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Inside the "Black Box" of Sell-Side Financial Analysts

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ABSTRACT

Our objective is to penetrate the "black box" of sell-side financial analysts by providing new insights into the inputs analysts use and the incentives they face. We survey 365 analysts and conduct 18 follow-up interviews covering a wide range of topics, including the inputs to analysts' earnings forecasts and stock recommendations, the value of their industry knowledge, the determinants of their compensation, the career benefits of *Institutional Investor* All-Star status, and the factors they consider indicative of high-quality earnings. One important finding is that *private* communication with management is a more useful input to analysts' earnings forecasts and stock recommendations than their own primary research, recent earnings performance, and

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recent 10-K and 10-Q reports. Another notable finding is that issuing earnings forecasts and stock recommendations that are well below the consensus often leads to an *increase* in analysts' credibility with their investing clients. We conduct cross-sectional analyses that highlight the impact of analyst and brokerage characteristics on analysts' inputs and incentives. Our findings are relevant to investors, managers, analysts, and academic researchers.

JEL codes: G20; G23; G24; G28; M40; M41

Keywords: sell-side analysts; analyst inputs; analyst incentives; private communication; analyst compensation; industry knowledge

1. Introduction

Sell-side financial analysts are of significant interest to academic researchers because of their prominent role in analyzing, interpreting, and disseminating information to capital market participants. While early research on analysts focused on the statistical properties of their earnings forecasts and on improving analysts' expectations models (Fried and Givoly [1982], O'Brien [1988], Lys and Sohn [1990], Brown [1993]), later research investigated the investment value of analysts' earnings forecasts and stock recommendations (Womack [1996], Francis and Soffer [1997], Clement and Tse [2003], Howe, Unlu, and Yan [2009]). Starting with Schipper [1991] and Brown [1993], however, researchers have suggested the literature should focus more on the context within which analysts make their decisions. More recently, Ramnath, Rock, and Shane [2008] and Bradshaw [2011] conclude that research on the "black box" of analysts' decision processes is required for the literature to progress. We penetrate this "black box" by surveying 365 analysts and conducting 18 follow-up interviews to gain insights into the inputs they use and the incentives they face.[1]

The inputs we investigate include the determinants of analysts' earnings forecasts and stock recommendations; the frequency, nature, and usefulness of their communication with senior management; the valuation models they use to support their stock recommendations; their beliefs about what constitutes high-quality earnings; and, their perceptions of possible "red flags" of financial misrepresentation. With respect to incentives, we investigate the determinants of analysts' compensation, their motivation for generating accurate earnings forecasts and profitable stock recommendations, and the consequences of issuing unfavorable earnings forecasts and stock recommendations. While prior research has generally focused on analysts' incentives to please company management or generate underwriting business, our findings highlight the strong incentives analysts face to satisfy their investing clients.

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[1] Surveys have limitations, such as the potential for response bias, small sample sizes, social desirability biases, and construct validity issues. However, surveys enable researchers to ask questions that would be difficult to address with archival data.

We summarize our main findings here and discuss our detailed results in section 3. Our findings shed light on the value of private communication with management as an input to analysts' decision processes. Soltes [2014] finds that private communication with management is a valuable source of information for analysts. We extend Soltes [2014] by providing evidence that over half of the analysts we survey report that they have direct contact with the CEO or CFO of the typical company they follow five or more times a year. We also find that private communication with management is a more important input to analysts' earnings forecasts and stock recommendations than primary research, recent earnings performance, and recent 10-K and 10-Q reports. Further, analysts rate private phone calls as one of the most useful types of direct contact with management for purposes of generating their earnings forecasts and stock recommendations. Our follow-up interviews reveal that some analysts avoid asking questions during public conference calls and use private phone conversations to check the assumptions of their models, to gain qualitative insights into the firm and its industry, and to get other details not explained on public calls. Our findings provide a deeper understanding of analysts' communication with management in the post–Regulation Fair Disclosure (Reg FD) environment and suggest analysts incorporate pieces of nonpublic information from management into a broader "mosaic."

Institutional Investor (*II*) surveys regularly find that sell-side analysts' industry knowledge is extremely valuable to their buy-side clients. We provide evidence that industry knowledge is a very important determinant of sell-side analysts' compensation, suggesting brokerage houses provide analysts with incentives to satisfy their clients' demand for industry knowledge (Brown et al. [2014]). We also find that industry knowledge is the single most useful input to analysts' earnings forecasts and stock recommendations.

We asked analysts about their perceptions of earnings quality and their beliefs about potential "red flags" of intentional misreporting. Although Dichev et al. [2013] asked similar questions of the CFOs they surveyed, *users* of financial accounting information (analysts) are likely to have more informative views on financial reporting issues than *preparers* (CFOs). Specifically, analysts are an important source of information for their investing clients and have incentives to recognize attributes of high-quality earnings because incorrect assessments of earnings quality could result in economic losses for their clients and have an adverse effect on their own reputation and compensation. Conversely, CFOs face incentives to manage earnings, which could create a preference for low-quality earnings and bias their responses to questions about earnings quality (Dechow et al. [2010], Nelson and Skinner [2013]). In addition, CFOs have other reporting incentives that are not always consistent with those of investors (Nelson and Skinner [2013]). For example, Dichev et al. [2013] find that CFOs rate the avoidance of long-term estimates as an important feature of high-quality earnings. However, the analysts we survey do not believe this factor is an important earnings

attribute, suggesting CFOs may simply prefer earnings that do not require additional explanations to external parties (Nelson and Skinner [2013]).

The factors analysts believe are most indicative of high-quality earnings include that earnings are backed by operating cash flows, are sustainable and repeatable, reflect economic reality, and reflect consistent reporting choices over time. While these findings suggest analysts could rein in earnings management before it escalates into more egregious misrepresentations of the financial statements (Schrand and Zechman [2012]), we also find analysts generally do not focus on detecting fraud or intentional misreporting.

With respect to incentives, our results provide a better understanding of the nature and structure of analyst compensation. Regulators and investors have expressed concerns about analysts' conflicts of interest, and the SEC and the major U.S. stock exchanges have worked together to fortify the "Chinese wall" separating the investment banking and research sides of brokerage houses. In spite of these efforts, 44% of our respondents say their success in generating underwriting business or trading commissions is very important to their compensation, suggesting conflicts of interest remain a persistent concern for users of sell-side research.

While many prior studies emphasize *II*'s annual All-America Research Team rankings (e.g., Stickel [1992], Leone and Wu [2007], Rees, Sharp, and Twedt [2014a]), the analysts we survey say broker votes are far more important to their career advancement.[2] Specifically, 83% of analysts indicate that broker votes are very important to their career advancement, while only 37% say the same about the *II* rankings. Our findings are consistent with Maber, Groysberg, and Healy [2014], who find that unlike *II* rankings, broker votes translate directly into revenue for analysts' employers.

We highlight other incentives analysts face. For example, one of their primary motivations for issuing accurate earnings forecasts is to use them as inputs to their own stock recommendations, revealing that analysts' forecasts are often a means to an end rather than an end unto themselves. In addition, analysts report that an *increase in their credibility* with investing clients is a more likely consequence of issuing unfavorable earnings forecasts and stock recommendations than many of the negative consequences discussed in prior research, such as being "frozen out" of the Q&A portion of future conference calls (Mayew [2008]). This finding underscores analysts' balancing act of satisfying both company management and their investing clients.

We conduct cross-sectional analyses that investigate the influence of analyst characteristics (gender, education, professional certifications, experience, and All-Star status) and brokerage house characteristics (size, investment banking activity, and client focus) on analysts' inputs and incentives. Some of our results help explain findings in the existing literature.

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[2] Buy-side portfolio managers and buy-side analysts assess the value of research services provided by sell-side brokerage houses and allocate research commissions through broker votes.

For example, we find that female analysts are more motivated to issue accurate earnings forecasts so they can use them as inputs to their stock recommendations, providing a partial explanation for Kumar's [2010] result that female analysts issue superior earnings forecasts. Other cross-sectional results add texture to our interviews and deepen our understanding of the main findings. For instance, our finding that analysts at large brokerage houses are more likely to indicate that private communication with management is a useful input to their stock recommendations is consistent with a potential information advantage for these analysts (Clement [1999]).

We make several contributions to the literature. A survey allows us to ask analysts questions about their inputs and incentives that would be difficult to address with archival data, enabling us to provide the literature with new insights. Some of our findings strengthen the extant literature. For example, Soltes [2014] uses field evidence from a single large-cap firm to show that private communication with management is valuable to sell-side analysts. We validate this finding with a broad sample of analysts following many firms from multiple industries and add context by assessing the value of private communication relative to other inputs analysts employ.

We also highlight areas where analysts' survey responses diverge from the findings of prior research (e.g., the contrast between analysts' and CFOs' views on earnings quality), and we provide direction for future research. For example, we address issues not considered by prior studies, such as the benefits to analysts of issuing relatively pessimistic earnings forecasts and stock recommendations. In general, our findings underscore the challenge analysts face when trying to maintain good relationships with firm management while also satisfying the demands of their investing clients. Our study is relevant to investors who use analysts' earnings forecasts and stock recommendations in their investing decisions, managers of companies followed by analysts, and analysts wishing to benchmark their practices and research against a broad set of peers.

2. *Survey Methodology, Interviews, and Cross-Sectional Analyses*

2.1 SUBJECT POOL

Our subject pool consists of sell-side analysts with an equity research report published in Investext during the 12-month period from October 1, 2011, to September 30, 2012. Investext includes more than 150,000 research reports from over 1,000 investment banks and brokerage houses during our sample period. We recorded the name, email address, phone number, and employer of every analyst with a sole-authored research report in Investext during this period. Analysts sometimes submit multiauthored (or team) research reports (Brown and Hugon [2009]). Thus, for every lead analyst who submitted a team report, we identified his or her most recent team report and collected contact information for every analyst on that team. This process yielded 3,341 sell-side analysts with very recent

experience. As a frame of reference, our subject pool is 77.2% of the number of analysts in I/B/E/S who issued an annual earnings forecast for at least one U.S. firm in 2012.

2.2 SURVEY DESIGN AND DELIVERY

We initially developed a list of survey questions based on our review of the literature. Our intent was to identify relevant questions that would be difficult to address using only archival data. After compiling a list of questions, we contacted academic colleagues who are familiar with this literature and asked them to suggest questions they would like to ask a group of sell-side analysts.[3] We received feedback on survey design from a professional survey consultant who contracts with a large public university and from academic colleagues in various disciplines who are experienced in conducting surveys. We distributed pilot surveys to several analysts and academic colleagues who helped us assess the reasonableness and presentation of our questions and the time required to complete the survey. This process helped reduce the possibility that we omitted fundamental questions, asked unimportant or ambiguous questions, or designed a survey requiring too much time to complete.

In an effort to address as many topics as possible, we created and administered two related versions of the survey, each containing 14 questions followed by several demographic questions. Both versions of the survey begin with five identical "common" questions, followed by six similar "twin" questions. In one version, the twin questions are specific to earnings forecasts (hereafter, EF version); in the other version, the twin questions are specific to stock recommendations (hereafter, SR version) but are otherwise identical. In each version, the twin questions are followed by three "unique" questions that are loosely related to the theme of either the EF or SR version. For example, the EF version asks analysts about earnings quality, while the SR version asks analysts about the valuation models they employ. We asked a total of 23 questions across the two versions of the survey: 6 specific to earnings forecasts, 6 specific to stock recommendations, and 11 addressing analysts' inputs and incentives in other contexts. The survey instrument is available in an online appendix.[4]

We asked the common questions first because we did not want our subjects to think we deemed either earnings forecasts or stock recommendations (depending on which version of the survey they received) to be particularly important. We asked the twin questions next to ensure that the responses to these questions would not be influenced by the different sets of unique questions, which we presented last. With one exception, we

[3] Other surveys of financial analysts include Bricker et al. [1995], Barker [1999], and Barker and Imam [2008].

[4] An online appendix to this paper can be downloaded at http://research.chicagobooth.edu/arc/journal-of-accounting-research/online-supplements.

randomized the order of the questions presented within each set of questions (common, twin, unique).[5] Unless the options had a natural sequence (e.g., never, once a year, twice a year), we randomized the order of each question's options.[6] Our survey ended with a series of demographic questions. Demographic characteristics and the correlations among them are included in the online appendix.

We used Qualtrics.com to deliver the survey via email on January 9, 2013. Two weeks later, we sent a reminder email to analysts who had not completed the survey.[7] We closed the survey on February 6, 2013, four weeks after our original email. To encourage participation, we told our subjects we would donate $10,000 multiplied by the response rate to our survey and that we would allocate the total donation among four charities from which we allowed the analysts to choose.

We informed analysts that their responses would be held in strict confidence, that no individual response would be reported, and that the survey should take less than 15 minutes to complete.[8] Qualtrics.com assigned each responding analyst, in alternating fashion, one of the two versions of the survey. We received a total of 365 responses for a response rate of 10.9%, which exceeds that of other accounting and finance surveys administered via email (e.g., Dichev et al. [2013] report a response rate of 5.4%, and Graham, Harvey, and Rajgopal [2005] report an 8.4% response rate on the portion of their survey delivered via the internet).

2.3 INTERVIEWS

We asked analysts to provide their phone numbers if they were willing to be contacted for a follow-up interview. Eighty-two analysts provided their phone numbers, and we conducted one-on-one interviews with 18 analysts to gain additional insights beyond those contained within the responses to our survey.[9] We made audio recordings of 13 of these interviews (average

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[5] In each version of the survey, we asked two "twin" questions about how often research management exerts upward or downward pressure on analysts' earnings forecasts (EF version) or stock recommendations (SR version). Because these two questions are naturally related to each other, we wanted analysts to answer them in sequence. Therefore, we asked these two "twin" questions last.

[6] See tables A3 and A5 in the online appendix.

[7] We used the Kolmogorov-Smirnov test (untabulated) to compare the distribution of demographic characteristics between analysts who responded to the survey early (i.e., before we sent the reminder email) versus late (i.e., after we sent the reminder email). We cannot reject the null hypothesis of equal distributions for any characteristic except analyst age, where the *p*-value is a marginally significant 0.086 (two-tailed). We did not compare the distribution of degrees and certifications between early and late responders because analysts can have multiple degrees (e.g., an undergraduate degree in economics and an MBA) and professional certifications (e.g., CPA and CFA).

[8] Excluding 21 analysts who took more than one hour to complete the survey, likely because of interruptions at work, the mean (median) time the analysts took to complete the survey was 14.1 (12.0) minutes.

[9] We conducted 17 interviews by phone and one in person. Before conducting any interviews, we tabulated all the demographic information for each analyst who volunteered to be

length was 30 minutes, 50 seconds) and took detailed notes on the other five. The 18 analysts we interviewed represent four of the nine primary industries listed in the survey and six "other" industries: four are female, they have a median of three to six years of experience both as sell-side analysts and at their current employer, they follow a median of 16–25 companies, and 55% of them work at brokerage houses with more than 25 sell-side analysts.

2.4 CROSS-SECTIONAL ANALYSES

We explore cross-sectional variation in survey responses based on analyst and brokerage house characteristics (Clement [1999]). For each survey question, we regress analysts' responses (which usually range from 0 to 6) on the following 12 characteristics:

$$\begin{aligned} \textit{Survey Response} = {} & ß_0 + ß_1 \textit{Gender} + ß_2 \textit{Accounting} + ß_3 \textit{MBA} + ß_4 \textit{CFA} \\ & + ß_5 \textit{Experience} + ß_6 \textit{II\_AllStar} + ß_7 \textit{StarMine} + ß_8 \textit{WSJ} \\ & + ß_9 \textit{Broker\_Size} + ß_{10} \textit{I\_Bank} + ß_{11} \textit{Retail\_Focus} \\ & + ß_{12} \textit{HF\_Focus} + \Sigma \textit{Industry} + \varepsilon, \end{aligned} \tag{1}$$

where *Survey Response* is the analyst's response to the survey question being examined. We formally define the independent variables in the appendix.

We obtain values of six independent variables (*Gender*, *Accounting*, *MBA*, *CFA*, *Experience*, and *Broker_Size*) from the results of demographic questions we pose in the survey. Unlike *Gender*, *Accounting*, *MBA*, and *CFA*, neither *Experience* nor *Broker_Size* is a binary response. To facilitate interpretation of our results, we create indicator variables for *Experience* and *Broker_Size* based on the median response for each variable, allowing for approximately the same number of analysts to be coded either 0 or 1 (e.g., 7+ years for *Experience*; 26+ sell-side analysts for *Broker_Size*).

We hand-collect the data for *WSJ*, *StarMine*, and *II_AllStar* to examine whether award-winning analysts use different inputs or have different incentives from other analysts.[10] We define each of these variables based on award status on the date we administered the survey. Following prior research (Bradshaw, Huang, and Tan [2014], Rees, Sharp, and Wong

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interviewed. Our objective was to interview analysts with a range of demographic characteristics (e.g., gender, experience, primary industry, broker size) that represented the overall sample. Thus, we interviewed both male and female analysts with varying levels of experience, representing a variety of primary industries, and from brokerage houses of varying size. Aside from the demographic information, we did not refer to any individual survey responses when deciding whom to call or what to ask. No analyst we contacted declined our request for an interview.

[10] *WSJ* analysts are selected based on the profitability of their recommendations. StarMine analysts are awarded based on both the profitability of their recommendations and the accuracy of their earnings forecasts. *II* All-America Research analysts are selected based on votes by institutional investors.

[2014b]), we use Thomson One Banker to determine whether analysts' employers provide underwriting of debt or equity issuances (*I_Bank*). We code the last two indicator variables, *Retail_Focus* and *HF_Focus*, based on the survey responses compiled in table 12, to capture the extent to which retail investing clients and hedge funds are important to the analyst's employer. We include industry fixed effects based on the primary industry the analyst covers.

For brevity, we report all cross-sectional results in the online appendix. We limit our discussion of cross-sectional results in the text to those that are significant at the 5% level or better, briefly summarizing the results we consider most interesting.

3. Results and Interview Responses

We organize the results based on the primary themes of our survey. Tables 1 through 7 address the inputs analysts use in their decisions. Specifically, tables 1 and 2 relate to general inputs to analysts' earnings forecasts and stock recommendations, table 3 pertains to analyst direct contact with management, and tables 4 to 7 present results relating to analysts' assessments of financial reporting quality. Tables 8 through 13 address the incentives analysts face. Specifically, tables 8 and 9 report on the determinants of analysts' career success, tables 10 and 11 present responses to questions about factors that influence analysts' earnings forecasts and stock recommendations, and tables 12 and 13 relate to other incentives analysts face.

In the first column of each table, we report the choices for each question based on the average ratings from the analysts. We also test whether the average rating for a given choice exceeds the average rating of the other choices, and, in the second column, we report the rows corresponding to a significant difference at the 5% level, using Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. The final two columns indicate the percentage of respondents who rate each choice near the top and bottom of the scale. In panel B of the four tables that contain the "twin" questions (tables 1, 3, 10, and 11), the middle column further reports the results of a *t*-test of the null hypothesis that the average rating is the same across both the EF and SR versions of the survey.

3.1 FREQUENCY AND CORRELATIONS OF DEMOGRAPHIC CHARACTERISTICS (ONLINE APPENDIX)

Among the analysts responding to the survey, the most commonly covered "primary" industries are banking/finance/insurance (15.1%), transportation/energy (14.5%), technology (12.3%), and retail/wholesale (9.3%).[11] Of those stating "other," 29 analysts indicated health care, making it the fifth most covered industry (7.9%). Nearly half cover only one

[11] We follow Dichev et al. [2013] in our choice of industries.

industry, and the median and modal analyst follows 16–25 firms. The vast majority of our respondents are male and under 50 years of age. Almost half have either an MBA or an undergraduate degree in economics or finance. More than a third are CFAs, but less than 4% are CPAs. Approximately half have been sell-side analysts for at least six years, have worked for their employer for at least three years, and work for a brokerage house with more than 25 analysts. For comparative purposes, we provide statistics for all analysts in I/B/E/S during 2012. The primary difference between our sample and I/B/E/S analysts is that our sample analysts follow more firms, suggesting I/B/E/S potentially excludes some firms that analysts follow.[12]

3.2 GENERAL INPUTS

One limitation of the existing literature is researchers' inability to observe the inputs that shape analysts' outputs (Ramnath, Rock, and Shane [2008], Bradshaw [2011]). We asked survey questions with the goal of shedding light on the inputs analysts use when forming their earnings forecasts and stock recommendations.

3.2.1. How Useful Are the Following for Determining Your Earnings Forecasts/Stock Recommendations? (Table 1). While *II* surveys regularly find that industry knowledge is highly valued by analysts' buy-side clients, little evidence exists regarding the importance of industry knowledge to sell-side analysts. Table 1 reveals that industry knowledge is the single most useful input to both analysts' earnings forecasts (panel A) and their stock recommendations (panel B). Industry knowledge includes understanding the industry's key trends and technologies; its supply chains, distribution models, and margins; and its customers, labor, and management teams. Consistent with evidence from archival research that industry knowledge is an important strength of sell-side analysts (Piotroski and Roulstone [2004], Kadan et al. [2012]), our respondents indicate that industry knowledge is the most useful input to their earnings forecasts and stock recommendations.

Private communication with management is another useful input to analysts' earnings forecasts and stock recommendations, underscoring the importance of analysts' access to management. While prior research demonstrates that private communication with management is valuable to sell-side analysts (Soltes [2014]), we document that it is even more useful to analysts than their own primary research, the firms' recent earnings performance, and the recent 10-K or 10-Q reports. Analysts at the largest brokerage houses indicate that private communication with management is a more useful input to their stock recommendations than

[12] We unambiguously identified 209 of our sample analysts in I/B/E/S, and we compared the number of firms these analysts say they follow with the number that I/B/E/S reports they followed in January 2013 (immediately before we administered the survey). Sixty-four analysts report following more firms than I/B/E/S suggests, while only 21 analysts report following fewer firms than I/B/E/S indicates.

TABLE 1

Survey Responses to the Question: How Useful Are the Following for Determining Your Earnings Forecasts (Stock Recommendations)?

Panel A: Summary statistics for the EF version

Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Useful (5 or 6)	% of Respondents Who Answered: Not Useful (0 or 1)
(1) Your industry knowledge	5.15	2–11	79.35	0.54
(2) Private communication with management	4.70	5–11	65.76	3.26
(3) Earnings conference calls	4.67	5–11	61.96	1.63
(4) Management's earnings guidance	4.65	5–11	61.41	1.63
(5) Quality or reputation of management	4.22	9–11	46.45	2.73
(6) Recent earnings performance	4.18	9–11	41.30	3.26
(7) Recent 10-K or 10-Q	4.16	9–11	42.39	4.89
(8) Primary research (e.g., channel checks, surveys, etc.)	3.96	9–11	46.20	14.13
(9) Other analysts' earnings forecasts[a]	2.16	11	7.07	36.41
(10) Your stock recommendation[a]	2.06	11	7.07	42.39
(11) Recent stock price performance	1.72	–	3.80	46.74
Total possible $N = 184$				

(Continued)

Column 1 reports the average rating, where higher values correspond to greater usefulness. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating usefulness of 5 or 6 (0 or 1).

TABLE 1—*Continued*

Panel B: Summary statistics for the SR version

	Responses	Average Rating	Significantly Greater Than	EF vs. SR	% of Respondents Who Answered: Very Useful (5 or 6)	% of Respondents Who Answered: Not Useful (0 or 1)
(1)	Your industry knowledge	5.31	2–11	1.83†	83.43	0.00
(2)	Your earnings forecast[a]	4.92	4–11	19.10†††	73.33	1.67
(3)	Private communication with management	4.84	4–11	0.99	72.22	4.44
(4)	Quality or reputation of management	4.56	5–11	2.67†††	56.67	1.67
(5)	Primary research (e.g., channel checks, surveys, etc.)	4.21	10–11	1.45	50.28	6.08
(6)	Earnings conference calls	3.98	10–11	5.50***	34.25	3.87
(7)	Recent earnings performance	3.92	10–11	1.86*	32.60	4.97
(8)	Recent 10-K or 10-Q	3.90	10–11	1.72*	38.67	9.39
(9)	Management's earnings guidance	3.87	10–11	5.93***	33.70	6.63
(10)	Recent stock price performance	3.27	11	9.69†††	21.11	15.56
(11)	Other analysts' stock recommendations[a]	1.56	–	4.08***	2.22	54.44
	Total possible $N = 181$					

[a]The wording of these responses is different across the two versions of the survey because one version refers to earnings forecasts (panel A) and the other version refers to stock recommendations (panel B).

Column 1 reports the average rating, where higher values correspond to greater likelihood. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the other items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 reports the results of a *t*-test of the null hypothesis that the average rating is the same across both the earnings forecast and stock recommendation versions of the survey. ***, **, and * (†††,††, and †) indicate that the average rating in the EF (SR) version of the survey is significantly larger at the 1%, 5%, and 10% level, respectively. Column 4 (5) presents the percentage of respondents indicating usefulness of 5 or 6 (0 or 1).

other analysts do, offering a possible explanation for Ertimur, Sunder, and Sunder's [2007] finding that analysts at large brokerage houses issue more profitable stock recommendations.

More than 70% of analysts indicate that their own earnings forecasts are a very useful input to their stock recommendations, consistent with our evidence in table 10 that analysts' most important motivation for issuing accurate earnings forecasts is to use them as inputs to their own stock recommendations. Our findings reveal that analysts' earnings forecasts are useful not only as a stand-alone output but also as an input to their stock recommendations.

Stock prices are a leading indicator of future earnings (Beaver, Lambert, and Morse [1980], Basu [1997]), and prior research indicates analysts' earnings forecasts do not fully reflect the information in prior stock price changes (Lys and Sohn [1990], Abarbanell [1991]). Similarly, our respondents indicate that recent stock price performance is not particularly useful for determining their earnings forecasts.

Although analysts generally report that other analysts' earnings forecasts (stock recommendations) are not useful for determining their own earnings forecasts (stock recommendations), some interviewees said they sometimes examine other analysts' reports.[13] One said the main reason his team looks at other analysts' estimates is to remove stale earnings forecasts from the consensus. Another reported, "Some analysts are just better than others, so I watch them more closely. If I notice that they're very light on an estimate, then it gives me pause. I say, 'Why am I 10 cents above this guy?' And I go back and look, and I say, 'Am I still comfortable that I did it right?' I'm not going to change it, but I am going to double-check. This isn't an idiot, and he's 10 cents below me. Why is that?"

One analyst stated, "You keep an eye on the outliers, because a lot of times if people do have a contrarian opinion, it's interesting to see how they're thinking about it." Another analyst said, "We don't care about other analysts' stock ratings. We never look. But we do care about where estimates come out after the quarter, especially for new companies . . . If we're off, and we don't have a non-consensus view on something, we ask, 'OK, why are we this low?' And usually there's a reason why, and that's OK. But if there's not, it's a red flag to us that maybe we're overlooking part of the story or making an error." Consistent with prior research on herding in analyst earnings forecasts (Trueman [1994], Welch [2000], Clement and Tse [2005]), our comparison of responses to the twin questions reveals that

[13] One inherent difficulty with surveys is that respondents may be reluctant to disclose the full extent of certain beliefs or practices if they perceive that such disclosure could result in an unfavorable portrayal of them or their profession. Despite evidence of herding behavior among sell-side analysts in the literature, our respondents give other analysts' earnings forecasts and stock recommendations low ratings in terms of their usefulness as inputs to their own forecasts and recommendations. We cannot rule out the possibility that analysts biased their responses downward to avoid appearing to rely heavily on other analysts.

analysts find other analysts' earnings forecasts more useful than other analysts' stock recommendations.[14]

3.2.2. How Often Do You Use the Following Valuation Models to Support Your Stock Recommendations? (Table 2). Consistent with Bradshaw [2004], most analysts state that they very frequently rely on price-earnings (P/E) or price-earnings-growth (PEG) models to support their stock recommendations. Reliance on P/E or PEG models implies that analysts' earnings forecasts are a key factor in their valuation models, consistent with our result in table 10 that analysts' most important motivation for issuing accurate earnings forecasts is to use their forecasts as an input to their stock recommendations. We also find that most analysts frequently use cash flow models but use the other five models much less frequently.

3.3 COMMUNICATION WITH MANAGEMENT

Although prior research examines the role of analysts' communication with company management (Chen and Matsumoto [2006], Ke and Yu [2006], Soltes [2014]), several important questions remain unanswered, such as the usefulness of private communication with management *relative to* other inputs analysts employ, the frequency of analysts' communication with management, and the relative usefulness of different venues for contact with management. We asked analysts several questions to address these issues.

3.3.1. How Often Do You Have Direct Contact with the CEO or CFO of the Typical Company You Cover? (Online Appendix). Among our responding analysts, 98.4% say they have direct contact with the CEO or CFO of the typical firm they cover at least once a year, and 53.2% have direct contact at least five times a year. Although our interviewees said Reg FD was a "game changer" that profoundly affected the way management communicates with analysts, several stated that managers are more accessible now than when Reg FD was first implemented. One analyst described the changes from the pre–Reg FD period to today as follows: "There was a lot of backroom chatter before Reg FD. Now management has figured out how to 'paper things up' [with an 8-K]. So now we're almost back to where we were pre–Reg FD, but not quite because that backroom chatter is shut down. It's just now it's not in the backroom; it's everywhere."

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[14] To determine whether we can reliably compare answers to twin questions in the EF and SR versions of our survey, we test whether respondents to the two versions of the survey provide similar answers to the five common questions discussed earlier. The respondents to the EF and SR versions of the survey provide virtually identical answers to the five common questions. Specifically, for each of the 39 choices available in these questions, we compare the average rating between the EF respondents and the SR respondents. Untabulated t-tests reveal no significant differences between the two groups at the 1% level, no significant differences between the two groups at the 5% level, and only three significant differences between the two groups at the 10% level. Establishing the similarity of these two groups of analysts enables us to reliably compare answers to twin questions in the two versions of our survey.

TABLE 2

Survey Responses to the Question: How Often Do You Use the Following Valuation Models to Support Your Stock Recommendations?

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Frequently (5 or 6)	% of Respondents Who Answered: Very Infrequently (0 or 1)
(1)	Price/earnings (P/E) or Price/earnings growth (PEG) model	4.42	3–7	61.33	12.15
(2)	Cash flow model	4.37	3–7	60.22	12.15
(3)	Dividend discount model	1.76	5–7	12.22	53.67
(4)	A model based on earnings momentum or earnings surprises	1.53	7	9.44	62.22
(5)	Economic value added (EVA) model	1.34	7	7.73	69.06
(6)	Residual income model	1.14	7	4.97	69.61
(7)	A model based on stock price and volume patterns	0.67	–	2.76	83.43
	Total possible $N = 181$				

Column 1 reports the average rating, where higher values correspond to greater frequency. Column 2 reports the results of t-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted p-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating frequency of 5 or 6 (0 or 1).

Another analyst reported that buy-side clients believe the insights of sell-side analysts are more valuable when analysts have direct contact with management: "Regardless of Reg FD, investors value analysts' direct contacts with management more than anything. As an analyst, if I call up a money manager, a hedge fund, whoever, and I've got a call to make on a stock, and I'm able to say, 'Hey, by the way, we were able to spend 20–30 minutes talking to senior management,' boom! Their ears are just straight up."

One analyst provided an interesting anecdote about the extent to which some brokerage houses go in order to understand how to read cues from management in the post–Reg FD environment: "We had an FBI profiler come in, and all the analysts and portfolio managers spent four hours with this profiler trying to understand how to read management teams, to tell when they're lying, to tell when they were uncomfortable with a question. That's how serious this whole issue has become." Although the evidence in section 3.4.2 suggests analysts do not focus on uncovering intentional misrepresentation in the financial statements, this interview anecdote is consistent with recent empirical research suggesting senior management's vocal cues can be used to assess firms' future prospects (Mayew and Venkatachalam [2012]).

3.3.2. How Useful Are the Following Types of Direct Contact with Management for the Purpose of Generating Your Earnings Forecasts/Stock Recommendations? (Table 3). More than 66% (72%) of analysts report that *private phone calls* are a very useful source of direct contact with management for the purpose of generating their earnings forecasts (stock recommendations), reinforcing our findings that analyst communication with management is both frequent (section 3.3.1) and useful (section 3.2.1). Analysts say private phone calls with management are at least as useful as other venues examined by recent research, including earnings conference calls, company investor day events, and conferences sponsored by brokerage houses (Green et al. [2014], Kirk and Markov [2014], Mayew, Sharp, and Venkatachalam [2013]).

Our cross-sectional evidence reveals that analysts for whom hedge funds are an important client are more likely to indicate that private phone calls with management are useful for their earnings forecasts.[15] If private phone calls with managers provide analysts with an information advantage, our results suggest analysts catering to hedge funds are likely to make superior earnings forecasts.

We used our interviews to inquire into the nature, timing, and content of analysts' private phone calls with management. Consistent with the results of our survey, our interviewees reported having private phone calls with

[15] Solomon and Soltes [2013] find that hedge funds are more likely than other investors to benefit from private meetings with managers, which they attribute to hedge funds' superior ability to process the information disclosed in private meetings or to their having possession of other information that makes the discussions in meetings especially valuable.

TABLE 3

Survey Responses to the Question: How Useful Are the Following Types of Direct Contact with Management for the Purpose of Generating Your Earnings Forecasts (Stock Recommendations)?

Panel A: Summary statistics for the EF version

Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Useful (5 or 6)	% of Respondents Who Answered: Not Useful (0 or 1)
(1) Private phone calls with management	4.71	3–8	66.48	7.69
(2) The Q&A portion of earnings conference calls	4.60	3–8	58.79	7.69
(3) Company investor day events	4.36	7–8	50.00	5.49
(4) Management's presentation on earnings conference calls	4.34	7–8	46.96	2.76
(5) Company or plant visits	4.19	7–8	46.15	7.14
(6) Road shows	4.13	7–8	48.90	10.44
(7) Industry conferences	3.55	8	26.92	9.34
(8) Conferences sponsored by your employer	3.14	–	21.43	20.33
Total possible $N = 182$				

Column 1 reports the average rating, where higher values correspond to greater likelihood. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating usefulness of 5 or 6 (0 or 1).

(Continued)

TABLE 3—*Continued*

Panel B: Summary statistics for the SR version

	Responses	Average Rating	Significantly Greater Than	EF vs. SR	% of Respondents Who Answered: Very Useful (5 or 6)	% of Respondents Who Answered: Not Useful (0 or 1)
(1)	Private phone calls with management	4.98	3–8	1.86†	72.38	3.31
(2)	Company or plant visits	4.79	4–8	3.89††	65.56	3.33
(3)	Road shows	4.59	5–8	2.86†††	58.33	3.33
(4)	Company investor day events	4.34	5–8	0.10	48.07	2.76
(5)	The Q&A portion of earnings conference calls	4.00	8	4.42***	36.44	4.42
(6)	Industry conferences	3.76	–	1.42	28.73	4.97
(7)	Conferences sponsored by your employer	3.74	–	3.48†††	32.60	10.50
(8)	Management's presentation on earnings conference calls	3.66	–	4.76***	27.07	6.63
	Total possible $N = 181$					

Column 1 reports the average rating, where higher values correspond to greater usefulness. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the other items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 reports the results of a *t*-test of the null hypothesis that the average rating is the same across both the earnings forecast and stock recommendation versions of the survey. ***, **, and * (†††,††, and †) indicate that the average rating in the EF (SR) version of the survey is significantly larger at the 1%, 5%, and 10% level, respectively. Column 4 (5) presents the percentage of respondents indicating usefulness of 5 or 6 (0 or 1).

senior management—most often the CFO—at least quarterly.[16] Many analysts said companies schedule analyst "call-backs" immediately after their public earnings conference calls: one-on-one, private calls from the CFO, who answers additional questions from individual analysts.

Several analysts discussed the importance of these follow-up calls. One analyst suggested the order of calls is based on the analysts' valuations of the company: "Management will call the analysts who are at the low end of their valuation, if they want the stock to move up. By the order in which management calls analysts, they can move the consensus to where they want it to be."[17]

Another analyst explained the benefits of private calls as follows: "In private conversations with management, you get details that they're not necessarily going to go into on a public call with investors. They might be more willing to share that with us because we can then go to clients and say, 'This is our understanding of the situation. This is what the company says; this is what we think.' It's a way for them to broadcast. We're sort of like a megaphone for them."

Another said, "We ask for qualitative thoughts and insights into industry trends or specific business lines, just so that we're also double-checking our own thought processes and that our models are solid." Consistent with empirical evidence (Mayew and Venkatachalam [2012], Hobson, Mayew, and Venkatachalam [2012]), one analyst reported, "The CEO and CFO, you can read their body language—even on the phone—and get a feel for how optimistic they are or how realistic something might be. And it's really that kind of information you're looking for—it's not something specific that they wouldn't tell someone else." This same analyst went on to say, "For the calls around the earnings calls, a lot of management teams want to call all the analysts and say, 'Did you understand what happened? Do you have any questions? Was anything confusing about the results themselves? Before you write your note, are you thinking badly about this? Can we maybe talk with you about it so you don't think so badly about it?'" Finally, another analyst described the information discussed on the private calls as follows, "It's not nonpublic material information; it's clarification of points. They help you digest the information a little bit better." Thus, our interviewees suggested that the follow-up calls they receive from management after public earnings conference calls are a valuable source of information.

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[16] In contrast, Solomon and Soltes [2013] report that the investor relations officer and the CEO of a single mid-cap company were more likely than the CFO to meet with institutional investors in one-on-one meetings.

[17] It is plausible that managers use a similar technique to walk down analysts' earnings forecasts (Richardson, Teoh, and Wysocki [2004], Libby et al. [2008]). In this scenario, a manager seeking to lower the consensus forecast would first call the analyst with the highest earnings forecast, pointing out, among other things, that every other analyst has a lower forecast. Following this initial call, the manager would then call the analyst with the next-highest forecast and use a similar line of reasoning to encourage the analyst to lower his or her forecast, and so on.

In spite of restrictions on selective disclosure enacted through Reg FD in October 2000, our findings are consistent with a provision of Reg FD that allows managers to disclose immaterial information to an analyst that "helps the analyst complete a 'mosaic' of information that, taken together, is material" (Securities and Exchange Commission [2000]). In other words, information analysts obtain *privately* from management can become useful within the context of other information the analyst already possesses. Thus, while our findings do not constitute direct evidence of violations of Reg FD, they do show that information conveyed in private conversations with management is extremely valuable to sell-side analysts in the post–Reg FD environment.[18]

Although academic research finds evidence consistent with the notion that analysts who ask questions on earnings conference calls are either highly favored by management (Mayew [2008]) or possess superior information about the firm (Mayew, Sharp, and Venkatachalam [2013]), some analysts told us they *purposely avoid* asking questions on public conference calls. One analyst stated, "There are three things that can happen when you ask a question on an earnings conference call: one, you sound like a complete idiot; two, they give you no information at all; and three, you get a really insightful answer except you've just shared it with all your competition. So I don't ask questions on calls."

A comparison of responses to these twin questions reveals that the Q&A portion of earnings conference calls and management's presentation on earnings conference calls are more useful for generating earnings forecasts than stock recommendations. In contrast, company or plant visits, road shows, and conferences sponsored by their employers are more useful for generating stock recommendations than earnings forecasts.

3.4 ASSESSMENTS OF FINANCIAL REPORTING QUALITY

Recent survey evidence sheds light on the perspective of CFOs regarding earnings quality (Dichev et al. [2013]). However, CFOs' views on this topic are likely influenced by financial reporting concerns. For example, CFOs have incentives related to compensation, litigation risk, or the firm's stock price, which could create a preference for managed earnings and bias their responses to questions about earnings quality (Dechow et al. [2010], Nelson and Skinner [2013]). In contrast, analysts are an important source of information for their investing clients (Brown et al. [2014]) and have incentives to identify attributes of high-quality earnings, because incorrect assessments of earnings quality could result in economic losses for their clients and have an adverse effect on their own reputation and compensation. Thus, because analysts' views on earnings quality are likely to be more informative than those of financial statement preparers (Nelson and

[18] This evidence is similar to what Solomon and Soltes [2013] report with respect to the value of private meetings with management to institutional investors.

Skinner [2013]), we asked analysts for their views on various financial reporting issues.

3.4.1. How Important Are the Following to Your Assessment of Whether a Company's "Quality" of Reported Earnings Is High? (Table 4). Analysts respond that "high-quality" earnings are backed by operating cash flows (Sloan [1996]), are sustainable and repeatable, reflect economic reality, and reflect consistent reporting choices over time. In contrast to the views of CFOs surveyed by Dichev et al. [2013] who rate avoidance of long-term estimates as an important factor in assessing earnings quality (2nd of 12 choices), analysts rate it much lower (10th of our 12 choices). This finding underscores Nelson and Skinner's [2013] concern that CFOs' preference for earnings that are free of long-term estimates may reflect their bias toward earnings that are easy to explain to external parties rather than representing the views of users of accounting information.

The lowest rated responses are that earnings are less volatile than operating cash flows and that the company is audited by one of the Big 4. Analysts view a Big 4 audit as relatively unimportant (12th of 12 choices), contrasting with research that indicates a Big 4 audit is associated with high-quality earnings (Khurana and Raman [2004], Behn, Choi, and Kang [2008]). However, analysts who primarily follow companies with Big 4 auditors may not view a Big 4 auditor as a distinguishing feature.

Our cross-sectional evidence shows that, consistent with their training, analysts with a bachelor's degree in accounting are more likely to consider a Big 4 audit a sign of high-quality earnings. *II* All-Stars, who receive votes from buy-side analysts and portfolio managers for providing the best equity research, are less likely than other analysts to believe many of the constructs the literature associates with high-quality earnings (e.g., earnings are backed by operating cash flows, are sustainable and repeatable, are less volatile than operating cash flows, and are predictive of future cash flows and earnings) are important.

3.4.2. To What Extent Do You Believe the Following Indicate Management Effort to Intentionally Misrepresent the Financial Statements? (Table 5). We asked analysts about the extent to which they believe potential "red flags" of misreporting indicate management effort to intentionally misrepresent financial statements. Financial statement users, such as analysts and investors, are likely to have more informative views on this topic than financial statement preparers because CFOs often have incentives to manage earnings and may have biased views of the indicators of financial misrepresentation (Nelson and Skinner [2013]). Although prior research suggests recent management turnover, consistently meeting or beating earnings targets, management wealth being closely tied to stock price, and recent auditor turnover are signals of financial misrepresentation (e.g., Krishnan and Krishnan [1997], Desai, Hogan, and Wilkins [2006], Efendi, Srivastava, and Swanson [2007], Myers, Myers, and Skinner [2007]), these items received relatively low

TABLE 4

Survey Responses to the Question: How Important Are the Following to Your Assessment of Whether a Company's "Quality" of Reported Earnings Is High?

				% of Respondents Who Answered	
	Responses	Average Rating	Significantly Greater Than	Very Important (5 or 6)	Not Important (0 or 1)
(1)	Earnings are backed by operating cash flows	4.67	5–12	64.29	2.20
(2)	Earnings are sustainable and repeatable	4.46	6–12	56.04	3.85
(3)	Earnings reflect economic reality	4.44	6–12	57.69	3.20
(4)	Earnings reflect consistent reporting choices over time	4.42	6–12	56.04	3.30
(5)	Company managers have high integrity or moral character	4.29	7–12	49.45	3.85
(6)	Earnings are free from one-time or special items	4.05	9–12	46.70	10.99
(7)	Earnings can predict future cash flows	3.85	10–12	38.25	9.29
(8)	Company has strong corporate governance	3.78	10–12	36.07	7.10
(9)	Earnings can predict future earnings	3.63	10–12	31.69	9.84
(10)	Earnings are not highly dependent on long-term estimates	3.21	11–12	24.58	15.64
(11)	Earnings are less volatile than operating cash flows	2.90	–	16.67	24.44
(12)	Company is audited by a Big 4 auditor	2.62	–	15.38	29.12
	Total possible $N = 183$				

Column 1 reports the average rating, where higher values correspond to greater importance. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating importance of 5 or 6 (0 or 1).

TABLE 5

Survey Responses to the Question: To What Extent Do You Believe the Following Indicate Management Effort to Intentionally Misrepresent the Financial Statements?

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Strongly Believe (5 or 6)	% of Respondents Who Answered: Do Not Believe (0 or 1)
(1)	Company has weak corporate governance	3.55	4–12	31.84	11.17
(2)	Company has a material internal control weakness	3.55	4–12	29.05	12.29
(3)	Large or frequent one-time items or special items	3.47	4–12	29.05	15.08
(4)	Large gap between earnings and operating cash flows	3.09	10–12	19.32	20.45
(5)	Company recently restated earnings	2.93	11–12	16.11	20.56
(6)	Company consistently reports smooth earnings	2.88	11–12	17.78	23.33
(7)	Deviations from industry or peer norms	2.85	11–12	14.53	21.23
(8)	Management is overconfident and/or overly optimistic	2.83	11–12	16.67	23.33
(9)	Recent auditor turnover	2.77	12	12.78	28.33
(10)	Management wealth is closely tied to stock price	2.64	–	13.33	28.33
(11)	Company consistently meets or beats earnings targets	2.48	–	12.29	30.17
(12)	Recent management turnover	2.34	–	7.22	34.44
	Total possible $N = 180$				

Column 1 reports the average rating, where higher values correspond to greater likelihood. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating likelihood of 5 or 6 (0 or 1).

ratings from analysts.[19] Instead, analysts consider weak corporate governance, internal control deficiencies, and large one-time or special items to be more indicative of financial reporting irregularities. When we compare analysts' responses with the responses of CFOs of public companies regarding red flags of misreporting (Dichev et al. [2013]), it is evident that managers and analysts have widely divergent views.[20]

In follow-up interviews, we asked analysts directly about their attention to "red flags" of potential misreporting. Most responded that they exert little effort trying to determine whether firms misreport earnings. Prior research provides evidence that sell-side analysts play a role in uncovering corporate fraud (Dyck, Morse, and Zingales [2010]), but analysts say it is not their job to look for earnings manipulation (Abarbanell and Lehavy [2003]). Financial misrepresentation is often difficult to detect, and analysts' buy-side clients value industry-level insights above all other services sell-side analysts provide; therefore, sell-side analysts are unlikely to have incentives to try to uncover firm-specific financial misrepresentation.

On the topic of intentional financial misrepresentation, one analyst said he "takes the financial statements at face value," because it is extremely difficult to uncover intentional misconduct. Another said, "It's up to the auditor to catch that . . . If they were able to fool the auditor into a clean audit opinion, I'm never going to be able to catch it just from the information that's in a Q or a K." Another analyst said that, if a company has audited financial statements, "It's somebody else's job to figure out if the information they're giving us is correct. We have to take that on faith." We note, however, that our collective evidence does not imply that analysts ignore more benign forms of earnings management (e.g., within-GAAP discretion to manage earnings). Indeed, as discussed in section 3.4.1, analysts prefer earnings that are backed by operating cash flows, that are sustainable, and that reflect economic reality, suggesting analysts could actually rein in earnings management before it escalates into more egregious misrepresentations of the financial statements (Schrand and Zechman [2012]).

Our cross-sectional evidence provides additional evidence that analysts are not a strong line of defense against financial reporting irregularities. *II* All-Stars and analysts employed at large brokerage houses are less likely than other analysts to be concerned with many common signs of financial statement misrepresentation, suggesting uncovering intentional financial misrepresentation is not a priority for even highly regarded analysts.

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[19] If analysts are complicit in the "numbers game" that results in companies consistently meeting or beating earnings targets, they may be reluctant to respond that consistently meeting or beating earnings targets is a "red flag" of intentional financial misrepresentation.

[20] For example, analysts rate material internal control weakness as an important red flag of misreporting (2nd of 12 choices), but internal control weaknesses do not make the list of 20 types of red flags mentioned by CFOs in Dichev et al.'s table 14. Moreover, that the company consistently meets or beats earnings targets receives little support from analysts (11th of 12 choices) but strong support from CFOs as a red flag of misreporting (3rd of 20 choices).

3.4.3. How Likely Are You to Take the Following Actions if You Observe a "Red Flag" of Management Effort to Intentionally Misrepresent the Financial Statements? (Online Appendix). The two most common actions analysts take when observing a "red flag" of management effort to intentionally misrepresent financial statements are to seek additional information from management and to seek additional information from nonmanagement sources. While not nearly as prevalent as the first two actions, more than half of our surveyed analysts say they are very likely to revise their stock recommendations and earnings forecasts downwards after observing a "red flag" of intentional misrepresentation. The only action analysts say they are unlikely to take is to cease covering the firm.

3.4.4. How Often Do You Exclude the Following Components of GAAP Earnings When Forecasting Street Earnings? (Table 6). A majority of analysts very frequently exclude extraordinary items, discontinued items, restructuring charges, and asset impairments when forecasting "street earnings," but most include amortization, changes in working capital, and depreciation in these forecasts. These findings shed light on the earnings components analysts include in their forecasts and are of interest given the importance of "street" earnings as a determinant of stock prices (Bradshaw and Sloan [2002]).

3.4.5. Do You Exclude Components of GAAP Earnings from Your Forecast of "Street" Earnings for the Following Reasons? (Table 7). The primary reason analysts exclude components of GAAP earnings from their forecasts of "street" earnings is their belief that the component is nonrecurring. In addition, nearly half say they exclude components of GAAP earnings because of their desire to improve earnings forecast accuracy.

3.5 DETERMINANTS OF ANALYSTS' CAREER SUCCESS

In contrast to archival studies that must infer analysts' incentives from observed statistical associations, we asked analysts directly about the factors that determine their compensation and the importance of various analyst rankings for their career advancement.

3.5.1. How Important Are the Following to Your Compensation? (Table 8). II surveys suggest institutional investors highly value sell-side analysts' industry knowledge, so it is reasonable for brokerage houses to compensate sell-side analysts for the industry knowledge they provide to institutional investors, their most important clients (see table 12). Indeed, sell-side analysts rate industry knowledge and their standing in analyst rankings or broker votes as the most important determinants of their compensation.[21] Broker votes are a process whereby buy-side portfolio managers and buy-side analysts vote to

[21] Our cross-sectional evidence reveals that experienced analysts are more likely to state that industry knowledge is important to their compensation, in contrast to MBAs, who are less likely to make this statement.

TABLE 6

Survey Responses to the Question: How Often Do You Exclude the Following Components of GAAP Earnings When Forecasting "Street" Earnings?

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Frequently (5 or 6)	% of Respondents Who Answered: Very Infrequently (0 or 1)
(1)	Extraordinary items	4.81	3–10	71.04	4.92
(2)	Discontinued items	4.60	4–10	63.74	9.34
(3)	Restructuring charges	4.34	5–10	57.69	8.79
(4)	Asset impairments	4.17	5–10	55.74	13.11
(5)	Cumulative effect of accounting changes	3.67	7–10	41.11	17.78
(6)	Nonoperating items	3.63	7–10	39.78	18.78
(7)	Stock option expense	2.35	8–10	25.41	48.07
(8)	Amortization	1.90	10–11	17.78	56.67
(9)	Changes in working capital	1.41	–	12.78	66.67
(10)	Depreciation	1.28	–	11.80	70.79
	Total possible $N = 183$				

Column 1 reports the average rating, where higher values correspond to greater frequency. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating frequency of 5 or 6 (0 or 1).

TABLE 7

Survey Responses to the Question: Do You Exclude Components of GAAP Earnings from Your Forecast of "Street" Earnings for the Following Reasons?

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Frequently (5 or 6)	% of Respondents Who Answered: Very Infrequently (0 or 1)
(1)	Because you believe the component is "nonrecurring"	4.51	2–5	61.33	7.18
(2)	Because you believe excluding the component improves your earnings forecast accuracy	3.86	4–5	49.72	14.92
(3)	Because you want to be consistent with management guidance	3.41	–	37.22	22.22
(4)	Because you want to be consistent with other sell-side analysts	3.27	–	36.11	24.44
(5)	Because you want to be consistent with communication from I/B/E/S, First Call, Zacks, or S&P	3.09	–	36.11	31.11
	Total possible $N = 181$				

Column 1 reports the average rating, where higher values correspond to greater frequency. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating frequency of 5 or 6 (0 or 1).

TABLE 8

Survey Responses to the Question: How Important Are the Following to Your Compensation?

Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Important (5 or 6)	% of Respondents Who Answered: Not Important (0 or 1)
(1) Your industry knowledge	4.95	3–9	72.18	1.93
(2) Your standing in analyst rankings or broker votes	4.73	5–9	66.85	4.97
(3) Your accessibility and/or responsiveness	4.73	5–9	63.54	2.21
(4) Your professional integrity	4.69	5–9	63.99	3.60
(5) Your written reports	4.17	7–9	38.95	2.76
(6) Your relationship with management of the companies you follow	4.14	8–9	44.63	7.16
(7) The profitability of your stock recommendations	3.94	9	35.08	5.52
(8) Your success at generating underwriting business or trading commissions	3.65	–	44.20	20.17
(9) The accuracy and timeliness of your earnings forecasts	3.59	–	24.10	7.76
Total possible $N = 363$				

Column 1 reports the average rating, where higher values correspond to greater importance. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating importance of 5 or 6 (0 or 1).

assess the value of research services from sell-side brokerage houses and to determine how to allocate research commissions. Two-thirds of analysts indicate their standing in analyst rankings or broker votes is very important, while fewer than 5% say it is not important to their compensation. Experienced analysts and analysts from large brokerage houses are more likely to say their standing in analyst rankings or broker votes is important to their compensation, consistent with evidence that these analysts are more likely to become *II* All-Stars (Rees, Sharp, and Wong [2014b]).

Industry knowledge is potentially important to analysts' compensation for several reasons. First, providing buy-side analysts with industry knowledge helps sell-side analysts generate broker votes. Second, analysts who are industry experts are more likely to develop investment banking relationships, which are important to their employers. Third, institutional investors highly value sell-side analysts' industry knowledge, suggesting brokerage houses likely reward industry experts in an effort to prevent them from being hired away by competitors.

Although its average rating is relatively low, 44% of analysts say their success at generating underwriting business or trading commissions is very important to their compensation. This result suggests conflicts of interest remain a persistent issue for a substantial number of sell-side analysts.[22] Finally, although the accuracy and timeliness of analysts' earnings forecasts and the profitability of their stock recommendations receive relatively low average ratings, 35% and 24% of our respondents, respectively, say they are very important determinants of their compensation. Retail-focused analysts are more likely to say the accuracy and timeliness of their earnings forecasts are important to their compensation, suggesting that they are more motivated to make accurate and timely earnings forecasts.

3.5.2. How Important Are the Following Analyst Rankings for Your Career Advancement? (Table 9). Although much of the prior literature on analyst rankings emphasizes the *II* All-America Research Team awards (Stickel [1992], Cox and Kleiman [2000], Leone and Wu [2007], Rees, Sharp, and Twedt [2014a]), analysts indicate that broker or client votes are significantly more important to their career advancement than the *II* awards.[23] More than

[22] Jack Grubman (2013), the highest paid sell-side analyst on Wall Street before being permanently banned from the securities industry for simultaneously advising both firms and investors, recently suggested the analyst industry has changed in form but not in substance. As an example, he says that, prior to the reforms of the past decade, an investment banker and a research analyst would hold a single meeting with management in an attempt to secure the firm's underwriting business. Now, he says, there are two meetings instead of one—one meeting in which the investment banker meets with management to try to gain the firm's underwriting business and another meeting in which the research analyst meets with management and makes another pitch for the underwriting business.

[23] In cross-sectional tests, we find that, although *II* All-Stars are more likely than other analysts to state that being an *II* All-Star is important for their career advancement, both *II* All-Stars and non–*II* All-Stars consider broker votes to be equally important for their career advancement.

TABLE 9

Survey Responses to the Question: How Important Are the Following Analyst Rankings for Your Career Advancement?

Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Important (5 or 6)	% of Respondents Who Answered: Not Important (0 or 1)
(1) Broker or Client votes	5.13	2–5	82.74	7.12
(2) *Institutional Investor*'s All-American Research Team	3.28	3–5	37.29	28.45
(3) *The Wall Street Journal*'s Survey of Award Winning Analysts	2.48	5	15.15	35.26
(4) Star Mine Analyst Awards	2.32	5	10.74	37.19
(5) Zacks All-Star Analyst Ratings	1.48	–	3.02	59.89
Total possible $N = 365$				

Buy-side portfolio managers and buy-side analysts award broker or client votes to sell-side brokerages based on the value of the research the brokerages' analysts provide. Column 1 reports the average rating, where higher values correspond to greater importance. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating importance of 5 or 6 (0 or 1).

twice as many analysts indicate that broker or client votes are important for career advancement (83%) than say the same thing about *II* status (37%). Researchers who seek to obtain more powerful tests of analyst rankings should use broker or client votes in lieu of *II* awards, if they are able to access the relevant data.

The analysts we interviewed explained why broker or client votes are so important for their career advancement. Broker votes translate directly into revenue from the sell-side analysts' clients to their employers (Maber, Groysberg, and Healy [2014]), and several stated that their bonuses are directly affected by broker votes. One analyst stated, "The part to me that's shocking about the industry is that I came into the industry thinking [success] would be based on how well my stock picks do. But a lot of it ends up being 'What are your broker votes?'" Another analyst said, "Broker votes have become very important in this business, not necessarily just to the analysts, but to the sales and trading part of the equation, too." Another analyst remarked, "Broker votes translate into revenue for my firm. They directly impact my compensation and directly impact my firm's compensation." Going further, the analyst stated: "25% of the allocation of our bonus pool is based on broker votes." These comments highlight analysts' incentives to satisfy their investing clients (Firth et al. [2013]).

We also asked analysts about the benefits of being an *II* All-Star. One analyst described it as "your external stamp of approval" and, consistent with prior research, said that, because the *II* results are visible to outsiders, "Your access to management teams is greatly increased by your *II* ranking" (Mayew [2008], Soltes [2014]). Another said, "The *II* rankings . . . give you significant leverage within your own firm" because *II*-rated analysts can easily find employment elsewhere. In summary, analysts indicate that, although broker votes are more important than *II* rankings for their career advancement, both forms of recognition provide analysts with valuable benefits (Groysberg, Healy, and Maber [2011]).

3.6 INFLUENCES ON EARNINGS FORECASTS AND STOCK RECOMMENDATIONS

Although academic researchers and market participants focus heavily on analysts' earnings forecasts (Mikhail, Walther, and Willis [1999], Hong and Kubik [2003], Call, Chen, and Tong [2009]) and stock recommendations ([Womack [1996], Francis and Soffer [1997], Bradshaw [2004]), relatively little is known about analysts' motivation for issuing accurate earnings forecasts and profitable stock recommendations. In addition to examining these issues, we consider the consequences to analysts who issue below-consensus earnings forecasts and stock recommendations and the internal pressures they face to alter their research outputs.

3.6.1. How Important Are the Following in Motivating You to Accurately Forecast Earnings/Make Profitable Stock Recommendations? (Table 10). Consistent with research suggesting analysts' stock recommendations are more profitable when supported by accurate earnings forecasts (Loh and Mian

TABLE 10

Survey Responses to the Question: How Important Are the Following in Motivating You to Accurately Forecast Earnings (Make Profitable Stock Recommendations)?

Panel A: Summary statistics for the EF version

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Important (5 or 6)	% of Respondents Who Answered: Not Important (0 or 1)
(1)	Your earnings forecast as an input to your stock recommendation[a]	4.77	2–7	66.48	3.30
(2)	Demand from your clients	4.45	3–7	59.34	6.04
(3)	Your reputation with management of the companies you follow	3.94	4–7	40.88	8.84
(4)	Your standing in analyst rankings	3.40	6–7	32.42	17.03
(5)	Your job security	3.04	–	23.63	21.43
(6)	Your compensation	2.82	–	14.92	22.10
(7)	Your job mobility	2.72	–	18.13	28.02
	Total possible $N = 182$				

Column 1 reports the average rating, where higher values correspond to greater importance. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating importance of 5 or 6 (0 or 1).

(Continued)

TABLE 10—*Continued*

Panel B: Summary statistics for the SR version

	Responses	Average Rating	Significantly Greater Than	EF vs. SR	% of Respondents Who Answered: Very Important (5 or 6)	% of Respondents Who Answered: Not Important (0 or 1)
(1)	Demand from your clients	4.34	2–7	0.69	53.04	8.84
(2)	Your standing in analyst rankings	3.92	5–7	2.71†††	47.51	13.81
(3)	Your compensation	3.78	5–7	5.11†††	43.33	17.22
(4)	Your job security	3.65	6–7	3.25†††	39.23	17.68
(5)	Your reputation with management of the companies you follow	3.44	7	2.93***	29.44	13.89
(6)	Your job mobility	3.29	–	2.94†††	30.39	19.89
(7)	Your stock recommendation as an input to your earnings forecast[a]	2.99	–	10.32***	25.14	23.46
	Total possible $N = 181$					

[a]The wording of these responses is different across the two versions of the survey because one version refers to earnings forecasts (panel A) and the other version refers to stock recommendations (panel B).

Column 1 reports the average rating, where higher values correspond to greater importance. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the other items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 reports the results of a *t*-test of the null hypothesis that the average rating is the same across both the earnings forecast and stock recommendation versions of the survey. ***, **, and * (†††,††, and †) indicate that the average rating in the EF (SR) version of the survey is significantly larger at the 1%, 5%, and 10% level, respectively. Column 4 (5) presents the percentage of respondents indicating usefulness of 5 or 6 (0 or 1).

[2006], Ertimur, Sunder, and Sunder [2007]), our surveyed analysts say their *single most important* motivation for issuing accurate earnings forecasts is for use as inputs to their stock recommendations. Female analysts are more likely to be motivated to issue accurate earnings forecasts for this purpose, consistent with evidence that they issue more accurate earnings forecasts than male analysts do (Kumar [2010]).

Demand from their clients is analysts' most important motivation for making profitable stock recommendations and their second most important motivation for issuing accurate earnings forecasts. Analysts' concerns about their standings in analyst rankings, compensation, job security, and job mobility are more important for motivating them to make profitable stock recommendations than to make accurate earnings forecasts.

3.6.2. How Likely Are the Following Consequences to You of Issuing Earnings Forecasts/Stock Recommendations That Are Well Below the Consensus? (Table 11). Collectively, the seven choices for the EF version of the survey received the lowest ratings of any question in our survey. The only response where more analysts believe the outcome is very likely than believe it is very unlikely is an increase in investing clients' perception of the analyst's credibility (the only *favorable* consequence we presented to the analysts). In contrast, far fewer analysts say the loss of access to management is very likely than say it is very unlikely. Our cross-sectional analyses suggest CFAs are less concerned about many negative repercussions of issuing earnings forecasts well below the consensus, suggesting they may be more likely to make bold, pessimistic forecasts.

In the SR version of the survey, "an increase in your investing clients' perception of your credibility" and "loss of access to management" are the two most likely consequences of issuing below-consensus stock recommendations. The fact that analysts perceive that the issuance of below-consensus stock recommendations improves their standing with investing clients underscores analysts' need to please not only the management of the companies they cover but also their investing clients.[24]

A comparison of responses between the two versions of the survey indicates that analysts believe issuing a below-consensus stock recommendation is more likely to lead to a loss of access to management than is issuing a below-consensus earnings forecast, possibly because issuing below-consensus earnings forecasts makes it easier for management to report a positive earnings surprise (Brown [2001], Richardson, Teoh, and Wysocki [2004], Graham, Harvey, and Rajgopal [2005], Ke and Yu [2006], Libby et al. [2008]). Our cross-sectional results reveal that female analysts are less concerned about lower bonus/compensation if they issue stock

[24] The upward bias in analysts' stock recommendations (Womack [1996], Barber et al. [2001], Chen and Matusmoto [2006], Mayew [2008]) is consistent with analysts' perception that a loss of access to management is a potential consequence of issuing below-consensus stock recommendations.

TABLE 11

Survey Responses to the Question: How Likely Are the Following Consequences to You of Issuing an Earnings Forecast (Stock Recommendation) that Is Well Below the Consensus?

Panel A: Summary statistics for the EF version

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Likely (5 or 6)	% of Respondents Who Answered: Very Unlikely (0 or 1)
(1)	An *increase* in your investing clients' perception of your credibility	3.16	2–7	21.43	18.13
(2)	Loss of access to management	2.53	3–7	16.48	32.97
(3)	Being "frozen out" of the Q&A portion of future conference calls	2.21	6–7	13.59	43.48
(4)	Damage to your employer's business relationship with buy-side clients who hold stock in the firm	1.94	6–7	6.01	43.17
(5)	Damage to your employer's business relationship with the company	1.92	6–7	7.61	47.28
(6)	Promotion less likely	0.76	–	1.63	77.72
(7)	Lower bonus/compensation	0.74	–	1.09	78.80
	Total possible $N = 184$				

Column 1 reports the average rating, where higher values correspond to greater likelihood. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating likelihood of 5 or 6 (0 or 1).

(Continued)

TABLE 11—*Continued*

Panel B: Summary statistics for the SR version

Responses	Average Rating	Significantly Greater Than	EF vs. SR	% of Respondents Who Answered: Very Likely (5 or 6)	% of Respondents Who Answered: Very Unlikely (0 or 1)
(1) An *increase* in your investing clients' perception of your credibility	3.55	3–7	2.38††	26.55	9.04
(2) Loss of access to management	3.24	3–7	3.95†††	24.44	17.78
(3) Damage to your employer's business relationship with the company	2.62	5–7	4.00†††	12.78	26.67
(4) Being "frozen out" of the Q&A portion of future conference calls	2.35	6–7	0.71	15.00	40.56
(5) Damage to your employer's business relationship with buy-side clients who hold stock in the firm	2.26	6–7	1.99††	6.67	32.78
(6) Lower bonus/compensation	1.04	–	2.26††	2.78	68.89
(7) Promotion less likely	0.97	–	1.73†	0.56	72.78
Total possible $N = 180$					

Column 1 reports the average rating, where higher values correspond to greater likelihood. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the other items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 reports the results of a *t*-test of the null hypothesis that the average rating is the same across both the earnings forecast and stock recommendation versions of the survey. ***, **, and * (†††,††, and †) indicate the average rating in the EF (SR) version of the survey is significantly larger at the 1%, 5%, and 10% level, respectively. Column 4 (5) presents the percentage of respondents indicating usefulness of 5 or 6 (0 or 1).

recommendations below the consensus. In addition, analysts with a hedge fund focus are less likely to believe issuing stock recommendations well below the consensus will result in lower compensation or damage to their employer's relationship with buy-side clients, perhaps due to their clients' unique ability to execute short positions and profit from analysts' negative ratings.[25]

Several analysts said a good relationship with management is critical to succeed as a sell-side analyst (Francis and Philbrick [1993]). One interviewee described an experience where company management canceled an already-scheduled road show with the analyst immediately after the analyst lowered his stock recommendation for the company. Another responded, "If I've got a sell rating on a stock, is that company really going to want to come attend a conference we're hosting? Is that company really going to give me three days to go market with them in New York? No, they're not. So you have to factor that in." One analyst stated, "When a company cuts you off, not only do you lose the information value of that [access], but you actually lose revenue. The company won't come to your conference; therefore, your conference is going to be less important. Clients pay a boatload for that access." Another candidly told us, "Most of the sell-side is worried more about what management thinks of them than they are about whether they're doing a good job for investors." Finally, one analyst said, "It's a needle you have to thread sometimes, between being intellectually honest yet not offensive. It's always in the back of your mind, because one of the biggest things the buy-side compensates sell-side research firms for is corporate access: road shows, meetings, access to management teams. So you obviously want to keep an amicable relationship with the companies that you follow."

Our findings highlight an important conflict in sell-side research. Whereas issuing earnings forecasts and stock recommendations that are well below the consensus increases analysts' credibility with investing clients, it can also damage analysts' relationships with managers of the firms they follow.

3.6.3. How Often Does Research Management Pressure You to Issue an Earnings Forecast That Is Lower Than (Exceeds) What Your Own Research Would Support? (EF Version) How Often Does Research Management Pressure You to Issue a Stock Recommendation What Is Less Favorable (More Favorable) than What Your Own Research Would Support? (SR Version) (Online Appendix). Pressure related to issuing earnings forecasts or stock recommendations is not pervasive within analysts' own firms. The vast majority of analysts have never experienced pressure from research management to alter their earnings forecasts or stock recommendations. Consistent with the positive bias in analysts' recommendations (Barber et al. [2006]), we find research

[25] Cross-sectional tests also reveal that *II* All-Stars are less likely to miss a promotion due to a stock recommendation that is well below the consensus.

management is more likely to pressure analysts to raise rather than to lower their stock recommendations.[26]

In response to questions about why research management pressures sell-side analysts, one interviewee explained: "Something like two-thirds of our clients are long-only shops. So even if you have a sell, the best the client can do is either own less of it or just not own it. They can't do much with a sell rating; unless they're a hedge fund, they can't profit directly from it." Another analyst put it simply: "There are lots of constituencies that analysts have to answer to, and none of them likes an under-perform."

Consistent with the literature suggesting analyst impartiality is influenced by investment banking relationships or trading incentives of the firm at which the analyst is employed (Lin and McNichols [1998], Michaely and Womack [1999], Lin, McNichols, and O'Brien [2005], Cowen, Groysberg, and Healy [2006], Ljungqvist, Marston, and Wilhelm [2006]), one interviewee said, "Equity analysts . . . are very, very reluctant—even after the Spitzer rules—to upset the investment bankers, because the investment bankers bring in so much more profitability . . . They certainly realize that the success of their company is tied to the performance of this much higher-margin business than the business that they're part of."

3.7 OTHER INCENTIVES

Finally, we explore two other incentives that shape sell-side research: the importance of various investing clients to analysts' employers and analysts' motivation to initiate coverage of a firm.

3.7.1. How Important Are the Following Clients to Your Employer? (Table 12). Hedge funds and mutual funds are the two most important clients to analysts' employers, and retail brokerage clients are the least important. These responses suggest that most analysts focus on addressing the needs of large, institutional investors, rather than the needs of small, individual investors (De Franco, Lu, and Vasvari [2007]).

3.7.2. How Important Are the Following in Your Decision to Cover a Given Company? (Table 13). Table 13 reveals that client demand for information about the company is the most important determinant of analysts' coverage decisions, with less than 1% of analysts saying this factor is not important to their coverage decision. Earnings predictability is among the least important determinants. Although prior archival research suggests disclosure quality (Lang and Lundholm [1996]) and company profitability (McNichols and O'Brien [1997]) are important factors in analysts' coverage decisions, these items receive relatively low ratings from our respondents. Our findings suggest analyst coverage is largely driven by a desire to satisfy client demand, with relatively little consideration given to financial

[26] A *t*-test indicates that research management exerts more downward pressure on earnings forecasts than on stock recommendations.

TABLE 12

Survey Responses to the Question: How Important Are the Following Clients to Your Employer?

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Important (5 or 6)	% of Respondents Who Answered: Not Important (0 or 1)
(1)	Hedge funds	5.26	3–7	81.49	2.21
(2)	Mutual funds	5.24	3–7	80.11	1.66
(3)	Defined-benefit pension funds	3.61	4–7	36.84	16.62
(4)	Insurance firms	3.31	5–7	29.89	20.67
(5)	Endowments and foundations	2.96	6–7	22.22	26.39
(6)	High net-worth individuals	2.41	7	18.23	41.61
(7)	Retail brokerage clients	1.89	–	13.30	51.52
	Total possible $N = 362$				

Column 1 reports the average rating, where higher values correspond to greater importance. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating importance of 5 or 6 (0 or 1).

TABLE 13

Survey Responses to the Question: How Important Are the Following in the Decision to Cover a Given Company?

	Responses	Average Rating	Significantly Greater Than	% of Respondents Who Answered: Very Important (5 or 6)	% of Respondents Who Answered: Not Important (0 or 1)
(1)	Client demand for information about the company	5.01	2–12	72.33	0.55
(2)	The similarity of the company to other companies you follow	4.17	6–12	48.34	6.91
(3)	The stock's trading volume	4.16	6–12	44.93	4.38
(4)	The stock's market capitalization	4.05	6–12	39.29	4.95
(5)	The company's growth prospects	3.98	6–12	42.42	9.92
(6)	The composition of the company's investor base	3.32	7–12	22.25	11.81
(7)	The company's disclosures	2.90	11–12	17.03	20.05
(8)	The company's corporate governance	2.77	12	14.01	24.45
(9)	The company's profitability	2.73	12	12.91	23.35
(10)	The company's investment banking relationship with your employer	2.71	–	21.21	32.78
(11)	Other sell-side analysts cover the company	2.54	–	12.60	31.23
(12)	The predictability of the company's earnings	2.43	–	9.09	30.03
	Total possible $N = 365$				

Column 1 reports the average rating, where higher values correspond to greater importance. Column 2 reports the results of *t*-tests of the null hypothesis that the average rating for a given item is not different from the average rating of the other items. We report the rows for which the average rating significantly exceeds the average rating of the corresponding items at the 5% level, and use Bonferroni-Holm–adjusted *p*-values to correct for multiple comparisons. Column 3 (4) presents the percentage of respondents indicating importance of 5 or 6 (0 or 1).

reporting attributes, such as disclosure quality and earnings predictability, that would make it easier to issue accurate forecasts. That analyst coverage decisions are so strongly motivated by investor demand for information about the company highlights the importance of analysts' investing clients and corroborates the idea that analyst following is a reasonable proxy for the firm's information environment (Bowen, Chen, and Cheng [2008], Derrien and Kecskés [2013]).

We asked analysts for additional insights about their coverage decisions. Most said they are required to run their coverage decisions through their firm's research management. One analyst reported, "The decision to pick up or drop a company or change your rating always runs through research management. They vet every change to make sure it's well founded."

4. Conclusion

In spite of the vast academic literature on sell-side analysts, the decision processes analysts employ have largely remained a "black box" (Ramnath, Rock, and Shane [2008], Bradshaw [2011]). We survey 365 sell-side analysts and conduct 18 follow-up interviews to gain insight into the inputs analysts use to make their decisions and the incentives they face.

We examine a wide range of topics, including the inputs analysts use when forming their earnings forecasts and stock recommendations; the frequency, nature, and usefulness of their communication with senior management; the valuation models they use to support their stock recommendations; their beliefs about earnings quality and financial misrepresentation; the factors affecting their compensation; their motivation for generating accurate earnings forecasts and profitable stock recommendations; and the consequences of publishing unfavorable assessments about the firms they follow.

Most analysts have contact with the CEO or CFO of the typical company they follow more than once per quarter, and they rate their private communication with management as a very useful input to both their earnings forecasts and stock recommendations—even more useful than primary research, recent earnings performance, or the recent 10-K or 10-Q. They also report that their private phone conversations with company management are more useful than interactions with management at road shows, industry conferences, or company investor day events.

We find that industry knowledge is an important determinant of sell-side analysts' compensation, consistent with brokerage houses rewarding analysts for providing their clients with the information they demand (Brown et al. [2014]). We also find industry knowledge is the single most useful input to analysts' earnings forecasts and stock recommendations.

We asked analysts about their perceptions of earnings quality. Analysts' views on earnings quality are important because incorrect assessments of earnings quality could result in economic losses for their investing clients and have an adverse effect on analysts' reputation and compensation. In

contrast, CFOs often have incentives to manage earnings, which is not always consistent with a preference for high-quality earnings (Dechow et al. [2010], Nelson and Skinner [2013]). Analysts believe earnings are of high quality if they are backed by operating cash flows, are sustainable and repeatable, reflect economic reality, and reflect consistent reporting choices over time. In addition, they do not believe many "red flags" of financial misrepresentation the academic literature has identified are indicative of misreporting. In our interviews, analysts made it clear that attempting to uncover intentional financial misrepresentation is not cost-beneficial for them, suggesting that they are unlikely to discover financial reporting irregularities. However, this evidence should not be interpreted to mean that analysts ignore other, more benign forms of earnings management that are often easier to detect than fraud. Indeed, their preference for earnings that are backed by operating cash flows, that are sustainable and repeatable, and that reflect economic reality suggests that analysts may indirectly guard against financial misreporting by reining in more benign forms of earnings management.

We also find that generating underwriting business or trading commissions continues to be an important determinant of compensation for many analysts. Further, we find that broker votes are an important determinant of analysts' career advancement, even more important than public rankings such as *II* All-Star status. Analysts indicate their single most important motivation for issuing accurate earnings forecasts is to use them as an input into their stock recommendations, revealing that analysts' earnings forecasts are often a means to an end and not ends in themselves. Analysts also report that issuing unfavorable stock recommendations often leads to an increase in their credibility with investing clients and to a loss of access to management. These findings highlight the notion that analysts face competing demands from their investing clients and company management.

As called for by prior research (Schipper [1991], Ramnath, Rock, and Shane [2008], Bradshaw [2011]), we penetrate the "black box" of analysts' decision processes and incentives. We provide insights relevant to investors who use analysts' forecasts and stock recommendations in their investing decisions and to managers whose companies are followed by sell-side analysts. Analysts who wish to benchmark their practices and research against a broad set of peers will also benefit from our findings, and academic researchers can use our findings as motivation for further study.

Our paper is subject to several limitations. First, although we carefully designed our survey instrument and received feedback from a professional survey consultant and pilot participants, we cannot be certain that analysts interpreted every question the way we intended. For example, we asked analysts about the consequences of issuing earnings forecasts and stock recommendations that are "well below" the consensus, but it is possible that some analysts interpreted this question to be about more modest departures from the consensus. Second, even with anonymous surveys, participants may intentionally or unintentionally bias their responses to portray

themselves or their profession in a positive light. For instance, in contrast to the existing literature, our findings suggest that analysts do not incorporate *other* analysts' earnings forecasts and stock recommendations into their own forecasts and recommendations. However, the analysts we surveyed may have been reluctant to acknowledge the usefulness of information provided by competing analysts. Third, although we believe sell-side analysts' insights on topics such as financial reporting quality are a valuable contribution to the literature, we acknowledge that analysts have their own biases. Specifically, although analysts indicate that they do not believe consistently meeting or beating earnings targets is an indicator of intentionally misrepresented financial statements, this finding may be due to analysts' complicity in issuing earnings forecasts that managers are able to beat. Fourth, while our response rate exceeds that of other recent surveys (e.g., Dichev et al. [2013]), nearly 90% of the analysts we invited did not participate in the survey. In spite of these limitations, we believe our study provides many important insights that should be considered by future research.

APPENDIX

Definitions of Independent Variables for Cross-Sectional Analyses

Gender = indicator variable equal to 1 if the analyst is male, and 0 if the analyst is female.

Accounting = indicator variable equal to 1 if the analyst has an undergraduate degree in accounting, and 0 otherwise.

MBA = indicator variable equal to 1 if the analyst has an MBA, and 0 otherwise.

CFA = indicator variable equal to 1 if the analyst is a CFA, and 0 otherwise.

Experience = indicator variable equal to 1 if the analyst has 7+ years of experience as a sell-side analyst, and 0 otherwise.

II_AllStar = indicator variable equal to 1 if the analyst is listed by *Institutional Investor* as an All-Star analyst, based on the rankings published closest to the time the survey was administered, and 0 otherwise.

StarMine = indicator variable equal to 1 if the analyst is ranked by StarMine in the rankings published closest to the time the survey was administered, and 0 otherwise.

WSJ = indicator variable equal to 1 if the analyst received *The Wall Street Journal*'s "Best on the Street" award in the rankings published closest to the time the survey was administered, and 0 otherwise.

Broker_Size = indicator variable equal to 1 if the analyst works for an employer with 26+ sell-side analysts, and 0 otherwise.

I_Bank = indicator variable if Thomson One Banker indicates the analyst's employer provides debt or equity underwriting services, and 0 otherwise (Bradshaw, Huang, and Tan [2014]).

Retail_Focus = indicator variable equal to 1 if the analyst indicated that "retail brokerage clients" are "very important" (a response of 5 or 6) to his/her employer, and 0 otherwise.

HF_Focus = indicator variable equal to 1 if the analyst indicated that "hedge funds" are "very important" (a response of 5 or 6) to his/her employer, and 0 otherwise.

Industry = industry fixed effects based on the primary industry the analyst covers.

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