Underwriting relationships, analysts' earnings forecasts and investment recommendations

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Abstract

We examine the effect of underwriting relationships on analysts' earnings forecasts and recommendations. Lead and co-underwriter analysts' growth forecasts and recommendations are significantly more favorable than those made by unaffiliated analysts, although their earnings forecasts are not generally greater. Investors respond similarly to lead underwriter and unaffiliated 'Strong buy' and 'Buy' recommendations, but three-day returns to lead underwriter 'Hold' recommendations are significantly more negative than those to unaffiliated 'Hold' recommendations. The findings suggest investors expect lead analysts are more likely to recommend 'Hold' when 'Sell' is warranted. The post-announcement returns following affiliated and unaffiliated analysts' recommendations are not significantly different. © 1998 Elsevier Science B.V. All rights reserved.

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1. Introduction

This paper examines whether research reports issued by analysts whose employer is affiliated with a company through an underwriting relationship are more favorable than research reports issued by unaffiliated analysts. This inquiry is motivated by concern expressed in the financial press that

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underwriting relationships create a conflict of interest for analysts[1]:

> Morgan Stanley's powerful investment bankers often have run roughshod over the firm's research analysts, some current and former Morgan Stanley analysts say. These analysts say Morgan Stanley's bankers have repeatedly pressured them to alter negative research reports on the stocks of the firm's corporate clients – particularly those for which it did stock underwriting deals. (Siconolfi, 1992)

Because the underwriting business requires substantial investment in developing and managing relationships with issuing companies, it is argued that investment bankers do not welcome a negative investment report by a member of the research staff, and may actively discourage them.

It is also argued that an investment bank's willingness to underwrite a firm's securities requires that it have a favorable view about the client's prospects, as one analyst argued:

> It goes without saying that if you do a company's IPO, you are going to have a buy [on the stock], because frankly if you don't you shouldn't be doing the deal. . ... for every deal Salomon has done in the last 12 months, I have personally turned down two deals. (Raghavan, 1997).

If issuers select underwriters on the basis of the favorableness of the terms underwriters offer and these terms are related to their analysts' views, then the chosen underwriters' analysts are more likely to have favorable views of issuing companies' prospects.

Both arguments suggest that affiliated analysts' research reports are more favorable than those issued by unaffiliated analysts. To test this, we examine key elements of research reports, specifically, current and subsequent year earnings forecasts, long term earnings growth forecasts and investment recommendations. We consider two groups of *affiliated* analysts, analysts employed by the lead bank underwriting seasoned equity offerings (*lead underwriter analysts*), and analysts employed by the co-underwriter bank (*co-underwriter analysts*). We compare their forecasts and recommendations to those made by analysts at investment banks that have not served as a lead or co-underwriter for the firm (*unaffiliated analysts*). We find that current and subsequent year earnings forecasts issued by affiliated analysts both before and after seasoned equity offerings are generally not more favorable than those issued by unaffiliated analysts. In

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[1] Additional examples include Browning (1995), Dorfman (1991), Dorfman and McGough (1993), Dorfman (1995), Konrad (1989), Raghavan (1997), Schism and Steinmetz (1994), Schultz (1990) and Siconolfi (1992, 1995).

contrast to these findings, we find that lead and co-underwriter analysts' growth forecasts and recommendations are significantly more favorable than those issued by unaffiliated analysts.

This paper also examines whether investors perceive differences in the quality of affiliated versus unaffiliated recommendations, and whether returns following the recommendations are different. Given affiliated analysts' more favorable investment recommendations, the return analysis ascertains whether investors respond differently to their announcement, and whether affiliated recommendations, if followed literally, generate poorer investment performance. We examine the returns to lead underwriter and unaffiliated investment recommendations for the 3-day period surrounding their announcement, and for longer windows in the first and second years following seasoned equity offerings. For the announcement period, we find no difference in returns to lead and unaffiliated analysts' 'Strong buy' and 'Buy' recommendations, but find the returns to lead 'Hold' recommendations are significantly more negative than unaffiliated 'Hold' recommendations. Looking at the post-announcement period, we find no difference in the returns to following affiliated versus unaffiliated analysts' recommendations.

The return analysis therefore suggests that analysts are overoptimistic, on average, when issuing a 'Hold' recommendation, and that lead analysts are overoptimistic to a greater degree than are unaffiliated analysts. If issuing companies select the underwriter whose analyst has the most favorable view, one would expect greater announcement returns for all unaffiliated recommendations. The finding of less negative announcement returns only for unaffiliated versus affiliated 'Hold' recommendations suggests that affiliated analysts strategically avoid 'Sell' recommendations to a greater extent than unaffiliated analysts to maintain client relations. However, the findings indicate that lead analysts' 'Strong Buy' and 'Buy' recommendations are not overoptimistic relative to those issued by unaffiliated analysts.

The study's findings contribute to two streams of literature. The first stream examines analysts' forecasts and forecast errors around initial and seasoned public equity offerings. Hansen and Sarin (1996) calculate adjusted forecast errors, where the earnings performance of the firm is a control variable, and find that the adjusted forecast errors are not significantly different from those by analysts at other times. They also examine the forecasts of lead and other analysts and do not find a difference. Hansen and Sarin conclude that analysts are disciplined by reputational forces and consequently forecast credibly around equity offerings. Our finding for earnings forecasts of affiliated versus unaffiliated analysts is consistent with theirs. Our finding of significant differences in growth forecasts and investment recommendations, however, suggests that studies focusing solely on near-term earnings forecasts cannot resolve the question of whether concern for reputation is sufficient to offset pressures from investment banking relationships. The present paper contributes to the

literature by analyzing earnings forecasts, growth forecasts and recommendations for a comprehensive sample of affiliated and unaffiliated analysts, and documenting significant differences in growth forecasts and recommendations.

Ali (1996) finds that analysts' forecasts of earnings for the year of the offering are not overoptimistic, but that earnings forecasts issued in the five years following offerings are significantly overoptimistic. Dechow et al. (1998) document that their sample of lead underwriter analysts' earnings growth forecasts around seasoned equity offerings are significantly more favorable than those of unaffiliated analysts. Their findings, and those of Ali (1996), suggest the difference between our results for earnings forecasts and recommendations may reflect differences in analysts' expectations of long-term earnings growth. Our evidence from analysts' long-term earnings growth forecasts is consistent with this conjecture, as we find that lead analysts' growth forecasts are significantly greater than those of unaffiliated analysts. The mean difference in growth forecasts is small however, at 0.56%, leaving open the question of whether greater long-term growth expectations are sufficient to explain affiliated analysts' more favorable recommendations.

This study also contributes to the literature on analyst affiliation and investment recommendations. Similar to our study, Dugar and Nathan (1995) find that recommendations by investment banker analysts are more favorable than those by unaffiliated analysts. In contrast to our study, they find no evidence of stock price response to recommendations by affiliated or unaffiliated analysts. Our findings indicate that affiliated and unaffiliated analysts' recommendations are associated with significant return response, and suggest that their ability to detect a difference in returns in the announcement and post-announcement periods may have been limited by their smaller sample size.

Recent studies by Lin and McNichols (1998) and Michaely and Womack (1996) find that affiliated analysts' recommendations at the time of initial public offerings are significantly more favorable than those of unaffiliated analysts. Our findings suggest that similar influences also affect analysts' recommendations at the time of seasoned equity offerings. Michaely and Womack document that three-day size-adjusted returns centered on the announcement of analysts' 'Strong buy' and 'Buy' announcements are significantly more positive for unaffiliated than affiliated analysts. We find that three-day size-adjusted returns centered on the announcement of lead and unaffiliated analysts' 'Strong buy' and 'Buy' recommendations are not significantly different. However, the three-day returns associated with affiliated 'Hold' recommendations are significantly more negative than those associated with unaffiliated 'Hold' recommendations, indicating that investors correct for greater bias in affiliated analysts' 'Hold' recommendations.

Michaely and Womack also find that IPOs recommended by affiliated analysts substantially under-perform IPOs recommended by unaffiliated analysts over the two-year period following analysts' recommendations. Dunbar et al.

(1997) document that when returns for 'Buy' recommendations are measured up to the date of a subsequent downgrade, but not beyond, only initial recommendations of analysts appear over-optimistic. We extend the methodologies in these two studies by measuring returns to analysts' recommendations only for the period the recommendation is 'live'. Specifically, we measure returns from the recommendation announcement to the analyst's subsequent recommendation, and do not include returns past the date an analyst has dropped coverage of the company or is no longer employed at the brokerage firm.

We find no difference between the post-announcement returns to lead underwriter and unaffiliated analysts' recommendations issued in the two years after seasoned equity offerings. Our evidence therefore indicates that although affiliated analysts' recommendations are more favorable, their 'Strong buy' and 'Buy' recommendations are not more overoptimistic than those issued by unaffiliated analysts. If affiliated analysts intentionally bias their recommendations or if issuing companies select banks as underwriters when their analyst's view is more favorable than other analysts, then affiliated recommendations should contain greater error. In such a case, one would expect a strategy of following affiliated recommendations literally to lead to weaker investment performance. Our evidence indicates that if intentional or selection bias cause affiliated recommendations to contain greater error, offsetting forces, such as affiliated analysts' potentially greater access to information, reduce such error.

The paper proceeds as follows. Section 2 briefly describes the brokerage firm business and discusses potential influences on analysts' coverage and reporting decisions. Section 3 presents our hypotheses. Section 4 describes the data and sample selection. Section 5 describes the research design and test results, and Section 6 concludes the paper.

2. Institutional background

2.1. Investment banks and underwriting deals

The investment banking or corporate finance department of an investment bank helps a corporation issue securities to the public by acting as its underwriter in return for a commission comprised of an underwriting fee, a management fee and a selling concession. These fees are significant to both participating investment bankers and the investment bank (Smith, 1991; Raghavan, 1996). Annual bonuses are typically a substantial portion of investment bankers' total compensation, and depend on their contributions to deals done over the year (Eccles and Crane, 1988).

When a company decides to issue securities, it first selects one or more investment bankers to manage the underwriting group or syndicate. Factors in this choice include the reputation of the investment banker for conducting

offerings successfully, the investment banker's understanding of the issuer's industry, the terms of the proposed offering, potential conflicts of interest relating to the investment banker's affiliation with the issuer's competitors, and the ability of the firm to provide research support after the offering. In addition to these factors, analysts' forecasts and recommendations issued prior to underwriter selection may influence firms' choice of underwriter directly, or be correlated with factors in this choice.

Once the underwriters are selected, a working group is formed, including the issuer, the issuer's counsel, the underwriters, the underwriters' counsel and the issuer's independent accountants. This group holds an organizational meeting to determine such matters as the structure of the offering, the time schedule for the offering, over-allotment options, and the amount of capital to be offered. The issuer, with the assistance of the working group, prepares a preliminary prospectus and files a registration statement. Over the next few weeks to months, the SEC reviews the registration statement (Weiss, 1993). Once approved, the registration statement is effective and the offering may be sold to the public.

The concern that analysts affiliated with underwriters might issue overly favorable forecasts and recommendations prior to an offering is a motivation for SEC rule 10b-6. It is aimed at curbing artificial stimulation of the market during distributions of securities (Sonsini, 1988). The 'quiet period' begins when the issuer reaches an understanding with an investment bank that it will underwrite an offering and typically ends 25 days following the offering. During this period, the investment bank's analysts are precluded from issuing an earnings forecast or recommendation on the client's stock, except when published as part of a firm's continuing research program covering industry or sub-industry groups. Furthermore, a recommendation issued by an affiliated analyst in such a publication cannot be more favorable than the analyst's previous recommendation (Jennings and Marsh, 1987, pp. 78–80).

2.2. Forces influencing analysts' coverage and reporting decisions

Whether underwriting relationships cause financial analysts to issue overly optimistic forecasts and recommendations depends on several forces. To the extent that an analyst is concerned about his reputation, and his reputation depends, at least in part, on the accuracy of his forecasts and recommendations, reputational considerations would increase analysts' incentives to report truthfully.

Other forces have also been hypothesized to influence analysts' forecasts and recommendations. For example, it has been argued that analysts have greater incentives to issue 'Buy' recommendations than 'Sell' recommendations because the former generate greater trading volume. Francis and Philbrick (1993) suggest that analysts may deviate from truthful reporting to maintain good relations with management of covered firms, because management is an important

source of information to analysts. McNichols and O'Brien (1997) hypothesize and document that analysts avoid reporting negative information by covering stocks for which their views are favorable. Because we expect these forces to affect affiliated and unaffiliated analysts similarly, we use unaffiliated analysts as a control group. Differences between the forecasts and recommendations of affiliated and unaffiliated analysts' should therefore reflect differences due to investment banking relationships incremental to these other forces.

3. Hypotheses

The hypotheses we test focus on three related questions. First, we examine whether lead and co-underwriter analysts issue more favorable forecasts and recommendations than unaffiliated analysts in the period shortly before a client's equity offering. Second, we examine how investors respond to affiliated versus unaffiliated analysts' recommendations. This test provides evidence on whether the market perceives differences in the credibility of affiliated vs. unaffiliated analysts. Third, we examine the longer term investment returns associated with the recommendations of affiliated vs. unaffiliated analysts, to provide evidence on whether affiliated analysts' recommendations generate weaker investment performance.

3.1. Affiliated and unaffiliated analysts' earnings forecasts and recommendations

There are two scenarios in which affiliated analysts' research reports are more favorable than those by unaffiliated analysts. First, analysts' expectations of the firm's future prospects are likely to be a factor (or to be correlated with a factor) in an issuer's choice of underwriter. We expect that more favorable expectations by an investment bank's research analyst affect underwriter expectations, resulting in more favorable deal terms. Also, issuers may prefer not to do business with an investment bank whose analyst has issued an unfavorable report. We refer to this as the *non-strategic bias* scenario: analysts' forecasts and recommendations are a factor (or are correlated with a factor) in the issuing companies' underwriter selection, but analysts report their information non-strategically. Non-strategic reporting is expected if the benefits of biased reports are less than their costs. In this scenario, more favorable forecasts and recommendations are observed for lead-underwriter analysts than unaffiliated analysts because of the choices made by issuing companies rather than analysts.

In the *strategic bias* scenario, we assume that analysts' forecasts and recommendations are a factor in an issuing company's choice of underwriter, and that analysts issue more favorable forecasts and recommendations to increase their

investment bank's chances of being selected as underwriter. We expect that, during the period of time after a company has decided to issue an equity offering but before it has chosen an underwriter, lead and co-underwriter analysts perceive a higher probability that their firm will be chosen as underwriter than analysts at other investment banks.[2] We therefore expect the benefits of issuing a more favorable report to be greater for such analysts than for unaffiliated analysts. By contrast, analysts at investment banks that do not expect to obtain a company's underwriting business have less incentive to bias their reports because the likelihood is low that the analyst will be rewarded for contributing (or punished for not contributing) to an equity deal.[3]

In each of these scenarios, lead and co-underwriter analysts (affiliated analysts) issue more favorable research reports than unaffiliated analysts. Our first hypothesis is as follows, stated in alternative form:

Hypothesis 1:   Affiliated analysts' research reports are more favorable than those by unaffiliated analysts.

3.2. Investor interpretation of affiliated and unaffiliated analysts' recommendations

Given the potential for conflict of interest on the part of analysts, and selection bias induced by issuers' choices, the informativeness of affiliated analysts' recommendations is an open question. Affiliated recommendations may be perceived as more informative given affiliated analysts' potentially greater access to proprietary information about the firm. Alternatively, if affiliated analysts overstate the favorableness of their views or their banks are selected as underwriters when analysts' views are more favorable than those of other analysts, then favorable (unfavorable) affiliated recommendations may be

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[2] For a sample of 7,295 equity offerings and initial public offerings, untabulated analysis indicates that the lead underwriter (co-underwriter) continues as lead (co-underwriter) in 64.6% (61.0%) of all subsequent offerings. The lead (co-underwriter) continues as co-underwriter (lead) for 13.8% (8.2%) of subsequent offerings, so the total frequency of participation as lead or co-underwriter is 78.4% for lead underwriters and 69.2% for co-underwriters. Thus, once an underwriting relationship is created, there is a reasonable expectation of continuation.

[3] It is also possible that affiliated analysts might choose not to report when their expectations are less favorable than those of unaffiliated analysts, leading to the finding that their reports are on average more favorable. However, issuing companies likely expect that their investment bank's research analysts will provide coverage when they issue securities. To test for the validity of this scenario, we compared unaffiliated analysts' recommendations for companies not followed by affiliated analysts with those for companies followed by affiliated analysts, to assess whether affiliated analysts were more likely to cover better performing issuing firms, and found the ratings to be insignificantly different.

perceived by investors as less (more) informative. These arguments motivate the following hypothesis, stated in alternative form:

Hypothesis 2: The announcement returns associated with affiliated 'Buy' ('Hold' and 'Sell') recommendations are less positive (more negative) than those associated with comparable unaffiliated recommendations.

Because we expect that unaffiliated analysts' recommendations are informative, observing less positive response to affiliated 'Buy' recommendations would suggest that investors do not find these recommendations as informative as those issued by unaffiliated analysts. Finding a more negative response to affiliated 'Hold' or 'Sell' recommendations would indicate that investors find these recommendations a more negative signal about firm value.

3.3. Longer term returns associated with affiliated and unaffiliated analysts' recommendations

Both the allegations that affiliated recommendations are overoptimistic and the empirical findings, to be presented shortly, that affiliated recommendations are more favorable than unaffiliated recommendations raise the possibility that investors who follow affiliated recommendations experience poorer investment performance. If analysts' recommendations have predictive ability, as suggested by the findings of Womack (1996), then 'Buy' ('Hold' and 'Sell') recommendations that are biased upward, either because of intentional misrepresentation by analysts or selection by issuing companies, should be associated with less positive (more negative) future returns. These arguments motivate the following alternate hypothesis:

Hypothesis 3: The post-announcement returns associated with affiliated 'Buy' ('Hold' and 'Sell') recommendations are less positive (more negative) than those associated with comparable unaffiliated recommendations.

Finding lower returns to following affiliated than unaffiliated recommendations suggests affiliated recommendations contain an optimistic bias. However, to the extent investors adjust for such bias, they need not earn lower returns.

4. Data

The tests of our hypotheses require data on securities offerings, analysts' earnings forecasts and recommendations, analysts' long-term earnings growth

forecasts, annual earnings per share (*EPS*), stock splits, and security prices. We collected information about public offerings in US markets by domestic issuers from the Securities Data Company, Inc. (SDC) Public Offering database. Data on investment bank analysts' earnings per share forecasts and recommendations were provided by Research Holdings, Limited. Analysts' long term earnings growth forecasts were collected from *I/B/E/S*. Annual *EPS* measures were collected from the 1995 COMPUSTAT Annual Industrial database. Finally, data on split factors, split dates and security returns are provided by the 1996 University of Chicago Center for Research in Security Prices (CRSP) database.

Our samples of lead and co-underwriter-analyst earnings forecasts, growth forecasts and recommendations for each issuing company are matched to those issued by unaffiliated analysts, i.e., analysts at investment banks that did not serve as lead or co-underwriter of the issuing company's equity securities during the 1985–94 period. The forecasts and recommendations for our tests of Hypothesis 1 must meet the following criteria:

1. forecasts or recommendations are made for companies that issued common stock during 1989–94, and
2. forecasts or recommendations of lead or co-underwriter analysts are available in the year prior to the public offering, and
3. a matching forecast or recommendation issued by an unaffiliated analyst within sixty days of the affiliated forecast or recommendation is available.[4]

These criteria ensure availability of forecast or recommendation data for issuing companies by both an affiliated and unaffiliated analyst in the year prior to the public offering.

When there was more than one affiliated forecast or recommendation for an underwriter-offering observation, the forecast or recommendation made on the day closest to the offering date was included in the sample. Similarly, when there was more than one unaffiliated forecast or recommendation within sixty days of the respective affiliated forecast, the unaffiliated forecast issued most closely to the date of the affiliated forecast was chosen.

To calculate deflators for forecasts, we require that data on price and stock splits of the issuing companies are available on the CRSP tape. To be included in the stock-price tests, daily returns and size deciles must be available from the CRSP file.

Table 1 documents that there were 2,400 seasoned equity offerings in US markets by domestic issuers during the 1989–1994 period. For the companies

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[4] Growth forecasts are issued less frequently than earnings forecasts or recommendations. For this reason, we require a matching unaffiliated growth forecast within 365 days of the affiliated growth forecast for our primary analysis. Similar results are obtained for a smaller sample when we require the matching growth forecasts be issued within 100 days of the affiliated forecast.

Table 1
Sample information

Year	Seasoned equity offerings	Observations with lead underwriter forecasts of annual EPS	Observations with lead underwriter recommendations
1989	215	62	52
1990	182	65	41
1991	448	209	141
1992	472	240	169
1993	672	306	206
1994	411	187	160
Total	2,400	1,069	769

Notes: This table shows the number of equity offerings, and the number of lead underwriter forecasts and recommendations preceding equity offerings for each year in the sample period.

issuing these offerings, 1,069 earnings forecasts and 769 recommendations by lead underwriter analysts are available.

5. Research design and test results

This section describes the research design, results of and inferences from our tests of differences between lead and co-underwriter analysts' research reports and those of unaffiliated analysts.

5.1. Differences between affiliated and unaffiliated analysts' earnings forecasts and recommendations

This paper focuses on earnings forecasts and recommendations because they are key elements of analysts' research reports. Forecasts of future earnings and earnings growth are important factors in analysts' models of equity value. An analyst's investment recommendation depends on the difference between his estimate of the firm's equity value and its current market value, and therefore reflects his view of the firm's future prospects.

We examine earnings forecasts and recommendations at two points in time: immediately prior to and following seasoned equity offerings. The forecasts and recommendations prior to the equity offering are of interest for three reasons. First, they reflect the information management used in selecting underwriters for its offering. Second, these are the forecasts and recommendations available to investors for use in pricing the firm's offering. Third, it is reasonable to assume that, in the pre-offering period, lead underwriter analysts expect the client to

issue equity and expect their firm to bid for the underwriting business. Thus, this is a time period in which analysts' incentives to curry favor with a prospective underwriting client should be most pronounced. Therefore, under the strategic bias scenario, we expect more favorable affiliated forecasts and recommendations in this time period. However, under the non-strategic bias scenario, we also expect more favorable affiliated forecasts and recommendations in this time period, if issuing companies choose underwriters on the basis of their views of their future prospects, and these views are correlated with their analysts' forecasts and recommendations.

Although we expect that affiliated analysts are likely to anticipate forthcoming offerings, and that their last pre-offering forecasts and recommendations reflect this, analysts' uncertainty about their affiliation in the pre-offering period can reduce the power of our tests. To assess the robustness of our findings to this potential uncertainty, we examine analysts' earnings forecasts and recommendations in the post-offering period, at which time analysts know their affiliation with certainty.

Our tests compare the forecasts and recommendations of three groups of analysts: lead underwriter analysts, co-underwriter analysts and unaffiliated analysts. Because of the role of relationships between investment banks and issuing companies, we expect lead and co-underwriter banks have a higher ex ante probability of selection than unaffiliated banks (Eccles and Crane, 1988). In the strategic bias scenario, lead and co-underwriter analysts would therefore be expected to issue more favorable forecasts and recommendations than unaffiliated analysts. Alternatively, in the selection bias scenario, issuing companies' choice of lead and co-underwriter banks is affected by their analysts' expectations relative to other banks' analysts.

To test whether affiliated analysts' forecasts are greater than those of unaffiliated analysts, we match the affiliated analyst's forecast made most immediately prior to the public offering date with the forecast issued by an unaffiliated analyst on the date closest to the affiliated analyst's forecast date.[5] Our research design therefore controls for differences in the characteristics of firms that affiliated versus unaffiliated analysts choose to cover. We test whether the mean and median differences between pairs of affiliated and unaffiliated analysts' forecasts are positive for current year earnings per share, *EPS*, subsequent year *EPS*, and the five-year earnings growth rate, *GROWTH*. We define $FY1$ and $FY2$ as an analyst's forecast of current and subsequent year *EPS*, respectively, deflated by the firm's share price on the day prior to the earlier of the two forecast dates for each matched pair.

Table 2 presents the results of our test of Hypothesis 1 using $FY1$, price-deflated forecasts of the current year's annual *EPS*, for all matched pairs.

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[5] We also require that unaffiliated forecasts and recommendations (growth forecasts) be issued within 60 (365) days of the respective affiliated analyst's, and prior to the offering.

Table 2

Differences between lead, co-underwriter and unaffiliated analysts' earnings forecasts and recommendations issued prior to equity offerings

Panel A: *Differences between lead underwriter and unaffiliated analysts' earnings forecasts, growth forecasts and recommendations*

| Variable[a] | n | Lead analysts | | Unaffiliated analysts | | Probability values: | |
| | | Wilcoxon | | | | | |
		Mean	Std. dev.	Mean	Std. dev.	t-test[b]	z-test[c]
FY1	775	0.0704	0.58	0.0709	0.61	0.6296	0.9550
FY2	745	0.0988	0.66	0.0980	0.66	0.2371	0.2682
GROWTH	467	0.2129	0.14	0.2073	0.14	0.1039	0.0047
REC[d]	436	1.7408	0.80	2.0986	1.03	0.0001	0.0001

Panel B: *Differences between co-underwriter and unaffiliated analysts' earnings forecasts, growth forecasts and recommendations*

| Variable[a] | n | Co-underwriter analysts | | Unaffiliated analysts | | Probability values: | |
| | | Wilcoxon | | | | | |
		Mean	Std. dev.	Mean	Std. dev.	t-test[b]	z-test[c]
FY1	471	0.0835	0.72	0.0864	0.78	0.8286	0.8865
FY2	428	0.1169	0.80	0.1209	0.87	0.8473	0.0037
GROWTH	367	0.1779	0.10	0.1752	0.11	0.2768	0.1027
REC[d]	179	1.7095	0.82	2.1001	1.03	0.0001	0.0001

[a]The variables FY1, FY2, Growth and REC are affiliated and unaffiliated analysts' forecasts of current year earnings, subsequent year earnings, long term earnings growth and their investment recommendations, respectively. FY1 and FY2 are deflated by price. Lead underwriter measures are compared to unaffiliated analysts' measures in Panel A, and co-underwriter measures are compared to unaffiliated analysts' measures in Panel B.
[b]The t-statistic tests the null hypothesis that the difference between the affiliated and unaffiliated analysts' pre-offering forecast (recommendation) is positive (negative).
[c]The Wilcoxon matched-pairs signed-rank z-statistic tests the alternate hypothesis that the median of the distribution of the differences between affiliated and unaffiliated analysts' forecasts (recommendations) is greater (less) than zero.
[d]Because recommendations are categorical, we also conduct a χ^2 test of differences in the distributions of recommendations by affiliated and unaffiliated analysts. The χ^2 statistic is 43.5 (19.2) for differences in the distribution of recommendations by lead and unaffiliated (co-underwriter and unaffiliated) analysts, both significant at less than 0.001 probability value.

Panel A documents that the mean lead underwriter *EPS* forecast is 7.04% of price, as compared to the mean unaffiliated *EPS* forecast of 7.09% of price. We are unable to reject the null hypothesis that the difference in these *FY*1 forecasts is zero, using either a *t*-test or Wilcoxon signed-rank *z*-test. Panel B documents that the difference between co-underwriter analysts' *FY*1 forecasts and those of unaffiliated analysts is also insignificantly different from zero.

As Table 2 shows, the results for subsequent year earnings forecasts, $FY2$, are generally similar to those for current year earnings forecasts. Although they are not independent tests, they reinforce the patterns documented for $FY1$. Panel A documents that the mean lead underwriter $FY2$ forecast is 9.88% of price, as compared to the mean unaffiliated $FY2$ forecast of 9.80% of price. The means and medians of these $FY2$ forecasts are insignificantly different, as are the means of co-underwriter analysts' and unaffiliated analysts' $FY2$ forecasts. The median difference between co-underwriter and unaffiliated analysts' $FY2$ forecasts, however, is significantly positive, suggesting a general tendency for co-underwriter analysts' earnings forecasts to exceed those of unaffiliated analysts by a small amount.[6]

Table 2 also documents that the mean growth forecast, $GROWTH$, issued by lead-underwriter analysts is 21.29%, as compared to the mean growth forecast of 20.73% issued by unaffiliated analysts. The statistical tests indicate that the mean difference is marginally significant, with a one-tailed probability value of 0.10, and the median difference is significantly positive, with a one-tailed p-value of 0.0047. Panel B documents a mean difference of 0.27 percent between earnings growth forecasts of co-underwriter and unaffiliated analysts, and slightly weaker statistical results. The mean difference is positive with a probability value 0.28, and the median is positive with a probability value 0.10.

The difference between affiliated and unaffiliated analysts' growth forecasts is smaller than the 4% difference documented by Dechow et al. (1998). Our conjecture is that this difference arises because design does not match by firm. It is possible that the greater differences they observe reflect the fact that affiliated analysts are more likely than unaffiliated analysts to cover smaller firms, whose growth rates likely are higher.

Our final analysis related to Hypothesis 1 examines analysts' recommendations, REC. The recommendations data are coded numerically by Research Holdings, Ltd., with values from 1 to 5, where 'Strong buy' is coded 1, 'Buy' is coded 2, 'Hold' is coded 3, 'Sell' is coded 4 and 'Strong sell' is coded 5. We hypothesize that the distributions of lead and co-underwriter analysts' recommendations will be shifted toward more favorable (lower-numbered) recommendations, relative to the respective comparison distributions of unaffiliated recommendations. We present parametric and nonparametric statistics for comparability with our tests of differences in the mean and median values of

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[6] The difference in these findings does not appear to be due to influential observations as similar parametric results are observed when observations above (below) the 99th (1st) percentile are excluded. The nonparametric findings are also corroborated by sign test results that indicate 214 out of 373 non-zero differences are positive, with a probability value of 0.0025.

$FY1$, $FY2$ and $GROWTH$. However, because the recommendation data are categorical, we also report χ^2 tests of differences in the distributions of the recommendation categories.

Table 2 presents strong evidence that affiliated recommendations are more favorable than unaffiliated recommendations. Panel A documents that the difference between lead underwriter and unaffiliated recommendations is significantly negative, with both the t-statistic and z-statistic significant at less than 0.0001. The difference between lead and unaffiliated recommendations is significantly negative, as indicated by the associated t-statistic of -6.11. The χ^2 (4) statistic for a test of differences in the distributions of affiliated and unaffiliated analysts' recommendations is 43.5, which is significant at a probability value less than 0.0001. Untabulated statistics indicate that 47.0% of lead underwriter recommendations are 'Strong buy', 32.8% are 'Buy', 19.5% are 'Hold', 0.5% are 'Sell' and 0.2% are 'Strong sell'. In contrast, 37.4% of lead underwriter recommendations are 'Strong buy', 23.9% are 'Buy', 33.0% are 'Hold', 3.0% are 'Sell' and 2.8% are 'Strong sell'. Therefore, the χ^2 test results reflect a more favorable distribution of recommendations by lead than unaffiliated analysts. Panel B documents similar findings for the recommendations of co-underwriter analysts relative to unaffiliated analysts.

To summarize, Table 2 documents three key findings. First, there is a striking difference in the favorableness of affiliated versus unaffiliated analysts' recommendations. Second, the findings for co-underwriter analysts are generally similar to those for lead underwriter analysts, in that their recommendations and their growth forecasts to a lesser degree are more favorable than those of unaffiliated analysts. This finding suggests that the forces that influence lead underwriter analysts' forecasts and recommendations influence those of co-underwriter analysts similarly. Third, affiliated and unaffiliated analysts differ most for the variables that are longer term and more difficult to compare to actual outcomes, investment recommendations and 5-year growth forecasts.

To determine whether our findings are due to analysts' uncertainty as to their status as underwriter in the pre-offering period, we repeat the tests in Table 2 using $FY1$, $FY2$, $GROWTH$ and REC based on the first post-offering announcement of the respective forecasts or recommendations. The untabulated findings are consistent with those in Table 2. Specifically, the $FY1$ and $FY2$ forecasts of lead and co-underwriter analysts are not significantly different from those of unaffiliated analysts, but the growth forecasts and recommendations of lead and of co-underwriter analysts are significantly more favorable than those of unaffiliated analysts.

The differing results for shorter-term earnings forecasts versus longer-term growth forecasts and investment recommendations are consistent with two interpretations. First, if management of an issuing company selects an underwriter on the basis of the valuation the underwriter offers, and the valuation depends substantially upon longer term earnings expectations, then analysts

may agree on short-term earnings but have different longer term expectations and recommendations for the company. Relatedly, if the issuing company selects an underwriter on the basis of its analyst's reports, then our findings suggest that management is more concerned with recommendations than earnings forecasts. This may arise because an analyst's recommendation summarizes his view of whether the company is overvalued or undervalued, which relates more directly to the company's stock price than do earnings forecasts.

Second, it is likely that manipulation of a growth forecast or an investment recommendation is more difficult for investors to detect than manipulation of an earnings forecast. The outcome of an earnings forecast, *EPS*, is realized on an annual basis. In contrast, the outcome of a long term earnings growth forecast is revealed over 5 years, and the outcome of an investment recommendation depends on the investment horizon and the expected rate of return, and these are often not specified. It can therefore be less costly to an analyst to issue overoptimistic growth forecasts and recommendations than overoptimistic earnings forecasts. On the other hand, investors are concerned with returns to recommendations, and the effect of overoptimistic recommendations on an analyst's reputation for stock-picking may offset the potentially lower cost of manipulation due to differences in detectability.

To provide additional evidence on the characteristics of lead underwriter and unaffiliated analysts' recommendations, Table 3 shows the mean recommendations for the three years preceding and following seasoned equity offerings. Even three years prior to an offering, the lead analysts' recommendations are more favorable than those of unaffiliated analysts. Both lead and unaffiliated analysts' recommendations become increasingly favorable through time, peaking in the 6 months after the offering. The number of analysts issuing recommendations increases after seasoned equity offerings, and the increase is most striking for lead underwriter analysts who issued 1,268 recommendations in months 0 to 6, compared to a maximum of 574 for any six month period prior to the offering.[7]

Table 3 documents that lead underwriter analysts' recommendations are significantly more favorable than unaffiliated analysts' recommendations for the three years before and after the offering. However, the greatest differences in recommendations occur in the 18 months preceding and 6 months following equity offerings. This pattern is consistent with both the non-strategic and strategic bias hypotheses. If an issuing company selects the investment bank whose analyst has the most favorable view, analysts are likely to have relatively

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[7] Because our recommendation data cover the same period as our offering data, observations 3 years before (after) an offering are only available for 1992–94 (1989–92) offerings. Thus, the number of lead analysts covering a company through the six-year period cannot be inferred from Table 3. However, this is not likely to affect the increase in coverage from −6 months to 0 to months 0 to 6 significantly.

Table 3
Lead underwriter and unaffiliated analysts' investment recommendations through time

| | Investment recommendations by | | | | | | |
| | Lead underwriter analysts | | | Unaffiliated analysts | | | |
Months relative to offering	n	Mean	SD	n	Mean	SD	χ^2 statistic
− 31 to − 36	240	2.258	0.868	3312	2.461	1.086	34.7
− 25 to − 30	290	2.162	0.879	3707	2.471	1.100	34.4
− 19 to − 24	323	2.136	0.871	3771	2.447	1.113	52.4
− 13 to − 18	451	1.973	0.896	4034	2.416	1.099	74.9
− 7 to − 12	574	1.801	0.798	4358	2.317	1.078	149.6
− 6 to 0	561	1.727	0.823	5051	2.249	1.060	134.9
0 to 6	1268	1.688	0.737	5801	2.188	1.041	339.6
7 to 12	651	1.963	0.874	5455	2.236	1.058	57.4
13 to 18	570	2.109	0.892	4821	2.300	1.055	42.0
19 to 24	391	2.158	0.883	4192	2.269	1.031	19.1
25 to 30	318	2.044	0.908	3590	2.254	1.022	18.8
31 to 36	242	2.049	0.909	2789	2.261	1.014	15.4

Notes: This table shows descriptive statistics for all recommendations issued by lead underwriter and unaffiliated analysts in the three years preceding and following seasoned equity offerings. The χ^2 statistics indicate that the distribution of recommendations is significantly different at the 0.001 level or less for all time periods except months 31 to 36, which is significant with probability 0.004.

more favorable views in the selection period, and views outside this period are likely to exhibit smaller differences. Alternatively, if analysts are urged to curry favor with management through overly favorable recommendations, the difference is likely to be greatest in the period analysts expect firms to issue equity, but also to be generally more favorable.

5.2. Evidence from returns at announcement and following investment recommendations

We examine the market's reaction to lead underwriter and unaffiliated analysts' investment recommendations to assess whether the initial and longer-term returns differ. We measure returns as the buy and hold return for each security less the same-period buy and hold return for the portfolio of firms matched by size decile from CRSP. The initial market reaction is measured for trading days -1 to $+1$ where day 0 is the recommendation announcement date, and longer term returns are measured from trading day $+2$ to 250 or the end date for the recommendation (explained below), whichever is earlier.

We model the relation between returns and recommendations as follows:

$$Ret = \alpha_1 SB_L + \alpha_2 B_L + \alpha_3 H_L + \alpha_4 SB + \alpha_5 B + \alpha_6 H + \alpha_7 S + e, \tag{1}$$

defining

SB = an indicator variable equal to one if the recommendation is 'Strong buy' and 0 otherwise

B = an indicator variable equal to one if the recommendation is 'Buy' and 0 otherwise

H = an indicator variable equal to one if the recommendation is 'Hold' and 0 otherwise

S = an indicator variable equal to one if the recommendation is 'Sell' or 'Strong sell' and 0 otherwise

The variables subscripted by L equal one if the respective recommendation is issued by a lead underwriter analyst, and zero otherwise. Because there were only 11 lead 'Sell' recommendations, these were grouped with lead 'Hold' recommendations.[8] The coefficients α_1, α_2 and α_3 thus reflect the incremental mean returns associated with lead underwriter analysts' recommendations relative to unaffiliated analysts' recommendations, and the *t*-statistics for these coefficients indicate the significance of the difference in the mean market reactions for lead and unaffiliated analysts.

We estimate the model for the sample of all lead and unaffiliated recommendations in the first and second years after the offering. We focus on recommendations following seasoned equity offerings to examine the returns to an implementable investment strategy. Following investment recommendations before a seasoned equity offering would not be implementable and would likely favor affiliated analysts since firms are documented to have substantial positive stock price performance prior to seasoned equity offerings (Korajczyk et al., 1990).

Table 4 presents the estimation results for Eq. (1), where returns are measured over a 3-day window centered on the recommendation date. The estimation results for all lead and unaffiliated recommendations in the first year indicate a significant positive response to unaffiliated 'Strong buy' ($t = 9.531$) and 'Buy' recommendations ($t = 3.729$), and significant negative response to 'Hold' ($t = -6.791$) and 'Sell' recommendations ($t = -3.295$). The evidence indicates that investors view analysts' recommendations as informative. The evidence also suggests that investors undo bias in 'Hold' recommendations. That is, they interpret unaffiliated 'Hold' recommendations as negative rather than neutral, information about a stock. The coefficients α_1 and α_2 are not significantly

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[8] We have examined the sensitivity of our results by separately estimating a coefficient for lead 'Sell' recommendations and none of our conclusions are affected.

Table 4
The association between 3-day returns, in percent, centered on the recommendation announcement and recommendations by lead and unaffiliated analysts

$$Ret = \alpha_1 SB_L + \alpha_2 B_L + \alpha_3 H_L + \alpha_4 SB + \alpha_5 B + \alpha_6 H + \alpha_7 S + e$$

	α_1	α_2	α_3	α_4	α_5	α_6	α_7	Sample	Adj. R^2	n
Coefficient	0.136	− 0.346	− 2.192	0.870	0.356	− 0.654	− 0.880	(i)	2.15%	12,150
t-statistic	(0.566)	(− 1.337)	(− 5.096)	(9.531)	(3.729)	(− 6.791)	(− 3.295)			
Coefficient	1.439	− 0.325	− 2.892	0.758	0.203	− 0.978	− 2.481	(ii)	3.26%	8,445
t-statistic	(2.774)	(− 0.746)	(− 4.851)	(5.781)	(1.633)	(− 7.266)	(− 6.929)			

Notes: This table presents the estimation results of Eq. (1) for two samples, (i) all lead and unaffiliated recommendations in the first year after the offering and (ii) all lead and unaffiliated recommendations in the second year after the offering. Returns are the three day buy-and-hold returns for the recommended security less the three-day buy-and-hold return for the relevant CRSP size decile, centered on the recommendation announcement date. Returns are expressed in percent form. The first three independent variables in the model equal one if the recommendation is strong buy, buy or hold, respectively, and is issued by the lead underwriter analyst, and equal zero otherwise. The last four independent variables in the model are equal to one if the recommendation is strong buy, buy, hold or sell, respectively. α_1, α_2 and α_3 thus capture the mean incremental returns associated with lead recommendations relative to the same recommendations by unaffiliated analysts.

different from zero, suggesting that investors do not view lead 'Buy' recommendations as less informative than unaffiliated 'Buy' recommendations.

In contrast, the coefficient α_3, reflecting the incremental market reaction to lead 'Hold' recommendations, is -2.2%, and is significantly negative ($t = -5.096$).[9] The evidence therefore suggests that the market interprets an affiliated 'Hold' to mean 'Sell' to a greater degree than an unaffiliated 'Hold'. This finding is more consistent with the strategic than non-strategic bias scenario. If issuing companies select the underwriter whose analyst has the most favorable view, one would expect more positive announcement effects to all unaffiliated recommendations. The finding of a more negative reaction only for affiliated 'Hold' recommendations suggests affiliated analysts strategically avoid 'Sell' recommendations to maintain client relations.

Table 4 also presents the estimation results for recommendations in the second year after the seasoned equity offering and documents a similar pattern to the results for the first year sample. Specifically, returns to unaffiliated 'Strong buy' recommendations are significantly positive, and returns to unaffiliated 'Hold' and 'Sell' recommendations are significantly negative. The reaction to lead 'Strong buy' recommendations is greater than that for unaffiliated analysts, suggesting affiliated analysts may have an information advantage. As in the first year after the offering, the returns associated with lead 'Hold' recommendations are significantly more negative than those associated with unaffiliated 'Hold' recommendations.

We examine the longer-term returns to an investment recommendation over the life of the investment recommendation or 250 trading days, whichever is shorter.[10] Table 5 presents a transition matrix for all initial and subsequent ratings in the year after seasoned equity offerings. Subsequent ratings include several categories in addition to recommendations from 'Strong buy' to 'Sell'. Specifically, for some firm-analyst combinations, there may be only one recommendation in the year following the seasoned equity offering, and therefore no subsequent recommendation (category 6). In this case, we consider the initial recommendation valid for 250 trading days. Category 7 includes cases where the analyst covering a sample firm issues an initial recommendation but then leaves the brokerage firm. The date the analyst leaves the firm is used to indicate the end of the 'life' of the recommendation. The database also indicates that an opinion is not available, or that the analyst is no longer covering the stock

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[9] This finding is not due to the aggregation of lead 'Hold' and 'Sell' recommendations. When the lead 'Sell' recommendations are included separately in the model, untabulated statistics indicate that the coefficient that reflects the incremental returns associated with lead 'Hold' recommendations, α_3, is -0.023, and the t-statistic is -5.34.

[10] Dunbar et al. (1997) take a related approach by separately calculating the returns to 'Buy' recommendations that have been downgraded.

Table 5
Initial and subsequent recommendations in the year following seasoned equity offerings

Subsequent recommendation	Definition	Current recommendation					
		1	2	3	4	5	Total
1	Strong buy	121	195	315	4	19	654
2	Buy	226	58	250	22	6	562
3	Hold	250	251	137	81	43	762
4	Sell	11	12	61	8	7	99
5	Strong sell	12	1	55	4	7	79
6	No subsequent recommendation	1,247	705	878	30	61	2,921
7	Analyst left firm	173	113	273	17	13	589
8	Discontinued coverage	502	225	429	25	25	1,206
9	Restricted	179	199	146	4	1	529
	Total	2,721	1,759	2,544	195	182	7,401

Notes: This table shows the transition from initial to subsequent recommendations in the first year after 1989–1993 seasoned equity offerings. For example, of the 2,721 strong buy recommendations by lead underwriter and unaffiliated analysts, 121 were reiterated, 226 were downgraded to buy, 250 were downgraded to hold, 11 were downgraded to sell and 12 were downgraded to strong sell, 1,247 had no subsequent recommendation, 173 were issued by analysts who subsequently left the firm, 502 subsequently discontinued coverage and 179 were restricted from issuing a recommendation.

(either temporarily or permanently); we include these cases in category 8. Finally, the database indicates when an analyst is restricted from reporting on a company due to quiet period rules, which we include in category 9. When one factors in transitions to other recommendation categories, or transitions to categories 7, 8 or 9, the median recommendation is in effect for 176 trading days. Our design takes this into account by measuring post-announcement returns to recommendations from the second day after announcement through the date of a subsequent recommendation or change in status.

We estimate Eq. (1) using size-decile adjusted buy-and-hold returns as the dependent variable. Because the dependent variable is measured over varying numbers of days and therefore the error term is likely heteroskedastic, we report White (1980) *t*-statistics. The estimation results in Table 6 indicate a similar pattern to those for short-term market reactions in Table 4, in that the returns to unaffiliated 'Strong buy' and 'Buy' recommendations are significantly positive and the returns to unaffiliated 'Hold' and 'Sell' recommendations are significantly negative. These findings are consistent with Womack (1996), and suggest that analysts' recommendations have investment value. However, given the potential cross-sectional dependence in these longer-term returns, it is likely that

the *t*-statistics are overstated. Furthermore, our measures of returns are before transaction costs. Accordingly, although these data suggest that analysts are, on average, able to identify mispriced securities, it is not clear these findings would be observed after controlling for transactions costs and cross-sectional dependence.[11] However, the analysis is informative about the difference between affiliated and unaffiliated analysts' ability to make recommendations that generate abnormal returns. Specifically, as in Table 4, the returns to lead 'Strong buy' and 'Buy' recommendations are insignificantly different from the returns to unaffiliated 'Strong buy' and 'Buy,' respectively. In contrast to Table 4, the longer term returns to lead 'Hold' recommendations are also insignificantly different, suggesting that the more negative implications of lead 'Hold' recommendations are reflected in price in the three-day announcement period.

We also examine the returns to recommendations in the second year after the offering, to assess whether the similar performance of first year lead and unaffiliated 'Buy' recommendations is due to the measurement period. Because negative abnormal returns to seasoned equity offering firms are documented by Loughran and Ritter (1995) to be more pronounced in year 2 than year 1, the evidence from year 1 may not capture periods with the greatest potential for differences in returns. As Table 6 shows, the longer-term returns to unaffiliated 'Strong buy' and 'Buy' recommendations in year 2 are not significantly positive, as for year 1. However, similar to the evidence for year 1, the returns to affiliated recommendations are insignificantly different from those of unaffiliated analysts. In particular, the incremental returns to lead 'Strong buy' and 'Buy' recommendations are positive, though not significantly so, and suggest investors would not have earned lower returns following lead analysts' 'Buy' recommendations.[12] As for year 1, the longer-term returns to lead 'Hold' recommendations are negative, but insignificantly different from those of unaffiliated analysts.

The return behavior in the announcement and post-announcement periods bears on recent findings by Dechow et al. (1998). They test whether investors correct for bias in analysts' growth forecasts, and find that growth expectations in price are inconsistent with adjustment by investors. In contrast, we find that investors do correct bias in unaffiliated analysts' 'Hold' recommendations.

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[11] For further discussion of methodological issues in measuring abnormal returns over long horizons, see Barber and Lyon (1997) and Kothari and Warner (1997).

[12] One caveat to the interpretation of these results is that our design compares the returns to lead underwriter and unaffiliated analysts' recommendations for firms issuing seasoned equity offerings. Our design thus holds the stocks constant and compares returns to recommendations, and therefore does not reflect differences in analysts' stock-picking ability. An alternative design is to examine the returns to all the recommendations of a sample of analysts, allowing different coefficients for the affiliated and unaffiliated recommendations. This would better reflect differences in the stocks analysts select to cover.

Table 6

The association between longer term returns, in percent, and recommendations by lead and unaffiliated analysts

$$Ret = \alpha_1 SB_L + \alpha_2 B_L + \alpha_3 H_L + \alpha_4 SB + \alpha_5 B + \alpha_6 H + \alpha_7 S + e$$

	α_1	α_2	α_3	α_4	α_5	α_6	α_7	Sample	Adj. R^2	n
Coefficient	−0.542	−0.844	−1.845	0.990	1.401	−1.446	−4.288	(i)	0.20%	11,831
t-statistic	(−0.290)	(−0.623)	(−1.039)	(1.603)	(2.142)	(−2.928)	(−4.573)			
Coefficient	0.851	2.643	−2.735	−0.958	−0.511	−2.940	−3.277	(ii)	0.64%	8,183
t-statistic	(0.362)	(1.416)	(−1.479)	(−1.589)	(−0.769)	(−5.928)	(3.726)			

Notes: This table presents the estimation results of Eq. (1) for two samples, (i) all lead and unaffiliated recommendations in the first year after the offering and (ii) all lead and unaffiliated recommendations in the second year after the offering. Returns are the buy-and-hold returns for the recommended security less the buy-and-hold return for the relevant CRSP size decile measured over the shorter of the life of the recommendation or the 250 trading days beginning on the second day after the recommendation date. Returns are in percent form. The first three independent variables in the model equal one if the recommendation is strong buy, buy or hold, respectively, and was issued by the lead underwriter analyst, and equal zero otherwise. The last four independent variables in the model are equal to one if the recommendation is strong buy, buy, hold or sell, respectively. α_1, α_2 and α_3 thus capture the mean incremental returns associated with lead recommendations relative to the same recommendations by unaffiliated analysts.

Furthermore, we find that investors correct for greater bias in affiliated analysts' 'Hold' recommendations relative to those of unaffiliated analysts. Why investors differ in their ability to correct for biases in growth forecasts and recommendations remains an intriguing question for future research.

Finally, to examine whether our findings on the association between returns and affiliated and unaffiliated analysts' investment recommendations are influenced by differences in their tendencies to reiterate recommendations, we repeated the analyses in Tables 4 and 6 using alternative definitions of analysts' recommendations. Specifically, we define 'Buy' recommendations to be those that are upgrades to 'Buy' or 'Strong buy', 'Uphold' recommendations to be those that are upgrades to 'Hold', 'Downhold' recommendations to be those that are downgrades to 'Hold' and 'Sell' recommendations to be those that are downgrades to 'Sell'. The untabulated findings are consistent with those reported in Tables 4 and 6. Specifically, affiliated analysts' 'Downhold' ratings are considered a significantly more negative signal about firms' future prospects than those of unaffiliated analysts. Furthermore, the longer-term returns to affiliated analysts' recommendations are insignificantly different from those to unaffiliated analysts' recommendations.

6. Summary and conclusions

This paper examines the effect of investment banks' underwriting relationships on analysts' earnings forecasts and recommendations for a sample of 2,400 seasoned equity offerings issued in 1989–1994. The findings indicate that lead and co-underwriter analysts' growth forecasts and particularly their recommendations are significantly more favorable than those of unaffiliated analysts, although their near-term earnings forecasts are generally not. These findings may reflect the greater incentives of affiliated analysts to issue overly favorable recommendations to maintain client relations. The findings may also reflect the issuing companies' incentives to select as underwriter the investment bank whose analysts have more favorable views.

The paper also examines whether investors respond differently to the announcement of affiliated versus unaffiliated analysts' recommendations, and whether affiliated analysts' more favorable recommendations, if followed literally, would lead to poorer investment performance. We find that the announcement returns to lead 'Hold' recommendations are significantly more negative than unaffiliated 'Hold recommendations, but find no difference in the announcement period returns to lead and unaffiliated analysts' 'Strong buy' and 'Buy' recommendations. These findings indicate that investors perceive a 'Hold' recommendation from an affiliated analyst as significantly more negative information about a stock's prospects than a 'Hold' recommendation from an unaffiliated analyst. One would expect more positive announcement effects to all

unaffiliated recommendations if issuing companies select the analysts with the most favorable views. This finding therefore suggests that affiliated analysts strategically avoid 'Sell' recommendations to maintain client relations. Finally, we find no difference in the post-announcement returns associated with affiliated vs. unaffiliated analysts' recommendations. The data therefore suggest that although affiliated analysts' recommendations are more favorable on average, an investor would not experience weaker investment performance by following their recommendations than by following unaffiliated recommendations.

The questions addressed in this study are of interest to accounting researchers for several reasons. First, the role of accounting disclosures depends on the characteristics of competing information sources such as analysts' reports. Much of the literature considers analysts as non-strategic information acquirers and providers, though an emerging view emphasizes the importance of understanding analysts' incentives. This study furthers our understanding of analysts' incentives, and their consequences for reported earnings forecasts, growth forecasts and recommendations. Our study's findings are relevant to researchers in accounting, finance and economics who rely on analyst forecast data as a proxy for investors' earnings expectations. In spite of substantial suggestion in the financial press that affiliated analysts are overoptimistic, our findings indicate that affiliated analysts' forecasts of earnings are generally not more optimistic than those made by unaffiliated analysts. However, our findings indicate that affiliated analysts' growth forecasts and particularly their recommendations are more favorable than those of unaffiliated analysts.

Our findings are also relevant to investors. A 'Hold' recommendation from an unaffiliated analyst is considered a negative signal about a firm's prospects, and a 'Hold' recommendation from the lead underwriter analyst is considered to be even more negative. Our findings indicate that investors view 'Strong Buy' and 'Buy' recommendations of lead and unaffiliated analysts similarly, and that the longer-term returns experienced following lead and unaffiliated recommendations are similar.

Finally, our findings are relevant for regulators. Given the allegations that affiliated analysts' reports are influenced by underwriting relationships in the period surrounding an offering, some researchers have suggested that regulators lengthen the quiet period, the period during which affiliated analysts are not permitted to issue forecasts and recommendations.[13] We find that affiliated analysts' recommendations are informative, and find no evidence that investors in seasoned equity offerings experience weaker investment performance by following affiliated recommendations. Our findings therefore indicate that lengthening the quiet period for seasoned equity offerings would deprive investors of access to information and provide no offsetting benefit.

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[13] See Shayne and Soderquist (1995), and Michaely and Womack (1997).

Acknowledgements

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