Unaffiliated Analysts' Recommendation Performance for IPO Firms

Maureen F. McNichols *
Patricia C. O'Brien **
Omer M. Pamukcu ***

Comments welcome
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* Contact author: Graduate School of Business, Stanford University, Stanford, CA 94305; (650) 723-0833; fmcnich@leland.stanford.edu
** School of Accountancy, University of Waterloo, 200 University Ave. W., Waterloo, ON, Canada N2L 3G1; (519) 888-4567, ext. 5423; pobrien@uwaterloo.ca
*** School of Accountancy, University of Waterloo, 200 University Ave. W., Waterloo, ON, Canada N2L 3G1; (519) 888-4567, ext. 7119; pamukcu@uwaterloo.ca

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Affiliated and Unaffiliated Analysts' Recommendation Performance for IPO Firms

Abstract

We examine whether unaffiliated financial analysts' Buy recommendations after IPOs earn higher returns than those of affiliated analysts during the 1994-2001 time period, when analysts working at investment banks are alleged to have been influenced by conflicts of interest. We extend the work of Michaely and Womack (1999), who studied 1990-1991 IPOs. While we confirm their result that investors tend to discount the recommendations of affiliated analysts, we do not find unaffiliated analyst recommendations earning higher abnormal buy-and-hold returns than recommendations from affiliated analysts at intervals of three, six or twelve months after the recommendation. Rather, our results show that the results vary considerably from year to year, with no evident time trend. Overall, we find that affiliated recommendations do not discriminate between good and bad IPO stocks, but unaffiliated recommendations generally arrive too late to provide useful trading advice.

1. Introduction

In recent years, regulators, investors and the media have raised concerns that analysts issued optimistically biased recommendations to maintain investment banking ties between analysts' employers and the companies that analysts cover.[1] While the anecdotal evidence is compelling that investment banking ties have influenced analysts' research in recent years, we aim to explore the pervasiveness and nature of its influence on the returns earned by investors in IPOs over the 1994-2001 period. We find that investors did not generally earn lower returns following affiliated analysts' recommendations for IPO companies than they did following unaffiliated analysts' recommendations. We find that the difference in post-recommendation returns varies substantially from year to year, without any obvious trend, lending no empirical support to the notion that widespread investment-banking-related conflicts of interest cost investors substantial sums, evaluated against the benchmark of unaffiliated recommendations.

The concern that investment banking ties could taint analysts' research has led to significant regulatory changes, including changes in New York Stock Exchange Rule 472 and NASDAQ Rule 2711. The revised rules aim to eliminate the influence of those involved in investment banking over research analysts, by prohibiting supervision or control of research analysts by any personnel engaged in investment banking activities, by prohibiting research analysts in efforts to solicit investment banking, and by requiring review of research analysts' compensation at least annually by a committee that has no representation of those involved in investment banking. (NYSE, 2003) In addition, the SEC, NYSE and NASD and the New York Attorney General reached a global research analyst settlement with ten Wall Street firms in the amount of $1.4 billion for failing to ensure that the research they provided their customers was

[1] Financial press articles include Siconolfi (1992), Siconolfi (1995a), Siconolfi (1995b), and more recently, Feldman and Caplin (2002), Byrne (2002a), Byrne (2002b), Gasparino (2002) and Morgenson (2002). See also speeches by Eliot Spitzer (2002) and Alan Greenspan (2002).

independent and unbiased. The settlement requires that firms separate research from investment banking, including physical separation, completely separate reporting lines, separate legal and compliance staffs, and separate budgeting processes. The firms will retain an Independent Monitor who is acceptable to the SEC to review the firms' compliance with the structural reforms. (Donaldson, 2003)

In light of the sweeping changes in regulation of analyst research in response to allegations of abuse in recent years, we believe it is useful to assess how the findings of academic research might differ for the 1994-2001 period relative to the earlier sample periods studied. Prior research by Dugar and Nathan (1995), Lin and McNichols (1998), Dechow, Hutton and Sloan (2000) and Michaely and Womack (1999) has documented systematic differences between the reports issued by analysts with and without investment banking ties to the companies they cover. These studies consistently find that analysts who serve as lead or co-underwriter of an equity offering issue more optimistic earnings growth forecasts and more favorable recommendations than unaffiliated analysts.[2]

Prior results concerning the implications of affiliated analysts' optimism for investors' returns are less consistent. Michaely and Womack (1999), hereafter MW, find that the returns earned following lead analysts' Buy recommendations for a sample of companies going public in 1990 and 1991 are significantly lower than those earned following non-lead analysts' Buy recommendations. Dechow, Hutton and Sloan (2000) find more pronounced post-offering underperformance for firms with the highest growth forecasts made by lead analysts, for their

[2] These studies are less consistent in finding that analysts' earnings forecasts differ, with Lin and McNichols (1998) finding no significant differences for one-year and two-year ahead forecasts, but Dugar and Nathan (1995) finding greater optimism for one-year ahead forecasts. In contemporaneous research, Bradshaw, Richardson and Sloan (2004) find no difference between affiliated and non-affiliated investment bank recommendations after a corporate financing event, while we find differences. As we discuss in section 2, we attribute the difference in results to their measuring analyst recommendations later, relative to the offering, than we do.

sample of IPO and SEO firms in the 1981-1990 period. Dugar and Nathan (1995) find no difference in the returns earned by following the investment recommendations of investment banker analysts and non-investment banker analysts for the 1983-1988 sample period. Lin and McNichols (1998) find no difference in the returns earned following affiliated and unaffiliated analysts' Buy or Strong Buy recommendations after seasoned equity offerings from 1989-1994. An open question regarding these different return results is whether they are due to differences in the time periods studied, differences in the offering studied (IPO vs. SEO), differences in the data on analysts' recommendations or forecasts, or differences in the definition of affiliation.

The aim of this study is to examine recent evidence concerning whether the returns to following unaffiliated analysts' recommendations exceed those associated with following affiliated analysts' recommendations. If affiliated analysts systematically bias their recommendations and investors do not correctly discount this bias, then we expect the returns to following unaffiliated analysts' recommendations to be significantly greater. On the other hand, if affiliated recommendations are not systematically biased relative to unaffiliated recommendations, or if investors undo the bias in affiliated analysts' recommendations, we expect returns to affiliated recommendations to be similar to those from following unaffiliated recommendations.

Our study most closely follows MW in design, both because these are the canonical results in this literature, and because we wish to study, as they did, the consequences for investors of following affiliated versus unaffiliated analysts' advice. Their study examines the return behavior associated with Buy recommendations for a sample of 200 IPOs occurring in 1990 and 1991. Similar to their study, our recommendations data come from First Call. Although we have the advantage of more extensive data, in terms of the numbers of years,

analysts and offerings than MW had available, the First Call database currently available for academic subscription begins in 1994, so it is not feasible for us to include MW's sample period.

MW conclude that the recommendations by underwriter analysts show significant evidence of bias. They also conclude that the market does not recognize the full extent of this bias, because they find a significantly negative mean difference between post-recommendation returns to the lead underwriter's Buy recommendations and those of non-lead analysts. They state:

> *For "buy" recommendations, the performance of the two groups diverges immediately. The price impact difference after three months is 8.9 percentage points, with a t-statistic of 2.43. This divergence continues for a year, with non-underwriter recommendations outperforming underwriters' by an average 18.4 percentage points after one year (t-statistic = 2.29). The median one-year size-adjusted returns are 3.5% versus –11 .6% for a 15.1 percentage point difference.*

Given the extensive anecdotal evidence concerning analyst conflicts in the late 1990's, we believe it is interesting to examine the effect of affiliation on returns for this later sample period. Similar to MW, we ask whether an underwriting relationship leads to recommendations that are more favorable, and if so whether the market correctly discounted the overly positive recommendations of affiliated underwriters.

Iskoz (2003) examines the return implications of bias in lead analyst recommendations for investors in IPOs and SEOs during 1993-2000. His study differs from ours in three key respects. First, we define lead manager plus co-manager analysts as affiliated, while Iskoz (2003) defines only lead analysts as affiliated, and co-manager analysts as unaffiliated. We demonstrate that co-underwriters behave like lead underwriters, and different from non-underwriters, in both timing and optimism of their recommendations, potentially reducing the power of Iskoz's tests. Second, we present our findings for each year of our sample period, to

show that results vary substantially through time. Third, our study uses First Call as a source of recommendation data, while his uses I/B/E/S. Although we have no reason to believe the data source will affect results, we believe the timing of First Call recommendations to be quite accurate because many investment banks use First Call as the transmission channel to communicate research to their clients.

We find, first, that investors consistently viewed the Buy recommendations of underwriter analysts as less favorable news than those of unaffiliated analysts, as measured by the size-adjusted returns in the three-day period centered on the recommendation announcement. This suggests that investors viewed Buy recommendations from affiliated underwriter analysts' with some skepticism in our 1994-2001 sample period. Our results are substantially stronger than those reported by MW, who find only a marginally significant difference, and they differ from those reported by Iskoz, who finds no significant differences in investors' reactions to lead versus non-lead Buy recommendations, and by Bradley, Jordan and Ritter (2006), who find no difference once they include an indicator for the quiet period.

When we pool observations across years for our full sample period, we find higher returns following affiliated Buy recommendations than following unaffiliated. When we examine returns year-by-year, we find substantial variation across years, and little evidence of differential performance across groups. These findings suggest that the prior evidence of weaker performance following affiliated recommendations vs. unaffiliated recommendations is not robust.

2. Hypotheses, Sample and Design

As discussed above, prior studies consistently document that affiliated analysts issue more favorable recommendations than unaffiliated analysts do. In contrast, prior studies find mixed evidence concerning the return implications of investment recommendations. Ever-increasing media attention to conflicts of interest throughout the 1990's may have caused greater awareness and skepticism by investors of affiliated analysts' recommendations. If investors were sufficiently aware of bias in affiliated analysts' recommendations, the response to affiliated Buy recommendations would be less favorable than to the Buy recommendations of unaffiliated analysts. If the response at the announcement date fully reflects the information in these recommendations, then we would not expect a difference in post-recommendation returns to affiliated vs. unaffiliated Buy recommendations. In contrast, if investors do not fully discount the bias in analysts' recommendations, then we expect that the longer-term returns to following unaffiliated analysts' recommendations will be greater.

Our sample includes U.S. companies that issued common stock in an initial public equity offering between 1994 and 2001. We choose public offerings as a starting point because the financing event allows us to distinguish affiliated from unaffiliated analysts. Consistent with the prior literature on analysts' banking affiliations, we use the Securities Data Corporation (SDC) database, which excludes "best efforts" offerings, so our sample is likewise limited.

We rely on SDC's codes to define affiliation. We classify SDC's book manager, joint book manager or joint lead underwriter codes as lead underwriters. We classify SDC's co-manager code as affiliated non-lead, and all others as unaffiliated.

We obtain our analyst recommendations from the First Call database. By hand, we match SDC underwriter names to First Call broker names to link the two databases. This process

entailed several challenges. First, First Call has recycled some of its broker codes so that recommendations with the same broker code can relate to different brokerage firms in different periods. We obtained a file from First Call that contains data on the reassigned codes, the brokerage firms they relate to and the timing of reassignment. This permitted us to verify that we attribute recommendations to the correct broker.[3] Second, when brokerage firms merge, First Call in some instances places the recommendations of the predecessor entities under the code of the combined or surviving entity. This also required that we verify that the recommendations attributed to a brokerage firm were in fact issued by that firm. Information about the merger history, the extent to which the predecessor entities issued recommendations, and direct examination of research reports in other data services such as Multex, Investext and I/B/E/S provided assurance that we were correctly assigning recommendations to a given entity.

A third challenge in matching First Call data to SDC is that SDC records the cusip at the issue date, while First Call changes its cusip identifier when the firm does. To ensure that we did not omit recommendations for IPO companies due to cusip changes, we linked all SDC cusips to CRSP perm numbers, and then identified all possible historical cusips for these permnos as of May 2002 to search the First Call file. Fourth, we note that some brokers are not included in our First Call database. In particular, Chase Hambrecht and Quist, DLJ, Paine Webber, Smith Barney and Sutro have no recommendations in the May 2002 file we use. We believe that they are included in other First Call databases at different points in time but excluded from our database at least in part due to changes in First Call's agreements with some brokers.

As we show in Table 1, Panel A, we drop from our sample (1) unit offerings, ADRs, REITs, closed-end funds, offerings other than ordinary common shares, and IPOs with offer

[3] We thank the referee for letting us know of this problem and the availability of the recycled code file from First Call.

prices below $5 per share; (2) IPOs where First Call does not include the lead underwriter and only the lead underwriter provides coverage; (3) IPOs without data on the Center for Research in Security Prices (CRSP) database; and (4) IPOs where the SDC issue date differs by more than three days from the CRSP beginning price date. The first criterion ensures that we have ordinary shares of companies. The second and third criteria ensure we have necessary data, while the fourth omits re-issues of once-public firms that had been taken private, as well as possible data errors.

Following MW, we examine the performance of analysts' Buy and Strong Buy recommendations made during the first year after the IPO. Of the 2,996 IPOs meeting the four criteria listed above, 2,674 or 89% receive Buy recommendations from a First Call analyst during the first year. In our tests, we use the analyst's initial Buy recommendation, although we also perform some sensitivity analyses using later recommendations. In no case do we include more than one recommendation from a given broker for a given IPO.

Table 1 Panels B through D present descriptive statistics on our sample. Panel B shows substantial offering activity in 1994-2001, with the greatest number of our sample IPOs occurring in 1996, and the least in 2001. The NASDAQ price index rose in each year from 1994 to 1999, falling sharply in 2000. IPO activity declined along with the NASDAQ index in 2000, and remained low in 2001. MW document a similar association between IPO activity and the level of the NASDAQ index in their 1990-1991 sample.

Panel C of Table 1 provides the market capitalization of IPOs in our sample at the end of the 25-day SEC quiet period. Our sample offerings are substantially larger, in terms of market capitalization, than MW's 1990-1991 sample. We find 50% of our sample IPOs raise $200 million or more, as compared to only 22% in MW's sample.

Table 1 Panel D documents that the industry composition of our sample is fairly well dispersed, with the greatest concentration, 28%, in the Business services industry. Approximately 10% of MW's sample was comprised of firms in the Business Services Industry, which was the largest single industry in their sample as well.

Table 2 justifies our definition of analyst affiliation, in relation to definitions used in other papers. For this table, we divide unaffiliated analyst firms into investment banks and non-investment-banks, and separate lead from non-lead affiliated analysts. We define any analyst company that acts as a lead or co-underwriter of any offering in our sample as an investment bank, and all others as non-investment-bank firms. In Panel A, we report the distribution of initial recommendations across categories, from Strong Buy to Strong Sell, by analyst affiliation and type. We find that unaffiliated analysts issue proportionally fewer initial Strong Buy and Buy recommendations, with 79% and 88% for non-investment bank and investment bank analysts respectively, than affiliated analysts, who have 97% and 99% from non-lead and lead analysts respectively. In the lower portion of Panel A, we provide a within-issuer t-test of differences in average initial recommendation across these four analyst affiliation groups. To construct this test, we average the recommendations within each analyst category and IPO firm. We then construct differences, within IPO firm across analyst types, and test whether this difference in average recommendations equals zero. We thus compare analyst types only for IPO firms where both types made recommendations, to control for differential coverage decisions. We find that lead analysts issue significantly more favorable initial recommendations than any other type. We find no significant difference in average recommendation between unaffiliated investment bank analysts and non-investment bank analysts.

In Panel B, we compare the timing of initial recommendations across these analyst types, by reporting the mean and median number of calendar days from the IPO date to the analyst's first recommendation. Affiliated analysts initiate coverage quickly following the IPO, averaging 46 and 48 days for lead and non-lead respectively, with medians of 27 and 28. The medians indicate that over 50% of affiliated analysts issue Buy recommendations just slightly beyond the 25-day "quiet period" required by law during our sample period, consistent with the phenomenon noted by Bradley, Jordan and Ritter (2003). In contrast, unaffiliated analysts, whether at investment banks or not, generally take substantially longer to issue a first recommendation. The medians are 159 days for analysts employed at non-investment-bank firms and 167 days for unaffiliated investment banks. Our within-issuer t-test of differences confirm that lead analysts initiate coverage earlier than any other group, and that unaffiliated investment bank analysts are indistinguishable from non-investment-bank analysts in the timing of their initial coverage.

We illustrate the timing difference in Figure 1, where we plot affiliated and unaffiliated coverage initiations, month-by-month after the IPO date. Figure 1 illustrates both the overwhelming numbers of affiliated analysts reporting at the end of the quiet period, and that after a relatively modest surge in the first month, initiations by unaffiliated investment bank analysts occur relatively evenly throughout the first year.

We conclude from the analyses in Table 2 and Figure 1 that our definition of affiliation, which includes both lead and co-managers but excludes syndicate members and other investment banks, separates analysts in terms of both their initial recommendation optimism and the timing of their initial post-offering recommendation. Based on this evidence, in the remainder of the paper we pool the lead and co-managers together as affiliated, and the non-manager investment banks with non-investment-banks together as unaffiliated. Our sensitivity analyses indicate that

our conclusions would not change if we disaggregated the lead and non-lead affiliated groups.[4] We discuss below results in related papers that define affiliation differently, and how this may affect comparisons across papers.

MW define only lead underwriter analysts to be affiliated, and all others to be unaffiliated. They find substantially less separation than we do in the median timing of initial Buy recommendations: 16 days (= 63 – 47, from MW Table 5) between lead and other analysts, versus more than 106 days (= 133 – 27, from our Table 2 Panel B) between our affiliated and unaffiliated analyst groups. This suggests that, by focusing only on the lead underwriter, MW pool together unlike groups of analysts (co-managers with unaffiliated), which would reduce their ability to discriminate between groups. Iskoz (2003) similarly compares lead analysts to all others, in a sample period similar to the one we examine, potentially reducing the power of his tests.

Agrawal and Chen (2005) and Barber, Lehavy and Trueman (2004) suggest that investment banks have similar incentives, regardless of whether they were underwriters on the last offering, because they are competing for the next. On this basis, they pool together affiliated and unaffiliated investment banks, and compare them against non-investment-bank analysts. Our results indicate that pooling together affiliated and unaffiliated investment banks may reduce the power of their tests, at least in periods close to an IPO. O'Brien, McNichols and Lin (2005, Fig. 4) provide evidence that affiliated analysts' relative optimism, while substantial around the time of an equity offering, dissipates within 6 months afterward. This may explain differences between our results and those of Bradshaw, Richardson and Sloan (2004), who find no difference between affiliated and unaffiliated analysts' optimism following corporate financing events.

[4] We performed these sensitivity analyses on the March 2006 dataset, and have not yet re-run them on the current dataset.

They use a definition of affiliation and time period similar to ours, but their timeline compares the analysts four months after the fiscal year-end following the financing, which is four to sixteen months after the financing event.

Another fact evident from our disaggregation in Table 2 is that the non-investment banks provide relatively little coverage, representing less than 3% of analyst-issuer pairs in our data. This relative sparseness could also reduce power in papers that compare all investment banks to non-investment banks.

For our examination of excess returns before, at, and after the analyst recommendation, we obtain return data from the daily CRSP files. Following MW, we calculate excess returns as the buy-and-hold returns on the stock minus the buy-and-hold return on the appropriate CRSP market capitalization decile portfolio for the thirty trading days prior to the recommendation, a three-trading day (-1 to +1) window around the recommendation, and for 3, 6 and 12 month periods following the recommendation. Specifically, we measure cumulative excess returns for each recommendation as:

$$ER^{i}_{a\,to\,b} = \left[\prod_{t=a}^{b}(1 + r_t^{i}) - \prod_{t=a}^{b}(1 + r_t^{size})\right] \qquad (1)$$

where r_t^i is the day t raw return on stock i, and r_t^{size} is the day t return on the matching CRSP market capitalization decile, matched at the most recent calendar year-end prior to t. $ER^{i}_{a\,to\,b}$ is the excess return for firm i from time a to time b, where a is the beginning of the return cumulation period and b is the earliest of: the end of the cumulation period, the delisting date, or the date of a subsequent downgrade of the recommendation by the analyst to a category below Buy. When the stock is delisted during the cumulation period, we incorporate CRSP's delisting return into the cumulative return, using the procedure prescribed in Beaver, McNichols and Price

(2006). This mimics an investor buying a stock on the date of an analyst's Buy recommendation, selling it if the analyst subsequently downgrades, and otherwise holding it for a fixed length of time, or until the stock delists, whichever is earlier.[5] The excess return for the recommendation portfolio is the mean of the cumulative excess returns for the individual recommendations, ER^i:

$$PER_{a\,to\,b} = \frac{1}{n}\left(\sum_{i=1}^{n} ER^{i}_{a\,to\,b}\right), \qquad (2)$$

where *n* equals the number of recommendations in the event period with available returns. Following MW, we compute cross-sectional standard errors to construct t-statistics. This probably overstates the statistical significance because it fails to account for cross-correlations between firms with overlapping time periods. We also disaggregate our sample period year by year, and perform statistical tests based on the assumption that each annual average is a single observation.

As an additional approach to controlling for cross-sectional dependence, we form portfolios in calendar time and estimate abnormal returns using the Fama and French (1993) three-factor model. For each affiliated or unaffiliated analyst issuing a Buy recommendation on day t in the year after the IPO, we place the firm into the respective portfolio as of the close of trading on day *t* to the earliest of: *t + 252* trading days, the date of a downgrade below Buy, or the date of delisting. We value-weight the returns for each date *t*, where the return for portfolio p, R_{pt}, is given by

$$R_{pt} = \sum_{i=1}^{n_{pt-1}} x_{it-1} R_{it}, \qquad (3)$$

[5] In a small number of cases, the analyst downgrades from a Buy to a Hold or Sell, and may subsequently upgrade to Buy again, all within one year after the IPO. In these cases, we set excess returns to zero during the period when the analyst had a less-than-Buy recommendation outstanding.

where

x_{it-1} = the market value of equity for firm i as of the close of trading on date $t-1$ divided by the aggregate market capitalization of all firms in portfolio p as of the close of trading on that date,

R_{it} = the return on the common stock of firm i on date t, and

n_{pt-1} = the number of firms in portolio p at the close of trading on date $t-1$.

We value-weight rather than equally-weight the securities in each portfolio, to avoid overstating returns due to equal-weighting and daily rebalancing, and to allow a better assessment of the economic significance of the results.[6]

We use an intercept test to evaluate the performance of stocks recommended by affiliated versus unaffiliated analysts using the following daily time-series regression[7]:

$$R_{pt} - R_{ft} = \alpha_p + \beta_p(R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + \varepsilon_{pt}, \qquad (4)$$

where

R_{mt} = the day t return on the CRSP NYSE/AMEX/Nasdaq value-weighted index,

R_{ft} = the day t return on Treasury bills having one month until maturity,

SMB_t = the difference between the day t returns of a value-weighted portfolio of small stocks and one of large stocks, and

HML_t = the difference between the day t returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks.

The estimation results provide parameter estimates for α_p, β_p, s_p, and h_p for the affiliated and unaffiliated analysts' portfolios.

[6] See Blume and Stambaugh (1983) or Barber and Lyon (1997) for a more detailed discussion.

[7] Fama and French (1993) discuss the construction of these portfolios in detail. We thank Ken French for providing the factor data.

3. Results

Table 3 presents our initial replication and extension of MW, concerning returns to Buy recommendations of affiliated vs. unaffiliated analysts. We partition analysts into affiliated (A) and unaffiliated (U) groups, as discussed above. In Table 2, we noted the separation of A from U analysts in terms of the timing of their initial Buy recommendation. The timing directly affects the returns, since we measure returns from the date of the initial Buy recommendation, and the IPOs covered by the two groups overlap substantially.

Affiliated analysts' Buy recommendations are preceded by positive size-adjusted returns averaging 38.5% (median 13.4%) in the 30 trading days prior to the recommendation. Unaffiliated analysts' Buy recommendations average a more modest 13.8% (median 2.7%) in the prior 30 days. This does not confirm MW's result, that excess returns average -1.6% prior to lead analyst recommendations, and 4.1% prior to non-lead, suggesting lead analysts provide a "booster shot" to poor-performing clients (see also Power (1993)). Our measure differs slightly from theirs, because we exclude the first-day run-up, while they include it. Because of the dramatic timing differences between affiliated and unaffiliated analysts in our sample period, discussed above, this one day has an overwhelming influence on the prior-period performance of affiliated analysts, increasing the positive return prior to affiliated recommendations. Thus, including the first-day run-up would increase the difference between our result and MW's.

We find positive three-day announcement returns surrounding the analysts' first Buy recommendation, significantly greater for unaffiliated than for affiliated analysts using both mean and median tests ($t=1.74$, $z=4.44$). This suggests that investors view affiliated analyst Buy recommendations as less favorable news than those of unaffiliated analysts. MW found no statistical difference between lead and non-lead analysts in univariate tests.

Excess returns for the three months following the analysts' first Buy recommendation have positive means and negative medians for both analyst categories, indicating that although most recommendations suffer negative short-run excess returns, a few perform well enough to make the average performance positive. Over the first three months following the analyst's initial Buy recommendation, we find no difference between affiliated and unaffiliated analsyts' recommendation performance. At six and twelve months, affiliated analysts' recommendations earn significantly more than unaffiliated analysts' at the median, and the same or better on average. This contrasts with MW's results. They found non-lead analyst recommendations earned significantly more than lead analysts' over three- and twelve-month intervals.

MW also examine the excess returns before, at and after the recommendations using multivariate analysis, which we replicate in untabulated analysis.[8] After controlling for size, time since IPO and other factors, we confirm the results reported in Table 3. That is, we find results contrary to the "booster shot" hypothesis, we confirm investors' weaker reaction to affiliated analysts' Buy recommendations, and we find no difference in average 12-month returns.

To assess the robustness of our findings in Tables 3, and to explore differences between our results and MW's, we next present returns separately for IPOs in each calendar year in our sample. In Table 4, we report mean and median returns before, at, and after affiliated and unaffiliated recommendations, similar to Table 3. The last column reports cross-sectional t-statistics and Wilcoxon rank-sum z-statistics testing the difference between affiliated and unaffiliated, year by year. At the bottom of each panel of Table 4 we report the mean, across years, of the annual mean returns or annual difference in mean returns, and a t-statistic based on the eight annual observations. Overall, the results in each panel indicate considerable variation

[8] These results are available on request from the authors.

in the cross-sectional returns through time, indicating that results based on short time intervals may not generalize to other time periods.

In Panel A of Table 4, we show returns during the 30 days prior to the recommendation. The mean returns vary from a low of 4.7% prior to unaffiliated recommendations in 1997 to a high of 93.4% prior to affiliated recommendations in 1999. Median returns vary from a low of -1.6% prior to unaffiliated recommendations in 1996 to a high of 47.7% prior to affiliated recommendations in the same year. The mean returns and t-statistics across years show that, although affiliated analysts have a higher average 30-day-prior return (30.2% vs. 10.7%), the return prior to unaffiliated analysts is more reliably positive (t=4.14 vs. t=2.77), because of less year-to-year variation. Overall, we find significantly (t = -2.32) higher returns in the 30 trading days prior to affiliated recommendations, contrary to the "booster shot" hypothesis.

Table 4 Panel B presents three-day announcement returns by year. In all years where the cross-sectional differences are statistically significant, the market reacts more to unaffiliated than to affiliated recommendations, and generally the Wilcoxon rank-sum z-statistic confirms the t-statistic. The average difference across years of 0.7%, significant at the 11% level using a 1-tailed test, provides weak support for the notion that investors viewed affiliated Buy recommendations as less favorable news than unaffiliated Buy recommendations throughout the 1994-2001 sample period.

Though our results on investor's 3-day reaction confirm MW's from the 1990-91 period, they contrast with those of Iskoz (2003) and Bradley, Clarke and Cooney (2006), whose 1993-2000 sample periods substantially overlaps ours, and with Bradley, Jordan and Ritter (2006), who examine 1999-2000. All these papers conclude that investors respond similarly to affiliated and unaffiliated analysts' recommendations. While Iskoz's aggregation of co-underwriter

analysts with unaffiliated analysts may have obscured differences, the other two papers define affiliation as we do, except that they use different analyst data sources. Bradley, Jordan and Ritter (2006) conjecture that investors anticipate affiliated Buy recommendations at the end of the quiet period, and find that differences disappear after controlling for this. In untabulated analysis, we have replicated their study design as closely as we can with our data source, but continue to find a significantly smaller reaction to affiliated analysts' recommendations. We have also replicated our Table 3 analysis using only initial recommendations that occur more than 30 trading days after the IPO, with similar results.[9] Bradley, Clarke and Cooney (2006) conjecture that unaffiliated analysts' incentives to "curry favor" grew during the 1990s, and that investors recognized that, therefore responding similarly to both types of analysts. We find significant discounting of affiliated recommendations in 2001, which does not support this conjecture. In addition, our median results over the eight-year period do not suggest that investor reactions grew more similar through time.

Table 4 Panel C presents mean and median size-adjusted returns to following the strategy of buying at an analysts' first Buy recommendation and holding for twelve months or until the analyst downgrades or the stock delists, by year of the IPO. We find similar results using three- and six-month returns, and so omit them. In cross-sectional two-tailed tests, unaffiliated analyst recommendations earn significantly (at the 10% level or better) greater returns than affiliated analysts in 1996 and 1998 based on the difference in means, and in 1996 and 2000 based on medians, while they earn significantly lower returns than affiliated based on means in 1999 and medians in 1997. When we aggregate across years, however, we find no significant differences across analyst groups (t=0.62).

[9] We performed these sensitivity analyses on our March 2006 dataset, and have not yet replicated them on our current dataset.

Our year-by-year analysis shows the difficulty in generalizing from MW's 1990-91 sample period. Within different years in our sample, using the cross-sectional methodology, one could find significantly superior or significant inferior performance by unaffiliated analysts, or no difference. Thus, cross-sectional results on return performance taken from a limited time span may not generalize to other time periods.

Tables 3 and 4 do not adjust for the possibility of differences in the risk of firms covered by affiliated versus unaffiliated analysts other than that due to size, nor for decisions investors make in real time. In Table 5, we report the results of calendar-time portfolios based on the Fama and French (1993) three-factor model. The findings indicate that our inferences are not affected by the inclusion of controls for the market excess return, size, and book-to-market. The coefficients indicate that affiliated analysts tend to issue Buy recommendations for lower beta stocks, larger companies and lower book-to-market companies than unaffiliated analysts. However, controlling for these factors, we continue to find no significant difference in the returns investors earn following affiliated versus unaffiliated analysts' Buy recommendations.

As we discussed above, Table 2 and Figure 1 show a dramatic difference in the arrival times of affiliated and unaffiliated analysts' first recommendations on IPO stocks. This suggests that unaffiliated analysts may wait for confirming information on a stock's performance before issuing their Buy recommendations. The timing also suggests that affiliated analysts may be obliged, either through explicit contract or implicit understanding, to provide coverage for companies they underwrite. In Table 6, we further investigate affiliated and unaffiliated analyst decisions about which companies to cover, and the implications for investors.

In Table 6, following MW, we separate our sample IPOs into four mutually exclusive groups, based on analyst Buy recommendations in the first year after the IPO: (1) IPOs with no

Buy recommendations, (2) IPOs with Buy recommendations only from unaffiliated analysts, (3) IPOs with Buy recommendations from both affiliated and unaffiliated analysts, and (4) IPOs with Buy recommendations only from affiliated analysts. We then examine returns in each group during the first, second and third years following the IPO. MW split their sample into similar groups based on first-year coverage, but their return intervals all include the first year, and so clearly do not reflect an implementable trading strategy. Our returns in years 2 and 3 represent returns to an implementable buy-and-hold strategy. In Panel A, for each of the three years, we first report mean and median returns for each coverage group computed from pooled firm-years, and then report the mean across years of annual cross-sectional averages, along with t-statistics measured across years, computed in the same way as those we reported at the bottom of each panel of Table 5. Panel B of Table 6 provides statistical tests of the differences between coverage groups, using both the pooled and year-by-year approaches.

Table 6, Panel A shows that the IPOs unable to attract any Buy recommendations during the first year perform relatively poorly in that year, while those attracting unaffiliated Buy recommendations, whether or not accompanied by affiliated Buys, perform relatively well. IPOs that attract only affiliated Buy recommendations perform worse than those with no Buy recommendations during the first year, confirming the notion that affiliated analysts recommend clients with little regard for quality. These results generally confirm MW's.

During Years 2 and 3 following the IPO, IPOs that received no Buy recommendations in Year 1 continue to underperform other IPOs, and reliably underperform their size deciles as well (t=-1.91). The other portfolios earn returns that are not statistically different from zero at conventional levels, although the group that received only affiliated coverage in Year 1 appears to perform marginally better than the other groups in Year 3. Figure 2 illustrates these returns

over the three-year period following the IPO. The figure shows a dramatic separation in Day 1 return between the AU group, which receives Year 1 Buy recommendations from both affiliated and unaffiliated analysts, and all other groups. The figure also shows noticeable differences in return patterns during Year 1, prior to portfolio formation. The returns following portfolio formation, however, show less dramatic differences.

Panel B of Table 6 provides statistical tests of differences between these coverage groups, based both on the pooled cross-section and time-series analyst-firm observations, and on the eight annual mean observations. As expected from Figure 2, we observe significant differences between groups prior to our portfolio formation date at the end of Year 1. Overall, after Year 1 we find no significant differences between affiliated and unaffiliated coverage groups in the time-series tests, which control for cross-sectional correlation. In the pooled tests, which fail to control for cross-sectional dependence, we find some statistically significant results. In Year 2, these show a tendency for companies that receive Year 1 Buy recommendations only from unaffiliated analysts to outperform other groups, including the group with Year 1 Buy recommendations from both unaffiliated and affiliated analysts. In Year 3, the group of firms that received Year 1 Buy recommendations only from affiliated analysts performs best in these pooled tests. We caution, however, that these pooled results likely overstate the statistical significance of differences by failing to control for cross-sectional dependence. Overall, we conclude that the implementable trading strategy of buying IPOs that receive unaffiliated Buy recommendations in the first year is unlikely to outperform the strategy of buying those with only affiliated coverage.

Table 6 suggests that unaffiliated analysts' Buy recommendations are good indicators of Year 1 IPO performance, but this observation suffers from hindsight bias. We showed in Table 2

that unaffiliated advice typically arrives later than affiliated. Moreover, in Tables 3 through 5, we showed that unaffiliated advice does not earn investors superior returns, when we take into account the timing of their recommendations. We conclude from these facts that affiliated analysts make their Buy recommendations too late to capture the superior Year 1 returns.

In addition to sensitivity analyses discussed above regarding the definition of affiliation (lead versus co-underwriters), the importance of the first-day run-up in prior-30-day returns, and the importance of recommendations made at the end of the quiet period, we assessed our results' sensitivity to the definition of a Buy recommendation. We do not confirm Iskoz's (2003) result that lead analyst recommendations underperform those of unaffiliated analysts for Strong Buy recommendations, though not for Buy recommendations. In untabulated analysis, we replicate our tests using only Strong Buy recommendations, and continue to find that affiliated analysts' recommendations perform at least as well as those from unaffiliated analysts.[10]

In summary, our results in Tables 3 through 6 for analyst recommendations following 1994-2001 IPOs consistently show that affiliated analysts initiate coverage following superior return performance, refuting the "booster shot" hypothesis as a primary motivation for these analysts. We find consistent evidence that investors discount the recommendations of affiliated analysts relative to unaffiliated. We find no evidence that following the advice of unaffiliated analysts dominates following affiliated advice, and some evidence to the contrary. Overall, we find wide variation across years in the profitability of either strategy, suggesting that results based on brief time periods do not generalize out of sample.

[10] We performed this sensitivity analysis on our March 2006 dataset, and have not yet re-done it using our current dataset.

4. Summary and conclusions

We examine whether affiliated financial analysts' Buy recommendations after IPOs earn lower returns than those of unaffiliated analysts during the 1994-2001 time period, when analyst conflicts of interest are alleged to have been egregious. We extend the work of Michaely and Womack (1999), who studied 1990-1991 IPOs. Our extensions include examining a later time period with more years and a larger number of recommendations; examining the issue year-by-year as well as in aggregate; and studying different definitions of affiliation. Overall, we find no support for MW's statement that "the best indicator for long-term performance of an IPO is not what the underwriter does or says, but what the more independent sources predict." Rather, our results suggest that while affiliated recommendations do not discriminate between good and bad IPO stocks, unaffiliated recommendations arrive too late to provide useful trading advice.

We find that investors tend to discount Buy recommendations of affiliated analysts, consistent with MW, but inconsistent with several contemporaneous studies. In contrast to MW, however, we do not see affiliated analyst recommendations earning lower abnormal buy-and-hold returns than unaffiliated at intervals of three, six or twelve months after the recommendations. Rather, we find that Buy recommendations from affiliated analysts generally earn returns similar to or greater than those from unaffiliated. Our year-by-year breakdown reveals wide variation across years, from significantly superior performance by affiliated analysts in 1999 to significant underperformance in 2000. No time trend is evident in these results, and most years in our sample period show no statistically significant difference between affiliated and unaffiliated analysts' abnormal returns.

We also examine different definitions of affiliation, to test whether mixed results in the prior literature might stem from low power from pooling unlike groups together. We find that

co-underwriters are similar to lead underwriters and different from unaffiliated analysts, in both the timing and optimism of their recommendations. We find that investment banks that are neither lead nor co-underwriters initiate coverage later, and issue less optimistic recommendations, than either underwriters or analysts employed at non-investment-bank firms. This latter result refutes the idea that all investment banks have similar incentives regarding future deals, and suggests rather that pooling underwriter and non-underwriter investment-bank analysts together can reduce the power to find differences.

Our results do not mean that no investors were harmed by investment banking conflicts of interest, nor do they necessarily imply that recent regulatory changes were unwarranted. Our results do suggest, however, that the widely-cited MW result that affiliated analysts' Buy recommendations lead to lower excess returns than those of unaffiliated analysts does not generalize outside their 1990-91 sample period. In particular, it does not generalize to the 1994-2001 period when affiliated analysts allegedly succumbed to conflicts of interest and egregiously misled investors.

References

Agrawal, Anup and Mark A. Chen. 2005. "Do Analyst Conflicts Matter? Evidence from Stock Recommendations." working paper, University of Alabama and University of Maryland.

Barber, Brad M., Reuven Lehavy and Brett Trueman. 2004. "Comparing the Stock Recommendation Performance of Investment Banks and Independent Research Firms." working paper, UC-Davis, University of Michigan and UCLA.

Beaver, William, Maureen McNichols and Richard Price. 2006. "Potential Bias from Excluding Delisting Returns: The Effect on Accounting-Based Market Anomalies." working paper, Stanford and Rice University.

Bradley, D., J. Clarke and J. Cooney. 2006. "The Changing Incentives of Financial Analysts from the Early 1990s into the Bubble." working paper, Clemson University, Georgia Institute of Technology and Texas Tech University.

Bradley, D., B. Jordan and J. Ritter. 2003. "The Quiet Period Goes Out with a Bang." Journal of Finance, 58 (1), 1-36.

Bradley, D., Jordan, B. and J. Ritter. 2006. "Analyst Behavior Following IPOs: The 'Bubble Period' Evidence." working paper, Clemson University, University of Kentucky and University of Florida.

Bradshaw, Mark P., Scott A. Richardson and Richard G. Sloan. 2004. "The Relation between Corporate Financing Activities, Analysts' Forecasts and Stock Returns. (Sept. 24) Harvard U., U. Penn and U. Michigan working paper.

Byrne, John. "Analysts." *BusinessWeek online* (May 6, 2002a). <http://www.businessweek.com/magazine/content/02_18/b3781706.htm>

Byrne, John. "How to Fix Corporate Governance." *BusinessWeek online* (May 6, 2002b). <http://www.businessweek.com/magazine/content/02_18/b3781701.htm>

Chen, H.-C. and J.R. Ritter. "The Seven Percent Solution," *Journal of Finance* 55 (June 2000): 1105-1131.

Dechow, P., A. Hutton and R. Sloan. "The relation between analysts' forecasts of long term growth and stock price performance following equity offerings." *Contemporary Accounting Research* (Spring 2000): 1-32.

Donaldson, William. "Testimony concerning the global research analyst settlement." Before the Senate Committee on Banking, Housing and Urban Affairs, May 7, 2003.

Dugar, A., and S. Nathan. "The effects of investment banking relationships on financial analysts' earnings forecasts and investment recommendations." *Contemporary Accounting Research* (Fall 1995): 131-160.

Fama, Eugene, and Kenneth French. “Common risk factors in the returns on stocks and bonds.” *Journal of Financial Economics* 33 (February 1993): 3-56.

Feldman, Amy, and Joan Chaplain. “Is Jack Grubman the worst analyst ever?” *CNNMoney* (April 25, 2002). <http://money.cnn.com/2002/04/25/pf/investing/grubman>

Gasparino, Charles. “NASD expands inquiry to analysts’ bosses.” *The Wall Street Journal* (January 6, 2003): C1.

Greenspan, Alan. “Corporate governance.” Remarks by Chairman Alan Greenspan at the Stern School of Business, New York University, New York, New York, March 26, 2002. <http://www.federalreserve.gov/boarddocs/speeches/2002/200203262/default.htm>

Iskoz, Sergey. 2002. “Bias in underwriter analyst recommendations: does it matter?” working paper, Massachusetts Institute of Technology.

Lin, H. and M. McNichols. 1998. “Underwriting relationships, analysts’ earnings forecasts and investment recommendations.” *Journal of Accounting and Economics* 25 (February): 101-128.

Lyon, J. H., B. M. Barber and C. Tsai. 1999. “Improved methods for tests of long-run abnormal returns.” *Journal of Finance* 55(1): 165-201

McNichols, M. and P.C. O'Brien. 1997. "Self-selection and Analyst Coverage," *Journal of Accounting Research* 35 (Supplement): 167-199.

Michaely, R., and K. L. Womack. 1999. "Conflicts of Interest and the Credibility of Underwriter Analyst Recommendations." *Review of Financial Studies* 12, no. 4, pp. 653-86.

Mitchell, M. L. and E. Stafford. 2000. "Managerial decisions and long term stock price performance." Journal of Business 73(2): 287-329

Morgenson, Gretchen. "Requiem for an Honorable Profession." *The New York Times* (May 5, 2002): section 3, p. 1.

New York Stock Exchange. "Information Memo 03-36: Rule 472 Amendments to Disclosure and Reporting Requirements." August 25, 2003.

O'Brien, P., M. McNichols and H. Lin (2005) "Analyst Impartiality and Investment Banking Relationships," *Journal of Accounting Research* 43:4 (September): 623-650..

Power, William (1993) "Heard on the Street: Why Not, New stocks Get Booster Shots," *The Wall Street Journal* (February 10): C1.

Siconolfi, M. "At Morgan Stanley, analysts were urged to soften harsh views." *The Wall Street Journal* (July 14 1992): A1.

Siconolfi, M. "A rare glimpse at how street covers clients." *The Wall Street Journal* (July 14 1995a): C1.

Siconolfi, M. "Incredible 'buys': Many companies press analysts to steer clear of negative ratings." *The Wall Street Journal* (July 19 1995b): A1.

Spitzer, Eliot (2002) "Institutional Investor Dinner, November 12, 2002." Office of New York State Attorney General Eliot Spitzer.
<http://www.oag.state.ny.us/press/statements/nov12_inst.html>

Table 1: Description of the IPO sample

Panel A: Sample selection

Number of IPOs in the SDC database between January 1, 1994 and December 31, 2001, excluding ADRs, REITs, and Closed End Funds	3740
Less: Offerings where offer type is not Common Share, Class A Share, Ordinary Share, Class A Ord Shs or Ord/Common Shs	(59)
	3681
Less: Unit Offerings	(307)
	3374
Less: Offerings with offer price < 5	(69)
	3305
Less: Offerings where First Call does not list the lead underwriter, and only the lead underwriter provides coverage	(260)
	3045
Less: Offerings without CRSP data	(15)
	3030
Less: Issues where CRSP first price and SDC issue date differ by more than 3 days	(34)
Number of IPOs in sample	**2996**
Less: Issues with no Buy recommendation on First Call within one year of the offering, and one issue where the sole recommendation occurred after the CRSP delisting date	(322)
Number of IPOs for the Recommendation Analysis	**2674**

Table 1: Description of the IPO sample (continued)

Panel B: Number of sample IPOs with and without coverage, and the year-end NASDAQ price index, by year

Year	Number of IPOs with at least one Buy or StrBuy recommendation within first year	Number of IPOs without a Buy recommendation within first year	Nasdaq Price Index
1994	259	74	911.84
1995	363	56	1282.72
1996	559	79	1569.79
1997	395	45	1922.35
1998	246	31	2672.14
1999	441	19	4957.77
2000	335	16	2987.63
2001	76	2	2361.62
Total	**2,674**	**322**	

Panel C: Sample IPOs classified by market capitalization (price x shares) at the end of the 25-day SEC quiet period

Market Capitalization, in millions	Percent of sample	Number of IPOs
Less than $50	12	357
$50 - $99.9	18	550
$100 - $199.99	23	686
$200 - $399.99	18	552
$400 - $999.99	17	505
Greater than $1000	12	346
All IPO firms	**100**	**2,996**

Table 1: Description of the IPO sample (continued)

Panel D: Industry distribution of sample IPOs, by two-digit SIC code

	SIC code	Percent of sample	Number of IPOs
Business services	(73)	27.1	813
Electronic equipment	(36)	9.4	283
Communications	(48)	5.9	177
Instruments	(38)	5.4	161
Chemicals and allied products	(28)	4.7	142
Industrial equipment	(35)	4.7	141
Engineering, Accounting, Research, Management, And Related Services	(87)	3.9	117
Health services	(80)	2.6	79
Miscellaneous Retail	(59)	2.6	77
Durable Goods	(50)	2.5	75
Non-depository Credit Institutions	(61)	1.9	58
Depository Institutions	(60)	1.8	54
Insurance Carriers	(63)	1.8	53
Other Industries	(Various)	25.6	766
Sample IPOs		**100.0**	**2,996**

Table 2: Distribution and timing of initial recommendations, by analyst types. We define analysts as Unaffiliated whose employers were not lead or co-underwriter for a given IPO. Unaffiliated Investment Bank analysts work for companies that acted as lead or co-underwriter on at least one offering in our sample. We classify all other Unaffiliated analysts as Non-Investment Bank. Affiliated Lead analysts work for the IPO's lead underwriter. Affiliated Non-Lead analysts work for co-underwriters for the IPO. Mean rec. is the average recommendation, across all analyst-issuer observations, within an analyst category, using the First Call numeric coding: Strong Buy = 1 through Strong Sell = 5. We construct the t-tests of differences by averaging recommendations or days within issuer and analyst type, and then computing differences across types within issuer. The number of observations for each t-test equals the number of issuers with recommendations from analysts in both types.

Panel A: Distribution of analysts' initial recommendations within one year after the IPO, across recommendation categories Strong Buy to Strong Sell, by analyst affiliation and unaffiliated type; and within-issuer tests of differences across analyst types.

	Unaffiliated		**Affiliated**	
	Non-Investment Bank	**Investment Bank**	**Non-Lead**	**Lead**
Strong Buy	157	2710	1490	1041
	53.2%	47.5%	52.7%	61.0%
Buy	76	2305	1238	642
	25.8%	40.4%	43.8%	37.6%
Hold	53	662	94	24
	18.0%	11.6%	3.3%	1.4%
Sell	6	20	2	0
	2.0%	0.4%	0.1%	0.0%
Strong Sell	3	5	2	0
	1.0%	0.1%	0.1%	0.0%
Total	**295**	**5702**	**2826**	**1707**
Mean rec.	1.72	1.65	1.51	1.40

t-tests of within-issuer differences across types in average recommendation

	N	**Difference**	**t statistic**	**p-value**
Lead v. Non-Lead	1124	-0.06	-3.02	0.0026
Lead v. Unaffiliated I-bank	1071	-0.18	-8.16	<0.0001
Lead v. Non-I-bank	145	-0.23	-3.18	0.0018
Non-Lead v. Unaffiliated I-bank	1415	-0.11	-6.24	<0.0001
Non-Lead v. Non-I-bank	179	-0.22	-3.03	0.0028
Unaffiliated I-bank v. Non-I-bank	223	0.00	0.02	0.9873

Table 2: Distribution and timing of initial recommendations, by analyst types. (continued)

Panel B: Calendar days from IPO date to analyst's initial recommendation, by analyst affiliation and unaffiliated type, and within-issuer tests of differences across analyst types.

	Unaffiliated		Affiliated	
	Non-Investment Bank	Investment Bank	Non-Lead	Lead
Mean days	169.0	168.9	47.2	46.4
Median days	159	167	28	27

t-tests of within-issuer differences across types in average days to initial rec.

	N	Difference	t statistic	p-value
Lead v. Non-Lead	1124	-6.7	-3.90	0.0001
Lead v. Unaffiliated I-bank	1071	-129.1	-44.35	<0.0001
Lead v. Non-I-bank	145	-126.1	-12.23	<0.0001
Non-Lead v. Unaffiliated I-bank	1415	-114.4	-44.55	<0.0001
Non-Lead v. Non-I-bank	179	-117.6	-13.70	<0.0001
Unaffiliated I-bank v. Non-I-bank	223	-5.6	-0.68	0.4963

Table 3: Excess returns before, at, and after analyst initial Buy recommendations for IPO firms, differentiated by underwriting relationships. We compute size-adjusted mean and median buy-and-hold returns, as defined in equations (1) and (2), for periods 30 trading days before, 3 days around, and 3, 6 and 12 months after the date of the analyst's initial Buy or Strong Buy recommendation. We define analysts as Affiliated (Unaffiliated) whose employers were (were not) lead or co-underwriter for the IPO. The t-statistics and Wilcoxon rank-sum z-statistics test that the two groups are equal, assuming each analyst-firm is an independent observation.

	Excess Return, Unaffiliated (U) (N = 5,298)	**Excess Return, Affiliated (A) (N = 4,439)**	**t-stat/ z-stat U-A**
Prior 30 Trading Days			
mean	13.8%	38.5%	-16.63
median	2.7%	13.4%	-20.46
3-day Event			
mean	2.8%	2.2%	1.74
median	1.1%	0.5%	4.44
Event + 3 months			
mean	3.6%	4.1%	-0.44
median	-3.4%	-3.4%	-0.56
Event + 6 months			
mean	-0.8%	1.8%	-1.59
median	-11.3%	-10.6%	-1.60
Event + 12 months			
mean	-4.5%	-3.3%	-0.55
median	-27.7%	-24.0%	-2.14

Table 4: Year-by-year examination of excess returns before, at, and after analyst Buy recommendations for IPO firms, by analyst affiliation. We report the yearly results by the calendar year of the IPO. We compute size-adjusted mean and median buy-and-hold returns, as defined in equations (1) and (2), for periods 30 days before, 3 days around, and 1 year after the analyst's initial Buy or Strong Buy recommendation for the 9,737 observations. We define analysts as Affiliated (Unaffiliated) whose employers were (were not) lead or co-underwriter for the IPO. The t-statistics and Wilcoxon rank-sum z-statistics in the rightmost column test whether the two groups are equal, assuming each analyst-firm is an independent observation. The "Across years" mean and t-statistic treat each annual mean as a single independent observation.

Panel A: Prior 30 days

		Excess return, Unaffiliated (U)	Excess return, Affiliated (A)	t-stat/ z-stat U-A
1994	mean	6.9%	8.1%	-0.65
	median	2.7%	3.7%	-0.93
1995	mean	6.9%	16.6%	-4.84
	median	3.5%	10.1%	-4.44
1996	mean	5.1%	14.6%	-6.87
	median	1.6%	7.8%	-6.67
1997	mean	4.7%	11.9%	-5.21
	median	3.0%	6.2%	-4.75
1998	mean	10.8%	20.8%	-3.38
	median	3.1%	7.9%	-4.25
1999	mean	24.9%	93.4%	-14.13
	median	3.0%	47.7%	-16.82
2000	mean	19.0%	62.3%	-9.40
	median	1.7%	27.7%	-11.85
2001	mean	7.5%	13.5%	-2.67
	median	6.2%	10.2%	-2.59
Across years:		**U**	**A**	**U-A**
	mean	10.7%	30.2%	-19.4%
	t-statistic	4.14	2.77	-2.32

Table 4: Year-by-year examination of excess returns before, at, and after analyst Buy recommendations for IPO firms, by analyst affiliation. (cont'd)

Panel B: 3-day event

		Excess return, Unaffiliated (U)	Excess return, Affiliated (A)	t-stat/ z-stat U-A
1994	mean	1.7%	1.4%	0.45
	median	0.8%	0.5%	1.07
1995	mean	2.9%	1.5%	2.74
	median	1.6%	0.7%	2.62
1996	mean	1.8%	1.9%	-0.30
	median	1.0%	1.0%	0.71
1997	mean	2.6%	2.0%	1.13
	median	1.3%	1.2%	1.32
1998	mean	3.0%	3.6%	-0.86
	median	1.0%	0.9%	-0.64
1999	mean	4.4%	3.7%	0.62
	median	1.4%	0.0%	3.97
2000	mean	1.6%	2.1%	-0.59
	median	0.0%	-0.2%	0.45
2001	mean	1.9%	-1.7%	4.02
	median	1.2%	-1.1%	4.00
Across years:		**U**	**A**	**U-A**
	mean	2.5%	1.8%	0.7%
	t-stat	7.49	3.10	1.38

Table 4: Year-by-year examination of excess returns before, at, and after analyst Buy recommendations for IPO firms, differentiated by underwriting relationships. (cont'd)

Panel C: 12 months starting at recommendation date

		Excess return, Unaffiliated (U)	Excess return, Affiliated (A)	t-stat/ z-stat U-A
1994	mean	22.6%	28.9%	-0.88
	median	0.9%	8.2%	-0.85
1995	mean	4.9%	7.2%	-0.50
	median	-7.5%	-12.1%	0.92
1996	mean	7.5%	-4.4%	3.46
	median	-3.6%	-14.3%	3.25
1997	mean	13.7%	13.2%	0.08
	median	-11.0%	-7.1%	-2.04
1998	mean	50.3%	23.4%	2.44
	median	-11.8%	-12.7%	-0.05
1999	mean	-29.1%	-10.8%	-3.15
	median	-62.7%	-57.2%	-0.32
2000	mean	-35.5%	-41.0%	2.07
	median	-54.7%	-61.4%	3.42
2001	mean	4.0%	-1.3%	0.71
	median	-1.2%	2.1%	-0.15
Across years		**U**	**A**	**U-A**
	mean	4.8%	1.9%	2.9%
	t-stat	0.50	0.24	0.62

Table 5: Twelve-month calendar-time portfolio regressions, using Fama and French (1993) factors.

This table presents percentage daily returns earned by portfolios composed of the stocks with Buy recommendations by unaffiliated and affiliated analysts in the year following an IPO. The results are based on a strategy of rebalancing the portfolios daily, at the close of each trading day. The intercept for the Fama-French three-factor model is the estimated intercept from a time-series regression of the portfolio excess return on the market excess return, R_{mt}-R_{ft}, a zero-investment size portfolio (SMB), and a zero-investment book-to-market portfolio (HML).

	Intercept	**R_m - R_f**	**SMB**	**HML**	**Adj. R^2 /N**
Unaffiliated	-1.797	1.237	0.977	-0.310	0.64
	-(72.38)	(35.87)	(20.89)	-(5.39)	2,315
Affiliated	-1.796	1.051	0.904	-0.393	0.60
	-(73.05)	(30.79)	(19.58)	-(6.92)	2,292
Unaffiliated - Affiliated	-0.016	0.178	0.074	0.074	0.03
	-(0.86)	(6.93)	(2.13)	(1.73)	2,292

Table 6: Returns before and after forming portfolios based on analysts' first-year coverage of IPO firms. We classify each IPO into one of four groups based on whether, during the one-year period following the issue date, it received Buy recommendations from: no analysts (NB), only unaffiliated analysts (U), both affiliated and unaffiliated analysts (AU), or only affiliated analysts. We compute size-adjusted mean and median buy-and-hold abnormal returns, as defined in equations (1) and (2), for the year before portfolio formation (Year 1), and the first year and second year after portfolio formation (Years 2 and 3). We define Affiliated analysts as those employed by the lead or co-underwriters for the IPO, and Unaffiliated as all others. In the rows labeled "Pooled," we treat each analyst-firm as an independent observation. In the rows labeled "Across Years," we treat each annual portfolio mean return as a single independent observation.

Panel A: Mean and median returns for pooled data, plus the mean of eight annual average returns and associated t-statistic, by year after the IPO. The Across Years t-statistic tests whether the mean across years equals zero.

	Firms with no Buy recom-mendations (NB)	Buy recommend-ations by Unaffiliated Only (U)	Buy recommend-ations by both Affiliated and Unaffiliated (AU)	Buy recommend-ations by Affiliated Only (A)
Year 1	(N=322)	(N=253)	(N=1703)	(N=718)
Pooled				
mean	-8.40%	47.85%	48.15%	-12.56%
median	-23.48%	13.42%	4.65%	-28.26%
Across Years				
mean	-19.11%	65.75%	46.58%	-16.33%
t-statistic	-2.32	1.72	3.12	-2.24
Year 2	(N=307)	(N=247)	(N=1663)	(N=703)
Pooled				
mean	-7.33%	-2.26%	-12.38%	-7.09%
median	-30.99%	-21.97%	-27.69%	-27.67%
Across Years				
mean	-11.44%	-3.11%	-6.41%	-6.97%
t-statistic	-0.99	-0.26	-0.85	-1.05
Year 3	(N=263)	(N=226)	(N=1473)	(N=625)
Pooled				
mean	-20.04%	-2.24%	-2.85%	6.25%
median	-29.68%	-16.22%	-20.30%	-14.79%
Across Years				
mean	-5.31%	-2.55%	-2.38%	5.17%
t-statistic	-0.23	-0.22	-0.84	0.80

Table 6: Returns before and after forming portfolios based on analysts' first-year coverage of IPO firms. (continued)

Panel B: Tests of differences across portfolio groups, by year after the IPO. The Pooled t-statistics and Wilcoxon rank-sum z-statistics test that the two groups are equal, assuming each analyst-firm is an independent observation. The Across Years t-statistics test whether the mean of annual between-group differences in average returns equal zero. We define the groups in Panel A.

	U - A	U - AU	AU - A	NB - U	NB - AU	NB - A
Year 1						
Pooled						
t-statistic	4.70	-0.02	10.74	-4.25	-8.75	0.80
z-statistic	8.04	1.47	9.95	-6.06	-6.15	1.11
Across Years						
t-statistic	2.04	0.71	4.45	-2.31	-5.86	-0.46
Year 2						
Pooled						
t-statistic	0.65	1.67	-0.95	-0.60	0.73	-0.03
z-statistic	1.76	2.96	-1.51	-2.47	-0.29	-1.22
Across Years						
t-statistic	0.60	0.38	0.11	-0.43	-0.36	-0.30
Year 3						
Pooled						
t-statistic	-1.24	0.11	-1.67	-2.72	-3.43	-4.05
z-statistic	0.10	1.35	-1.81	-3.11	-2.70	-3.63
Across Years						
t-statistic	-0.76	-0.02	-1.23	-0.20	-0.13	-0.52

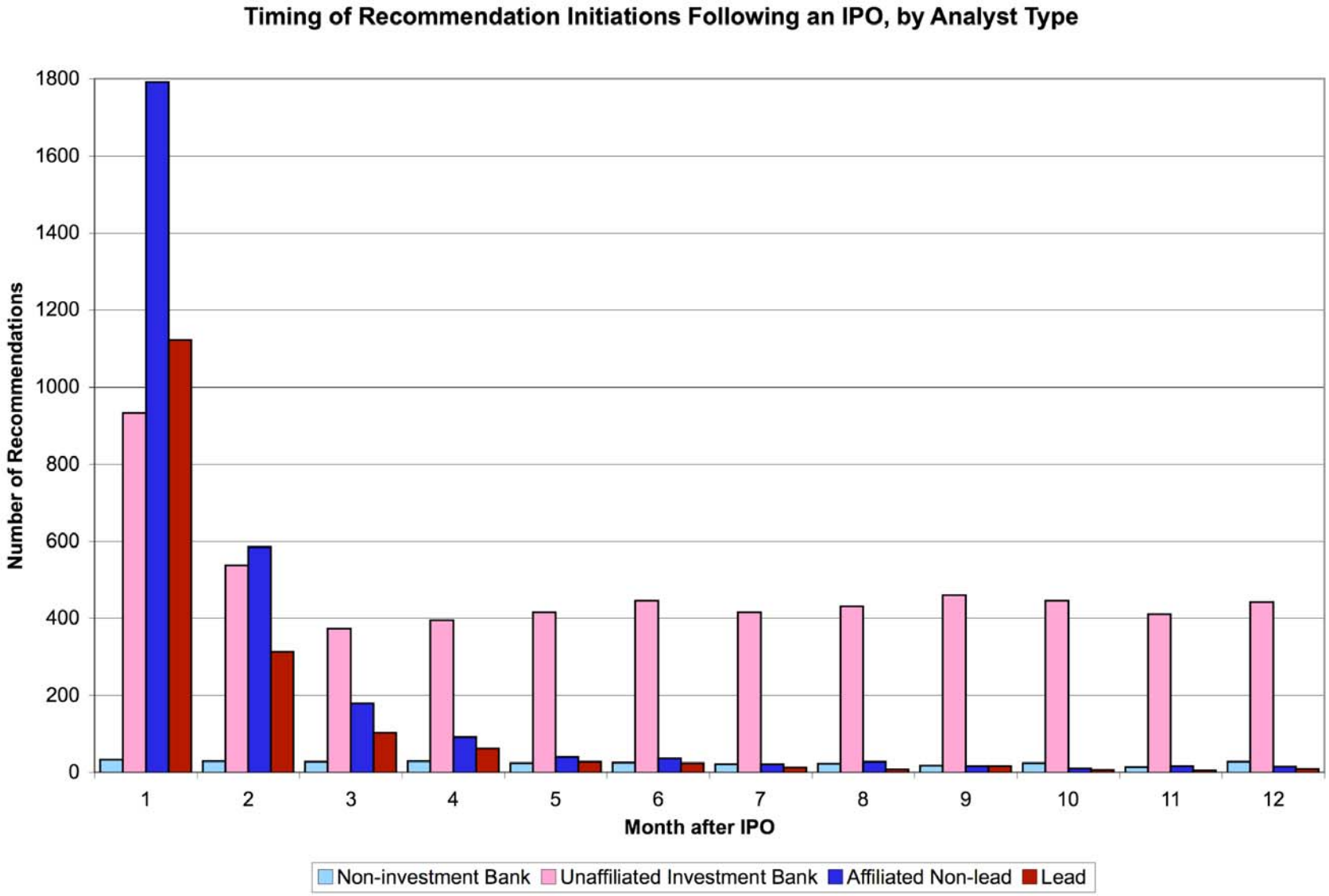
Timing of Recommendation Initiations Following an IPO, by Analyst Type
Number of Recommendations
1800
1600
1400
1200
1000
800
600
400
200
0
1
2
3
4
5
6
7
8
9
10
11
12
Month after IPO
Non-investment Bank
Unaffiliated Investment Bank
Affiliated Non-lead
Lead

Figure 2: Cumulative Size-adjusted Returns during 3 years following IPO, by Analyst Coverage in Year 1