabilities, but also how they react emotionally to potential outcomes and the decision process itself. Feelings or emotions that decision makers associate with outcomes, such as disappointment or regret, are anticipated emotions expected to be experienced in the future. The novel contribution of this model is its inclusion of emotions such as fear or anxiety that decision makers experience when making a risky decision. These anticipatory emotions are influenced by decision makers’ cognitive evaluations of potential outcomes. And, they exert influence on the decision itself.

We develop a risk-based model of the auditors’ MW determination based on the “risk-as-feelings” model. Our model of auditors’ MW disclosure decision incorporates the decision’s economic impact through the expected utility framework and affect-related consequences through auditors’ emotional responses to the decision process and the potential outcomes. In addition, our model of auditors’ MW determination recognizes that auditors’ perception of MW disclosure risks exist from both their firms’ as well as their clients’ perspectives.
To empirically test our MW disclosure model, 48 practicing audit seniors, managers and partners evaluated a relatively complex audit case based on a hypothetical company where a control deficiency had been identified. The participants reviewed the case materials and responded to the required questions using online survey administration software. In addition to making the determination of whether they believed the control deficiency should be disclosed as a material weakness, participants answered questions regarding both the affect-related and economic aspects of risk. The questions regarding the affect associated with outcomes (anticipatory emotions) included, for example, the participants’ perceptions of how catastrophic the outcomes might be and how difficult they would be to mitigate. The affect associated with the decision process itself (anticipatory emotions) was tapped by questions, such as, how worried the auditor was about the decision. The expected utility questions focused on the perceived magnitude of gains and losses and the probability of occurrence for each. Each set of questions was randomly asked twice: from the perspective of the auditor and the perspective of the client.

Because our sample was small and each participant responded to only one case, we used a regression analysis rather than structural equation modeling to test our predictions. We expected that anticipatory emotions would be determined by auditors’ perceptions of potential outcomes, both economic and affective. We find that auditor’s feelings of anticipatory risk are influenced by their expected outcomes when they consider their firm’s but not their client's perspective. We also expected that anticipatory emotions have both a direct and a joint effect with the expected outcomes on the disclosure decision. Our findings suggest a direct effect of anticipatory emotions only when the decision is considered from the perspective of the client, while evidence of the joint effect was found for both perspectives.
The regulatory mandate for the auditor to issue an adverse opinion when control deficiencies are determined to be MW has existed since 2007. Since the mandate began, fewer than 4 percent of all discovered control weaknesses are publicly disclosed as MW (Bedard and Graham 2011). Despite this, Bedard and Graham also find that many companies receiving a “clean” Section 404 report had at least one control deficiency severe enough to report to their audit committees. Based on these results, we argue that there are relatively frequent, critical negotiations between auditors and their clients regarding MW disclosure that needs to be investigated (Rice and Weber 2011). Entity-level data is necessarily limited in its ability to provide insights into the risks the auditor perceives surrounding MW disclosure. Our study contributes an important, in-depth look at how individual auditors perceive disclosure risk from both affect-related and economic perspectives.

Our second contribution is our model’s consideration of the affective response the decision maker has to the decision process itself. Prior accounting research that examined the impact of affect/emotions on decision-making has focused on the affective responses associated with outcomes (Moreno et al. 2002; Koonce et al. 2005). The inclusion of both anticipatory and anticipated emotions in modeling auditors’ decision provides a more complete representation of auditors’ risk assessment process and a deeper understanding of the role emotional reactions, including those resulting from the decision process itself, play in auditors’ risky decisions.

A third contribution of this research is found in the nature of the task and the experience of our participants. In studies that have examined both affect-related and economic factors in the perception of risk, the risk assessment is often a public policy issue such as risks associated with terrorist attacks (e.g., Fischhoff, et al. 2005). Our realistic experimental scenario contributes important insights into the relative importance of the risk factors auditors consider. Much of the
psychology and previous accounting research into the impact of emotions on judgments has been done using students. Our participants are audit seniors, managers and partners who have an average of 12 years of experience as auditors and report having familiarity in making MW disclosure decisions. Thus, using a realistic task and experienced decision-makers, we have the potential to show that, in spite of auditors’ professional mandate to be objective in their risk assessments, they are not immune to the emotional impact of making difficult, risky decisions.

The next section of the paper reviews the relevant background literature. The third section of the paper translates the “risk-as-feelings” model into a risk-based model of auditors’ MW disclosure decision and posits three hypothesized relationships. The experimental methods and procedures are described in the fourth section. In the fifth section, the analysis and results are presented. A discussion the results and conclusion are contained in the final section.

2. Theory and Hypotheses

2.1 BACKGROUND LITERATURE

2.1.1 Auditing Standards. Auditors’ responsibility for examining and reporting on control weaknesses as required by SOX 404 began with AS 2 (PCAOB, 2004), which was superseded a short time later by AS 5 (PCAOB, 2007). In considering the PCAOB’s proposal for changes in auditors’ responsibility between the two standards, the Commission directed its staff to focus on "Encouraging auditors to use professional judgment in the 404 process, particularly in using risk-assessment” (PCAOB Release 2007-005A Page A4 – 8). Citing potential improvement in practice, commenters’ on the proposal supported the use of professional judgment while acknowledging the potential for inconsistency in the evaluation of deficiencies (PCAOB Release 2007-005A A1–43). AS 5, as adopted by the PCAOB, contains language that requires auditors to exercise professional judgment in evaluating ICFR.
2.1.2 Material Weakness Research. Auditors’ reports on ICFR have been linked to firm-level outcomes such as CEO and accrual quality (e.g., Doyle, Ge, and McVay 2007, Ashbaugh-Skaife et al. 2008). In terms of firm characteristics, those who receive adverse SOX 404 opinions have less qualified CFOs and they experience higher CFO turnover in the year subsequent to the adverse opinion (Li 2010). Firms that previously disclosed control deficiencies tend to exhibit higher quality accruals when their external auditors subsequently verify remediation. In addition, changes in firm’s successive SOX 404 audit opinions are linked to changes in accrual quality, consistent with the direction implied by the change in opinions (Ashbaugh-Skaife et al. 2008).

ICFR disclosures have been shown to be important to stockholders. Hammersley et al. (2007) find that material weakness disclosures produce returns that are more negative than both significant deficiency and control deficiency disclosures. They pose three potential reasons that the stock price reactions to material weakness disclosures cause investor concern: remediation costs, an adverse audit opinion on the internal control audit (if unremediated) and/or the possibility of uncorrected financial statements errors. MW necessarily indicate the presence of control problems that are likely to lead to material financial statement misstatements that, if subsequently detected, result in large stock price declines. Palmrose et al. (2004) investigate the connection between stock price reactions and restatement announcements due to various causes. They find that when restatements where attributed to auditors the returns were even more negative than for average restatement announcements.

The less reliable financial reporting that results from weak ICFR may increase investors’ information risk. Ashbaugh-Skaife et al. (2009) show that firms reporting weak internal controls have higher idiosyncratic risk, betas and cost of equity. In a pattern similar to accrual quality, firms undergo significant increases in their market-adjusted cost of equity around their initial
disclosure that are reversed when auditors report successful remediation (Ashbaugh-Skaife et al. 2009). However, controlling for characteristics associated with disclosing material weaknesses has been shown to eliminate the higher cost of equity for firms disclosing MW (Ogneva et al. 2007).

The client-risk reflected in potential economic damage and reputational losses as been shown to affect the client-related decisions that auditors make. Client-related risk has been linked to auditors’ resignation from engagements, but not to dismissals (Landsman et al. 2009). In the IPO setting, auditors’ assessments of client risk have also been associated with the determination of appropriate audit fees. Auditors routinely bill at a higher percentage of their standard rates with more audit hours to mitigate the higher risk in IPO audits (Venkataraman et al. 2008).

There is limited research that looks at factors affecting auditors’ classification of control deficiencies. Bedard and Graham (2011) obtained a sample of audits of smaller accelerated filer companies in which 3,990 control deficiencies were detected and find that clients tend to initially classify control deficiencies as less severe and that auditors frequently override those initial classifications. They also find that the likelihood of a control deficiency being classified as a material weakness increases with factors such as a longer auditor testing period, detection during a subset of tests and the number of material weaknesses identified. Existing misstatements are more likely to result in classification as a material weakness, and weaknesses that have yet to fail are more likely to receive a material weakness classification when the internal control system is considered to be of lower quality or the IT system of the client is better integrated. Earley et al. (2008) experimentally examine client’s proposal of an initial ICFR assessment in the pre-negotiation phase and find the client’s views receive less weight when in settings where the
auditors perceive the potential economic consequences as greater than the weight their views receive when the economic consequences have less potential impact.

2.1.3 Affect and Risk in Accounting Research. Most prior research into auditors’ risk perceptions has focused on risk as described in the auditing standards; it focuses on broad assessments such as control risk, inherent risk and combining risks as prescribed by the AICPA audit risk model (e.g., Jiambalvo and Waller 1984, Vandervelde et al. 2009). No previous audit research has examined the role of affect-related risk perceptions; nor has it focused on the risks auditors perceive associated with reporting or disclosure decisions.

In the context of capital budgeting decisions, Moreno et al. (2002) examine whether affective reactions can exert sufficient influence in decision-making to overcome economic effects found in studies based on the predictions of prospect theory (e.g., Lipe 1993). They presented practicing managers with three scenarios, two of which were designed to elicit negative affective reactions, such as, frustration or anger, while the third was designed to elicit positive affect. Each scenario involved evaluations of risky alternatives constructed in both an expected gain and an expected loss version resulting in a total of six experimental conditions. They find that participants tended to avoid negative affect and choose positive affect despite the underlying economics. It is important to note that this study was silent with regard to the distinction between anticipatory and anticipated emotions and the manipulation produced only emotions associated with decision outcomes (anticipated emotions).

Based on substantial research in the health and technology domains, Slovic and his colleagues (e.g., Slovic 1987) suggest that people perceive risk based on their assessments of two underlying dimensions, which they label “dread” and “unknown.” Dread captures a risky item’s perceived controllability and voluntariness, as well as the amount of worry and catastrophic
potential associated with the item. Unknown captures a risky item’s observability, its newness, the amount of knowledge about the item, and the immediacy of the item’s effects. These dimensions and their underlying measures constitute the behavioral variables used by Koonce et al. (2005) to evaluate the perceived risk of a broad range of financial statement items' perceived riskiness. MBA students answered questions about a list of financial items and rated the overall risk of each item. They find that financial statement users’ risk-related emotions as well as their perceptions of the economic variables impact the perceived riskiness of the financial statement items. In a second study, Koonce et al. (2005) manipulated the potential loss associated with the financial statement items. As part of this analysis they factor analyzed the 14 questions. They label one factor “dread,” which includes their measures of the worry, catastrophic nature, voluntariness, immediacy and newness of the risks related to the items. They show that information about potential loss outcomes directly effects perceived risk and indirectly effects perceived risk though its influence on dread.

2.2 A RISK-BASED DISCLOSURE DECISION MODEL AND HYPOTHESES

2.2.1 Auditors’ Disclosure Decision Model. The “risk-as-feelings” model (Loewenstein et al. 2001) incorporates both anticipated and anticipatory emotions with the traditional expected utility formulation of decision-making. Anticipated emotions are those that the decision maker expects to experience when outcomes occur and, as such, become a component of the alternative outcomes. In contrast, anticipatory emotions are mental reactions to the decision itself and are influenced by the decision-makers’ exposure to or experience with outcomes or the vividness with which consequences can be imagined. Research from the perspectives of social psychology and neuroscience support the existence and importance of anticipatory emotions in decision-making under risk. Phenomena similar to anticipatory emotions have been described in the
context of social judgments as the affect-as-information hypothesis (Schwarz and Clore 1983) where one’s mood directly affects judgments. Related research in neuroscience finds that decision makers’ ability to perceive changes in somatic states serve as informational inputs to decision-making (e.g., Bechara et al. 1996). The general conclusion is that anticipatory emotions are spontaneous, unavoidable and less controllable by cognitive processes than traditional expected utility evaluations.

The proposed risk-based model of auditors’ disclosure decision (ADDM) shown in Figure 1 is based on the risk-as-feelings model. The ADDM focuses specifically on the auditors’ perceptions of the risks associated with the decision to require a client to disclose a control deficiency as a material weakness item or not. The expected outcomes include both the expected economic values and anticipated emotions associated with those outcomes. In economic terms, the client faces direct economic and reputational losses from disclosing an item that should not have been disclosed. On the other hand, the audit firm has potential economic and reputational losses when it does not require disclosure of an item that should have been disclosed. The risks associated with disclosing an item that should have been disclosed or not disclosing an item that should not have been disclosed are considered minimal. The anticipated emotions correspond to the economic considerations in terms of feelings evoked by questions such as “how hard will it be to mitigate the outcome” or “how catastrophic will the outcome be?” This view is consistent with theories where decision-makers generate the anticipated feelings they associate with different outcomes as a result of counterfactual comparisons (e.g., Mellers, Schwartz, Ho, and Ritov 1997, Mellers, Schwartz, & Ritov 1999).

*Insert Figure 1 about here*
In their model, Loewenstein et al. (2001) include the decision-maker’s experience with outcomes as a determinant of “other factors” influencing his or her feelings. In the ADDM, another factor we consider important to the risk assessment is whether the risks are viewed from the auditor’s or client’s perspective on the disclosure decision. Given the unique risks associated with the critical outcomes, it seems plausible to assume that the risk associated with disclosing an item that should not necessarily be disclosed fall principally on the client. On the other hand, the risk associated with not disclosing an item that would have been considered necessary falls mainly on the auditor. Though the auditor's decision is being modeled, it seems to be a reasonable assumption that he or she would consider both perspectives in assessing the risk of disclosure.

2.2.2 Hypothesized Affect-Related Relationships. In traditional expected utility formulations of risky decisions, the decision or choice is viewed as an algebraic process where the decision maker assesses the likelihood of the possible outcomes and their severity and then integrates these assessments to arrive at a decision. The ADDM includes those economic assessments as well as anticipated and anticipatory emotions. We hypothesize two relationships that involve a role for anticipatory emotions in the auditor's decision process: expected outcomes influence anticipatory emotions and anticipatory emotions will directly affect the decision to disclose.

The link between the expected outcomes and the decision-makers’ anticipatory emotions has significant support. For example, those who experience a flood or an earthquake or know someone who has are more likely to purchase flood or earthquake insurance (Browne & Hoyt, 2000). Purchases of air travel insurance increase significantly when the insurable event is described as “death from terrorist acts” as opposed to “all possible causes” (Johnson et al. 1993). In both of these cases, the ability to imagine outcomes leads to emotional responses that in turn
affect behavior. It has been shown also that increasing feelings of worry lead to an increase in self protective behaviors, such as, seat belt use by those who have experienced automobile accidents and natural hazard preparedness by those who experienced natural hazards (Weinstein 1989). These studies show that knowledge of potential outcomes or heightened capability to imagine decision outcomes influence decision-makers’ anticipatory responses to the decision that they face. Thus, we predict a link between auditors’ perceptions of the expected outcomes from disclosing a material weakness and their emotional responses to making the decision.

**H1**: Auditors’ perceptions of expected economic outcomes from the disclosure decision and their affective responses to potential outcomes (anticipated risk) will influence their affective responses to making the decision (anticipatory risk).

The direct impact of emotions or feelings on individuals’ judgments and decisions is shown in a wide variety of settings. In an economics-based, experimental setting, Rottenstreich and Hsee (2001) offer participants choices between affect-rich options, such as, coupons for European travel, or hypothetical electrical shocks and affect-poor options such as a coupon for one's phone bill. They find that affect rich prospects yield more risk seeking and risk aversion than affect-poor prospects. In a different economic context, Lerner et al. (2004) examine the impact of two emotions (disgust and sadness) on the endowment effect. Half their participants were endowed with an object with the opportunity to sell it back, while the other half was shown the object and given the choice of receiving it or various amounts of cash. The endowment effect predicts that selling prices tend to exceed buying prices for the object. Lerner et al. predicted specific patterns that emotions would play in the buying and selling decisions. They find that the endowment effect was eliminated in the case of disgust and actually reversed in the case of sadness. In addition, the impact of emotions is found in a wide variety of public policy settings including use of pesticides, purchase of insurance and the decision to smoke (Slovic et al. 2004).
The direct link between anticipatory emotions and decisions in other settings leads us to the following hypothesis:

**H2:** Auditors’ decision to classify a control deficiency as a MW will be directly affected by their anticipatory emotions in response to making the decision.

**3. Experimental Materials and Procedures**

3.1 PARTICIPANTS

Participants were recruited through personal contacts made by the researchers with partners in eight offices of several international public accounting firms. Each partner contacted was asked to identify individuals in his or her office with substantial experience in evaluating ICFR and making the decision whether to classify a control deficiency as a MW. The contact partner was asked to forward to the individuals they identified a link to the experimental materials, which were administered through an online survey management service.¹

50 auditors responded by completing the experimental materials. 48 of those who responded indicated that they had sufficient experience evaluating ICFR by choosing from a short menu of responses that they had either “enough to be comfortable with the process” (n = 16) or “a lot” (n = 32). Only respondents who reported sufficient experience evaluating ICFR were used in the analyses reported here.² They had an average of 12.8 years of experience in public accounting; 93.7% were either managers or partners in the audit firms; and 83.3% were male. Both the internal and external validity of the study are enhanced by the participants’ ability to adopt the role of the external auditor for the company. When asked “How thoroughly were

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¹ We are unable to determine the exact number of individuals asked to participate by the contact partners. Three of the eight contact partners provided reliable counts of the individuals asked, and in those offices participation was 100%. This leads us to believe that response bias is not an issue. However, this process was clearly not a random selection.

² The analyses described in this paper were replicated with the two inexperienced participants included. The results were substantially the same as those reported.
you able to adopt the role you were asked to assume when participating in this study?” over 70% said “moderately” or “very thoroughly,” while none said “not at all.”

3.2 EXPERIMENTAL INSTRUMENT

A single, detailed case constituted the substantive portion of the experimental materials. The general description of the hypothetical company in the case (FAMCO), including five years of financial data, was based upon an actual, publicly traded company. The case also included a detailed explanation of a deficient internal control within the company’s procurement-to-payment cycle. Specifically, an internally developed purchase order management (POM) system was intended to interface with the warehouse management system (WM). The participating auditors were told that

“…design issues related to the WM system cause the interface between the POM and WM system to not work appropriately at times, which results in numerous exceptions that must be manually investigated and resolved. As a result, senior management has manually recorded entries such as writeoffs of certain payables and reducing certain operating expenses, and losses of inventory relating to such items as theft, loss in shipment, etc. (shrink expense) following established policies and procedures.”

Participants were also told the materiality level for assessments of internal controls over financial reporting and that no qualitative factors should be taken into consideration.

3.2.1 Measures of the Economic and Affect-related Aspects of Risk. After the participating auditors studied the information about the hypothetical company and the control weakness identified, they were asked to answer eight questions regarding the affective aspects of risk and five questions to capture the economic aspect of risk. Each question was asked twice, once from the perspective of the “external auditor responsible for evaluating ICFR” (audit firm) and again from the perspective of the client. The exact questions stated from the perspective of the external auditor are shown in Table 1. They were framed in terms of the risk to “their reputations or financial well-being arising from the decision to classify the 3-way match as a material
weakness.” Within the constraints of the online survey administration software, we randomized the order of these questions.³

Insert Table 1 about here

As a Table 1 shows, the biggest differences for the affect-related variables between their perceptions from the auditor's perspective and those from the client’s are how catastrophic the decision will be and how immediate its impact will be, both of which were rated as higher for the client than the auditor. And, the risk to the client was rated as much more precisely known by the auditors than the client. In terms of the economic variables, the potential loss to the client was seen as much larger than the potential loss to the audit firm. Table 1 also shows that the risk to the client as a result of the decision to classify the three-way match as a MW was seen as much higher than the risk to the audit firm.

The affect-related questions used in this study are similar to the behavioral risk assessments used by Koonce et al. (2005) that were, in turn, based on measures used by Slovic and others (e.g., Slovic 1987). We chose to adapt these questions to assess our model based on the belief that using slight variations of previously used measures allows conceptual refinement of those measures and comparison with previous results. In light of the distinction between anticipated and anticipatory emotions, we carefully re-examined these questions and found three that are more appropriately viewed as measures of the emotional reactions to the decision process itself. The affect-related question most directly linked to one's feelings at the time of making a risk-based decision asks “how worried are you about this risk.” Asking how “new” a

³ The questions regarding perceptions of how catastrophic, difficult to mitigate, immediacy of the impact and discretionary the decision is, from both perspectives, were all presented in random order. The four questions regarding the size of the gain or loss from the two perspectives were all randomized on one page. As were the six questions regarding the probability of a gain or loss. The order of the questions from the two perspectives were randomized within the questions regarding newness, worry and how precisely known the risk was.
risk is perceived to be draws on the sense of surprise that arises from the uncertainty about the situation and the information available. The question about how precisely the risk is known also goes to a feeling of unease due to the uncertainty about the circumstances and extent of potential unknowns. Of the other four questions, three questions deal with the immediacy, difficulty mitigating and catastrophic nature of the decision’s impact. The fourth of these questions deals with the discretion in making the decision, and, for an auditor, it is associated with the potential consequences of enforcing a disclosure requirement. These four questions are associated more closely with the risks associated with outcomes, instead of feelings about the decision process itself.

We conducted a principal factor analysis with a varimax rotation to confirm our grouping of the affect-related risk measures. For the measures from the client’s perspective, the analysis produced two factors that confirmed the variable grouping we advocate. When viewed from the auditor's perspective, three factors were produced. The first contained the four affective risk measures we believe are associated with outcomes (how catastrophic, how discretionary, how, how easily mitigated). A second factor included the two knowledge measures while newness and worry were included in a third factor. The results of these analyses support our grouping of the affect-related risk measures. We chose not to use the standardized factor scores from these analyses in the subsequent tests of our model because, while these procedures reduce the dimensionality of the data, they obscure the contribution of the individual measures when examining the various relationships.4

3.2.2 Experimental Manipulation. Since there was no experimental manipulation, this study is best described as a quasi-experiment. The participants’ decision to classify the control deficiency

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4 Analyses conducted using the factors identified in the principal components analysis instead of individual measures produce results that would not change the conclusions regarding the auditor disclosure model.
described in the experimental case as a MW or not is used to classify the participants into two self-selected groups. One consequence of this approach is that our grouping is susceptible to all of the threats to its validity described by Cook and Campbell (1979). Of particular concern is the potential for characteristics of group members to differ systematically with the decision to classify the control deficiency one way or another. As shown in Table 2, the two groups did not differ in terms of demographic variables such as age, gender, education or years worked in public accounting. Nor do they differ in terms of motivation or interest in participation. At two points in the experiment, participants were asked objective questions about facts, which were included in the experimental materials. They were asked about the discussion of Auditing Standard 5 and the description of FAMCO. The two groups did not differ in the percentage of correct responses to either of these sets of objective questions about the content of the materials. We also asked the participants about the amount of information provided in the case regarding FAMCO and the control deficiency. While both groups agreed about the amount of information provided for FAMCO, they differed in their perception of the sufficiency of the information provided about the control deficiency in question. All of the statistical analyses reported here were replicated with participants’ perception of the amount of information provided about the control deficiency as a covariate, and the results were substantially the same. This fact along with the general lack of differences on participants’ characteristics and perceptions of the experiment provides assurance that the results of our study are not adversely affected by the quasi-experimental approach we used.

*Insert Table 2 about here*

Table 2 also shows that the group of participants that chose to classify the control deficiency as a MW statistically differed from the group that did not consider it a MW in terms
of their views on the expected economic gain or loss to the client (ECOCLNT). ECOCLNT is included both as an independent and as a dependent variable in the analyses reported.

4. Analysis and Results

4.1 TESTS OF H1. Our first hypothesis predicts that auditors’ perceptions of anticipatory risk will be influenced by both their expected economic outcomes from the disclosure decision and the anticipated risk associated with those outcomes. To test these links, we conducted two sets of MANOVAs: one from the auditor's perspective and another from the client’s. The independent variables from the auditor's perspective are ECONAUD ((GAINAUD*PROBGAINAUD) - (LOSSAUD*PROBLOSSAUD))\(^5\), which represents the expected economic outcomes, along with our measures of anticipated risk (CatastrAud, DiscrAud, ImmedAud and MitigAud). The MANOVA jointly tests the effects the anticipatory risk measures (NewAud, WorryAud, AriskknwAud and CriskknwAud) on the independent variables. Panel A of Table 3 shows the results of the joint tests (Hotelling-Lawley Trace) across the four parameters of the dependent variables with the significance-levels based on approximations of an F distribution and the results of separate regressions for each dependent variable. The results show that ECONAUD and two of the four anticipated risk measures (DiscrAud and ImmedAud) had significant joint effects across parameters. Three of the four separate regressions show that the intercept along with two other independent variables were significant, while in the regression where worry about risk to the firm (WorryAud) was the dependent variable, only the intercept and ImmedAud were significant. Overall, these results provide strong support for the existence of a link between

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\(^5\) We used various formulations of these economic variables, such as, expected loss only (i.e., PrblossClnt*LossClnt from the client’s perspective) or simply the estimated loss (i.e., LossClnt) and none of them yielded results that differ materially from those reported.
expected outcomes and anticipatory risk when auditors consider these constructs from the perspective of their firm.

*Insert Table 3 about here*

Panel B of Table 3 shows the results of the MANOVA analysis on the auditor’s expected economic outcomes and the associated anticipated risk from the client’s perspective. The independent variables are ECONCLNT \(((GAINFAM*PROBGAINFAM) - (LOSSFAM*PROBLOSSFAM))\) and the four measures of anticipated risk (MitigClnt, DiscrClnt, CatastrClnt and ImmedClnt), and the dependent variables are the anticipatory risk measures from the client’s perspective (NewClnt, WorryClnt, AriskknwClnt and CriskknwClnt). In this analysis, none of the independent variables are significantly related to the joint effect of auditor’s perceptions of anticipatory risk. This is consistent with the finding that auditors did not cognitively link outcomes to risks perceived during the process of decision making when these constructs are considered from the client’s perspective.

4.2 TESTS OF H2. We expect auditors’ decision to classify a control deficiency as a MW to be directly affected by their feelings of anticipatory risk. So, there should be a statistical relationship between the anticipatory-risk variables and the disclosure decision. The column of Panel A of Table 4 labeled (1) shows the logistic regression between the decision, which is a dichotomous choice to classify the deficiency as a MW or not, and the anticipatory-risk variables from the auditor's perspective. The model is insignificant. Thus, we conclude that there is no relationship between the anticipatory risk-related feelings and the decision to classify a control deficiency as a material weakness MW, when the auditor views the decision from the perspective of audit firm.

*Insert Table 4 about here*
The logistic regression in column (1) of Table 4, Panel B shows the regression of the anticipatory variables on the disclosure decision from the perspective of the client. The overall model is significant with the intercept and the measure of how worried the auditor is (WorryAud) individually significant. Taken together these two analyses indicate that, when viewed from the client’s perspective, anticipatory risk-related variables have a direct relationship on the decision to disclose a material weakness.

We do not explicitly hypothesize that auditors’ expected outcomes will impact their decision to classify a control deficiency as a MW. However, the ADDM suggests that both auditors’ expected outcomes and their anticipatory risk-related feelings should affect the decision. Column (2) of Table 4, Panel A shows the logistic regression of ECONAUD, the expected economic outcomes, and the four measures of anticipated risk on the disclosure decision. Two anticipated risk measures, DiscrAud and ImmedAud, are significant as is the overall model, while ECONAUD is not significant. The logistic regression in column (3) of Table 4, Panel A includes the variables used in the column (2) regression plus the four anticipatory risk variables. The expanded model is significant as are the same two anticipated risk variables that were significant in the regression shown in column (2). Statistical comparison of these two regressions shows that the column (3) regression is a significantly better fit (d.f. = 4, \( \chi^2 = 18.10; p < .000 \)), which is consistent with both the expected outcomes and anticipatory risk impacting the decision to disclose a MW, when these constructs are viewed from the auditor's perspective.

The logistic regressions using independent variables viewed from the client’s perspective are shown in Table 4, Panel B. As before, the logistic regression of the disclosure decision on expected outcomes is shown in column (2) and the four anticipatory risk variables are added to
produce the regression shown in column (3). The model using outcome-related measures only is very significant. The individual variables measuring economic outcomes (ECONCLNT) and the variable measuring concern over whether the outcome can be mitigated (MitigClnt) are significant. When the anticipatory risk measures are included in the regression, column (3), it is a significantly better fit (d.f. = 4, $\chi^2 = 25.50; p<.000$) than the regression without those measures. In addition, the intercept, two of the anticipatory risk variables (WorryClnt and AriskknwClnt) and three of the affective-risk outcome measures (CatastrClnt, DiscrClnt, and MitigClnt) are significant. These differences imply that, when viewed from the client’s perspective, not only do anticipatory-risk and outcome-related measures jointly affect the disclosure decision, but they are consistent with anticipatory-risk changing the causal relationship between outcome-related measures and the decision to disclose.

5. Discussion and Conclusions

Auditors are required to disclose any internal control deficiency in a client's ICFR system that is determined to be a material weakness. Both the auditor and their client face substantial risks associated with this disclosure decision. We propose a model of auditors’ risky disclosure decision that captures both expected utility and perceived affect-related risks associated with the decision. The affect-related risks are divided into those associated with outcomes (anticipated emotions) and those associated with the process of making the risky decision (anticipatory emotions). While anticipated emotions have previously been shown to affect accounting-related decisions (Moreno et al. 2002) and perceptions (Koonce et al. 2005), anticipatory emotions have not been considered. Our model considers these risks from both the auditors’ as well as the clients’ views of these risks, though both are captured from the auditor's perspective.
We expected to find a link from the outcome-related expectations, both economic and affective, and auditors’ anticipatory feelings. We find this link present when the auditors consider their feelings from the perspective of their firm but not from the perspective of the client. Our findings regarding the link between outcomes and anticipatory feelings may be explained in terms of the auditors’ cognitive processing. The anticipatory feelings are those the auditors perceive as results of imagining possible outcomes both in terms of economics and emotional responses. Since the construct of anticipatory emotions is internal it may be that the auditor can vividly imagine potential outcomes and those imagined outcomes cause the auditor to feel anticipatory emotions. The link between potential outcomes and the feelings experienced by the client would not be as readily or vividly imagined which would not induce the anticipatory emotions from the client’s perspective. Emotional responses to the decision itself on the part of the auditor could lead them to overestimate the potential impact of a material weakness or any other disclosure they might insist the client make. This would increase the risk of them having disagreements that may ultimately lead to dismissal, when the disagreement itself was somewhat exaggerated by their emotional responses. Further research that examines this possibility has the potential to greatly benefit the negotiation process between auditors and their clients.

We also expected to find a direct link between the anticipatory feelings and the decision to disclose a control deficiency as a material weakness. In contrast to the link between outcomes and anticipatory feelings, we find that a direct link exists between the anticipatory feelings and the decision from the client’s perspective but not from the auditor’s. The emotions associated with outcomes strongly affect the decision from both perspectives. In this phase of the model the auditor might be better able to imagine the feelings of the client, since the outcome becomes very
concrete and immediate. The auditor may be less affected by the anticipatory emotions from their perspective because the implications for the client are no longer hypothetical in the client’s perspective is much more easily imagined.

There are several limitations to this study that should be acknowledged and considered. One is that anticipatory emotions were experimentally captured by responses questions presented to participants, which means that the responses were necessarily mediated by cognition. There is a substantial body of research that directly measures emotional states by measuring activation in emotional areas of the brain. Having audit professionals submit to this sort of measurement would result in much more objective and direct assessments of their emotional states. It is also the case that there was no experimental manipulation in this study, subjecting the results to alternative interpretations. Deeper understanding of the factors that lead auditors to classify certain control deficiencies as material weaknesses will allow experimental materials to be designed with a material weakness manipulation, which would heighten the degree of experimental control.

Audit decision-making research strives to deepen our understanding of how auditors make decisions with the goal of improving audit practice. Many of the decisions auditors make involve risk. This research shows that both anticipated and anticipatory emotions play important roles in auditors’ risky decisions. There is potential for our findings to influence audit practice and provide useful and important insights for future audit research.
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Figure 1
A model of auditors’ risk-based disclosure decision and hypothesized relationships

H1: Anticipated emotions and expected economic outcomes will influence anticipatory risk

H2: Anticipatory emotions have a direct affect on the decision to disclose