THE ACCOUNTING REVIEW
Vol. 94, No. 1
January 2019
pp. 249–270

American Accounting Association
DOI: 10.2308/accr-52110

The Revolving Door of Sell-Side Analysts

Ben Lourie
University of California, Irvine

ABSTRACT: Equity analysts are often hired by firms they cover. I document the extent to which this *revolving door* phenomenon impairs analysts' independence. I do this by examining the presence of biased research reports issued during the year before analysts are employed by a firm they cover. I find that during their final year, revolving door analysts bias their EPS forecasts, their target prices, and their recommendations in a direction that suggests that they are attempting to gain favor from their prospective employers. Specifically, relative to other analysts, revolving door analysts issue more optimistic reports on the firms that hire them, and they issue more pessimistic reports on firms that do not hire them. These results suggest the presence of strategic bias, although more innocuous interpretations cannot be completely ruled out.

JEL Classifications: G14; G17; G24; G28; M41.

Data Availability: Data are available from public sources identified in the text.

Keywords: revolving door; sell-side analysts; conflicts of interest; career concerns.

I. INTRODUCTION

Revolving door analysts are analysts who are hired by the firms they cover. In this paper, I evaluate whether these revolving door (RD) analysts bias their target prices, their stock recommendations, and their earnings per share (EPS) forecasts in the year before they are hired in a manner that is consistent with an attempt to gain favor from a prospective employer.

The possibility of this kind of bias is a major concern because sell-side analysts occupy a position of trust in the capital markets. They occupy this position because the investment community relies on these analysts to produce estimates that are fair, unbiased, and driven solely by professional considerations. The Securities and Exchange Commission (SEC) explicitly requires that analysts be independent. It views them as "gatekeepers" for the investment community, and requires them to bear fiduciary responsibilities for investors (Fisch 2006).[1] The SEC requires analysts to certify that the opinions expressed in their public reports accurately reflect their own views.[2]

The revolving door phenomenon is also a concern in other professions that the public expects to be objective and independent. For example, research raises questions about the independence of auditors of public companies who are hired by their client firms (Baber, Krishnan, and Zhang 2014; Menon and Williams 2004). Other research questions the independence of

I appreciate comments and suggestions from Mark T. Bradshaw (editor) and two anonymous reviewers. I am grateful to my dissertation chair, Carla Hayn, and to committee members David Aboody, Dan Givoly, and Brett Trueman for their support, ideas, and advice. For helpful comments and discussions, I thank Judson Caskey, Yonca Ertimur, Henry Friedman, Elizabeth Gutierrez, John Hughes, Ruihao Ke, Yaron Levi, Beatrice Michaeli, Bruce Miller, Bugra Ozel, Terry Shevlin, and Suhas Sridharan. The paper benefited from seminar participants at University of California, Irvine, The Pennsylvania State University, The University of Texas at Dallas, University of Rochester, The University of Utah, Purdue University, National University of Singapore, The Hong Kong Polytechnic University, and The Chinese University of Hong Kong. Any errors are my own.

This paper is based on my dissertation work at the University of California, Los Angeles.

Editor's note: Accepted by Mark T. Bradshaw, under the Senior Editorship of Mark L. DeFond.

Submitted: March 2016
Accepted: March 2018
Published Online: March 2018

[1] See the testimony of Chairman of the SEC William H. Donaldson (2003). See, also, the SEC's (2003) statement regarding the Global Settlement that relates to analysts' conflicts of interest, in which limitations on investing banking contacts are said to be "designed to maintain the analyst's role as gatekeeper."

[2] This requirement, mandated by the Analyst Certification Regulation rule, which became effective in April 2003, applies to research reports and public appearances.

congressional staff who gain employment with lobbying firms (Blanes i Vidal, Draca, and Fons-Rosen 2012), as well as the independence of credit rating analysts hired by companies they previously rated (J. Cornaggia, K. Cornaggia, and Xia 2016).

Regulations often attempt to reduce the likelihood of conflicts of interest in revolving employment situations by requiring a "cooling-off" period or some form of disclosure. The Honest Leadership and Open Government Act of 2007 requires a cooling-off period before government employees are allowed to lobby the Senate. Credit rating analysts are governed by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (hereafter, Dodd-Frank). This legislation requires rating agencies to report if an analyst was hired by a firm in whose rating that analyst was involved in determining within the previous five years.

A prime example of this regulation is the cooling-off period specified in the Sarbanes-Oxley Act of 2002 (hereafter, SOX) that forbids publicly held companies from hiring their audit firm's former employees in key positions for up to one year after the individual separates from the audit firm. In contrast, analysts are not subject to any mandated cooling-off periods, and they are not required to give any specific notification about being hired by the firms they cover.

In this study, I evaluate the extent to which RD analysts bias their reports in favor of covered firms during their last year of employment as analysts (hereafter, the *final year*). For this purpose, I construct a unique sample of 299 RD analysts from 1999–2014.[3] These RD analysts move to firms in all types of industries (e.g., finance, consumer services, and energy). Firms hire more than half (56 percent) of these analysts to work in investor relations, with the remainder hired to work in other areas (e.g., corporate development, finance, and marketing).

I find that in their final year, RD analysts issue higher target prices, more optimistic two-year-ahead EPS forecasts, and more favorable recommendations for their prospective employer (hereafter, the *hiring firm*) relative to other analysts who cover these firms. This relative optimism is greater in their final year than in previous years. I also find that during their final year, RD analysts issue more pessimistic reports about other firms (i.e., firms that do not hire them) than they issued previously. This result underscores the optimism they display for the hiring firm. Last, I show that during their final year, RD analysts issue a higher frequency of reports about their hiring firm than other analysts who cover it, and a higher frequency of reports than they issued about the hiring firm in previous years.

These results can be explained by analysts attempting to gain favor from prospective employers. However, there are several alternative, more benign, explanations for the results. The first alternative explanation is that analysts' optimism toward their hiring firm in their final year is justified *ex post* by their more accurate forecasts. However, I find that RD analysts' reports about hiring firms are actually less accurate in their final year than their own reports in previous years. The second alternative explanation is that analysts' optimism toward their hiring firm is a rational response to a change in their incentives during their final year. However, I find no such change in optimism in the final year of departing analysts who are not RD analysts.

While my findings provide evidence that RD analysts bias their reports on their hiring firms in their final year, the analysts' mindsets are unobservable. This raises the question of whether this bias is caused by career advancement incentives or rather a simple outcome of labor market incentives: job seekers are attracted to those employers about whom they are most optimistic, and hiring firms prefer candidates who are optimistic about them. A parallel to my setting is the literature on optimism of analysts affiliated with companies through underwriting relationships. This literature has wrestled with the question of whether analysts are strategically optimistic as a way of increasing the odds that their brokerage house will be selected as an underwriter, or whether a firm, not surprisingly, tends to select an underwriter whose analysts are more optimistic about the firm's prospects (see Bradshaw [2011] for a discussion of the literature).

In this study, the evidence lends support to the strategic bias explanation for the optimism displayed by RD analysts regarding their hiring firm in their final year. This conclusion is supported by three observations: (1) RD analysts issue relatively more optimistic (pessimistic) reports in their final year about their hiring (non-hiring) firm than they did in previous years. These results suggests that their optimism represents a change in their assessment of the hiring firm in particular, rather than a change in their optimism toward the industry in general. (2) In their final year, RD analysts issue forecasts that are less accurate than the forecasts they issued about their hiring firm in previous years. This finding suggest that in their final year, the optimism of RD analysts is not due to better information or insight. (3) RD analysts issue more frequent reports about their hiring firm than they issued in previous years. This result suggests that RD analysts attempt to be more visible to their prospective employer, or that they want to influence investors toward favorable views with a higher frequency of optimistic research.

To further provide circumstantial evidence that the optimistic bias of RD analysts is caused by career concerns, I conduct two cross-sectional tests that show that the optimism of RD analysts regarding their hiring firm is highest when they are more likely to strategically bias their reports. Specifically, I find that the optimistic bias is stronger when there is higher perceived

[3] The sample of 299 revolving door analysts constitutes about 5 percent (9 percent) of the total number of analysts with a minimum of two (five) years of job experience who were present on, and then left, the Institutional Brokers' Estimate System (I/B/E/S) database within the sample period.

competition for the job (proxied by the average number of analysts following in the industry of this hiring firm), and that the bias does not exist when analysts might be exposed to litigation risk (proxied by high-litigation industries).

The RD analysts' optimism toward the hiring firm in their final year is consistent with Cornaggia et al. (2016), who examine the phenomenon among credit rating analysts. However, *a priori,* the presumption of a revolving door conflict of interest is more compelling for equity analysts than for credit analysts for three reasons. First, credit analysts have less of an effect on the rating decision than equity analysts on their report. While an internal committee decides and votes on a credit analyst's rating (Fitch Ratings 2006; Moody's Investors Service 2011; Standard & Poor's [S&P] 2016), the SEC requires equity analysts to certify that the opinions expressed in their public reports accurately reflect their own views. Second, Dodd-Frank addresses the issue of a potential conflict of interest by revolving door credit analysts, but not for equity analysts. Third, the SEC requires credit rating agencies to disclose the methodology and the main assumptions used to determine credit ratings.[4] No such disclosure is required of equity analysts, who appear to have more individual discretion in the choice of methodology and assumptions.

In a study on the security analyst industry, Cohen, Frazzini, and Malloy (2012) examine the past performance of 51 members of boards of directors. They find that firms appoint directors who are sympathetic to management, but are still considered independent based on regulatory definitions. A related study by Horton, Serafeim, and Wu (2017) finds that throughout their careers, analysts employed by low- and mid-tier brokerage houses "walk-down" their earnings forecasts for banks that have sell-side equity departments. The authors suggest that this bias occurs due to career concerns. My paper provides more direct evidence regarding the effect of analysts' career concerns. I focus on analysts' bias toward their hiring firms immediately before they are hired, rather than over longer portions of their careers. This focus means that I observe analyst behavior when one would expect the most bias, and it supports the inference that the observed biases are due to career concerns, which helps to rule out alternative explanations (as shown in Section II). Last, I explore analysts' forecasting behavior using a broader set of their research outputs, including target prices and recommendations.[5]

The conclusion that firms hire optimistically biased analysts does not necessarily imply that this bias drives firms to irrationally ignore analysts' qualifications when hiring for corporate positions. To shed some light on this issue, I examine how RD analysts perform in their new positions. I focus on the job performance of RD analysts who were hired in investor relations (IR) functions by the covered firms. In untabulated results, I find that, relative to new IR hires from other professions, hiring RD analysts is associated with an increase in analyst following and a better management of the analysts' community expectations. This finding is consistent with rational behavior by the hiring firms.

Overall, this study extends the literature on analysts' conflicts of interest and career concerns (Hong, Kubik, and Solomon 2000; Hong and Kubik 2003; Mehran and Stulz 2007; Bradshaw 2011; Horton et al. 2017). It is the first to offer large-sample evidence on the potential conflicts of interest that could arise during the hiring period, when firms consider equity analysts for employment. The finding that RD analysts issue biased reports during their final year raises concerns about their independence during this period. Industry regulators should consider these findings.

II. BACKGROUND AND LITERATURE REVIEW

Analysts' Conflicts of Interest and Career Concerns

The literature has extensively examined the risk of conflicts of interest among equity analysts (Mehran and Stulz 2007; Bradshaw 2011). One of the main conflicts discussed in the literature is analysts' ties with the investment banking side of their brokerage house. Prior research shows that analysts issue more favorable long-term growth forecasts and stock recommendations for firms whose seasoned equity offerings were underwritten by their employers (Dugar and Nathan 1995; Lin and McNichols 1998).

Allegations that analysts' recommendations are biased in favor of stocks that their brokerage house underwrote led to the Global Research Analyst Settlement in 2003. Among other provisions, this settlement requires investment banks to separate investment banking and research departments, both physically and by upholding "Chinese walls" to ensure that the financial incentives of one area of the firm do not compromise the independence of the firm's research analysts. Empirical evidence suggests that the Settlement has been at least somewhat effective in addressing conflicts of interest (Kadan, Madureira, Wang, and Zach 2009).

[4] New rules introduced in 2014 by the SEC require credit rating agencies to release the procedure or methodology used to determine credit ratings, as well as the main assumptions and principles used to determine credit ratings (see: https://www.sec.gov/news/pressrelease/2014-178.html).

[5] Examining target prices and recommendations is important, because Bradshaw, Lee, and Peterson (2016) have questioned the notion that walk-down behavior stems from analysts' strategic or opportunistic behavior. Bradshaw et al. (2016) explain the phenomenon by behavioral factors and the difficulty in forecasting.

With respect to the phenomenon of RD analysts, there is, surprisingly, no specific regulation to address it. While regulators have addressed the RD conflict of interest in other professions by requiring a cooling-off period, no such specific requirement exists for RD analysts. The only regulation pertaining to this situation is Rule 2711(h)(1)(c) of the National Association of Security Dealers (NASD), which specifies that an analyst must report any "actual, material conflicts of interest" (see: http://finra.complinet.com/en/display/display.html?rbid=2403&element_id=3675). While this rule does not specifically mention the potential for conflicts of interest when an analyst is considered for employment by a covered firm, this situation would seem to merit such a disclosure. However, to date, there is only one case in which an enforcement action was taken against an RD analyst who failed to disclose that she was being interviewed by the company that was the subject of her reports.[6]

This failure to disclose is likely not limited to this single case in which disciplinary action was taken. I examined all available research reports that analysts released shortly before being hired by a covered firm and found no disclosures of a conflict of interest. Further, to the best of my knowledge, the Financial Industry Regulatory Authority (FINRA, formerly NASD) has not taken actions against any analysts. This is rather surprising, given FINRA's policy that when "a research analyst is pursuing employment or has accepted a job with a covered company, the NASD rule requires that information concerning such a clear conflict of interest must be disclosed in research reports" (NASD 2007).[7]

This paper contributes to the literature on analysts' conflicts of interest by providing evidence that the RD phenomenon can cause analysts to bias their reports. Regulators have made significant strides in addressing investment banking conflicts of interest, but they have not established specific restrictions on revolving door situations involving analysts.

This paper also extends the literature that examines analysts' career advancement. Research on analysts' employment within the profession has found that inexperienced analysts who issue inaccurate earnings forecasts and analysts who make bold forecasts are more likely to leave the profession than their experienced counterparts (Hong et al. 2000). Research also suggests that analysts with greater experience are more likely to be promoted to research executive positions (Wu and Zang 2009). This paper offers insight on analysts' movement out of their profession and into the corporate world, and it suggests that analysts' optimistic bias during their final year increases the likelihood of gaining employment with a particular firm.

The Revolving Door Phenomenon

Researchers have studied the RD phenomenon as a potential threat to independence in professions or occupations that require unbiased evaluations. This research has produced mixed evidence (Baber et al. 2014; deHaan, Kedia, Koh, and Rajgopal 2015; Menon and Williams 2004; Blanes i Vidal et al. 2012). For example, in auditing, Menon and Williams (2004) find that hiring former auditing partners as officers is associated with lower earnings quality. On the other hand, deHaan et al. (2015) find that law firms tend to hire high-performing SEC lawyers. The authors conclude that their results alleviate concerns about potential conflicts of interest of these "revolving door" SEC lawyers.

In a study on the security analyst industry, Cohen et al. (2012) examine the past performance of 51 members of boards of directors. The 51 individuals examined in the study by Cohen et al. (2012) previously served as equity analysts following a particular firm, then became a member of the board of directors of that same firm. They find that when these directors were analysts, their performance was inferior to that of other analysts in terms of the accuracy of their recommendations. However, these analysts were more optimistic than other analysts about the prospects of the companies on whose boards they eventually served. Given the seniority and experience required for board membership, the Cohen et al. (2012) sample of directors likely consists of individuals whose previous employment as analysts was in the remote past, rather than immediately before their board appointments.[8] Thus, their investigation is limited in its ability to make inferences about conflicts of interest among RD analysts.

A number of recent papers have addressed potential conflicts of interest among information intermediaries who move within or leave the profession (Cornaggia et al. 2016; Horton et al. 2017; Jiang, I. Wang, and K. Wang 2018). Cornaggia et al. (2016) find that the rating agencies that employed RD credit analysts issued ratings that were more favorable in the year before the analysts' departures relative to the ratings issued by other credit rating agencies. As discussed in the introduction, one might infer that these favorable ratings (an institutional product) reflect the strategic behavior of individual credit analysts; however, this is not as compelling as the inferences that are based on research directly attributable to individual equity analysts.

[6] The analyst in this case was initially fined $12,500, but after an appeal, the fine was increased to $20,000 and a suspension for two years from working at a brokerage house was added. Given that the former analyst had decided to leave the profession, this appears to be a weak deterrent against nondisclosure of conflict of interests.

[7] Statement made in a news release by James Shorris, former Head of Enforcement of NASD.

[8] Cohen et al. (2012) did not consider in their design the extent of the time gap between the dates when the analysts left the profession and their subsequent appointment to the board. I was only able to find six analysts that were appointed as independent directors immediately after they finished their tenure as equity analysts.

Horton et al. (2017) hypothesize that career concerns influence the extent of the "walk-down" phenomenon among analysts that cover banks. To test this, they consider two groups of banking analysts: those working for high-status brokerage houses and those working for low- and mid-tier brokerage houses. The latter group of analysts likely aspire to seek future employment with more reputable banks. Horton et al. (2017) find that the walk-down phenomenon is more pronounced for the latter group.

The evidence provided in Horton et al. (2017) indicates a very low rate of analyst "migration" from low- and mid-tier houses to high-status brokerage houses. Further, only a small fraction of the "migrants" actually move to a brokerage house that is affiliated with a bank they cover.[9] The sample and the empirical design of my paper allow for a more direct and powerful test of the effect of analysts' career concerns on the integrity of their research. My study focuses on a select group of analysts whose actual departure reveals this motivation. I sample on the subset of analysts who were hired by firms they covered, and I test for bias when the bias is most likely to manifest: in the period immediately preceding the analyst's hiring.

III. DEVELOPMENT OF HYPOTHESES

Analysts are natural candidates for corporate positions, particularly positions in the financial or investor relations areas. They have a great deal of knowledge about the companies and industries that they cover, and they have gained both industry-specific and firm-specific knowledge. In turn, hiring firm managers are likely familiar with analysts who follow their firms, particularly those who have exhibited optimism.

It is plausible to assume that, all else being equal, firms would prefer to hire individuals who are excited about the company and its future. There are two scenarios in which this preference by the firm results in favorable reports by RD analysts toward their hiring firm immediately before they are hired. In the first scenario, analysts are attracted to those employers about whom they are most optimistic. In this scenario, analysts are not strategically biasing their reports. In the second scenario, analysts who are interested in being hired try to demonstrate and accentuate their optimism with respect to the potential hiring firm. In this scenario, analysts are strategically biasing their reports to increase their chances of being hired. The first hypothesis of this paper, presented in its alternative form, is, thus:

H1: RD analysts issue more favorable reports about their hiring firm in their final year.

In testing H1, I compare the RD analyst's optimism to the optimism of other analysts who cover the same firms in the RD analyst's final year. To better distinguish between the two alternative interpretations, I conduct several tests that provide circumstantial evidence that the optimistic bias of RD analysts is motivated by career concerns.

I compare the relative optimism of RD analysts in their final year to the optimism they displayed in previous years toward their hiring and non-hiring firms. This will establish whether any observed relative optimistic bias is unique to the hiring firm, and whether this bias existed prior to the final year. Furthermore, I conduct two cross-sectional tests that examine whether the optimism of RD analysts regarding their hiring firm is highest when they are more likely to strategically bias their reports—namely, when there is a higher perceived competition for the position and a lower likelihood of facing litigation.

Another way for analysts to attract the attention of potential employers is to issue a higher frequency of reports on their potential employer. Exerting this additional effort keeps the analyst on management's radar screen and may serve as a signal of the analyst's interest in the covered firm. The most effective period to enhance their visibility in such a manner is the final year. Accordingly, I test the following hypothesis, presented in its alternative form:

H2: RD analysts issue a higher frequency of reports about their hiring firm in their final year.

Similar to the tests of H1, when testing H2, I compare the number of reports that RD analysts issue on their hiring firms in their final year to the number of reports issued by other analysts who also cover the hiring firm. I also compare the number of reports that RD analysts issue on their hiring firms in their final year to the number of reports the same analyst issued on the hiring firms in previous years.

IV. DATA AND RESEARCH DESIGN

I obtain analysts' research estimates (i.e., recommendations, target prices, EPS forecasts, and number of reports) from the Institutional Brokers' Estimate System (I/B/E/S) database over 1996–2014. I choose the starting year 1996 because this

[9] During the Horton et al. (2017) sample period, 6.05 percent of analysts changed brokerage houses annually, and of these moving analysts, 6.93 percent cover a bank associated with their would-be employers (see Horton et al. 2017, Table 5, Panel B). Based on the descriptive statistics provided, it appears that only 0.42 percent (6.05 percent × 6.93 percent) of the banking analysts join a covered company each year. This evidence challenges the validity of the assumption that the forecasting patterns of all analysts are shaped by their wish to please their potential future employer.

is the first year for which recommendation data are available. I obtain these data on RD analysts, and other analysts who followed the same firms, throughout the analysts' careers until the time an RD analyst became employed by the covered firm.

Identifying Revolving Door Analysts

I collect the sample of RD analysts examined in this study from several sources. The primary one is Capital IQ, which contains the employment history of all equity analysts who contribute forecasts to the Reuters/Thomson feed.[10] Using this database, I identify all equity analysts who, after being employed as analysts, were subsequently employed by other companies.[11] These analysts are then matched to the I/B/E/S database by name and by brokerage house affiliation. Then, among those analysts included on both the Capital IQ and I/B/E/S databases, I identify RD analysts who issued research estimates on firms where they subsequently became employed. Using this procedure, I identify 299 RD analysts.[12]

Table 1, Panel A provides information on the number of analysts by the year they issued their last forecast before joining the covered firms. The table also provides the percentage of analysts who were employed in the investor relations area, a common career path for analysts who join the corporate world. Over half of the RD analysts in the sample (56 percent) were hired in the investor relations area, and the remainder were hired for positions in other functional areas, such as corporate development, finance, and marketing. As shown in Table 1, Panel B, the hiring firms belong to a variety of sectors, with the financial sector being the most prevalent.

Measures of Analysts' Optimism and Effort

I use three estimates of the research produced by RD analysts to assess the degree of their optimism: target prices, two-year-ahead EPS forecasts, and stock recommendations. For each of these estimates, an analyst's optimism is defined relative to the analyst's past research and relative to the contemporaneous research by other (non-RD) analysts.

Following prior research, I compare the degree of optimism in analysts' two-year-ahead EPS forecasts and target prices for a particular company and time period to the mean level of optimism for all analysts who make forecasts for the same company and time period within a comparable forecast horizon (Jacob, Lys, and Neale 1999; Clement 1999; Hong and Kubik 2003; Cowen, Groysberg, and Healy 2006). This relative performance measure controls for any company- or time-specific factors that affect forecast optimism. I use a similar relative performance measure to assess the level of effort exerted by analysts for each firm they cover.

I estimate the relative optimism of the analysts' target stock prices within a calendar month. I estimate the optimism of relative two-year-ahead EPS forecasts using all forecasts for a company that are made during the same fiscal year (comparing each forecast to the average of all forecasts made within the last 90 days). I measure the level of effort exerted by the analysts as the number of reports issued over a fiscal year for each covered firm.[13]

To calculate these relative measures, I use the calculation below. For illustrative purposes, I use the target price; the same calculation is used for EPS forecasts and the number of reports:

$$Relative\ Optimism\ in\ Target\ Price_{i,j,t} = \frac{Analyst's\ Target\ Price_{i,j,t} - Average\ Target\ Price\ of\ All\ Analysts_{j,t}}{Standard\ Deviation\left(Target\ Price\ of\ All\ Analysts_{j,t}\right)}$$

where *Relative Optimism in Target Price*$_{i,j,t}$ is measured as analyst i's target price for company j at time t minus the average target price for all analysts who cover company j (including analyst i) within the same month. I standardize this difference across firms by dividing the difference by the standard deviation of target prices across all analysts who cover company j at time t.

[10] The information derives from three main sources. Reuters/Thomson provides a direct feed of the analyst information to the Capital IQ database. The broker submits reports that have analysts (primary and secondary authors) tagged. Capital IQ also has a continuous validation process by which it adds professionals to the database by validating them from broker websites.

[11] Capital IQ provides information on the location and dates of the analyst's employment. The company uses public sources, news releases, articles, and filings to capture information about the analyst's movements. Additionally, Capital IQ also maintains dropping coverage documents submitted by brokers, in which the brokerage discloses analyst departures. I filled in missing data using LinkedIn, *Bloomberg Businessweek,* ZoomInfo, and LexisNexis.

[12] The start date of employment at the hiring firm is available for 268 analysts, and it is generally within one month of the last day of their employment as an analyst. The exact start date of the 31 remaining analysts is not available in their biography. However, their biography does indicate that their immediate employment after working as an analyst was with the hiring firm. Excluding these 31 observations produces qualitatively similar results.

[13] For example, if an analyst produces a report that contains more than one item (e.g., a target stock price and an EPS forecast), then I consider this as one report.

TABLE 1

Sample Description

Panel A: Number of Revolving Door Analysts by Year of Last Forecast and Number (%) Employed in Investor Relations

	Revolving Door Analysts		
Year	Number	Number (%) Employed in Investor Relations	
1999–2014	299	167	(56%)
1999	10	8	(80%)
2000	10	4	(40%)
2001	11	9	(82%)
2002	11	5	(45%)
2003	16	9	(56%)
2004	24	19	(79%)
2005	19	10	(53%)
2006	11	3	(27%)
2007	25	17	(68%)
2008	33	17	(52%)
2009	17	10	(59%)
2010	23	12	(52%)
2011	31	18	(58%)
2012	29	15	(52%)
2013	24	8	(33%)
2014	5	3	(60%)

Panel B: Number of Revolving Door Analysts by Industry Sector of Covered Firm and Number (%) Employed in Investor Relations

	Revolving Door Analysts		
Industry Sector	Number	Number (%) Employed in Investor Relations	
Full Sample	299	167	(56%)
Finance	62	38	(61%)
Consumer Services	34	25	(74%)
Energy	39	18	(46%)
Health Care	33	16	(48%)
Basic Industries	37	18	(49%)
Technology	34	11	(32%)
Capital Goods	21	14	(67%)
Public Utilities	16	11	(69%)
Consumer Non-Durables	12	8	(67%)
Consumer Durables	8	6	(75%)
Transportation	3	2	(67%)

It is tempting to also use short-term earnings forecasts to gauge optimism. However, in the context of the research question of this paper, issuing favorably biased short-term earnings forecasts is unlikely to be an effective way for job-seeking analysts to gain favor with prospective employers. Such forecasts do not necessarily benefit the hiring firm because a favorable earnings forecast sets a more difficult benchmark for the firm to meet, raising the likelihood of downward forecast revisions and the likelihood of failure by the firm to meet the forecasted earnings. This reasoning is consistent with Lin and McNichols (1998), who find that the investment banking conflict of interest has no effect on short-term forecasts, but it does affect variables that

represent long-term effects and are more difficult to compare to actual outcomes.[14] Therefore, I do not expect that short-term forecasts would be used opportunistically by analysts.

Relative Optimism and Effort

To assess whether RD analysts issue more optimistic two-year-ahead EPS forecasts or target prices on the hiring firm they cover, or whether they are more active in their coverage (thus expending more effort), I estimate the following regression model:

$$Relative\ Optimism(or\ Effort)_{i,j,t} = \alpha + \beta_1 RD_{i,j,t} + \beta_2 Controls + \varepsilon_{i,j,t} \quad (1)$$

where $RD_{i,j,t}$ is a dummy variable that has a value of 1 for forecasts made by RD analysts, and 0 otherwise. As discussed in Section IV, the manner in which the dependent variables are constructed already controls for any company- or time-specific factors that affect forecast optimism and effort. Therefore, I control for any analyst-specific or brokerage house-specific characteristics that might affect the dependent variables. These control variables include the number of firms covered by the analyst, the brokerage house size, the analyst's firm-specific experience, the analyst's one-year-ahead EPS forecast accuracy, and brokerage house fixed effects.

Clement (1999) finds that the number of firms an analyst follows is negatively correlated with the analyst's accuracy. I expect this variable to also be negatively correlated with an analyst's effort to research any individual firm. Lim (2001) finds that the size of the analyst's brokerage house is negatively correlated with the analyst's optimism. Since large brokerage houses have more resources at their disposal, I expect the size of the brokerage house to be positively associated with analyst effort.

Another factor that may affect analyst optimism is the length of time that an analyst has covered a firm. More experienced analysts have likely developed close relationships with the management of a particular firm, and this might cause the analyst to view the firm more positively and, thus, exhibit more optimism bias. On the other hand, the longer analysts cover a specific firm, the more knowledgeable they may become about its operations and prospects, and this information could reduce or eliminate optimism bias (Ertimur, J. Sunder, and S. Sunder 2007).

To calculate these control variables, I use the calculation below. For illustrative purposes, I use the number of companies covered; the same calculation is used for the brokerage size and for the coverage length.

$Companies\_Covered_{i,j,t}$ is a measure of the number of companies analyst i follows in year t. I define this variable as the number of companies covered by analyst i who follows firm j in year t, minus the minimum number of companies followed by other analysts who follow firm j in year t. I scale this difference by the range of the number of companies followed by the analysts who follow firm j in year t.[15]

To test my hypotheses, I further assess whether the relative optimism (or relative effort) of RD analysts in their final year is different from the relative optimism (or relative effort) they exhibit in other years of their career. For this purpose, I estimate the following regression from the reports that RD analysts issued on their hiring firm throughout their entire career:

$$Relative\ Optimism(or\ Effort)_{i,j,t} = \alpha + \beta_1 Final\_Year_{i,j,t} + \beta_2 Controls + \varepsilon_{i,j,t} \quad (2)$$

where the variables are defined as described above, and *Final_Year* is a dummy variable that equals 1 for reports issued in the final year of the RD analyst, and 0 otherwise. The analyst's final year of employment consists of the 365 days that precede the day the analyst issues his or her final estimate on I/B/E/S.

Measuring Recommendation Optimism

To test analysts' behavior with respect to recommendations, I use a slightly different design due to the categorical nature of the recommendation variable. Analysts issue recommendations in the form of *strong buy, buy, hold, underperform,* or *sell* recommendations. These recommendations are discrete and ordinal. Therefore, I use an ordered logistic regression to analyze recommendation optimism (Kolasinski and Kothari 2004; Cowen et al. 2006). The dependent variable in this analysis is the analyst's recommendation, coded as 3 for *strong buy* and *buy,* 2 for *hold,* and 1 for *underperform* and *sell*.[16]

[14] While this may be true for target prices and recommendations, the adverse effect of optimism is likely to be stronger for short-term earnings forecasts for two reasons. First, the realization of short-term earnings forecasts is a clearly identified and well-publicized event (i.e., an earnings announcement). Further, the realization occurs in a relatively short time, typically less than a quarter (for quarterly forecasts) or a year (annual forecasts). In contrast, while realized prices are public knowledge, there is some ambiguity about the horizon of the target price or recommendation. Finally, the benchmark to assess recommendation "error" (e.g., absolute stock performance, or performance relative to the industry or the market) is vague.

[15] *Relative accuracy* is defined in Section VI, below.

[16] Using a five-tier recommendation system produces qualitatively similar results.

To test whether the RD analysts' recommendations made for their hiring firm in their final year are optimistic relative to those made by other analysts for that firm in that year, I use the following model:

$$Recommendation_{i,j,t} = Ordered\ Logistic\left(\beta_1 RD_{i,j,t} + \beta_2 Controls + \varepsilon_{i,j,t}\right) \quad (3)$$

where the variables are defined as described above, and I also include as independent variables the number of *buy, hold,* and *sell* recommendations issued by all other analysts within the same calendar quarter. This ensures that the estimates of the coefficients of the independent variables are valid measures of those variables' impact on analyst optimism relative to the consensus (e.g., $N\_Buy_{j,t}$ is the number of *strong buy* and *buy* recommendations for company j in quarter t).

Next, I test H1 for a change in the tone of the RD analysts' recommendations in their final year relative to previous years. To do this, I estimate the following regression from the recommendations made by RD analysts on their hiring firms throughout their career:

$$Recommendation_{i,j,t} = Ordered\ Logistic\left(\beta_1 Final\_Year_{i,j,t} + \beta_2 Controls + \varepsilon_{i,j,t}\right) \quad (4)$$

where the independent variables are defined as described above.

Finally, I use Regressions (1)–(4) to rule out the possibility that relative optimism is confined to these firms and is not present in the analysts' estimates for other (non-hiring) firms they cover in their final year. For this test, I use reports prepared by analysts in the final year on all other (non-hiring) firms they cover.

Descriptive Statistics

Table 2 shows the distribution of the variables for the two main samples used throughout this paper for all types of reports. The first sample includes all reports issued by all analysts who cover the hiring firms in the final year of the RD analysts' career. The second sample includes all the reports issued by the RD analysts on their hiring firms throughout their careers. At the final year of the RD analysts' employment, there are 2,595 recommendations made for the hiring firms. The average recommendation is a 2.39 and the median recommendation is a hold. RD analysts throughout their career have made 1,427 recommendation for the hiring firms. The average recommendation is 2.55 and the median recommendation is a buy.

Table 3 presents a univariate analysis of the RD analysts' characteristics measured at the time of their last EPS forecast on their hiring firms. Panel A compares these characteristics to those of other analysts who cover the same companies at the same time. On average, there are almost no differences between these two groups. There is no significant difference between the groups in terms of the analysts' number of companies covered, average years of experience, the average size of their brokerage houses, the percentage of analysts who work for a high-status brokerage house, the average accuracy of analysts' reports throughout their career, or the percentage of institutional investor all-star ranked analysts.[17] There is, however, a significant difference between the number of years that RD analysts covered their hiring firms and the number of years the other analysts followed the same firms. Specifically, RD analysts followed their would-be employers for 1.22 years longer, on average, than other analysts.

Panel B of Table 3 compares the differences between RD analysts' characteristics and those of all departing analysts.[18] Many differences are significant. RD analysts have almost twice as much experience, are more accurate throughout their careers, cover more companies, and are more likely to be selected as all-star analysts. The analysts' career concerns literature has generally treated all departing analysts as having been terminated from their job.[19] The results of Table 3 show that RD analysts are different from departing analysts, but they are similar to other analysts who cover the same firms at the same time. These results suggest that RD analysts may leave the profession of their own free will.

Panel C of Table 3 presents the results of a univariate analysis of five types of analysts' research estimates. The results suggest that in their final year, RD analysts are more optimistic than other analysts who cover the same firms at the same time. This is true for all types of estimates, except for one-year-ahead EPS forecasts.[20] As mentioned in Section IV, issuing favorably biased short-term earnings forecasts is unlikely to be an effective way for job-seeking analysts to gain favor with prospective employers, since an optimistic earnings forecast sets a more difficult benchmark for the firm to meet. I concentrate the rest of my analysis on recommendations, target prices, and two-year-ahead EPS forecasts.

---

[17] Following Hong and Kubik (2003), I identify a *high-status* brokerage house as one with a house size in the top 3 percent each year.

[18] Analysts who were present on, and then left, the I/B/E/S database within the sample period.

[19] An exclusion to that are Wu and Zang (2009) and Bradley, Gokkaya, and Liu (2017), who show that a small portion of analysts receive promotions to Director of Research at the brokerage house.

[20] Following Horton et al. (2017), I examine whether the walk-down pattern of revolving door analysts in their one-year-ahead EPS forecasts made during their final year is different from the pattern displayed by other analysts who follow that same firm. The results (untabulated) show no such difference. This is not surprising, given that I do not find a difference in the level of optimism of these forecasts between the two groups of analysts.

TABLE 2

Descriptive Statistics

	All Analysts in the Final Year						Revolving Door Analysts Throughout Their Career					
	n	Mean	S.D.	P25	P50	P75	n	Mean	S.D.	P25	P50	P75
Target Prices												
Relative Optimism	9,097	−0.01	0.94	−0.68	−0.02	0.67	2,584	0.23	0.83	−0.49	0.35	0.79
Companies_Covered	9,097	0.44	0.34	0.15	0.38	0.70	2,584	0.39	0.39	0.00	0.29	0.75
Brokerage_Size	9,097	0.32	0.36	0.03	0.15	0.53	2,584	0.37	0.40	0.01	0.19	0.81
Coverage_Length	9,097	0.42	0.38	0.00	0.33	0.75	2,584	0.45	0.42	0.00	0.38	1.00
FY1_Accuracy	9,097	0.75	0.27	0.50	0.86	0.96	2,584	0.68	0.30	0.50	0.78	0.94
EPS FY2												
Relative Optimism	21,157	0.01	0.98	−0.64	0.01	0.64	4,705	0.07	0.92	−0.56	0.09	0.70
Companies_Covered	21,157	0.39	0.28	0.16	0.33	0.56	4,705	0.37	0.31	0.12	0.29	0.55
Brokerage_Size	21,157	0.34	0.30	0.08	0.24	0.51	4,705	0.32	0.28	0.10	0.26	0.44
Coverage_Length	21,157	0.35	0.32	0.08	0.25	0.54	4,705	0.48	0.38	0.13	0.43	0.91
FY1_Accuracy	21,157	0.63	0.25	0.45	0.66	0.84	4,705	0.62	0.26	0.44	0.64	0.84
Recommendations												
Recommendations	2,595	2.39	0.67	2.00	2.00	3.00	1,427	2.55	0.59	2.00	3.00	3.00
Companies_Covered	2,595	0.41	0.37	0.03	0.31	0.73	1,427	0.37	0.38	0.00	0.26	0.67
Brokerage_Size	2,595	0.34	0.38	0.02	0.16	0.69	1,427	0.35	0.40	0.00	0.16	0.78
Coverage_Length	2,595	0.37	0.40	0.00	0.20	0.75	1,427	0.42	0.43	0.00	0.29	1.00
FY1_Accuracy	2,595	0.70	0.27	0.50	0.79	0.94	1,427	0.70	0.28	0.50	0.80	0.95
N_Buy	2,595	4.95	4.56	2.00	4.00	6.00	1,427	5.37	6.66	2.00	3.00	6.00
N_Hold	2,595	5.12	5.97	1.00	3.00	6.00	1,427	3.82	4.90	1.00	2.00	5.00
N_Sell	2,595	1.10	1.59	0.00	0.00	2.00	1,427	0.88	1.94	0.00	0.00	1.00

This table reports descriptive statistics for the two main samples. The first is of all analysts who cover the hiring firms at the final year of the revolving door analysts' career. The second is of revolving door analysts who cover the hiring firms throughout their careers. The dependent variables are as follows. *Relative Optimism*$_{i,j,t}$ is analyst *i*'s target price (EPS forecast) of company *j* at time *t*. This target price (EPS forecast) is compared to the average target price (EPS forecast) for all analysts issuing target prices (EPS forecasts) for company *j* within the same month (year). The relative optimism is standardized across firms by deflating the standard deviation of target prices (EPS forecasts) across all analysts who cover the firm within that month (year). Recommendations is coded as 3 (buy and strong buy), 2 (hold), and 1 (underperform and sell).
Definitions of the independent variables are provided in Appendix A.

V. RESULTS

Relative Optimism About the Hiring Firms

Columns (1)–(3) of Table 4 present the results regarding the relative optimism of the RD analysts' target prices, two-year-ahead EPS forecasts, and recommendations for the covered companies in their final year (based on Regressions (1) and (3)). The results in these columns are based on reports on the hiring firms issued in the final year by all analysts who cover these firms. The coefficient on the variable of interest, *RD,* represents the optimism of the RD analysts in their final year relative to other analysts. A positive coefficient on this variable indicates that the RD analyst has an optimistic outlook in his or her final year toward the hiring firm relative to the outlook held by other analysts toward that same firm.

The results presented in Table 4, Column (1) indicate that, consistent with H1, RD analysts provide more optimistic target prices for their hiring firm in their final year than other analysts who cover the same firm. Column (1) shows that the coefficient on *RD* is 0.301, which is significant at the 1 percent level. This indicates that the target price issued by RD analysts is higher by 0.301 standard deviations than the mean target price of the consensus. Based on the mean target price of $77.2 in the sample (with a standard deviation of 20.6), the average RD analyst would have an optimistic target price of $83.4 (i.e., 0.301 standard deviations higher than the mean).

I find a similar result for two-year-ahead EPS forecasts and for recommendations, as shown in Table 4, Columns (2) and (3), respectively. RD analysts produce significantly more optimistic EPS forecasts in their final year than the consensus in that same year. The coefficient of *RD,* shown in Column (2), is 0.155 and is significant at the 5 percent level. Similarly, RD analysts issue higher recommendations on their hiring firms than do other analysts who cover these firms during this period. Column (3) shows that the coefficient on *RD* is 0.732 and is significant at the 1 percent level.

TABLE 3

Characteristics by Analyst Group

Panel A: Revolving Door Analysts versus Other Analysts Covering the Hiring Firm

	Revolving Door Analysts	Other Analysts	Difference	t-statistic[a]
Observations	299	5,237		
Number of companies the analyst covers	12.92	13.65	−0.73	−1.29
Number of analysts in the brokerage house	84.63	84.12	0.51	0.09
Number of years the analyst followed the hiring firm	4.19	2.97	1.22***	4.54
Number of years of experience as an analyst	9.28	8.71	0.57	1.54
Relative FY1 EPS accuracy throughout analyst career	0.053	0.087	−0.034	−0.59
Percent of II all-star analysts	13.6%	11.3%	2.3%	0.78
Percent of analysts in high-status brokerage houses	36.8%	36.3%	0.5%	0.04

Panel B: Revolving Door Analysts versus All Departing Analysts

	Revolving Door Analysts	Other Analysts	Difference	t-statistic[a]
Observations	299	6,770		
Number of companies the analyst covers	12.92	7.92	5.00***	8.93
Number of analysts in the brokerage house	84.63	78.03	6.60	1.34
Number of years of experience as an analyst	9.28	4.91	4.37***	13.00
Relative FY1 EPS accuracy throughout analyst career	0.053	−0.037	0.09***	7.43
Percent of II all-star analysts	13.6%	8.4%	5.2%**	5.32
Percent of analysts in high-status brokerage houses	36.8%	30.4%	6.4%*	3.07

Panel C: Relative Optimism of Revolving Door Analysts vs. Other Analysts Covering the Hiring Firm

	Revolving Door Analysts	Other Analysts	Difference	t-statistic[a]
Recommendations	2.59	2.36	0.23***	5.44
Target Prices	0.310	−0.031	0.341***	9.86
FY1 EPS Forecasts	0.037	−0.002	0.039	1.43
FY2 EPS Forecasts	0.177	−0.001	0.18***	5.29
FY3 EPS Forecasts	0.207	−0.023	0.23***	4.72

*, **, *** Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

[a] Proportion test for the percentage of II all-star analysts and analysts in top brokerage firms is a Chi-square test.

This table reports univariate analysis at the time that the revolving door analysts issued their last EPS forecast on the hiring firm, compared with other analysts who covered these firms at that time (Panel A) and compared with other departing analysts (Panel B). For descriptive purposes, the analysts' characteristics are not standardized. In testing the hypotheses, these characteristics are standardized, as described in Appendix A. Panel C reports the results of the revolving door analysts' optimism relative to other analysts who cover these firms during this period. The variables are as follows. *Relative Optimism*$_{i,j,t}$ is analyst *i*'s target price (EPS forecast) of company *j* at time *t*. This target price (EPS forecast) is compared to the average target price (EPS forecast) for all analysts issuing target prices (EPS forecasts) for company *j* within the same month (year). The relative optimism is standardized across firms by deflating the standard deviation of target prices (EPS forecasts) across all analysts who cover the firm within that month (year). *Recommendations* is coded as 3 (buy and strong buy), 2 (hold), and 1 (underperform and sell).

Analysts employed by larger brokerage houses provide less optimistic recommendations. Analysts who cover a firm for a longer time provide more optimistic target prices. There is no evidence that the number of companies the analyst covers affects the content of their reports.

In an alternative test of H1, I compare the optimism of RD analysts in their final year to the optimism they exhibited toward that same firm throughout their careers. The last three Columns in Table 4 provide the results of this test. They show that the

TABLE 4

Relative Optimism of Revolving Door Analysts about the Hiring Firms in Their Final Year as Analysts

	Revolving Door Analysts' Relative Optimism in the Final Year Compared with:					
	Optimism of Other Analysts			Optimism Throughout Their Careers		
	Target Prices (1)	EPS FY2 (2)	Recommendations (3)	Target Prices (4)	EPS FY2 (5)	Recommendations (6)
RD	0.301***	0.155**	0.732***			
	(4.47)	(2.03)	(4.56)			
Final_Year				0.153**	0.186***	0.538**
				(2.10)	(3.35)	(2.51)
Companies_Covered	−0.038	−0.013	−0.153	−0.125*	0.007	−0.255
	(−0.78)	(−0.23)	(−1.22)	(−1.79)	(0.11)	(−1.14)
Brokerage_Size	−0.043	−0.039	−0.440***	−0.155	−0.196**	−0.226
	(−0.65)	(−0.40)	(−3.78)	(−1.51)	(−2.36)	(−1.16)
Coverage_Length	0.132***	−0.018	0.255**	0.178*	0.146**	−0.112
	(2.88)	(−0.44)	(2.18)	(1.87)	(2.23)	(−0.53)
FY1_Accuracy	0.066	−0.263***	0.140	−0.064	−0.453***	−0.129
	(1.14)	(−2.90)	(0.79)	(−0.67)	(−6.31)	(−0.47)
N_Sell			−0.390***			−0.423***
			(−9.83)			(−5.59)
N_Hold			−0.062***			−0.174***
			(−7.26)			(−3.27)
N_Buy			0.143***			0.309***
			(9.45)			(6.72)
Brokerage House FE	Yes	Yes				
Analyst FE				Yes	Yes	
Observations	9,097	21,157	2,595	2,584	4,705	1,427
Adjusted R^2	0.093	0.070		0.211	0.162	
Pseudo R^2			0.119			0.250

*, **, *** Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

The samples used to examine the relative optimism of the revolving door analysts in their final year before moving to a covered company, relative to other analysts who cover these firms during this period (Columns (1), (2), and (3)), include all forecasts made by all analysts who cover the hiring firm during this year. Model 1 is used to examine target prices and EPS forecasts, and Model 3 is used to examine recommendations. The samples used to examine the relative optimism of revolving door analysts during their final year, as compared with that throughout their careers (excluding their final year), include all of the forecasts on the hiring firm made only by revolving door analysts (Columns (4), (5), and (6)). Model 2 is used to examine target prices and EPS forecasts and Model 4 is used to examine recommendations. Definitions of the variables are provided in Appendix A. t-statistics (z-statistics for Columns (3) and (6)) are provided in parentheses, with heteroscedastic-consistent standard errors clustered at the analyst level.

degree of relative optimism in an analyst's final year exceeds that of previous years. The results provided in Column (4) indicate that RD analysts alter their level of optimism in their target prices in their final year relative to their optimism in previous years. The coefficient of the variable of interest, *Final_Year,* is 0.153 and is significant at the 5 percent level. This suggests that RD analysts are more favorably biased in terms of the target prices they set for their hiring firms compared to the target prices they set earlier in their careers. Based on the mean target price of $91.5 in the sample (with a standard deviation of 26.3), the average RD analyst in her final year sets an optimistic target price of $95.5 (i.e., 0.153 standard deviations higher than the mean). A similar result is obtained for two-year-ahead EPS forecasts and for recommendations (presented in Columns (5) and (6), respectively), and the coefficient on *Final_Year* is positive and significant for both variables at the 1 percent and 5 percent levels, respectively.

Overall, the results presented in Table 4 are consistent with H1. For all three projections contained in their reports, RD analysts not only displayed greater optimism in their final year relative to other analysts who cover the same firms, but their relative optimism with respect to their hiring firm increased in their final year.

TABLE 5

Relative Optimism of Revolving Door Analysts about the Other (Non-Hiring) Firms in Their Final Year as Analysts

	Revolving Door Analysts' Relative Optimism in the Final Year Compared with:					
	Optimism of Other Analysts			Optimism Throughout Their Careers		
	Target Prices (1)	EPS FY2 (2)	Recommendations (3)	Target Prices (4)	EPS FY2 (5)	Recommendations (6)
RD	−0.055**	−0.059**	0.044			
	(−2.14)	(−2.03)	(0.62)			
Final_Year				−0.067**	−0.111**	−0.138**
				(−2.01)	(−2.23)	(−2.15)
Brokerage House FE	Yes	Yes				
Analyst FE				Yes	Yes	
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	39,275	81,288	13,934	43,260	67,088	28,855
Adjusted R^2	0.053	0.053		0.102	0.051	
Pseudo R^2			0.134			0.147

*, **, *** Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

The samples used to examine the relative optimism of the revolving door analysts in their final year before moving to a covered company, relative to other analysts who cover these firms during this period (Columns (1), (2), and (3)), include all forecasts made by all analysts who cover the non-hiring firms during this year. Model 1 is used to examine target prices and EPS forecasts, and Model 3 is used to examine recommendations. The samples used to examine the relative optimism of revolving door analysts during their final year, as compared with that throughout their careers (excluding their final year), include all of the forecasts on the non-hiring firms made only by revolving door analysts (Columns (4), (5), and (6)). Model 2 is used to examine target prices and EPS forecasts, and Model 4 is used to examine recommendations. Control variables (Columns (1)–(6)) include *Companies_Covered, Brokerage_Size, Coverage_Length,* and *FY1_Accuracy*. Columns (3) and (6) also include the following control variables: *N_ Sell, N_Hold,* and *N_Buy*. t-statistics (z-statistics for Columns (3) and (6)) are provided in parentheses, with heteroscedastic-consistent standard errors clustered at the analyst level. Definitions of the variables are provided in Appendix A.

Relative Optimism About the Other (Non-Hiring) Firms

Table 5 shows the results of RD analysts' relative pessimism about the non-hiring firms they cover. The results reported in Columns (1), (2), and (3) are based on an analysis of the reports issued by all the analysts who cover these non-hiring firms during the RD analysts' final year. Column (1) shows that RD analysts issue more pessimistic target prices for the non-hiring firms in their final year than other analysts: the coefficient on *RD* is −0.055 and is significant at the 5 percent level. Column (2) shows that RD analysts also issue lower EPS forecasts: the coefficient on *RD* is −0.059 and is significant at the 5 percent level. However, Column (3) shows that the coefficient on *RD* for recommendations (i.e., 0.044) is insignificant.

The difference between the RD analysts' relative pessimism in their final year with their pessimism throughout their careers is presented in Table 5, Columns (4), (5), and (6). Examining analysts' behavior regarding target prices, the coefficient on *Final_Year* (Column (4), −0.067) is significant at the 5 percent level, suggesting that RD analysts change their outlook in their final year, issuing relatively more pessimistic target prices about the other firms they are following. Similar results are obtained for the two-year-ahead EPS forecasts, with the coefficient of *Final_Year* (Column (5), −0.111) significant at the 5 percent level, and for recommendations (Column (6), a coefficient of −0.138) significant at the 5 percent level.

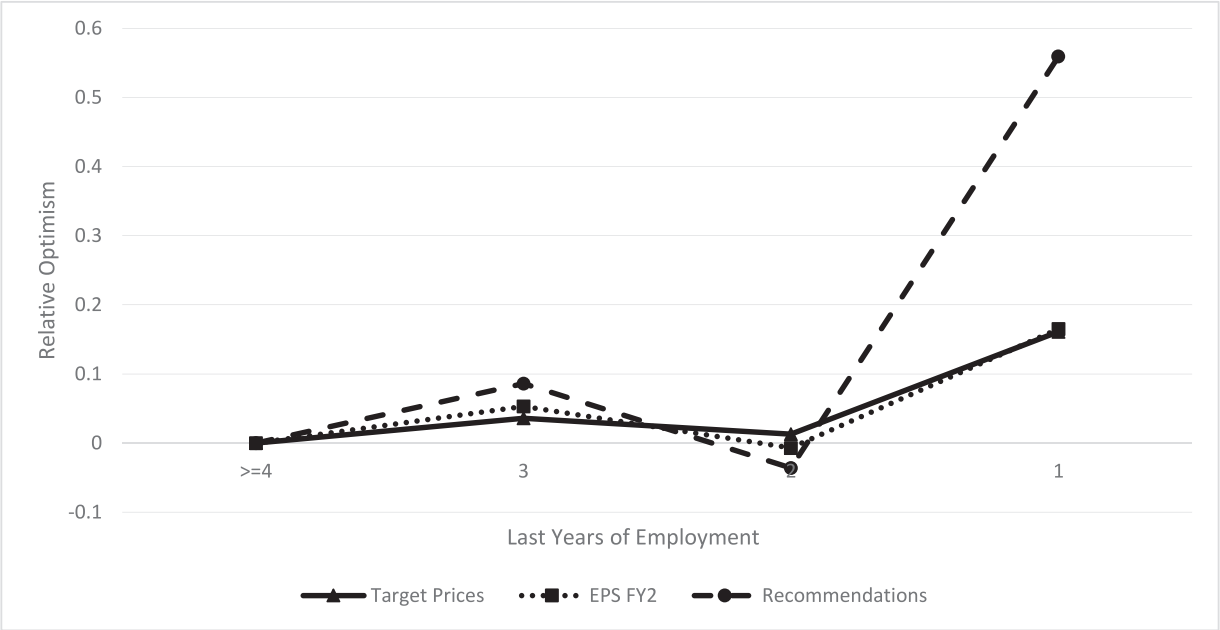
Overall, the results presented in Table 5 help rule out the possibility that the favorable bias shown by RD analysts toward their hiring firm is merely a reflection of a more general optimistic outlook they hold for all firms in that year. On the contrary, the results show that in their final year, RD analysts issue relatively more *pessimistic* reports about the non-hiring firms they follow compared to their reports in prior periods.

Trend in Relative Optimism in Final Years of Employment

Section V shows that RD analysts, in their final year, are relatively more optimistic (pessimistic) about hiring (non-hiring) firms than they were throughout their career. To ascertain whether there is a shift in the RD analysts' optimism in their final

FIGURE 1
Trend in Revolving Door Analysts' Relative Optimism in Their Final Years of Employment

Panel A: Revolving Door Analysts' Relative Optimism Toward the Hiring Firms



(continued on next page)

year or whether this increase in optimism (pessimism) happens earlier, I use Regressions (2) and (4) with the addition of two variables of interest. The variable *Last_2_Years* (*Last_3_Years*) is a dummy variable that receives the value of 1 for the forecasts made in the last two (three) years of the RD analyst's employment as an analyst, and 0 otherwise. This research design allows me to examine exactly where the shift in optimism happens, as each variable of interest represents the difference in relative optimism from the year prior.

The coefficients from the regressions that are reported in Figure 1 verify that the change in optimism occurs in the final year of the RD analysts' employment. Figure 1, Panel A, which examines the relative optimism of RD analysts toward their hiring firm throughout their careers, shows that RD analysts become more optimistic in their final year of employment than they were two years before the end of their employment (i.e., the coefficient of the variable of interest *Final_Year* is positive and significant for all three types of estimates). Figure 1, Panel A also shows that there is no difference in the relative optimism between two years before the end of employment and three years prior, and it shows that there is no difference between three years before the end of employment and the analysts' career up until that year (the coefficients of the other variables of interest *Last_2_Years* and *Last_3_Years* are insignificant).

Similarly, Figure 1, Panel B shows that the increase in relative pessimism toward the non-hiring firms materializes in the final year and not before then. The variable of interest, *Final_Year,* is negative and significant for target prices and EPS forecasts, and is negative, but insignificant, for recommendations. As before, the coefficients on *Last_2_Years* and *Last_3_Years* are insignificant for all three estimates, which suggests that RD analysts' shift in relative pessimism toward non-hiring firms only happens in the final year.

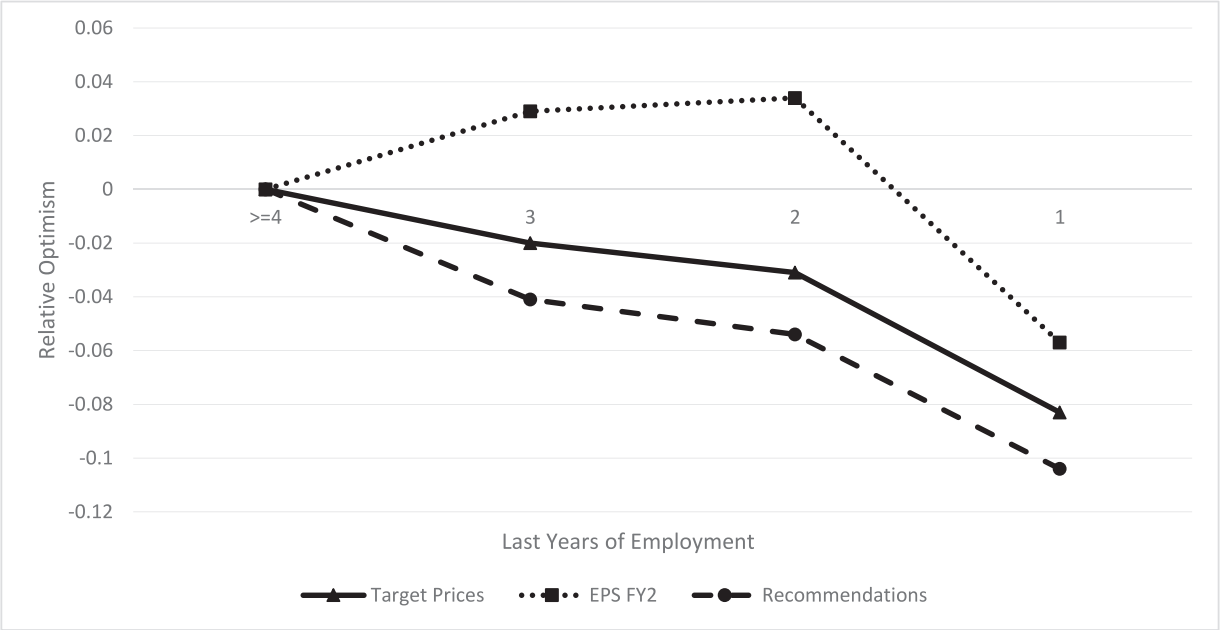
Overall, the results presented in Figure 1 confirm that the change in optimism of RD analysts toward both the hiring and non-hiring firms occurs only in the final year, when the analysts are likely aware of the job opportunity, and not before then.

Relative Effort Exerted by Revolving Door Analysts

Table 6 presents the results of testing H2, which posits that RD analysts exert relatively more effort in their final year than in prior periods, as gauged by the increased number of reports they issue on covered firms that hire them. As shown in Column

FIGURE 1 (continued)

Panel B: Revolving Door Analysts' Relative Optimism Toward the Non-Hiring Firm



The samples used in the figure include all of the forecasts on the hiring (non-hiring) firms made only by revolving door analysts. The coefficients from Regressions (2) and (4) of the variable of interest *Final_Year* are presented with the addition of two variables of interest. *Last_2_Years* (*Last_3_Years*) is a dummy variable that receives the value of 1 for the forecasts made in the last two (three) years of the revolving door analyst's employment as an analyst, and 0 otherwise. An upward (downward) trend in the final year indicates that the revolving door analysts are becoming relatively more optimistic (pessimistic) toward the (non) hiring firms.

(1), the RD analysts issue a higher frequency of reports on their hiring firms in their final year relative to other analysts who cover the same firms at the same time. The coefficient *RD* (0.155) is positive and significant at the 5 percent level. In contrast, the results provided in Column (2) (an insignificant coefficient on *RD* of −0.043) indicate that RD analysts do not increase the number of reports they issue on the other (non-hiring) firms they cover relative to other analysts who cover these same firms at that time.

In comparison to their level of relative effort throughout their careers, the coefficient on *Final_Year* in Table 6 (0.219, Column (3)) is significant at the 5 percent level. This suggests that RD analysts issue relatively a higher frequency of reports on their hiring firm during their final year than they did in previous years. At the same time, there is no change in the number of reports they issue on the other non-hiring firms they cover during this period.

Overall, the results provided in Table 6 suggest that RD analysts issue a higher frequency of reports on their hiring firms in their final year, relative to both other analysts who cover the same firms and to their own prior behavior. While their individual motivations are not known, this finding is consistent with the notion that RD analysts are trying to attract the attention of their hiring firms in order to increase their chances of being hired.

VI. ALTERNATIVE EXPLANATIONS

Analysts Express Their True Opinion—Cross-Sectional Tests

As stated in the introduction, the finding that RD analysts are optimistic about their future employers is consistent with the notion that when a job candidate displays a positive outlook regarding a potential employer, the job candidate becomes more attractive to the hiring firm, and *vice versa,* thus increasing the likelihood of a successful match and hiring. In this case, there would be no conflict of interest, since the analysts are not purposefully altering their reports in favor of their would-be

TABLE 6

Relative Effort of Revolving Door Analysts in Their Final Year as Analysts

	Revolving Door Analysts' Relative Effort in The Final Year Compared with:			
	Effort of Other Analysts		Effort Throughout Their Careers	
	Hiring Firms (1)	Non-Hiring Firms (2)	Hiring Firms (3)	Non-Hiring Firms (4)
RD	0.155**	−0.043		
	(2.27)	(−1.09)		
Final_Year			0.219**	0.068
			(2.49)	(1.51)
Companies_Covered	0.107**	0.151***	0.390*	0.181***
	(2.05)	(5.58)	(1.93)	(3.47)
Brokerage_Size	0.348***	0.048	0.267	−0.024
	(3.25)	(1.10)	(0.79)	(−0.36)
Coverage_Length	0.421***	0.381***	0.058	0.339***
	(11.16)	(20.36)	(0.29)	(13.50)
Constant	−0.313***	−0.228***	−0.127	−0.272***
	(−8.23)	(−12.18)	(−0.72)	(−8.18)
Brokerage House FE	Yes	Yes		
Analyst FE			Yes	Yes
Observations	9,199	46,638	1,547	31,885
Adjusted R^2	0.158	0.139	0.195	0.177

*, **, *** Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.
The samples used to examine the relative effort of the revolving door analysts in their final year before moving to a covered company, relative to other analysts who cover these firms during this period (Columns (1) and (2)), include all forecasts made by all analysts who cover the hiring and non-hiring firms, respectively, during this year. The samples used to examine the relative effort of revolving door analysts during their final year, as compared with that throughout their careers (excluding their final year), includes all of the forecasts on the hiring and non-hiring firms, respectively, made only by revolving door analysts (Columns (3) and (4)). Model 1 is used to examine the reports made on the hiring firms, and Model 2 is used to examine those made on the other (non-hiring) firms. t-statistics are in parentheses, with heteroscedastic-consistent standard errors clustered at the analyst level.
Definitions of the variables are provided in Appendix A.

employers. Therefore, while the RD analysts' change in outlook toward their hiring firm in the final year suggests strategic bias, I cannot completely rule out an innocuous interpretation of the results.

With this caveat in mind, I follow Bradshaw et al. (2016) in conducting cross-sectional tests that provide additional evidence that the bias is strategic rather than innocuous. These tests use Models (2) and (4) and compare the RD analysts' relative optimism in their final year to their relative optimism throughout their career in the cross-section. In the first test, I examine the relationship between the bias and the level of competition among analysts on outside jobs in the industry. I use the average number of analysts per firm in the industry as a measure of analyst competition.[21] I expect that analysts operating in industries with a higher degree of competition will have a stronger motivation to stand out above the competition. In the second test, I examine the effect of industry litigation risk on analysts' bias. Past research shows that other professionals who operate in the capital market (e.g., auditors and underwriters) respond to higher litigation risk by modifying their behavior to reduce their own exposure to litigation.[22] In the same vein, I expect that analysts in industries with high litigation risk would be less inclined to bias their reports.

Table 7 presents the results from these tests. Columns (1) and (2) partition the sample by the degree of competition in an industry, measured by the average number of analysts per firm in the industry in the final year of the RD analyst's career (the top quintile represents high competition and the bottom quintile represents low competition). The coefficient of interest, *Final_*

[21] Merkley, Michaely, and Pacelli (2017) show that the higher the number of analysts who cover an industry, the greater the competition among them.
[22] Venkataraman, Weber, and Willenborg (2008) show that auditors produce higher-quality audits for firms that have a higher litigation risk, and Lowry and Shu (2002) document that underwriters underprice initial public offerings (IPOs) for such firms.

TABLE 7

Relative Optimism of Revolving Door Analysts about the Hiring Firms in Their Final Year as Analysts
Cross-Sectional Analysis

Panel A: Price Targets

	Degree of Competition in the Industry		Litigation Risk of the Industry	
	High Competition Among Analysts (1)	Low Competition Among Analysts (2)	High Litigation (3)	Other Industries (4)
Final_Year	0.402***	−0.037	−0.062	0.173**
	(2.83)	(−1.09)	(−0.81)	(2.32)
Analyst FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations	649	644	236	2,348
Adjusted R^2	0.387	0.242	0.397	0.210

Panel B: EPS FY2

	Degree of Competition in the Industry		Litigation Risk of the Industry	
	High Competition Among Analysts (1)	Low Competition Among Analysts (2)	High Litigation (3)	Other Industries (4)
Final_Year	0.266**	0.055	−0.343	0.211***
	(2.56)	(0.60)	(−1.34)	(3.67)
Analyst FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations	1,176	1,177	379	4,326
Adjusted R^2	0.204	0.182	0.132	0.176

Panel C: Recommendations

	Degree of Competition in the Industry		Litigation Risk of the Industry	
	High Competition Among Analysts (1)	Low Competition Among Analysts (2)	High Litigation (3)	Other Industries (4)
Final_Year	0.941	0.254	−0.334	0.537**
	(1.60)	(0.72)	(−0.32)	(2.50)
Controls	Yes	Yes	Yes	Yes
Observations	352	334	137	1,290
Pseudo R^2	0.247	0.297	0.688	0.228

*, **, *** Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.
Industry is determined according to SIC four-digit classification; High (Low) Competition industries are those in which the average number of analysts per firm in the industry is at the top (bottom) quintile of the distribution in the final year; High-Litigation industries include Bio Technology (SIC 2833–2836), Computer Hardware (SIC 3570–3577), Electronics (SIC 3600–3674), Retailing (SIC 5200–5961), and Computer Software (SIC 7371–7379). Model 2 is used to examine target prices and EPS forecasts, and Model 4 is used to examine recommendations. Control variables (Panels A, B, and C) include *Companies_Covered, Brokerage_Size, Coverage_Length,* and *FY1_Accuracy*. Panel C also include the following control variables: *N_Sell, N_Hold,* and *N_Buy*. t-statistics (z-statistics for Panel C) are provided in parentheses, with heteroscedastic-consistent standard errors clustered at the analyst level. Definitions of the variables are provided in Appendix A.

Year, is positive and significant at the 1 percent level (Column (1), 0.402) for industries that have a high level of analyst following, but negative and insignificant for industries with low analyst following for target prices. The difference in coefficients is statistically significant, with a one-tailed p-value of 0.0106. Similar results are obtained for two-year-ahead EPS forecasts. The difference in coefficients is statistically significant, with a one-tailed p-value of 0.0596.

Columns (3) and (4) of Table 7 partition the sample into high-litigation industries and non-high-litigation industries.[23] For target prices, the coefficient of interest, *Final_Year,* is negative and insignificant for high-litigation industries (Column (3), −0.062), but positive and significant at the 5 percent level (Column (4), 0.173) for high-litigation industries. The difference in coefficients is statistically significant, with a one-tailed p-value of 0.0741. Similarly, the difference between coefficients is statistically significant for two-year-ahead EPS forecasts, with a one-tailed p-value of 0.0148. These tests provide additional evidence consistent with the notion that analysts strategically bias their forecasts to gain favor with their hiring firm. RD analysts do not bias their reports when there is high litigation risk, and are more likely to bias their reports when the perceived competition for the job is high.

Optimism Relative to Realized Performance

The next test examines another alternative explanation, which is that RD analysts' optimistic outlook toward their hiring firm is valid based on the firm's realized performance. To do this, I examine the price target accuracy and the two-year-ahead EPS forecast accuracy of the RD analysts relative to other analysts who cover the same firms at the same time. Similar to the relative optimism and effort measures, *relative accuracy* is defined as follows. For illustrative purposes, I use the target price; the same calculation is used for EPS forecasts:

$$Relative\ Accuracy\ of\ Target\ Price_{i,j,t} = \frac{Average\ Forecast\ Error\ of\ All\ Analysts_{i,t} - Analyst's\ Forecast\ Error_{i,j,t}}{Standard\ Deviation\ \left(Forecast\ Error\ of\ All\ Analysts_{j,t}\right)}$$

where $Forecast\ Error_{i,j,t}$ is the absolute value of realize price minus analyst i's target price made three and 12 months before company j for month t.

I compare the relative accuracy in the final year to other analysts who cover the same firm at the same time, and I compare the relative accuracy in the final year to the relative accuracy of RD analysts throughout their careers (excluding their final year). The higher the analyst's forecast error relative to that of other analysts, the lower the calculated value of the measure and, thus, the lower the measure of relative accuracy.

The results of this analysis are provided in Table 8. The results presented in Column (1) and (2) indicate that RD analysts are less accurate in their target prices than other analysts who cover the hiring firm in their final year as analysts. The coefficient of *RD* is significant at the 1 percent and 5 percent level, respectively. For two-year-ahead EPS forecasts, there is no difference between the accuracy of the analysts in the final year.

More importantly, the results provided in Table 8, Columns (4), (5), and (6) indicate that the RD analysts are less accurate in their target prices and in their two-year-ahead EPS forecasts in their final year relative to their accuracy in prior years. The coefficient of the variable of interest, *Final_Year,* is negative and significant at the 1 percent, 5 percent, and 1 percent levels, respectively. This suggests that in their final year, RD analysts issue less accurate target prices and less accurate EPS forecasts for the hiring firms than they issued earlier in their careers. These findings cast doubt on the alternative explanation that the optimistic outlook of RD analysts toward their hiring firm in their final year can be explained by the hiring firm's realized performance.

Final-Year Change in Incentives

In contrast to the RD analysts who work for covered firms after leaving their analysts' positions, I identify 166 analysts who are eventually employed by a firm they once covered as analysts, but were first employed by a firm they did not cover as analysts. Because these analysts had at least one intervening employer, it is unlikely that these analysts knew before being hired by a firm they never covered that they would eventually be employed by a company they had covered. They, thus, had no incentive to alter their reports to seek favor with firms they followed in their final year. This group of analysts, thus, serves as a control group for the RD analysts. Because of this lack of incentives, I expect there to be no change in the optimism of this control group in their final year. In untabulated results, I find that analysts with intervening employers are not relatively more optimistic about the firm that eventually hires them, and there is no change in the optimism of this comparison group in their final year.[24]

[23] Following Gong, Li, and Xie (2009), I define *high-litigation industries* as Bio Technology (SIC 2833–2836), Computer Hardware (SIC 3570–3577), Electronics (SIC 3600–3674), Retailing (SIC 5200–5961), and Computer Software (SIC 7371–7379).

[24] I also examine the entire population of analysts who departed from the profession (I/B/E/S sample) to another occupation (but not to a covered firm). In untabulated results, I find that these departing analysts also do not change their optimistic outlook in their final year.

TABLE 8

Relative Accuracy of Revolving Door Analysts about the Hiring Firms in Their Final Year as Analysts

	Revolving Door Analysts' Relative Accuracy Compared with:					
	Accuracy of Other Analysts			Accuracy Throughout Their Careers		
	3 Month Price Realization (1)	12 Month Price Realization (2)	EPS FY2 (3)	3 Month Price Realization (4)	12 Month Price Realization (5)	EPS FY2 (6)
RD	−0.190***	−0.084**	−0.072			
	(−4.66)	(−2.09)	(−0.56)			
Final_Year				−0.139***	−0.099**	−0.342***
				(−2.98)	(−2.15)	(−3.37)
Brokerage House FE	Yes	Yes	Yes			
Analyst FE				Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,053	9,005	21,157	2,527	2,484	4,705
Adjusted R^2	0.060	0.053	0.594	0.110	0.080	0.320

*, **, *** Indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

The samples used to examine the relative accuracy of the revolving door analysts in their final year before moving to a covered company, relative to other analysts who cover these firms during this period (Columns (1), (2), and (3)), include all target prices (Columns (1) and (2)) and EPS forecasts (Column (3)) made by all analysts who cover the hiring firm during this year. The samples used to examine the relative accuracy of revolving door analysts during their final year, as compared with that throughout their careers (excluding their final year), include all of the target prices (Columns (4) and (5)) and EPS forecasts (Column (6)) on the hiring firm made only by revolving door analysts. Control variables (Columns (1)–(6)) include *Companies_Covered, Brokerage_Size,* and *Coverage_Length*. t-statistics are provided in parentheses, with heteroskedastic-consistent standard errors clustered at the analyst level.

Definitions of the variables are provided in Appendix A.

Do Firms Make Irrational Hiring Decisions?

Analysts may bias their reports in order to make themselves more attractive to the covered firms, and these firms may hire them. However, as noted in the introduction, this does not necessarily imply that these firms are acting irrationally, or that firms can be so influenced by an analyst's positive reports that they ignore the analyst's qualifications. In fact, when a covered firm hires an analyst, it loses this positive coverage. Therefore, the firm would be incentivized to gain something in return for this loss.

I explore whether the hiring firms benefit from the analyst's experience, from the analyst's firm- and industry-specific knowledge, and from the analyst's recent ties to the analyst community. To do this, I examine firms that employed RD analysts as investor relations officers (*IR Officers*). This is a common career path for analysts who join covered firms (56 percent of the sample). In this role, their impact on the firm can be assessed. IR officers have a primary responsibility to communicate with the financial community in general and with analysts in particular (Brennan and Tamarowski 2000; Kirk and Vincent 2014).[25] IR officers can benefit the firm by managing the analyst community expectations (Bartov, Givoly, and Hayn 2002) and by attracting additional analyst following (Bowen, Chen, and Cheng 2008).

In untabulated results, I find an increased probability of meeting or slightly beating analysts' expectations and of attracting a larger analyst following when firms hire RD analysts as IR officers, in comparison with firms that hire IR officers from other professions. These findings are consistent with rational behavior by the hiring firms. Firms are not simply swayed by the RD analysts' biased reports; they also consider the analysts' qualifications for their new positions.

VII. CONCLUSIONS

Conflicts of interest are difficult to determine and can be impossible to prove in individual cases. However, the aggregate pattern is clear. My findings suggest that the revolving door phenomenon creates conflicts of interest between analysts'

[25] According to the National Investor Relations Institute (2013), 97 percent of IR officers report that they are engaged in managing shareholder expectations, citing sell-side research reports as a primary source of information on these expectations.

fiduciary responsibilities and their desire to gain favor with their future employers. The evidence indicates that, relative to other analysts, the reports issued by RD analysts are more optimistic about their hiring firms in their final year than they were in prior years. In addition, I find that during this same period, their reports are more pessimistic about other firms (i.e., the non-hiring firms).

The results reported in this paper suggest that RD analysts, in their final year, bias their forecasts in favor of the hiring firms. Future research could examine whether these revolving door conflicts of interest play a role when analysts are hired by the buy-side clients they serve.

REFERENCES

Baber, W. R., J. Krishnan, and Y. Zhang. 2014. Investor perceptions of the earnings quality consequences of hiring an affiliated auditor. *Review of Accounting Studies* 19 (1): 69–102. https://doi.org/10.1007/s11142-013-9244-9

Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics* 33 (2): 173–204. https://doi.org/10.1016/S0165-4101(02)00045-9

Blanes i Vidal, J. B. I., M. Draca, and C. Fons-Rosen. 2012. Revolving door lobbyists. *American Economic Review* 102 (7): 3731–3748. https://doi.org/10.1257/aer.102.7.3731

Bowen, R. M., X. Chen, and Q. Cheng. 2008. Analyst coverage and the cost of raising equity capital: Evidence from underpricing of seasoned equity offerings. *Contemporary Accounting Research* 25 (3): 657–700. https://doi.org/10.1506/car.25.3.1

Bradley, D., S. Gokkaya, and X. Liu. 2017. The boss knows best: Directors of research and subordinate analysts. *Journal of Financial and Quantitative Analysis* (forthcoming).

Bradshaw, M. T. 2011. *Analysts' Forecasts: What Do We Know After Decades of Work?* Working paper, Boston College.

Bradshaw, M. T., L. F. Lee, and K. Peterson. 2016. The interactive role of difficulty and incentives in explaining the annual earnings forecast walkdown. *The Accounting Review* 91 (4): 995–1021. https://doi.org/10.2308/accr-51398

Brennan, M. J., and C. Tamarowski. 2000. Investor relations, liquidity, and stock prices. *Journal of Applied Corporate Finance* 12 (4): 26–37. https://doi.org/10.1111/j.1745-6622.2000.tb00017.x

Clement, M. B. 1999. Analyst forecast accuracy: Do ability, resources, and portfolio complexity matter? *Journal of Accounting and Economics* 27 (3): 285–303. https://doi.org/10.1016/S0165-4101(99)00013-0

Cohen, L., A. Frazzini, and C. J. Malloy. 2012. Hiring cheerleaders: Board appointments of "independent" directors. *Management Science* 58 (6): 1039–1058. https://doi.org/10.1287/mnsc.1110.1483

Cornaggia, J., K. J. Cornaggia, and H. Xia. 2016. Revolving doors on Wall Street. *Journal of Financial Economics* 120 (2): 400–419. https://doi.org/10.1016/j.jfineco.2016.01.007

Cowen, A., B. Groysberg, and P. Healy. 2006. Which types of analyst firms are more optimistic? *Journal of Accounting and Economics* 41 (1/2): 119–146. https://doi.org/10.1016/j.jacceco.2005.09.001

deHaan, E., S. Kedia, K. Koh, and S. Rajgopal. 2015. The revolving door and the SEC's enforcement outcomes: Initial evidence from civil litigation. *Journal of Accounting and Economics* 60 (2/3): 65–96. https://doi.org/10.1016/j.jacceco.2015.07.010

Donaldson, W. H. 2003. *Testimony on the Impact of the Global Settlement at the Hearing before the Senate Committee on Banking, Housing, and Urban Affairs*. 108th Congress 69 (May 7). Available at: https://www.gpo.gov/fdsys/pkg/CHRG-108shrg95946/html/CHRG-108shrg95946.htm

Dugar, A., and S. Nathan. 1995. The effect of investment banking relationships on financial analysts' earnings forecasts and investment recommendations. *Contemporary Accounting Research* 12 (1): 131–160. https://doi.org/10.1111/j.1911-3846.1995.tb00484.x

Ertimur, Y., J. Sunder, and S. V. Sunder. 2007. Measure for measure: The relation between forecast accuracy and recommendation profitability of analysts. *Journal of Accounting Research* 45 (3): 567–606. https://doi.org/10.1111/j.1475-679X.2007.00244.x

Fisch, J. E. 2006. Fiduciary duties and the analyst scandals. *Alabama Law Review* 58: 1083.

Fitch Ratings. 2006. *The Ratings Process*. Available at: http://pages.stern.nyu.edu/~igiddy/articles/rating_process.pdf

Gong, G., L. Y. Li, and H. Xie. 2009. The association between management earnings forecast errors and accruals. *The Accounting Review* 84 (2): 497–530.

Hong, H., and J. D. Kubik. 2003. Analyzing the analysts: Career concerns and biased earnings forecasts. *Journal of Finance* 58 (1): 313–351. https://doi.org/10.1111/1540-6261.00526

Hong, H., J. D. Kubik, and A. Solomon. 2000. Security analysts' career concerns and herding of earnings forecasts. *Rand Journal of Economics* 31 (1): 121–144. https://doi.org/10.2307/2601032

Horton, J., G. Serafeim, and S. Wu. 2017. Career concerns of banking analysts. *Journal of Accounting and Economics* 63 (2/3): 231–252. https://doi.org/10.1016/j.jacceco.2017.03.003

Jacob, J., T. Z. Lys, and M. A. Neale. 1999. Expertise in forecasting performance of security analysts. *Journal of Accounting and Economics* 28 (1): 51–82. https://doi.org/10.1016/S0165-4101(99)00016-6

Jiang, J. X., I. Y. Wang, and K. P. Wang. 2018. Revolving rating analysts and ratings of mortgage-backed and asset-backed securities: Evidence from LinkedIn. *Management Science* (forthcoming). https://doi.org/10.1287/mnsc.2017.2921

Kadan, O., L. Madureira, R. Wang, and T. Zach. 2009. Conflicts of interest and stock recommendations: The effects of the Global Settlement and related regulations. *Review of Financial Studies* 22 (10): 4189–4217. https://doi.org/10.1093/rfs/hhn109

Kirk, M. P., and J. D. Vincent. 2014. Professional investor relations within the firm. *The Accounting Review* 89 (4): 1421–1452. https://doi.org/10.2308/accr-50724

Kolasinski, A., and S. P. Kothari. 2004. *Investment Banking And Analyst Objectivity: Evidence from Forecasts and Recommendations of Analysts Affiliated with M&A Advisors*. Working paper, Texas A&M University.

Lim, T. 2001. Rationality and analysts' forecast bias. *Journal of Finance* 56 (1): 369–385. https://doi.org/10.1111/0022-1082.00329

Lin, H., and M. F. McNichols. 1998. Underwriting relationships, analysts' earnings forecasts and investment recommendations. *Journal of Accounting and Economics* 25 (1): 101–127.

Lowry, M., and S. Shu. 2002. Litigation risk and IPO underpricing. *Journal of Financial Economics* 65 (3): 309–335. https://doi.org/10.1016/S0304-405X(02)00144-7

Mehran, H., and R. M. Stulz. 2007. The economics of conflicts of interest in financial institutions. *Journal of Financial Economics* 85 (2): 267–296. https://doi.org/10.1016/j.jfineco.2006.11.001

Menon, K., and D. D. Williams. 2004. Former audit partners and abnormal accruals. *The Accounting Review* 79 (4): 1095–1118. https://doi.org/10.2308/accr.2004.79.4.1095

Merkley, K., R. Michaely, and J. Pacelli. 2017. Does the scope of the sell-side analyst industry matter? An examination of bias, accuracy, and information content of analyst reports. *Journal of Finance* 72 (3): 1285–1334. https://doi.org/10.1111/jofi.12485

Moody's Investors Service. 2011. *Core Principles for the Conduct of Rating Committees*. Available at: https://www.moodys.com/sites/products/ProductAttachments/Compliance/9-9-2011/SP13997_Core%20Principles%20for%20the%20Conduct%20of%20Rating%20Committees.pdf

National Association of Securities Dealers (NASD). 2007. *NASD Fines Wells Fargo Securities $250,000 for Failing to Disclose Analyst's Employment with Covered Company in Research Report* (June 27). Available at: http://www.finra.org/Newsroom/NewsReleases/2007/P019344

National Investor Relations Institute (NIRI). 2013. *Compensation Growth Continues for Corporate Investor Relations Officers According to Biennial NIRI and Korn Ferry Survey*. (June 25). Available at: http://www.shareholderforum.com/access/Library/20130513_IRMagazine.htm

Securities and Exchange Commission (SEC). 2003. *Statement Regarding Global Settlement Related to Analyst Conflicts of Interest*. (April 28). Available at: https://www.sec.gov/news/speech/spch042803com.htm

Standard & Poor's (S&P) Global Ratings, 2016. *General Description of the Credit Ratings Process as of June 16 2016*. New York, NY: Standard & Poor's.

Venkataraman, R., J. P. Weber, and M. Willenborg. 2008. Litigation risk, audit quality, and audit fees: Evidence from initial public offerings. *The Accounting Review* 83 (5): 1315–1345. https://doi.org/10.2308/accr.2008.83.5.1315

Wu, J. S., and A. Y. Zang. 2009. What determine financial analysts' career outcomes during mergers? *Journal of Accounting and Economics* 47 (1/2): 59–86. https://doi.org/10.1016/j.jacceco.2008.11.002

APPENDIX A

Variable Definitions

Variable		Definition
Relative Target Price Optimism	=	(Target Price$_{i,j,t}$ − Avg Target Price$_{j,t}$)/Stdev Target Price$_{j,t}$. Target Price$_{i,j,t}$ is analyst *i*'s forecast at time *t* for company *j*. This forecast is then compared to the average forecast for all analysts making forecasts for company *j* within the same month. The relative forecast is standardized across firms by deflating by the standard deviation of forecasts across all analysts forecasting for company *j* at time *t*.
Relative Target Price Accuracy	=	(Avg Target Price Forecast Error$_{j,t}$ − Target Price Forecast Error$_{i,j,t}$)/Stdev Target Price Forecast Error$_{j,t}$. Target Price Forecast Error$_{i,j,t}$ is analyst *i*'s forecast at time *t* for company *j*. This forecast error is then compared to the average forecast error for all analysts making forecasts for company *j* within the same month. The relative forecast error is standardized across firms by deflating by the standard deviation of forecast errors across all analysts forecasting for company *j* at time *t*.
Relative 1, 2, and 3 Years Ahead EPS Forecast Optimism	=	(EPS Forecast$_{i,j,t}$ − Avg EPS Forecast$_{j,t}$)/Stdev EPS Forecast$_{j,t}$. EPS Forecast$_{i,j,t}$ is analyst *i*'s forecast at time *t* for company *j*. This forecast is then compared to the average forecast for all analysts making forecasts for company *j* within the same 90 days. The relative forecast is standardized across firms by deflating by the standard deviation of forecasts across all analysts forecasting for company *j* at time *t*.
Relative 1 and 2 Years Ahead EPS Forecast Accuracy	=	(Avg EPS Forecast Error$_{j,t}$ − EPS Forecast Error$_{i,j,t}$)/Stdev EPS Forecast Error$_{j,t}$. EPS Forecast Error$_{i,j,t}$ is analyst *i*'s forecast error at time *t* for company *j*. This forecast error is then compared to the average forecast error for all analysts making forecasts for company *j* within the same 90 days. The relative forecast error is standardized across firms by deflating by the standard deviation of forecast errors across all analysts forecasting for company *j* at time *t*.
Number of Reports	=	the number of Recommendations, Target Prices, and EPS forecasts the analyst issues for each company each fiscal year.
Relative Effort	=	(Number of Reports$_{i,j,t}$ − Avg Number of Reports$_{j,t}$)/Stdev Number of Reports$_{j,t}$. Number of Reports$_{i,j,t}$ is analyst *i*'s Number of Recommendations, Target Prices, and EPS forecasts at time *t* for company *j*. The number of reports is then compared to the average number of reports for all analysts making forecasts for company *j* within the same fiscal year. The relative number of reports is standardized across firms by deflating by the standard deviation of number of reports across all analysts forecasting for company *j* at time *t*.
Recommendations	=	3 (buy and strong buy), 2 (hold), and 1 (underperform and sell).
RD	=	a dummy variable that receives a value of 1 for all the forecasts the RD analyst makes for all the firms she covers, and 0 otherwise
Final_Year	=	a dummy variable that receives a value of 1 for reports issued in the final year of the RD analyst's employment as an analyst, and 0 otherwise. The analyst's final year of employment consists of the 365 days ending with the release day of the last estimate of the analyst on I/B/E/S.
Companies_Covered	=	a measure of the number of companies analyst *i* follows in year *t* (calculated as the number of companies followed by analyst *i* who follows firm *j* in year *t* minus the minimum number of companies followed by analysts who follow firm *j* in year *t,* with this difference scaled by the range in the number of companies followed by the analysts following firm *j* in year *t*).
Brokerage_Size	=	a measure of the size of analyst *i*'s brokerage house (calculated as the number of analysts employed by the brokerage employing analyst *i* following firm *j* in year *t* minus the minimum number of analysts employed by brokerages for analysts following firm *j* in year *t,* with this difference scaled by the range of brokerage house sizes for analysts following firm *j* in year *t*).
Coverage_Length	=	a measure of analyst *i*'s firm-specific experience (calculated as the number of years of firm-specific experience for analyst *i* following firm *j* in year *t* minus the minimum number of years of firm-specific experience for analysts following firm *j* in year *t,* with this difference scaled by the range of years of firm-specific experience for analysts following firm *j* in year *t*).
N_Buy/N_Hold/N_Sell	=	the number of buy, hold, and sell recommendations, respectively, made by other analysts for the same company and quarter.