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The Revolving-Door of Sell-Side Analysts: A Threat to Analysts' Independence?

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The Revolving-Door of Sell-Side Analysts:

A Threat to Analysts' Independence?

A dissertation submitted in partial satisfaction of the

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in Management

by

Ben Lourie

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ABSTRACT OF THE DISSERTATION

The Revolving-Door of Sell-Side Analysts:

A Threat to Analysts' Independence?

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Ben Lourie

Doctor of Philosophy in Management

University of California, Los Angeles, 2015

Professor Carla Hayn, Chair

The "revolving-door" phenomenon whereby analysts are hired by firms that they cover poses a threat to their independence. In this paper, I document this phenomenon and assess the extent to which it is associated with analysts' issuance of biased research reports during the year prior to their employment with the covered firms. During this final year, I find that the revolving-door analysts alter their forecasts, target prices and recommendations in a direction which suggests that they are attempting to gain favor with their would-be employers. Specifically, relative to other analysts, they become more optimistic about the firms that end up hiring them while, at the same time, they become more pesimistic about other firms' prospects. The findings raise concerns about their independence and indicate a potential benefit to tightening employment regulations in this industry.

The dissertation of Ben Lourie is approved.

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David Aboody

Carla Hayn, Committee Chair

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TABLE OF CONTENTS

LIST OF TABLES

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VITA

Ben Lourie was born in Tel Aviv, Israel. After completing his schoolwork at Gimnazia Hertzelia in Tel Aviv in 2000, Ben joined the army for three years. He received Bachelor of Science with a major in Economics from Tel Aviv University in January 2007. During the following three years, he was employed as a consultant at Deloitte Management Consulting. In September 2010, he entered the Graduate School of The University of California at Los Angeles.

CHAPTER 1

INTRODUCTION

In this paper, I examine whether analysts who are hired by firms they have just covered (hereafter, revolving-door analysts) bias their earnings forecasts, target prices and stock recommendations in the year prior to their move to curry favor with their would-be employers. This issue is of concern since sell-side equity analysts occupy a position of trust in the capital markets, being relied upon by the investment community to produce forecasts and recommendations that are fair, unbiased and driven solely by professional considerations. The Securities and Exchange Commission (SEC) explicitly requires analysts to be independent, viewing them as "gatekeepers" of the investment community and as having fiduciary responsibilities for investors (Fisch, 2006).[1] As evidence of their independence, analysts are required to certify that the opinions expressed in their public reports accurately reflect their own views.[2]

The revolving-door phenomenon is a concern also in other professions on which the public relies for objectivity and independence. For example, concerns have been raised about the independence of auditors of public companies who are hired by their client firms. Similarly, whether congressional staff members who gain employment with lobbying firms or credit-rating analysts hired by companies they previously rated are able to maintain their independence has

1. See the testimony of William H. Donaldson, Chairman of the SEC, in the "Impact of the Global Settlement: Hearing before the Senate Committee on Banking, Housing, and Urban Affairs," 108th Congress 69 (2003). See also the SEC's statement regarding the Global Settlement that relates to analysts' conflicts of interests in which limitations on investing banking contacts are said to be "designed to maintain the analyst's role as gatekeeper," (April 28, 2003).

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

been questioned. In these instances, the possibility of a conflict of interests is mitigated either by requiring a "cooling-off" period or some form of notification.[3] A prime example of this is the cooling-off period specified in the Sarbanes-Oxley Act of 2002 which mandates that publicly-held companies cannot hire their auditor's former employees in key positions for at least a year.

Despite the possibility of a conflict of interests of revolving-door analysts, a cooling-off period is not required nor is any specific notification mandated. 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 conflict of interests." While this rule does not specifically mention the potential conflict of interests arising when an analyst is being considered for employment by a covered firm, clearly this situation would merit such a disclosure. To date, there is only one case where an enforcement action was taken against a revolving-door analyst who failed to disclose in her reports that, at the time these reports were issued, she was being interviewed by the company that was the subject of these reports.[4] This failure to disclose is clearly not limited to this single case in which disciplinary action was taken. My examination of the hundreds of relevant research reports issued by revolving-door analysts did not reveal even a single disclosure of a conflict of interests. Further, to the best of my knowledge, the Financial Industry Regulatory Authority (FINRA, formerly NASD) has not taken actions against any of these analysts. This is unexpected rather surprising finding given FINRA's policy that when "a research analyst is pursuing employment or has accepted a job with a

3. 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. This requires that the rating agency file a report with the SEC when an analyst moves to a covered firm within five years of being involved in producing the ratings of that firm.

4. The analyst in this case was initially fined by $12,500 but after an appeal, the fine 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 to avoid disclosing the conflict of interests.

covered company, the NASD rule require that information concerning such a clear conflict of interest must be disclosed in research reports."[5]

The purpose of this study is to examine the extent to which revolving-door analysts alter their behavior in favor of the covered firms during their last year of employment as analysts (henceforth referred to as the "last year"). Based on a sample of 299 revolving-door analysts over the period from 1999 to 2014, I find that in the last year, these analysts issued higher target prices and more optimistic recommendations for their would-be employing firms relative to other analysts covering these firms.[6] This relative optimism is much higher in their last year than in previous years, indicating a marked change in the behavior of the revolving-door analysts. During this same period, relative to other analysts, revolving-door analysts become more pessimistic about other firms' prospects, accentuating the optimism they display with respect to the companies that eventually hire them.

The findings also show that revolving-door analysts in their last year, perhaps in an attempt to capture the attention of their would-be employers, issue more reports about the hiring firm relative to both other analysts who cover that firm and as compared with the number of reports they issued in previous periods. While the latter does not bespeak a conflict of interests, the marked change in the tone of the revolving-door analysts' reports (recommendations, target prices and EPS forecasts) suggests that they are acting in such a way as to gain favor with their would-be hiring firms, compromising their independence in doing so.

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5. Statement made by James Shorris, former Head of Enforcement of NASD, in a NASD news release (2007).

6. The sample of 299 revolving-door analysts constitutes about 5% (9%) 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.

The main finding that revolving-door analysts change their behavior in their last year of employment to gain favor with their would-be employers could be consistent with three alternative explanations. First, it may be the case that revolving-door analysts are of a higher quality than other analysts and the change in behavior is justified. One attribute of higher quality analysts is that they produce more accurate EPS forecasts. Thus to investigate this explanation, I examine the relative accuracy of revolving-door analysts' EPS forecasts of the firms that hired them. The results indicate that these analysts are no more accurate than other analysts. In fact, considering their relative accuracy in forecasting EPS for all of the firms that they cover, revolving-door analysts are found to be less accurate, on average, than are other analysts.

A second alternative explanation for the change in behavior of the revolving-door analysts is that their incentives might shift in their last year of employment.[7] To test the feasibility of this explanation, I examine the change in behavior of two groups of analysts. The first group consists of departing analysts who are hired by a company they cover but only after an interim period of more than one year during which they were employed elsewhere. The second group consists of analysts who transitioned to another occupation upon leaving their positions as analysts but not to a covered firm.[8] Neither group changes its behavior in their last year of employment as analysts, thus providing no support for this explanation.

A third alternative explanation is that revolving-door analysts pursue employment at firms for which they are more favorably disposed at the peak time of their optimism. In this case, there is no conflict of interests since the analysts are not purposefully altering their reports in

7. For example, Jackson (2005) analytically shows that in their last year of employment, analysts concentrate on increasing their commissions (at the expense of their long-run reputations) through increased trading volume produced by issuing optimistic forecasts.

8. The results of the second group are not tabulated.

favor of their would-be employers. While empirically it is hard, if not impossible, to rule this explanation out, the preponderance of the evidence does not support this possibility. The evidence that revolving-door analysts also become pessimistic about peer firms in the industry coupled with the finding that the change in their behavior occurs in the year just prior to their move to the covered firms renders this explanation less likely.

While analysts' biased reporting appears to be a consideration of the hiring firms, this does not necessarily mean that these firms are unduly and irrationally swayed in their hiring decisions and thus ignore the analysts' qualifications for the corporate positions. To shed some light on this issue, I examine whether revolving-door analysts perform adequately in their new positions. Specifically, I examine the job performance of analysts who were hired in investor relations (IR) functions by the covered firms. The findings of this examination suggest that even though revolving-door analysts apparently alter their behavior to improve the likelihood of being hired, firms take into account the analysts' qualifications as evidenced by the fact that as IR officers, revolving-door analysts perform comparably better than new hires from other professions.[9] This finding is consistent with rational behavior by the hiring firms.

This study is the first to offer large-sample evidence on the potential conflict of interests that could arise during the hiring period when firms consider sell-side equity analysts for employment. The finding that revolving-door analysts alter their behavior in their last year of employment as analysts raises concerns about their independence during this time. The SEC requirement of analyst independence and the different regulations enacted to safeguard their independence suggest that tighter regulations or stricter enforcement of the existing NASD

9. In untabulated results I also find that former revolving-door analysts who are hired as IR officers perform comparably better than new hires who are former analysts (non-revolving-door). However the small sample size of former analysts (45 analysts) merits further investigation.

disclosure rule may be needed to address the potential conflict of interests caused by the revolving-door phenomenon.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature and section 3 develops the hypotheses. Section 4 describes the data and outlines the research design and section 5 presents the results. Section 6 provides additional analyses and section 7 concludes the paper.

CHAPTER 2

LITERATURE REVIEW

2.1 Analysts' Conflict of Interests

Analysts' conflict of interests may arise from different sources. One source stems from analysts' ties with the trading and investment banking sides of their brokerage houses. 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). The evidence also shows that analysts whose brokerage houses are affiliated with investment banks upgrade recommendations for their firms' client companies significantly faster and wait a longer time to downgrade their stock recommendations for these companies as compared with non-client companies (O'Brien et al., 2005).

Allegations that analysts' recommendations were biased in favor of stocks that their brokerage houses underwrote led to the Global Research Analyst Settlement in 2003. Among other provisions, this enforcement agreement requires investment banks to separate their investment banking and research departments both physically and by upholding "Chinese walls" in an effort to ensure that the financial incentives of one area of the firm do not compromise the independence of the firms' research analysts.

Another potential source of conflict of analysts' interests is the relationship that can develop between analysts and their covered firms whereby management shares information on a selective basis with favored analysts. This was particularly evident prior to the year 2000 when management could legally release information to a select group of analysts who, in return, might provide favorable coverage on the company (Chen and Matsumoto, 2006). Concerns about the uneven access to information and potential conflict of analysts' interests led to the SEC's

adoption of Regulation Fair Disclosure (Regulation FD) in August 2000. This rule, which addresses the selective disclosure of information by publicly-traded companies, mandates that material nonpublic information must be disclosed to all market participants at the same time.

Empirical evidence suggests that this regulation, along with the Global Research Analyst Settlement of 2003, has been at least somewhat effective in addressing the conflicts of interests. Mohanram and Sunder (2006) and Cohen et al. (2010) find that Regulation FD appears to have been successful in lessening the likelihood that certain analysts receive selective information. Similarly, the likelihood of issuing optimistic recommendations in the post- Global Research Analyst Settlement period is found to no longer depend on affiliation with the covered firm, although affiliated analysts still appear to be reluctant to issue pessimistic recommendations (Kadan et al., 2009).

Surprisingly, though the potential for a conflict of interests looms large when analysts are seeking employment with firms they are covering, there are currently no restrictions on covered firms employing these analysts. Given the prevalence of analysts who become employed by firms they once covered, investigating whether these analysts maintain their independence during their last year of employment as analysts provides insight into analysts' behavior and the motives of the firms that hire them.

2.2 The revolving-door phenomenon

Researchers have studied the revolving-door phenomenon as a potential threat to independence in professions or occupations that require such independence. In auditing, Menon and Williams (2004) examine how client firms that hire partners of their audit firms in officer or director positions are affected. They find that the quality of the audit is lower for such firms, that the financial reports contain more abnormal accruals, and that there is greater earnings

management as evidenced by the increased frequency of meeting or beating analysts' earnings forecasts. Despite the findings of a lower audit and reporting quality, Geiger et al. (2008) document that the market reacts positively when companies announce that they have hired members of their external audit firms, suggesting that this positive reaction stems from the potential benefits that the audit partners bring to firms because of their familiarity with the firms' operations. Baber et al. (2014) find that the perceived (but not actual) audit quality declines following the hiring of individuals who were recently employed by firms' external auditors. However, this result is not present after the enactment of the Sarbanes-Oxley Act of 2002 (SOX), likely because of the cooling-off period (mentioned earlier) introduced by this regulation which requires a one-year waiting period before firms can employ a member of its external audit team.

In the political and governmental arenas, Vidal et al. (2010) document that the revenues of lobbying firms that employ ex-governmental staff members increase subsequent to hiring these individuals, suggesting that these well-connected hires are effective in lobbying activities. Luechinger and Moser (2012) document positive abnormal returns upon announcement of political appointments from the private sector as well as to announcements of corporate appointments of former government officials, suggesting that investors expect the hiring firms to benefit from these appointments. DeHaan et al. (2014) find that private law firms tend to hire high performing SEC lawyers, evidence consistent with these individuals being selected based on their skills and abilities (rather than their leniency in dealing with regulatory violations). The authors conclude that their results alleviate concerns arising from potential conflicts of interest of these "revolving-door" SEC lawyers.

In a more related study on the security analysts' industry, Cohen et al. (2012) examine the past performance of 51 members of boards of directors who served in their past careers as

sell-side equity analysts that followed the firms on whose board they currently serve. 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 about the prospects of the companies on whose boards they eventually served than were other analysts. The authors further find that firms with directors who were former analysts tend to exhibit greater earnings management and have higher CEO compensation levels. The authors conclude that firms appoint directors who are sympathetic to management but are still considered to be independent based on regulatory definitions.

Given the seniority and experience required for board membership, the Cohen et al. sample of directors likely consists of individuals whose previous employment as analysts was in the remote past rather than immediately prior to their board appointments.[10] Thus, this investigation limits our ability to make inferences about the presence of a conflict of interests among revolving-door analysts.

Also related to the current paper is recent work by Jiang et al. (2014) which investigates the security ratings of firms that hired credit-rating analysts. Examining the ratings of 391 former credit-rating analysts who were hired by issuers of mortgage-backed and asset-backed securities, they find that firms employing more of these analysts obtained what appear, in retrospect, to be inflated initial security ratings as implied by large subsequent downgrades.[11] The authors conclude that the inflated ratings resulted from the former analysts' specialized knowledge about structured finance and not from their personal connections with former colleagues. Also, even though it cannot be determined if these former analysts were ever involved in determining the

10. Cohen et al. (2012) do not examine the conflict of interest issue.

11. The sample in this study is derived from a search of the Linkedin database, a professional networking website where users can post their work experience.

ratings of the firms that hired them, the authors attribute the inflated ratings at least in part to the revolving-door phenomenon.

Cornaggia et al. (2014) examine 106 credit analysts' who left their positions to join firms primarily in the financial service industry. The sample is drawn from reports that credit agencies must file when their analysts become employed by companies on which the agencies issued ratings.[12] Consistent with the findings of Jiang et al., Cornaggia et al. document that the credit ratings issued by the rating agencies that employed the analysts are more favorable in the year prior to the analysts' departures from those agencies as compared with the ratings issued by other credit rating agencies. While this result suggests that there is a conflict of interests during credit analysts' last year of employment, due to data limitations, there is no way to discern to what extent and when these analysts were actually involved in producing the credit ratings on the hiring firms since the transition reports do not specify the analysts' names.

12. This reporting requirement is specified in the Securities Exchange Act of 1934. Section 15E(h)(5), as amended by The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, requires credit agencies to provide a report when an individual associated with the agency obtains employment with a covered company if that individual had a part in determining the credit rating any time within the previous five years. The report provides only limited information, identifying the covered firm but not the analyst who was employed or whether that analyst joined the covered firm immediately or at a later date.

CHAPTER 3

METHOD

3.1 Hypotheses Development

Analysts are natural candidates for corporate positions, particularly those in financial or investor relations functions. They have a great deal of knowledge about the companies and industries that they cover and have undoubtedly gained both industry- and firm-specific knowledge in their capacity as analysts, including insights into managements' quality and strategies for future endeavors gained through conference calls and company presentations. In turn, management is likely to be familiar with analysts who follow their firms, particularly those who have distinguished themselves by being very favorably or unfavorably disposed towards their firms.

One would expect that among the pool of available analysts, firms would target analysts who, in management's opinion, have held the company in particularly high regard as evidenced by their positive reports. It is reasonable to assume that management would not be interested in hiring analysts who tend to issue unfavorable reports about the company in comparison with other analysts or who appear to favor competing companies in the industry.[13]

Because analysts are knowledgeable about the firms they cover, they are likely to be aware of potential employment opportunities in these firms. Analysts interested in seeking employment with a covered firm have an incentive to adjust their reports (recommendations, target prices and EPS forecasts) to enhance their hiring prospects. They may also accentuate the

13. According to U.S. News & World Report (2011) and Forbes (2013), one of the five most common questions in job interviews is: "Why do you want to work for us?" From the potential employer's perspective, the "best" answer to this question is that the applicant desires to work for the company because it finds it attractive and favors it over other companies.

potential hiring firm's view of them by issuing less favorable reports or forecasts on other firms they cover.

To determine whether the revolving-door analysts provide more favorable reports on the covered firms that become their employers, I compare their reports on these firms to both those that they issued in the past and those of other analysts. Accordingly, the main hypotheses of the paper (stated in the alternate form) are:

H_1: Relative to other analysts, revolving-door analysts are more optimistic about the hiring firms in their last year of employment than they were in previous years.

H_2: Relative to other analysts, revolving-door analysts are more pessimistic about the non-hiring firms in their last year of employment than they were in previous years.

Another way for analysts to attract the attention of potential employers is to issue more reports on them. 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. This leads to the third hypothesis:

H_3: Relative to other analysts, revolving-door analysts issue more reports about the hiring firms in their last year of employment than they did in previous years.

An underlying assumption in these hypotheses is that during their last year of employment as analysts, these individuals are actively involved in a job search, interviewing with the covered firms and, at some point, negotiating the terms and accepting a job offer. This is a reasonable assumption given that very little time elapses (on average, less than a month) between the time these individuals were analysts and their employment by the covered firms.

3.2 Research Design

3.2.1 Identifying Revolving-Door Analysts

The sample of revolving-door analysts examined in this study is obtained from several sources, the primary one being Capital IQ which contains the employment history of all equity analysts who contribute forecasts to the Reuters/Thomson feed. Using this database, I identify all sell-side equity analysts who, after being employed as analysts, were subsequently employed by other companies.[14] These analysts are then matched to the Institutional Brokers' Estimate System (I/B/E/S) database by name and brokerage house affiliation. Then, among those analysts included on both the Capital IQ and I/B/E/S databases, I identify revolving-door analysts who issued forecasts, target prices, or recommendations on firms in which they subsequently became employed.

Using this procedure, I identified 299 revolving door analysts. Table 1, panel A, provides information on the number of analysts by the year they issued their last forecast prior to joining the covered companies. The percentage of analysts who were employed in the investor relations area, a common career path for analyst who join the corporate world, is also provided. Over half of the revolving-door analysts (56%) were hired in this area with the remainder being hired for positions in other functional areas such as corporate development, finance and marketing. As shown in panel B of table 1, the hiring firms belong to a variety of sectors, with the financial sector being the most prevalent.

14. Capital IQ provides information on where the analysts were employed and the dates of their employment. I filled in missing data using Linkedin, BusinessWeek, Zoominfo and Lexis Nexis.

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%)

3.2.2 Descriptive Statistics

Data on analysts' recommendations, target prices, EPS forecasts and the number of reports were collected from the I/B/E/S database over the period 1999-2014. The starting year of 1999 was chosen since this is the first year that target price data are available. These data were collected for revolving-door analysts and other analysts following the same firms throughout the analysts' career up until the time that the revolving-door analysts were employed by the covered firms.

Table 2 shows the number of observations for the revolving-door analysts and a comparison group of other analysts. The number of observations by type of repot (recommendations, target prices and EPS forecasts) is provided on the hiring companies and non-hiring companies that these analysts followed. For example, the revolving-door analysts issued 1,427 stock recommendations on firms that eventually hired them and 28,855 recommendations on other firms that they covered. The other analysts issued 14,329 recommendations on companies that hired the revolving-door analysts and 57,170 recommendations on the other companies that the revolving-door analysts covered during the same time periods as those examined for the revolving-door analysts.

Table 3 shows the revolving-door analysts' characteristics measured at the time of their last EPS forecast on the hiring companies. This is compared with the characteristics of other analysts who are covering the same companies at the same time. On average, revolving-door analysts covered 0.73 fewer companies at the time of their last forecast as compared with the other analysts, a difference that is not significant. There is also no significant difference in the average size of the brokerage houses or the average years of experience of the revolving-door analysts and the other analysts. There is, however, a significant difference in the number of years

Table 2

Number of Observations and Type of Report by Analyst Group

Analyst Group	Number of Observations by Type of Report [a]			
	Recommendations	Target Prices	EPS Forecasts	Effort
Revolving-Door Analysts[b]				
Number of reports issued made on:				
a) would-be hiring firms of revolving-door analysts	1,427	2,584	942	1,547
b) all other firms (non-hiring)	28,855	43,260	17,069	31,885
Other Analysts[c]				
Number of reports issued made on:				
c) would-be hiring firms of revolving-door analysts	14,329	34,297	21,615	49,198
d) all other firms (non-hiring)	57,170	114,353	79,641	243,261

[a] The number of observations is measured throughout the analysts' career during the sample period 1999-2014. Recommendations are measured for a quarter, target prices are measured for a month, and EPS forecasts are the latest forecast within 90 days of the earnings announcement. Effort is assessed based on the number of separate reports issued by the analyst over the fiscal year.

[b] "Revolving-door analysts" are analysts who went to work for a firm that they covered immediately upon leaving their analyst positions.

[c] Other analysts are analysts who issued reports at the same time as the revolving-door analysts about the same firms.

Table 3

Characteristics by Analyst Group

	Revolving-door Analysts	Other Analysts	Difference	t-statistic
Number of observations	299	5,237		
Average number of companies the analyst covers	12.92	13.65	-0.73	-1.29
Average number of analysts in the brokerage house	84.63	84.12	0.51	0.09
Average number of years the analyst followed the hiring firm	4.19	2.97	1.22***	4.54
Average number of years of experience as an analyst	9.28	8.71	0.57	1.54

Note: This table reports descriptive statistics at the time that the revolving-door analysts issued their last EPS forecast on the hiring company compared with other analysts who covered these firms at that time. For descriptive purposes, the analysts' characteristics are not standardized. In testing the hypotheses, these characteristics are standardized as described in the appendix. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

that the revolving-door analysts covered the firms that hired them as compared to the other analysts following these firms. Specifically, revolving-door analysts followed their would-be employers an average of 1.22 years more than did the other analysts.

3.2.3 EPS Forecast and Target Price Optimism and Effort

Following prior research, I compare the degree of optimism in analysts' 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 et al., 1999; Clement, 1999; Hong and Kubik, 2003 and Cowen et al., 2006). This relative performance measure controls for any company- or time-specific factors that affect forecast optimism. A similar relative performance measure is used to assess the level of effort exerted by analysts for each firm they cover.

The relative optimism of the analysts' target stock prices is estimated within a calendar month. Their relative annual EPS forecast optimism is estimated as the latest forecast provided by each analyst within 91 days of the annual earnings announcements. The level of effort exerted by the analysts is measured as the number of reports issued (regardless of the number of data elements contained in each) over a fiscal year for each company covered.[15]

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

15. For example, if an analyst produces a report that contains more than one item (e.g., a target stock price and an EPS forecast), this is counted as one report.

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

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 covering company j (including analyst i) within the same month. This difference is standardized across firms by dividing it by the standard deviation of target prices across all analysts covering company j at time t. For example, suppose that analyst i issues a target price of $50 for firm j in January and, during the same month, all analysts following firm j issue an average target price of $47 with a standard deviation of $2. The relative optimism of analyst i is 1.5 (calculated as (50-47) / 2).

As discussed above, the way in which the three variables of interest (i.e., the dependent variables) are constructed controls for any company- or time-specific factors that affect forecast optimism and effort. Thus any analyst- or brokerage-house-specific characteristics are determinants that might affect the dependent variables.

Prior research indicates that the number of companies covered by the analyst, the brokerage house size, the forecast horizon, and the analyst's general and firm-specific experience are associated with optimism and effort. Jacob et al. (1999) suggest that the number of companies an analyst covers is a measure of ability insofar as a larger number of covered companies is positively correlated with more accurate forecasts. Similarly, Mikhail et al. (2004) find that the number of companies an analyst follows is negatively correlated with that analyst's optimism. Jacob et al. (1999) and Clement (1999) also conclude that brokerage size is positively correlated with accuracy presumably because larger brokerage houses attract better-performing analysts.

The effect of the analysts' experience as well as the length of time they have covered specific firms is less clear. On one hand, more experienced analysts might have developed close

relationships with management, which may result in them viewing the firm through rose-colored glasses and thus exhibiting a higher optimism bias. Offsetting this, the longer analysts cover a specific firm, the more knowledgeable they are about its operations and prospects, information that could reduce or eliminate any potential optimistic forecast bias (Ertimur et al., 2007). Clement and Tse (2003) and Cowen et al. (2006) show that the forecast horizon may have an effect on the accuracy and optimism of forecasts since it is likely that more earnings information is revealed the closer the forecast is to the earnings announcement.

The following model, which incorporates these variables, is used to test the extent of the revolving-door analysts' optimism and effort in their last year as analysts relative to that of other analysts covering the same firms at this time:

$$\begin{aligned} Relative\ Optimism\ \left(or\ Effort\right)_{i,j,t} = {} & \alpha + \beta_1 R-D\_Analyst_{i,j,t} + \beta_2 Companies\_Covered_{i,j,t} \\ & + \beta_3 Brokerage\_Size_{i,j,t} + \beta_4 Company\_Experience_{i,j,t} \\ & + \beta_5 General\_Experience_{i,j,t} + \beta_6 Horizon_{i,j,t} \\ & + Brokerage\ House\ Fixed\ Effects + \varepsilon \end{aligned} \tag{1}$$

The independent variables in (1) are defined as follows. R-D_Analyst $_{i,j,t}$ is a dummy variable that receives a value of one for forecasts made by revolving-door analysts and zero otherwise. Companies_Covered $_{i,j,t}$ is a measure of the number of companies analyst i follows in year t. It is calculated as the number of companies covered by analyst i following 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 $_{i,j,t}$ is a measure of the size of analyst i's brokerage house. It is calculated as the number of analysts employed by the brokerage house employing analyst i following firm j in year t minus the minimum number of analysts employed by brokerage houses 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. Company_Experience $_{i,j,t}$ is a measure of analyst i's firm-specific experience. It is calculated as the number of years of firm-specific experience of 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. General_Experience $_{i,j,t}$ is a measure of analyst i's experience as an analyst. It is calculated as the number of years of experience for analyst i in year t minus the minimum number of years of experience for analysts following firm j in year t, with this difference scaled by the range of years of experience for analysts following firm j in year t. Horizon $_{i,j,t}$ is a measure of the time between the forecast date and the earnings announcement. It is calculated as the number of days from the forecast date to the date of the earnings announcement for analyst i in year t minus the minimum number of days from the forecast date to the date of the earnings announcement for analysts following firm j in year t, with this difference scaled by the range of days from the forecast date to the date of the earnings announcement for analysts following firm j in year t.

To ascertain whether there is a change in the behavior of the revolving-door analysts' forecasts or level of effort in their last year as analysts, I include only reports made by revolving-door analysts. I compare the relative optimism and effort in the year prior to their employment by the covered firms to that present throughout their careers (excluding their last year as analysts) using the following model:

$$\begin{aligned} Relative\ Optimism\ \left(or\ Effort\right)_{i,j,t} = {} & \alpha + \beta_1 Last\_Year + \beta_2 Companies\_Covered_{i,j,t} \\ & + \beta_3 Brokerage\_Size_{i,j,t} + \beta_4 Company\_Experience_{i,j,t} \\ & + \beta_5 General\_Experience_{i,j,t} + \beta_6 Horizon_{i,j,t} \\ & + Analyst\ Fixed\ Effects + \varepsilon \end{aligned} \tag{2}$$

where the variables are as defined above and Last_Year is a dummy variable that receives a value of one for all forecasts made in the last year of the revolving-door analyst's employment as an analyst and zero otherwise.

3.24 Recommendation Optimism

Analysts issue recommendations in the form of strong buy, buy, hold, underperform or sell recommendations. These recommendations are discrete and ordinal which violates the standard ordinary least squares (OLS) regression assumptions. I therefore use an ordered logistic regression to analyze recommendation optimism (Kolasinski and Kothari, 2004 and Cowen et al., 2006). The dependent variable in this analysis is the analyst's recommendation, coded as 4 for strong buy, 3 for buy, 2 for hold, 1 for underperform, and 0 for sell. In order to ensure that the estimates of the coefficients of the independent variables are valid measures of those variables' impact on analyst optimism relative to the consensus, I also include as independent variables the number of strong buy, buy, hold, underperform and sell recommendations issued by all other analysts within the same calendar quarter.

The following model is used to test the extent of optimism in the revolving-door analysts' recommendations relative to that of other analysts covering the same firms in the year prior to their move to the covered firms:

$$Recommendation_{i,j,t} = Ordered\ Logistic \begin{pmatrix} \beta_1 R-D\_Analyst_{i,j,t} + \beta_2 Companies\_Covered_{i,j,t} \\ +\beta_3 Brokerage\_Size_{i,j,t} + \beta_4 Company\_Experience_{i,j,t} \\ +\beta_5 General\_Experience_{i,j,t} + \beta_6 N\_Strong\_Buy_{j,t} + \beta_7 N\_Buy_{j,t} \\ +\beta_8 N\_Hold_{j,t} + \beta_9 N\_Underperform_{j,t} + \beta_{10} N\_Sell_{j,t} + \varepsilon \end{pmatrix} \quad (3)$$

where the variables are defined as before and "N_" denotes the number of recommendations of this type (e.g., N_Stong_Buy $_{j,t}$ is the number of Strong Buy recommendations for company j in quarter t).

To ascertain whether there is a change in the tone of the revolving-door analysts' recommendations in the year prior to their move to the covered firms, I include only recommendations made by revolving-door analysts and compare their recommendations throughout their careers with their recommendations in the year prior to their move using the following model:

$$Recommendation_{i,j,t} = Ordered\ Logistic \begin{pmatrix} \beta_1 Last\_Year_{i,j,t} + \beta_2 Companies\_Covered_{i,j,t} \\ +\beta_3 Brokerage\_Size_{i,j,t} + \beta_4 Company\_Experience_{i,j,t} \\ +\beta_5 General\_Experience_{i,j,t} + \beta_6 N\_Strong\_Buy_{j,t} + \beta_7 N\_Buy_{j,t} \\ +\beta_8 N\_Hold_{j,t} + \beta_9 N\_Underperform_{j,t} + \beta_{10} N\_Sell\ j,t + \varepsilon \end{pmatrix} \quad (4)$$

The independent variables in (4) are as defined earlier.

CHAPTER 4

RESULTS

In this section, I examine the behavior of the revolving-door analyst during their last year as analysts relative to that throughout their career. In keeping with the first and second hypotheses that analysts alter their behavior so as to gain favor with the hiring company in their last year, I expect to find that relative to other analysts, revolving-door analysts are more optimistic (pessimistic) about the hiring companies (non-hiring companies) in this year than they were throughout their careers.

4.1 Relative Optimism about the Hiring Companies

Table 4 presents the results of testing H1, the relative optimism of the revolving-door analysts' recommendations, target prices and EPS forecasts for the covered companies in their last year as compared with other analysts during this period and relative to their own level of optimism throughout the earlier years of their careers.

The results of examining the revolving-door analysts' optimism during their last year compared with that of other analysts covering these firms at the same time are shown in the first three columns. The samples used in these examinations include all of the forecasts made by all analysts covering the hiring companies during this year. The coefficient on the variable of interest, R-D_Analyst, represents the optimism of the revolving-door analysts in the last year relative to other analysts.

The results presented in column 1 indicate that revolving-door analysts provide more optimistic recommendations than do other analysts covering the hiring firm in their final year as analysts. The coefficient on R-D_Analyst is significant at the 1% level. A similar result is found for target prices, as shown in column 2. Revolving-door analysts issue higher target prices on

Table 4

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

	Revolving-Door Analysts' Relative Optimism Compared with:					
	Optimism of Other Analysts			Optimism Throughout Their Careers		
	Recommendations	Target Prices	EPS Forecasts	Recommendations	Target Prices	EPS Forecasts
	(1)	(2)	(3)	(4)	(5)	(6)
R-D_Analyst	0.622***	0.297***	0.035			
	(4.26)	(4.38)	(0.98)			
Last_Year				0.328**	0.148**	0.137**
				(2.01)	(2.05)	(2.34)
Companies_Covered	-0.126	-0.035	0.012	-0.045	-0.138*	-0.075
	(-1.06)	(-0.70)	(0.49)	(-0.23)	(-1.97)	(-0.92)
Brokerage_Size	-0.603***	-0.047	-0.071	-0.355**	-0.158	-0.013
	(-5.77)	(-0.71)	(-1.64)	(-2.16)	(-1.56)	(-0.11)
Company_Experience	0.151	0.135***	0.013	-0.088	0.149	-0.062
	(1.28)	(2.66)	(0.58)	(-0.41)	(1.57)	(-0.72)
General_Experience	0.000	-0.009	-0.029	0.087	0.119	-0.033
	(0.00)	(-0.18)	(-1.16)	(0.39)	(1.55)	(-0.30)
N_ Sell	-0.656***			-0.402		
	(-5.31)			(-1.17)		
N_UnderPerform	-0.285***			-0.366***		
	(-6.70)			(-4.46)		
N_Hold	-0.062***			-0.137***		
	(-7.75)			(-3.03)		
N_Buy	0.043**			0.003		
	(2.10)			(0.21)		
N_Strong_Buy	0.218***			0.396***		
	(8.33)			(3.66)		
Horizon			0.010			-0.037
			(0.57)			(-0.61)
Brokerage House Fixed Effects		Y	Y			
Analyst Fixed Effects					Y	Y
No. of Observations	2,595	9,097	4,936	1,427	2,584	942
Pseudo\Adj Rsquare	0.0925	0.093	0.037	0.168	0.213	0.164

Note: The samples used to examine the relative optimism of the revolving-doors analysts in their last year before moving to a covered company relative to other analysts covering these firms during this period (columns 1, 2 and 3) include all forecasts made by all analysts covering the hiring company during this year. Model 3 is used to examine recommendations and model 1 is used to examine target prices and EPS forecasts. The samples used to examine the relative optimism of revolving-door analysts during their last year of employment as analysts as compared with that throughout their careers (excluding their last year as analysts) include all of the forecasts on the hiring company made only by revolving-door analysts (columns 4, 5 and 6). Model 4 is used to examine recommendations and model 2 is used to examine target prices and EPS forecasts. The dependent variables are as follows. Recommendations is coded as 4, 3, 2, 1 and 0 for strong buy, buy, hold, underperform and sell, respectively. Relative $\text{Optimism}_{i,j,t}$ 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 (last 90 days of fiscal year). The relative optimism is standardized across firms by deflating the standard deviation of target prices (EPS forecasts) across all analysts covering the firm within that month (last 90 days of fiscal year). The independent variables are as follows. R-D_Analyst is a dummy variable that receives the value of one for the forecasts made by revolving-door analysts and zero otherwise. Last_Year is a dummy variable that receives the value of one for the forecasts made in the last year of the revolving-door analyst's employment as an analyst and zero otherwise. Definitions of the control variables are provided in appendix A. t-statistics (z-statistics for models 3 and 4) are provided in parentheses with heteroskedastic-consistent standard errors clustered at the analyst level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

their would-be employers than do other analysts covering these firms during this period. The coefficient on R-D_Analyst of 0.297, which is significant at the 5% level, indicates that the target price issued by revolving-door analysts is higher by 0.297 standard deviations than the consensus target price. Although revolving-door analysts appear to provide more optimistic recommendations and higher target prices, there is not a significant difference in their EPS forecasts during their last year of employment (a coefficient of 0.035 as shown in column 3). This could be because the revolving-door analysts do not want to produce overly optimistic EPS forecasts since this will make it more difficult for their would-be employers to meet or beat the consensus earnings forecasts.

The last three columns in the table provide the results of the revolving-door analysts' relative optimism in their last year as analysts compared to that present throughout their careers. This examination focuses only on the forecasts made by the revolving-door analysts of the covered companies that hire them.

The results provided in column 4 indicate that the revolving-door analysts alter the level of optimism in their recommendations in their last year of employment as analysts relative to the level in prior years. The coefficient of the variable of interest, Last_Year, is positive and significant at the 5% level, suggesting that the revolving-door analysts become relatively more optimistic about the covered firms that end up hiring them than they were earlier in their careers. A similar result is obtained for target prices and EPS forecasts (presented in columns 5 and 6, respectively), with the coefficient on Last_Year being positive and significant for both variables.

Overall the results presented in Table 4 are consistent with Hypothesis 1. For all three types of reports, revolving-door analysts change their behavior in favor of the hiring company in their last year as analysts, becoming relatively more optimistic than they were in prior years.

4.2 Relative Optimism about the Other (Non-Hiring) Companies

The results of the revolving-door analysts' relative pessimism about the other (non-hiring) companies that they cover are provided in Table 5. The results reported in columns 1, 2 and 3 are based on analysis of the reports made by all of the analysts covering these other companies during the revolving-door analysts' last year of employment before moving to the covered companies. The findings are mixed. For recommendations (column 1) and EPS forecasts (column 3), the coefficient on R-D_Analyst, is insignificant (0.029 and 0.010), suggesting that there is no difference in the level of pessimism between revolving-door analysts and other analysts covering these other firms during the last year. However, the revolving-door analysts are more pessimistic in their target prices about the other firms in the last year than are other analysts (column 2, a coefficient of -0.051, which is significant at the 5% level).

The difference between the revolving-door analysts' relative pessimism in the year prior to their move as compared with the level throughout their careers is presented in columns 4, 5 and 6. Examining analysts' behavior regarding recommendations, the coefficient on Last_Year (column 4, -0.119) is significant at the 5% level, suggesting that revolving-door analysts become relatively more pessimistic about the other companies they are following in the year prior to their move. Similar results are obtained for the target prices, with the coefficient of Last_Year (column 5, -0.066) significant at the 5% level. However, for the EPS forecasts (column 6, a coefficient of 0.020 which is not significant), there is apparently no change in the behavior of the revolving-door analysts in their last year.

Overall, the results presented in Table 5 are consistent with H2. During their last year of employment as analysts, revolving-door analysts become relatively more pessimistic about the other (non-hiring) firms they are following as compared with their behavior in prior periods.

Table 5

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

	Revolving-Door Analysts' Relative Optimism Compared with:					
	Optimism of Other Analysts			Optimism Throughout Their Careers		
	Recommendations	Target Prices	EPS Forecasts	Recommendations	Target Prices	EPS Forecasts
	(1)	(2)	(3)	(4)	(5)	(6)
R-D_Analyst	0.029	-0.051**	0.010			
	(0.44)	(-2.01)	(0.89)			
Last_Year				-0.119**	-0.066**	0.020
				(-1.99)	(-2.04)	(1.20)
Intercepts and control variables are redacted for brevity						
Brokerage House Fixed Effects		Y	Y			
Analyst Fixed Effects					Y	Y
No. of Observations	13,934	39,275	17,219	28,855	43,260	17,069
Pseudo\Adj Rsquare	0.0967	0.054	0.016	0.155	0.102	0.030

Note: The samples used to examine the relative optimism of the revolving-doors analysts in their last year before moving to a covered company relative to other analysts covering these firms during this period (columns 1, 2 and 3) include all forecasts made by all analysts covering the non-hiring companies during this year. Model 3 is used to examine recommendations and model 1 is used to examine target prices and EPS forecasts. The samples used to examine the relative optimism of revolving-door analysts during their last year of employment as analysts as compared with that throughout their careers (excluding their last year as analysts) includes all of the forecasts on the non-hiring companies made only by revolving-door analysts (columns 4, 5 and 6). Model 4 is used to examine recommendations and model 2 is used to examine target prices and EPS forecasts. The dependent variables are as follows. Recommendations is coded as 4, 3, 2, 1 and 0 for strong buy, buy, hold, underperform and sell, respectively; 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 (last 90 days of fiscal year). The relative optimism is standardized across firms by deflating the standard deviation of target prices (EPS forecasts) across all analysts covering the firm within that month (last 90 days of fiscal year). The independent variables are as follows. R-D_Analyst is a dummy variable that receives the value of one for the forecasts made by revolving-door analysts and zero otherwise. Last_Year is a dummy variable that receives the value of one for the forecasts made in the last year of the revolving-door analyst's employment as an analyst and zero otherwise. Definitions of the control variables are provided in appendix A. t-statistics (z-statistics for models 3 and 4) are provided in parentheses with heteroskedastic-consistent standard errors clustered at the analyst level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

4.3 Relative Effort Exerted by Revolving-Door Analysts

Table 6 presents the results of testing H3 which posits that revolving-door analysts exert relatively more effort in their last 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 1, the revolving-door analysts issue more reports on the hiring firms in their last year relative to other analysts covering the same firms at the same time. The coefficient R-D_Analyst (0.156) is positive and significant at the 5% level. In contrast, as the results provided in column 2 (an insignificant coefficient on R-D_Analyst of -0.042) indicate, revolving-door analysts do not increase the number of reports that they issue on the other (non-hiring) firms they cover relative to other analysts covering these same firms at that time.

In comparison to their level of relative effort throughout their careers, the coefficient on Last_Year (0.224, column 3) is significant at the 5% level. This suggests that revolving-door analysts issue relatively more reports on the hiring firm during their last 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 that they cover during this period.

Overall, the results provided in Table 6 suggest that revolving-door analysts issue more reports on the hiring firms in their last year relative to both other analysts covering the same firms and to their own prior behavior. While their individual motivations are not known, this finding is consistent with the notion that revolving-door analysts are trying to attract the attention of the hiring firms in order to increase their chances of being hired.

Table 6

Relative Effort of Revolving-Door Analysts in Their Last Year as Analysts

	Revolving-Door Analysts' Relative Effort Compared with:			
	Effort of Other Analysts		Effort Throughout Their Careers	
	Hiring Firms	Other (Non-Hiring) Firms	Hiring Firms	Other (Non-Hiring) Firms
	(1)	(2)	(3)	(4)
R-D_Analyst	0.156**	-0.042		
	(2.26)	(-1.07)		
Last_Year			0.224**	0.063
			(2.53)	(1.38)
Companies_Covered	0.088	0.154***	0.402**	0.177***
	(1.64)	(5.54)	(1.98)	(3.38)
Brokerage_Size	0.363***	0.047	0.270	-0.020
	(3.40)	(1.07)	(0.81)	(-0.31)
Company_Experience	0.381***	0.385***	0.102	0.332***
	(9.57)	(20.22)	(0.50)	(13.04)
General_Experience	0.097**	-0.010	-0.222	0.105
	(2.16)	(-0.41)	(-0.75)	(0.95)
Constant	-0.364***	-0.223***	0.015	-0.352***
	(-8.11)	(-9.60)	(0.06)	(-3.98)
Brokerage House FE	Y	Y		
Analyst FE			Y	Y
No. of Observations	9,199	46,638	1,547	31,885
Adjusted R-squared	0.159	0.139	0.195	0.177

Note: The samples used to examine the relative effort of the revolving-doors analysts in their last year before moving to a covered company relative to other analysts covering these firms during this period (columns 1 and 2) include all forecasts made by all analysts covering the hiring and non-hiring companies, respectively, during this year. The samples used to examine the relative effort of revolving-door analysts during their last year of employment as analysts as compared with that throughout their careers (excluding their last year as analysts) includes all of the forecasts on the hiring and non-hiring companies respectively made only by revolving-door analysts (columns 3 and 4). Model 1 is used to examine the reports made by the hiring firms and model 2 is used to examine those made on the other (non-hiring) firms. The dependent variable Relative Effort $_{i,j,t}$ is analyst i's number of reports (recommendations, target prices and EPS forecasts) of company j's at fiscal year t. The number of reports is then compared to the average number of reports for all analysts issuing reports for company j's within the same fiscal year. The relative effort is standardized across firms by deflating the standard deviation of the number of reports across all analysts issuing reports within that fiscal year. The independent variables are: R-D_Analyst is a dummy variable that receives the value of one for the forecasts made by revolving-door analysts and zero otherwise; Last_Year is a dummy variable that receives the value of one for the forecasts made in the last year of the revolving-door analyst's employment as an analyst and zero otherwise; Definitions of the control variables are provided in appendix A. t-statistics are in parentheses with heteroskedastic-consistent standard errors clustered at the analyst level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

CHAPTER 5

ADDITIONAL ANALYSES

5.1 Analyst Quality

To examine the alternative explanation that firms hire analysts who are more talented than their peers, I examine the EPS forecast accuracy of the revolving-door 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:

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

where Forecast $\text{Error}_{i,j,t}$ is the absolute value of actual earnings per share minus analyst i's latest forecast made within 90 days of the earnings announcement of company j for fiscal year t.

This measure is used to compare between the accuracy of all the analysts who cover the hiring and non-hiring firms throughout the revolving-door analysts' careers (up until their last year as analysts) and in that last year. The higher is 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 7. The coefficient on the variable of interest, R-D_Analyst, is negative and insignificant in both columns 1 and 2.This indicates that there is no difference in the level of accuracy of the EPS forecasts of the hiring firms made by the revolving-door analysts as compared with other analysts. This is true for both the forecasts made in the last year before the revolving-door analysts' move to the covered companies and throughout the revolving-door analysts' careers. The results on the relative accuracy in forecasting EPS for the other, non-hiring firms, are presented in columns 3 and 4. It is interesting to note that relative to other analysts, revolving-door analysts' forecasts for these firms are less

Table 7

Relative Accuracy of Revolving-Door Analysts

	Relative Accuracy of Revolving-Door Analysts In Forecasting EPS for:			
	Hiring Firms		Other (Non-Hiring) Firms	
	In Their Last Year as an Analyst	Over Their Careers	In Their Last Year as an Analyst	Over Their Careers
	(1)	(2)	(3)	(4)
R-D_Analysts	-0.008	-0.015	-0.050***	-0.034***
	(-0.26)	(-0.97)	(-4.34)	(-6.05)
Companies_Covered	-0.061**	-0.032***	-0.042***	-0.030***
	(-2.51)	(-2.99)	(-3.53)	(-5.23)
Brokerage_Size	-0.047	-0.074***	-0.089***	-0.058***
	(-1.11)	(-4.19)	(-4.75)	(-6.78)
Company_Experience	-0.020	0.016	0.002	0.005
	(-1.00)	(1.53)	(0.20)	(0.86)
General_Experience	0.035	-0.003	0.000	-0.002
	(1.57)	(-0.25)	(0.02)	(-0.31)
Horizon	-0.029*	-0.070***	-0.069***	-0.065***
	(-1.79)	(-9.09)	(-8.29)	(-16.56)
Constant	0.729***	0.724***	0.725***	0.695***
	(37.57)	(84.78)	(74.97)	(160.74)
Brokerage House FE	Y	Y	Y	Y
No. of Observations	4,936	22,557	17,219	96,710
Adjusted R-squared	0.072	0.046	0.035	0.024

Note: The samples used to examine the relative accuracy of revolving-door analysts' EPS forecasts in their last year of employment as analysts (columns 1 and 3) includes all analysts covering the hiring and non-hiring companies, respectively, during this time period. The samples used to examine the relative accuracy in the revolving-doors analysts' EPS forecasts over their careers (excluding their last year as analysts) (columns 2 and 4) include all forecasts made by all analysts covering the hiring and non-hiring companies, respectively, during this time period. The dependent variable Relative Accuracy $_{i,j,t}$ is analyst i's absolute value of EPS forecast error of company j's at fiscal year t. The forecast error is then compared to the average forecast error for all analysts issuing reports for company j's within the last 90 days of the fiscal year. The relative accuracy is standardized across firms by deflating the standard deviation of the forecast error across all analysts issuing reports within the last 90 days of the fiscal year. The independent variables are: R-D_Analyst is a dummy variable that receives the value of one for the forecasts made by revolving-door analysts and zero otherwise. Definitions of the control variables are provided in appendix A. t-statistics are in parentheses with heteroskedastic-consistent standard errors clustered at the analyst level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

accurate. The coefficient of R-D_Analyst is negative and significant at the 1% level for both the forecasts made in their last year as analysts and throughout their careers. These findings cast doubt on the alternative explanation that revolving-door analysts are hired based on their superior talents.

5.2 Analysts with Intervening Employers

In contrast to the revolving-door analysts who go to work for covered firms upon leaving their analysts' positions, I identified 166 analysts who went to work for firms that they once covered after being employed by at least one other employer for at least a year. Often times, these analysts worked for several employers after leaving their analysts' positions before becoming employed by a covered firm. Because of this time lapse and the fact that they had at least one intervening employer, it is unlikely that these analysts knew they would eventually be employed by a company they were covering. They thus had no incentive to alter their reports in such a way as to seek favor with the covered firms. This group of analysts, "analysts with intervening employers," thus serves as a control group for the revolving-door analysts who moved directly from their analysts' positions to employment with the covered firms. Because of this lack of incentives, I expect there to be no change in the behavior of this group in their last year of employment as analysts.

The results of this analysts are provided in Table 8, panel. As expected, the variable of interest, Last_Year, is insignificant for all three types of reports. This indicates that there is no change in behavior of this comparison group in their last year of employment as analysts.

Panel B shows this group of analysts' relative optimism towards the non-hiring firms. In contrast to revolving-door analysts, on average, these analysts who had intervening employers are more optimistic about the firms they covered in their last year of employment. The variable

Table 8

Relative Optimism of Analysts with Intervening Employers in Their Last Year as Analysts

	Intervening Employers Analysts' Relative Optimism Compared with:					
	Optimism of Other Analysts			Optimism Throughout Their Careers		
	Recommendations	Target Prices	EPS Forecasts	Recommendations	Target Prices	EPS Forecasts
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Hiring Firms						
Intervening_Employers	0.003	0.106	0.098**			
	(0.02)	(1.05)	(1.98)			
Last_Year				-0.329	-0.083	0.056
				(-1.47)	(-0.57)	(0.74)
Intercepts and control variables are redacted for brevity						
Brokerage House Fixed Effects		Y	Y			
Analyst Fixed Effects					Y	Y
No. of Observations	1,847	3,326	2,091	1,024	1,072	678
Pseudo\Adj Rsquare	0.0997	0.087	0.086	0.256	0.356	0.183
Panel B: Non-Hiring Firms						
Intervening_Employers	0.181**	0.114***	-0.005			
	(2.25)	(3.05)	(-0.29)			
Last_Year				0.046	0.054	-0.012
				(0.42)	(1.05)	(-0.58)
Intercepts and control variables are redacted for brevity						
Brokerage House Fixed Effects		Y	Y			
Analyst Fixed Effects					Y	Y
No. of Observations	8,911	12,572	10,186	15,682	16,014	17,579
Pseudo\Adj Rsquare	0.0982	0.078	0.026	0.188	0.138	0.029

Note: The samples used to examine the relative optimism in the Analysts with Intervening Employers last year before leaving the I/B/E/S sample (columns 1, 3 and 5) include all forecasts made by all analysts covering the hiring company during this year. The samples used to examine the relative optimism of Analysts with Intervening Employers throughout their careers (excluding their last year as analysts) compared with their last year of employment as analysts includes all of the forecasts on the hiring company made only by Analysts with Intervening Employers (columns 2, 4 and 6). The dependent variables are: Recommendations is coded as 4, 3, 2, 1 and 0 for strong buy, buy, hold, underperform and sell, respectively; Relative Optimismi,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 (last 90 days of fiscal year). The relative optimism is standardized across firms by deflating the standard deviation of target prices (EPS forecasts) across all analysts covering the firm within that month (last 90 days of fiscal year).The independent variables are: Intervening_Employers is a dummy variable that receives the value of one for the forecasts made by analysts with intervening employers prior to going to work for a covered firm and zero otherwise. Last_Year is a dummy variable that receives the value of one for the forecasts made in the last year of the revolving-door analyst's employment as an analyst and zero otherwise. Definitions of the control variables are provided in the appendix. t-statistics (z-statistics for models 3 and 4) are provided in parentheses with heteroskedastic-consistent standard errors clustered at the analyst level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Intervening_Employers is positive and significant at the 5% level for both recommendations and target prices (columns 1 and 3, respectively). Also in contrast to the revolving-door analysts, there is no apparent change in the behavior of analysts with intervening employers in their last year of employment as analysts. The variable Last_Year is insignificant for recommendations, target prices and EPS forecasts. Thus this group of analysts, who had other employment before joining a covered firm, are optimistic about the companies that they cover throughout their careers and do not change their behavior in their last year of employment as analysts.

5.3 The Performance of the Analysts as Investor Relations Officers

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 they are so taken with the analysts' positive reports that they ignore the analysts' qualifications. In fact, when a covered firm hires an analyst, it loses this positive coverage so, presumably, it gains something in return.

To explore whether the hiring firms benefit from the analysts' experience and firm- and industry-specific knowledge as well as their recent ties to the analyst community, I examine firms who employed revolving-door analysts as investor relations officers (henceforth, IR officers). As noted above, this is a common career path for analysts who join covered firms (56% of the sample) and, 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). It might well be the case that former analysts who used to cover firms that now employ them are more effective at communicating with the analyst community than are average IR officers. They have a better understanding of how

analysts develop their reports, the type of information they will find useful, and when to disclose this information so as to maximize coverage by the analyst community.[16]

Past research suggests that effective IR officers will guide expectations to ensure that firms meet or slightly beat the outstanding analysts' forecasts (defined as an earnings surprise from zero to one cent) because there are penalties if these forecasts are not met.[17] Falling short of the consensus analyst forecast involves real economic costs in the form of stock price drops (Bartov et al., 2002), reduced CEO bonuses (Matsunaga and Park, 2001), or a loss of employment (Farrell and Whidbee, 2003).

Another benefit that IR officers can bring to their new employers is an increased analyst following. Having more analysts follow the firm is beneficial since analysts provide information on the firm to the market, presumably reducing information asymmetries among investors (Merton 1987) and increasing trading in the firm's stock (Roulstone, 2003). There are also indications that a greater analyst following is associated with a lower cost of capital (Bowen et al., 2008). Revolving-door analysts hired as IR officers will likely be better able to attract additional analyst following as their previous experience makes them a better source of information for the analyst community than the average IR officer.

Based on these considerations, the benefits that analysts might bring to the firms that hired them are assessed by two measures: the frequency with which their firms meet or slightly beat their earnings forecasts and the increase in the number of analysts following the firms. To assess the impact of hiring revolving-door analysts, I compare the change in these performance

16. According to the National Investor Relations Institute (2013), 97% 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.

17. Burgstahler and Eams (2006) show evidence that firms manage analysts' expectations to meet or slightly beat the consensus forecast.

measures for firms that hire analysts as IR officers to the change in performance for firms that hire IR officers who were not analysts.

Data on IR officers who were not previously analysts were obtained from the BoardEx database which contains detailed biographic information on executives and board members of public and private firms.[18] My sample consists only of individuals in top management of IR areas.[19] To gauge whether the employment of revolving-door analysts as IR officers impacts the firm, I compare the two measures for this group of firms to those for firms that hire new non-analyst IR officers.

To assess whether analysts are better at managing the expectations of the analyst community, I compare the change in the probability of a positive earnings surprise for companies that employ analysts as IR officers to the change in probability for companies that employ non-analysts as IR officers. If the analysts are more successful at managing the analyst community's expectations, I expect to see an increase in the probability of their firms slightly beating expectations. The model used to test this is as follows:

$$P\begin{pmatrix} Earnings\ Surprise_t: \\ (MBE,\ Slightly\_Beat,\ Beat) \end{pmatrix} = Logistic \begin{pmatrix} \alpha + \beta_1 New\_IRO\_Revolving + \beta_2 New\_IRO \\ +\beta_3 Hiring\_Firm + \beta_4 Shares_t + \beta_5 Size_t \\ +\beta_6 Num\_Analysts_t + \beta_7 Consensus_t \\ +\beta_8 Loss_t + Year\ Fixed\ Effects + \varepsilon \end{pmatrix} \quad (5)$$

18. BoardEx contains 120 different role descriptions of IR positions. I use the 15 that relate only to top management. Expanding the sample to include all IR positions produces qualitatively similar results.

19. I investigate only those in top management to ensure that the non-analyst IR officers group is comparable with the revolving-door analysts who became IR officers since the latter group assumed top management positions.

The dependent variables are defined as follows. Earnings Surprise $_t$ is the difference between actual earnings and the latest consensus forecast outstanding just prior to the earnings announcement at fiscal year t. MBE (meeting or beating expectations) is a dummy variable set to one if the earnings surprise is equal to or greater than 0 and zero otherwise. Slightly_Beat is a dummy variable which equals one when the earnings surprise is between $0.00 and $0.01 and zero otherwise. Beat is a dummy variable set to one if the earnings surprise is greater than 0 and zero otherwise.

The independent variables are defined as follows. New_IRO_Revolving is a dummy variable that is equal to one when the revolving-door analyst serves as an investor relations officer of the hiring firm and zero otherwise. New_IRO is a dummy variable that is set to one if a new investor relations officer is hired and zero otherwise. Hiring_Firm is a dummy variable that takes a value of one for the hiring firm that hires an analyst as an IR officer (including the observations when the analyst is not the IR officer in the firm) and zero otherwise.

Following prior research, five control variables that might be correlated with earnings surprises are included in (5). The variables are defined as follows. Shares $_t$, measured as the log of the number of outstanding shares at the end of fiscal year t, is included because firms with more outstanding shares have smaller earnings per share and thus are more likely to meet or beat analysts' earnings per share forecasts (Barton and Simko 2002). Size $_t$, measured as the log of the market value of equity in fiscal year t, is included since small firms are more likely to meet or beat analysts' forecasts (Skinner and Sloan 2002). Num_Analysts $_t$, the log of the number of analysts following the firm, and Consensus $_t$, the standard deviation of analysts' forecasts which comprise the consensus forecast, are both measured at the time of the latest consensus forecast at fiscal year t and deflated by the median forecast. These two variable are included because it has

been shown that managers have a greater incentive to meet or beat forecasts the larger the analysts' following and the greater the consensus among analysts. Presumably, investors place more value on reported earnings when the analyst following is high and the forecast dispersion is low (Payne and Robb 2000). Loss $_t$, a dummy variable that equals one when actual earnings per share at fiscal year t are less than $0 and zero otherwise is included because firms that report a loss are more likely to miss their forecasts (Brown, 2001).

Fixed effects cannot be used in a logistic regression if the number of observations per group is too small (Kalbfleisch and Sprott, 1970). Since unobservable firm characteristics could be influencing the results, I also use the fixed effects form of the logistic regression (conditional logistic regression) which controls for any company-specific factors and measures the variation within a firm over time (Chamberlain, 1980) as follows:

$$P\begin{pmatrix} Earnings\ Surprise_t: \\ (MBE,\ Slightly\_Beat,\ Beat) \end{pmatrix} = Conditional\ Logistic \begin{pmatrix} \beta_1 New\_IRO\_Revolving + \beta_2 New\_IRO \\ +\beta_3 Hiring\_Firm + \beta_4 Shares_t + \beta_5 Size_t \\ +\beta_6 Num\_Analysts_t + \beta_7 Consensus_t \\ +\beta_8 Loss_t + Year\ Fixed\ Effects + \varepsilon \end{pmatrix} \quad (6)$$

where the variables are as defined in (5).

I use an OLS regression with year and firm fixed effects to ascertain whether former analysts who are employed as IR officers are able to attract more analysts than the average IR (non-analyst) officers. To test this, I use the following regression with the independent variables defined as explained above:

$$\begin{aligned} Num\_Analysts_t = \alpha + \beta 1\ New\_IRO\_Revolving + \beta 2\ New\_IRO + \beta 3\ Hiring\_Firm \\ +\beta 4\ Shares_t + \beta 5\ Size_t + \beta 6\ Consensus_t + \beta 7\ Loss_t + Year\ Fixed\ Effects \\ +Firm\ Fixed\ Effects + \varepsilon \end{aligned} \quad (7)$$

As robustness test, I also compare the hiring of analysts in other (non-investor relations) executive positions to the hiring of new IR officers. This provides insight as to whether any changes detected in the two performance measures are due to the influence of the new IR officers per se or whether the analyst community is responding positively to all firms that hire one of "its own." If there is no difference across these two firms groups in the number of firms that slightly beat their earnings forecasts or in their ability to attract a larger analyst following then apparently hiring an analyst in an IR position provides no detectable benefits to the firm beyond what would be provided by hiring analysts in any area.

5.3.1 Meeting or Beating Expectations

Table 9 reports the logistic regression results of testing model 5. Hiring a new IR officer in general does not appear to affect firms' likelihood of meeting or beating expectations as evidenced by the fact that the coefficient of New_IRO is not significantly different than zero. However, hiring a revolving-door analyst as an IR officer does have an impact. As shown in column 1, the coefficient for New_Revolving_IRO is 0.277, significant at the 10% level. This finding translates to an increase in the probability of meeting or beating expectations by 31.9% for firms that hire revolving-door analysts as IR officers. Columns 2 and 3 show that the increased likelihood of meeting or beating expectations stems from an increase in the probability of slightly beating expectations; there is no change in the probability of beating expectations. The coefficient of the variable of interest, New_Revolving_IRO shown in column 2 is positive (0.445) and significant at the 5% level. The coefficient translates to an increase in the probability of slightly beating expectations by 56% for firms who hired revolving-door analysts as IR officers. Column 3 shows that there is no change in the probability of beating expectations for this same group of firms.

Table 9

Hiring of a Revolving-Door Analysts as IR Officers and Increase in Analysts' Following

	(1)	(2)
	Model 7	
	IR Officer Analysts	Executive Analysts
New_IRO_Revolving	0.049**	
	(2.38)	
New_EXEC_Revolving		0.010
		(0.53)
New_IRO	0.021*	0.045***
	(1.81)	(3.95)
Shares	0.071***	0.069***
	(4.48)	(4.63)
Size	0.199***	0.204***
	(27.98)	(28.65)
Consensus	-0.002**	-0.001
	(-2.30)	(-0.70)
Loss	-0.057***	-0.079***
	(-3.27)	(-4.63)
Constant	0.748***	0.657***
	(6.64)	(7.36)
Firm FE	Y	Y
Year FE	Y	Y
No. of Observations	12,488	13,302
Adjusted R-square	0.747	0.74

Note: The table shows the results of the change in the number of analysts following the firm when a revolving-door analyst is hired as an IR officer relative to a hiring of an IR officer who is not an analyst (column 1). The results in the change in the number of analyst following the firm when a revolving-door analyst is hired as an executive (non-IR officer) relative to a hiring of an IR officer who is not an analyst are presented in column 2. The dependent variable Num_Analysts is the log number of analysts following the firm at the time of the latest consensus forecast. The independent variables are as follows. New_IRO_Revolving is a dummy variable that takes a value of one when the revolving-door analyst serves as an investor relations officer at the hiring company and zero otherwise. New_IRO is a dummy variable that takes the value of one for a hire of a new investor relations officer and zero otherwise. New_EXEC_Revolving is a dummy variable that takes the value of one for a hire of a revolving-door analyst as an executive and zero otherwise. All other control variables are defined in the appendix. t-statistics are in parentheses with heteroskedastic-consistent standard errors clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

As noted earlier, to control for any unobservable firm characteristics, the tests were also conducted using a conditional logistic regression (model 6) which estimates the associations within each firm. Column 4 shows the results when examining the impact of meeting or beating expectations using this approach. The coefficient on New_Revolving_IRO is positive (0.132) but, unlike in the unconditional logistic regression, the coefficient is not significant. Column 5 presents the results from examining the firms' propensity to slightly beat expectations (Slightly_Beat). The results are qualitatively similar to those for the unconditional model with the coefficient of New_Revolving_IRO positive and significant at the 5% level. Overall, the results suggests that revolving-door analysts who become IR officers are better able to manage the expectations of the analyst community as evidenced by the finding that there is an increase in the likelihood that their companies will slightly beat expectations. Confirming that revolving-door analysts hired as IR officers are effective in communicating with the analyst community, panel B shows that there is no significant difference in the probability of meeting or beating expectations when a company hires an analyst in an executive position outside of the investor relations area.

5.3.2 Number of Analyst Following

Table 10 reports the results of testing model 7 on whether revolving-door analysts are better able to increase the number of analysts following their companies. The results reported in column 1 indicate that hiring a new IR officer increases the log number of analysts who are following the firm by 0.021 and is significant at the 10% level. This translates to an increase of 1.02 analysts if a new IR officer is hired. When a firm hires a revolving-door analyst as an IR officer, the log number of analysts following the firm increases by 0.049 (significant at the 5% level) above the increase of hiring a new IR officer. This translates to an increase in the average

Table 10

Hiring Revolving-Door Analysts as IR Officers and Firms' Ability to Meet or Beat Expectations

	(1)	(2)	(3)	(4)	(5)	(6)
		Model 5			Model 6	
	MBE	Slightly_Beat	Beat	MBE	Slightly_Beat	Beat
Panel A: Revolving-Door Analysts Hired as IR Officers (N=12,488)						
New_IRO_Revolving	0.277*	0.445**	0.115	0.132	0.443**	-0.023
	(1.95)	(2.11)	(0.86)	(1.06)	(2.24)	(-0.20)
New_IRO	-0.062	0.034	-0.095	-0.109	-0.040	-0.100
	(-0.95)	(0.42)	(-1.62)	(-1.47)	(-0.42)	(-1.45)
Hiring_Firm	-0.495***	-0.767***	-0.224**			
	(-4.97)	(-4.48)	(-2.53)			
Shares	-0.033	0.367***	-0.073**	0.031	0.237**	-0.018
	(-1.02)	(7.52)	(-2.38)	(0.41)	(2.12)	(-0.24)
Size	0.004	-0.280***	0.056**	-0.008	-0.153***	0.013
	(0.14)	(-6.47)	(2.06)	(-0.21)	(-2.92)	(0.38)
Num_Analysts	0.017***	0.014**	0.008**	0.003	0.011	-0.010*
	(3.64)	(2.49)	(2.06)	(0.52)	(1.47)	(-1.81)
Consensus	-0.032	-0.033	-0.038	-0.025	-0.046	-0.032
	(-0.58)	(-0.71)	(-0.61)	(-0.86)	(-0.61)	(-1.04)
Loss	-1.125***	-1.090***	-0.864***	-1.226***	-0.830***	-0.976***
	(-13.74)	(-8.21)	(-10.91)	(-13.37)	(-5.06)	(-10.90)
Constant	-0.204	-1.962**	-0.578			
	(-0.38)	(-2.54)	(-1.11)			
Year Fixed Effects	Y	Y	Y	Y	Y	Y
Pseudo R-squared	0.0394	0.0528	0.0219	0.0286	0.0349	0.0179
Panel B: Revolving-Door Analysts Hired as Executives (N=13,302)						
New_EXEC_Revolving	0.001	-0.037	-0.016	-0.173	-0.301	-0.159
	(0.01)	(-0.25)	(-0.16)	(-1.37)	(-1.39)	(-1.39)
New_IRO	-0.039	0.060	-0.077	-0.110	0.034	-0.118
	(-0.63)	(0.76)	(-1.36)	(-1.35)	(0.32)	(-1.57)
Control variables are redacted for brevity						
Year Fixed Effects	Y	Y	Y	Y	Y	Y
Pseudo R-square	0.0406	0.0530	0.0230	0.0278	0.0410	0.0173

Note: The table shows the results of the change in chance of the firm to meet or beat expectations when a revolving-door analyst is hired as an IR officer relative to a hiring of an IR officer who is not an analyst. The dependent variables are as follows. Earnings Surprise is the difference between actual earnings and the latest consensus forecast before the earnings announcement. MBE (meeting or beating expectations) is a dummy variable which equals one when the earning surprise is larger or equal to 0 and zero otherwise. Slightly_Beat is a dummy variable equal to one when the earnings surprise is between $0.00 and $0.01 and zero otherwise. Beat is a dummy variable which equals one when the earning surprise is larger than 0 and zero otherwise. The independent variables are as follows. New_IRO_Revolving is a dummy variable that equals 1 if a revolving-door analyst is hired as an investor relations officer and zero otherwise. New_IRO is a dummy variable that equals one if a new investor relations officer is hired and zero otherwise. New_EXEC_Revolving is a dummy variable that equals one if a revolving-door analyst is hired as an executive and zero otherwise. All other control variables are defined in the appendix. z-statistics are in parentheses with heteroskedastic-consistent standard errors clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively.

number of analysts of 1.051 above the increase in the number of analysts when hiring a new IR officer. The results presented in column 2 indicate that there is no difference in the number of analysts who begin covering the hiring firm if analysts are hired outside of the investor relations area.

The findings reported in this section of an increased probability of slightly beating the consensus forecasts and of attracting a larger analyst following suggest that former analysts' experience and ties with the analyst community benefit the firms that hired them. The insignificant results for firms that hired analysts in positions outside of the investor relations area suggest that the results are not driven by any positive feelings in the analyst community that might ensue if firms hire "one of their own." Rather, it is the former analysts in their new roles as IR officers who are better at their jobs. These findings are consistent with rational behavior by the hiring firms. Firms are not simply swayed by the analysts' biased reports but also consider their qualifications in their new positions.

CHAPTER 6

CONCLUSION

The findings suggest that the "revolving-door" phenomenon creates a conflict of interests between analysts' fiduciary responsibilities and their desire to gain favor with their future employers. Revolving-door analysts change their behavior in favor of their future employers in their last year of employment as analysts. The evidence indicates that relative to other analysts, revolving-door analysts are more optimistic (pessimistic) about the hiring companies (non-hiring companies) in the year prior to their move than they were throughout their career. The evidence also shows that relative to other analysts, revolving-door analysts increase the number of reports they issue on the hiring companies in the year prior to their move, consistent with the notion that these analysts are actively trying to attract the attention of the hiring companies.

Additional analyses suggest that while the hiring companies lose favorable coverage when they employ analysts, they gain from the analysts' experience and connections with their former peers. The evidence shows that hiring these analysts in investor relations positions provides more effective communications with the analyst community in that the firms are more likely to slightly beat the consensus forecasts and to attract a larger analyst following.

In my sample period, I identified 299 analysts who accepted employment with a covered firm. Anecdotal evidence suggests that the revolving-door phenomenon is much more widespread than this number indicates since associate (more junior) analysts tend to move to covered firms. Interviews with analysts indicate that a common career path for associate analysts is to move to a covered company.[20] Identifying and tracking the movement of associate analysts

20. "Real Life of an Equity Analyst," http://thealphabanker.com/2013/09/24/real-life-of-an-equity-analyst-buy-side; "Equity Research: A Day in the Life, Pay, and Exit Opportunities" http://www.mergersandinquisitions .com/equity-research-on-the-job; "Life on the Sell Side: Recruiting, Compensation and Exit Opportunities." http://www.lifeonthebuyside.com/life-on-the-sell-side-equity-research-part-2.

is more complicated than tracking analysts since their names, while included in the research reports, are not collected by I/B/E/S and thus must be manually collected. Future research of this conflict of interests would benefit from examining associate analysts since knowledge of their behavior would provide a more complete picture on the impact of the revolving-door phenomenon.

Taken together, the results suggest that revolving-door analysts bias their forecasts in the year prior to their move in favor of the covered companies that hire them. In order to prevent such a conflict of interests from arising, regulators and standard setters might consider tightening the employment regulations in the industry. At the very least, investors should be made aware, through the enforcement of the existing disclosure rule, when analysts are issuing reports on firms with which they are interviewing or have accepted employment.

APPENDIX

DEFINITIONS OF VARIABLES

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 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 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
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
Recommendation	is coded 4, 3, 2, 1 and 0 for strong buy, buy, hold, underperform and sell recommendations respectively
Relative 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 is the absolute value of actual earnings per share minus analyst i's forecast of company j at time t.. This forecast error is then compared to the average forecast error for all analysts making forecasts for company j within the last 90 days of the fiscal year. The relative forecast error is standardized across firms by deflating by the standard deviation of forecast error across all analysts forecasting for company j at time t
R-D_Analyst	a dummy variable that receives a value of one for all the forecasts the revolving-door analyst makes for all the companies she covers and zero otherwise
Hiring_Year	a dummy variable that receives a value of one for all the forecasts made in the last year of an analyst's employment and zero otherwise

Variable	Definition
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 following 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)
Company_Experience	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)
General_Experience	a measure of analyst i's experience (calculated as the number of years of experience for analyst i in year t minus the minimum number of years of experience for analysts following firm j in year t, with this difference scaled by the range of years of experience for analysts following firm j in year t)
Horizon	a measure of the time from the forecast date to the earnings announcement (calculated as the number of days from the forecast date to the date of the earnings announcement for analyst i in year t minus the minimum number of days from the forecast date to the date of the earnings announcement for analysts following firm j in year t, with this difference scaled by the range of days from the forecast date to the date of the earnings announcement for analysts following firm j in year t)
N_Strong_Buy/ N_Buy/ N_Hold/ N_UnderPerform/ N_Sell	the number of strong buy, buy, hold, underperform, and sell recommendations respectively made by other analysts for the same company and quarter
Earnings Surprise	Earnings Surprise is measured as the difference between actual earnings and the latest consensus forecast before the earnings announcement
MBE	MBE (meeting or beating expectations) is a dummy variable equaling one when the earnings surprise is greater than or equal to 0 and zero otherwise
Slightly_Beat	Slightly_Beat is a dummy variable equaling one when the earnings surprise is between $0 and $0.01 and zero otherwise
Beat	Beat is a dummy variable equaling one when the earnings surprise is greater than 0 and zero otherwise
New_IRO_Revolving	a dummy variable that takes a value of one when the revolving-door analyst serves as an investor relations officer at the hiring company and zero otherwise

Variable	Definition
New_IRO	a dummy that takes the value of one for a hire of a new investor relations officer and zero otherwise
Hiring_Firm	a dummy variable that takes a value of one for the hiring company that hires an analyst as an IR officer and zero otherwise
Num_Analysts	The log number of analysts following the firm at the time of the latest consensus forecast
Consensus	standard deviation of the consensus forecast deflated by the median forecast
Loss	a dummy variable that equals one when actual earnings per share are less than $0 and zero otherwise
Size	The log of market value of equity
Shares	The log number of outstanding shares
New_Exec_Revolving	a dummy variable that takes a value of one when the revolving-door analyst serves as an executive (non-investor relations officer) at the hiring company and zero otherwise

BIBLIOGRAPHY

Arakawa, Dana, and Margaret Greenberg. “Optimistic Managers and Their Influence on Productivity and Employee Engagement in a Technology Organization: Implications for Coaching Psychologists.” *Coaching Psychology Review* 2, no. 1 (2007): 78–89.

Baber, William R., Jagan Krishnan, and Yinqi Zhang. “Investor Perceptions of the Earnings Quality Consequences of Hiring an Affiliated Auditor.” *Review of Accounting Studies* 19, no. 1 (2014): 69–102.

Barth, Mary E., and Amy P. Hutton. “Financial Analysts and the Pricing of Accruals.” Research Paper No. 1693, Graduate School of Business, Stanford University, Stanford, CA, 2001. http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.196.8230

Barton, Jan, and Paul J. Simko. “The Balance Sheet as an Earnings Management Constraint.” *The Accounting Review* 77 (2002): 1–27.

Bartov, E., D. Givoly, and C. Hayn. “The Rewards to Meeting or Beating Earnings Expectations.’’ *Journal of Accounting and Economics* 33 (2002): 173–204.

Bowen, Robert M., Xia Chen, and Qiang Cheng. “Analyst Coverage and the Cost of Raising Equity Capital: Evidence from Underpricing of Seasoned Equity Offerings.” *Contemporary Accounting Research* 25, no. 3 (2008): 657–700.

Brennan, Michael J., and Claudia Tamarowski. “Investor Relations, Liquidity, and Stock Prices.” *Journal of Applied Corporate Finance* 12, no. 4 (2000): 26–37.

Brown, Lawrence D. “A Temporal Analysis of Earnings Surprises: Profits versus Losses.” *Journal of Accounting Research* 39, no. 2 (2001): 221–41.

Burgstahler, David, and Michael Eames. “Management of Earnings and Analysts’ Forecasts to Achieve Zero and Small Positive Earnings Surprises.” *Journal of Business Finance & Accounting* 33, no. 5–6 (2006): 633–52.

Bushee, Brian J., and Gregory S. Miller. “Investor Relations, Firm Visibility, and Investor Following.” *The Accounting Review* 87, no. 3 (2012): 867–97.

Chamberlain, Gary. “Analysis of Covariance with Qualitative Data.” *Review of Economic Studies* 47 (1980): 225–38.

Chen, Shuping, and Dawn A. Matsumoto. “Favorable versus Unfavorable Recommendations: The Impact on Analyst Access to Management-Provided Information.” *Journal of Accounting Research* 44, no. 4 (2006): 657–89.

Cheng, Qiang, and Terry D. Warfield. “Equity Incentives and Earnings Management.” *The Accounting Review* 80, no. 2 (2005): 441–76.

Clement, Michael B. “Analyst Forecast Accuracy: Do Ability, Resources, and Portfolio Complexity Matter?” *Journal of Accounting and Economics* 27, no. 3 (1999): 285–303.

Clement, Michael B., and Senyo Y. Tse. “Do Investors Respond to Analysts’ Forecast Revisions as If Forecast Accuracy is All That Matters?” *The Accounting Review* 78, no. 1 (2003): 227–49.

Cohen, Lauren, Andrea Frazzini, and Christopher J. Malloy. “Hiring Cheerleaders: Board Appointments of “Independent” Directors.” *Management Science* 58, no. 6 (2012): 1039–58.

Cohen, Lauren, Andrea Frazzini, and Christopher Malloy. “Sell-Side School Ties.” *The Journal of Finance* 65, no. 4 (2010): 1409–37.

Cornaggia, Jess, Kimberly Rodgers Cornaggia, and Han Xia. “Revolving Doors on Wall Street.” Working Paper, 2015. http://ssrn.com/abstract=2150998

Cowen, Amanda, Boris Groysberg, and Paul Healy. “Which Types of Analyst Firms Are More Optimistic?” *Journal of Accounting and Economics* 41, no. 1 (2006): 119–46.

deHaan, Ed, Simi Kedia, Kevin Koh, and Shivaram Rajgopal. “Does the Revolving-Door Affect the SEC’s Enforcement Outcomes?” *Journal of Accounting and Economics* 65, forthcoming.

Dugar, Amitabh, and Siva Nathan. “The Effect of Investment Banking Relationships on Financial Analysts’ Earnings Forecasts and Investment Recommendations.” *Contemporary Accounting Research* 12, no. 1 (1995): 131–60.

Ertimur, Yonca, Jayanthi Sunder, and Shyam V. Sunder. “Measure for Measure: The Relation between Forecast Accuracy and Recommendation Profitability of Analysts.” *Journal of Accounting Research* 45, no. 3 (2007): 567–606.

Farrell, Kathleen A., and David A. Whidbee. “Impact of Firm Performance Expectations on CEO Turnover and Replacement Decisions.” *Journal of Accounting and Economics* 36, no. 1 (2003): 165–96.

Fisch, Jill E. “Fiduciary Duties and the Analyst Scandals.” *Alabama Law Review* 58 (2006): 1083–1102.

Fitch Ratings. *The Ratings Process*. New York: Fitch Ratings, 2006.

Geiger, Marshall A., Clive S. Lennox, and David S. North. “The Hiring of Accounting and Finance Officers from Audit Firms: How Did the Market React?” *Review of Accounting Studies* 13, no. 1 (2008): 55–86.

Goldsmith, Arthur H., Jonathan R. Veum, and William Darity. “The Impact of Psychological and Human Capital on Wages.” *Economic Inquiry* 35, no. 4 (1997): 815–29.

Graham, J. R., C. R. Harvey, and S. Rajgopal. 2005. "The Economic Implications of Corporate Financial Reporting.'' *Journal of Accounting and Economics* 40 (December): 3–73.

Green, Alison. "The 10 Most Common Job Interview Questions." *US News & World Report*, 24 Jan. 2011. Web. 23 Oct. 2014.

Groysberg, Boris, Paul M. Healy, and David A. Maber. "What Drives Sell-Side Analyst Compensation at High-Status Investment Banks?" *Journal of Accounting Research* 49, no. 4 (2011): 969–1000.

Jackson, Andrew R. "Trade Generation, Reputation, and Sell-Side Analysts." *The Journal of Finance* 60, no. 2 (2005): 673–717.

Jacob, John, Thomas Z. Lys, and Margaret A. Neale. "Expertise in Forecasting Performance of Security Analysts." *Journal of Accounting and Economics* 28, no. 1 (1999): 51–82.

Jiang, John (Xuefeng), Isabel Yanyan Wang, and Kailong (Philip) Wang. "Former Rating Analysts and the Ratings of MBS and ABS: Evidence from LinkedIn." Working Paper, Department of Accounting & Information Systems, Michigan State University, 2015. http://ssrn.com/abstract=2442472

Kadan, Ohad, Leonardo Madureira, Rong Wang, and Tzachi Zach, "Conflicts of Interest and Stock Recommendations: The Effects of the Global Settlement and Related Regulations." *Review of Financial Studies* 22, no. 10 (2009): 4189–217.

Kalbfleisch, John D., and David A. Sprott. "Application of Likelihood Methods to Models Involving Large Numbers of Parameters." *Journal of the Royal Statistical Society, Series B (Methodological)* (1970): 175–208.

Kasznik, Ron, and Maureen F. McNichols. "Does Meeting Earnings Expectations Matter? Evidence from Analyst Forecast Revisions and Share Prices." *Journal of Accounting Research* 40, no. 3 (2002): 727–59.

Ke, Bin, and Yong Yu. "The Effect of Issuing Biased Earnings Forecasts on Analysts' Access to Management and Survival." *Journal of Accounting Research* 44, no. 5 (2006): 965–99.

Kolasinski, Adam, and S. P. Kothari. "Investment Banking and Analyst Objectivity: Evidence from Forecasts and Recommendations of Analysts Affiliated with M&A Advisors." Working Paper, Kenan Flagler Business School, University of North Carolina, Chapel Hill, NC, 2004. http://public.kenan-flagler.unc.edu/faculty/shivdasani/unc-duke %20corporate%20finance/Kolasinski_Kothari.pdf

Lin, Hsiou-Wei, and Maureen F. McNichols. "Underwriting Relationships, Analysts' Earnings Forecasts and Investment Recommendations." *Journal of Accounting and Economics* 25, no. 1 (1998): 101–27.

Luechinger, Simon, and Christopher Moser. “The Value of the Revolving-Door: Political Appointees and the Stock Market.” KOF Working Papers No. 310, KOF Swiss Econimc Institute, Zürich, Switzerland, 2012. https://www.kof.ethz.ch/en/publications/p/kof-working-papers/310/

Luthans, Fred. “Positive Organizational Behavior: Developing and Managing Psychological Strengths.” *The Academy of Management Executive* 16, no. 1 (2002): 57–72.

Matsunaga, Steven R., and Chul W. Park. “The Effect of Missing a Quarterly Earnings Benchmark on the CEO’s Annual Bonus.” *The Accounting Review* 76, no. 3 (2001): 313–32.

Menon, Krishnagopal, and David D. Williams. “Former Audit Partners and Abnormal Accruals.” *The Accounting Review* 79, no. 4 (2004): 1095–118.

Merton, Robert C. “A Simple Model of Capital Market Equilibrium with Incomplete Information.” *The Journal of Finance* 42, no. 3 (1987): 483–510.

Mikhail, Michael B., Beverly R. Walther, and Richard H. Willis. “Do Security Analysts Improve Their Performance with Experience?” *Journal of Accounting Research* 35 (1997): 131–57.

Mohanram, Partha S., and Shyam V. Sunder. “How Has Regulation FD Affected the Operations of Financial Analysts?” *Contemporary Accounting Research* 23, no. 2 (2006): 491–525.

Mohanty, Madhu S. “Effects of Positive Attitude on Earnings: Evidence from the US Longitudinal Data.” *Journal of Socio-Economics* 38, no. 2 (2009): 357–71.

Nollen, Stanley D., and Karen N. Gaertner. “Effects of Skill and Attitudes on Employee Performance and Earnings.” *Industrial Relations: A Journal of Economy and Society* 30, no. 3 (1991): 435–55.

O’Brien, Patricia C., Maureen F. McNichols, and Lin Hsiou-Wei. “Analyst Impartiality and Investment Banking Relationships.” *Journal of Accounting Research* 43, no. 4 (2005): 623–50.

Payne, Jeff L., and Sean W. G. Robb. “Earnings Management: The Effect of Ex Ante Earnings Expectations.” *Journal of Accounting, Auditing & Finance* 15, no. 4 (2000): 371–92.

Puri, Manju, and David T. Robinson. “Optimism and Economic Choice.” *Journal of Financial Economics* 86, no. 1 (2007): 71–99.

Roulstone, Darren T. “Analyst Following and Market Liquidity.” *Contemporary Accounting Research* 20, no. 3 (2003): 552–78.

Schulman, Peter. “Applying Learned Optimism to Increase Sales Productivity.” *The Journal of Personal Selling and Sales Management* (1999): 31–37.

Seligman, Martin E. *Learned Optimism: How to Change your Mind and Your Life*. Random House Digital, 2011.

Skinner, Douglas J., and Richard G. Sloan. “Earnings Surprises, Growth Expectations, and Stock Returns or Don’t Let an Earnings Torpedo Sink Your Portfolio.” *Review of Accounting Studies* 7, no. 2–3 (2002): 289–312.

Vidal, Jordi Blanes I., Mirko Draca, and Christian Fons-Rosen. “Revolving-Door Lobbyists.” *The American Economic Review* 102, no. 7 (2012): 3731–48.

Waddell, Glen R. “Labor Market Consequences of Poor Attitude and Low Self-Esteem in Youth.” *Economic Inquiry* 44, no. 1 (2006): 69–97.