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How Audit Reviewers Respond to an Audit Preparer’s Affective Bias: The Ironic Rebound Effect
How Audit Reviewers Respond to an Audit Preparer’s Affective Bias: The Ironic Rebound Effect

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ABSTRACT: Prior research suggests that audit seniors’ judgments are sometimes biased by their affect toward (i.e., feeling of personally liking or disliking) client personnel. We examine how experienced audit reviewers respond when reviewing an audit preparer’s judgment that appears to be biased by the preparer’s affect toward a client’s controller. In our experiment, reviewers are provided with a preparer’s judgment that appears inconsistent with the audit workpapers. We then examine the effect of providing versus not providing reviewers with a cue about the preparer’s positive or negative affect toward the controller. We find that despite reviewers’ belief that affect biases a preparer’s judgment, reviewers who are informed of the preparer’s affect do not rely less on the preparer’s judgment. Instead, they actually rely more on the preparer’s judgment than do those who are not informed about the preparer’s affect. This result is consistent with Wegner’s (1994) ironic rebound effect, which predicts that sometimes when individuals are trying not to rely on information, they ironically rely on it more. Our findings suggest a potential limitation of the audit review process.

Keywords: audit review process; bias; ironic rebound effect; affect.
I. INTRODUCTION

A significant amount of research suggests that audit seniors’ (i.e., preparers’) judgments may be biased by factors such as their affect toward (feelings of personally liking or disliking) client personnel. However, research has not examined whether the audit review process corrects for this type of bias in preparer judgments. To address this issue, our study examines how experienced audit managers (i.e., reviewers) respond when reviewing an audit preparer’s judgment that they suspect could be biased by affect. Specifically, we investigate whether reviewers are able to rely less on a potentially biased preparer judgment.

We focus on reviewers’ response to being informed about a preparer’s affect because research shows (Bhattacharjee and Moreno 2002; Kadous, Leiby, and Peecher 2013) that affect influences senior auditors’ judgments even when it should not because the affect is not related to client competence or audit risk. If reviewers rely too heavily on preparers’ judgments that are overly influenced by affect, then audit quality could be reduced. For example, assume that a preparer’s feelings of personally liking client personnel (i.e., positive affect) result in the preparer reaching a judgment that is overly favorable to the client. If reviewers are inappropriately influenced by the preparer’s judgment, then they may overlook a serious problem in the client’s financial statements. Similarly, if a preparer’s feeling of disliking client personnel (i.e., negative affect) causes the preparer to reach a judgment that is overly critical, and if reviewers are inappropriately influenced by the preparer’s biased judgment, then reviewers may require unnecessary costly audit procedures. Thus, over-relying on a preparer’s judgment that has been biased by affect could undermine the efficiency and effectiveness of the audit review process, resulting in significant costs to the audit firm. Indeed, Bhattacharjee and Moreno (2013) suggest that audit firms would benefit from research that investigates whether the review process can minimize the impact of judgment errors caused by preparers’ feelings.

We develop competing hypotheses about how reviewers respond to a preparer’s judgment when it appears to be biased by affect. When reviewers suspect that affect biased the preparer’s judgment, making it too positive or too negative, but do not know the extent of the bias, reviewers will try to rely less on the preparer’s judgment. Our competing hypotheses address whether reviewers actually do rely less on the preparer’s judgment. The first hypothesis predicts that they do not. This hypothesis is based on psychology research that predicts that in settings such as ours, individuals are likely to exhibit the “ironic rebound effect,” where they rely more on the biased judgment than they would if they had no reason to suspect a bias (Wegner 1994; Cain, Loewenstein, and Moore 2005; Silverman et al. 2010). In contrast, our competing hypothesis is based on audit review process literature and predicts that reviewers’ judgments will not exhibit the ironic rebound effect. We propose competing hypotheses because despite researchers’ speculation that professionals’ judgments will be susceptible to the ironic rebound effect in settings such as ours, they have not empirically tested this idea (Cain et al. 2005; Silverman et al. 2010). Similarly, although the auditing literature (Libby and Trotman 1993; Ramsay 1994; Tan and Yip-Ow 2001) generally finds the review process to be effective at mitigating errors and biases, it has not examined a setting in which reviewers suspect a preparer’s judgment is biased, but do not know the extent of that bias. Our study provides a test of these alternatives.

To test our hypotheses, we conduct an experiment in which audit managers and senior managers act as reviewers. All participants are provided with a preparer’s judgment that appears inconsistent with the workpaper evidence. While the workpaper evidence includes a balanced set of positive and negative information, we manipulate the preparer’s judgment to be either overly favorable or unfavorable to the client. We also manipulate whether reviewers are or are not

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1 Consistent with the psychology literature, we use the word “bias” to mean “prejudice in favor of or against one thing, person, or group compared with another, usually in a way considered to be unfair” (Oxford Dictionaries 2013).
provided with information about the preparer’s affect toward the controller, and when such information is provided, we vary whether the preparer personally likes or dislikes the controller. We then examine how being informed of the preparer’s affect influences reviewers’ judgments.

Similar to prior auditing literature (Libby and Trotman 1993; Ramsay 1994), we find that reviewers who are not informed about the preparer’s affect are not significantly influenced by the preparer’s judgment and arrive at judgments more consistent with the audit evidence. In contrast, reviewers who not only receive the same preparer judgment and workpaper evidence, but who are also informed of the preparer’s affect, are significantly influenced by the preparer’s judgment. This finding that reviewers rely more on the preparer’s judgment when they suspect that it is biased is consistent with the ironic rebound effect. We conduct a follow-up study that provides evidence that reviewers indeed believe that a preparer’s positive (negative) affect toward the controller will cause the preparer’s judgment to be more favorable (unfavorable) to the client than is warranted. Thus, despite their belief that affect biases the preparer’s judgment, reviewers fail to mitigate this bias when reaching their own judgments.

These findings extend the audit review process literature by highlighting that reviewers might not always mitigate biases in preparers’ judgments, particularly in cases where they cannot readily determine how much the bias influenced the preparer’s judgment. The previous research that finds that reviewers rely less on a preparer’s judgment that is inconsistent with workpaper evidence (Solomon 1987; Tan and Yip-Ow 2001) typically provides reviewers with enough information to determine how much a preparer’s judgment deviated from an unbiased judgment. However, in the current study, reviewers cannot readily determine the extent to which the preparer’s judgment is biased, which is often the case in practice. Our results suggest that in this type of setting, reviewers may be inappropriately influenced by the preparer’s judgment.

Audit firms should be interested in these findings because they view the review process as a key quality control mechanism (Rich, Solomon, and Trotman 1997). If reviewers rely too heavily on a preparer’s biased judgment, then they inadvertently increase the firm’s audit risk. Identifying this potential limitation of the review process is a necessary first step in helping reviewers respond more appropriately when they believe it is likely that a preparer’s judgment is biased.

Finally, our study is the first to demonstrate the potential importance of the ironic rebound effect in audit settings. The ironic rebound effect has been documented in other settings, such as with jurors who ultimately rely more on evidence they are told to ignore (Cox and Tanford 1989). However, we are not aware of any previous study that tests for the ironic rebound effect in professionals’ judgments. Thus, we contribute to the psychology literature by providing evidence consistent with previous speculations that the ironic rebound effect will occur in a setting such as ours (Silverman et al. 2010; Cain et al. 2005).

In Section II, we develop our competing hypotheses. We explain our methodology in Section III, and present the results of our study in Section IV. Section V describes our supplemental analyses, including a description of our follow-up study, and Section VI concludes with a discussion of the implications of our research.

II. HYPOTHESIS DEVELOPMENT

Interpersonal Affect

When auditors interact with client personnel, they sometimes develop strong feelings of personally liking or disliking these individuals. These types of feelings, often referred to as interpersonal affect, have been described by Zajonc (1980) as being involuntary, effortless, and irrevocable. An auditor’s personal feelings toward a client’s controller could be relevant to the audit if the feelings are related to the client’s competence or to factors such as trustworthiness that
influence audit risk. However, to the extent that a preparer’s feelings arise from factors that do not influence client competence or audit risk, these feelings should not influence auditors’ judgments.2

Considerable evidence (Regan, Straus, and Fazio 1974; Katz and Glass 1979; Tsui and Barry 1986; Kadous 2001; Kida, Moreno, and Smith 2001; Bhattacharjee and Moreno 2002; Moreno, Kida, and Smith 2002) suggests that even when it is irrelevant, interpersonal affect can influence individuals’ decisions. For example, Bhattacharjee and Moreno (2002) find that irrelevant negative affect unrelated to client competence or to perceived audit risk influences less experienced auditors’ (staff and seniors) inventory obsolescence judgments. Our study extends these prior studies by examining how reviewers respond to being informed about a preparer’s affect.3 We also examine how reviewers respond to both a preparer’s positive and negative affect. While Bhattacharjee and Moreno (2002) examine only feelings of disliking the client, subsequent research finds that feelings of liking client personnel can also influence preparers’ judgments even when they should not (Kadous et al. 2013; Bhattacharjee, Moreno, and Riley 2012).

We expect reviewers in our study who are informed of a preparer’s affect to suspect that it biased the preparer’s judgment. Psychology research shows that individuals recognize that people’s judgments are biased by their feelings. For example, individuals understand that others tend to be biased in favor of their in-group (Vivian and Berkowitz 1992) and against their out-group (Robinson, Kellner, Ward, and Ross 1995; Ehrlinger, Gilovich, and Ross 2005), and are aware that people’s feelings of like or dislike could bias their judgments (Mills and Grant 2009). Our primary study assumes that reviewers believe a preparer’s affect will bias the preparer’s judgments, and we confirm this assumption in the follow-up study described in Section V.

Competing Hypotheses

Our main research question examines whether reviewers exhibit an ironic rebound effect when reviewing a preparer’s judgment that they believe could be biased by affect. The review process literature finds mixed results regarding reviewers’ response to biased preparers’ judgments (Ricchiute 1999; Yip-Ow and Tan 2000; Tan and Yip-Ow 2001; Tan and Trotman 2003).4 These mixed results likely occur because of differences in the nature of the information provided to participants. Specifically, studies such as Tan and Yip-Ow (2001) provide reviewers with enough information to determine both that the preparer is biased and the extent to which the bias influenced the preparer’s work. In contrast, other studies, such as Ricchiute (1999), do not give reviewers any information that would allow them to infer that the preparer could be biased, so reviewers have no reason to believe they should rely less on the preparer’s judgment. Our study more closely models what occurs in audit practice by providing contextual information about the preparer’s affect toward

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2 Factors unrelated to client competence or audit risk often cause an affective response. For example, positive affect may arise because of another individual’s warmth, sociability, or happiness, even if that individual is not particularly competent (Asch 1946; McAllister 1995; Casciaro and Sousa Lobo 2005).

3 In a subsequent study, Bhattacharjee et al. (2012) vary the level of client competence at the extremes of very high versus very low, and find that affect has a larger influence on preparers’ judgments when the client has very low competence. Bhattacharjee et al. (2012) make the extreme levels of client competence very salient to the preparer participants and do not examine the moderate case used in the Bhattacharjee and Moreno (2002) study. We hold client competence constant at a moderate level (as in Bhattacharjee and Moreno 2002) and find that our reviewers believe that preparers will be influenced by affective information, consistent with the results of Bhattacharjee and Moreno (2002).

4 Peecher, Piercey, Rich, and Tubbs (2010) also examine audit reviewers’ judgments. However, they examine whether audit reviewers, who are themselves biased and cause the audit preparer to become similarly biased, anticipate and correct for their influence on an audit preparer’s judgment. Because Peecher et al.’s (2010) audit reviewers are the cause of the audit preparer’s bias, it is not clear whether audit reviewers are able to anticipate and adjust for an erroneous influence that is unrelated to them.
the controller without explicitly informing reviewers that the preparer’s judgment is biased or how much it might be biased.\footnote{Tan and Yip-Ow (2001) provide reviewers with all possible workpaper information so they can readily determine when preparers strategically omit specific facts from their workpaper documentation. We inform the reviewers that the evidence documented in the preparer’s workpaper represents all available audit evidence. Even though research suggests that reviewers do not spontaneously consider that preparers sometimes stylize their workpapers (Ricchiute 1999), we wanted to further ensure that reviewers in our setting would not perceive that the preparer strategically documented evidence.}

Cain et al. (2005) and Wegner (1994) offer insights into how reviewers might respond when reviewing a preparer’s judgment that appears biased by affect. Cain et al. (2005) explain that individuals are likely to recognize when information appears biased and to try to reduce the relative weight they place on that information in arriving at their own judgment. Wegner (1994) suggests that when individuals do not have a clear understanding of how much to discount information, they ironically rely on it more than if they were not actively trying to rely on it less.

According to Wegner’s (1994) model, attempting to ignore or rely less on information engages a subconscious monitoring process. This monitoring process helps ensure that individuals do not rely on information that they do not want to influence their judgments. However, when individuals are relatively uncertain about how much they should discount that information, their monitoring process becomes more activated as they work harder to ensure they are not relying on it too heavily. This increase in monitoring activity keeps the information one is trying not to rely on salient in working memory. Because more salient information has a stronger influence on judgments (Bargh 1989), an ironic rebound effect is likely to occur.

The ironic rebound effect has been found in many other settings (Cox and Tanford 1989; Wegner, Erber, and Zanakos 1993; Wegner 1994; Lieberman and Arndt 2000). For example, Cox and Tanford (1989) find that jurors who are told to disregard a piece of evidence ironically use that evidence more than those who are not trying to avoid using the evidence. As explained in Lieberman and Arndt’s (2000) discussion of Cox and Tanford’s (1989) study, it is likely that the jurors were unsure how to respond to the abundance of information they were provided, which probably increased the intensity of their monitoring processes. Consequently, the inadmissible evidence became more salient and had a stronger influence on the jury’s subsequent judgment.

Silverman et al. (2010) speculate that even professionals often lack a clear understanding of how to respond to biased information. They examine how physicians respond when asked to make a prescription decision based on a drug company-sponsored research study. The authors find that a majority of participants perceive a conflict of interest and believe they should adjust for it, but do not. Silverman et al. (2010) suggest that the physicians do not prescribe the drug less often because they do not know how much to discount the biased information in reaching their judgments.\footnote{Because the physicians in that study were given the option of not making a judgment and could respond that they were unsure whether to prescribe the drug, Silverman et al.’s (2010) study was not designed to test for the ironic rebound effect. Thus, it is unclear whether the physicians would over-rely on the biased research report if they had to make a prescription decision.} Cain et al. (2005) also speculate about how individuals could respond when reviewing biased advice. They argue that the ironic rebound effect would be especially likely to occur when individuals are trying not to rely on a piece of advice or a judgment that appears to have been influenced by a subconscious bias, such as when the advice is received from an advisor with a conflict of interest.\footnote{Of course, an advisor’s conflict of interest can also result in a conscious bias, but Cain et al.’s (2005) discussion focuses on subconscious biases that research finds are unintentional and not easily corrected.} Both Cain et al. (2005) and Silverman et al. (2010) address how people might respond to information that appears subconsciously biased by an advisor’s conflict of interest. Their settings are quite similar to ours because individuals are likely to understand the probable direction of the subconscious bias, but to have difficulty knowing exactly how to respond to correct for the bias’s effect on another individual’s judgment.
In our audit setting, if reviewers do not know exactly how to discount a preparer’s judgment that appears biased, then their monitoring process is likely to stay actively engaged. Specifically, when aware of a preparer’s positive (negative) affect, reviewers will monitor themselves to ensure that their judgments are not too positive (negative). This monitoring process keeps the preparer’s judgment salient in the reviewers’ working memory, subconsciously increasing the weight reviewers place on the preparer’s judgment relative to those who are not informed about the preparer’s affect. Thus, reviewers in our setting may be susceptible to the ironic rebound effect.

As noted earlier, no research directly tests whether professionals, such as auditors, actually exhibit ironic rebound effects and whether reviewers can mitigate a suspected bias in a preparer’s judgment when the extent of that bias is unknown. Prior auditing literature finds that the review process is often effective because reviewers ensure that judgments are consistent with the audit evidence and correct for inconsistencies between preparers’ judgments and evidence (Libby and Trotman 1993; Ramsay 1994; Tan and Yip-Ow 2001). While the review process research does not examine how reviewers respond when they perceive a preparer’s judgment was influenced by a subconscious bias with an indeterminate effect, it does suggest that reviewers would not rely more on a judgment when they perceive it is biased.

Reviewers could respond in two ways if they are not susceptible to the ironic rebound effect. First, they could mitigate the preparer’s bias by reaching the same judgments when aware of the preparer’s affect as when they are not aware of the preparer’s affect. Second, reviewers not susceptible to the ironic rebound effect could “become even more vigilant” and “place less weight on the preparer’s conclusions” (Tan and Yip-Ow 2001, 668) when they are informed about a preparer’s affect. Thus, reviewers informed about a preparer’s affect, but not susceptible to the ironic rebound effect, could rely on a preparer’s judgment to the same extent or less than reviewers who are not informed about a preparer’s affect.

Hypotheses 1a and 1b offer competing predictions about whether the ironic rebound effect will occur, with H1a predicting that it will and H1b predicting that it will not:

H1a: Audit reviewers who are aware of a preparer’s positive (negative) affect will reach judgments that are more favorable (more unfavorable) to the client than those who do not receive affective information.

H1b: Audit reviewers who are aware of a preparer’s positive (negative) affect will reach judgments that are the same as, or more unfavorable (more favorable) to the client than those who do not receive affective information.

III. METHOD

Participants

Participants were 119 audit managers and senior managers with an average of 9.37 years of audit experience recruited from two Big 4 accounting firms.8 We chose participants with this level of experience because prior research shows that audit managers and senior managers are not influenced by irrelevant affective information when acting as preparers (Bhattacharjee and Moreno 2002). Furthermore, they are the ones who review the work of less experienced auditors (audit staff and audit seniors), who have been shown to be erroneously influenced by affect.

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8 Because participant characteristics and results do not differ significantly between firms, we combine the two firms in all subsequent analyses.
Experimental Design

The study was conducted online. We emailed individuals identified by their firm as having the requisite experience levels. After agreeing to participate, participants were told to assume the role of an audit manager assigned the task of reviewing certain inventory judgments made by a hypothetical audit senior. Each participant was then randomly assigned to one of four treatment conditions and sent a link to a website that contained the task materials.

We employ a $2 \times 2$ between-subjects design where we manipulate (1) the amount of the preparer’s recommended inventory writedown (Positive or Negative), and (2) whether the reviewer is informed about the preparer’s affect toward the controller (Affective Information Provided or Affective Information Not Provided). In the Positive conditions, the preparer reaches a very favorable conclusion, recommending that no writedown is required, whereas in the Negative conditions, the preparer reaches a very unfavorable conclusion, recommending an extremely high writedown of $1.2$ million. We construct cases such that preparers make judgments consistent with their affective response. That is, when the preparer personally likes the controller, he or she reaches a favorable judgment, and those who dislike the controller only reach an unfavorable judgment. We make this design choice because previous literature (Bhattacharjee and Moreno 2002; Kadous et al. 2013) indicates that individuals’ judgments tend to be influenced in a direction consistent with their affective reactions.

In the Affective Information Provided conditions, reviewers are told about either the preparer’s strong positive personal feelings (Positive Affect) or strong negative personal feelings (Negative Affect) toward the controller. For each affect condition, we create a corresponding control condition. In the Positive (Negative) Control condition, all information is the same as in the Positive (Negative) Affect condition, except that no affective information is provided. We include two separate control conditions to avoid varying two variables at once—whether affective information is provided and the dollar amount of the preparer’s recommended writedown. Specifically, in both the Positive Affect and Positive Control conditions, the preparer recommends a $0$ writedown, whereas in the Negative Affect and Negative Control conditions, the preparer recommends a $1.2$ million writedown. Comparing each affect condition to its control condition isolates the influence of the reviewer knowing about the preparer’s affect.

Experimental Task

After being told they were the reviewers on the engagement, participants received a narrative providing information about the company’s background and the firm’s past and present audits. The background information indicated that client personnel were competent and that the audit firm had issued unqualified opinions in each of the last five years. They were also informed that the client’s internal controls, including inventory controls, were effective and that there have never been any disputes between the audit firm and its client with respect to financial disclosures or applications of accounting principles. Finally, participants were informed that they had already reviewed the preparer’s inventory procedures, and that other than the valuation issue, the inventory balance was found to be free of material misstatements and omissions.

The background information included an affect manipulation. Participants in the Positive Affect condition were told that when asked about how the audit was going, the preparer mentioned that he

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9 In the Positive conditions participants were told the preparer recommended an inventory writedown amount of $0, leaving the $1.8 million preliminary inventory balance unadjusted. In the Negative conditions, participants were told the preparer recommended an inventory writedown amount of $1.2 million, adjusting the initial $1.8 million balance down to an adjusted balance of $600,000. The online task was programmed so that when a participant entered a recommended amount of writedown to inventory, the computer automatically calculated the revised inventory balance such that participants did not have to do this calculation themselves.

10 We created the narrative by modifying a portion of the task described in Bhattacharjee and Moreno (2002).
was happy to work on this engagement because he had previously worked with the client’s controller when that controller worked at a different company. Based on their prior interactions, he really liked the controller and found him to be very pleasant to work with. Conversely, in the Negative Affect condition, the preparer said he was not looking forward to working on the engagement because, based on their prior interactions at another company, he found the controller arrogant, condescending, and extremely unpleasant to work with. This manipulation was intended to convey that the preparer’s feelings were strong enough that he was inclined to mention them when asked only about how the audit was going. Presumably, preparers often have some personal feelings toward client personnel, but would not be inclined to mention them unless they were relatively strong.

By design, the preparer’s relationship with the controller was based on their interactions at a different company to avoid unintentionally providing participants in the affect conditions with additional information about the company’s current audit situation. Furthermore, as confirmed by our post-experimental questionnaire (PEQ), reported in the “Results” section, the additional paragraph about affect did not provide any information that increased the risk associated with the audit, nor did it influence the perceived competence of the client’s controller.

Participants were next told that, in a prior meeting, they had asked the preparer for a workpaper that presented his recommended inventory writedown amount and a written summary of the evidence used to make his judgment. Participants in all conditions received the same written summary of evidence from the preparer (see Appendix A). Two partners from a Big 4 audit firm reviewed all case materials, and indicated that the information provided was realistic and typical of information an auditor would encounter during an audit of inventory. Both individuals also agreed that (1) the evidence in the workpaper included a mix of information, some of which was consistent with inventory obsolescence and some that was inconsistent, making the task fairly subjective, and (2) the appropriate inventory writedown was greater than $0, but less than $1.2 million.

After reviewing the workpaper, participants were asked if they agreed with the preparer’s recommended inventory writedown amount. Participants who disagreed were then asked to provide what they believed was the appropriate inventory writedown amount. They were able to go back and review both the background information and the preparer’s workpaper when making their judgments, but not when answering the subsequent PEQ. Finally, participants answered manipulation check questions and questions designed to gather demographic information.11

IV. RESULTS

Manipulation Checks and Audit Reviewers’ Perceptions of Competence and Audit Risk

Table 1 presents means (standard deviations) for the manipulation check questions. Participants in the Positive Affect and Positive Control (Negative Affect and Negative Control) conditions were asked whether it seemed the preparer personally liked (disliked) the controller and were asked to select “Yes,” “No,” or “Do Not Know.” Table 1, Panel A shows that almost all participants correctly answered about the preparer’s affective response to the controller (mean = 92.44 percent).12

Also, participants attended to the information presented, and perceived client personnel to be relatively competent and audit risk (i.e., risk of misstatement) to be relatively low. Specifically, in

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11 These questions primarily addressed months of audit experience, the participant’s gender, the participant’s job title (either senior manager or manager), and the amount of time the participants had spent auditing manufacturing clients.

12 A Chi-square test confirms that participants’ responses were strongly associated with the experimental condition to which they were assigned ($\chi^2(df = 3, n = 119) = 86.5, p < 0.001$). Three of the 35 participants in the Positive Affect condition and four of the 30 participants in the Negative Affect condition answered “Do Not Know” instead of providing the correct response of “Yes.” Excluding those participants who answered this item incorrectly does not change any of our statistical inferences.
TABLE 1  
Summary of Responses to Manipulation Checks by Condition

Panel A: Percentage of Participants Who Correctly Identified Preparer’s Affect\(^a\)

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Correct Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Affect</td>
<td>91.43%</td>
</tr>
<tr>
<td>Positive Control</td>
<td>96.00%</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>86.67%</td>
</tr>
<tr>
<td>Negative Control</td>
<td>96.55%</td>
</tr>
<tr>
<td>Overall</td>
<td>92.44%</td>
</tr>
</tbody>
</table>

Panel B: Mean (Standard Deviation) of Participants’ Responses Regarding Client Competence and Audit Risk

<table>
<thead>
<tr>
<th></th>
<th>Positive Affect</th>
<th>Positive Control</th>
<th>Negative Affect</th>
<th>Negative Control</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree that Client is Competent(^b)</td>
<td>8.29 (1.69)</td>
<td>7.52 (1.91)</td>
<td>8.10 (1.57)</td>
<td>8.28 (1.73)</td>
<td>8.08 (1.73)</td>
</tr>
<tr>
<td>Agree that Audit Risk is Low(^c)</td>
<td>8.05 (2.37)</td>
<td>7.36 (2.38)</td>
<td>8.00 (2.13)</td>
<td>7.34 (2.62)</td>
<td>7.72 (2.41)</td>
</tr>
</tbody>
</table>

\(^a\) Participants in the Positive Affect and Positive Control (Negative Affect and Negative Control) conditions were asked whether the audit senior personally liked (disliked) the client’s controller, and responded “Yes,” “No,” or “Do Not Know.”

\(^b\) Participants were asked to assess the extent to which they agreed with the assertion that the client’s accounting personnel, including the controller, were competent. Participants responded on an 11-point scale, from 0 “Completely Disagree” to 10 “Completely Agree,” with a midpoint of 5 “Neutral.”

\(^c\) Participants were asked to assess the extent to which they agreed with the assertion that other than the valuation issue, the client’s inventory balance was free of misstatements or omissions. Participants responded on an 11-point scale, from 0 “Completely Disagree” to 10 “Completely Agree,” with a midpoint of 5 “Neutral.”

Table 1, Panel B, on an 11-point scale where 0 = Completely Disagree, 5 = Neutral, and 10 = Completely Agree, participants agreed that the client’s accounting personnel, including the controller, were competent (mean = 8.08) and that, other than there being a question of valuation, the client’s inventory balance was free of misstatements or omissions (mean = 7.72). There were no significant differences in any of these measures across treatment conditions. \(^{13}\)

In addition, PEQ items examined whether reviewers perceive that affect could influence both their own judgment and preparers’ judgments. Specifically, we asked participants in the Positive Affect and Positive Control conditions to assess the likelihood that their own feelings of liking a client would influence their audit judgments, and the likelihood that a staff or senior’s feelings would influence their judgments. Participants in the Negative Affect and Negative Control conditions were asked identical questions regarding feelings of disliking a client. \(^{14}\) Participants responded on an 11-point scale, from 0

\(^{13}\) We conducted ANOVAs to confirm that there were no main effects or interactions for the manipulation check variables (all \(p\) values > 0.10). A series of nonparametric tests provided similar results.

\(^{14}\) We combined the PEQ results of the Positive Affect and Positive Control conditions because participants were asked the same questions about liking the client, and because their responses did not differ from each other (\(t = 0.15, \ p = 0.880\)). Similarly, we combined the PEQ results of the Negative Affect and Negative Control conditions because participants were asked the same questions about disliking the client, and because their responses did not differ from each other (\(t = 0.67, \ p = 0.509\)).
“Very unlikely to affect judgment” to 10 “Very likely to affect judgment.” Participants’ responses suggest that reviewers believe their own judgments might be slightly influenced by their feelings of liking the controller (mean = 2.79), but that preparers’ judgments (mean = 5.02) are significantly more influenced (t = 6.86, p < 0.001). Similarly, reviewers believe their own judgments are only slightly influenced by their feelings of disliking the controller (mean = 3.15), but that preparers’ judgments (mean = 4.95) are significantly more influenced (t = 6.68, p < 0.001). These responses also indicate that there is no significant difference (t = 0.18, p = 0.859, two-tailed) between the perceived magnitude of the effects on preparer judgments of liking versus disliking client personnel.

While the PEQ responses suggest that reviewers perceive that affect influences preparers’ judgments, they do not address whether reviewers believe affect erroneously causes preparers to be more favorable or unfavorable to the client than warranted. We designed our follow-up study described in Section V to provide evidence on this issue. The results demonstrate that in a setting identical to that of our primary experiment, reviewers perceive that preparers’ positive (negative) affect toward the controller erroneously makes their judgments more favorable (unfavorable) to the client than warranted.

Tests of H1a versus H1b

Our hypotheses offer competing predictions about whether reviewers’ judgments exhibit the ironic rebound effect. The primary dependent measure is the inventory writedown amount agreed to by reviewers. Table 2, Panel A presents descriptive statistics, and Figure 1 illustrates these results graphically. To test whether the data are consistent with H1a or H1b, we report an ANOVA in Table 2, Panel B. The dependent variable is the amount of the reviewer’s writedown, and the independent variables are whether any affective information was provided (Affective Information Provided versus Affective Information Not Provided) and the preparer’s recommended writedown (Positive/$0 writedown or Negative/$1.2 million writedown).

The ANOVA results in Table 2, Panel B indicate that Affective Information and the Preparer’s Recommendation have a significant interactive effect on Reviewers’ Recommended Writedown (F = 7.41, p < 0.01). Figure 1 shows that this interaction is consistent with H1a, but not H1b. That is, reviewers’ judgments are more consistent with preparers’ judgments in the affect conditions than in their corresponding control conditions. It is important to note that this interaction arises because the affect-consistent response moves reviewers’ judgments in two different directions (i.e., more positive versus more negative), not because the two types of feelings influence reviewers’ judgments to a different extent.15

Because there is a significant interaction, it is not meaningful to look at the ANOVA’s marginal main effects. Therefore, we conduct tests of simple main effects and present the results in Table 2, Panel C. H1a predicts that when reviewers know that a preparer has strong personal feelings, reviewers who are aware of a preparer’s positive (negative) feelings will recommend a more favorable (unfavorable) writedown than will those not provided with affective information. Consistent with this prediction, the data reported in Table 2, Panel A and in the first simple main effects test in Panel C show that the mean reviewer writedown of $42,400 in the Positive Affect condition is more favorable (i.e., a smaller writedown) than the mean reviewer writedown of $119,200 in the Positive Control condition (F = 5.49, p < 0.03, two-tailed). Similarly, the second simple main effects test indicates that the mean reviewer writedown of $357,333 in the Negative Affect condition is more unfavorable (i.e., a larger writedown) than the mean reviewer writedown of $183,103 in the Negative Control condition (F = 4.07, p < 0.05, two-tailed). These results are consistent with the ironic rebound effect predicted in H1a.

15 We later report in Table 3 the results of testing whether the effects of positive and negative affect are symmetric by comparing the absolute value of the change for positive versus negative affect.
Our hypotheses predict *differences* between the Affect conditions and the Control conditions, not the *level* of the reviewers’ judgments in each condition. However, prior audit review process literature, such as Libby and Trotman (1993), suggests that reviewers in the Control conditions will not rely on a preparer’s judgment that appears inconsistent with the audit evidence. The fact that reviewers’ judgments are not different ($F = 0.94$, $p > 0.33$) between the Positive Control ($119,200$) and Negative Conditions.

### TABLE 2
**Tests of Hypotheses**

#### Panel A: Mean (Standard Deviation) of Reviewers’ Recommended Writedown

<table>
<thead>
<tr>
<th>Preparer’s Recommended Writedown Amount</th>
<th>Information About Preparers’ Affect:</th>
<th>Not Provided</th>
<th>Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Conditions (Writedown of $0$ is Favorable to Client)</td>
<td>Positive Control</td>
<td>$119,200$</td>
<td>$42,400$</td>
</tr>
<tr>
<td></td>
<td>($157,107$)</td>
<td>($96,359$)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$n = 25$</td>
<td>$n = 35$</td>
<td></td>
</tr>
<tr>
<td>Negative Conditions (Writedown of $1.2$ million is Unfavorable to Client)</td>
<td>Negative Control</td>
<td>$183,103$</td>
<td>$357,333$</td>
</tr>
<tr>
<td></td>
<td>($296,155$)</td>
<td>($362,358$)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$n = 29$</td>
<td>$n = 30$</td>
<td></td>
</tr>
</tbody>
</table>

#### Panel B: Two-Way ANOVA

<table>
<thead>
<tr>
<th>Source</th>
<th>$F$</th>
<th>p-value (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Information Provided (Yes or No)</td>
<td>0.55</td>
<td>0.458</td>
</tr>
<tr>
<td>Preparer Recommendation (Favorable/$0$ writedown or Unfavorable/$1.2$ million writedown)</td>
<td>19.16</td>
<td>$&lt;0.001$</td>
</tr>
<tr>
<td>Affective Information $\times$ Preparer Recommendation</td>
<td>7.41</td>
<td>0.008</td>
</tr>
</tbody>
</table>

#### Panel C: Simple Main Effects

<table>
<thead>
<tr>
<th>Source</th>
<th>$F$</th>
<th>p-value (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Effect of Providing Positive Affective Information When Preparer Recommends Favorable/$0$ Writedown (Positive Affect versus Positive Control)</td>
<td>5.49</td>
<td>0.023</td>
</tr>
<tr>
<td>2. Effect of Providing Negative Affective Information When Preparer Recommends Unfavorable/$1.2$ Million Writedown (Negative Affect versus Negative Control)</td>
<td>4.07</td>
<td>0.048</td>
</tr>
<tr>
<td>3. Effect of Preparer Recommendation (Positive Control versus Negative Control)</td>
<td>0.94</td>
<td>0.338</td>
</tr>
<tr>
<td>4. Effect of Nature of Affective Information (Positive Affect versus Negative Affect)</td>
<td>24.48</td>
<td>$&lt;0.001$</td>
</tr>
</tbody>
</table>

In the Positive (Negative) Affect condition, reviewers were told that the preparer personally liked (disliked) the client.
Control ($183,103) conditions, as shown in the third simple main effects test in Table 2, Panel C, indicates that reviewers do not rely on preparers’ judgments when they do not suspect the judgments are biased. Reviewers’ inappropriate reliance on the preparer’s judgment only occurs when the preparer’s judgment appears biased by his or her affect. The judgments in the Control conditions also suggest that reviewers believe the appropriate mean writedown for this situation falls somewhere between $119,200 and $183,103.

V. SUPPLEMENTAL ANALYSES

Differences in the Influence of Positive versus Negative Affective Information

We did not hypothesize any difference in the extent to which positive versus negative affective information would influence reviewer judgments. However, we conduct a supplemental analysis to determine whether the magnitude of the difference between the affect and control condition is different for positive versus negative feelings. To conduct this analysis, we calculate the absolute value of the difference between the preparer’s and reviewers’ recommendations, and use this as the dependent variable in the ANOVA presented in Table 3. We find a main effect of providing reviewers with affective information ($F = 16.99, p < 0.001$), but that there is no interaction between...
positive and negative affective information and the preparer’s recommended writedown amount (i.e., $0 versus $1.2 million). This indicates that the magnitude of the influence of receiving positive affective information is not significantly different from that of receiving negative affective information (F = 1.12, p = 0.293). That is, reviewers seem to be influenced similarly by learning of a preparer’s positive and negative affect.16

Audit Reviewers Expect Audit Preparers’ Judgments to be Overly Influenced by Affect

As noted previously, we expected reviewers to recognize that preparers’ affect influences their judgments, and the PEQ results confirm that they do. Note that such an influence might be

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16 The main effect of Preparer’s Recommendation in Table 3 is due to the parameters chosen in the experiment. Because all participants believed the appropriate writedown was much closer to $0 than to $1.2 million, a much larger adjustment was needed when the preparer recommended an unfavorable writedown of $1.2 million than when the preparer recommended a favorable writedown of $0. This effect is unrelated to our hypotheses or results.
warranted if reviewers attributed the affect to factors diagnostic of audit risk or client competence. However, affective reactions often capture traits like warmth and happiness, which should not influence preparers’ judgments if they are unrelated to the audit.

To assess whether reviewers perceive that a preparer’s affect could influence the preparer’s judgment to a greater extent than warranted, we conducted a follow-up study with participants similar to those in our primary experiment. We randomly assigned 40 Big 4 audit managers and senior managers with an average of 8.51 years of audit experience (none of whom participated in our primary experiment) to either a Positive or Negative condition, and sent the participants a link to access the case materials.

The materials asked participants to assume that they are the audit manager reviewing an engagement. The client background information and affect manipulation were identical to that of our primary experiment. That is, the Positive (Negative) condition’s affect manipulation is the same as the experiment’s Positive (Negative) Affect condition. After reading the background information, the materials informed participants that in a prior meeting, they had asked the preparer to make an initial judgment regarding the appropriate inventory writedown. The participants then rated the likelihood that the preparer’s personal feelings toward the client’s controller would erroneously influence the preparer’s inventory writedown judgment. In the Positive condition, participants were asked to rate the likelihood that the preparer would erroneously reach a judgment that is more favorable to the client than warranted. Participants respond on an 11-point scale ranging from 0 percent (definitely not more favorable than warranted) to 100 percent (definitely more favorable than warranted). Similarly, in the Negative condition, participants rated the likelihood that the preparer would erroneously reach a judgment that is less favorable to the client than warranted, and responded on an 11-point scale ranging from 0 percent (definitely not less favorable than warranted) to 100 percent (definitely less favorable than warranted).

Table 4 presents a summary of participants’ responses. As shown in Panel A, in the Positive condition, 100 percent of participants believe there is at least some likelihood that the preparer’s feelings would erroneously influence his or her judgment to be more favorable to the client than warranted. In addition, 71.4 percent (15 of 21) believe it is at least 50 percent likely, and 42.8 percent (9 of 21) believe it is more than 50 percent likely that the preparer’s judgment would erroneously be more favorable to the client than warranted. Panel B of this table shows similar results for the Negative condition, where 90 percent of participants (all but two) believe there is at least some likelihood that the preparer’s feelings would erroneously influence his or her judgment to be more unfavorable to the client than warranted. In addition, 63.2 percent (12 of 19 participants) believe it is at least 50 percent likely, and 47.4 percent (9 of 19 participants) believe it is more than 50 percent likely, that the preparer’s judgment would erroneously be more unfavorable to the client than warranted. Consistent with the primary experiment, there is no difference between mean responses in the Positive and Negative conditions (t = 1.01, p = 0.32).

Thus, our follow-up study confirms that most experienced auditor reviewers (38 of 40, or 95 percent) perceive that preparers’ affect will have some erroneous influence on preparers’ judgments.

VI. CONCLUSIONS AND IMPLICATIONS

We report the results of an experiment designed to investigate how experienced auditors acting as reviewers respond when reviewing a preparer’s judgment that they do or do not perceive might be biased by affect. We find that reviewers in the control conditions, who are not provided with information about the preparer’s affect, are able to avoid relying too heavily on the preparer’s judgment, and instead make judgments based primarily on the workpaper evidence. This is consistent with the results of prior audit review process studies that find that reviewers mitigate
preparer errors and biases (Libby and Trotman 1993; Ramsay 1994). However, when reviewers in our study also receive information about the preparer’s affect, they rely on the preparer’s judgment more than when they are not informed about a preparer’s affect. This finding is consistent with the ironic rebound effect, which predicts that when reviewers do not know exactly how to discount a preparer’s judgment that appears biased, they will ironically rely on it more.17 Our results suggest that reviewers can better adjust for a preparer’s judgment that is simply inconsistent with the audit evidence than one that appears biased by the preparer’s affect.

These results have implications for audit practice and audit research. Prior studies, such as Agoglia, Hatfield, and Brazel (2009), Rich et al. (1997), Ramsay (1994), and Libby and Trotman

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**TABLE 4**

Results of Supplemental Study to Assess Reviewers’ Perceptions of the Influence of Affect on Preparer Judgments

**Panel A: Positive Condition (n = 21)**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of Participants</th>
<th>% of Total Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% Likely</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>10%–40% Likely</td>
<td>6</td>
<td>28.6%</td>
</tr>
<tr>
<td>50% Likely</td>
<td>6</td>
<td>28.6%</td>
</tr>
<tr>
<td>&gt; 50% Likely</td>
<td>9</td>
<td>42.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

In the Positive Condition, participants were told that the audit preparer personally likes the client’s controller. Participants were then asked to rate the likelihood that the preparer’s strong personal feelings toward the client would lead the preparer to erroneously reach a judgment that is more favorable to the client than warranted. Participants respond on an 11-point scale, ranging from 0 percent (definitely not more favorable than warranted) to 100 percent (definitely more favorable than warranted).

**Panel B: Negative Condition (n = 19)**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number of Participants</th>
<th>% of Total Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% Likely</td>
<td>2</td>
<td>10.5%</td>
</tr>
<tr>
<td>10%–40% Likely</td>
<td>5</td>
<td>26.3%</td>
</tr>
<tr>
<td>50% Likely</td>
<td>3</td>
<td>15.8%</td>
</tr>
<tr>
<td>&gt; 50% Likely</td>
<td>9</td>
<td>47.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

In the Negative Condition, participants were told that the audit preparer personally dislikes the client’s controller. Participants were then asked to rate the likelihood that the preparer’s strong personal feelings toward the client would lead the preparer to erroneously reach a judgment that is less favorable to the client than warranted. Participants respond on an 11-point scale, ranging from 0 percent (definitely not less favorable than warranted) to 100 percent (definitely less favorable than warranted).

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17 The ironic rebound effect seems consistent with other research that suggests that when the cognitive demands of a task increase, as is the case when monitoring activity increases, it is more likely that individuals will anchor on a salient value (Kahneman and Frederick 2002).
(1993), demonstrate a number of benefits generally associated with the audit review process. However, we document a circumstance in which the review process does not seem as effective—when reviewers are faced with a preparer judgment that appears biased, but they do not know the extent of the bias or exactly how to adjust for it, they do not mitigate the bias. This finding could be relevant in many audit contexts because, as discussed in R. Ashton and A. Ashton (1995) and Bonner (2008), several other psychological factors have been found to bias preparers’ judgments. If reviewers cannot mitigate these biases, then the audit review process’s ability to function as a quality control mechanism could be impaired.

We document a specific potential problem with the audit review process. Future research could replicate these results and extend them by investigating ways to alleviate this problem and make reviewers less susceptible to the ironic rebound effect. For example, it may be possible to restructure the reviewer’s task. In cases where reviewers perceive that a preparer’s judgment is biased, it might be helpful to prompt reviewers to explicitly incorporate their perceptions of bias into the judgment process rather than to try to ignore the preparer’s judgment (Wegner 1994; Lieberman and Arndt 2000). Restructuring the task in this way could put less demand on the reviewer’s monitoring process.

Our experimental setting made the preparer’s affective reaction toward the controller salient to the reviewer. One might question how reviewers on actual audits might become aware of a preparer’s affect. Based on our discussions with practicing auditors, audit managers and partners often visit audit staff on client engagements, taking them to lunch or interacting with them in other informal social settings. In these settings, in addition to discussing audit issues, it is not unusual for preparers with relatively strong personal feelings toward the client’s personnel to discuss them with the rest of the audit team. Moreover, psychology research about secondhand affect (Gilovich 1987; Baron, David, Brunsman, and Inman 1997) suggests that these types of discussions could lead reviewers to experience secondhand affective reactions, which are subconsciously positive toward client personnel that the preparer likes and negative toward those that the preparer dislikes. Future research could investigate whether reviewers experience secondhand affect, and if they do, if their secondhand affect exacerbates the results found here.

A potential limitation of our study relates to the fact that in practice, a reviewer who perceives that a preparer’s judgment may be biased could go back and gather additional evidence or ask another preparer who does not have strong affect toward the client’s controller to re-perform the preparer’s work. However, it is unlikely that such significant steps would normally be taken given the potential immediate cost to the audit firm and the time constraints inherent in the audit process (Lambert and Agoglia 2011; Asare and McDaniel 1996). Furthermore, the auditing literature suggests that once reviewers are aware of the initial preparer’s judgment, it may not be possible for them to completely ignore this judgment when reviewing the work of another preparer (H.-T. Tan and S.-K. Tan 2008).

Another potential limitation of our study is that we rely on final audit judgments to test our hypotheses without direct evidence regarding the subconscious cognitive processes underlying those judgments. We also have no evidence regarding the exact weight that reviewers placed on the preparer’s judgment. Instead, like prior studies in this area, we rely on final judgments to demonstrate the effect. Despite not having direct evidence regarding the underlying cognitive process, we find it reassuring that the pattern of judgments is consistent with prior ironic rebound effect studies. Also, the fact that the results were the same in both the Positive and Negative between-subjects treatment conditions provides additional assurance that the effects we observe are systematic and did not occur by chance. Because research suggests that individuals generally lack insight into their subconscious cognitive processes (Nisbett and Wilson 1977), participants are unlikely to know how much weight they placed on the preparer’s judgment or how much they
discounted it. Future research could consider employing process tracing or magnetic imaging techniques to investigate the subconscious cognitive mechanisms that underlie these judgments.

REFERENCES


APPENDIX A

The following workpaper evidence, some of which was adopted from Bhattacharjee and Moreno (2002), was provided to all participants.

- BDRM has 60,000 electronic components in the year-end stock, carried at full absorption cost of $30 each. This is equivalent to six months’ sales at 10,000 units per month. Over the last three years, the average selling price was $50 per unit and delivery costs were $9 per unit. Production of these units is continuing.

- During the year ended December 31, 2009, it was discovered that BDRM’s primary competitor, Roth, Inc., developed a prototype of a product that may be viewed as technically superior to BDRM’s. While BDRM has begun to develop a product comparable to Roth’s, the production of its existing design will continue so that BDRM is able to serve its existing customer needs until the commercial success and cost competitiveness of this product is established.

- According to Roth’s press releases, their new electronic component is currently expected to sell for approximately $40, which is below the price at which BDRM has historically offered its product. While BDRM is unsure whether Roth’s lower price is a temporary marketing strategy, Company management believes that Roth’s new device will be priced competitively when available. Consequently, management believes that significant pricing changes may be necessary for BDRM to sell existing inventory and continue production.

- BDRM believes that it is premature to project any significant losses on its electronic component inventory for many reasons. First, although Roth has recently begun accepting pre-orders, BDRM believes, given likely retooling and production delays, that it will take at least 18–20 months for Roth to gear up to full production. Furthermore, BDRM anticipates that many customers will be unwilling or unable to wait that long for an item that is unproven and has never been used in actual production conditions. BDRM management is also somewhat skeptical of the adequacy of Roth’s testing of its new technology and, as such, believes that Roth may be attempting to market its device prematurely.

- BDRM has an international marketing team that aggressively markets its older technology products in developing nations around the world. Past experiences indicate that there is a healthy third-world market for electronic components such as the devices BDRM is currently manufacturing. Preliminary analysis by BDRM’s international team indicates that 5,000 units per month could be expected, conservatively, to sell in these foreign markets by using existing market channels and personnel. The selling price of these products would likely yield positive profit margins.