Do Investors Value Financial Reporting Quality Beyond Estimated Fundamental Value? And, Can Better Audit Reports Unlock This Value?

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ABSTRACT: In this experimental study, we predict and find evidence that investors treat a firm’s common shares as a bundle of two goods, one private and one other public. Controlling for the value of the private good per share, i.e., the traditional present value of future dividends and any gains on disposition, investors are willing to pay more per share for a firm’s positive contributions to the greater public good. Higher relative financial reporting quality is an example of such a public good. Further, we predict and find that audit report content can facilitate investors’ ability to discern gradations in firms’ financial reporting quality. Specifically, controlling for the relative fundamental value per share, investors are willing to pay a higher price per share of a mature firm with higher financial reporting quality, than for shares of a growth firm with lower financial reporting quality, provided that the audit report provides commentary that reveals these two firms’ relative financial reporting quality. Thus by directly helping investors distinguish relative financial reporting quality across firms, audit report content indirectly causes investors to increase or decrease their willingness to pay for shares, controlling for fundamental value. This study therefore contributes to the literatures on audit reports and on the determinants of prices investors are willing to pay for common shares. In addition, this study has potential implications for the large literature in accounting and finance on the efficiency of capital markets and cases of apparent mispricing. A new alternative explanation to a mispricing story besides the traditional rival of there being some non-diversifiable risk factor is that prices per share could reflect a bundling of two goods, both intrinsically valued by investors.

Key Words: Willingness to pay, Fundamental Value, Audit Reports, Extraction Costs, Financial Reporting Quality, Bundles of goods, Public good

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I. INTRODUCTION

This paper develops and reports an experimental test of theory predicting that a firm’s financial reporting quality increases the price investors are willing to pay for the firm’s common shares, controlling for the influence of such quality on estimated fundamental value.\(^1\) This paper also predicts and finds that more informative audit reports, by making it easier for investors to discern inter-firm gradations in financial reporting quality, amplify the fundamental value-adjusted prices that investors are willing to pay for a firm using higher quality reporting.

These things are true, according to our theory, because investors value two goods that are invariably bundled within a firm’s common shares, one being a private good and other being a public good. The private good is traditional fundamental value, i.e., the present value of future dividends and any gains on disposition. The public good, which is an innovation of our theory, is the social value the firm adds to (subtracts from) the greater public interest as a result of its perceived use of higher (lower) financial reporting quality.

Even though investors inherently value both of these goods, the invariable bundling of the two in our capital market system makes it a challenge to tease apart their relative value using archival measures of investors’ bids/asks or market prices. Related, even if one could tease out these two, the potential value investors presently ascribe to higher financial reporting quality might appear low in today’s equity markets. This is the case because, as others have noted, investors have bounded rationality and limited-attention (Hirshleifer and Teoh 2003) and there are high extraction costs to discerning gradations in financial reporting quality, even for

\(^1\) We acknowledge that no single, generally agreed upon definitions of financial reporting quality, financial statement quality or earnings quality exist (Jonas and Blanchet 2000; Francis, Olsson, and Schipper 2008; Biddle, Hilary, and Verdi 2009). At the same time, we believe our hypotheses hold across many popular definitions in the academic and practitioner literature, provided that they readily map into investors’ perceptions of quality.
sophisticated investors (Bloomfield and Libby 1996; Bloomfield 2002). Extending this, we argue that better external monitoring, in the form of enhanced audit reports, can decrease these extraction costs, enabling investors to more fully express their willingness to pay higher prices per share for firms perceived as using higher quality financial reporting.

There are at least two conceptual reasons why investors would pay more for common shares of firms with higher perceived financial reporting quality. One is that investors could derive (dis-)utility from owning shares of firms using high (low) quality financial reporting. Another reason is that investors could believe capital investment and economic welfare generated in a capital market increases with more widespread, transparent, and credible use of higher quality financial reporting by participating firms (cf., Dopuch and King 1991).

Along these lines, we argue that more informative independent auditors’ reports can enable investors to more efficiently allocate resources as a result of lowering their extraction costs in trying to discern firms’ relative financial reporting quality. Examining the use of more informative audit report content as a means to reduce extraction costs also is timely. After decades of little change, international and U.S. audit standard setters are contemplating numerous possible changes to the auditor’s report. These changes open up a menu of ways in which audit reports could convey good or bad news about a firm’s financial reporting quality (e.g., auditor commentary, critical audit matters, identified engagement partner, planning or performance materiality levels).

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2 Investor limited attention is shorthand for investors’ bounded rationality and susceptibility to an array of judgmental biases (see, e.g., Elliott, Hobson and White 2015; Hales 2007; Han and Tan 2010; Thayer 2011).

3 Of course, other things such as a firm’s social or environmental performance also could add to or detract from the greater social good in the eyes of investors, potentially affecting fundamental values or even fundamental value-adjusted prices (see, e.g., McWilliams and Siegel 2001; Bénabou and Tirole 2010; Margolis, Elfenbein and Walsh 2009; Di Guilii and Kostovetsky 2014). Our focus is on financial performance in this paper.

4 To the degree audit reports succeed in doing this, they will advance the mission of key standard setters and regulators. The PCAOB’s (2016) mission is to “protect the interests of investors and further the public interest in the preparation of informative, fair, and independent audit reports.” Similarly, the SEC’s (2016) mission is “to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation.”
For example, if an audit report from an high-reputation engagement partner contains positive auditor commentary and materiality thresholds that are lower percentages of operating income, investors would conclude more readily that management has used relatively high-quality financial reporting. Higher quality accounting practices can provide relevant and representationally faithful information to investors so that they can better interpret and forecast a firm’s financial performance. Further, higher quality accounting practices can incentivize other firms (who are competing for investor capital) to use similar accounting practices, improving the overall quality of financial accounting practices used by many firms in a capital market.

In our experiment, we operationalize extraction costs by manipulating the presence of auditor’s commentary regarding management’s financial reporting quality. Though favored by the PCAOB’s investor advisory group (IAG, 2014) and by a strong majority of respondents in an earlier IAG survey (IAG, 2011), auditor commentary so far is neither required nor encouraged by the PCAOB. UK audit standard setters, by contrast, encourage auditor commentary (e.g., Izza 2013), and some UK public company auditors include commentary in their audit reports (e.g., KPMG 2013, 2014). For our control condition, we do not use the traditional “binary” audit reports but rather audit reports that identify critical audit matters (CAMs). We do this even though it reduces the power of our manipulation because both global and US audit standard setters appear to be headed in this direction. That is, investors are randomly assigned to conditions featuring audit reports that include CAMs and commentary versus CAMs alone. We use a between-subjects manipulation to make it easier for some limited-attention investors, but harder for others, to reach conclusions about the two firms’ relative financial reporting quality. The presence of auditor commentary reduces their extraction costs, so that they can more readily
act on any propensity to value higher-quality reporting, beyond the value they derive from a firm’s forecasted future cash flows.

Further, in our experimental setting, investors evaluate two companies on a within-subjects basis. One is more of a growth firm and the other is more of a mature firm, and both firms compete in the healthcare equipment industry. The growth firm uses lower quality, aggressive financial reporting (hereafter, low quality reporter), while the mature firm uses higher quality, neutral financial reporting (hereafter, high quality reporter). This combination of a low quality reporter and a high quality reporter creates tension about which firm is a better investment, especially if, as we predict, investors value both traditional fundamental value (i.e., the private good) and higher quality financial reporting (i.e., the public good).

Together, the between-subjects commentary manipulation and within-subjects manipulation that features two firms sets up a classic “difference-in-difference” experimental design. We use two key dependent variables within this difference-in-difference experimental design. As a first cut, we examine differences between the investor participants’ willingness to pay per share (WTP) across each firm, divided by investor-specific estimates of fundamental value (FV). Scaling by investor-specific estimates of fundamental value allows us to isolate the component of their WTP driven by the value they ascribe to higher-quality financial reporting. This ability to scale cleanly in this fashion is an advantage of using an experimental, as opposed to archival, research design. We subtract investor-specific WTP/FV ratios for the low quality reporter from their WTP/FV ratios for the high quality reporter. Thus, higher differences mean that investors have higher fundamental-value-adjusted WTP’s for the high quality reporter compared to the low quality reporter.
We next turn to a stiffer test, in which we tabulate whether or not each investor’s WTP for a firm’s common shares exceeds their estimate of its common share’s fundamental value. This test is more stringent because, even if investors value both fundamental value (the traditional private good) and higher financial reporting quality (the public good), their risk preferences and strategies in forming bids may be such that they often calibrate their bids to be lower than the sum of these two values. By contrast, if investors express a WTP that exceeds their estimates of a firm’s common share’s traditional fundamental value, and this more frequently occurs for the high quality reporter precisely in experimental conditions featuring lower extraction costs, it is hard to attribute this difference-in-a-difference pattern to anything other than investors’ actually ascribing incremental value to that firm’s use of higher quality financial reporting practices believed to contribute to the greater public good.\(^5\)

Our experimental findings are theory consistent in that the predicted WTP/FV difference-in-difference across the high quality and low quality reporters obtains and is statistically significant. That is, we subtract participants’ WTP/FV ratio for the low quality reporter from the ratio for the high quality reporter. Thus, positive (negative) values suggest participants reward the high quality (low quality) reporter relative to the other.\(^6\) Our theory predicts when investors’ extraction costs are lower, it is easier for investors to discern relative financial reporting quality and thus to ascribe incremental value to firms that contribute to the public good by using high quality reporting relative to low quality reporting. We operationalize extraction costs by

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\(^5\) The incremental value that we observe when investors ascribe to the high quality reporter’s use of financial reporting practices may stem from: (1) a personal preference for higher quality reporting or, (2) even if an investor does not have a personal preference for higher quality reporting, s/he may believe others do, and thus s/he may still ascribe value to firms contributing to this greater public good (see, e.g., Elliott, Krische and Peecher 2010).

\(^6\) Put differently, the difference in WTP/FV ratios would be equal to zero if investors’ willingness to pay prices are the same portion of each firm’s fundamental value, respectively. To the extent that participants are willing to pay a relatively greater portion of the high quality reporter’s fundamental value than the low quality reporter’s fundamental value, we would expect positive values when we take the difference between the ratios for the two firms. Our theory predicts this is most likely when auditor commentary lowers investors’ extraction costs and facilitates investors’ desire to reward the high quality reporter’s contribution to this public good.
manipulating the presence or absence of commentary in the audit report. Thus, our theory predicts the relative WTP/FV ratio will be more positive under conditions where extraction costs are lower (i.e., audit report commentary is present). Consistent with this, our results show that, on average, the WTP/FV ratio for the high quality reporter minus the WTP/FV ratio for the low quality reporter is more positive when audit commentary is included than when auditor commentary is excluded (+2.76% vs. -1.48%).

Further, we observe a similar statistically significant pattern when using the more stringent test statistic of counting the number of participants for whom WTP does versus does not exceed their estimate of FV for the high quality versus low quality reporter. We subtract the percentage of participants who are willing to pay more than FV for the high quality relative to the low quality reporter. Positive (Negative) values indicate more participants are willing to pay more than fundamental value for the high (low) quality reporter relative to the other. Our theory predicts that more participants would be willing to pay prices exceeding FV under conditions where extraction costs are lower (i.e., audit report commentary is present). Consistent with this, we find that, on average, the percentage of participants willing to pay more than FV for the high quality reporter minus the percentage willing to pay more than FV for the low quality reporter is positive when audit commentary is included and negative when auditor commentary is excluded (+2.60% vs. –9.76%). These results provide additional support for our prediction.

Supplemental mediation analyses also support our extraction cost theoretical explanation. Specifically, participants are significantly better able to discern the relatively higher quality financial reporting of the high quality reporter as compared to the low quality reporter given the presence versus absence of auditor commentary. In particular, key individual components participants use to derive estimates of each firms’ fundamental value (e.g., their perceptions of
the true value of current year earnings and their projections of long-term growth rates in residual earnings) and their post-test assessments of financial reporting quality indicate that the provision of auditor commentary reduced their extraction costs in discerning relative financial reporting quality across the two firms.

Collectively our theory and findings make several contributions to the literature. First, our study affirms and extends prior work pointing out the importance of not conceptually equating investors’ estimates of traditional fundamental value with the price they are willing to pay (Elliott, et al. 2010; Elliott, Jackson, Peecher and White 2014; Elliott, Hobson and White 2015). Second, and related, we contribute to the literature by identifying a new and potentially important determinant of investors’ willingness to pay for a firm’s common shares. This contribution raises new questions about studies claiming to document mispricing, because those studies typically assume only the private good (traditional fundamental value) is reflected in market prices of common shares. In contrast, we demonstrate that a firm’s common shares are better conceptualized as a bundle of two goods: one private and one public, both having value to investors. Third, the results of our study suggest that audit standard setters and regulators who are reconsidering the required content of audit reports likely would benefit from thinking more broadly about how audit reports could enable investors to more fully express and act on the value they ascribe to high quality financial reporting with potential market pricing and resource allocation implications.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Determinants of Price Investors Are Willing to Pay for Firm Shares

The traditional view is that the main, if not only, conceptual determinant of a firm’s stock price is its intrinsic, or fundamental value (e.g., Lee, Myers, and Swaminathan 1999; Lee 2001).
Lee et al. (1999, 1693) note that “most financial economists agree that a stock’s intrinsic value is the present value of future dividends (or cash flows) to common shareholders, based on currently available information.” A simple expression of this view is:

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\text{Price willing to pay} = f(\text{fundamental value}). \tag{1}
\]

In fact, many accounting and finance studies either assume that price equals fundamental value (e.g., Dechow et al. 1999; Feltham and Ohlson 1999; Zhang 2000) or that it is equilibrating towards intrinsic value, slowed by bounded rationality of investors, noise traders, and the limits of arbitrage (Frankel and Lee, 1998; Lee et al. 1999; Lee 2001; Kothari 2001).

An implication of the traditional view is that the primary conceptual reason that investors value higher financial reporting quality is that it improves the information set they can use to estimate a firm’s fundamental value. Higher financial reporting quality under this view enables investors to better predict future earnings or, by reducing moral hazard frictions, lower a firm’s cost of capital (Diamond and Verrecchia 1991; Barth and Schipper 2008). Along these lines, prior work indicates that investors shift their holdings to firms with higher quality reporting so as to reduce their exposure to economy-wide risks (e.g., Cheynel 2013; Chen, et al. 2015).

Our view adds a new conceptual determinant of the price investors are willing to pay for a firm’s common shares. Specifically, we posit investors are willing to pay more for a firm’s shares to the degree the firm is perceived to be credibly strengthening the wealth allocation and wealth generation roles provided by capital markets, i.e., a public good (Levine and Zervos 1998). In other words, the total value a firm adds to the economy, conceptually is a function of its fundamental value and its contribution to or detraction from the greater public good:

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\text{Price willing to pay} = f(\text{fundamental value}, \text{public good}). \tag{2}
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7 As noted in footnote 3, we acknowledge there likely are other determinants of a firm’s contribution to the greater public good including CSR, but our focus herein is on financial reporting quality.
This new determinant of investor’s willingness to pay recognizes that an overarching purpose of a capital market is to serve the public good. Capital markets serve the public good to the extent they enable investors to allocate capital toward risk-adjusted prospects with the most risk-adjusted growth potential and away from prospects with less potential (Levine and Zervos 1998; Wurgler 2000; Brown, Martinsson, and Petersen 2013; Bloomberg 2014). Consistent with this, prior research suggests that countries with capital markets that impound more firm-specific information into stock price have better allocation of capital as investors are better able to distinguish between good and bad investments (Wurgler 2000). Related, capital markets of countries in which firms report earnings with greater opacity feature across-the-board higher costs of equity and lower trading (Battacharya, Daouk and Welker 2003), which could prevent firms with great ideas from obtaining any equity capital, reducing the ability to invest in higher risk-adjusted projects (Brown, Martinsson, and Petersen 2013) and slow economic and technological innovation (Hsu, Tian, and Xu 2014).

In addition to this archival evidence, some theoretical models and evidence in laboratory markets also affirms that variation in credible (e.g., audited), high-quality financial reporting causes some capital markets to be better than others from producers’ and investors’ points of view (Klein and Leffler 1981; Lizzeri 1999; Elfenbein, Fisman and McManus 2014). Specifically, relative to capital markets comprised by firms that use financial reporting of low or uncertain quality, capital markets comprised by firms that credibly and transparently use higher quality financial reporting help investors allocate capital to the most promising firms, and when more promising firms undertake more investment, greater surplus obtains to divide amongst producers, investors and consumers (Dopuch and King 1991). When firms can undertake more
investment that provide positive returns, auditing can help improve social welfare by helping firms more credibly use higher-quality financial reporting (Dopuch, King and Wallin 1989).

Bloomfield (2002) usefully summarizes this pattern of findings by arguing that high extraction costs cause market prices to incompletely reveal information buried in (even audited) financial statements. Evidence consistent with this proposition obtained in several earlier studies (e.g., Bloomfield and Libby 1996; Hirst and Hopkins 1998; Maines and McDaniel 2000; Dietrich et al. 2001). Several subsequent accounting studies also demonstrate that investors have trouble discriminating between firms reporting more versus less value-relevant earnings (e.g., Hobson 2011; Elliott et al. 2014). Most recently Elliott, Hobson, and White (2015), within a laboratory market setting, find investors are able to estimate value more accurately when earnings metrics make it easier for them to separate transitory from persistent components.

**More Informative Audit Reports Can Reduce Investors’ Extraction Costs**

High extraction costs mean that even a firm within a capital market attempts to credibly signal its use of higher quality financial reporting, investors still can find it costly to extract value-relevant information from that firm’s audited financial statements. If audit reports were to more transparently reveal the degree to which a firm is using higher financial reporting quality, however, investors’ extraction costs would decrease. Lower extraction costs would then cause investors’ underlying willingness to pay higher fundamental value-adjusted prices for shares of firms with higher vs. lower financial reporting quality to become more readily observable.

More informative audit reports would be a departure for auditors who historically have created value predominantly by generating information rather than from conveying it (Klein 2002). In particular, financial statement auditors generate evidence to support their largely binary, “reasonable assurance” opinions that the financial statements are or are not free of
material misstatement, but essentially keep most of that underlying evidence and account-or disclosure-specific conclusions to themselves. Investors have come to learn to just glance at the auditor’s opinion to ensure the opinion is a clean one and do not expect to read individuating information in the auditor’s report (IAG 2014; Peterson 2015).  

Presently, however, standard setters and regulators are considering whether to start requiring auditors to convey more of what they come to learn as a result of their evidence gathering process (Tysiac 2013; Peterson 2015). Conveyance of such information could reduce investors’ extraction costs regarding firms’ relative financial reporting quality. The PCAOB currently is considering feedback received on a 2013 exposure draft that would require the auditor to disclose critical audit matters defined as matters that involved the most difficult, subjective, or complex auditor judgments, posed the most difficulty in obtaining sufficient appropriate evidence or in forming an overall opinion on the financial statements (PCAOB 2013; Tysiac 2013). In addition, the PCAOB continues to consider requiring more materiality disclosures and identification of the engagement partner and other key audit team personnel (PCAOB 2015). Beyond merely discussing critical audit matters, auditors could be required to provide commentary about the quality of management’s financial reporting that could help users more easily form judgments about the quality of a specific firm’s financial reporting.  

A prominent example of auditor commentary is recent KPMG audit reports for Rolls Royce. KPMG qualitatively characterizes Rolls Royce’s aerospace profit recognition by noting, “Overall, our assessment is that the assumptions and resulting estimates … resulted in mildly

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8 Notably, despite the largely standardized audit reports of today, the presence of nonstandard explanatory language is associated with heightened likelihood of subsequent restatement (Czerney, Schmidt, and Thompson 2014).  
9 As CAMs are among the most likely changes that US audit standard setters will require, several recent studies examine information effects of CAMs on investor judgment (see, e.g., Christensen, Glover, and Wolfe 2014; Kachelmeier et al. 2014). Similarly, other papers examine the effects of CAMs on auditor liability (see, e.g., Backof et al. (2014), Brasel et al. (2014), Brown et al. (2015), Kachelmeier et al. (2014), and Gimbar et al. (2014).
cautious profit recognition” as well as a Daimler AG put option by saying, “We found that the resulting estimate was acceptable but mildly optimistic resulting in a somewhat lower liability being recorded than might otherwise have been the case.” These reports contain auditor commentary on the quality, not just acceptability, of management’s estimates.

Based on the above, we predict investors are willing to pay more for shares of firms credibly using higher quality financial reporting, above and beyond estimated fundamental value, but that investors are more likely to act on the value that they place on higher financial reporting quality, when it is easier for them to discern firms’ relative financial reporting quality.

**Hypothesis:** When extraction costs of judging financial reporting quality are lower, investors are willing to pay prices that are relatively higher (lower) for a high (low) quality reporter firm’s common stock, controlling for their estimates of fundamental value and inclusive of any impact of financial reporting quality on their estimates of fundamental value.

Note this hypothesis does not require investors’ willingness to pay to *exceed* their estimates of fundamental value. Investors might stop short of their estimates of fundamental value for reasons (e.g., bidding strategies, risk aversion). However, it would be strong support for our hypothesis if investors were to more frequently offer to pay more than fundamental value for higher quality financial reporting precisely when extraction costs are lower.

**II. METHOD**

**Experimental Participants**

One hundred seventy graduate business students in a financial statement analysis course at a large state university participated as a proxy for reasonably informed investors. Following

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10 There are several other notable changes in the UK reports in that they now must include engagement partner identification as well as disclosure of planning and performance materiality levels. A recent Citi analyst report offers a critique of the Big 4 audit firm’s new UK audit reports, saying KPMG is the best and EY the worst in terms of qualitative disclosure about the firm’s financial reporting quality (Citi Research 2014).

11 In the analyses in Section III, we exclude three participants who violated an assumption of the residual income model by providing long-term growth rates that exceeded the firm’s cost of capital (Penman 2012). We also exclude
Elliott et al. (2007), we recruit students who self-select into financial statement analysis courses because they have been shown to better integrate information in making investment judgments and decisions than other graduate business students. On average, these participants had taken eight accounting courses and six finance courses. More than 90 percent of participants reported that they had used financial statements to evaluate a firm’s performance. Approximately 33 percent of participants had previously purchased or sold common stock or debt securities, and 77 percent said they planned to do so in the next five years. We administered the experiment in a lab outside of class time over two semesters, with the instructor awarding extra credit to participants.

**Experimental Design**

Our design sets up a “difference in difference” test of our hypothesis in a setting in which participants evaluate two hypothetical competitor firms from the medical equipment industry. The treatment factors in our experiment form a 2 x 2 mixed design, as we manipulate firm type within-subjects and extraction costs between-subjects. The within-subjects firm type factor has two levels. One firm’s product mix is more mature, but it uses higher-quality, neutral financial reporting. The other firm’s product mix is at more of a growth stage, but it uses lower quality, aggressive financial reporting. For brevity, we label the firm type levels as a high quality reporter and low quality reporter.) We made the design choice to present participants with a poignant tradeoff between a firm doing its part to enhance public good aspects of a high quality financial reporting system with lower growth prospects against a firm less dedicated to this public good but that offers higher growth prospects. Use of an incomplete rather than fully

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12 We use “mature” and “growth” firm following terminology in business lifecycle theory (Rothaermel 2013).
crossed within subjects manipulation also has the advantage of keeping participants’ completion times down and avoiding noisy responses from fatigue.

We manipulate *extraction costs* between-subjects by using auditor report type. Specifically, we vary whether or not the regulatory regime required auditors to comment on the quality of management’s accounting practices. Participants in both audit report type conditions received an audit report for each firm that identified warranty expense and bad debt expense as critical audit matters (CAMs). Half of the participants received audit reports for both firms with these items identified as CAMs, as in the PCAOB’s 2013 proposal (*CAM condition*). The other half received audit reports for both firms that, in addition to identifying the same CAMs, provided commentary from auditors about the accounting quality of these estimates (*Commentary condition*). The audit report for the *high quality reporter* indicated these estimates identified as CAMs were in the middle of auditor’s independent range and that management used neutral assumptions. In contrast, the audit report for the *low quality reporter* stated that they were at the low end of the auditor’s independent range and used optimistic assumptions.

**Control Factors**

We also manipulate two factors as robustness checks. We wanted to ensure our results were not an artifact of any one order, so we manipulate the order in which participants viewed the two firms. Participants either viewed the high quality reporter followed by the low quality reporter or viewed the firms in the reverse order.

We also anticipated that participants would vary in their beliefs and prior exposure to different schools of thought as to how prices, willingness to pay, and fundamental value should relate to one another. While random assignment would control for this variation in terms of allowing a clean test of our primary hypothesis, we wanted to explore the robustness of our
hypotheses to different exposure levels. Thus, we manipulated whether or not participants received or did not receive a prompt explaining these two different two schools of thought. For those participants who received this prompt, we provided a balanced discussion of both schools of thought; specifically, that some experts believe that the total value that a firm adds to the economy is simply equal to its fundamental value, while other experts believe that the total value added by a firm is its fundamental value plus any contribution / detraction from the “greater public good.” Further, the prompt suggested that one way a firm can detract from the “greater public good” is by using lower quality accounting practices. As expected, we find that our results are robust to controlling for this prompt (see Section IV for relevant analyses).

**Procedures**

Participants arrived in a computer lab outside of class time and were randomly assigned to an experimental condition. Before they began, all participants were informed that their task would include deriving estimates of the “fundamental value” of each of two firms’ shares of common stock and judging how much they would be willing to pay per share for each. Participants received materials in two envelopes (labeled Envelopes 1 and 2), and were asked to read and complete the materials in sequential order. Envelope 1 began by either prompting participants with the expert opinion or not. Following the prompt (if present), participants were asked a series of knowledge check questions designed to test their understanding of the expert opinions described in the prompt.

Then, as illustrated in Exhibit 1, participants were provided with background information about the two firms. The background information described the mature firm as the current market leader for a medical device that is in high demand. The growth firm was also described as a seller of this device, with a much smaller portion of the current market share but far ahead of
the other firm in development of a new device that would be a breakthrough compared to the current device. There was some uncertainty about whether the new device would pass clinical testing. However, in the event clinical testing is successful, the growth firm is poised to take market share away from the mature firm, suggesting the potential for significant future growth for the growth firm compared to the mature firm.

Next, participants were provided with an overview of current audit standards, where we manipulated whether or not the audit standards required auditors to comment on the quality of management’s reporting for CAM items. Following this overview, participants were asked a series of knowledge check questions designed to test their understanding of the audit standard described in their condition.

Participants then received key performance ratios for each of the two firms, excerpts from each firm’s audited financial statements, and the auditors’ reports expressing an opinion on each firm’s financial statements. The key performance ratios and the financial statements indicated that while the mature firm had higher revenues than the growth firm, reported earnings for both firms were approximately equal. The growth firm was able to achieve similar earnings with smaller revenues because its accounting for warranty expense and bad debt expense was based on more optimistic assumptions compared to the mature firm’s accounting (Exhibit 1). Specifically, the mature firm’s warranty expense and bad debt expense were the same percentage of sales each year, while for the growth firm these expenses decreased as a percentage of sales each year.

The auditor’s report followed each firm’s financial statements (see Exhibit 2). We manipulated the audit report type as described above. In the CAM condition, auditors gave both firms an unqualified audit opinion with two CAM items (i.e., warranty expense and bad debt
expense). In the Commentary condition, auditors also gave both firms an unqualified opinion and identified the same CAM items, plus auditors included commentary about the quality of each firm’s accounting for these items. For the mature firm (growth firm), the auditor indicated management’s estimates fell in the middle (low end) of the auditor’s acceptable range.

After reviewing the audited financial statements, participants were asked to derive an estimate of the fundamental value of each firm’s stock, using an Excel template (see Exhibit 3). In doing so, participants were asked to provide the estimates necessary to complete a residual earnings valuation model for each firm. In the computer lab, participants were each provided with a residual earnings valuation template for each firm in a spreadsheet, adapted from Elliott et al. (2014). For each firm, participants provided their best estimate of the current year’s net income (i.e., they could use earnings as reported or adjust it), forecasts of earnings for each of the four subsequent years, a cost of capital estimate, and an estimate of the rate at which they expected residual earnings to grow after the fourth year (Penman 2012). The template then calculated and displayed the resulting estimate of fundamental value for each firm, respectively, which participants recorded on their pencil and paper materials. The first page of Exhibit 3 reproduces one participant’s completed templates for each firm.

We measure willingness to invest in each firm’s stock by asking participants to assume that they had received an inheritance of $10,000 from a distant relative and to identify the maximum price per share at which they would be willing to invest 5%, 10%, 25%, and 50% of their inheritance in each firm’s stock, respectively (see Exhibit 4). This format is adapted from Elliott et al. 2014. If participants were willing to pay a price that differed from their fundamental value estimates for either firm, we asked them to explain their reasons separately for each firm
after they did so. After completing the materials in Envelope 1, participants proceeded to Envelope 2 where they completed manipulation checks and other post-experimental questions.

**Dependent Variables**

We use average willingness to pay scaled by fundamental value ratios as one of our two primary dependent measures. That is, we average how much a participant would be willing to pay for the company’s stock assuming they allocated 50%, 25%, 10% and 5% of recently inherited wealth to purchasing the company’s stock, and then scale this average by the participant’s estimate of fundamental value. The conceptual basis for this measure has similarities to the rationale for the V/P ratios discussed by Lee et al. (1999). Our rationale differs in one key respect, however. Rather than argue larger discrepancies between an investor’s WTP from fundamental value likely reveals irrational investor bidding for stocks that, if not suppressed by market aggregation processes, would exacerbate mispricing, we argue that discrepancies merely could reflect that investors’ utility function to include something above and beyond the present value of future dividends (or cash flows). Specifically, we predict and test whether investors attach value to the quality of financial reporting. If, controlling for their estimates of fundamental value, participants are willing to pay different prices for a firm’s common stock precisely when there are lower extraction costs, they likely are deriving (dis)utility from higher (lower) quality financial reporting, per se. This is because lower extraction costs enable them to see more readily that one firm is using higher (lower) financial reporting quality, revealing how participants attach positive (negative) value to the relatively high (low) financial reporting quality.

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13 We note that there are other things than financial reporting quality that could give investors utility that transcend expected financial returns. Some investors, for example, may derive utility from strong corporate social responsibility performance (see, e.g., Elliott, Jackson, Pecher and White 2014; Mackey, Mackey, and Barney 2007).
Our second primary dependent variable is more strict and entails counting the number of investors in each condition whose willingness to pay for a share of common stock exceeds 100% of their estimate of each company’s stock’s fundamental value. While it might be a worthwhile gamble to purposely exceed one’s estimate of fundamental value when spending a relatively small percentage of one’s wealth on a stock that you might have substantially under-valued, this becomes implausible for higher percentages of one’s wealth.

Finally, we also capture a mediating variable comprised of the questions in Table 5. These questions capture participant’s perceptions of financial reporting quality for the two firms. If our theory is correct, i.e., the path through which lower extraction costs alter participants’ willingness to pay scaled by their own estimates of fundamental value will be such perceptions. If a different mediator were at play, we would not expect our mediation analyses to work.

IV. RESULTS

Manipulation Check of the Firm Type and Audit Report Independent Factors

Our participants responded to our manipulation of firm type as we anticipated. In arriving at their fundamental value estimates using a residual earnings model template, participants provided their best estimate of current year earnings for each firm, respectively. Participants had access to each firm’s current year reported earnings as well as income statements and balance sheets. Participants were told they could use the reported earnings figure as is or adjust it to a figure that better captured their belief about the firm’s current financial performance. Consistent with our firm type manipulation, participants’ adjusted reported earnings downward more for the low quality reporter than for the high quality reporter ($t_{158} = -4.95, p < 0.001$). This is consistent with participants forming the perception that the low quality reporter’s current year earnings were more optimistically biased than high quality reporter’s current year earnings. As additional
support for our firm type manipulation, participants’ long-term growth rates and cost of capital estimates were adjusted upward from the industry average more for the low quality reporter than for the high quality reporter (t = 7.23_{158}, p < 0.001 and t_{158} = 9.57, p < 0.001, respectively). This pattern in the inputs to participants’ residual income templates indicates our participants responded to the firm type as expected.

Further, our participants distinguished between firms more in the commentary condition than in the CAM condition. In particular, participants in the commentary condition relative to those in the CAM condition adjusted the growth firm’s reported earnings downward more than the mature firm’s earnings (t = 1.47_{157}, p = 0.07, one-tailed). Participants in the commentary condition relative to the CAM condition also increased their long-term growth rate upward from the industry average more for the growth firm than for the mature firm (t_{157} = 1.40, p = 0.08, one-tailed). Participants in the commentary and CAM conditions increased the cost of capital estimate upward from the industry average more for the growth firm than for the mature firm, but this did not differ across audit report types (t_{157} = 0.71, p = 0.48). In sum, there is some evidence to suggest that participants generally were able to distinguish between the two firms more when the audit report provided commentary than when it did not. This suggests that under conditions where the audit report includes commentary, investors’ extraction costs are lower than under conditions where the audit report does not include commentary.

Descriptive statistics

Descriptive statistics for participants’ FV estimates, WTP prices and WTP/ FV ratios at allocations of 50%, 25%, 10%, and 5% of their inheritance, for the high quality (low quality) reporter are tabulated in Panels A and B (C and D) of Table 1. Panel E of Table 1 tabulates these measures for the high quality reporter relative to the low quality reporter. Descriptive statistics
for participants’ average WTP/FV ratios (our primary dependent variable) across our two audit report type conditions are tabulated in Panels A through E of Table 2 and displayed graphically in Figure 1.

**Tests of our hypothesis**

We hypothesize that when investors’ extraction costs of judging financial reporting quality are lower, investors will be willing to pay prices that are relatively higher (lower) for a high (low) reporting quality firm’s common stock, controlling for their estimates of its fundamental value. To test our hypothesis, we perform a one-way analysis of variance (ANOVA) model of participants’ average WTP/FV judgments across the two audit report type conditions, which operationalize higher versus lower extraction costs. The ANOVA reveals a significant main effect of audit report type ($F_{(1, 157)} = 2.66, p = 0.05$, one-tailed). The pattern of investors’ WTP/FV ratios is statistically consistent with our hypothesis. Specifically, investors are willing to pay relatively more of the high quality reporter’s fundamental value than the low quality reporter’s fundamental value when the audit report comments on the firm’s financial reporting quality than when the audit report does not do so (means = 2.76% vs. -1.48%, respectively.)

Next, we perform a stricter test, in which we tabulate whether or not each investor’s WTP for a firm’s common shares *exceeds* their estimate of its common share’s fundamental value. This test is more stringent because, even if investors value both fundamental value (the traditional private good) and higher financial reporting quality (the public good), their risk preferences and strategies in forming bids may be such that they often calibrate their bids to be lower than the sum of these two values. By contrast, if investors express a WTP that *exceeds* their estimates of a firm’s common share’s traditional fundamental value, and this more
frequently occurs for the high quality reporter precisely when extraction costs are lower, it is hard to attribute the pattern in our average WTP/FV findings, reported above, to something other than investors’ actually ascribing nontrivial value to that firm’s use of financial reporting practices believed to contribute to the greater public good.

Panel A (B) of Table 3 tabulates the number and percentage of participants with average WTP exceeding their FV estimate for shares of the high quality (low quality) reporter. Panel C of Table 3 tabulates these frequencies for the high quality reporter relative to the low quality reporter. Interestingly, the pattern of our results suggests that in the absence of commentary in the audit report (i.e., when financial reporting quality extraction costs are higher), only 23.17% of participants were willing to pay more than fundamental value for the high quality reporter, but 32.93% of participants were willing to do so for the low quality reporter. In contrast, when the auditor’s report included commentary to reduce investors’ cost to extract the relative financial reporting quality of the two firms, 33.77% of participants were willing to pay more than fundamental value for the high quality reporter and 31.17% of participants were willing to do so for the low quality reporter. Our Fisher’s exact test revealed that significantly more participants were, on average, willing to pay more than fundamental value for the high quality reporter relative to the low quality reporter when the auditor’s report provided commentary than when it did not provide commentary (p < 0.001).

In sum, these results support our hypothesis that investors are willing to pay prices that are relatively higher (lower) for a higher (lower) quality reporter firm’s common stock, controlling for their estimates of its fundamental value, when extraction costs to judge financial reporting quality are lower than when they are higher.

Supplemental Analysis

We also tabulate these frequencies at allocations of 50%, 25%, 10%, and 5% of their inheritance.
We analyzed participants’ post-test assessments of financial reporting quality to see if they indicate that auditor commentary reduced their extraction costs in discerning relative financial reporting quality across the two firms. Our theory is supported if participants perceive the high quality reporter’s accounting quality to be higher than the low quality reporter’s, more in the *commentary* condition than in the *CAM* condition. This would suggest that the provision of auditor commentary affects the extent to which investors can appropriately discriminate firms with relatively higher or lower accounting quality. We asked three post-experimental questions designed to elicit participants’ perceptions of the firms’ relative accounting quality. These questions are displayed in Panel A of Table 5. Panel B of Table 5 reports cell sizes, means, and standard errors for responses to each of these three questions in the *CAM* and *commentary* audit report conditions, respectively. We perform a first-order Confirmatory Factor Analysis (CFA) to test the relationships between each of our three observed variables and our latent variable, perceptions of relative accounting quality. As shown in Panel C of Table 5, consistent with our theory, the measurement model suggests that our three observed variables are significant factor indicators for our latent construct, with all factor loadings significant (p-values < 0.001)

We use a structural equations model (SEM) to simultaneously estimate the latent variable and mediation within one model. As shown in Figure 2, the structural model contains: the independent variable (audit report), the mediating variable (the perceptions of relative accounting quality factor) and the dependent variable (relative average WTP/FV). The fit of the model is good, with $\chi^2_{(4 \ df)}$ of 4.56 ($p = 0.34$), a comparative fit index (CFI) of 0.997, a minimum discrepancy divided by degrees of freedom ($\chi^2/df$) of 1.14, and RMSEA of 0.03. Models with CFI > 0.95, $\chi^2/df < 3.0$, $p > 0.05$, and RMSEA < 0.05 are considered good fits (Marsh et al. 2004; Iacobucci 2010).
The results of our structural model suggest that investors’ perceptions of relative accounting quality partially mediate their relative average WTP/FV ratios. Specifically, as shown in Figure 2, the relation between audit report and perceptions of relative accounting quality (Link 1) is positive and significant (p = 0.03, one-tailed). The relation between perceptions of relative accounting quality and relative average WTP/FV (Link 3) is positive and significant (p = 0.02, one-tailed). Finally, the (previously significant) relation between audit report and relative average WTP/FV (Link 2) documented above in our hypothesis test is now insignificant (p = 0.19, two-tailed). Thus, we find direct evidence for our theory that when auditors provide commentary, investors better discriminate firms’ relative accounting quality, which, in turn, affects their willingness to pay, controlling for fundamental value.\textsuperscript{15}

[Insert Figure 2 here]

**Control Independent Factors**

We confirm that our findings are robust to the two factors we manipulate as robustness checks. First, we manipulate the order in which participants viewed the two firms. Participants either viewed the high quality reporter followed by the low quality reporter or viewed the firms in the reverse order.\textsuperscript{16} Our results are robust to the order in which participants viewed the two firms. Specifically, in a one-way ANOVA with our WTP/FV as the dependent variable, we do

\textsuperscript{15} In our post-test, we also asked participants a set of four questions for each firm designed to measure their affective reactions to the firms’ relative financial reporting quality. We perform a first-order Confirmatory Factor Analysis (CFA) to test the relationships between each of these observed variables and a latent variable, affective reactions to relative FRQ. A measurement model suggests that our observed affect variables are significant factor indicators for this latent affective reaction construct, with all factor loadings significant (p-values < 0.001). Next, we estimate an SEM model using investors’ affective reactions as the latent mediator, the audit report as the independent variable and the relative average WTP/FV as the dependent variable. However, we find this model is not a good fit ($\chi^2_{(8 df)} = 50.92$, p < 0.001), a comparative fit index (CFI) of 0.93, a minimum discrepancy divided by degrees of freedom ($\chi^2/df$) of 6.37, and RMSEA of 0.18). Taken together, the lack of fit for an affect-based model coupled with the fit of our model in Figure 2, suggests that investors’ willingness to pay for a firm’s financial reporting quality (beyond fundamental value) is more of a conscious process, rather than an affective, subconscious process.

\textsuperscript{16} The experiment was administered over two semesters. The order of firms was manipulated in the second semester, but not in the first semester of data collection. We do not detect a main effect of semester of data collection ($F_{(1,155)} = 0.55$, p = 0.46) or a semester x audit report type interaction ($F_{(1,155)} = 0.26$, p = 0.61).
not detect a main effect of order ($F_{(1,155)} = 2.06, p = 0.15$) or an order × audit report type interaction ($F_{(1,155)} = 0.19, p = 0.66$) and the main effect of audit report continues to be statistically significant ($F_{(1,155)} = 3.03, p = 0.04$, one-tailed).

Second, we randomly assign some participants to receive a balanced discussion of two schools of thought as to how prices, willingness to pay, and fundamental value should relate to one another. Our results are robust to the presence or absence of this discussion. Specifically, in a one-way ANOVA with our WTP/FV as the dependent variable, we do not detect a main effect of the discussion ($F_{(1,155)} = 1.73, p = 0.19$) or a discussion × audit report type interaction ($F_{(1,155)} = 0.03, p = 0.86$) and the main effect of audit report continues to be statistically significant ($F_{(1,155)} = 2.78, p = 0.05$, one-tailed).

**IV. CONCLUSION**

As Hirshleifer and Teoh (2003) observe, there has been a great divide between psychology-based experimental research showing that investors and other financial statement users are biased information processors who reach predictably fallible judgments and decisions (see, e.g., Libby et al. 2002 for a review) and economical based analytical models that typically assume full rationality guides their reactions to new information, enabling them to regularly reach efficient judgments and decisions. Our paper helps close this gap by identifying a new reason why the risk-adjusted price investors are willing to pay for a firm’s common shares systematically can exceed its estimates of fundamental value.

Namely, investors can conceptualize the purchase of common shares as a bundle of goods that goes to the future cash flows associated with dividends and capital gains and includes the degree to which the firm’s financial reporting quality is contributing to the smooth operation and reliability of our capital markets. The latter is a valuable public good that indirectly can be
invested in by directly rewarding (penalizing) firms that use accounting estimates, methods, and policies of higher (lower) perceived quality.

Historically, investors and others have incurred relatively high extraction costs to develop well-assured perceptions of financial reporting quality. We find that more informative audit reports can be a mechanism that lowers these extraction costs, enabling investors to more fully express their willingness to pay higher prices per share for firms using higher quality financial reporting. Recent global trends aimed at expanding the content of auditor’s reports has real potential to lower these extraction costs. We examine the use of auditor commentary (such as seen in the UK, e.g., KPMG auditor’s Rolls Royce report) as a means of lowering these costs. Future research can examine other ways besides auditor commentary that auditors (or other information intermediaries) can employ to help lower these costs.

Our study does have some limitations, of course. While we measure individual investors’ willingness to pay and control for the estimates of fundamental value, we do not observe market behaviors in this study. We also use participants who actually have little real-world wealth on the line, and who are not expert investors. It is possible that attributes of markets or of investors would interact with our manipulation of extraction costs to amplify or dampen investor propensity to willingly pay value-adjusted higher prices for firms using higher financial reporting quality. Future work can develop theory about and test for the presence of these possible interactions.

Despite such limitations, our paper has at least two important implications. One implication of our theory and results is that commentary within independent auditors’ reports can make the capital market price discovery process more efficient by lowering the extraction cost of firms’ relative financial reporting quality. The potential for a more informative audit report
reducing the friction in the price discovery process is consistent with the most basic goals of standard setters and regulators to protect investors, facilitate more efficient markets, and serve the public interest. Another implication is that the mispricing literature which treats apparent deviations between prices and estimates of fundamental value as anomalous or the result of a mis-specified model is overlooking the public good facet of improved financial reporting quality and its attendant impact on prices investors are willing to pay. If investors ascribe nontrivial value to higher quality reporting along the lines discussed herein, a particularly worrisome aspect of this problem with the literature is that proxies of traditional fundamental value themselves likely include measures affected by the public good (e.g., Market to Book ratios). We leave examination of such matters to future research.
Citations


KPMG. 2014. Independent Auditor’s Report for Rolls Royce Holdings, PLC.

KPMG. 2013. Independent Auditor’s Report for Rolls Royce Holdings, PLC.


Financial Statements and the Related Auditor’s Report; And Related Amendments to PCAOB Standards. 


EXHIBIT 1
Excerpts of Firm Type Manipulation

OVERVIEW OF FIRM X AND FIRM Y

- **Firm X** and **Firm Y** are publicly traded competitors in this industry. Each firm designs, manufactures, and markets medical equipment and supplies primarily for the U.S. domestic market.

- **Firm X**’s products historically have had the largest market share, but **Firm Y** reportedly has grown more rapidly in the past two years, which poses a challenge to **Firm X**’s leadership position. Further, **Firm Y** asserts that it will have superior technology going-forward.

- **Firm X** and **Firm Y** each have marketed proprietary robotic arm and camera systems that are used by surgeons to perform minimally invasive surgery. Multiple small incisions are made during surgery to insert robotic arms and cameras into patients. Minimally invasive surgery allows for a much faster recovery time compared to older generation surgical techniques, thus these robotic devices are in high demand.

- **Firm Y** has developed a new robotic system, which requires only a single, small incision through which the robotic arms and camera enter. *If successful, this competing technology would be the first of its kind.** **Firm Y**’s prototype is fully developed and clinical testing of the technology is in progress. *There are mixed opinions about the prototype.* Some industry analysts say the prototype may have a design flaw that will reduce **Firm Y**’s chances of getting its prototype through clinical testing or of gaining market share over the longer term. Other industry analysts, however, are optimistic, saying **Firm Y**’s prototype is well designed and will be in high demand.

- **Firm X**, perhaps in response, recently began research and development of its own single-incision device. They do not yet have a prototype developed, but **Firm X** asserts to be moving quickly in order to maintain their historic competitive advantage and market share.

20X2 FINANCIAL INFORMATION

Assume that it is early 20X3, and you are reviewing the audited financial statements for **Firm X** and **Firm Y** that were just released.

This table compares **Firm X** and **Firm Y**’s performance on key financial ratios for the most recent year, along with the industry averages:

<table>
<thead>
<tr>
<th>Key Performance indicators</th>
<th>Firm X</th>
<th>Firm Y</th>
<th>Industry Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings growth</td>
<td>3.26%</td>
<td>15.20%</td>
<td>2.23%</td>
</tr>
<tr>
<td>Profit margin</td>
<td>5.87%</td>
<td>7.03%</td>
<td>5.60%</td>
</tr>
</tbody>
</table>
For brevity, this exhibit displays Firm X (Y) as the high quality (low quality) reporter. We manipulate the order in which participants viewed the two firms. Participants either viewed the high quality reporter followed by the low quality reporter or viewed the firms in the reverse order. Thus, for half of our participants, Firm X (Y) was the high quality reporter and vice-versa.
REPORT OF INDEPENDENT AUDITORS

To the Board of Directors and Stockholders of Firm X

We have audited the accompanying consolidated 20X2 financial statements for Firm X. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 20X2, and the results of its operations and its cash flows for the fiscal year then ended in accordance with U.S. generally accepted accounting principles (GAAP).

Critical Audit Matters

The standards of the PCAOB require that we provide discussion of critical audit matters in our report. Critical audit matters are those matters addressed during the audit that (1) involved our most difficult, subjective, or complex judgments; (2) posed the most difficulty to us in obtaining sufficient appropriate evidence; or (3) posed the most difficulty to us in forming our opinion on the financial statements. Our discussion of critical audit matters provided below does not alter our overall opinion on the financial statements, taken as a whole.

Warranty Expense

We selected the Company’s warranty expense estimate as a critical audit matter. The Company developed new models with different assumptions about product returns and its estimate of the cost per return, a key element in estimating warranty expense. There is a lack of historical experience with these new assumptions.

To address this matter, we consulted with our national office on (1) the design and performance of audit procedures to test the data underlying management's assumptions used to estimate warranty expense and (2) our evaluation of the results of those procedures, including our assessment of the reasonableness of management's judgments regarding the effect that changes in the Company's return policies and practices, as well as changes in economic trends that affect customer behavior, have on the estimate of warranty expense. The Company’s accounting policy for warranty expense is discussed in Note 1 to the financial statements.

Bad Debt Expense

We selected the Company’s bad debt expense estimate as a critical audit matter. The Company developed new models with different assumptions about customer payments, a key element in estimating bad debt expense. There is a lack of historical experience with these new assumptions.

To address this matter, we consulted with our national office on (1) the design and performance of audit procedures to test the data underlying management's assumptions used to estimate bad debt expense and (2) our evaluation of the results of those procedures, including our assessment of the reasonableness of management's judgments regarding the effect that changes in the Company’s credit policies and practices, as well as changes in economic trends that affect customer behavior, have on the estimate of bad debt expense. The Company’s accounting policy for bad debt expense is discussed in Note 2 to the financial statements.

Internal Controls Over Financial Reporting

We have also audited, in accordance with the standards of the Public Company Accounting Standards Board (United States), the Company’s internal control over financial reporting as of December 31, 20X2, based on the criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 21, 20X3 expressed an unqualified opinion on the Company’s internal control over financial reporting.

Big Four Accounting Firm
March 21, 20X3

In the CAM conditions, the audit reports for the two firms were identical except for the name of the firm.
REPORT OF INDEPENDENT AUDITORS

To the Board of Directors and Stockholders of Firm X

We have audited the accompanying consolidated 20X2 financial statements for Firm X. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 20X2, and the results of its operations and its cash flows for the fiscal year then ended in accordance with U.S. generally accepted accounting principles (GAAP).

Critical Audit Matters and Related Commentary on the Quality of Management's Accounting Practices

The standards of the PCAOB require that we provide commentary on the quality of management’s accounting practices pertaining to critical audit matters identified in our report. Critical audit matters are those matters addressed during the audit that (1) involved our most difficult, subjective, or complex judgments; (2) posed the most difficulty to us in obtaining sufficient appropriate evidence; or (3) posed the most difficulty to us in forming our opinion on the financial statements. The commentary about management’s accounting practices provided below does not alter our overall opinion on the financial statements, taken as a whole.

Warranty Expense
We selected the Company’s warranty expense estimate as a critical audit matter. The Company developed new models with different assumptions about product returns and its estimate of the cost per return, a key element in estimating warranty expense. There is a lack of historical experience with these new assumptions.

To address this matter, we consulted with our national office on (1) the design and performance of audit procedures to test the data underlying management's assumptions used to estimate warranty expense and (2) our evaluation of the results of those procedures, including our assessment of the reasonableness of management's judgments regarding the effect that changes in the Company’s credit policies and practices, as well as changes in economic trends that affect customer behavior, have on the estimate of warranty expense. The Company’s accounting policy for warranty expense is discussed in Note 2 to the financial statements.

Commentary about the Quality of Management’s Estimate of Warranty Expense
To assess the quality of this estimate, we developed an independent range for purposes of evaluating the reasonableness of management’s estimate and underlying assumptions. Management’s recorded amount fell in the middle of our acceptable range and, although based on new assumptions, these assumptions appear to be neutral and realistic about product returns and cost per return.

Bad Debt Expense
We selected the Company’s bad debt expense estimate as a critical audit matter. The Company developed new models with different assumptions about customer payments, a key element in estimating bad debt expense. There is a lack of historical experience with these new assumptions.

To address this matter, we consulted with our national office on (1) the design and performance of audit procedures to test the data underlying management's assumptions used to estimate bad debt expense and (2) our evaluation of the results of those procedures, including our assessment of the reasonableness of management's judgments regarding the effect that changes in the Company’s credit policies and practices, as well as changes in economic trends that affect customer behavior, have on the estimate of bad debt expense. The Company’s accounting policy for bad debt expense is discussed in Note 2 to the financial statements.

Commentary about the Quality of Management’s Estimate of Bad Debt Expense
To assess the quality of this estimate, we developed an independent range for purposes of evaluating the reasonableness of management’s estimate and underlying assumptions. Management’s recorded amount fell in the middle of our acceptable range and is based on neutral, realistic assumptions about customer payment behaviors.

Internal Controls Over Financial Reporting
We have also audited, in accordance with the standards of the Public Company Accounting Standards Board (United States), the Company’s internal control over financial reporting as of December 31, 20X2, based on the criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 21, 20X3 expressed an unqualified opinion on the Company’s internal control over financial reporting.

Big Four Accounting Firm
March 21, 20X3
used to estimate warranty expense and (2) our evaluation of the results of those procedures, including our assessment of the reasonableness of management's judgments regarding the effect that changes in the Company's return policies and practices, as well as changes in economic trends that affect customer behavior, have on the estimate of warranty expense. The Company’s accounting policy for warranty expense is discussed in Note 1 to the financial statements.

REPORT OF INDEPENDENT AUDITORS

To the Board of Directors and Stockholders of Firm Y

We have audited the accompanying consolidated 20X2 financial statements for Firm Y. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 20X2, and the results of its operations and its cash flows for the fiscal year then ended in accordance with U.S. generally accepted accounting principles (GAAP).

Critical Audit Matters and Related Commentary on the Quality of Management’s Accounting Practices

The standards of the PCAOB require that we provide commentary on the quality of management’s accounting practices pertaining to critical audit matters identified in our report. Critical audit matters are those matters addressed during the audit that (1) involved our most difficult, subjective, or complex judgments; (2) posed the most difficulty to us in obtaining sufficient appropriate evidence; or (3) posed the most difficulty to us in forming our opinion on the financial statements. The commentary about management’s accounting practices provided below does not alter our overall opinion on the financial statements, taken as a whole.

Warranty Expense

We selected the Company’s warranty expense estimate as a critical audit matter. The Company’s accounting policy for warranty expense is discussed in Note 1 to the financial statements.

Commentary about the Quality of Management’s Estimate of Warranty Expense

To assess the quality of this estimate, we developed an independent range for purposes of evaluating the reasonableness of management’s estimate and underlying assumptions. Management’s recorded amount fell at the low end of our acceptable range and is based on more favorable assumptions about product returns and cost per return than in prior years. In addition, management’s key assumptions are more optimistic than those we used to derive our independent estimate of future returns.

Bad Debt Expense

We selected the Company’s bad debt expense estimate as a critical audit matter. The Company developed new models with different assumptions about customer payments, a key element in estimating bad debt expense. There is a lack of historical experience with these new assumptions.

To address this matter, we consulted with our national office on (1) the design and performance of audit procedures to test the data underlying management's assumptions used to estimate bad debt expense and (2) our evaluation of the results of those procedures, including our assessment of the reasonableness of management's judgments regarding the effect that changes in the Company’s credit policies and practices, as well as changes in economic trends that affect customer behavior, have on the estimate of bad debt expense. The Company’s accounting policy for bad debt expense is discussed in Note 2 to the financial statements.

Commentary about the Quality of Management’s Estimate of Bad Debt Expense

To assess the quality of this estimate, we developed an independent range for purposes of evaluating the reasonableness of management’s estimate and underlying assumptions. Management’s recorded amount fell at the low end of our acceptable range and is based on more favorable assumptions about customer payments than in prior years. In addition, management’s key assumptions are more optimistic than the assumptions we used to derive our independent estimate of bad debt expense.

Internal Controls Over Financial Reporting

We have also audited, in accordance with the standards of the Public Company Accounting Standards Board (United States), the Company’s internal control over
Company developed new models with different assumptions about product returns and its estimate of the cost per return, a key element in estimating warranty expense. There is a lack of historical experience with these new assumptions.

To address this matter, we consulted with our national office on (1) the design and performance of audit procedures to test the data underlying management's assumptions used to estimate warranty expense and (2) our evaluation of the results of those procedures, including our assessment of the reasonableness of management's judgments regarding the effect that changes in the Company's return policies and practices, as well as changes in economic trends that affect customer behavior, have on the estimate of warranty expense. The Company’s accounting policy for warranty expense is discussed in Note 1 to the financial statements.

financial reporting as of December 31, 20X2, based on the criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 21, 20X3 expressed an unqualified opinion on the Company’s internal control over financial reporting.

Big Four Accounting Firm
March 21, 20X3

* In the Commentary conditions, the audit report provided commentary about where the estimates for warranty expense and bad debt expense fell within auditor’s acceptable range. We manipulate the order in which participants viewed the two firms. Participants either viewed the high quality reporter followed by the low quality reporter or viewed the firms in the reverse order. Thus, for half of our participants, Firm X (Y) was the high quality reporter and vice-versa.
EXHIBIT 3 (continues on the next page)
Exhibit 3 (continued)

To compute each firm's fundamental value, provide your best estimate of the following values below, first for Firm X and then for Firm Y (where possible, industry averages are provided to assist you in making your estimates.

Firm X

Step 1: Develop your best estimate of Firm X’s net income (in Excel, enter values in the box shown).

In estimating Firm X’s fundamental value, you want to start with your best estimate of its net income for the current year.

- So, if you believe that the financial accounting policies and estimates used by Firm X management to derive its reported net income constitutes your best estimate of Firm X’s true net income, you do not need to adjust reported net income.
- But, if you believe that Firm X’s financial accounting policies and estimates resulted in “net income” that is either optimistically biased or pessimistically biased, you should either decrease or increase reported net income.

Net income as reported for Firm X this year (ending 1/31/20X2, in millions): $1,056

My “Adjusted” Net income for Firm X this year (ending 1/31/20X2, in millions): $________

Step 2: Forecast future net income for the next 4 years for Firm X (in Excel, enter values in the boxes shown).

Net income forecast for Firm X next year (year ending 1/31/20X3, in millions): $_______

Net income forecast for Firm X year ending 1/31/20X4 (in millions): $_______

Net income forecast for Firm X year ending 1/31/20X5 (in millions): $_______

Net income forecast for Firm X year ending 1/31/20X6 (in millions): $_______

Step 3: Estimate cost of capital and growth in residual earnings (in Excel, enter values in the boxes shown). Note: A firm’s long-term growth rate in residual earnings cannot exceed its cost of capital.

Firm X’s cost of capital (industry average is 5.00%): _________

Firm X’s Long-term growth rate for residual earnings:
(Industry average is 1.50%) _________

Step 4: Record estimate of Firm X’s fundamental value per share from Excel template

Estimated fundamental value per share of Firm X = $_______
EXHIBIT 4

Directions: Please answer the following questions. You may refer back to the case materials.

We are interested in the prices you would be willing to pay to allocate different percentages of your $100,000 inheritance to Firm X and then Firm Y. These prices may differ across Firm X and Firm Y. Also, the price you should be willing to pay when allocating 50% of your $100,000 to any single investment ought to be lower than when allocating smaller percentages.

Q1. Please indicate the **maximum price per share** at which you would be willing to invest the following amounts in Firm X's stock:

- $50,000, or 50%, of your inheritance: $________ (1)
- $25,000, or 25%, of your inheritance: $________ (2)
- $10,000, or 10%, of your inheritance: $________ (3)
- $5,000, or 5%, of your inheritance: $________ (4)

Price should be increasing from (1) to (4)

Q2. Please indicate the **maximum price per share** at which you would be willing to invest the following amounts in Firm Y's stock:

- $50,000, or 50%, of your inheritance: $________ (5)
- $25,000, or 25%, of your inheritance: $________ (6)
- $10,000, or 10%, of your inheritance: $________ (7)
- $5,000, or 5%, of your inheritance: $________ (8)

Price should be increasing from (5) to (8)

After you have finished Q1 and Q2 above, you may want to make sure they make sense – if you would be willing to pay more for one firm versus the other firm then your prices should reflect that.
Figure 1 depicts the observed pattern of cell means for participants’ average willingness to pay to fundamental value ratio for a high quality reporter relative to a low quality reporter (see Table 2, Panel A). This pattern is tested using the ANOVA presented in Panel B of Table 2.

† Investors estimated the fundamental value of two firms using a residual earnings model template. Next, they were asked to assume they had inherited $10,000. Participants specified maximum prices at which they would invest 50%, 25%, 10% or 5% of their inheritance in each firm’s stock. For each participant, the mean of the four willing to pay price responses for each firm was divided by their estimate of that firm’s fundamental value, yielding a ratio for each of the two firms. The ratio for the low quality reporter was subtracted from the ratio for the high quality reporter to arrive at our primary dependent measure (i.e., participants’ average willingness to invest prices to fundamental value ratio for the high quality reporter relative to the low quality reporter). Positive (negative) values suggest participants reward the high quality (low quality) reporter relative to the other.
FIGURE 2
Mediation Test of Investors’ Perceptions of Firms’ Relative Accounting Quality

This figure presents a full measurement and structural model that were estimated simultaneously. This model suggests the effect of the audit report on investors’ relative WTP/FV ratio is partially mediated by their perceptions of the relative accounting quality of the two firms. For each link, the observed standardized coefficient and one-tailed p-value is reported. The overall model’s comparative fit index (CFI) is 0.997, $\chi^2_{(4 \, df)}$ of 4.56 ($p = 0.34$), the minimum discrepancy divided by degrees of freedom ($\chi^2/df$) is 1.14, and RMSEA of 0.03. Models with CFI > 0.95, $\chi^2/df < 3.0$, $p > 0.05$, and RMSEA < 0.05 are considered good fits (Marsh et al. 2004; Iacobucci 2010). Table 2 Panel A presents descriptive statistics for our relative average WTP/FV dependent variable. Table 5 Panel B presents descriptive statistics for the three questions measuring participants’ perceptions of accounting quality. Table 5 Panel C presents results for the measurement model.

1 Audit report type manipulated whether participants received a CAM or a Commentary audit report.
2 We asked three questions designed to elicit participants’ perceptions of relative accounting quality (see Table 5, Panel A for the questions and Table 5, Panel B for the descriptive statistics).
3 Investors’ average willingness to pay to fundamental value ratio for a high quality reporter relative to a low quality reporter. See Figure 1 for a description of our primary dependent variable.
TABLE 1
Descriptive Statistics

Panel A: High quality reporter - Fundamental Value Estimate (FV) & Willingness to Pay (WTP) means [standard deviations]

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>n</th>
<th>FV Estimate</th>
<th>WTP at 50%</th>
<th>WTP at 25%</th>
<th>WTP at 10%</th>
<th>WTP at 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commentary</td>
<td>77</td>
<td>$59.87</td>
<td>$51.14</td>
<td>$54.62</td>
<td>$57.74</td>
<td>$60.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[$20.42]</td>
<td>[$18.20]</td>
<td>[$18.91]</td>
<td>[$20.58]</td>
<td>[$22.32]</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>$64.80</td>
<td>$54.37</td>
<td>$57.82</td>
<td>$61.57</td>
<td>$64.42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[$48.96]</td>
<td>[$47.10]</td>
<td>[$47.38]</td>
<td>[$48.27]</td>
<td>[$49.84]</td>
</tr>
</tbody>
</table>

Panel B: High quality reporter - WTP to FV ratios means [standard deviations]

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>n</th>
<th>WTP to FV Ratio at 50%</th>
<th>WTP to FV Ratio at 25%</th>
<th>WTP to FV Ratio at 10%</th>
<th>WTP to FV Ratio at 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commentary</td>
<td>77</td>
<td>87.13%</td>
<td>92.85%</td>
<td>98.08%</td>
<td>103.37%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[17.65%]</td>
<td>[16.31%]</td>
<td>[17.47%]</td>
<td>[20.89%]</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>84.20%</td>
<td>90.05%</td>
<td>94.71%</td>
<td>99.13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[26.25%]</td>
<td>[25.14%]</td>
<td>[15.67%]</td>
<td>[17.87%]</td>
</tr>
</tbody>
</table>

Panel C: Low quality reporter - FV and WTP means [standard deviations]

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>n</th>
<th>FV Estimate</th>
<th>WTP at 50%</th>
<th>WTP at 25%</th>
<th>WTP at 10%</th>
<th>WTP at 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commentary</td>
<td>77</td>
<td>$63.66</td>
<td>$53.09</td>
<td>$55.27</td>
<td>$59.47</td>
<td>$63.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[$34.26]</td>
<td>[$32.74]</td>
<td>[$30.80]</td>
<td>[$33.04]</td>
<td>[$34.06]</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>$73.29</td>
<td>$62.14</td>
<td>$65.41</td>
<td>$68.97</td>
<td>$74.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[$49.75]</td>
<td>[$44.39]</td>
<td>[$46.18]</td>
<td>[$49.47]</td>
<td>[$51.97]</td>
</tr>
</tbody>
</table>

Panel D: Low quality reporter - WTP to FV ratios means [standard deviations]

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>n</th>
<th>WTP to FV Ratio at 50%</th>
<th>WTP to FV Ratio at 25%</th>
<th>WTP to FV Ratio at 10%</th>
<th>WTP to FV Ratio at 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commentary</td>
<td>77</td>
<td>83.52%</td>
<td>88.69%</td>
<td>95.75%</td>
<td>102.43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[20.29%]</td>
<td>[19.66%]</td>
<td>[18.91%]</td>
<td>[21.99%]</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>85.16%</td>
<td>89.84%</td>
<td>95.60%</td>
<td>103.39%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[20.40%]</td>
<td>[18.55%]</td>
<td>[20.01%]</td>
<td>[24.28%]</td>
</tr>
</tbody>
</table>
### TABLE 1 (CONTINUED)

Panel E: WTP to FV ratios for high quality reporter relative to low quality reporter\(^\ast\) - means [standard deviations]

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>n</th>
<th>Relative WTP to FV Ratio at 50%</th>
<th>Relative WTP to FV Ratio at 25%</th>
<th>Relative WTP to FV Ratio at 10%</th>
<th>Relative WTP to FV Ratio at 5%</th>
<th>Average WTP to FV Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commentary</td>
<td>77</td>
<td>3.61%</td>
<td>4.16%</td>
<td>2.33%</td>
<td>0.94%</td>
<td>2.76%</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>-0.95%</td>
<td>0.20%</td>
<td>-0.89%</td>
<td>-4.27%</td>
<td>-1.48%</td>
</tr>
</tbody>
</table>

\(^\ast\)Participants were asked to assume they had inherited $10,000. They provided the prices they would be willing to pay for each firm's stock at allocations of 50%, 25%, 10%, or 5% of their inheritance.

\(\dagger\)A willingness to pay to fundamental value ratio for each firm was computed for each participant at each allocation level of investment (i.e., 50%, 25%, 10%, and 5%). Each participant's willingness to pay price at each allocation level was divided by their fundamental value estimate for each firm, respectively.

\(^\ast\)Means in Panel E are calculated by subtracting the willingness to pay to fundamental value ratio for the low quality reporter from the same ratio for the high quality reporter. Positive (negative) values suggest participants reward the high quality (low quality) reporter relative to the other.
### TABLE 2

Descriptive Statistics and Test of Hypothesis

Panel A: Average willingness to pay to fundamental value ratio for high quality reporter relative to low quality reporter -- means [standard deviations]

<table>
<thead>
<tr>
<th>Audit report type condition</th>
<th>n</th>
<th>2.76%</th>
<th>[14.91%]</th>
<th>-1.48%</th>
<th>[17.61%]</th>
<th>4.24%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commentary</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel B: ANOVA model of average willingness to pay / fundamental value ratios for a high quality relative to a low quality reporter

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit report type</td>
<td>0.071</td>
<td>1</td>
<td>0.071</td>
<td>2.66</td>
<td>0.05*</td>
</tr>
<tr>
<td>Error</td>
<td>4.202</td>
<td>157</td>
<td>0.027</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Reported p-values are one-tailed equivalents, given our directional predictions.

**Reported p-values are two-tailed.
### TABLE 3
Numbers and Percentages of Investors’ Willingness to Pay More Than Their Fundamental Value Estimates (WTP > FV)

**Panel A: High quality reporter**

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>Commentary</th>
<th>50% allocation</th>
<th>25% allocation</th>
<th>10% allocation</th>
<th>5% allocation</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>77</td>
<td>16.88%</td>
<td>28.57%</td>
<td>37.66%</td>
<td>51.95%</td>
<td>33.77%</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>14.63%</td>
<td>14.63%</td>
<td>28.05%</td>
<td>43.90%</td>
<td>23.17%</td>
</tr>
</tbody>
</table>

**Panel B: Low quality reporter**

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>Commentary</th>
<th>50% allocation</th>
<th>25% allocation</th>
<th>10% allocation</th>
<th>5% allocation</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>77</td>
<td>11.69%</td>
<td>19.48%</td>
<td>38.96%</td>
<td>61.04%</td>
<td>31.17%</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>15.85%</td>
<td>25.61%</td>
<td>35.37%</td>
<td>54.88%</td>
<td>32.93%</td>
</tr>
</tbody>
</table>

**Panel C: Difference (i.e., High quality reporter Minus Low quality reporter)**

<table>
<thead>
<tr>
<th>Audit report type</th>
<th>Commentary</th>
<th>50% allocation</th>
<th>25% allocation</th>
<th>10% allocation</th>
<th>5% allocation</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>77</td>
<td>5.19%</td>
<td>9.09%</td>
<td>-1.30%</td>
<td>-9.09%</td>
<td>2.60%</td>
</tr>
<tr>
<td>CAM</td>
<td>82</td>
<td>-1.22%</td>
<td>-10.98%</td>
<td>-7.32%</td>
<td>-10.98%</td>
<td>-9.76%</td>
</tr>
</tbody>
</table>

**Panel D: Test of Significance of Difference Using Fisher’s Exact Tests**

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>50% allocation</th>
<th>25% allocation</th>
<th>10% allocation</th>
<th>5% allocation</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quality reporter</td>
<td>77</td>
<td>p = 0.43</td>
<td>p = 0.03</td>
<td>p = 0.13</td>
<td>p = 0.20</td>
<td>p = 0.10</td>
</tr>
<tr>
<td>Low quality reporter</td>
<td>82</td>
<td>p = 0.30</td>
<td>p = 0.23</td>
<td>p = 0.38</td>
<td>p = 0.27</td>
<td>p = 0.47</td>
</tr>
<tr>
<td>Difference between high</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>quality reporter relative to low quality reporter</td>
<td></td>
<td>p = 0.10</td>
<td>p &lt; 0.001</td>
<td>p = 0.09</td>
<td>p = 0.30</td>
<td>p &lt; 0.001</td>
</tr>
</tbody>
</table>

*Positive (Negative) values indicate more participants are willing to pay more than fundamental value for the high (low) quality reporter relative to the low (high) quality reporter.*
**TABLE 4**

Inputs into Residual Income Model

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audit report type</strong></td>
<td><strong>Earnings adjustment (as a percentage of reported earnings)</strong></td>
<td><strong>Long-term growth rate adjustment from industry average</strong></td>
<td><strong>Cost of capital adjustment from industry average</strong></td>
</tr>
<tr>
<td>Commentary</td>
<td>-0.09% [1.46%]</td>
<td>0.37% [0.81%]</td>
<td>0.02% [1.01%]</td>
</tr>
<tr>
<td>CAM</td>
<td>-0.85% [6.73%]</td>
<td>0.22% [0.56%]</td>
<td>0.05% [0.85%]</td>
</tr>
<tr>
<td><strong>Audit report type</strong></td>
<td><strong>Earnings adjustment (as a percentage of reported earnings)</strong></td>
<td><strong>Long-term growth rate adjustment from industry average</strong></td>
<td><strong>Cost of capital adjustment from industry average</strong></td>
</tr>
<tr>
<td>Commentary</td>
<td>-7.04% [10.05%]</td>
<td>0.85% [1.22%]</td>
<td>1.24% [1.62%]</td>
</tr>
<tr>
<td>CAM</td>
<td>-4.64% [16.16%]</td>
<td>0.95% [1.04%]</td>
<td>1.11% [1.46%]</td>
</tr>
<tr>
<td><strong>Audit report type</strong></td>
<td><strong>Earnings adjustment (as a percentage of reported earnings)</strong></td>
<td><strong>Long-term growth rate adjustment from industry average</strong></td>
<td><strong>Cost of capital adjustment from industry average</strong></td>
</tr>
<tr>
<td>Commentary</td>
<td>6.94% [10.13%]</td>
<td>-0.49% [1.11%]</td>
<td>-1.22% [1.51%]</td>
</tr>
<tr>
<td>CAM</td>
<td>3.79% [15.99%]</td>
<td>-0.72% [1.00%]</td>
<td>-1.06% [1.49%]</td>
</tr>
</tbody>
</table>

Participants derived an estimate of the fundamental value of each firm's stock, using an Excel template (see Exhibit 3). In doing so, participants were asked to provide the estimates necessary to complete a residual earnings valuation model for each firm. In the computer lab, participants were each provided with a residual earnings valuation template for each firm in a spreadsheet, adapted from Elliott et al. (2014). For each firm, participants provided their best estimate of the current year's net income (i.e., they could use earnings as reported or adjust it), forecasts of earnings for each of the four subsequent years, a cost of capital estimate (i.e., they could use the industry average or adjust it), and an estimate of the rate at which they expected residual earnings to grow after the fourth year (i.e., they could use the industry average or adjust it) (Penman 2012). The template then calculated and displayed the resulting estimate of fundamental value for each firm.
TABLE 5
Investors’ Perceptions of Relative Accounting Quality

Panel A: Questions used to Measure Perceptions of Relative Accounting Quality†
1. To what degree, if any, do you believe management at Firm X or Firm Y used more optimistic assumptions about product returns and cost per return to arrive at a lower estimate of warranty expense?
Response Scale: (-3 = Firm X used much more optimistic assumptions to +3 = Firm Y used much more optimistic assumptions)

2. To what degree, if any, do you believe management at Firm X or Firm Y used more optimistic assumptions about customer payment behaviors to arrive at a lower estimate of bad debt expense?
Response Scale: (-3 = Firm X used much more optimistic assumptions to +3 = Firm Y used much more optimistic assumptions)

3. To what degree, if any, do you believe that overall, management at Firm X or Firm Y used higher quality accounting practices compared to the other?
Response Scale: (-3 = Firm X used much higher quality to +3 = Firm Y used much higher quality)

Panel B: Measures of Perceptions of Relative Accounting Quality by Audit Report Condition
Mean [Standard Error], n = 158

<table>
<thead>
<tr>
<th>Question</th>
<th>CAM (n = 81)</th>
<th>Commentary (n = 77)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.05 [0.17]</td>
<td>1.36 [0.16]</td>
</tr>
<tr>
<td>2</td>
<td>0.86 [0.15]</td>
<td>1.26 [0.16]</td>
</tr>
<tr>
<td>3</td>
<td>-0.80 [0.12]</td>
<td>-1.08 [0.12]</td>
</tr>
</tbody>
</table>

Panel C: Measurement Model Descriptive Statistics£

<table>
<thead>
<tr>
<th>Item</th>
<th>Standardized Estimate</th>
<th>Standard Error</th>
<th>Critical Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1 &lt;-&gt; - - Perceptions of Relative Accounting Quality</td>
<td>0.78</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Question 2 &lt;-&gt; - - Perceptions of Relative Accounting Quality</td>
<td>0.91</td>
<td>0.12</td>
<td>9.07</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Question 3 &lt;-&gt; - - Perceptions of Relative Accounting Quality</td>
<td>-0.66</td>
<td>0.08</td>
<td>-8.25</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

† We manipulate the order in which participants viewed the two firms; participants either viewed the high quality reporter followed by the low quality reporter or viewed the firms in the reverse order. Thus, for some participants Firm X (Y) was the high (low) quality reporter. For those participants who viewed the low quality reporter first (i.e., the low quality reporter was Firm X and the high quality reporter was Firm Y), we reverse coded the responses to
these three questions. Thus, regardless of order, for Questions 1 and 2 more positive values suggest participants distinguish the high (low) quality reporter as having higher (lower) accounting quality than the other firm. For the third question, more negative values suggest participants distinguish the high (low) quality reporter as having higher (lower) accounting quality than the other firm.

Panel C reports results of the measurement model portion of the structural equations model reported in Figure 2. We constrain Question One’s factor-loading parameter to 1.0 (i.e. a reference variable) to ensure the latent variable scales are determined (Byrne 2010). AMOS graphics automatically assigns this value to an indicator variable, but the model is robust to reassigning any other indicator variables as the reference variable.