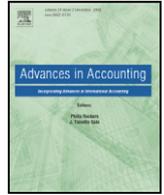




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## Experimental evidence on the effect of earnings targets on managers' estimates in the financial statements

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### ABSTRACT

This paper reports on an experiment designed to provide evidence on whether external earnings targets, such as those imposed by analysts, influence managers' judgments about (and the related accuracy of) the value of assets/liabilities reported in the financial statements. Data from the experiment indicate that higher earnings targets result in managers reporting higher estimates of profitability/asset values, but also produce larger errors in estimating those amounts. The biased estimates and related errors are a result of managers being overly optimistic about their ability to generate outcomes that fully support their estimates. In addition, data indicate that managers, over-time, learn to make better estimates, but the relation between targets, estimates, and estimation errors persists. All of this occurred in a setting in which there were financial incentives to produce the most accurate estimates possible—nothing was to be gained by deliberately biasing estimates. This suggests that the earnings targets affected managers' judgment about amounts to be reported in the financial statements, and led to *sub-conscious* biases that produced results causing managers' estimates to be erroneously correlated with external earnings targets.

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### 1. Introduction

This paper reports on an experiment designed to provide evidence on whether external earnings targets, such as those imposed by analysts, influence managers' judgments about (and the related accuracy of) the value of assets/liabilities reported in the financial statements.

Empirical–archival research documents systematic relations between analysts' earnings targets and changes in the values of assets and liabilities that require significant judgment to estimate (e.g., [Comprich, Mills, & Schmidt, 2012](#); [Dhaliwal, Gleason, & Mills, 2004](#); [Kasznik & McNichols, 2002](#)). The authors suggest that the results *could be* attributable to deliberate attempts to shade estimates in an effort to produce accounting numbers in-line with the external targets. However, these studies were not designed to provide evidence about the underlying causes of these observed results.

In contrast, in this paper, I posit that these relations can be caused by *unconscious* biases in managers' judgments that are triggered by the imposition of earnings targets. In other words, managers may truly believe that they are reporting accurate, unbiased numbers in the financial statements; yet those numbers may, in fact, be influenced by external factors such as analysts' earnings targets.

The experiment described in this paper provides evidence about whether external targets influence manager's judgments about the value of assets and liabilities under their control, and thus offers insight

into whether unconscious bias might be an issue in financial reporting. The experiment requires managers to estimate the amounts they expect to realize from buying and selling assets under their control. In principle, this could serve as the basis for valuing those assets on the balance sheet. Managers are given financial incentives to generate the most accurate estimates possible. There is no financial benefit that can be gained by making anything but one's best estimate. The estimates are made in the presence of profitability targets, which have different degrees of difficulty to reach. After making their estimates, managers engage in a competitive market, where they buy and sell the assets in question. Generating enough profit to reach a target achieves a bonus for a manager, which increases his/her cash compensation in the experiment. This structure permits an investigation of whether the external targets not only affect estimated performance, but whether the targets also have an influence on actual performance.

This research should be of interest to standard setters who develop guidance aimed at providing quality information to the market. For instance, to develop standards to improve the accuracy of financial information, it is useful to understand the why current practice leads to inaccuracies. Standards aimed at overcoming unconscious deficiencies in judgment might look very different than standards aimed at curbing intentional misstatements. Second, the distinction should also be of interest to regulators, such as Congress and the SEC. For example, the Sarbanes Oxley Act's requirement for top management to certify the accuracy of the financial statements appears to have a greater potential for mitigating deliberate misstatements than it does for mitigating the financial reporting effects of unconscious judgment biases.

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The remainder of this paper proceeds as follows. The next section offers background on how financial reporting is an area that is susceptible to unconscious bias. Following, is a section that proposes hypotheses about how we might expect external targets to influence managers' estimates on numbers in the financial statements, and whether those estimates are likely to be realized. The next section presents the experimental design used to test the hypotheses. Following is a section on the results, and finally a section with concluding comments.

## 2. Background

Financial reporting is a process, with a set of institutional features that make it an interesting setting in which to examine the effect of external targets on estimates and performance. First, periodic financial reporting can be attributed in part to the existence of financial markets—and information asymmetry between firms and investors/creditors. In addition, financial intermediaries such as analysts make publicly available estimates of firm performance measures, such as GAAP earnings. It is widely documented that these estimates serve as de facto targets; and meeting or missing these targets can influence stock prices and returns (Bartov, Givoly, & Hayn, 2002; Brown & Caylor, 2005; Dechow & Skinner, 2000; Dopuch, Seethamraju, & Xu, 2008; Kasznik & McNichols, 2002; Lopez & Rees, 2002), and can also influence managers' compensation (Comprix et al., 2012).

In addition, financial reporting can be viewed as a process whereby management periodically discloses financial information, which often is evaluated in reference to targets set by external parties, and which includes estimates about the financial impact of future events; the outcomes of which frequently can be influenced by managers' actions. Accordingly, managers with financial reporting responsibilities are put in the position of having to estimate the financial impact of future events, the outcomes of which are partially controlled by management itself, knowing that the firm, and frequently one's own performance, will be evaluated against targets set by others. The empirical/archival research referenced above documents that managers do not appear to be immune to the pressures set forth by this process. That is, it appears that values reported in the financial statements—particularly those that require estimates—depend on the firm's proximity to the external targets set by analysts (e.g. Comprix et al., 2012; Dhaliwal et al., 2004; Kasznik & McNichols, 2002). While the authors argue that the observed results could be due to deliberate attempts to shade accounting numbers to meet earnings targets, it is important to recognize that this research was not designed to explain why the observed connection between analysts' estimates and amounts reported in the financial statements exists. In particular, it leaves open the possibility that the relation is not based on conscious choices made by managers, but rather by unconscious biases that creep into managers' judgments.

Conventional wisdom in psychology depicts *judgment* as being distinct from *decisions*. Judgment is a process of evaluating facts and circumstances, and forming an opinion as to what is fair, just, true, accurate, material, or sufficient. Hence, judgments serve as the basis for decisions. Meanwhile, decisions are specific actions taken, or choices made by individuals or groups. In accounting, decisions made by managers with financial reporting responsibilities typically require considerable professional judgment as an input (e.g., what is an appropriate estimate for loan losses? What is an adequate allowance for doubtful accounts?). It follows that amounts reported in the financial statements can be affected by decisions that are deliberately inconsistent with one's underlying judgment (e.g., intentionally incorporating an overly-aggressive estimate). Alternatively, inaccuracies can be the by-product of well-intentioned, yet *unconsciously* biased judgments (e.g., a manager may truly believe that a \$100,000 allowance for doubtful accounts is adequate, when it is not). Accordingly, this distinction between judgment and decisions suggests that

the documented empirical relation between analysts' estimates and reported financial statement values might be attributable either to consciously biased decisions, or unconscious biases in judgment triggered by the financial reporting process, or both. As noted above, distinguishing between these two potential causes has implications for both standard setting and regulation.

## 3. Hypothesis development

At the end of accounting periods, managers make a set of estimates which influence how their firms' profitability is measured for the period in question. This also affects the values at which various assets and liabilities are reported on the balance sheet at that point-in-time. To the extent that the estimates contain error, ex-post realizations of profits and related asset values may differ from the amounts estimated. When making these end-of-period estimates, managers are aware of various external targets (e.g., analysts' forecasts, accounting-based bonus targets, etc.) pertaining to their firms' financial performance and financial position. In what follows, I develop hypotheses about the potential effects of these targets on managers' estimates.

Prior to proceeding, it is instructive to note that GAAP requires managers, in many instances, to base their estimates on inferences about the outcomes of future events. Examples include the measurement of pension liabilities, contingent liabilities, valuation allowances for deferred tax assets, loan loss provisions, useful lives, salvage values, and potential impairment of plant and equipment, etc. In each case there is uncertainty—often considerable—which creates latitude in estimating the related values. Moreover, in many cases, management can take future actions which can influence the ultimate realization of the values being estimated. For instance, deferring future maintenance can affect useful lives and salvage values; litigation strategies/tactics can influence the realization of contingent liabilities; whether a fixed asset is impaired depends in part on its future use; and today's valuation allowances on deferred tax assets can be influenced by a firm's future profitability, which in turn depends in part on future business decisions. Finally, in many cases, the outcomes in question are determined via interaction with third-parties in competitive situations (e.g. asset impairments, contingent liabilities, valuation allowance on deferred tax assets). In these cases, managers cannot unilaterally influence the values in question; but may do so only subject to the forces of competition.

The first research issue to be addressed is whether external targets influence managers' judgment about amounts to be estimated and then reported in the financial statements. A well-known behavioral phenomenon—anchoring—suggests that the answer is yes. Anchoring (Tversky & Kahneman, 1974) occurs when external cues influence individuals' judgment—often excessively; especially in situations where the anchor is irrelevant to the judgment to be made. Although it has been widely documented (e.g., Griffen & Tversky, 1992; Kruger, 1999), the underlying causes of anchoring are still being studied and debated. However, there is mounting evidence that anchors influence (and bias) the way information is retrieved (see Chapman & Johnson, 2002; Payne, Bettman, & Johnson, 1992). The theory suggests that anchors prompt individuals to search for and retrieve information that is similar to the anchor in form or consistent with the anchor being the correct answer to the question at hand (e.g., should our earnings per share be \$0.92 this quarter?), while ignoring or not retrieving information that is either dissimilar in form or that would indicate that the anchor is not correct. In the context of accounting estimates, it follows that external targets may *subconsciously* predispose managers to construct estimates that will ultimately support the external targets (e.g., managers with higher earnings targets may likely generate more optimistic estimates than those with lower targets) through the process described above. Implicit in this argument is that any bias in managers' estimates is not based on intent to deceive, but rather, on a shift in judgment about what is a proper—or reasonable—

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