

## The Effects of Hindsight Bias on Auditors' Going-Concern Judgments

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### Abstract

According to auditing standards, auditors are required to determine if substantial doubt exists regarding an audit client's likelihood of continuing as a going concern for one year from the date of the financial statements being audited. My research indicates that auditors are prone to "hindsight bias" when making going-concern judgments. Hindsight bias is the tendency for individuals who have been provided the outcome of an uncertain event to overstate their abilities to have predicted that outcome in foresight. My research has examined: the effects of auditor experience on hindsight bias; the extent to which hindsight bias influences auditors' relevance ratings of adverse factors versus mitigating factors; the effectiveness of a debiasing strategy designed to reduce auditors' hindsight bias; the degree to which hindsight bias causes auditors to be overconfident in their judgments; the effects of hindsight bias on the audit opinion decision, and the effects of experience on auditors' relevance ratings of adverse factors and mitigating factors when making going-concern judgments.

**Keywords:** Hindsight Bias; Going-Concern Judgments; Auditor Judgments

### I. Introduction

According to Auditing Standards (AICPA, 1988; AICPA, 1990), auditors are required to determine if substantial doubt exists regarding an audit client's likelihood of continuing as a going-concern for one year from the date of the financial statements being audited. Hindsight bias is the tendency for individuals who have been provided with the outcome of an uncertain event to systematically overstate their abilities to have predicted that outcome in foresight (Fischhoff, 1975). Further, individuals deny that knowledge of the event's actual outcome has affected their predictions.

According to the psychological literature (e.g., Fischhoff, 1975; Hawkins & Hastie, 1990), the "knew-it-all-along" attitude created by hindsight bias impedes feedback learning, thereby reducing what individuals could potentially learn from the feedback provided by the outcome. If auditors believe they "knew all along" that a bankrupt company was going to fail, they will not learn what they should from the outcome and will believe more often than they should that they could have actually predicted the outcome. It is assumed that hindsight bias will cause auditors to be overconfident in their abilities to accurately make subsequent going-concern judgments in foresight. This overconfidence may lead auditors to believe they have little reason to re-evaluate and improve their decision making processes and evidence gathering strategies regarding going-concern judgments.

Fischhoff (1975) coined the term "creeping determinism" to describe the process he believed was responsible for hindsight bias. According to Fischhoff, "Upon receipt of outcome knowledge judges immediately assimilate it with what they already know about the event in question. In other words, the retrospective judge attempts to make sense, or a coherent whole, out of all that he knows about the event" (1975, 297). Because the process was hypothesized to be quick and unconscious, Fischhoff described the outcome information as "creeping" into the subject's mental representation of the event resulting in cognitive restructuring. The characteristic effect of creeping determinism is the proclivity to view a known outcome as nearly inevitable, as revealed in retrospective probability judgments, because of the seemingly unalterable sequence of events leading up to it (Hawkins & Hastie, 1990). The "creeping

determinism” hypothesis is consistent with more of the hindsight literature results than any other explanation offered (Hawkins & Hastie, 1990).

It is very important for auditors to improve their going-concern judgments by learning from the feedback provided by actual bankruptcies and to avoid overconfidence when making these judgments. Of the 20 largest U.S. corporate bankruptcies since 1980, all but three occurred after the first quarter of 2001. The two largest, Lehman Brothers Holdings, Inc. and Washington Mutual, Inc., occurred during September 2008 (BankruptcyData.com, 2015). Case studies describing the facts surrounding U.S. bankruptcies appear in auditing textbooks and are used in public accounting firm training programs. In order to learn as much as possible from the feedback provided by these case studies, it is critical that auditing students as well as professional auditors not be adversely affected by the presence of hindsight bias. Next is a review of the research method I used in my six papers on the topic of hindsight bias and auditors' judgments followed by a summary of the hypotheses and results.

## **II. Research Method**

### **II.1 Experimental Design**

The overall experimental design used was a 2X3 factorial. The two between factors were either experience, debiasing strategy, or factor type, and outcome. The experience factor had two levels, high (i.e., managers and partners) and low (i.e., staff auditors). The debiasing strategy had two levels, no (i.e., the debiasing strategy was not used) and yes (i.e., the debiasing strategy was used). The two levels of factor type were repeated measures, including adverse factors and mitigating factors.

The outcome factor had three levels: no outcome, (i.e., the foresight condition), failure outcome (i.e., the hindsight condition – the company filed for bankruptcy), and the success outcome (i.e., the hindsight condition – the company continued in business and did not file for bankruptcy). In every study, one of the dependent variables was the auditor's going-concern probability judgment (hereafter referred to as the viability judgment). Other dependent variables included the auditor's confidence rating of their viability judgment, their audit opinion decision, their relevance ratings of adverse factors and mitigating factors.

### **II.2 Subjects and Procedure**

The subjects were asked to judge the likelihood that a troubled company would or would not continue as a going concern. The sample of subjects consisted of auditors from international public accounting firms. Subjects were randomly assigned to experimental conditions. Each subject received a packet of materials, consisting of a sealed envelope, a page of general instructions, and either five or six pages of case data (including a case review task). After completing the case review task, the written instructions indicated that the subjects were to open the sealed envelope. The envelope contained: the outcome information (if provided), the viability judgment task, the confidence rating task or cue relevance rating task, the opinion decision task (if applicable), and the debriefing task. The subjects were not allowed to use reference materials and were required to work independently.

### **II.3 Case Review Task**

The subjects were provided with a page of general instructions and a narrative summary of pertinent information for a real, but disguised, chemical manufacturer and three years of financial data for that manufacturer. The narrative summary contained an equal number of adverse factors (cues pointing toward failure) and mitigating factors (cues pointing toward success). The financial data included the financial statements (i.e., a balance sheet, income

statement, and statement of cash flows), a summary of financial highlights, and a set of financial ratios.

Figure 1 illustrates the experimental tasks that the subjects were asked to perform. The subjects' first task was to review the case data for Alpha Chemical, Inc. (the fictitious name given to a real chemical manufacturer). They were instructed to assume the role of audit supervisor on the Alpha audit for year 1. They were also told that the fieldwork had been completed, but the final audit opinion had not yet been written. They were to review Alpha's financial statements in an attempt to assess viability.

### Figure 1: Experimental Tasks

#### Steps

- I Review Case Data (Task #1)
- II Failure (Success) Outcome Provided to Subjects in Failure (Success) Outcome Condition
- III Viability Judgment Task (Task #2)
- IV Confidence Rating Task OR Cue Relevance Rating Task (Task #3)
- V Opinion Decision Task (Task #4)
- VI Debriefing Questionnaire (Task #4 or Task #5 in opinion decision studies)

#### II.4 Viability Judgment Task

After reviewing the case data, subjects were instructed to begin the second task, the viability judgment. Before making their viability judgments, subjects in the failure outcome condition were informed that the company did file for bankruptcy during the last half of the year subsequent to the year under audit. Subjects in the success outcome condition were informed that the company did continue in existence as a going concern throughout the year subsequent to the year under audit. Subjects in the no outcome condition were not provided with any outcome information.

All subjects were instructed to assume that it was the last day of fieldwork for the year-end audit. They were reminded that at that time they would not have known whether the company was going to succeed or whether it was going to fail, so were told to ignore the fact that they now know the outcome. They were instructed to estimate the likelihood that the company would or would not continue as a going concern throughout the year subsequent to the year under audit by placing an "X" on a probability scale ranging from 0% (certain NOT to continue) to 100% (certain to continue).

#### II.5 Confidence Rating Task/Cue Relevance Rating Task

In the experiments involving the effects of hindsight bias on auditors' confidence, immediately following the viability judgment task, subjects were asked to rate their confidence in that judgment. Subjects were asked to rate their confidence in their viability judgment on a seven-point scale anchored on 0, not at all confident, to 6, extremely confident. In the experiments involving the cue relevance ratings of adverse factors and mitigating factors, subjects were instructed to rate the relevance of five adverse factors and five mitigating factors that were mentioned in the case study.

#### II.6 Opinion Decision Task

In the experiment involving the opinion decision, after rating their confidence in their viability judgment, subjects were asked to make an audit opinion decision. They were asked, "What audit opinion do you believe should be issued to Alpha, Inc. for the year under audit?" They were given the following three choices: clean, three-paragraph opinion; clean, four-paragraph opinion

modified for going-concern problems, or a disclaimer of opinion. Given its extreme rarity, the choice of adverse opinion was not provided.

### **II.7 Debriefing Task**

The final task for all subjects was completing a one-page debriefing questionnaire. Subjects were asked to indicate their number of years and months of experience, their current rank within their firm, and the number of minutes they took in completing the experiment. They were also asked to indicate both the number of audit engagements they had been associated with in which substantial doubt existed regarding the client's ability to continue as a going concern and their degree of involvement in the going-concern evaluation of these clients. In addition, they were asked to rate their degree of proficiency at evaluating a company's going-concern status. Finally, subjects in the failure outcome and success outcome conditions were asked to indicate the degree of influence, if any, the outcome information had on their viability judgments.

In the next section, the hypotheses developed are summarized along with a summary of the experimental results found in each of the studies.

## **III. Hypotheses and Results**

### **III.1 Hindsight Bias and the Effects of Experience**

I hypothesized that, based on theories from the psychological literature, auditors would be prone to hindsight bias and that the bias would be greater for experienced auditors as compared to inexperienced auditors. It was theorized that experienced auditors' foresight-hindsight difference in their mental representations of the event would be greater than inexperienced auditors'. It was argued that experienced auditors would be better able to rewrite their mental representations of the case scenario by adding semantic links signifying causal relations between events in the case and the actual outcome.

The research findings did reveal that auditors are prone to hindsight bias; however the bias neither intensifies nor diminishes with experience, but instead remains unchanged. This could be due to the overall lack of experience that even auditors at the senior manager and partner levels have with client companies that have going-concern issues.

### **III.2 Hindsight Bias and Cue Relevance Ratings**

In my second experiment, I hypothesized and found that, contrary to the psychological literature, auditors would rate adverse factors as more relevant than mitigating factors regardless of the outcome information provided. I also predicted and found that due to the presence of hindsight bias, auditors with failure outcome would rate adverse factors as more relevant than mitigating factors to a greater extent than would auditors not provided with outcome information. Due to the unique nature of auditor training and expertise, the influence of hindsight bias on cue relevance effects in an audit setting systematically differ from those found in psychological studies using student subjects and simplified tasks. Professional auditors realize that there are differential decision error costs associated with some tasks.

The error of incorrectly issuing an unqualified audit opinion to a company that subsequently fails is extremely costly in terms of the risk of a lawsuit and the resulting damage to the public accounting firm's reputation. The error of incorrectly issuing a modified opinion to a company that subsequently continues is generally perceived to be far less costly, resulting in at most the loss of the client and its related audit fees. This asymmetry in decision error costs causes auditors to view adverse factors as far more relevant than mitigating factors in the context of

going-concern judgments. In addition, auditors are required by professional standards and are trained to view adverse factors as more relevant than mitigating factors.

My finding that auditors do in fact rate adverse factors as more relevant than mitigating factors despite the outcome information provided illustrates a unique case where the presence of hindsight bias does not lead to the over-weighting of confirming evidence as found in the psychological literature. It also illustrates the success of auditor training programs, which attempt to train auditors to regard adverse factors as more relevant than mitigating factors in compliance with professional standards and in reaction to the differential decision error costs associated with going-concern decisions. In short, researchers must exercise caution when importing the results from the psychological literature using student subjects and generic tasks to an auditing domain using professional auditors performing specialized tasks.

### **III.3 Hindsight Bias and the Effects of a Debiasing Strategy**

In my third experiment, I examined the effectiveness of a preoutcome debiasing strategy found to be successful in reducing hindsight bias in the psychological literature. This preoutcome debiasing strategy involves allowing subjects to review reasons for the alternative outcomes that they had recorded before they were informed of the actual outcome. It is believed that this strategy enables subjects to retrieve their foresight perspectives which has been found to lead to a reduction in hindsight bias.

I predicted and found that, due to the unique nature of auditors' training and experience, when instructed to generate lists of reasons for the alternative outcomes in foresight, an asymmetrical effect is produced, whereby auditors self-generate a greater number of more highly rated reasons supporting the failure outcome (i.e., adverse factors) as compared to reasons supporting the success outcome (i.e., mitigating factors). As a result, referring back to the lists of reasons after the receipt of outcome information eliminates the degree of hindsight bias exhibited by auditors provided with the success outcome. However, reviewing the lists substantially increases the bias for auditors provided with the failure outcome by creating a "I-really-did-know-it-all-along" attitude.

### **III.4 Hindsight Bias and Overconfidence**

In my fourth experiment, I tested the assumption that the presence of hindsight bias creates overconfidence, and that this overconfidence will adversely affect the accuracy of subsequent probability judgments made in foresight. In this study, I predicted that, due to the infrequency of the failure outcome and auditors' lack of experience with the failure outcome, being given the failure outcome would not lead to overconfidence despite the presence of hindsight bias. Further, due to the high decision error cost associated with incorrectly predicting the success outcome, this study also predicted and found that despite the presence of hindsight bias, auditors provided with the success outcome are not overconfident.

The main contribution of this study is that it does empirically test the assumption that hindsight bias leads to overconfidence. Although the auditor subjects did exhibit hindsight bias as predicted, this bias did not lead the auditors to be overconfident in their judgments. Due to their unique training and experience, it cannot be assumed that auditors will behave and respond in the same manner as one might assume student subjects in psychological experiments to behave. It may first be necessary to subject the findings in the psychological literature to empirical testing that includes auditor subjects performing auditing tasks.

If hindsight bias does not cause auditors to be overconfident when making going-concern judgments, then there is no need to devote resources toward changing existing audit training programs in an effort to eliminate hindsight bias as suggested by previous auditing research. It may also be unnecessary to continue conducting research studies aimed at developing debiasing strategies that eliminate hindsight bias. If hindsight bias does not lead to overconfidence, it may not be as dysfunctional as previously assumed.

### **III.5 Hindsight Bias and Overconfidence and the Effects on the Audit Opinion Decision**

In my fifth experiment, I extended the research from my fourth experiment to determine the effect of hindsight bias on the audit opinion decision. Given that the presence of hindsight bias was not found to result in overconfidence in auditors, it was predicted that hindsight bias would not influence their opinion decisions. Given that only more experienced auditors make the final audit opinion decision, all of the subjects in this experiment were experienced. It was predicted and found that experienced auditors with failure outcome information were no more likely to issue a modified audit opinion than were experienced auditors without outcome information.

### **III.6 Hindsight Bias and Cue Relevance Ratings and the Effects of Experience**

In my sixth experiment, I extended my second experiment on the effects of hindsight bias on auditor judgment and the degree to which the bias influences cue relevance ratings by examining the effects of auditor experience on the cue relevance ratings. Experienced auditors have more elaborate cognitive networks with more linkages and nodes than do inexperienced auditors. They will also have more training and work experience with client companies experiencing going-concern problems. As a result, they should be better able than inexperienced auditors to identify the adverse factors and to rate them as more relevant, which lead to the hypothesis that experienced auditors will exhibit greater cue relevance effects than will inexperienced auditors. This hypothesis was not supported, which could be due to the overall lack of experience that all auditors, even those at the senior manager and partner levels, have with client companies experiencing going-concern problems.

## **IV. Conclusion**

In light of the increasing number of large corporate bankruptcies in the United States, it is more important than ever for auditors to accurately assess the going-concern status of their clients and to issue the appropriate audit opinion. Case studies describing the facts surrounding recent U.S. bankruptcies appear in auditing textbooks and are used in public accounting firm training programs. In order to learn as much as possible from the feedback provided by these case studies, it is critical that auditing students as well as professional auditors not be adversely affected by the presence of hindsight bias, which is believed to impede feedback learning.

The six experiments I have conducted on the effects of hindsight bias on auditors' judgments have uncovered the following:

- Both experienced and inexperienced auditors exhibit hindsight bias when making going-concern judgments.
- Hindsight bias neither intensifies nor diminishes with experience, but instead remains unchanged.
- Auditors rate adverse factors as more relevant than mitigating factors regardless of the outcome information provided.
- Auditors with failure outcome rate adverse factors as more relevant than mitigating factors to a greater extent than do auditors not provided with outcome information.

- Auditor experience has no effect on these cue relevance findings.
- A preoutcome debiasing strategy eliminates hindsight bias for the success outcome, but increases hindsight bias in the failure outcome.
- Hindsight bias does not lead to overconfidence in auditors' going-concern judgments.
- Hindsight bias does not affect experienced auditors' opinion decisions.

The results of these studies must be interpreted in light of certain limitations. First, the studies involve a sample of auditor subjects from international public accounting firms which limits the ability to generalize the results to smaller public accounting firms at the national, regional, and local levels. Second, it is difficult to determine whether the subjects were sufficiently motivated to concentrate on the experimental tasks and to complete the tasks as they would in practice. Third, the subjects did not have access to the array of information, resources, and consultations with others that would normally be available to them during an actual audit. Also, the subjects may not have been able to relate to many situations in practice in which they are required to ignore known outcomes and state explicitly what judgments they would have made at some point in the past.

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