

**COMPARING THE STOCK RECOMMENDATION PERFORMANCE OF
INVESTMENT BANKS AND INDEPENDENT RESEARCH FIRMS**

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Abstract

This study compares the profitability of security recommendations issued by investment banks and independent research firms. During the February 1996 - June 2003 period, the average daily abnormal return to independent research firm buy recommendations exceeds that of the investment banks by 3.1 basis points, or almost 8 percentage points annualized. In contrast, investment bank hold and sell recommendations outperform those of independent research firms by 1.8 basis points daily, or 4½ percentage points annualized. Investment bank buy recommendation underperformance is concentrated in the subperiod subsequent to the NASDAQ market peak (March 10, 2000), where it averages 6.9 basis points per day, or slightly more than 17 percent annualized. More strikingly, during this period those investment bank buy recommendations outstanding subsequent to equity offerings underperform those of independent research firms by 8.7 basis points (almost 22 percent annualized). Taken as a whole, these results suggest that at least part of the underperformance of investment bank buy recommendations is due to a reluctance to downgrade stocks whose prospects dimmed during the early 2000's bear market, as claimed in the SEC's *Global Analyst Research Settlement*. Additional analyses find that the underperformance of investment bank buy recommendations extends not only to the ten investment banks sanctioned in the research settlement but to the non-sanctioned investment banks as well.

Comparing the Stock Recommendation Performance of Investment Banks and Independent Research Firms

Introduction

On April 28, 2003, the Securities and Exchange Commission (SEC) announced an historic agreement with ten of the largest investment banks.¹ This agreement, known as the *Global Analyst Research Settlement*, was the culmination of extensive investigations by Congress, New York Attorney General Elliot Spitzer, the SEC, and other regulators, into potential conflicts of interest among security analysts employed by investment banking firms. Alleging numerous incidents where analysts compromised the integrity of their research in order to generate investment banking business, the agreement requires the ten firms to pay \$875 million in penalties and disgorgement of profits, \$80 million for investor education, and \$432.5 million to fund independent research. In addition to these payments, the investment banks must separate their investment banking and research departments and add a number of specific disclosures to their research reports. They must also provide independent securities research to their clients, in order to “...ensure that individual investors get access to objective investment advice...”² Motivated by this last requirement, and the arguably implicit assumption that the recommendations of independent research firms are superior to those issued by investment banks, this study compares the performance of the stock recommendations issued by these two

¹The ten firms are Bear Stearns, Citigroup (formerly Salomon Smith Barney), Credit Suisse First Boston, Goldman Sachs, J.P. Morgan Securities, Lehman Brothers, Merrill Lynch, Morgan Stanley, UBS Warburg, and U.S. Bancorp Piper Jaffray.

²Joint Press Release of the SEC, New York Attorney General, North American Securities Administrators Association, National Association of Securities Dealers, and the New York Stock Exchange, April 28, 2003, p. 4. The press release specifies that “For a five-year period, each of the firms will be required to contract with no fewer than three independent research firms that will make available independent research to the firm's customers.”

sets of securities firms.

Our analysis utilizes the *First Call* database, which contains almost 335,000 recommendations issued on more than 11,000 companies by 409 securities firms. We partition these recommendations into those issued by investment banks and those provided by independent research firms (defined here as either pure research firms or firms with research and brokerage activities, but without investment banking business). Each of these two samples is further subdivided into buy recommendations (including upgrades to buy or strong buy, and initiations, resumptions, or reiterations with a buy or strong buy rating), and hold and sell recommendations (including downgrades to hold, sell, or strong sell, and initiations, resumptions, or reiterations with a hold, sell, or strong sell rating). We then compute daily buy-and-hold abnormal returns to the buy and hold/sell recommendation portfolios, controlling for market risk, size, book-to-market, and price momentum effects. During the period from February 1996 through June 2003, we find that the average daily abnormal return on the independent research firms' buy recommendations exceeds the corresponding return for the investment banks by a significant and economically large 3.1 basis points (almost 8 percentage points annualized). In contrast, the hold/sell recommendations of the investment banks outperform (on the downside) those of the independent research firms by a significant and again economically large 1.8 basis points daily (4½ percentage points yearly).

The underperformance of investment banks' buy recommendations is consistent with allegations of biased research. However, it is also consistent with at least two other explanations. The first is that analysts at independent research firms are simply better able to identify undervalued securities. The second is that the threshold expected return necessary for an analyst

to issue a buy rating is higher at independent research firms than at investment banks.

We attempt to distinguish among these competing explanations by noting that the specific allegations of biased research in the *Global Analyst Research Settlement* mostly involved claims that investment banking analysts were reluctant to downgrade stocks which had recently issued equity, and were concentrated in the post-March 2000 bear market. If biased research is indeed a driving force behind the underperformance of investment banks' buy recommendations, then we should find it to be more pronounced during this time period and for stocks with recent equity offerings.

From the beginning of our sample period through March 10, 2000, the date of the NASDAQ market peak (sometimes referred to below as the bull market period), we find that the average daily abnormal return to investment banks' buy recommendations exceeds that of the independent research firms, but only by a statistically insignificant 0.4 basis points.³ In contrast, during the period from March 11, 2000, through the end of our sample period (sometimes referred to below as the bear market period), investment banks' buy recommendations underperform, on average, by a significant and much larger 6.9 basis points per day, or more than 17 percent annualized. More strikingly, during this latter period, the subset of investment bank buy recommendations that are outstanding subsequent to equity offerings significantly underperform the corresponding recommendations of independent research firms by an even larger 8.7 basis points, or almost 22 percent yearly. Taken together, these results suggest that at least part of the underperformance of investment banks' buy recommendations is due to the

³The Standard & Poors 500 index topped out somewhat later in March. We choose the date of the NASDAQ peak to partition our sample period since most of the covered firms mentioned in the *Global Analyst Research Settlement* were listed on NASDAQ.

reluctance of their analysts to downgrade stocks whose prospects dimmed during the bear market.

Since the SEC chose to sanction only ten investment banks in its *Global Analyst Research Settlement*, it is natural to ask whether there is any difference in the performance of their recommendations relative to those of the non-sanctioned banks. To address this question we partition the investment banks in our sample into three groups: the ten sanctioned banks, non-sanctioned investment banks which, like the sanctioned ones, were lead or joint-lead underwriters in at least one equity offering during our sample period (this group is referred to below simply as lead underwriters), and the non-sanctioned investment banks which were syndicate members of at least one offering during our sample period, but were never a lead or joint-lead underwriter (referred to below as syndicate members).⁴

We find that the buy recommendations of all three investment banking categories underperform those of the independent research firms during our sample period, by a daily average which ranges from 2.2 basis points (for the syndicate members) to 3.5 basis points (for the sanctioned banks). This is true, in particular, for the subset of recommendations outstanding both during the bear market and subsequent to equity offerings, where the average daily underperformance ranges from 5.9 basis points (for syndicate members) to 9.2 basis points (for lead underwriters). This uniform underperformance suggests that differentiating between the sanctioned and non-sanctioned banks, in terms of the requirement that independent research be distributed to clients, may not be justified.

Comparing performance across investment banking categories for our whole sample

⁴This partition is similar to that used by Cowen et al. (2003).

period, we find that syndicate members' buy recommendations earn significantly higher returns than those of the sanctioned banks, as well as higher (albeit not statistically significantly higher) returns than those of the lead underwriters. The outperformance is especially pronounced during the bear market, where the average daily abnormal return of the syndicate members' buy recommendations exceeds those of the sanctioned banks and lead underwriters by a significant 2.7 and 2.5 basis points, respectively. The syndicate members' outperformance, relative to the other investment banks, is consistent with the overall superiority of independent research firms' buy recommendations, as some syndicate members are essentially independent research firms. Investment banking activity for some of them consists solely of distributing shares they are allocated by lead underwriters; they do not actively seek lead underwriter roles themselves. Perhaps the most well-known example of this type of firm is Sanford Bernstein, which has been described as "...one of the more independent research houses – it only has a small syndicate business..."⁵

A number of recent studies have investigated various aspects of the relation between investment banking and the performance of analysts' earnings forecasts and stock recommendations. Generally, banking activity is not found to be associated with either less accurate or more optimistic short-term earnings forecasts (see, for example, Lin and McNichols (1998), Cowen et al. (2003), Agrawal and Chen (2004), and Kolasinski and Kothari (2004)).⁶ However, Lin and McNichols (1998) and Dechow et al. (2000) show that long-term growth

⁵See "Wall St. Wins Back its Research Reputation," Lina Saigol, *Financial Times* (September 8, 2003, p. 26).

⁶An exception is Bradshaw et al. (2004) who find evidence that analysts' short-term forecasts and stock recommendations are overly optimistic for firms engaged in corporate financing activities.

forecasts for firms with recent equity offerings are more optimistic when coming from analysts employed by the offerings' lead underwriters than when issued by other analysts.⁷ Comparing the buy recommendations and, separately, the hold/sell recommendations issued on these firms by these two sets of analysts, Lin and McNichols (1998) and Iskoz (2003) find no significant differences in returns.⁸ Michaely and Womack (1999), in contrast, document that for initial public offerings, the average two-year performance of lead underwriter recommendations is significantly lower than that of other analysts.⁹ Relative to these studies of analyst recommendations, ours covers a more recent period (Iskoz's sample period ends in 2000, Lin and McNichols' in 1994, and Michaely and Womack's in 1991) and is broader, focusing on all securities firms with investment banking business, rather than on just lead underwriters. Further, our analysis is not restricted to firms that had recently issued equity.

While the results of our analysis suggest that some of the research issued by investment banking analysts was biased, our findings must be approached cautiously, given that they hold for a relatively narrow window, coinciding with a period of time that has been the subject of intense media and regulatory attention. As such, we cannot rule out the possibility that they are the product of a media-driven hindsight bias, rather than indicative of the existence of biased research on a significant scale. It must also be emphasized that our results pertain to our sample of securities firms and recommendations, *on average*. As such, they cannot be used to conclude,

⁷In contrast, Agrawal and Chen (2004) find that analysts employed by investment banking firms are more conservative in their long-term growth forecasts than are analysts at independent research firms.

⁸Iskoz does find that the strong buy recommendations issued by analysts at lead underwriters significantly underperform those of non-lead analysts.

⁹Michaely and Womack use a two-year return period for all recommendations, whether or not the recommendations were dropped or changed during that time.

or bolster the contention, that research on any particular stock by any given investment bank was biased. This is an important point to recognize in the current legal environment, where a large number of claims have been brought by investors against investment banks alleging specific instances of biased research.

The plan of this paper is as follows. In section I we describe the recommendation sample used in the study. This is followed by a discussion of our research design in section II. Section III presents descriptive statistics for our sample, while Section IV compares the recommendation returns of investment banks and independent research firms. The issue of whether the recommendation returns of the ten sanctioned banks differ from those of the non-sanctioned banks is examined in Section V. Section VI presents a summary and conclusions.

I. Research Sample

The source for the analyst recommendations used in this study is Thomson Financial's *First Call* database, which obtains its data directly from securities firms. The recommendations take one of two forms, real time or batch. Real-time recommendations, which constitute the majority of those recorded by *First Call* in recent years, come from live feeds and give the date and time of report publication. Batch reports come from a weekly batch file sent by the firms; as a consequence, the precise announcement date of the individual recommendations is unknown. We employ only real-time recommendations in this study, in order to ensure the accuracy of the dates used to measure investment returns. Further, any recommendation that is outstanding in the database for more than one year is dropped at the end of the year, under the assumption that such a recommendation has become stale by that time.

Each database record contains the name of the company covered, the securities firm issuing the report, and a rating between 1 and 5. A rating of 1 represents a strong buy; 2, a buy; 3, a hold; 4, a sell; and 5, a strong sell. If an analyst uses some other scale, *First Call* converts the analyst's rating to its five-point scale. The recommendations in this study cover the period from January 1996 through June 2003.

We partition the *First Call* securities firms into four categories: (1) the ten investment banks sanctioned by the SEC; (2) non-sanctioned investment banks that were lead or joint-lead managers of at least one equity offering during the sample period (referred to in this paper as lead underwriters); (3) investment banks that were syndicate members of one or more equity offering during the sample period, but were never a lead or joint-lead underwriter (referred to as syndicate members); and (4) non-investment banking securities firms that produce equity research (referred to here as independent research firms). This latter category is comprised of (i) firms engaged in brokerage activity, such as trading securities or managing funds, but not investment banking and (ii) firms engaged solely in research, having neither brokerage nor investment banking business.¹⁰

To determine the category into which each non-sanctioned securities firm falls, we employ the *Securities Data Corporation (SDC)* database. Any *First Call* firm which *SDC* records as having been the lead or joint-lead underwriter for at least one equity offering during our sample period is classified as a lead underwriter. A securities firm which *SDC* shows as having participated in at least one equity offering, but never as a lead or joint-lead underwriter, is categorized as a syndicate member. Securities firms not listed on *SDC* as having participated in

¹⁰We initially separated brokerage firms from pure research firms, but combined the categories when it was found that there are relatively few pure research firm recommendations included in the *First Call* database.

any equity offerings during the sample period are initially classified as independent research firms.¹¹ They are retained in our sample as independent research firms if they are listed in *Nelson's Directory of Investment Research* or if they have web sites, and those sites make clear that they are not engaged in investment banking business. Otherwise, they are dropped from our sample.¹²

II. Research Design

Our initial set of analyses compares the recommendation returns of the independent research firms with those of all the investment banks combined. Subsequently, we examine the recommendation performance of each investment bank category separately. For both sets of analyses and each category of securities firm we form two portfolios: (1) a buy portfolio, consisting of all stocks that at least one securities firm in that category upgraded to buy or strong buy, or initiated, resumed, or reiterated coverage with a buy or strong buy rating and (2) a hold/sell portfolio, comprised of all stocks that at least one securities firm in that category downgraded to hold, sell, or strong sell, or initiated, resumed, or reiterated coverage with a hold, sell, or strong sell rating.¹³

¹¹This rule misclassifies as independent research firms those investment banks that participate in debt offerings and/or merger and acquisition activity, but not equity offerings. Given the magnitude of the equity issuance market, however, it is unlikely that there are many such investment banks.

¹²The dropped securities firms are a very small part of the *First Call* database, having issued less than 3 percent of all the recommendations during the sample period.

¹³We could alternatively have restricted the buy (hold/sell) portfolio to those stocks that were recently upgraded to buy or strong buy (downgraded to hold, sell, or strong sell). We have chosen to include initiations, resumptions, and reiterations in our portfolios since this allows us to more closely track the returns to analyst recommendations over the period they are in effect. In particular, the returns will more precisely reflect the extent to which buy portfolio performance is affected by the alleged reluctance of securities firms to downgrade stocks whose prospects have dimmed. Restricting the buy (hold/sell) portfolio to upgrades (downgrades) likely would increase the reported performance of the portfolios. See Barber et al. (2001) and Jegadeesh et al. (2004).

To understand how these portfolios are constructed, take as an example the buy portfolio of the investment banks. For each investment bank in the *First Call* database, we identify the upgrades to buy or strong buy during our sample period, as well as the initiations, resumptions, and reiterations of coverage with a buy or strong buy rating. For each of these recommendations, the recommended stock enters the buy portfolio at the close of trading on the day the recommendation is announced (unless the announcement comes after the market close, in which case the stock is added at the close of the following day's trading). By waiting until the close of trading, we explicitly exclude the first trading day recommendation returns. We do so to reflect that some investors, especially small ones, likely become aware of upgrades only with a delay.¹⁴ Each recommended stock remains in the portfolio until either the stock is downgraded or dropped from coverage by the investment bank. If more than one investment bank is recommending a particular stock on a given date, then that stock will appear multiple times in the portfolio on that date, once for each buy or strong buy recommendation.

Assuming an equal dollar investment in each recommendation, the portfolio return on date t is given by:

$$\frac{\sum_{i=1}^{n_t} x_{it} \cdot R_{it}}{\sum_{i=1}^{n_t} x_{it}} \quad (1)$$

¹⁴Returns would be higher for those investors with real-time access to recommendation announcements. Green (2003) estimates that buying (selling) shares at the start of the trading day subsequent to an upgrade (downgrade), rather than waiting until the end of the day to take a position, would increase returns by approximately 1½ (2) percentage points.

where R_{it} is the gross date t return on recommendation i , n_t is the number of recommendations in the portfolio, and x_{it} is the compounded daily return of recommended stock i from the close of trading on the day of the recommendation through day $t-1$.¹⁵ The buy portfolio is updated daily, so that stocks which are downgraded or dropped from coverage are taken out of the portfolio at the close of trading on the day of the downgrade or drop. This calculation yields a time-series of daily returns for the buy portfolio. The daily returns for the hold/sell portfolio are determined in an analogous fashion.

Abnormal return performance is calculated as the intercept, α_j , from the four-factor model developed by Carhart (1997), found by estimating the following daily time-series regression for each portfolio j :¹⁶

$$R_t^j - R_{ft} = \alpha_j + \beta_j(R_{mt} - R_{ft}) + s_jSMB_t + h_jHML_t + w_jWML_t + \epsilon_{jt} \quad (2)$$

where R_t^j is the date t return on portfolio j , R_{ft} is the date t risk-free rate, R_{mt} is the date t return on the value-weighted market index, SMB_t is the date t return on a value-weighted portfolio of small stocks minus the date t return on a value-weighted portfolio of big stocks, HML_t is the date t return on a value-weighted portfolio of high book-to-market stocks minus the date t return on a value-weighted portfolio of low book-to-market stocks, and WML_t is the date t return on a value-weighted portfolio of stocks with high recent returns minus the date t return on a value-weighted

¹⁵The variable x_{it} equals 1 for a stock recommended on day $t-1$.

¹⁶We also compute market-adjusted returns. Results are qualitatively similar to those derived from the four-factor model.

portfolio of stocks with low recent returns.¹⁷ The regression yields parameter estimates of α_j , β_j , s_j , h_j , and w_j . The error term in the regression is denoted by ϵ_j . In the discussion below, the intercept α_j is alternatively referred to simply as the abnormal return on portfolio j .

III. Descriptive Statistics

Table 1 provides descriptive statistics for the real-time recommendations in the *First Call* database. During the January 1996 - June 2003 period, *First Call* recorded almost 335,000 real-time recommendations issued by 409 securities firms on more than 11,000 different firms. As shown in column 2, the year 2002 has by far the most recommendations of any sample year. This is due, in large part, to the reissuance of recommendations just before September 9, the effective date for implementation of National Association of Securities Dealers (NASD) Rule 2711 which, among other things, requires every securities firm to disclose in each of its research reports the distribution of the firm's ratings across buys, holds, and sells.¹⁸ Column 3 reveals that, after holding fairly steady for the years 1996-2000, the number of covered firms dropped sharply in 2001 and 2002. (While it is not yet clear whether coverage will continue at this lower level for the full year 2003, evidence through June suggests that it will.) Among possible reasons for this decrease is a fall-off in the number of listed firms (many firms were delisted during this period because they either went bankrupt or otherwise failed to meet listing requirements, while few new firms joined those listed due to a slowdown in the new issues market), a tendency by

¹⁷We thank Ken French and James Davis for providing us with daily factor returns. The construction of the size and book-to-market portfolios is identical to that in Fama and French (1993). The *WML* return is constructed as in Carhart (1997).

¹⁸See Barber et al. (2004) for a detailed description of NASD 2711 and its impact on the distribution of analysts' recommendations.

securities firms to discontinue coverage of firms that have been performing badly, and a general cut-back in the level of research services provided by securities firms.¹⁹

Table 2 presents descriptive statistics for each of the different types of securities firms. The lead underwriter category contains the largest number of securities firms (column 1), followed by the independent research firms and the syndicate members. The number in the former category has trended upward in recent years, likely reflecting a widening in the coverage of the *First Call* database, rather than a trend toward firms divesting themselves of banking activity. The sanctioned bank category has the smallest number of firms, just ten (by definition). The lead underwriters cover the most firms (column 3) and issue by far the most recommendations (column 2), followed by the sanctioned banks. This is not surprising, given that the lead underwriter category has the most members and given that the lead underwriters and sanctioned banks are the largest securities firms.

The last four columns of Table 2 present the numbers and percentages of outstanding recommendations in the year-end buy and hold/sell portfolios of each type of securities firm. There is a common time-pattern across the investment banking categories – a general increase in the percentage of buy recommendations through 2000 and a decrease thereafter. (The peak year for the independent research firms is 1996.) The reversal is consistent with evidence in Barber et al. (2004) and reflects both the downturn in the economy beginning in 2000 as well as the increased scrutiny placed on analysts by regulators and Congress. Given that the sanctioned

¹⁹See McNichols and O'Brien (1997) for evidence that analysts tend to discontinue coverage of stocks with unfavorable prospects rather than issue negative recommendations. The impact of recently enacted regulations on the provision of analyst research services is discussed by Landon Thomas, Jr. in "An Analyst's Job Used to be Fun. Not Anymore," *The New York Times*, August 17, 2003.

banks received the greatest attention during this time, it is not surprising that their percentage of buy recommendations experienced the sharpest decline.

IV. Portfolio Returns

A. Buy Recommendations

In Table 3 we report the returns to the buy portfolios of the investment banks and independent research firms. For our entire sample period (columns 1-2), the portfolio of investment bank buy recommendations has an insignificant average daily abnormal return of 0.7 basis points.²⁰ This compares to a significant average daily abnormal return of 3.8 basis points for the independent research firms. The underperformance of the investment bank buy portfolio, 3.1 basis points, is both significant and economically large, reflecting an annualized return difference of almost 8 percent.

In the *Global Analyst Research Settlement* regulators claimed that there were numerous instances where analysts inappropriately chose not to downgrade stocks for which their employers had investment banking relationships.²¹ The underperformance we document is

²⁰While we form portfolios using recommendations issued in January 1996 and later, we measure returns beginning in February 1996. This is because the number of recommendations in the *First Call* database during January is relatively small.

²¹Excerpts from the SEC's April 28, 2003, complaints against three of the sanctioned banks illustrate these allegations. In its complaint against Bear Stearns, the SEC alleges that "Bear Stearns, via three successive analysts, rated the stock [Digital River] a 'Buy'...In an April 1, 2002, e-mail to his IB counterpart an analyst stated: 'I have to tell you, I feel a bit compromised today...The artificial Buy rating on the stock...makes me look bad.'" In its complaint against Goldman Sachs, the SEC states that "In May 2001, WorldCom had Goldman Sachs' highest rating, Recommended List. The Business Unit Leader for U.S. Telecommunications research told his European counterpart that he 'would have loved to cut ratings long ago...'" In its complaint against UBS Securities, the SEC alleges that "On March 20, 2000, [an] analyst sent an e-mail to UBS Warburg's sales force informing them that another company had developed a product to compete with Interspeed. One of the members of the sales force responded, 'This sounds like a short . . . correct? (Off the record, of course).' The analyst responded, 'YES.' However, the analyst still maintained the 'Buy' rating."

consistent with this alleged bias. However, there are several other potential explanations for this finding. One is that analysts at independent research firms are better able to identify undervalued stocks than are their counterparts at investment banks. Another is that analysts at investment banks were devoting relatively more effort to business development and less to research than were analysts at independent research firms, at least for a portion of our sample period, making their recommendations less valuable. A third is that the threshold expected return necessary for an analyst to issue a buy rating is lower at investment banks than at independent research firms.

To shed light on the empirical validity of these alternative explanations we partition our sample period into two subperiods – the first running until March 10, 2000, the date of the NASDAQ market peak (referred to below as the bull market period), and the other beginning on March 11, 2000 (referred to as the bear market period). If analysts at independent research firms have superior research abilities, then they would be expected to outperform investment banking analysts by similar magnitudes during the two subperiods. If they simply devote more effort to research activities than do analysts at investment banks during periods of heightened investment banking activity, then we should expect greater underperformance by investment banks within the first subperiod, when investment banking activity was arguably much more vibrant.²² Finally, if the threshold expected return for issuing a buy recommendation is lower for investment banking analysts, then the outperformance of independent research firms again should not vary across subperiods.

The subperiod returns presented in Table 3 are fundamentally different from each other.

²²The *SDC* database records 89 initial public offerings (IPOs) and seasoned equity offerings (SEOs) per month, on average, during the February 1996 - March 2000 period. The corresponding average for the April 2000 - June 2003 period is only 40.

In the years leading up to the market peak, investment bank buy recommendations earned a marginally significant average daily abnormal return of 1.1 basis points, while those of the independent research firms generated an insignificant 0.6 basis point abnormal return (columns 3-4). The difference, 0.4 basis points is not statistically significant.²³ In contrast, during the bear market the independent research firms outperformed the investment banks by a significant and economically quite large 6.9 basis points, on average, per day (over 17 percent annually), with the recommendations of the investment banks generating an insignificant average daily abnormal return of -0.1 basis point and the recommendations of the independent research firms earning a significantly positive average abnormal return of 6.7 basis points per day (columns 5-6). The much stronger independent research firm outperformance during the bear market is consistent with the allegation that investment banks were reluctant to downgrade stocks whose fortunes dimmed after the market peak. It is not consistent, however, with our alternative potential explanations for investment bank underperformance.

Thirty-three of the 38 stocks which were specifically alleged to have been the subject of biased research in the *Global Analyst Research Settlement* participated in IPOs and/or SEOs during our sample period. Given that analysts are most likely to face potential conflicts of interest between banking and research when covering firms that provide underwriting business, this finding is not surprising. If investment banking analysts did, indeed, issue biased research during our sample period, then we would expect that bias to be more pronounced for the recommendations outstanding subsequent to IPOs and/or SEOs.

²³As is true here, rounding errors sometimes cause a tabulated return difference to differ slightly from the difference in the individual tabulated returns.

To examine this issue, we partition our recommendations into two subsamples. The first subsample, referred to below as the IPO/SEO recommendations, consists of those recommendations which either were issued within the two years after a stock's IPO or SEO or were outstanding at the time of an SEO. For the latter subset, we begin cumulating returns the day after the SEO. Including prior returns would likely produce an upward bias, given that stock returns are usually positive prior to SEOs. For a similar reason, we do not include in the IPO/SEO subsample any recommendations with end-dates before an SEO.²⁴ The second subsample consists of all other recommendations and is referred to below as the non-IPO/SEO recommendations.

Table 4 presents the return results for the IPO/SEO recommendation subsample (panel A) and, separately, for the non-IPO/SEO recommendations (panel B). Over the entire sample period the IPO/SEO recommendations of the investment banking analysts generate a negative and significant average abnormal return of -1.8 basis points per day (-4½ percent annualized). The average abnormal return for the independent research firms' recommendations, in contrast, is insignificantly different from zero. The outperformance of the independent research firms, 2.5 basis points (over 6 percent annualized), although quite large, is not reliably different from zero.

During the bull market the IPO/SEO recommendations of the investment banks outperform those of the independent research firms by an economically large and marginally significant 3.8 basis points (9½ percent annualized). In stark contrast, during the bear market the

²⁴Unlike Iskoz (2003) and Lin and McNichols (1998), we include in our subsample all recommendations outstanding subsequent to IPOs and/or SEOs, not just those associated with the investment bankers that led the offerings. By being more inclusive, we capture the notion that potential conflicts of interest arise not only with respect to firms for which an investment bank has had a lead underwriting relationship, but also with respect to firms for which they either were syndicate members or might have (or desire to have) an underwriting relationship in the future.

independent research firms' IPO/SEO recommendations outperform those of the investment banks by a significant and economically very large 8.7 basis points per day, on average (almost 22 percent yearly). This is due, in large measure, to the negative average daily abnormal return of -4.4 basis points generated by the investment banking analysts' recommendations.

Turning to the non-IPO/SEO recommendation subsample, both the investment banks and independent research firms generate positive and significant average daily abnormal returns for the entire sample period (1.4 and 4.0 basis points, respectively). The independent research firms' average outperformance, 2.6 basis points per day (6½ percent, annualized), is significant and quite large. Their outperformance is driven by the bear market period, where the independent research firms' recommendations generate a 7.0 basis point average daily abnormal return, as compared to 1.7 basis points for the investment banks. The difference is a significant 5.3 basis points (over 13 percent, annualized).

A comparison of the abnormal returns of these recommendation subsamples yields two interesting observations. First, the underperformance of the investment banks during the bear market is greater in the IPO/SEO recommendation subsample, where the difference in outperformance is an economically large 3.4 basis points per day. (Untabulated results reveal, though, that this difference is not statistically significant.) Second, while the investment banking analysts are able to earn significantly positive abnormal returns on their non-IPO/SEO recommendations during this period, their IPO/SEO recommendations generate significantly negative abnormal returns. These two observations are consistent with prior evidence which suggests that investment banking analyst underperformance stems, in part, from the issuance of biased recommendations during the recent market decline, as alleged in the *Global Analyst*

Research Settlement.

B. Hold and Sell Recommendations

Table 5 presents the hold/sell recommendation returns for our entire sample of firms. They paint a much different picture of the relative performance of the analysts at investment banks and independent research firms. Over the full sample period, investment banks' hold/sell recommendations earn a significant and economically large average daily abnormal return of -1.9 basis points (almost -5 percent annually). These significant and large abnormal returns extend to both subperiods. The abnormal returns of the independent research firms, in contrast, are only significant over the bull market period. Comparing abnormal returns reveals that investment bank hold/sell recommendations outperform those of independent research firms by a significant -1.8 basis points daily (-4½ percent annually), on average, over the full sample period.²⁵ The return difference is almost entirely attributable to the outperformance of -3.5 basis points per day during the bear market.

As reflected in Table 6, the IPO/SEO and non-IPO/SEO hold/sell recommendation subsamples display the same general return patterns as does the full recommendation sample. Notably, the abnormal returns for the IPO/SEO recommendations are much larger in magnitude than are those for the non-IPO/SEO recommendations. This is true as well for the magnitude of investment bank outperformance, both over the full sample period and during the bear market.²⁶ In fact, the greatest investment bank outperformance, -8.8 basis points (-22 percent annualized),

²⁵Since these are negative recommendations, a greater negative (or less positive) return reflects outperformance.

²⁶Untabulated results reveal that the difference in investment bank outperformance between the two recommendation subsamples, while economically quite large, is not reliably different from zero.

is generated by the IPO/SEO recommendation subsample during the bear market. Moreover, it is the only outperformance that is reliably different from zero.

That performance differences are so much larger in magnitude for the IPO/SEO recommendation subsample and are only reliably negative during the bear market strongly suggests that investment bank outperformance is not simply due to banking analysts being better able to spot overvalued stocks or to their having a higher (negative) threshold expected return for issuing a hold or sell recommendation. Rather, it is consistent with a reluctance on the part of these analysts to downgrade stocks during the market downturn, in particular those that had recently generated investment banking business. Apparently, a very negative expected return was required, in general, for a banking analyst to issue a downgrade under these circumstances.

V. Recommendation Returns Across Investment Banking Categories

Table 7 presents the average daily abnormal returns to the buy recommendations of the sanctioned banks, the non-sanctioned lead underwriters, and the non-lead syndicate member investment banks. For the entire sample period, the buy recommendations of all three categories of investment banks significantly underperform those of the independent research firms. The underperformance ranges from an average of 2.2 basis points daily for the syndicate members to 3.5 basis points per day for the sanctioned banks. These results are driven by the bear market period returns, where underperformance ranges from an average of 4.5 basis points daily for the syndicate members to 7.2 basis points per day for the sanctioned banks.

The uniform underperformance notwithstanding, *F*-tests reveal that there are significant abnormal return differences across the three categories of investment banks for the entire sample

period ($F = 3.67$), as well as during the bull and bear market subperiods ($F = 3.82$ and 5.23 , respectively). Untabulated t -tests show that the average daily abnormal returns of the syndicate members' buy recommendations are significantly higher than those of the sanctioned banks (by 1.3 basis points) over the entire sample period, and are significantly greater than those of both the sanctioned banks and lead underwriters (by 2.7 and 2.5 basis points, respectively) during the bear market. During the bull market, though, the buy recommendations of the lead underwriters generate an average daily abnormal return that significantly exceeds that of the sanctioned banks and syndicate members (by 1.0 and 1.1 basis points, respectively).

The dominance of syndicate members' buy recommendations over our full sample period and during the bear market is not surprising, given the previously documented outperformance of independent research firms' buy recommendations. This is because some syndicate members are really hybrids between investment banks and independent research firms.²⁷ Unlike the lead underwriters and sanctioned banks in our sample, syndicate members often have small investment banking arms, whose activities are limited to the distribution of shares allocated to them by lead underwriters. Arguably, then, the analysts in these firms face less severe potential conflicts of interest than those employed by lead underwriters and sanctioned banks.

Table 8 presents the average daily abnormal returns for the IPO/SEO and non-IPO/SEO recommendation subsamples. These subsample results are qualitatively similar to those of our full sample, in that the buy recommendations of each of the three investment banking categories

²⁷One notable example, mentioned in the introduction, is Sanford Bernstein. Another is The Buckingham Research Group, which is described in the 2000 edition of *Nelson's Directory of Investment Research* as "an institutional brokerage firm dedicated to finding successful investment ideas for a select group of clients. Through its focus on research...Buckingham has established a special niche with many of the most successful money managers in the country."

underperform those of the independent research firms, during both the entire sample period and the bear market. Moreover, with just two exceptions (the IPO/SEO recommendations of the lead underwriters and syndicate members during the whole sample period), the levels of underperformance are statistically significant. For the IPO/SEO recommendation subsample the average daily underperformance ranges from 1.9 basis points (for the syndicate members) to 2.7 (for the sanctioned banks) over the whole sample period, and from 5.9 basis points (for the syndicate members) to 9.2 (for the lead underwriters) during the bear market. During the bull market, in contrast, the lead underwriters significantly outperform the independent research firms, by an average of 4.2 basis points per day.

For the non-IPO/SEO recommendation subsample average daily underperformance ranges from 2.0 basis points (for the syndicate members) to 3.0 (for the sanctioned banks) during the full sample period and from 4.2 basis points (for the syndicate members) to 5.9 (for the sanctioned banks) during the bear market.²⁸ Abnormal returns during the bull market are very similar, and statistically indistinguishable, across the four categories of securities firms.

The bear market results reflect a greater level of underperformance for the IPO/SEO recommendations, relative to the non-IPO/SEO recommendations, for each investment banking category, and mirror the evidence for the investment banking sample as a whole. Untabulated results reveal that the difference in average daily underperformance between the two recommendation subsamples during the bear market is not statistically significant for any

²⁸Unlike the full sample results, *F*-tests reveal no significant abnormal return differences across the three categories of investment banks for the IPO/SEO recommendation subsample over the entire sample period ($F=0.52$). Abnormal return differences for the non-IPO/SEO recommendation subsample, though, are marginally significant ($F=2.42$). There is mixed evidence of significant abnormal return differences in the two subperiods.

investment banking category; however, the large magnitudes of these differences (ranging from 1.7 basis points for the syndicate members to 4.1 for the lead underwriters) provide additional suggestive evidence that not only did analysts at the sanctioned banks issue biased recommendations during the recent market decline, but so did analysts at the lead underwriters and syndicate members. Consequently, differentiating between the sanctioned and non-sanctioned banks with respect to requiring that independent research be distributed to clients, may not be justified.

Table 9 presents the hold/sell recommendation returns for each of the three investment banking categories. They are quite similar in nature to those for the full set of banking firms, reflecting significant outperformance, relative to the independent research firms' recommendations, over the entire sample period. The abnormal return differences range from 1.5 basis points per day, on average (for the syndicate members), to 1.9 basis points daily (for the sanctioned banks). Average daily outperformance is also economically large for each of the investment banking categories during the bear market (ranging up to 3.9 basis points for the lead underwriters); however, it is statistically significant only for the sanctioned banks and lead underwriters.²⁹

The return results for the IPO/SEO and non-IPO/SEO hold/sell recommendation subsamples, presented in Table 10, are again quite similar to those for our investment banking firm sample as a whole. The IPO/SEO hold/sell recommendations of the lead underwriters and sanctioned banks significantly outperform those of the independent research firms during the

²⁹Unlike the buy recommendation results, *F*-tests reveal no significant differences in abnormal returns across investment banking categories for our whole sample period or for either of the two subperiods.

bear market, where the average daily abnormal return of the sanctioned banks (lead underwriters) is 7.9 (9.7) basis points less than that of the independent research firms. For the non-IPO/SEO hold/sell recommendation subsample, there is no evidence of outperformance by any of the three investment banking categories, either for the entire sample or during the two subperiods.³⁰

As is true for the entire investment banking sample, hold/sell recommendation outperformance for each category of investment bank is greater for the IPO/SEO subsample than for the non-IPO/SEO subsample during the bear market. Over that subperiod, the difference in average outperformance ranges from an economically large 4.0 basis points per day (for the syndicate members) to 8.2 basis points daily (for the lead underwriters). Untabulated results reveal that this difference is marginally significant for the lead underwriters. As before, these results suggest that investment banking analysts (not just those at the sanctioned banks) were reluctant to downgrade stocks during the market downturn, especially those providing investment banking business, and did so only if they anticipated relatively large negative returns.

VI. Summary and Conclusions

Motivated by the requirement that ten of the largest investment banks begin providing independent securities research to their clients, this study has compared the performance of recommendations issued by analysts at investment banks with those prepared by analysts at independent research firms (securities firms without investment banking business). Over the February 1996 - June 2003 time period we find that the buy recommendations of independent

³⁰Neither the IPO/SEO nor the non-IPO/SEO hold/sell recommendation subsamples evidence significant abnormal return differences across the three categories of investment banks for the whole sample period ($F = 1.76$ and 1.25 , respectively). There is mixed evidence of abnormal return differences in the two subperiods.

research firms outperform those of investment banks by an average of 3.1 basis points per day. Investment bank hold and sell recommendations, in contrast, outperform those of the independent research firms by 1.8 basis points daily, on average.

The outperformance of independent research firms' buy recommendations is concentrated in the post-March 10, 2000, bear market period, where they generate an average daily abnormal return that is 6.9 basis points greater than that of the investment banks' buy recommendations. Moreover, during this period, independent research firm buy recommendations outstanding subsequent to equity offerings outperform those of the investment banks by a quite large 8.7 basis points. These results, taken as a whole, are consistent with allegations in the *Global Analyst Research Settlement* of biased research on the part of at least some investment banking analysts. In particular, the results suggest a reluctance to downgrade stocks whose prospects weakened during the bear market.

We go on to separately analyze the performance of the recommendations of the ten banks sanctioned in the *Global Analyst Research Settlement*, those of non-sanctioned lead underwriters, and those of non-lead syndicate members. Overall, we find that the buy recommendations of each investment banking category significantly underperform those of the independent research firms, while the hold and sell recommendations outperform. The uniform buy recommendation underperformance calls into question the appropriateness of the SEC's requirement that only the ten sanctioned banks provide independent research to their clients. We further find some evidence that the buy recommendations of the syndicate members outperform those of the sanctioned banks and lead underwriters. This is consistent with the notion that some syndicate members are, in essence, hybrids of investment banking and independent research firms.

It is important to keep in mind that investment bank underperformance has been found for a relatively narrow window, coinciding with a period of intense media and regulatory scrutiny into potential conflicts of interest among securities analysts. This opens up the possibility that our findings reflect hindsight bias, rather than evidence of biased research. It is also important to recognize that our results apply to our sample taken as a whole, and do not imply that the research of all investment banking analysts, or of any particular analyst, was biased during this period.

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Table 1
Descriptive Statistics on Analyst Stock Recommendations:
January 1996 to June 2003

This table presents, by year, the number of securities firms, the number of real-time stock recommendations issued, and the number of firms with at least one real-time recommendation in the *First Call* database.

Year	Number of securities firms	Number of recommendations	Number of covered firms
	(1)	(2)	(3)
1996	176	27,911	5,707
1997	190	35,518	6,395
1998	211	45,085	6,726
1999	202	45,981	6,650
2000	214	42,358	6,422
2001	227	46,904	5,457
2002	238	72,921	5,351
2003 (January-June)	218	18,157	3,523
Overall	409	334,835	11,181

Table 2

Descriptive Statistics on Stock Recommendations by Security Firm Category: January 1996 to June 2003

Panels A-D of this table present the number of securities firms, the number of real-time stock recommendations, the number of firms covered, the number and percentage of end-of-year recommendations that were either upgrades to buy or strong buy, or initiations/resumptions/reiterations of coverage with a buy or strong buy rating, and the number and percentage of end-of-year recommendations that were either downgrades to hold, sell, or strong sell, or initiations/resumptions/reiterations of coverage with a hold, sell, or strong sell rating. The statistics are presented for the ten banks sanctioned in the *Global Analyst Research Settlement* (the "sanctioned banks"), non-sanctioned banks that were lead or joint-lead underwriters of at least one equity offering during our sample period (the "lead underwriters"), non-sanctioned banks that were syndicate members of one or more equity offering during the sample period, but were never a lead or joint-lead underwriter (the "syndicate members"), and non-investment banking securities firms that produce equity research (the "independent research firms").

Panel A: Sanctioned banks

Year	Number of securities firms	Number of rec's	Number of covered firms	Recommendation Frequency			
				Strong Buy/Buy		Hold/Sell/Strong Sell	
				N	% of Total	N	% of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1996	10	7,086	2,750	4,268	64.0%	2,397	36.0%
1997	10	10,523	3,410	6,500	65.3%	3,449	34.7%
1998	10	15,389	3,930	9,093	63.6%	5,196	36.4%
1999	10	15,285	4,009	9,857	68.4%	4,548	31.6%
2000	10	14,928	4,046	9,698	69.4%	4,279	30.6%
2001	10	15,245	3,409	8,568	60.7%	5,538	39.3%
2002	10	24,427	3,337	11,142	48.5%	11,842	51.5%
2003 (January-June)	10	4,599	1,723	1,297	30.1%	3,008	69.9%
Overall	10	107,482	7,158	60,423	60.0%	40,257	40.0%

Panel B: Lead underwriters

Year	Number of securities firms	Number of rec's	Number of covered firms	Recommendation Frequency			
				Strong Buy/Buy		Hold/Sell/Strong Sell	
				N	% of Total	N	% of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1996	83	14,394	4,516	8,667	64.8%	4,708	35.2%
1997	92	17,489	5,068	10,458	65.2%	5,591	34.8%
1998	104	24,462	5,615	14,101	64.2%	7,870	35.8%
1999	108	25,811	5,553	15,954	68.0%	7,492	32.0%
2000	106	22,858	5,195	14,410	69.5%	6,320	30.5%
2001	97	25,736	4,365	13,757	58.7%	9,672	41.3%
2002	93	38,523	4,443	20,217	56.4%	15,622	43.6%
2003 (January-June)	85	9,775	2,805	3,796	43.0%	5,036	57.0%
Overall	134	179,048	9,751	101,360	61.9%	62,311	38.1%

Panel C: Syndicate members

Year	Number of securities firms	Number of rec's	Number of covered firms	Recommendation Frequency			
				Strong Buy/Buy		Hold/Sell/Strong Sell	
				N	% of Total	N	% of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1996	41	3,240	1,745	1,850	61.7%	1,147	38.3%
1997	43	3,944	1,993	2,412	65.8%	1,255	34.2%
1998	49	3,182	1,595	1,924	66.4%	975	33.6%
1999	50	3,636	1,835	2,342	70.8%	966	29.2%
2000	54	3,238	1,747	2,091	70.9%	860	29.1%
2001	61	3,891	1,710	2,250	63.8%	1,274	36.2%
2002	62	6,732	2,135	3,879	62.6%	2,316	37.4%
2003 (January-June)	50	2,522	1,333	1,108	51.2%	1,055	48.8%
Overall	97	30,385	5,381	17,856	64.5%	9,848	35.5%

Panel D: Independent research firms

Year	Number of securities firms	Number of rec's	Number of covered firms	Recommendation Frequency			
				Strong Buy/Buy		Hold/Sell/Strong Sell	
				N	% of Total	N	% of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1996	24	1,061	744	602	60.1%	399	39.9%
1997	26	1,208	746	674	58.4%	480	41.6%
1998	32	876	580	489	58.1%	352	41.9%
1999	28	785	514	416	58.6%	294	41.4%
2000	30	913	568	460	54.4%	386	45.6%
2001	47	1,565	807	680	48.5%	722	51.5%
2002	50	2,517	1,121	1,228	52.5%	1,111	47.5%
2003 (January-June)	48	863	614	365	48.4%	389	51.6%
Overall	98	9,788	2,825	4,914	54.3%	4,133	45.7%

Table 3**Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Portfolios of All Investment Banks and Independent Research Firms**

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding *t*-statistics, for portfolios of buy recommendations (upgrades to buy or strong buy, or initiations/resumptions/reiterations with a buy or strong buy rating), for all investment banks and for the independent research firms. The difference in returns between the investment banks' buy portfolio and that of the independent research firms is also presented. Columns 1-2 report the average daily abnormal returns, and associated *t*-statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated *t*-statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	0.007	1.28	0.011	1.86	-0.001	-0.15
Independent research firms (IND)	0.038	4.05	0.006	0.58	0.067	4.58
IB - IND	-0.031	-3.38	0.004	0.41	-0.069	-4.72

Table 4

Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Portfolios of All Investment Banks and Independent Research Firms, by Stock Issuance Activity

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding *t*-statistics, for portfolios of buy recommendations (upgrades to buy or strong buy, or initiations/resumptions/reiterations with a buy or strong buy rating), for all investment banks and for the independent research firms. The IPO/SEO recommendation subsample (panel A) consists of those recommendations which either were issued within the two years after a stock's initial public offering (IPO) or seasoned equity offering (SEO), or were outstanding at the time of an SEO. The non-IPO/SEO recommendation subsample (panel B) consists of all other recommendations. The difference in returns between the investment banks' buy portfolio and that of the independent research firms is also presented. Columns 1-2 report the average daily abnormal returns, and associated *t*-statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated *t*-statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

Panel A: IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	-0.018	-1.98	0.004	0.42	-0.044	-2.61
Independent research firms (IND)	0.007	0.43	-0.034	-1.69	0.043	1.72
IB - IND	-0.025	-1.51	0.038	1.86	-0.087	-3.41

Panel B: Non-IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	0.014	2.82	0.006	1.16	0.017	2.03
Independent research firms (IND)	0.040	4.15	0.006	0.55	0.070	4.70
IB - IND	-0.026	-2.92	0.000	-0.01	-0.053	-3.77

Table 5**Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Portfolios of All Investment Banks and Independent Research Firms**

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding *t*-statistics, for portfolios of hold/sell recommendations (downgrades to hold, sell, or strong sell, or initiations/resumptions/reiterations with a hold, sell, or strong sell rating), for all investment banks and for the independent research firms. The difference in returns between the investment banks' hold/sell portfolio and that of the independent research firms is also presented. Columns 1-2 report the average daily abnormal returns, and associated *t*-statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated *t*-statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	-0.019	-3.12	-0.026	-4.80	-0.023	-1.92
Independent research firms (IND)	-0.001	-0.15	-0.023	-2.19	0.013	0.91
IB - IND	-0.018	-2.06	-0.003	-0.29	-0.035	-2.54

Table 6**Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Portfolios of All Investment Banks and Independent Research Firms, by Stock Issuance Activity**

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding *t*-statistics, for portfolios of hold/sell recommendations (downgrades to hold, sell, or strong sell, or initiations/resumptions/reiterations with a hold, sell, or strong sell rating), for all investment banks and for the independent research firms. The IPO/SEO recommendation subsample (panel A) consists of those recommendations which either were issued within the two years after a stock's initial public offering (IPO) or seasoned equity offering (SEO), or were outstanding at the time of an SEO. The non-IPO/SEO recommendation subsample (panel B) consists of all other recommendations. The difference in returns between the investment banks' sell portfolio and that of the independent research firms is also presented. Columns 1-2 report the average daily abnormal returns, and associated *t*-statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated *t*-statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

Panel A: IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	-0.065	-5.00	-0.044	-4.08	-0.106	-4.10
Independent research firms (IND)	-0.024	-0.90	-0.036	-1.04	-0.019	-0.45
IB - IND	-0.041	-1.46	-0.008	-0.23	-0.088	-1.90

Panel A: Non-IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	-0.010	-1.58	-0.022	-4.14	-0.003	-0.30
Independent research firms (IND)	-0.004	-0.42	-0.026	-2.49	0.011	0.78
IB - IND	-0.006	-0.72	0.003	0.33	-0.014	-1.14

Table 7
Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Portfolios
of Different Types of Investment Banks and Independent Research Firms

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding t -statistics, for portfolios of buy recommendations (upgrades to buy or strong buy, or initiations/resumptions/reiterations with a buy or strong buy rating), for the ten banks sanctioned in the *Global Analyst Research Settlement* (the "sanctioned banks"), non-sanctioned banks that were lead or joint-lead underwriters of at least one equity offering during our sample period (the "lead underwriters"), non-sanctioned banks that were syndicate members of one or more equity offerings during the sample period, but were never a lead or joint-lead underwriter (the "syndicate members"), and independent research firms. The difference in returns between each type of investment bank's buy portfolio and that of the independent research firms is also presented, along with the F -statistic, testing for differences in abnormal returns across investment banking categories. Columns 1-2 report the average daily abnormal returns, and associated t -statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated t -statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
Sanctioned banks (SB)	0.003	0.53	0.005	0.82	-0.005	-0.53
Lead underwriters (LU)	0.008	1.28	0.015	2.31	-0.003	-0.25
Syndicate members (SM)	0.016	2.42	0.004	0.48	0.022	2.06
Independent research firms (IND)	0.038	4.05	0.006	0.58	0.067	4.58
SB - IND	-0.035	-3.95	-0.002	-0.15	-0.072	-5.12
LU - IND	-0.030	-3.10	0.009	0.76	-0.070	-4.46
SM - IND	-0.022	-2.47	-0.003	-0.23	-0.045	-3.37
F -statistic for differences in IB abnormal returns	3.67		3.82		5.23	

Table 8

Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Portfolios of Different Types of Investment Banks and Independent Research Firms, by Stock Issuance Activity

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding *t*-statistics, for portfolios of buy recommendations (upgrades to buy or strong buy, or initiations/resumptions/reiterations with a buy or strong buy rating), for the ten banks sanctioned in the *Global Analyst Research Settlement* (the "sanctioned banks"), non-sanctioned banks that were lead or joint-lead underwriters of at least one equity offering during our sample period (the "lead underwriters"), non-sanctioned banks that were syndicate members of one or more equity offerings during the sample period, but were never a lead or joint-lead underwriter (the "syndicate members"), and independent research firms. The IPO/SEO recommendation subsample (panel A) consists of those recommendations which either were issued within the two years after a stock's initial public offering (IPO) or seasoned equity offering (SEO), or were outstanding at the time of an SEO. The non-IPO/SEO recommendation subsample (panel B) consists of all other recommendations. The difference in returns between each type of investment bank's buy portfolio and that of the independent research firms is also presented, along with the *F*-statistic, testing for differences in abnormal returns across investment banking categories. Columns 1-2 report the average daily abnormal returns, and associated *t*-statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated *t*-statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

Panel A: IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
Sanctioned banks (SB)	-0.020	-2.33	-0.002	-0.27	-0.042	-2.61
Lead underwriters (LU)	-0.018	-1.81	0.008	0.81	-0.049	-2.68
Syndicate members (SM)	-0.012	-1.19	-0.012	-0.97	-0.016	-0.94
Independent research firms (IND)	0.007	0.43	-0.034	-1.69	0.043	1.72
SB - IND	-0.027	-1.66	0.032	1.56	-0.085	-3.42
LU - IND	-0.025	-1.46	0.042	2.02	-0.092	-3.46
SM - IND	-0.019	-1.12	0.023	1.04	-0.059	-2.33
<i>F</i> -statistic for differences in IB abnormal returns	0.52		2.37		2.78	

Table 8 - Continued

Panel B: Non-IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
Sanctioned banks (SB)	0.010	1.81	0.002	0.31	0.012	1.26
Lead underwriters (LU)	0.015	3.00	0.009	1.55	0.019	2.19
Syndicate members (SM)	0.020	3.04	0.006	0.78	0.029	2.67
Independent research firms (IND)	0.040	4.15	0.006	0.55	0.070	4.70
SB - IND	-0.030	-3.38	-0.004	-0.40	-0.059	-4.14
LU - IND	-0.025	-2.66	0.003	0.23	-0.051	-3.47
SM - IND	-0.020	-2.18	0.000	-0.01	-0.042	-3.03
<i>F</i> -statistic for differences in IB abnormal returns	2.42		1.53		2.31	

Table 9

Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Portfolios of Different Types of Investment Banks and Independent Research Firms

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding *t*-statistics, for portfolios of hold/sell recommendations (downgrades to hold, sell, or strong sell, or initiations/resumptions/reiterations with a hold, sell, or strong sell rating), for the ten banks sanctioned in the *Global Analyst Research Settlement* (the "sanctioned banks"), non-sanctioned banks that were lead or joint-lead underwriters of at least one equity offering during our sample period (the "lead underwriters"), non-sanctioned banks that were syndicate members of one or more equity offerings during the sample period, but were never a lead or joint-lead underwriter (the "syndicate members"), and independent research firms. The difference in returns between each type of investment bank's hold/sell portfolio and that of the independent research firms is also presented, along with the *F*-statistic, testing for differences in abnormal returns across investment banking categories. Columns 1-2 report the average daily abnormal returns, and associated *t*-statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated *t*-statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
Sanctioned banks (SB)	-0.020	-3.23	-0.030	-4.97	-0.019	-1.60
Lead underwriters (LU)	-0.019	-2.91	-0.024	-3.99	-0.026	-2.08
Syndicate members (SM)	-0.016	-2.11	-0.033	-3.87	-0.007	-0.59
Independent research firms (IND)	-0.001	-0.15	-0.023	-2.19	0.013	0.91
SB - IND	-0.019	-2.25	-0.007	-0.64	-0.031	-2.36
LU - IND	-0.018	-1.92	0.000	-0.05	-0.039	-2.58
SM - IND	-0.015	-1.64	-0.009	-0.81	-0.020	-1.52
<i>F</i> -statistic for differences in IB abnormal returns	0.28		1.27		1.98	

Table 10

Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Portfolios of Different Types of Investment Banks and Independent Research Firms, by Stock Issuance Activity

This table reports the average daily percentage buy-and-hold abnormal returns, and corresponding *t*-statistics, for portfolios of hold/sell recommendations (downgrades to hold, sell, or strong sell, or initiations/resumptions/reiterations with a sell or strong sell rating), for the ten banks sanctioned in the *Global Analyst Research Settlement* (the "sanctioned banks"), non-sanctioned banks that were lead or joint-lead underwriters of at least one equity offering during our sample period (the "lead underwriters"), non-sanctioned banks that were syndicate members of one or more equity offerings during the sample period, but were never a lead or joint-lead underwriter (the "syndicate members"), and independent research firms. The IPO/SEO recommendation subsample (panel A) consists of those recommendations which either were issued within the two years after a stock's initial public offering (IPO) or seasoned equity offering (SEO), or were outstanding at the time of an SEO. The non-IPO/SEO recommendation subsample (panel B) consists of all other recommendations. The difference in returns between each type of investment bank's hold/sell portfolio and that of the independent research firms is also presented, along with the *F*-statistic, testing for differences in abnormal returns across investment banking categories. Columns 1-2 report the average daily abnormal returns, and associated *t*-statistics, for the entire sample period, while columns 3-4 and 5-6 present the average daily abnormal returns, and associated *t*-statistics, for the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. The average daily abnormal return is the intercept from a regression of the daily portfolio excess return on (1) the excess of the market return over the risk-free rate, (2) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (3) the difference between the daily returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks, and (4) the difference between the daily returns of a value-weighted portfolio of high price momentum stocks and one of low price momentum stocks.

Panel A: IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
Sanctioned banks (SB)	-0.061	-4.54	-0.042	-3.31	-0.098	-3.81
Lead underwriters (LU)	-0.071	-4.97	-0.046	-3.87	-0.116	-4.13
Syndicate members (SM)	-0.042	-2.36	-0.039	-1.68	-0.065	-2.36
Independent research firms (IND)	-0.024	-0.91	-0.036	-1.04	-0.019	-0.45
SB - IND	-0.037	-1.28	-0.006	-0.16	-0.079	-1.69
LU - IND	-0.047	-1.61	-0.010	-0.28	-0.097	-2.05
SM - IND	-0.018	-0.62	-0.003	-0.07	-0.047	-1.06
<i>F</i> -statistic for differences in IB abnormal returns	1.76		0.09		2.33	

Table 10 - Continued

Panel B: Non-IPO/SEO recommendation subsample

	February 1996 to June 2003		February 1996 to March 10, 2000		March 11, 2000 to June 2003	
	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic	Avg. abnormal daily return (%)	<i>t</i> -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
Sanctioned banks (SB)	-0.013	-2.02	-0.028	-4.60	-0.003	-0.21
Lead underwriters (LU)	-0.007	-1.14	-0.018	-3.03	-0.004	-0.36
Syndicate members (SM)	-0.012	-1.54	-0.033	-3.85	0.004	0.27
Independent research firms (IND)	-0.004	-0.42	-0.026	-2.49	0.011	0.78
SB - IND	-0.009	-1.16	-0.002	-0.25	-0.013	-1.10
LU - IND	-0.003	-0.40	0.008	0.76	-0.015	-1.12
SM - IND	-0.008	-0.95	-0.007	-0.63	-0.007	-0.55
<i>F</i> -statistic for differences in IB abnormal returns	1.25		3.18		0.38	