



**NANYANG
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**Are Accurate Bold Forecasts Better than Accurate Non-
Bold Forecasts? Investors' Reactions to the Joint Effect of
Forecast Boldness Salience and Forecast Timing**

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ABSTRACT

In this study, I conduct an experiment to investigate how financial analysts' forecast boldness salience and forecast timing jointly influence investors' willingness to pay for investment advice, holding constant the accuracy of the forecast. I consider forecast boldness salience to refer to the extent that the magnitude of the analyst's forecast stands out from that made by others in terms of its boldness (magnitude of the forecast relative to the average forecast made by others) and uniqueness (whether there are other individual forecasts that are close or similar to this forecast). Forecast timing refers to whether analysts issue their forecasts earlier or later relative to other analysts. I find that for an early analyst, investors' willingness to pay for advice increases once his/her forecast is confirmed by the follower analyst(s). In contrast, for a late analyst, investors' willingness to pay for advice decreases if his/her forecast is non-bold. My results enrich our understanding on the joint effect of forecast characteristics on investor reaction to analysts' forecasts. I show that the effect of analysts' forecast boldness is contingent on both forecast uniqueness and forecast timing. My study has practical implications on forecasting strategies for financial analysts.

Keywords: Investors' Willingness to Pay for Investment Advice; Forecast Timing; Forecast Boldness Salience; Forecast Uniqueness

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I. INTRODUCTION

Financial analysts play an important role as financial intermediaries (Asquith et al. 2005; Beaver 2002; Mikhail et al. 2007). Investors usually rely on analysts' earnings forecasts when making trading and investment decisions (Schipper 1991). Prior studies have shown that investor reaction to analyst forecasts is not only affected by the *ex post* accuracy of the forecast, but is also affected by the analyst's and his/her past forecast characteristics, e.g., the analyst' prior reputation, brokerage affiliation, past forecast conservatism (Bonner et al. 2007; Clement and Tse 2003; Hugon and Muslu 2010). In this study, I experimentally investigate how two forecast characteristics, the timing of forecast issuance (forecast timing) and the extent the forecast is bold and unique (forecast boldness salience¹) in terms of being distinctive from other analysts' forecasts, jointly influence investors' willingness to pay for analysts' investment advice.

Forecast timing refers to whether analysts issue their forecasts earlier or later relative to other analysts. Forecast timing is an important attribute used to assess analyst quality. Every year, to select the "All American Research Team", the *Institutional Investor* magazine sends surveys to buy-side investors, asking them to assess what the most important attributes of analysts' research reports to them. Since 2001, analysts' responsiveness has been among the top three highly valued aspects,² which implies that investors value analysts' early issuance of information. Forecast timing is therefore an important forecast attribute. However, existing research provides limited evidence on the properties and effects of this attribute.

¹ I use the construct of "boldness salience" rather than "boldness uniqueness" to be consistent with analysts' forecast incentive literature to better motivate the study, as recent studies show that bold forecasts can result from analysts' incentive to be more salient than the peer analysts to attract market attention (Yin and Zhang 2012; Zhuang 2011). Specifically, the term "boldness salience" better reflects the relationship between boldness and salience.

² With a descending order of importance, the 2011 survey results by *Institutional Investor* magazine reveal the following twelve important attributes that are valued by buy-side investors: (1) Integrity, (2) Industry knowledge, (3) Responsiveness, (4) Special services, (5) Written reports, (6) Management access, (7) Useful/timely calls and visits, (8) Local market knowledge, (9) Financial models, (10) Idea generation, (11) Research delivery, (12) Earnings estimates.

I define forecast boldness salience to be the distinctiveness of an analyst's forecast from other analysts' forecasts. Specifically, it refers to the extent that the magnitude of the analyst's forecast stands out from that made by others in terms of its boldness (magnitude of the forecast relative to the *average* forecast made by others) and uniqueness (whether there are other individual forecasts that are close or similar to this forecast).³ A bold and unique forecast, which is very salient,⁴ can make the analyst issuing the forecast stand out from the pack and gain attention from the market (Prendergast and Stole 1996). It is especially true when we consider analysts' competition as a kind of tournament, where a small proportion of (winner) analysts take away most of the benefits (Yin and Zhang 2012; Zhuang 2011). Prior studies usually use forecast boldness, the deviation from the consensus forecast, to proxy for forecast boldness salience, without considering the uniqueness of the forecast (i.e., whether there are other analysts with similar forecasts).⁵ Current literature provides evidence that analysts with inaccurate bold forecasts are more likely to experience credibility losses (Kadous et al. 2009) and job terminations than analysts with inaccurate non-bold forecasts (Hong et al. 2000). However, in terms of the positive effect of accurate bold forecasts, the evidence is inconclusive. Hong et al. (2000) find that bold forecasts with high accuracy do not significantly improve an analyst's future career outcomes, while Kadous et al. (2009) show experimental evidence that accurate bold forecasts improve investors' willingness to rely on analysts' research reports. None of the prior studies has distinguished the effect of forecast boldness from forecast boldness salience, nor has any examined the joint effect of forecast timing and forecast boldness salience.

In this study, I examine the joint effect of forecast timing and forecast boldness salience on investors' purchasing decisions, a proxy for the extent that investors rely on or are influenced by analysts' outputs.

³ I acknowledge that an extremely bold forecast can be a unique forecast. However, these are not similar constructs, and an extremely bold forecast is not necessarily unique. E.g., the analysts' EPS forecasts for IBM 2009 Q1 ranged from \$1.65 to \$1.70, except for two extreme forecasts with the value of \$1.55 and \$1.56, much lower than the other forecasts. These two extreme forecasts are (pessimistic) bold, but not unique, as the values are very close/similar to each other.

⁴ Salience can refer to the relative importance or prominence of an object, or the state or quality of an item that stands out relative to neighboring items. In this paper, salience refers to the latter meaning.

⁵ Based on the definition of forecast boldness in the literature, a bold forecast can be most salient if other forecasts are close to each other while far away from the bold forecast. In contrast, a bold forecast can also be less salient if there are other very close or similar forecasts, but it is still bold as it is far away from the consensus forecast.

This issue is important because analyst forecasts systematically differ in these attributes, but there is little understanding of how they influence investor reliance on the forecasts associated with these analysts. From the analysts' perspective, identifying how forecast boldness salience and forecast timing affect their credibility among investors is important for their reputation development. Within the profession, analysts compete with each other to establish their forecasting reputation for better compensation and career outcomes (Hong and Kacperczyk 2010; Lys and Soo 1995). Establishing credibility with investors is crucial for analysts as it directly determines the market influence and trading volume resulting from their earnings forecasts (Cote 2000; Dorfman 1991), which in turn affect their career prospects (Cooper et al. 2001). This issue is of greater relevance currently arising from the passage of Regulation Fair Disclosure (FD) in 2000, which mandates that publicly traded companies disclose material information to all investors at the same time. After Regulation FD, it has become more difficult for an individual analyst to secure private information advantage from management over other analysts. Given the same set of information released by the target firm, in order to generate more trading commissions and sell more research reports, analysts would benefit from an awareness of how the timing of their forecast release and the boldness salience of the forecast influence investors' willingness to purchase their investment advice.

I conduct an experiment to examine this issue. An experiment enables me to examine investors' *ex post* (i.e., post actual earnings announcement) assessments of analysts who issued forecasts before the earnings announcement, along with investors' intention to rely on the analysts' forecasts in the future, holding constant information released by the firm and firm characteristics. An experiment also allows me to obtain measures to understand the mechanism leading to these effects. I utilize a 2×3 between-subjects experiment to investigate whether and how forecast timing and forecast boldness salience interact to affect investors' willingness to pay for the analyst's investment advice. I manipulate analyst forecast timing by having the focal analyst be an early or a late forecaster, and manipulate forecast boldness salience by having three boldness salience levels: bold with high salience (bold and unique, high salience), bold with low salience (bold and non-unique, low salience) and non-bold (non-bold and non-unique, non-

salience). I examine this issue in a context where the forecast turns out to be accurate (rather than inaccurate) as this enables me to establish the incremental effect of these two attributes (timing and boldness salience) over accuracy. The negative effect of an inaccurate bold forecast has been well documented in existing literature. However, the effect of an accurate bold forecast is still under debate⁶ and the findings are somehow mixed as discussed above.

I find that, generally, early issuance is better than late issuance for analysts to sell their investment advice, and investors are more willing to pay for advice from analysts issuing bold, low salience forecasts than those issuing bold, high salience forecasts or those issuing non-bold forecasts. More interestingly, I find a significant interaction effect of forecast timing and forecast boldness salience. I find that for an early analyst, investors' willingness to pay for advice is lower when the forecast is bold with high salience than when the forecast is bold with low salience or non-bold. Conversely, for a late analyst, investors' willingness to pay for advice is lower when the forecast is non-bold than when the forecast is bold with high salience or bold with low salience.

My study contributes to the current literature on financial analysts' reputation formation. I provide the first evidence that early issuance, as a pure forecasting characteristic, enhances an analyst's reputation. I also find that the effect of forecast boldness salience on investors' willingness to pay for advice becomes weakened, and even reversed once the timing factor is considered. Moreover, by differentiating forecast salience from forecast boldness, I delineate the boundary conditions on the effect of forecast boldness. Compared to a non-bold forecast, a bold forecast works well to enhance investors' willingness to pay for his/her investment advice for a late analyst. However, a bold forecast is less helpful in enhancing investors' willingness to pay for the investment advice than a non-bold forecast for an early analyst,

⁶ In Scharfstein and Stein (1990), a "smart" agent receives correlated information while a "dumb" agent receives uncorrelated information, which is noise. Even if the unconventional (bold) forecast turns out to be accurate, that will only confirm the general belief in the agent's rashness. Therefore, the agent whose behavior is very different from others is more likely to be perceived of low ability by the market. Conversely, in Kadous et al. (2009), participants perceive the bold and accurate analyst to be diligent and of high ability.

unless the bold forecast is confirmed by other analysts. These findings suggest that the effect of forecast boldness is contingent on forecast uniqueness and forecast timing, which provides additional insight for the inconclusive evidence on analysts' career outcomes resulting from accurate bold forecasts. My study also suggests that investors give different weights to the forecast attributes when evaluating early and late analysts. Investors are more concerned about information confirmation for an early analyst's forecast, while they favor information boldness for a late analyst's forecast.

My study also provides practical implications on effective strategies relating to forecast issuance for financial analysts. While the existing literature suggests that non-bold (herding) forecasts cannot effectively help an analyst to impress the market and enhance reputation, my results indicate that investors' willingness to pay for advice is very high when an analyst's forecast is non-bold but issued early. It indicates that by issuing forecast early, an analyst can still build his/her forecasting reputation even without unique information. This message is especially useful to financial analysts, considering the fact that after Regulation FD, it has become very difficult for an individual analyst to have more private information from management, and therefore they are unlikely to have information to make bold and unique forecasts. The analysts should try to issue forecast early if he/she knows that there is little chance to acquire any private information advantage over other analysts. However, once some other competitor analysts have issued their forecasts early, the late analyst should try to improve his/her forecast boldness salience to the extent that his/her relative accuracy among the analysts is not significantly compromised.

In the next section of the paper, I review the related literature and develop my hypotheses. I describe experiment design in Section 3, and analyze the results in Section 4. Finally, I conclude the study in Section 5.

II. LITERATURE REVIEW AND HYPOTHESES

Analyst Forecast Boldness Salience

Competition within the analyst profession is on the rise. In the early 1980s, the number of analysts was less than 100 in the Institutional Brokers Estimate System (I/B/E/S) database; there are currently more than 7,000 financial analysts contributing earnings expectation data to the database. Among this large community, only a few analysts can move to prestigious brokerage houses or be selected as star analysts (e.g., to be included in *Institutional Investors' All American Research Team*). Most importantly, this small group of analysts gets disproportionately large rewards in terms of compensation and prestige (Lott and Loosvelt 2005).

I consider analysts' forecast boldness salience to refer to the extent that the magnitude of the analyst's forecast stands out from that made by others. This involves at least two dimensions: (a) whether the magnitude of the forecast is different from the *average* forecast made by others (boldness), and (b) whether there are other individual forecasts that are close or similar to this forecast (uniqueness). Prior studies generally consider only the first dimension, and employ the term "forecast boldness" to refer to this dimension. For the determinants of bold forecasts, theoretical models indicate that high ability and/or less risk-averse analysts have more incentives to issue bold forecasts (Scharfstein and Stein 1990; Trueman 1994). Clement and Tse (2005) provide empirical evidence that bold forecasts are more likely to be issued by experienced analysts, and that these bold forecasts provide more relevant information to investors than non-bold (herding) forecasts.⁷ In terms of reputational consequences resulting from issuing bold forecasts, Hong et al. (2000) document that bold but bad (low accuracy) forecasts lead to worse future career outcomes for analysts while bold and good (high accuracy) forecasts do not significantly improve an analyst's future career prospect. Kadous et al. (2009) provide experimental evidence that investors are less willing to purchase reports from bold, inaccurate analysts than those from non-bold,

⁷ Recent archival research indicates that analysts' competition can be regarded as one kind of tournament game, and that those analysts who have more incentives to win the tournament are more likely to issue bold forecasts (Lott and Loosvelt 2005; Zhuang 2011; Yin and Zhang 2012).

inaccurate analysts. However, inconsistent with Hong et al. (2000), they document that investors are more willing to purchase reports from bold, accurate analysts than from non-bold, accurate analysts. To date, the existing literature provides inconclusive evidence on the effect of bold forecasts with high accuracy. Furthermore, the focus has been on forecast boldness rather than the broader construct of forecast boldness salience.

In this study, I use the construct forecast boldness salience instead of forecast boldness, as forecast boldness salience more precisely captures the notion of “distinguishing oneself from the crowd.” For the same bold forecast (e.g., one that is higher than the average forecast made by others), one is more unique (and therefore more salient) when there is no other analyst issuing the same forecast than when there is, say, one other analyst also issuing the same forecast. Thus, a bold forecast is not necessarily salient if there are similar forecasts made by some other analysts. I examine how forecast boldness salience affects investors’ willingness to pay for analysts’ investment advice. I further investigate whether forecast timing and forecast boldness salience interact with each other to affect investors’ judgments and decisions. In the discussion that follows, I consider these effects in the context where the forecast turns out to be accurate (rather than inaccurate).

When the forecast is bold (e.g., in terms of being larger in magnitude than the average analyst forecast) and unique (i.e., no other analyst has a similar forecast), I call this a bold-high salience forecast. When the forecast is bold but non-unique (i.e., there is at least one other analyst with a similar forecast), I call this a bold-low salience forecast. Lastly, when the forecast is close to the consensus and other analysts’ forecasts, it is a non-bold forecast. These three forecasts have decreasing degrees of forecast boldness salience.

Analyst Forecast Timing

The timing of a forecast issuance is an important decision for analysts. If an analyst issues his/her forecast early, the value of his/her information to the market is high but the precision of his/her forecast

may be low (Guttman 2010). To the extent that information released by an early analyst has an influence on the decisions of investors, an early analyst is more likely to affect stock prices and generate trading volume than late analysts. Besides the information impact, forecast timing is also important for analysts to build their forecasting credibility. Analysts' responsiveness and timely calls/visits are among the most important aspects that the financial institutions (e.g., *Institutional Investors* and *Wall Street Journal*) consider when they select their star analysts.

When the analyst responds most quickly to the new information released to the market, he/she is considered to be an early analyst by the market. In contrast, if the analyst responds relatively late compared with other analysts, he/she is considered to be a late analyst. Current literature has examined the information content and profitability of early analysts' earnings forecasts (Cooper et al. 2001), as well as characteristics of early analysts (Guttman 2010). However, little is known that how forecast timing, as a pure forecasting characteristic, interacts with forecast boldness salience to affect investors' perceptions about the analysts.

Interaction of Forecast Boldness Salience and Forecast Timing

Effects of forecast boldness salience on early analysts

Attribution studies from social psychology investigate how people make causal explanations to a certain behavior or outcome (Kelley 1973). The causal inferences can be classified as either internal (personal) or external (situational) attributions, where the internal factors generally have more persistence than the external factors (Heider 1958). Kelley (1967) suggests that people are more likely to make internal (external) attributions when a person's behavior is of low (high) consensus. If an analyst's forecast is bold (away from the consensus) and accurate, investors are more likely to attribute personal factors (e.g., ability) rather than situational factors (e.g., industry stability) to his/her forecast accuracy. This suggests a gain in personal reputation, and thus, attribution theory indicates that investors should perceive a bold analyst to have relatively high ability, and therefore, consider his/her forecast to be more helpful to them and are more willing to pay for his/her investment advice compared to a non-bold analyst

(Kadous et al. 2009). Attribution theory does not specifically address another dimension of forecast boldness salience—the uniqueness of the forecast.⁸

Another stream of research in accounting and finance suggests that investors would discount the information without confirmation. Scharfstein and Stein (1990) argue that in the capital market, a “smart agent” (a high ability analyst) observes correlated information signal while a “dumb agent” (a low ability analyst) observes uncorrelated information signal, which is noise *per se*. Even if the uncorrelated signal turns out to be accurate, investors may just attribute luck to the rash behavior of the “dumb agent.” As “worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally” (Keynes 1936, pp. 157-58). O’Brien (1990) finds no systematic differences in forecasting accuracy among the individual analysts in her sample, which also supports the idea that it is difficult for one individual analyst to get information advantage over all other analysts, and this argument has been more valid with the passage of Regulation FD. A unique forecast is disconfirmed by any other forecast, and thus has little correlation with other forecasts. In contrast, a non-unique forecast is confirmed by other forecasts, and thus has relatively higher correlation with other forecasts. Therefore, investors are more likely to view a unique forecast to contain more noise and be less helpful to them than a non-unique forecast.

Forecasting information confirmation is especially important for an early analyst, because for an early analyst, whether the later forecasts are consistent or inconsistent with his/her forecast largely influences his/her forecast uniqueness.⁹ Thus, I predict that an early analyst issuing a non-unique forecast (correlated information) is viewed to have higher ability and provided more helpful forecasts, and that

⁸ Kelly (1967)’s covariation theory discusses the issue of distinctiveness, but refers to it as the extent that the actor behaves consistently across different contexts.

⁹ The construct “uniqueness” is different from the construct “extent the forecast follows or is followed by other analysts’ forecasts.” Forecast uniqueness specifically refers to whether there are other individual forecasts with a similar forecast magnitude. In contrast, the latter construct considers both the magnitude and the timing of the forecast. To precisely distinguish forecast magnitude features from forecast timing features, I use the former construct instead of the latter construct in my experiment.

investors are more willing to pay for his/her advice than an early analyst issuing a unique forecast (uncorrelated information).

Taking both the implications from attribution studies and information correlation argument in accounting and finance into consideration, for the early analyst, I apply two principles in predicting the effects of forecasts that vary in their boldness and uniqueness: (1) analysts issuing bold forecasts have higher ability than those issuing non-bold forecasts, and (2) analysts issuing forecasts that are not unique have higher ability than those issuing unique forecasts.¹⁰ These two principles predict that investors perceive an early analyst to be most capable if his/her forecast is bold and not unique. Given a bold forecast (to which investors likely make more personal attributions for the analyst issuing this forecast), an early analyst whose forecast is confirmed by other analysts (highly correlated information), is likely to be viewed to be of higher ability than an early analyst whose forecast is unique (and not mimicked by other analysts; little correlated information). As a result, I predict that investors perceive the early analyst with a bold-low salience forecast to be of higher ability, and that they are more willing to pay for his/her investment advice than the early analyst with a bold-high salience forecast.

Both a bold-low salience forecast and a non-bold forecast receive confirmation by other analyst(s) and are highly correlated with other forecasts, and therefore are similar based on Principle 2. However, the non-bold forecast is less bold than the bold-low salience forecast, and Principle 1 suggests that investors perceive the early analyst issuing the bold-low salience forecast to have higher ability and are therefore more willing to pay for his/her investment advice than the early analyst issuing the non-bold forecast.

Lastly, comparing a bold-high salience forecast with a non-bold forecast, Principle 1 suggests that the early analyst issuing a bold-high salience forecast will be viewed to be of higher ability than the one

¹⁰ Note that the term “principle” used here does not refer to the original theoretical reasoning of attribution theory and information correlation argument in this thesis, but refers to inferences that can be made based on prior studies.

issuing a non-bold forecast. However, Principle 2 suggests the early analyst issuing the non-bold forecast receives a confirmation (correlated information) from other analysts but not the one issuing a bold-high salience forecast (little correlated information). These effects offset each other, which suggests no difference in the reputational effects to the early analyst issuing these two types of forecasts. Overall, I posit H1¹¹ below:

***H1:** For an early analyst, investors' willingness to pay for investment advice is higher when the forecast is bold-low salience than when the forecast is bold-high salience or when the forecast is non-bold. Investors' willingness to pay for advice does not differ whether the forecast is bold-high salience or non-bold.*

Effects of forecast boldness salience on late analysts

In contrast, I predict that for a late analyst, Principle 1 applies while Principle 2 does not. This is because of the distinctive feature of timing under a capital market context relative to other contexts—more public and/or private information is available in the market as the forecast release date approaches to the actual earnings announcement date. As a result, for a late analyst, whether his/her forecast is consistent with the previous forecasts is of less concern because his/her forecast comes *after* the others. Thus, the issue of confirmation of an earlier forecast by some other analyst(s) does not apply, so Principle 2 does not apply when evaluating the late analysts. In terms of forecast boldness, investors can assess whether the late analyst's forecast is close to or deviates away from the consensus forecast. Thus, Principle 1 still applies. Based on the above argument, I predict that for a late analyst, a bold forecast, whether unique or not, increases investors' willingness to pay for his/her advice. I make the following hypotheses:

***H2:** For a late analyst, investors' willingness to pay for investment advice is higher when the forecast is bold than when the forecast is non-bold. Investors' willingness to pay for investment advice does not differ whether the forecast is bold-high salience or bold-low salience.*

¹¹ Note that the hypotheses in this paper are made assuming that the analyst has no known prior forecast reputation (e.g., the analyst has no known historical track record of forecasting accuracy or inaccuracy).

III. EXPERIMENT

Participants

I conduct an experiment to test my hypotheses. One hundred and twenty Master of Business Administration (MBA) students from a major university in Singapore participate in my study, and each of them receives compensation of 20 Singapore dollars. Elliott et al. (2007) suggest that MBA students generally can be used as proxies for nonprofessional investors.¹² In my experiment, the MBA participants have relevant institutional knowledge about the financial market. Among these participants, 66.9% of them have stock and/or mutual fund investment experience, and 75% of those without investment experience plan to invest in stocks in the future. Moreover, half of the participants have experience in using financial analysts' research reports, and more than 80% of them indicate that they will use or continue to use analysts' research reports to aid their investment decisions in the future. On average, they have taken 2.42 accounting courses and 2.76 finance courses. In terms of working experience, the mean is 6.10 years.¹³

Design

I employ a 2×3 between-subjects design, with analyst forecast timing (*early or late*) and forecast boldness salience (*bold-high salience, bold-low salience, and non-bold*) as manipulated factors. The experimental materials in my study are adapted from Kadous et al. (2009). The case involves a hypothetical firm MedTec (MEDT) that produces and markets a variety of health-care products in the medical industry. Participants are given a Wall Street Journal "Cheat Sheet" for MedTec. In the "cheat sheet," nine analysts' earnings forecasts for MedTec 2011 third quarter are presented chronologically, with the forecast dates appearing below each corresponding analyst. I use X1 to X9 to refer to each of the

¹² Elliott et al. (2007) find that "select" MBA students (those who have completed the first year of an M.B.A. program and have elected to take a financial statement analysis course) are appropriate proxies for nonprofessional investors. In my study, all the participants have at least completed the first semester of their MBA studies, and have finished the financial statement analysis course. They are appropriate participants for this analyst evaluation task. Moreover, their accounting and finance course background information does not vary across experimental conditions, $p > 0.53$

¹³ Participants' background information does not vary across experimental conditions, with the smallest $p = 0.18$.

nine analysts. In terms of the time sequence, Analyst X1 is the first analyst to issue his/her forecast (on Aug 5th), Analyst X5 is fifth (on Aug 9th), and Analyst X9 is the last (on Aug 13th). The “cheat sheet” shows the average consensus of the nine analysts’ forecasts as \$0.35, and it also summarizes the key issues identified in the nine analysts’ research reports. In the “cheat sheet,” it is indicated that “(t)here has been no public news release or conference call by MEDT or any other health-care related company during the 9-day period from Aug 5th to Aug 13th.” Figure 1 presents the “cheat sheet” used in this experiment. Across the six experimental conditions, the average consensus forecast is held constant at \$0.35, and the target analyst forecast is always accurate in each condition, consistent with the announced firm’s actual third quarter earnings.

[Insert Figure 1 here]

I manipulate analyst forecast timing by assigning half of the participants to evaluate Analyst X1 (*an early analyst*) who issues the third quarter earnings forecast first, and the other half to evaluate Analyst X9 (*a late analyst*) who issues his/her forecast last. I manipulate analyst forecast boldness salience by having three levels of boldness salience—*bold-high salience*, *bold-low salience*, and *non-bold*. In the bold-high salience forecast conditions, Analyst X1/X9’s forecast of \$0.40 is bold compared to the mean consensus (\$0.35), and it is also highly salient/unique compared to any other analyst’ forecast. In the bold-low salience forecast conditions, Analyst X1/X9’s forecast of \$0.40 is bold compared to the mean consensus (\$0.35), but is of low salience/uniqueness compared to two other analysts with forecasts of \$0.40 and \$0.39. In the non-bold forecast conditions, Analyst X1/X9’s forecast of \$0.35 is not bold compared to the mean consensus (\$0.35), and is also not salient/unique compared to the other analysts.¹⁴

¹⁴ If I separately consider the forecast magnitude relative to the average analyst forecast and the uniqueness of the forecast (i.e., whether there are other forecasts close to this forecast), the six conditions are: (1) early, unique, bold (early/high boldness salience); (2) late, unique, bold (late/high boldness salience); (3) early, less unique, bold (early/moderate boldness salience); (4) late, less unique, bold (late/moderate boldness salience); (5) early, non-unique, non-bold (early/low boldness salience); (6) late, non-unique, non-bold (late/low boldness salience). I do not employ a non-bold but salient/unique forecast condition as it is not common in reality that most of the group members’ opinions deviate far away from the group’s consensus opinion.

Figure 2 shows the six manipulation conditions.¹⁵ Overall, the conditions involve analysts who are: (1) early with a bold-high salience forecast, (2) late with a bold-high salience forecast, (3) early with a bold-low salience forecast, (4) late with a bold-low salience forecast, (5) early with a non-bold forecast, and (6) late with a non-bold forecast. Figure 3 shows the accuracy information presented after participants finish reading the “cheat sheet.” I vary the actual third quarter earnings per share to be either \$0.40 or \$0.35 such that Analyst X1/X9 makes an accurate forecast.

[Insert Figure 2 &3 here]

Administration and Procedures

During the experiment, each participant is given three envelopes (A, B, and C sequentially) that contain the experiment materials. Before they proceed to the questions in the next envelope, they complete questions in the previous envelope(s) first and put the materials back into the corresponding envelope. The instrument takes about 20 minutes to complete.

Participants first open Envelope A. In Envelope A, they are told to assume the role of general investors, and are presented with the financial summary for the recent three years, as well as the recent quarters’ performance of MedTec. After the background information, participants are informed that they will see a Wall Street Journal “cheat sheet” for MedTec. They are informed that nine financial analysts who are following the firm provide their earnings forecasts for the third quarter. In the 9-day period between Aug 5th to Aug 13th, there is one analyst releasing his/her forecast every day. These nine EPS forecasts are presented chronologically, with Analyst X1’s forecast released on Aug 5th and Analyst X9’s forecast released on Aug 13th. Once they finish reading the “cheat sheet,” they are told to insert the materials back to Envelope A and proceed to Envelope B.

¹⁵ Under such a context, if the analyst wants to be an early analyst, his/her forecast boldness salience is not under his/her control, as subsequent analysts’ forecasts will influence his/her forecast boldness salience. In contrast, if the analyst wants to have complete control over forecast boldness salience, he/she has to sacrifice forecast timing: wait until other analysts have released their forecasts. This timing and boldness salience trade-off is consistent with the assumptions made by Guttman (2010), which theoretically examines how analysts make forecast timing decisions.

In Envelope B, participants are provided with MedTec’s actual earnings announcement for the third quarter. The actual earnings per share are \$0.40 in the bold-high salience and bold-low salience conditions, and \$0.35 in the non-bold conditions, implying that Analyst X1/X9 has been accurate in their forecasts in the early/late conditions. Participants are shown how each financial analyst’s prediction stacks up against the actual earnings per share. Then, they are asked to rank these analysts for an analyst award based on their third quarter earnings forecast performance. After this, they indicate their willingness to pay for Analyst X1/X9’s investment advice, and their reliance on Analyst X1/X9’s research reports. After completing these questions, they proceed to the questions in the next page, where they are asked to evaluate Analyst X1/X9’s credibility by assessing the analyst’s attributes (e.g., competence and trustworthiness) and other debriefing questions.

Participants then proceed to Envelope C, where they are asked to recall the EPS forecasts made by Analyst X1, X5 and X9, respectively. After that, they answer the manipulation check questions and some within-subject questions about forecasting strategies an analyst would choose under certain situations. Finally, they provide their demographic information.

IV. RESULTS

Manipulation Checks

With respect to the analyst forecast timing manipulation, I ask the question: “How timely was Analyst X1/X9’s third quarter earnings forecast compared to the other analysts” on an 11-point Likert scale with end points 1 = “Not at all Timely” and 11 = “Very Timely”. The mean rating in the *early* conditions is 8.19, significantly higher than that of 5.23 in the *late* conditions, $F = 47.89$, $p = 0.00$.¹⁶ Moreover, the mean rating in each of the *early* conditions is significantly higher than the mean rating in any of the *late* conditions, with largest one-tailed $p = 0.07$. Hence, my forecast timing manipulation is successful.

¹⁶ All the results are two-tailed unless otherwise specified.

To check my forecast boldness salience manipulation, I ask participants the question: “In terms of the numerical earnings forecast value, how unique was Analyst X1/X9’s third quarter earnings forecast relative to the majority of the other analysts” on an 11-point Likert scale with end points 1 = “Not at all Unique” and 11 = “Very Unique.” The mean rating in the *bold-low salience* conditions is 6.98, significantly lower than that of 8.68 in the *bold-high salience* conditions ($F = 13.21, p = 0.00$), and significantly higher than that of 4.50 in the *non-bold* conditions ($F = 26.47, p = 0.00$). The mean rating of 8.68 in the *bold-high salience* conditions is significantly higher than that of 4.50 in the *non-bold* conditions ($F = 76.00, p = 0.00$). In addition, I ask participants the question: “In terms of the numerical earnings forecast value, were there other analysts’ forecasts that were similar to Analyst X1/X9’s forecast?” Participants give their responses by indicating “Yes” or “No.” Six participants in *bold-high salience* conditions choose “Yes” and one participant in *bold-low salience* conditions choose “No.” Others give the correct responses.¹⁷ I also ask participants to indicate “(h)ow bold was Analyst X1/X9’s third quarter earnings forecast compared to the average consensus forecast” on an 11-point Likert scale with end points “1” = “Not at all Bold” and “11” = “Very Bold”. The mean boldness ratings are 8.78 and 7.85 in the *bold-high salience* and *bold-low salience* conditions, respectively, significantly higher than that of 5.07 in the *non-bold* conditions ($F = 57.25, p = 0.00$; $F = 31.34, p = 0.00$). The mean rating of 8.78 in the *bold-high salience* conditions is significantly higher than that of 7.85 in the *bold-low salience* conditions ($F = 3.83, p = 0.05$).¹⁸ The results show that my boldness salience manipulation is largely successful as well.

In all the six conditions, Analyst X1/X9’s forecast is always accurate. To check whether participants are aware of this, I ask them to indicate whether Analyst X1/X9’s third quarter earnings forecast was close (within +/- \$0.01) to the actual third quarter earnings, “Yes” or “No.” Twelve of the participants

¹⁷ My results are not affected by the seven participants who give wrong answers to this question.

¹⁸ The boldness rating difference between the *bold-high salience* and *bold-low salience* conditions is much smaller than the difference between the *bold-high salience* and *non-bold* conditions, $p = 0.00$. Participants’ higher boldness ratings in the *bold-high salience* conditions than in the *bold-low salience* conditions may be caused by the higher uniqueness of the forecast in the *bold-high salience* conditions.

give the wrong answers. Excluding their responses does not affect the significance of my results. I report my results based on the entire data observations from the 120 participants.

Hypothesis Testing

Investors' willingness to pay for analysts' investment advice

To test how forecast boldness salience and timing influence investors' investment advice purchasing decisions, I ask the question "(s)uppose you had to pay to obtain investment advice about MedTec from Analyst X1/X9. How much would be you willing to pay for the investment advice?" The assessment is measured on a 13-point scale with endpoints "0" = "Much less than I'd pay for the average analyst's advice" and "12" = "Much more than I'd pay for the average analyst's advice." H1 relates to the effects of forecast boldness salience on early analysts, and H2 relates to the effects of forecast boldness salience on late analysts. To test these hypotheses, I conduct an analysis of variance (ANOVA) for investors' willingness to pay for analyst's advice, with forecast timing and forecast boldness salience as the independent variables.

Table 1 shows the descriptive statistics and ANOVA results for investors' willingness to pay for advice. Panel A presents the descriptive statistics, Panel B presents the ANOVA results, and Panels C and D report the results from simple main effect analyses for forecast boldness salience and forecast timing, respectively. Figure 4 displays the graphical plots for the effect of forecasting timing and boldness salience on investors' willingness to pay for advice.

[Insert Table 1 & Figure 4 here]

Consistent with the overall predictions of H1 and H2, ANOVA results show a significant interaction effect of forecast timing and forecast boldness salience ($F = 4.40$, $p = 0.01$). For the main effect of forecast boldness salience, I find that participants are more willing to pay for investment advice from analysts with a bold-low salience forecast (8.07) than from analysts with a bold-high salience forecast (7.37), $F = 2.93$, one-tailed $p = 0.04$, or from analysts with a non-bold forecast (7.37), $F = 2.73$, one-tailed

$p = 0.05$. Comparing analysts with a bold-high salience forecast and analysts with a non-bold forecast, there is no difference in participants' willingness to pay for their advice (7.37 vs. 7.37, $F = 0.00$, $p = 0.98$). For the main effect of forecast timing, I find that participants are more willing to pay for advice from early analysts (7.95) than late analysts (7.29), $F = 3.81$, one-tailed $p = 0.03$.

H1 predicts that for early analysts, investors' willingness to pay for investment advice is higher when the forecast is bold-low salience than when it is bold-high salience or non-bold. Results show that participants' willingness to pay for advice is 7.00/8.58/8.32 when the early analyst's forecast is bold-high salience/bold-low salience/non-bold. From Panel C, I find that for early analysts, when the forecast is bold-low salience, participants' willingness to pay for advice is higher than when the forecast is bold-high salience (8.58 vs. 7.00, $p = 0.01$), consistent with H1. However, it is not higher than when the forecast is non-bold (8.58 vs. 8.32, $p = 0.68$). Participants' willingness to pay for advice is higher when the forecast is non-bold than when it is bold-high salience (8.32 vs. 7.00, $p = 0.04$). The latter two results are not fully consistent with H1.

H2 predicts that for late analysts, investors' willingness to pay for advice is higher when the forecast is bold than when it is non-bold. Participants' willingness to pay for advice is 7.71/7.64/6.42 when the late analyst's forecast is bold-high salience/bold-low salience/non-bold. From Panel C, I find that for late analysts, participants' willingness to pay is lower when the forecast is non-bold than when the forecast is bold-high salience (6.42 vs. 7.71, $p = 0.04$), or when the forecast is bold-low salience (6.42 vs. 7.64, $p = 0.05$). When the forecast is bold-low salience, participants' willingness to pay is not significantly different from that when the forecast is bold-high salience (7.64 vs. 7.71, $p = 0.90$). The above results are consistent with H2.

Panel D presents the simple main effect of forecast timing. I find that forecast timing does not have a significant influence on participants' willingness to pay for advice when the forecast is bold-high salience (7.00 in early condition vs. 7.71 in late condition, $p = 0.25$). Hence, when the forecast is bold-low salience

or non-bold, participants are more willing to pay for early analysts' advice than late analysts' (8.58 in early condition vs. 7.64 in late conditions one-tailed $p = 0.07$; 8.32 in early condition vs. 6.42 in late condition, $p = 0.00$).

Overall, I find a significant interaction effect of forecast boldness salience and forecast timing as predicted by H1 and H2. The simple main effect analyses show that for early analysts, compared with a bold-high salience forecast, a bold-low salience or non-bold forecast increases participants' willingness to pay for advice from the analysts, which suggests that investors favor early forecasts confirmed by others than those not confirmed by others. In contrast, the results for late analysts show that the effect of a unique forecast (not confirmed by others) does not matter. Rather, for late analysts, bold forecasts (whether unique or not) tend to lead investors to be more willing to pay for advice than non-bold forecasts, suggesting that investors are looking for new information beyond the consensus forecast from a late analyst's forecast.

Investors' credibility judgment

To measure participants' assessments of Analyst X1/X9's credibility, I ask them to evaluate both the competence and trustworthiness of the analyst, in that prior studies in communication and persuasion, as well as in accounting, have shown substantive evidence that competence and trustworthiness are base dimensions of source credibility (Griffin 1967; McCroskey 1966; Mercer 2005). Specifically, participants are asked to indicate "(t)o what extent do you think Analyst X1/X9 is competent/trustworthy" on a 13-point Likert scale, with endpoints "0" = "Not at all Competent/Trustworthy" and "12" = "Very Competent/Trustworthy." These two measures are highly correlated (Pearson correlation = 0.80, $p = 0.00$; Cronbach's alpha = 0.89). Following prior literature, I average these two measures to obtain a credibility score.¹⁹

¹⁹ I obtain similar results if the competence and trustworthiness measures are separately analyzed.

Table 2 shows the descriptive statistics and ANOVA results for credibility judgment. I find that investors perceive early analysts (8.12) to be more credible than late analysts (7.60), $F = 2.79$, one-tailed $p = 0.05$. Forecast timing and boldness salience interact with each other to affect investors' credibility judgment, with a marginally significant $p = 0.10$, one-tailed. The simple main effect analyses show generally weaker results than those using my main dependent variable.²⁰

[Insert Table 2 here]

Mediation Analysis for Early and Late Analysts

Internal versus external attribution

To check how forecast timing and boldness salience influence investors' attributions of the analyst's performance, I list six factors for participants to rank from "1" to "6", with "1"/ "6" = the most/least likely cause of Analyst X1/X9's accuracy. These six factors are: high ability, good personal access to MedTec's management, high effort, luck, industry stability and high media coverage of MedTec. The first three factors are internal causes (personal factors) while the latter three are external causes (environmental/situational factors). I use the total scores for the three external factors minus the total scores for the three internal factors, and then average the difference to create an attribution score: the higher the value, the more important the internal relative to the external causes.

For early analysts, the attribution score is 1.63/0.30/0.70 when the forecast is bold-high salience/bold-low salience/non-bold, which suggests that for early analysts, investors make more internal attributions to forecast accuracy when the forecast is bold-high salience than when it is bold-low salience (1.63 vs. 0.30, $p = 0.01$), or when it is non-bold (1.63 vs. 0.70, $p = 0.07$). There is no difference in attribution scores between the early/bold-low salience condition and the early/non-bold condition (0.30 vs. 0.70, $p = 0.43$). For late analysts, the attribution score is 1.02/0.29/-0.61 when the forecast is bold-high salience/bold-low salience/non-bold. The results suggest that for late analysts, investors make less internal

²⁰ The results for participants' credibility judgments are weak. A possible reason for the weak results is that the focal analyst's forecast is accurate across experimental conditions, and participants generally perceive accurate analysts to be credible.

attributions to forecast accuracy when the forecast is non-bold than when it is bold-high salience (-0.61 vs. 1.02, $p = 0.00$), or when it is bold-low salience (-0.61 vs. 0.29, $p = 0.07$). There is no significant difference in attribution scores between the late/bold-high salience condition and the late/bold-low salience condition (1.02 vs. 0.29, $p = 0.14$). The overall results are generally consistent with Kelly (1967) that people make internal attributions to the bold behavior which is of low consensus. In addition, I find that an analyst's forecast timing affects investors' attribution as well, with more internal factors attributed to forecast accuracy for early analysts than late analysts (0.88 vs. 0.26, $p = 0.03$), suggesting the importance of timing for analysts to build forecasting reputation.

Information validation

To assess participants' forecast validation perceptions, I ask them "(t)o what extent do you think Analyst X1/X9's forecast has been validated by other analysts" on a 13-point scale, with endpoints "0" = "Not at all Validated" and "12" = "To a very large extent." For early analysts, the mean validation rating is 4.85/6.47/7.33 in bold-high salience/bold-low salience/non-bold condition, respectively, where participants perceive less validation in the bold-high salience conditions than in the bold-low salience conditions (4.85 vs. 6.47, $p = 0.08$) or in non-bold conditions (4.85 vs. 7.33, $p = 0.01$). The validation scores are not significantly different between the bold-low salience and non-bold conditions (6.47 vs. 7.33, $p = 0.36$). For late analysts, the mean validation rating is 6.19/6.23/6.33 in the bold-high salience/bold-low salience/non-bold condition, respectively, where all the pairwise comparisons are insignificant, with smallest $p = 0.89$. Validation analysis suggests that because of the distinctive feature of financial context, investors are less likely to use the previous forecasts to validate the late forecasts. But they do care about confirmation for the forecasts that are released relatively early. The results also suggest that caution must be taken when applying the assumption made by Scharfstein and Stein (1990), as information validation may not be a concern for the late analysts, at least in my setting where the forecast turns out to be accurate.

Path analysis for early and late analysts

The results for the primary dependent variable suggest that for an early analyst, participants' willingness to pay for advice increases once his/her forecast is confirmed by the follower analyst(s). In contrast, for a late analyst, participants' willingness to pay increases if his/her forecast is bold, as bold accurate forecasts lead to more positive internal attributions than non-bold accurate forecasts. I conduct path analysis to examine whether the above argument holds. The results for path analysis are presented in Figure 5 and Figure 6, with the standardized coefficient and the corresponding p-value shown next to each link.

To capture forecast confirmation, I use participants' responses to the question "(i)n terms of the numerical earnings forecast value, were there other analysts' forecasts that were similar to Analyst X1/X9's forecast", with "1" indicating "Yes, there were" and "2" indicating "No, there were not."²¹ I reverse code participants' responses to this question so that higher value means higher confirmation. Figure 5 shows the relationship between forecast confirmation and investors' willingness to pay for advice, with a χ^2 test indicating that the model fits the overall data well ($\chi^2 = 8.74$, $df = 5$, $p = 0.12$). I find that forecast boldness salience is significantly related to information confirmation (Link 1, coefficient = -0.85, $p < 0.01$), where high boldness salience leads to low information confirmation. In addition, information confirmation is not associated with participants' willingness to pay for advice (Link 2, coefficient = 0.11, $p = 0.25$). Further analysis shows that for early analysts, information confirmation improves participants' willingness to pay for advice (Link 2, coefficient = 0.29, $p = 0.03$), while for late analysts, information confirmation has no effect on willingness to pay for advice (Link 2 = -0.05, $p = 0.70$). The difference of the two coefficients is significant, (0.29 vs. -0.05, $\chi^2 = 3.28$, $p = 0.07$), suggesting

²¹ This question is also a manipulation check question for forecast uniqueness. I exclude seven participants' wrong responses. The results presented in Figure 5 still hold if I include the seven participants' responses.

the moderating role of forecast timing for the effect of information confirmation on willingness to pay is established.²²

For the variable of internal attributions in Figure 6, I use the attribution scores from the internal and external attribution analysis, where the higher the attribution score is, the more important the internal factors are to analysts' forecast accuracy relative to the external factors. Figure 6 shows the relationship between internal attributions and investors' willingness to pay for advice, with a χ^2 test indicating that the model fits the overall data well ($\chi^2 = 9.20$, $df = 5$, $p = 0.10$). I find that forecast boldness salience is positively associated with internal attributions (Link 3, coefficient = 0.31, $p < 0.01$), which is further positively associated with willingness to pay for advice (Link 4, coefficient = 0.16, $p = 0.09$). Additional analysis shows that for early analysts, participants' internal attributions are not significantly associated with their willingness to pay for advice (Link 4, coefficient = -0.02, $p = 0.86$), while for late analysts, participants' internal attributions significantly improve their willingness to pay for advice (Link 4 = 0.28, $p = 0.02$). The difference of the two coefficients is marginally significant, (-0.02 vs. 0.28, $\chi^2 = 2.82$, $p = 0.09$), suggesting the moderating role of forecast timing for the effect of internal attributions on willingness to pay is established. As accurate bold forecasts lead to more positive internal attributions than accurate non-bold forecasts, the above path analysis indicates that investors attend to forecast boldness for late analysts.²³

Overall, the above path analysis supports the argument that for early analysts, investors attend to forecast confirmation. In contrast, for late analysts, investors attend to forecast boldness rather than forecast confirmation.

[Insert Figure 5 & Figure 6 here]

²² I also use participants' perceptions about information validation to proxy for information confirmation. Untabulated results show that for early analysts, information validation is positively associated with willingness to pay, but p-value is insignificant ($p = 0.20$). For late analysts, forecast boldness salience has no impact on information validation, $p = 0.89$.

²³ I also use participants' boldness rating toward the forecast as the mediator in the model. Untabulated results show similar conclusions. For early analysts, participants' boldness rating is not significantly associated with willingness to pay for advice ($p = 0.60$), while for late analysts, boldness rating is positively associated with willingness to pay for advice, with a significant $p = 0.01$.

Additional Analysis

Investors' perceptions of forecast helpfulness

Consumers evaluate alternative products in terms of the functional and psychological benefits that the products can offer. In financial context, investors look for and rely on financial analysts who can help them make better investment decisions. The more helpful they perceive an analyst's forecast is, the more likely he is going to purchase the analyst's research advice. Scharfstein and Stein (1990) suggest that a unique (uncorrelated signal) is more likely to be noise, and thus is less helpful to investors. I analyze whether investors' helpfulness perceptions of the forecast mediate the joint effect of timing and boldness salience on the primary dependent variables.

I ask participants to assess "(t)o what extent do you think Analyst X1/X9's earnings forecast for 2011 third quarter is helpful to the market and investors" on a 13-point scale with endpoints "0" = "Not at all Helpful" and "12" = "Very Helpful." ANOVA results show a significant main effect of forecast timing, with the mean perceived helpfulness rating in early conditions higher than that in the late conditions (8.14 vs. 6.89, $F = 3.24$, $p = 0.04$, one-tailed), and a significant interaction effect of forecast timing and boldness salience ($F = 2.20$, $p = 0.06$, one-tailed). Additional simple main effect analyses show that for early analysts, the mean helpfulness rating is 7.40/8.32/8.74 in bold-high salience/bold-low salience/non-bold condition, respectively. There is no significant difference between the bold-low salience and non-bold conditions (8.32 vs. 8.74, $p = 0.57$). However, a non-bold forecast is perceived to be more helpful than a bold-high salience forecast (8.74 vs. 7.40, $p = 0.07$); a bold-low salience forecast is not perceived to be significantly more helpful than a bold-high salience forecast (8.32 vs. 7.40, $p = 0.21$). The above results for the early analysts are not fully consistent with my predictions, as the non-bold forecast is perceived to be more helpful than the bold-high salience forecast. It may be because participants perceive the non-bold forecast to be more helpful to follower analysts than the bold-high salience forecast.

For late analysts, the mean helpfulness rating is 7.71/7.59/6.89 in the bold-high salience/bold-low salience/non-bold condition, respectively, and there is no significant difference between any of the two

ratings, with smallest $p > 0.26$. The above results for the late analysts are weaker than those using investors' willingness to pay for advice. Simple main effect tests for forecast timing show that the early analyst' forecast is perceived to be more helpful than the late analyst' when it is non-bold (8.74 vs. 6.89, $p = 0.01$, one-tailed). There is no significant positive effect of early issuance when the forecast is bold-high salience (7.40 vs. 7.71, $p = 0.66$) or bold-low salience (8.32 vs. 7.59, $p = 0.30$).

I follow Baron and Kenny (1986)'s 4-step procedures to test whether "perceived forecast helpfulness" can mediate the joint effect of forecast boldness salience and forecast timing on investors' willingness to pay for advice and their credibility judgments. Table 3 Panel A and Panel B summarize the mediation analysis results for willingness to pay advice and credibility judgments, respectively. As shown in Table 1 and Table 2, forecast timing and salience jointly influence the investors' willingness to pay for advice and credibility judgments, supporting Step 1. ANOVA and simple main effect analyses confirm that forecast timing and salience also significantly affect investors' perceptions about the helpfulness of the forecast, supporting Step 2. I re-analyze willingness to pay for advice and credibility judgments by controlling helpfulness rating as a covariate. For willingness to pay for advice, I find that helpfulness has a strong effect ($F = 83.00$, $p = 0.00$), while the main effect and interaction effect of the independent variables become weaker. These results support Step 3 and Step 4, suggesting that helpfulness partially mediates the joint effect of forecast timing and salience on investors' willingness to pay for investment advice. For investors' credibility judgments, I find that helpfulness of forecast has a strong effect on analysts' credibility ($F = 127.22$, $p = 0.00$), and that the main effect and interaction of the independent variables become insignificant. These results again support Step 3 and Step 4, indicating that perceived helpfulness of the forecast fully mediates the effect of forecast timing and boldness salience on analysts' credibility.

[Insert Table 3 here]

Analysts' ranking

Financial institutions (e.g., *Institutional Investor Magazine*, *Wall Street Journal*) rank and select star analysts every year based on certain criteria. Analysts' ranking outcome is very important as it can largely determine analysts' compensation and career outcomes. Relative importance of each characteristic of financial analysts and their research forecasts is documented in existing literature, as well as in surveys done by these financial institutions. However, we have little understanding of how these characteristics interact with each other to affect investor judgment in analyst ranking. Hence, I examine how investors rank the nine financial analysts in this experimental case, whose forecasts vary in boldness salience and timing.

After participants receive the information about the firm's actual third quarter earnings, they are asked to rank the nine analysts for an analyst award, with "1" indicating the highest ranking and "9" indicating the lowest ranking. In the early condition, participants' mean ranking score is 1.15/1.05/1.26 when the forecast is bold-high salience/bold-low salience/non-bold, respectively, and the mean comparison tests show that there is no significant difference among the rankings, with smallest $p = 0.63$. In the late condition, participants' mean ranking score is 3.09/2.86/3.47 when the forecast is bold-high salience/bold-low salience/non-bold, respectively, and the mean comparisons show that there is no significant difference among the rankings, with smallest $p = 0.32$. On average, participants give higher rankings to early analysts than the late analysts, 1.16 vs. 3.12, $p = 0.00$.²⁴

Investors' perceptions about investment risk, forecast task difficulty and earnings trend

To exclude the possibility that participants' judgments are affected by their risk perceptions, I ask them "(t)o what extent do you think it is risky to invest in MedTec's stock" on a 13-point scale with the end points "0" = "Not at all Risky" and "12" = "Very Risky". For an early (late) analyst, the mean risk

²⁴ I also ask the participants how likely they would rely on Analyst X1/X9's report if they were given one of their reports. Though there are no significant statistical results for this reliance assessment, the pattern for reliance results is similar to the pattern for the willingness to pay for advice results.

rating is 6.45/6.58/6.44 (5.76/5.09/4.95) when the forecast is bold-high salience/bold-low salience/non-bold, respectively. Participants indicate higher “risk to invest” in the early conditions than in late the conditions (6.49 vs. 5.27, $p = 0.01$), and there is no main effect of boldness salience ($p = 0.72$) nor a boldness salience by timing interaction effect ($p = 0.66$) on participants’ risk perceptions. If the forecast is issued early, the means of participants’ risk perceptions are 6.45/6.58/6.44 when the forecast is bold-high salience/bold-low salience/non-bold, and there is no significant difference in these responses, $p > 0.86$. If the forecast is issued late, the means of participants’ risk perceptions are 5.76/5.09/4.94 when the forecast is bold-high salience/bold-low salience/non-bold, and there is also no significant difference in these responses, $p > 0.26$. I split participants into high and low risk perception groups based on the median value, and call this new variable “risk perception.”

In terms of forecasting task difficulty, I ask participants “(t)o what extent do you think it is difficult to predict MedTec’Q3 earnings per share” on a 13-point scale with the end points “0” = “Not at all Difficult” and “12” = “Very Difficult”. For an early (late) analyst, the mean risk rating is 7.45/7.37/6.33 (6.57/6.14/5.21) when the forecast is bold-high salience/bold-low salience/non-bold, respectively. Similarly, participants indicate higher “forecasting task difficulty” in the early conditions than in the late conditions (7.07 vs. 6.00, $p = 0.02$). There is a marginally significant main effect of boldness salience ($p = 0.07$), and the interaction effect of boldness salience and timing is insignificant ($p = 0.95$). I also split participants into high and low difficulty perception groups based on the median score.

I ask participants whether there is any apparent trend in terms of the nine analysts’ third quarter earnings forecasts, “Yes” or “No.” About half of the participants indicate “Yes” while the other half indicate “No.” The response to this question does not vary across experimental conditions, $p = 0.37$.

For all the three variables, I assess whether each variable (using a median split for the risk and difficulty variables) moderates the effect of timing and boldness salience on the primary dependent variables. I find no significant main ($p > 0.10$) or interaction effect ($p > 0.20$) for any of these variables

except for an interaction effect of forecast timing and perceived forecast difficulty ($p = 0.04$).²⁵ Hence, my results for participants' willingness to pay for advice are not affected by participants' investment risk perceptions²⁶, forecasting task difficulty perceptions, or earnings trend perceptions.

Investors' perceptions about analysts' mimicking behavior

Though issuing later forecasts can increase forecast accuracy (since the late analyst can make use of the earlier analysts' forecasts), he/she bears the risk of being perceived to be a free-rider. I ask participants "(t)o what extent do you think Analyst X1/X9 is mimicking the forecasts by other analysts" on a 13-point scale with endpoints 0 = "Not at all" and "12" = "To a Very Large Extent." Results reveal that investors perceive late analysts more likely to be free-riders than early analysts (6.90 in late conditions vs. 4.39 in early conditions, $p = 0.00$). Issuing a bold, salient forecast can reduce this concern of being perceived to be engaging in mimicking behavior, in that the perceived possibility of mimicking does not differ for late analysts from that for early analysts in this case (5.24 in late/bold-high salience condition vs. 4.95 in early/bold-high salience condition, $p = 0.72$). However, once a late analyst issues a forecast which is similar to some existing forecast(s), he/she is more likely perceived to a free-rider (7.54 in late/bold-low salience condition vs. 4.95 in the early/bold-low salience condition, $p = 0.00$; 8.00 in late/non-bold condition vs. 3.26 in the early/non-bold condition, $p = 0.00$).²⁷

²⁵ When the perceived forecast task difficulty is low (below median), participants judge a late analysts to be less credible and they are also less willing to pay for his/her investment advice than an early analyst ($p = 0.00$). In contrast, when the perceived forecast task difficulty is high (above median), participants' credibility judgment and willingness to pay for advice for a late analyst are not significantly lower than for an early analyst ($p > 0.50$).

²⁶ Using the scaled risk perception as a covariate, ANCOVA analysis shows that the results for willingness to pay for advice does not change (main effect of boldness salience: $p = 0.17$; main effect of timing, $p = 0.07$; interaction effect: $p = 0.02$), and this risk perception is not significantly correlated with willingness to pay for investment advice ($p = 0.59$).

²⁷ Though late analysts with a bold, non-unique forecast are more likely to be perceived as mimicking previous forecasts than late analysts with a bold but unique forecast, participants' willingness to pay for advice does not differ for late analysts, whether the bold forecast is unique or non-unique. The above results indicate that participants' willingness to pay for advice from late analysts is not determined by their mimicking perceptions.

Investors' perceptions about analysts' information quality²⁸

To assess whether participants perceive the earnings forecast to contain new information, I ask them “(t)o what extent do you think Analyst X1/X9’s earnings forecast contains new information on MedTec when Analyst X1/X9 issues his forecast” on a 13-point scale with the end points “0” = “Not at all” and “12” = “To a Very Large Extent.” For an early analyst, the mean rating is 7.65/7.47/6.89 when the forecast is bold-high salience/bold-low salience/non-bold, where there is no significant difference among the ratings, with smallest $p = 0.36$. For a late analyst, the mean rating is 7.67/7.59/5.44 when the forecast is bold-high salience/bold-low salience/non-bold. The late, non-bold earnings forecast is perceived to have less new information than the late, bold-high salience forecast or late, bold-low salience forecast, both $p = 0.01$. Participants’ new information rating does not differ whether the late forecast is of bold-high or bold-low salience, $p = 0.94$, which suggests that participants perceive the late bold forecast to provide new information over the consensus, whether the bold forecast is unique or non-unique.

I also ask participants “(t)o what extent do you think Analyst X1/X9 had acquired private information about MedTec 2011 third quarter earnings” on a 13-point scale with the end points “0” = “Not at all” and “12” = “To a Very Large Extent.” I obtain similar results as for the new information question. For an early analyst, the private information rating is 7.65/6.84/6.89 when the forecast is bold-high salience/bold-low salience/non-bold. There is no significant difference among the ratings, with smallest $p = 0.36$. In contrast, for a late analyst, the rating is 7.67/7.36/4.74 when the forecast is bold-high salience/bold-low salience/non-bold. Analysts with a late, non-bold forecast are perceived to have less private information than those with a late, bold-high salience forecast or a late, bold-low salience forecast, both $p = 0.00$. There is no significant difference in the private information ratings when the forecast is late, bold-high salience or bold-low salience, $p = 0.72$.

²⁸ Theoretically, the latest forecast contains the most updated information so that it is the most valuable forecast. However, there are other factors influencing the perceived value of the latest forecast, e.g., the forecasts already released to the market, personal characteristics (intention, ability, affiliation et al.) of the analyst who issues the latest forecast. If the latest forecast is a herding forecast, investors would perceive the latest forecast providing little incremental information to the market. This is especially true when investors evaluate the forecast *after the accuracy of the forecast is known*.

Investors' perceptions about analysts' intention to attract attention and please management

I test whether investors perceive bold forecasts to be more likely incentive-driven by asking the participants the question “(t)o what extent to you think Analyst X1/X9 is trying to attract attention from investors” on a 13-point scale with the endpoints “0” = “Not at all” and “12” = “To a Very Large Extent.” For an early (late) analyst, the mean rating is 9.15/7.21/8.11 (7.43/8.32/6.16) when the forecast is bold-high salience/bold-low salience/non-bold. Results suggest that for an early analyst, perceived analysts' intention to attract investors' attention when the forecast is non-bold does not differ from that when the forecast is bold-high salience (8.11 vs. 9.15, $p = 0.17$), or when the forecast is bold-low salience (8.11 vs. 7.21, $p = 0.24$). In contrast, for a late analyst, perceived analysts' intention to attract investors' attention when the forecast is non-bold is significantly lower than when the forecast is bold-high salience (6.16 v. 7.43, $p = 0.09$), or when the forecast is bold-low salience (6.16 vs. 8.32, $p = 0.03$).

In addition, to assess whether forecast timing and boldness salience affect investors' perceptions about the bias in the forecast toward the management, I ask the question “(t)o what extent do you think Analyst X1/X9 is trying to please MedTec's management” on a 13-point scale with the endpoints “0” = “Not at all” and “12” = “To a Very Large Extent.” For an early (late) analyst, the mean rating is 6.15/6.79/6.06 (6.29/6.95/5.68) when the forecast is bold-high salience/bold-low salience/non-bold. The mean comparison tests show that there is no significant difference among the six conditions ($p > 0.01$), except that a late analyst with a non-bold forecast is perceived to have less intention to please the management than a late analyst with a bold-low salience forecast ($p = 0.09$).

Recall test

To investigate whether investors have stronger impressions of and memory for salience forecasts, in all conditions, participants are asked to recall the third quarter earnings forecasts made by three analysts: X1, X5 and X9. If participants' recall of each forecast is consistent with the value in each manipulated condition (as shown in Figure 2), I record the response as “1;” otherwise I record it as “0.” When Analyst X1/X9 is the focal analyst in the early conditions/late conditions, only seven out of the 120 participants

give wrong recalls of the focal analyst's forecast, with 4 wrong recalls in bold-high salience conditions and 3 wrong recalls in non-bold conditions. For the middle analyst (X5), in both bold-high salience and non-bold conditions, the analyst's forecast is \$0.34, similar to most of the other analysts, which makes Analyst X5 in these conditions non-salient. In the bold-low salience conditions, Analyst X5's forecast is \$0.40, one of the two highest among the nine forecasts, which makes Analyst X5 quite salient. Results show that 27.5%/82.5%/35.1% participants in the bold-high salience/bold-low salience/non-bold conditions give the right answers, where 82.5% is significantly higher than 27.5% ($\chi^2 = 24.44$, $p = 0.00$) and 35.1% ($\chi^2 = 17.93$, $p = 0.00$), and 27.5% is not significantly different from 35.1% ($\chi^2 = 0.52$, $p = 0.47$), suggesting that participants remember salient information more than non-salient information. For the last analyst (when X1/X9 is not the focal analyst), when his/her forecast is relatively of high salience/low salience/non-salience, 91.9%/70.0%/50.0% give the right recall answers, where 91.9% is significantly higher than 70.0% ($\chi^2 = 5.87$, $p = 0.02$) and 50% ($\chi^2 = 16.10$, $p = 0.00$), and 70% is also significantly higher than 50% ($\chi^2 = 3.33$, $p = 0.07$). Again, participants give more correct recalls when information salience increases. Given the presumed intention of analysts to stand out from the pack, my recall test indicates that participants best remember analysts with high salience forecasts.

The results of attribution and recall tests are consistent with the psychology theories on information salience that people make more internal attributions to distinctive behavior than conventional behavior, and that they also have more impressions of salient information.

Investors' beliefs about analysts' forecast timing choices

In reality, analysts often face the decision of when to issue their forecasts. They can choose to issue the forecast early or late. In order to test investors' perceptions of analysts' forecast timing strategy, participants read two different conditions and answer corresponding questions after each condition.

Condition 1: James Bollin, a financial analyst, is following Alpha Technology, a medium-sized firm listed in New York Stock Exchange. Alpha has just announced its first quarter earnings recently. Besides James, other eight analysts are also following Alpha and making regular earnings forecasts for Alpha.

James is going to issue his second quarter earnings forecast for Alpha. *James believes that his revised estimate of second quarter earnings is likely to be higher than the other analysts' revised forecasts.* James has now to decide when to issue his forecast. Based on the above description, there could be two possible forecasting strategies for James. Strategy A: Issuing the forecast at an early stage before most of the other analysts. Strategy B: Issuing the forecast at a later stage after most of the other analysts.

In Condition 2, the description is the same as in Condition 1 except for the bold Italic words which are changed to “*James believes that his revised estimate of second quarter earnings is close to other analysts' revised forecasts.*”

I ask participants to indicate which forecasting strategy James will most likely to adopt under 8 different situations (Question 1 to Question 8), “Early” or “Late.” Table 4 contains the results.

[Insert Table 4 here]

Results show that more investors perceive that an analyst will issue a forecast early in condition 2 (close to others' forecasts) than in condition 1 (higher than others' forecasts) if he/she is (Q1) already highly reputable (87.4% vs. 69.2%, $p = 0.00$), (Q2) a young analyst who wants to build forecasting reputation (79.0% vs. 46.7%, $p = 0.00$), (Q5) very confident about his/her own estimate (94.1% vs. 87.5%, $p = 0.08$), and (Q6) wants to be perceived as an independent analyst (96.0% vs. 80.0%, $p = 0.01$). The results for the first two questions provide supportive evidence for the reputation-based herding assumptions in Scharfstein and Stein (1990)—an agent will choose to herd if he/she is more concerned about his/her reputation, as early issuance with a non-bold forecast is safer, relative to a bold, salient forecast. Moreover, 51.3% of the participants perceive that the analyst in condition 2 will issue forecast early when the earnings volatility is large (Q7), but only 20.0% perceive that the analyst in condition 1 will issue the forecast early ($p = 0.00$). Similarly, 65.5% perceive that the analyst in condition 2 will issue the forecast early even though other analysts are more experienced (Q8), but only 15.8% perceive that the analyst in condition 1 will issue forecast early ($p = 0.00$). The results for Q7 and Q8 support the implications from the analytical work of Guttman (2010) on analysts' forecast timing decisions where an

analyst will decide to issue his/her forecast relatively late if the information precision is low, or if he/she can benefit more from other analysts' forecasts. I do not find a significant difference between conditions 1 and 2 when the analyst wants to generate as much trading volume as possible (Q3, 81.7% vs. 86.6%, $p = 0.30$), or have a good relationship with management of the target firm (Q4, 68.3% vs. 71.4%, $p = 0.60$), suggesting that participants perceive analysts to sacrifice forecast accuracy when there is conflict of interests.

V. CONCLUSIONS

In this study, I conduct an experiment to examine how analysts' forecast timing and forecast boldness salience jointly influence investors' willingness to pay for investment advice, given that the forecast is accurate. Overall, I find that for the early analyst, investors are more willing to pay for his/her advice, once the forecast (whether bold or non-bold) is confirmed by some other follower analyst(s); for the late analyst, investors' willingness to pay for advice depends largely on whether the forecast is bold. I also find that investors are generally more willing to pay for advice from an early analyst than a late analyst.

My study makes several contributions to the existing literature. First, I extend the literature on how analysts' forecast characteristics affect investors' reactions. I find that the effect of individual forecast characteristic may interact with each other to affect investors' judgments and decisions. Prior research has examined the effect of forecast boldness on analysts' reputation and career consequences (Hong et al. 2000; Clement and Tse 2005; Kadous et al. 2009; Zhuang 2011). My study is the first one to provide evidence that the effect of forecast boldness on investors' willingness to pay for investment advice is both contingent on forecast uniqueness and forecast timing. I find that in term of a main effect of forecast boldness salience, investors are least willing to pay for a late analyst's investment advice with a non-salient, non-bold forecast. I also find that investors are less willing to pay for advice from an early analyst with a bold forecast than an early analyst with a non-bold, non-salient forecast. However, once the early

analyst's bold forecast is confirmed by one or two late analysts, investors' willingness to pay greatly improves. These results enrich current research on forecast boldness. So far, the existing studies provide inconclusive evidence on the effect of forecast boldness when the forecast is accurate (Hong et al. 2000; Kadous et al. 2009). My study suggests that the effect of forecast boldness may be weakened or even reversed once there are other forecast characteristics playing their roles, such as forecast timing and forecast uniqueness. Moreover, my results suggest that investors pay attention to different dimensions of forecast boldness salience for early and late analysts' forecasts. For an early analyst, investors pay attention to confirmation of the forecast. Conversely, this aspect is not attended to for a late analyst; instead, investors attend to the boldness of the forecast.

Second, I provide direct evidence that the timing of analysts' forecast, as a pure forecasting characteristic, plays an important role in investors' perceptions of analysts' credibility and willingness to pay for advice. In my experiment, after controlling the information released by management among the interim period of the forecasts, investors perceive early analysts to be more credible than late analysts. Moreover, I also find that investors attribute analysts' early issuance to their personal factors (e.g., ability and effort) rather than situational factors (e.g., industry stability and media coverage), suggesting the importance of forecast timing in reputation building.

Lastly, this study has practical implications for analysts who want to build their forecasting reputation. In order to attraction attention from the market and investors, an analyst has a motivation to distinguish himself from other analysts by issuing bold/salient forecasts (Zhuang 2011; Yin and Zhang 2012). However, unless the analyst is extremely confident in the reliability of his/her private information and his/her own forecasting ability, there is a risk of issuing a bold forecast (Hong et al. 2000; Kadous et al. 2009). After Regulation FD, it is very difficult for an individual analyst to get private information advantage over other analysts, which suggests that a unique forecast has a low probability of being accurate. Prior studies document that bold inaccurate analysts are more likely to lose their jobs than non-bold inaccurate analysts. My results suggest that without unique information to make a salient forecast, an

analyst can still improve his/her reputation and forecasting influence by issuing a non-bold, non-salient forecast as early as possible. Actually, the analysts who issue non-bold, non-salient and accurate forecasts early to the market are perceived to be much more credible than late analysts, and they are perceived to be even more credible than those analysts who provide bold accurate forecasts. However, once other analysts have already released forecasts early to the public, an analyst should try to increase the salience level of his/her forecast without significantly compromising his/her relative accuracy among the analysts.²⁹

My study has several limitations. First, I examine how investors respond to forecast timing and forecast boldness salience when the forecast is accurate. When the forecast is inaccurate, the joint effect of forecast timing and forecast boldness salience could be of a different pattern. It is possible that for both early and late analysts, inaccurate bold forecasts lead to more negative consequences than inaccurate non-bold forecasts, whether the bold forecasts are unique or not. Second, in the current context, investors evaluate the analysts after the actual accuracy is known. The psychological process of investors could be different if they do not know the actual earnings. For example, they may rely more on analysts who provide non-bold forecasts than those who provide bold forecasts, as people are more likely to rely on consensus information when there is no explicit benchmark (e.g. in the absence of actual earnings). I choose the current context because existing archival studies (Clement and Tse 2003, 2005; Shroff et al. 2011; Zhuang 2011) have documented some evidence, though inconclusive, on the effects of forecast timing and boldness on investors' reactions in the current period (before accuracy is known), but we know little about whether and how the effects of the two forecast characteristics carry over to influence investors' reactions in the subsequent period (after accuracy is known). Third, in my study, a moderate boldness salience forecast is bold in terms of the magnitude relative to the consensus, and is confirmed by other analysts. Theoretically, a moderate boldness salience forecast could also be non-bold in terms of the magnitude (close to consensus), but is not confirmed by other analysts. In reality, it is rare for a non-bold

²⁹ A recent study by Zhuang (2011) finds that an analyst who makes bolder but slightly less accurate forecasts is more likely to be selected in Institutional Investor's All-American Research Team than an analyst who makes more accurate but less bold forecasts, which suggests that sometimes analysts' boldness is rewarded if accuracy is not too low.

forecast not to be confirmed by other analyst(s) at all, and I do not employ such a moderate boldness salience forecast condition in my experiment. Fourth, I examine the effect of bold forecasts in one forecasting period. It is highly possible that accurate bold forecasts in multiple time periods greatly enhance an analyst's reputation, whether the bold forecasts are confirmed or not. Lastly, I do not include analysts' historical track record of accuracy or inaccuracy in the paper. However, Kadous et al. (2009) find that though investors are more likely to rely on analysts with high prior reputation, the *incremental* effect of forecast boldness (in one forecasting period) on investors' reliance on analysts does not vary with analysts' prior reputation. Whether prior reputation has an *incremental* effect on forecast boldness salience and forecast timing on analysts' forecasting reputation building is an issue for future research.

REFERENCES

- Asquith, P., B. Mikhail, and A. S. Au. 2005. Information content of equity analyst reports. *Journal of Financial Economics* 75: 245-282.
- Baron, R. M., and D. A. Kenny. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology* 51: 1173-1182.
- Beaver, W. 2002. Perspectives on recent capital market research. *The Accounting Review* 77: 453-474.
- Bonner, S., A. Hugon, and B. R. Walther. 2007. Investor reaction to celebrity analysts: The case of earnings forecast revisions. *Journal of Accounting Research* 45: 481-513.
- Cooper, R., T. Day, and C. Lewis. 2001. Following the leader: A study of individual analysts' earnings forecasts. *Journal of Financial Economics* 61: 383-416.
- Clement, M., and S. Tse. 2003. Do investors respond to analysts' forecast revisions as if forecast accuracy is all that matter? *The Accounting Review* 78: 227-249.
- Clement, M., and S. Tse. 2005. Financial analyst characteristics and herding behavior in forecasting. *Journal of Finance* 60: 307-341.
- Cote, J. 2000. Analyst credibility: The investor's perspective. *Journal of Managerial Issues* 12: 352-362.
- Dorfman, J. 1991. Analysts devote more time to selling as firms keep scorecard on performance. *Wall Street Journal* October 29, C1.
- Elliott, B., F. Hodge, J. Kennedy, and M. Pronk. 2007. Are M.B.A. students a good proxy for non-professional investors? *The Accounting Review* 82: 139-168.
- Griffin, K. 1967. The contribution of studies of source credibility to a theory of interpersonal trust in the communication process. *Psychological Bulletin* 68: 104-20.
- Guttman, I. 2010. The timing of analysts' earnings forecast. *The Accounting Review* 85: 513-545.
- Heider, F. 1958. *The psychology of interpersonal relations*. New York: Wiley.
- Hong, H., and M. Kacperczyk. 2010. Competition and bias. *Quarterly Journal of Economics* 125: 1683-1725.
- Hong, H., J. Kubik, and A. Solomon. 2000. Security analysts' career concerns and herding of earnings forecasts. *RAND Journal of Economics* 31: 121-44.
- Hugon, A. and V. Muslu. 2010. Market demand for conservative analysts. *Journal of Accounting and Economics* 50: 42-57.

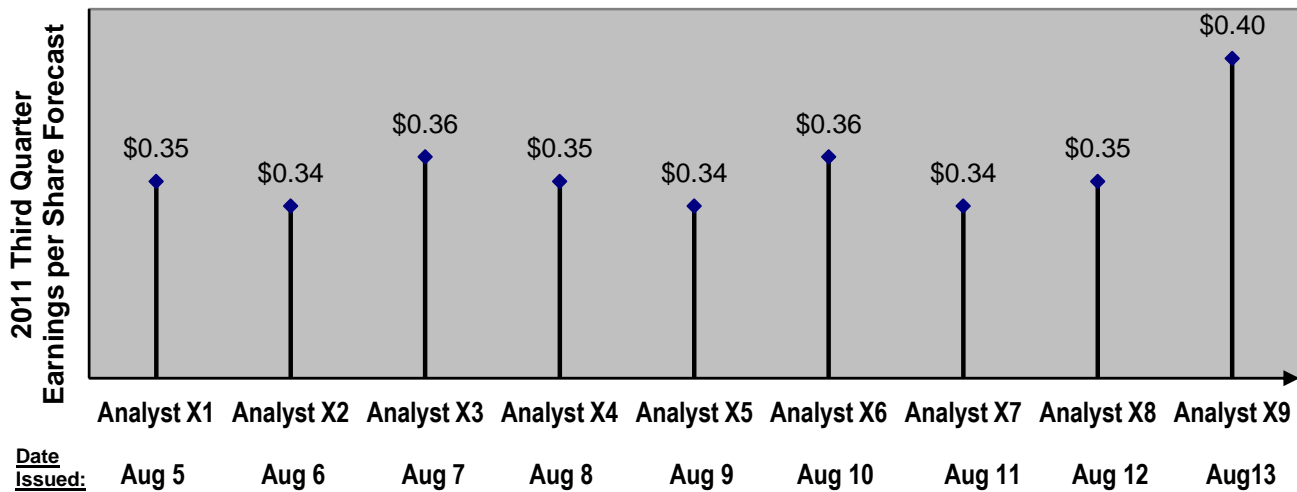
- Kadous, K., M. Mercer, and J. Thayer. 2009. Is there safety in numbers? The effect of forecast accuracy and forecast boldness on financial analysts' credibility with investors. *Contemporary Accounting Research* 26: 993-968.
- Kelley, H. 1967. Attribution theory in social psychology. In Nebraska Symposium on Motivation, ed. D. Levine, 192-241. Lincoln, NE: University of Nebraska Press.
- Kelley, H. 1973. The process of causal attribution. *American Psychologist* 28:107-128.
- Keynes, J. M. 1936. The general theory of employment, interest and money. London: Macmillan.
- Lott, T. and D. Loosvelt. 2005. Value Career Guide in Investment Banking. Vault Inc. New York.
- Lys, T., and L. G. Soo. 1995. Analysts' forecast precision as a response to competition. *Journal of Accounting, Auditing & Finance* 10: 751-765.
- McCroskey, J. 1966. Scales for the measurement of ethos. *Communication Monographs* 33: 65-72.
- Mercer, M. 2005. The fleeting effects of disclosure forthcomingness on management's reporting credibility. *The Accounting Review* 80: 723-744.
- Mikhail, M. B., B. R. Walther, and R. H. Willis. 2007. When security analysts talk, who listens? *The Accounting Review* 82: 1127-1253.
- O'Brien, P. 1990. Forecast accuracy of individual analysts in nine industries. *Journal of Accounting Research* 28: 286-304.
- Prendergast, C., and L. Stole. 1996. Impetuous youngsters and jaded old-timers: Acquiring a reputation for learning. *Journal of Political Economy* 104: 1105-1134.
- Scharfstein, D. S., and J. C. Stein. 1990. Herd behavior and investment. *American Economic Review* 80: 465-479.
- Schipper, K. 1991. Analysts' forecasts. *Accounting Horizons* 5: 105-131.
- Shroff, P., R. Venkataraman, and B. Xin. 2011. Timeliness of analysts' forecasts: The information content of delayed forecasts. Working paper, University of Toronto.
- Trueman, B. 1994. Analyst forecast and herding behavior. *Review of Financial Studies* 7: 97-124.
- Yin, H., and H. Zhang. 2012. Tournaments of Financial Analysts. Working paper, Shanghai University of Finance and Economics.
- Zhuang, Z. 2011. Tournaments and the impetuous contestants: An analysis of incentives for analyst forecast boldness, Working paper, The Chinese University of Hong Kong.

Figure 1: Experiment Material—the Cheat Sheet

MedTec (MEDT)

Earnings Outlook: Nine financial analysts currently follow MEDT. The table below shows each analyst’s earnings per share forecast issued between August 5th 2011 to August 13th 2011. As at August 13th 2011, the Quarter 3 average consensus forecast is \$0.35. Analysts’ forecasts are presented chronologically. (*The fiscal year end of MEDT is December 31st.*)

Note: There has been no public news release or conference call by MEDT or any other health-care related company during the 9-day period from August 5th to August 13th.



Revenue Outlook: Analysts project 2011 third quarter revenues of \$150.26 million (median), up from \$140.06 million in 2011 second quarter.

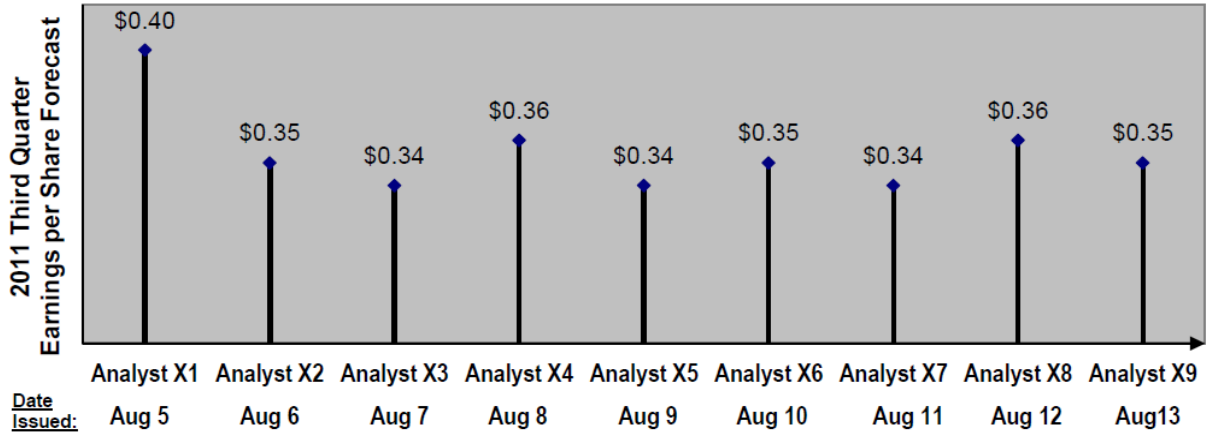
Key Issues Noted in Analysts’ Reports:

- **Steady Strong Growth:** Most analysts project that MEDT's sales growth, which registered at 13% for the second quarter of 2011, will keep its current pace in the third quarter of 2011.
- **Opportunity in Stent Market:** Analysts note the opportunity for MEDT's drug-eluting stent, which has been a growth driver in recent quarters, to increase its market share. The March 2011 recall of a rival company’s stent provides an opening for MEDT to corner this market. Analysts are confident that MEDT is able to capitalize on its rival’s stumble.
- **Regulatory Pains:** Some analysts are concerned that the marketing of Trimal, one of MEDT's best-selling products, is under federal scrutiny and that New York regulators have launched similar probes into the marketing of schizophrenia drug Dirselar and the Rosagesic pain patch. Some other analysts think the possibility of a worst outcome is very small.

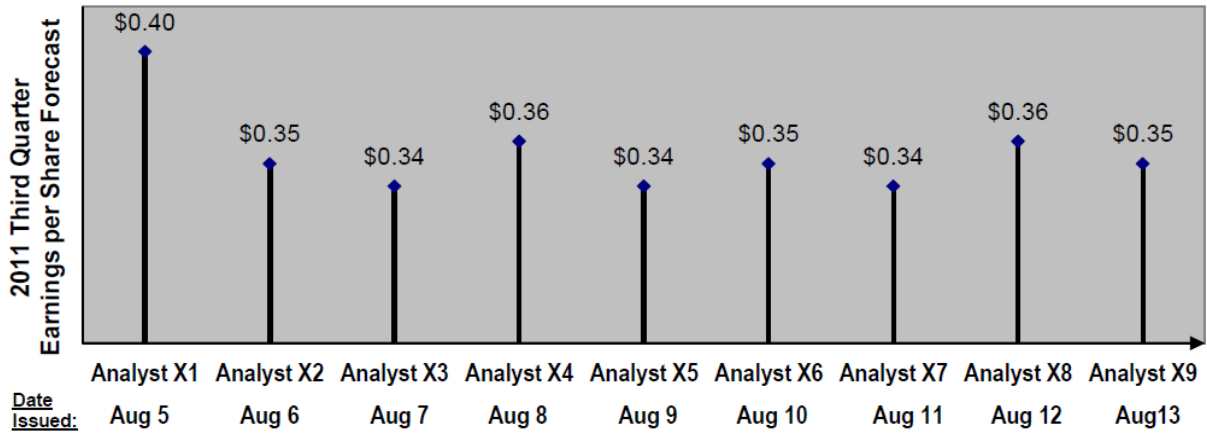
Summary: Most analysts expect that the company, whose wide range of health-care products has been yielding strong results, will continue its strong and solid growth during the third quarter of 2011.

Figure 2: Six Manipulated Conditions

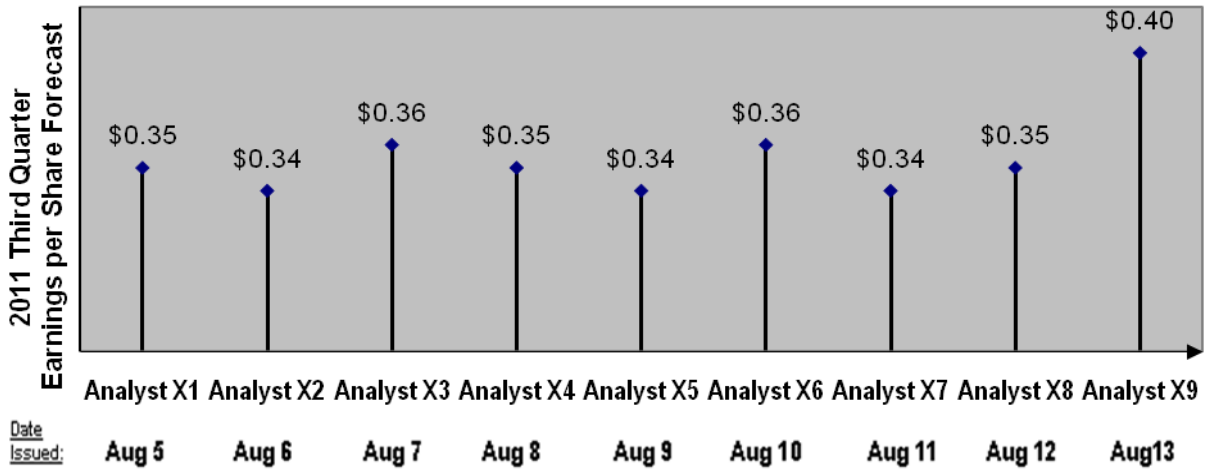
Analyst X1: Early, Bold-High Salience



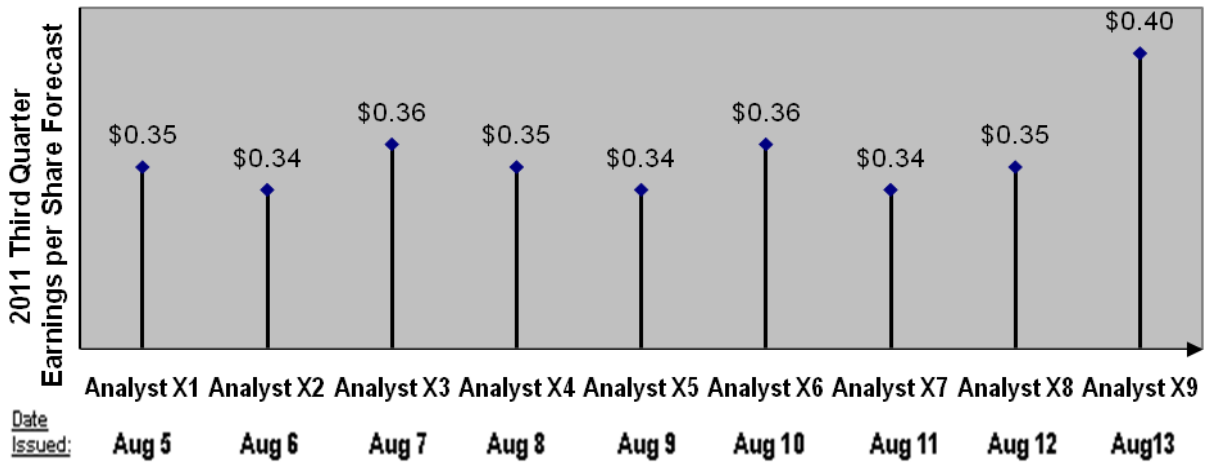
Analyst X9: Late, Non-Bold



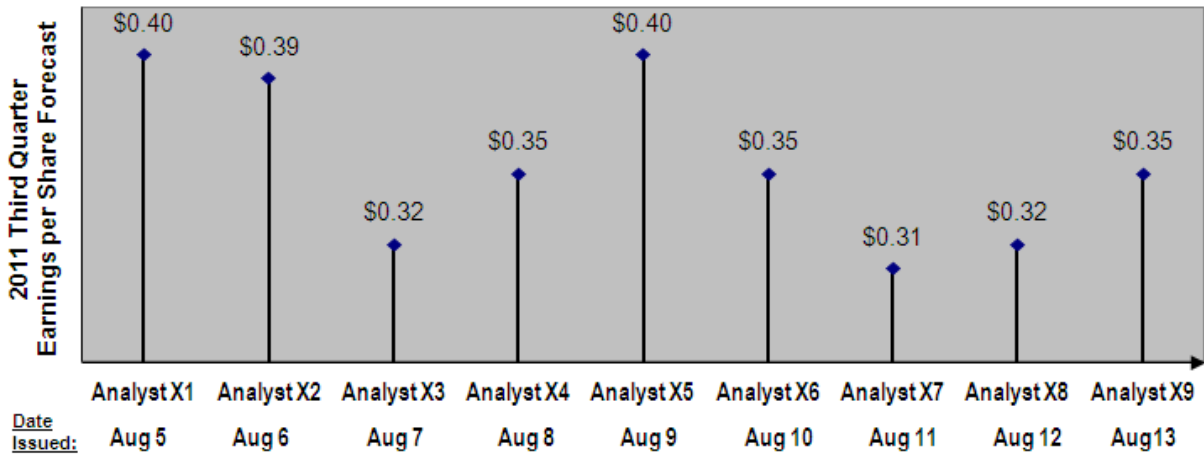
Analyst X1: Early, Non-Bold



Analyst X9: Late, Bold-High Salience



Analyst X1: Early, Bold-Low Salience



Analyst X9: Late, Bold-Low Salience

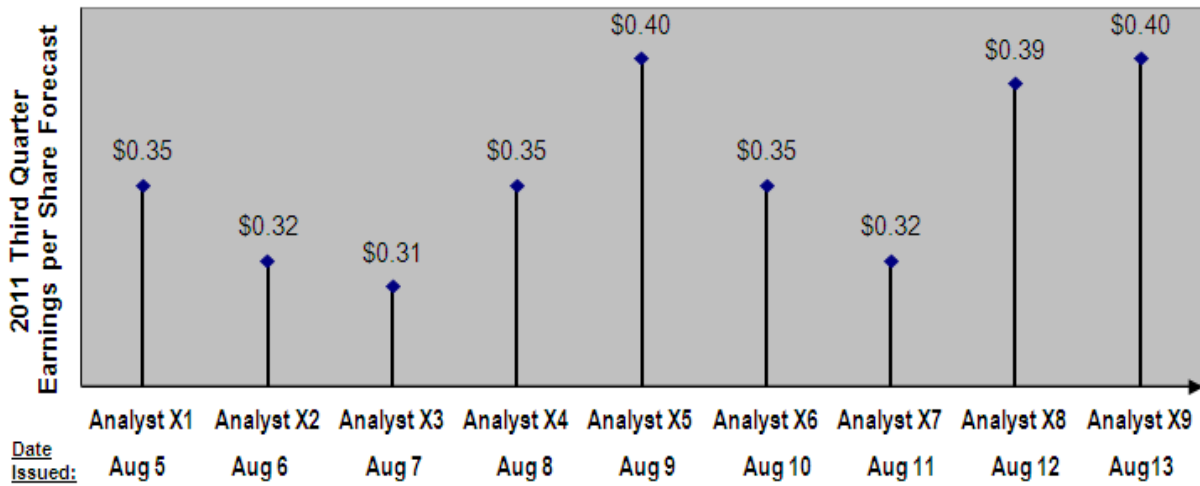
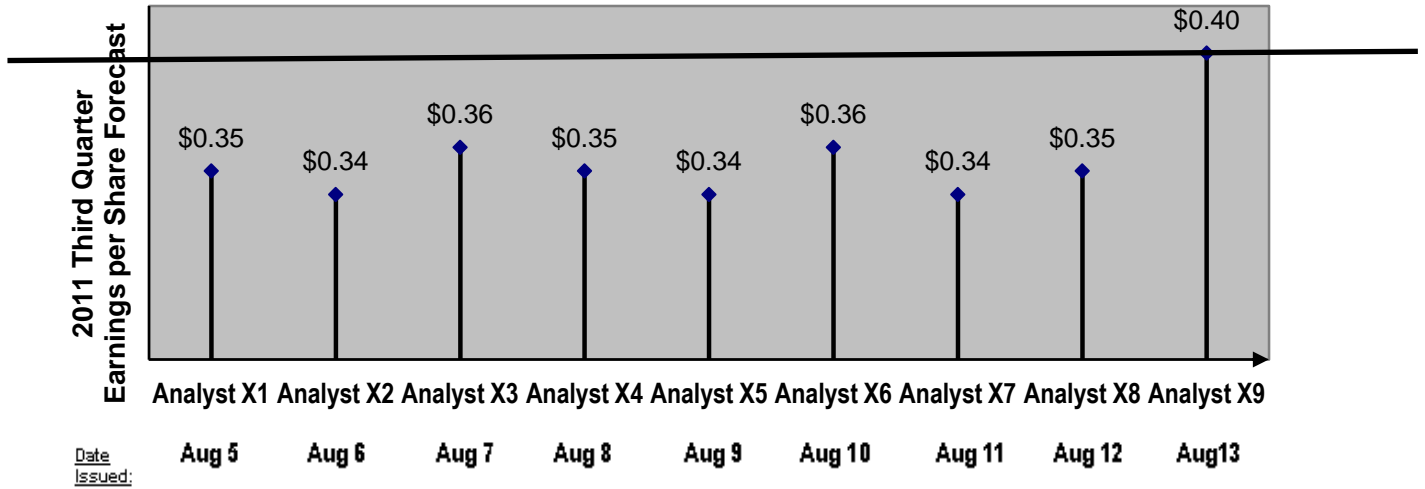


Figure 3: Actual Earnings Manipulations—Either \$0.40 or \$0.35 to Make the Target Forecast Accurate

When actual earnings per share are \$0.40



When actual earnings per share are \$0.35

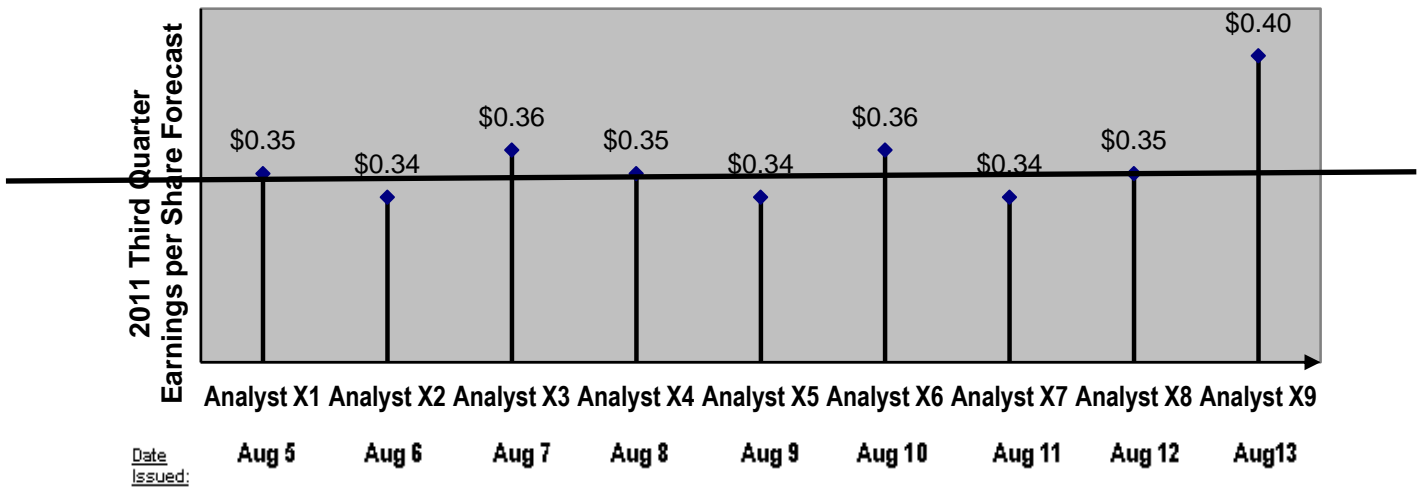


Figure 4: Investors' Willingness to Pay for Analysts' Investment Advice

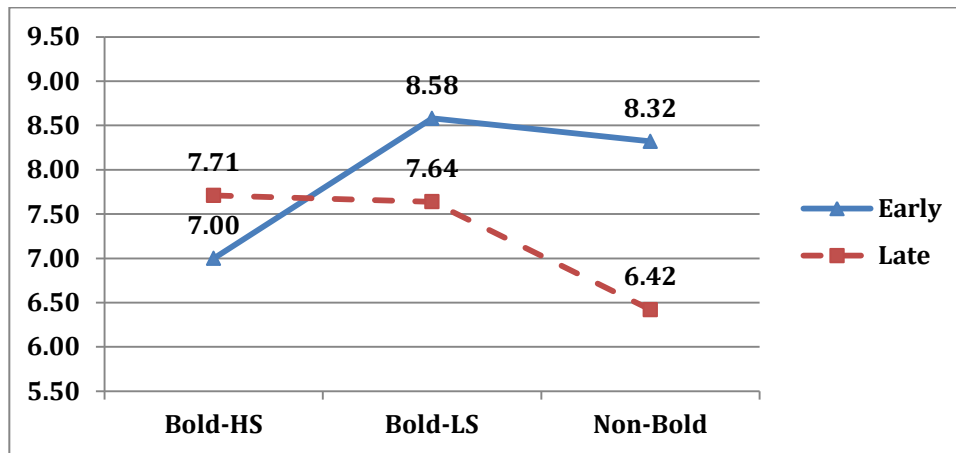
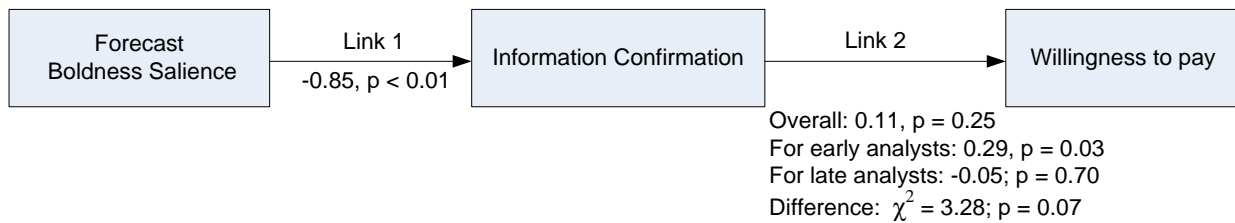
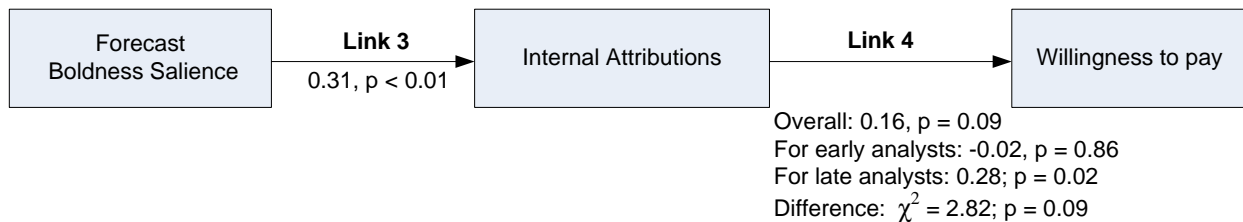


Figure 5: Path Analysis for Information Confirmation



This figure shows structural-equation modeling results for a moderated mediation analysis, where the mediating effect of information confirmation is moderated by forecast timing. I present the standardized coefficients and corresponding p-values next to each link. The χ^2 test shows that the model fits the overall data well ($\chi^2 = 8.74$, $df = 5$, $p = 0.12$).

Figure 6: Path Analysis for Internal Attributions



This figure shows structural-equation modeling results for a moderated mediation analysis, where the mediating effect of internal attributions is moderated by forecast timing. I present the standardized coefficients and corresponding p-values next to each link. The χ^2 test shows that the model fits the overall data well ($\chi^2 = 9.20$, $df = 5$, $p = 0.10$).

TABLE 1
Investors' Willingness to Pay for Analysts' Investment Advice

Panel A: Descriptive Statistics – Means (Standard Deviations) [Sample Size]
Forecast Boldness Salience

	Bold-High Salience			Bold-Low Salience			Non-Bold		
Early	7.00	(2.02)	[20]	8.58	(1.71)	[19]	8.32	(1.38)	[19]
Late	7.71	(1.85)	[21]	7.64	(2.36)	[22]	6.42	(2.34)	[19]
Overall	7.37	(1.95)	[41]	8.07	(2.11)	[41]	7.37	(2.12)	[38]

Panel B: Two-Way ANOVA Tests

Source	df	Mean Square	F-statistic	p-value
Timing	1	14.98	3.81	0.03*
BS	2	7.47	1.90	0.08*
Timing × BS	2	17.32	4.40	0.01

Panel C: Simple Main Effect Tests for Forecast Boldness Salience (BS)

	Bold-HS vs. Bold-LS		Bold-HS vs. Non-Bold		Bold-LS vs. Non-Bold	
	<u>F</u>	<u>p</u>	<u>F</u>	<u>p</u>	<u>F</u>	<u>p</u>
Early	6.17	0.01	4.29	0.04	0.17	0.68
Late	0.02	0.90	4.23	0.04	3.83	0.05

Panel D: Simple Main Effect Tests for Forecast Timing

Source	df	Mean Square	F-statistic	p-value
Timing at Bold-HS level	1	5.23	1.33	0.25
Timing at Bold-LS level	1	9.06	2.30	0.07*
Timing at Non-Bold level	1	34.11	8.66	0.00

Participants are asked to indicate “(h)ow much would you be willing to pay for the investment advice” on a 13-point scale, with endpoints “0” = “Much less than I’d pay for the average analyst’s advice” and “12” = “Much more than I’d pay for the average analyst’s advice.” Panel A shows the descriptive statistics. Panel B provides the results of the analysis of variance (ANOVA). Panels C and D present the simple main effect analyses.

*one-tailed p-value

TABLE 2
Investors' Judgment of Analysts' Credibility

Panel A: Descriptive Statistics – Means (Standard Deviations) [Sample Size]
Forecast Boldness Salience

	Bold-High Salience			Bold-Low Salience			Non-Bold		
Early	7.55	(1.61)	[20]	8.16	(1.66)	[19]	8.66	(1.63)	[19]
Late	7.62	(1.70)	[21]	7.82	(2.03)	[22]	7.32	(1.86)	[19]
Overall	7.59	(1.64)	[41]	7.98	(1.85)	[41]	7.99	(1.85)	[38]

Panel B: Two-Way ANOVA Tests

Source	df	Mean Square	F-statistic	p-value
Timing	1	8.64	2.79	0.05*
BS	2	2.19	0.71	0.50
Timing × BS	2	5.15	1.67	0.10*

Panel C: Simple Main Effect Tests for Forecast Boldness Salience (BS)

	Bold-HS vs. Bold-LS		Bold-HS vs. Non-Bold		Bold-LS vs. Non-Bold	
	F	p	F	p	F	p
Early	1.16	0.28	3.86	0.05	0.77	0.38
Late	0.14	0.71	0.30	0.59	0.83	0.36

Panel D: Simple Main Effect Tests for Forecast Timing

Source	df	Mean Square	F-statistic	p-value
Timing at Bold-HS level	1	0.05	0.02	0.90
Timing at Bold-LS level	1	1.18	0.38	0.54
Timing at Non-Bold level	1	17.11	5.53	0.01*

Participants are asked to indicate the extent they think Analyst X1/X9 is competent/trustworthy on a 13-point scale, with endpoints “0” = “Not at all Competent/Trustworthy” and “12” = “Very Competent/Trustworthy.” These two measures are highly correlated (Pearson correlation = 0.80, p = 0.00; Cronbach’s alpha = 0.89). Thus, I combine these two measures into one credibility score, and use the average credibility score as the measure for investors’ judgment of analysts’ credibility. Panel A shows the descriptive statistics. Panel B provides the results of the analysis of variance (ANOVA). Panels C and D present the simple main effect analyses.

*one-tailed p-value

TABLE 3
The Mediating Role of Perceived Helpfulness of Analyst Forecast

Panel A: The Mediation for Investors' Willingness to Pay for Analysts' Investment Advice

	F-value (p-value)			
	Step 1: IVs effect on DV	Step 2: IVs effect on MV	Step 3: MV effect on DV, controlling for IVs	Step 4: IV effects on DV, with MV included
IVs: Forecast Timing Forecast BS	Timing: F = 3.81 (0.03*)	Timing: F = 3.24 (0.04*)		Timing: F = 1.02 (0.32)
DV: Willingness to Pay for Investment Advice	BS: F = 1.90 (0.16)	BS: F = 0.32 (0.73)	MV: F = 83.00 (0.00)	BS: F = 2.13 (0.12)
Mediator (MV): Forecast Helpfulness	Interaction: F = 4.40 (0.01)	Interaction: F = 2.20 (0.06*)		Interaction: F = 2.24 (0.06*)
Mediation successful?	YES	YES	YES	YES Partial Mediation

Panel B: The Mediation for Investors' Credibility Judgment

	F-value (p-value)			
	Step 1: IVs effect on DV	Step 2: IVs effect on MV	Step 3: MV effect on DV, controlling for IVs	Step 4: IV effects on DV, with MV included
IVs: Forecast Timing Forecast BS	Timing: F = 2.79 (0.05*)	Timing: F = 3.24 (0.04*)		Timing: F = 0.27 (0.61)
DV: Analysts' Credibility	BS: F = 0.71 (0.50)	BS: F = 0.32 (0.73)	MV: F = 127.22 (0.00)	BS: F = 0.69 (0.63)
Mediator (MV): Forecast Helpfulness	Interaction: F = 1.67 (0.10*)	Interaction: F = 2.20 (0.06*)		Interaction: F = 0.79 (0.23)
Mediation successful?	YES	YES	YES	YES Full Mediation

Participants are asked to indicate "(t)o what extent do you think Analyst X1/X9's earnings forecast for 2011 third quarter is helpful to the market and investors" on an 13-point scale, with endpoints "0" = "Not at all Helpful" and "12" = "Very Helpful."

*one-tailed p-value

TABLE 4
Investors' Perceptions of Analysts' Forecast Timing Strategies

	If the analyst, James believes his forecast is <i>higher than</i> the other analysts' forecasts	If the analyst, James, believes his forecast is <i>close to</i> the other analysts' forecasts	
Question: Please indicate which forecasting strategy James will most likely to adopt under each condition listed below.	Percentage of Choosing "Early"	Percentage of Choosing "Early"	Statistical ⁺ Difference
1. If James is a highly reputable analyst	69.2%	87.4%	$\chi^2=11.62$, p = 0.00
2. If James is a young analyst who wants to build his forecasting reputation	46.7%	79.0%	$\chi^2=26.71$, p = 0.00
3. If James wants to generate as much trading volume as possible	81.7%	86.6%	$\chi^2=1.07$, p = 0.30
4. If James wants to have a good relationship with Alpha's management	68.3%	71.4%	$\chi^2=0.27$, p = 0.60
5. If James is very confident on his own estimate	87.5%	94.1%	$\chi^2=3.13$, p = 0.08
6. If James wants to be perceived as an independent analyst	80.0%	96.0%	$\chi^2=6.59$, p = 0.01
7. If Alpha Technology has relatively large earnings volatility	20.0%	51.3%	$\chi^2=25.48$, p = 0.00
8. If other analysts who are following Alpha are generally more experienced	15.8%	65.5%	$\chi^2=61.24$, p = 0.00

+: Pearson Chi-Square test

Appendix: Experiment Instrument**Section 1**

MedTec is a publicly-traded company that produces and markets a variety of health-care products, including medical instruments and prescription and over-the-counter drugs. On August 4th 2011, MedTec reported second quarter earnings per share (EPS) of \$0.29.

Selected Financial Data *(Note: The fiscal year end of MedTec is December 31th)*

THREE YEAR FINANCIAL SUMMARY <i>(In thousands, except per share dollar)</i>					
FISCAL YEAR	2010	2009	2008		
RESULTS OF OPERATION					
Net sales	\$510,118	\$488,409	\$473,486		
Operating income	\$101,775	\$96,028	\$94,697		
Net earnings	\$15,877	\$15,364	\$14,678		
Net earnings per share (diluted)	\$1.07	\$1.00	\$0.98		
FINANCIAL POSITION					
Working capital	\$12,035	\$11,598	\$13,193		
Total assets	\$757,420	\$732,843	\$714,963		
Long-term debt	\$61,497	\$59,314	\$54,917		
Stockholders' equity	\$442,452	\$435,706	\$428,978		
QUARTERLY FINANCIAL DATA <i>(In thousands, except per share dollar)</i>					
FISCAL YEAR 2011	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Net sales	\$123,908	\$140,063			
Gross profit	\$74,990	\$78,435			
Operating income	\$26,009	\$29,012			
Earnings per share	\$0.24	\$0.29			
FISCAL YEAR 2010					
Net sales	\$134,035	\$142,081	\$118,996	\$115,006	\$510,118
Gross profit	\$78,061	\$84,663	\$72,168	\$71,180	\$306,072
Operating income	\$27,638	\$29,319	\$23,087	\$21,731	\$101,775
Earnings per share	\$0.30	\$0.32	\$0.23	\$0.22	\$1.07

*: Before the announcement of the second quarter earnings, market expectation for MedTec third quarter earnings per share was \$0.27.

Section 2

In this section, we provide you with a Wall Street Journal “cheat sheet” for MedTec, which summarizes nine financial analysts’ earnings forecasts about MedTec’s third quarter financial performance in 2011. These forecasts are made right after August 4th 2011 (the date that MedTec made the second quarter earnings announcement).

In the “cheat sheet,” the nine analysts’ earnings forecasts are presented *chronologically* in a time line, with the forecast issuing date below each corresponding analyst. For simplicity purpose, we refer to the nine analysts as Analyst X1, X2, X3, X4, X5, X6, X7, X8, and X9. **In terms of the time sequence**, among the nine financial analysts, **Analyst X1 is the first one** to issue his forecast (on August 5th), **Analyst X5 is the fifth** to issue his forecast (on August 9th), **and Analyst X9 is the last** to issue his forecast (on August 13th). The key issues in these analysts’ reports are also provided in the “cheat sheet.”

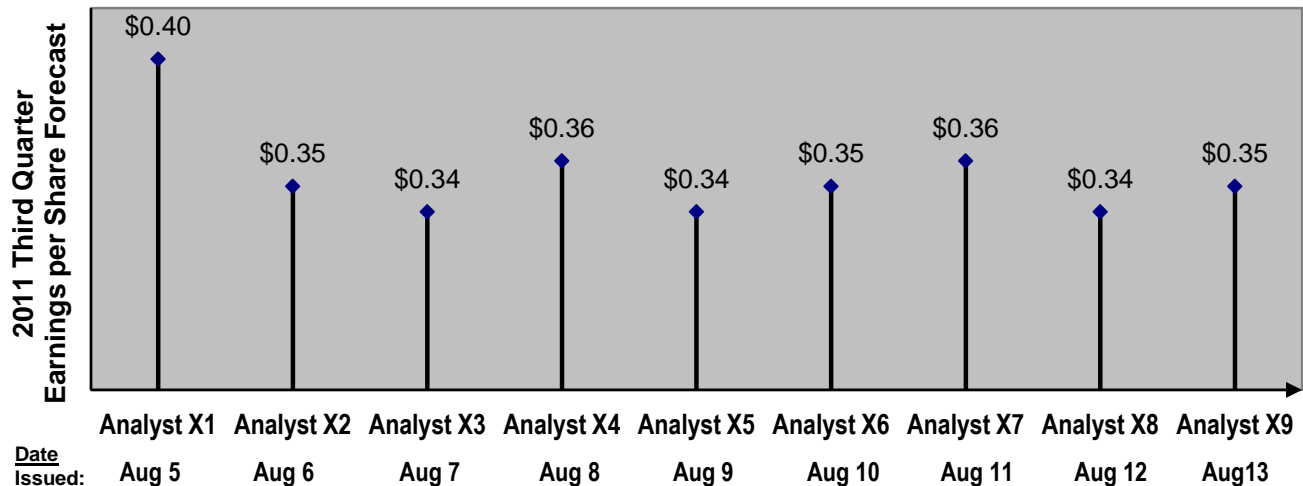
You will be asked to answer questions concerning the analysts who cover MedTec. However, most of the questions relate to one of the analyst in particular — **Analyst X1**.

Please read the information provided carefully. When you are done, please return the materials to Envelope A.

MedTec (MEDT) (early/bold-high salience condition; these words not shown during experiment)

Earnings Outlook: Nine financial analysts currently follow MEDT. The table below shows each analyst's earnings per share forecast issued between August 5th 2011 to August 13th 2011. As at August 13th 2011, the Quarter 3 average consensus forecast is \$0.35. Analysts' forecasts are presented chronologically. (*The fiscal year end of MEDT is December 31st.*)

Note: There has been no public news release or conference call by MEDT or any other health-care related company during the 9-day period from August 5th to August 13th.



Revenue Outlook: Analysts project 2011 third quarter revenues of \$150.26 million (median), up from \$140.06 million in 2011 second quarter.

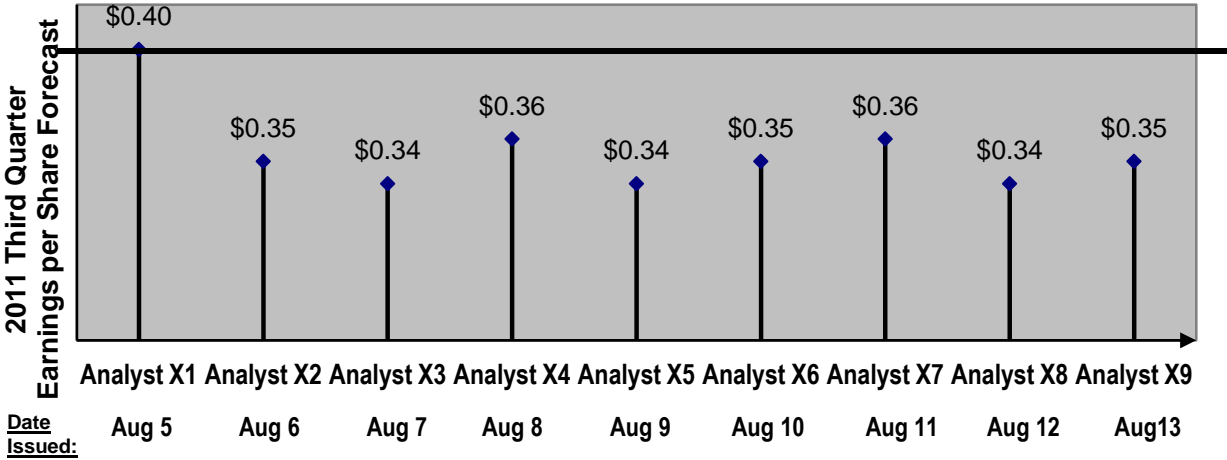
Key Issues Noted in Analysts' Reports:

- **Steady Strong Growth:** Most analysts project that MEDT's sales growth, which registered at 13% for the second quarter of 2011, will keep its current pace in the third quarter of 2011.
- **Opportunity in Stent Market:** Analysts note the opportunity for MEDT's drug-eluting stent, which has been a growth driver in recent quarters, to increase its market share. The March 2011 recall of a rival company's stent provides an opening for MEDT to corner this market. Analysts are confident that MEDT is able to capitalize on its rival's stumble.
- **Regulatory Pains:** Some analysts are concerned that the marketing of Trimal, one of MEDT's best-selling products, is under federal scrutiny and that New York regulators have launched similar probes into the marketing of schizophrenia drug Dirselar and the Rosagesic pain patch. Some other analysts think the possibility of a worst outcome is very small.

Summary: Most analysts expect that the company, whose wide range of health-care products has been yielding strong results, will continue its strong and solid growth during the third quarter of 2011.

SECTION 3

In early October, MedTec reported actual 2011 third quarter earnings per share of \$0.40. Some financial analysts' predictions were closer to the actual number than others. Following is a comparison of how each financial analyst's prediction stacked up against actual earnings per share for 2011 third quarter.



Use the information provided to answer the following questions. Most of the questions will be focused on Analyst X1.

- Suppose now you have to rank these analysts for an analyst award. Please put a number from “1” to “9” against each analyst code, with “1” indicating the highest ranking and “9” indicating the lowest ranking. Use the same rank for ties, but assign unique ranks as far as possible.

<u>Analyst Code</u>	<u>Ranking (“1” for highest-ranked analyst”,</u> <u>“9” for lowest-ranked analyst)</u>
---------------------	--

Analyst X1	_____
Analyst X2	_____
Analyst X3	_____
Analyst X4	_____
Analyst X5	_____
Analyst X6	_____
Analyst X7	_____
Analyst X8	_____
Analyst X9	_____

- Is there any apparent trend in terms of the nine analysts' third quarter earnings forecasts (e.g., an increasing or decreasing trend)? YES or NO (*Tick one*)

If yes, what was the trend of the earnings forecasts:

- Many facts and circumstances can influence an analyst's forecasting performance. Below is a list of six possible factors that could have caused **Analyst X1**'s accurate earnings forecast. **Please rank these factors from '1' to '6,'** where '1' is the factor that you think is the most likely cause of **Analyst X1**'s accuracy and '6' is the factor that you believe to be the least likely cause of **Analyst X1**'s accuracy.

Analyst A's earnings forecast was probably accurate because:

- ___ Analyst X1 is a high ability analyst.
- ___ Analyst X1 happened to get lucky.
- ___ Analyst X1 has good personal access to MedTec's management.
- ___ The health care industry was relatively stable during the time period.
- ___ Analyst X1 exerted high effort when forecasting MedTec's earnings.
- ___ Media coverage of MedTec is relatively high.

**You have now completed Section 3. Please return the pages to Envelope B.
You can now open Envelope C**

SECTION 6

In this section, you are going to read two different conditions that financial analysts usually face in making forecast. Please answer the corresponding questions after you read each condition.

Condition 1:

James Bollin, a financial analyst, is following Alpha Technology, a medium-sized firm listed in New York Stock Exchange. Alpha has just announced its first quarter earnings recently. Besides James, other eight analysts are also following Alpha and making regular earnings forecasts for Alpha. James is going to issue his second quarter earnings forecast for Alpha. ***James believes that his revised estimate of second quarter earnings is likely to be higher than the other analysts' revised forecasts.*** James has to now decide when to issue his forecast.

Based on the above description, there could be two possible forecasting strategies for James.

Strategy A: Issuing at an early stage before most of the other analysts

Strategy B: Issuing at a later stage after most of the other analysts

Please indicate which forecasting strategy James will most likely to adopt under each condition listed below.	STRATEGIES (Tick one)	
	Early	Late
1. If James is a highly reputable analyst	Early	Late
2. If James is a young analyst who wants to build his forecasting reputation	Early	Late
3. If James wants to generate as much trading volume as possible	Early	Late
4. If James wants to have good relationship with Alpha's management	Early	Late
5. If James is very confident on his own estimate	Early	Late
6. If James wants to be perceived as an independent analyst	Early	Late
7. If Alpha Technology has relatively large earnings volatility	Early	Late
8. If other analysts who are following Alpha are generally more experienced	Early	Late

Condition 2:

James Bollin, a financial analyst, is following Alpha Technology, a medium-sized firm listed in New York Stock Exchange. Alpha just announced its first quarter earnings recently. Besides James, other eight analysts are also following Alpha and making regular earnings forecast for Alpha. James is going to issue his second quarter earnings forecast for Alpha. **James believes that his revised estimate of second quarter earnings is close to other analysts' revised forecasts.** Now James has to decide when to issue his forecast.

Based on the above description, there could be two possible forecasting strategies for James.

Strategy A: Issuing at an early stage before most of the other analysts

Strategy B: Issuing at a later stage after most of the other analysts

Please indicate which forecasting strategy James will most likely to adopt under each condition listed below.	STRATEGIES (Tick one)	
1. If James is a highly reputable analyst	Early	Late
2. If James is a young analyst who wants to build his forecasting reputation	Early	Late
3. If James wants to generate as much trading volume as possible	Early	Late
4. If James wants to have good relationship with Alpha's management	Early	Late
5. If James is very confident on his own estimate	Early	Late
6. If James wants to be perceived as an independent analyst	Early	Late
7. Alpha Technology has relatively large earnings volatility	Early	Late
8. Other analysts who are following Alpha are generally more experienced	Early	Late

SECTION 7

We would like to gather some background information about you. Please answer each of the following questions.

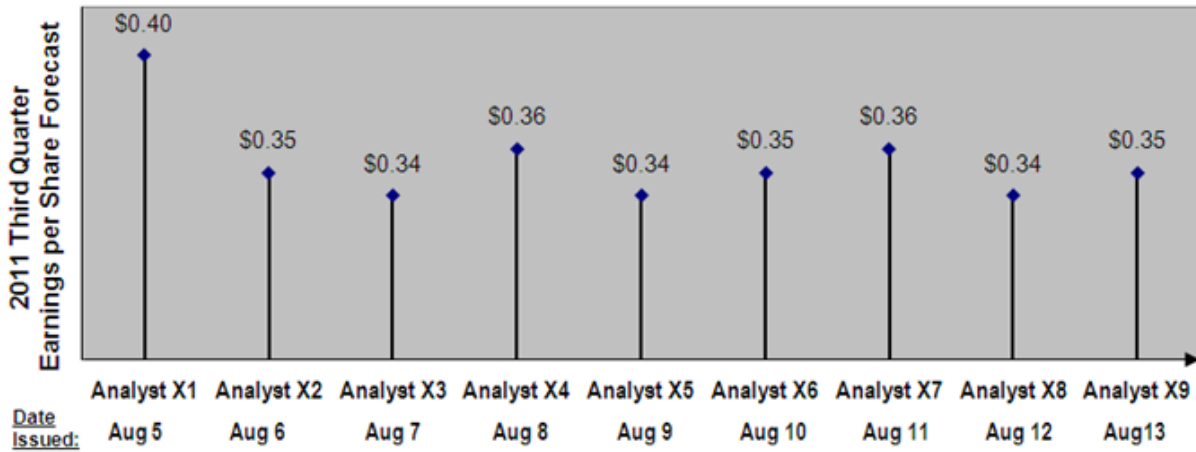
- Have you ever made investments in the stock of a company? Yes No
If yes, approximately how many times? _____ times
- Have you ever made investments in a stock mutual fund? Yes No
- Do you plan to invest in the stock of a company at some time in the future? Yes No
Have you ever used financial analyst research reports to aid your investment decisions?
Yes No
- Do you plan to use financial analyst research reports to aid your investment decisions at some time in the future? Yes No
- Do you plan to work in a finance-related job upon graduation? Yes No
- How many years of working experience (including part-time) do you have? _____Months
- Please indicate the number of courses (undergraduate and graduate level) you have taken or have currently enrolled in: Accounting _____courses; Finance _____courses.
- Indicate your gender. (*Circle one*) MALE / FEMALE

**YOU HAVE REACHED THE END OF THE CASE.
THANK YOU FOR PARTICIPATING!**

Six Manipulation Conditions:

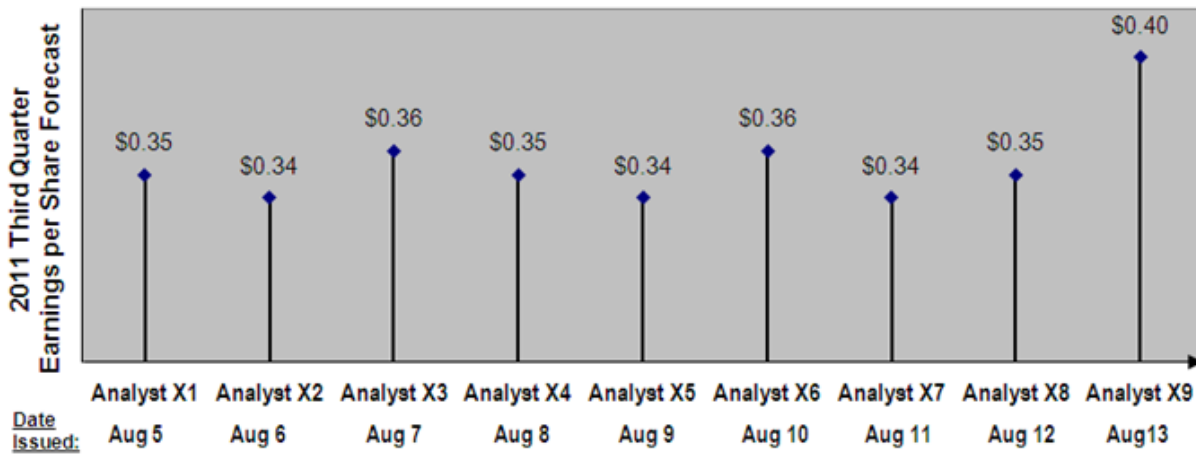
Condition 1: Early, Bold-High Salience (X1)

Condition 4: Late, Non-Bold (X9)

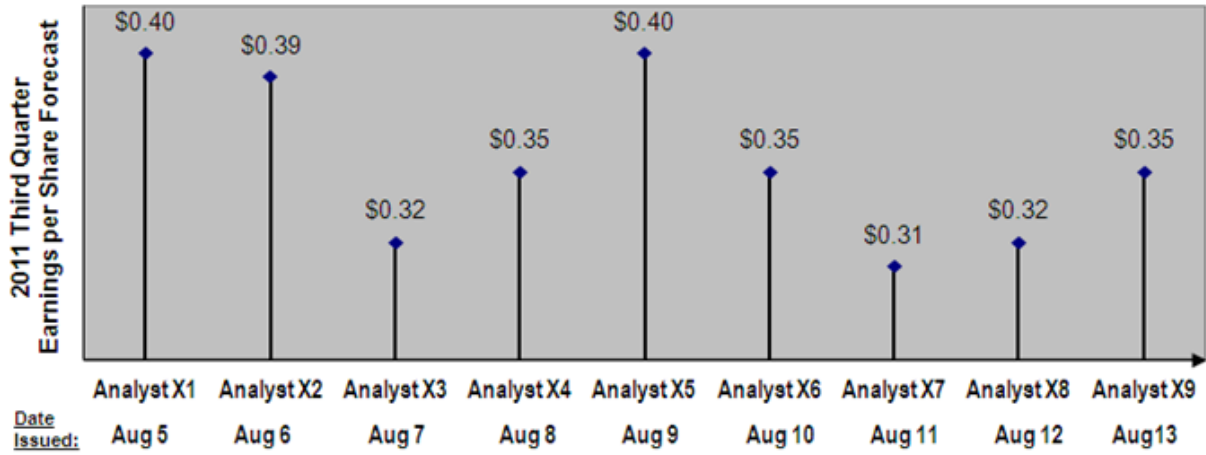


Condition 3: Early, Non-Bold (X1)

Condition 2: Late, Bold-High Salience (X9)



Condition 5: Early, Bold-Low Salience (X1)



Condition 6: Late, Bold-Low Salience (X9)

