

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 1996 through mid-2003 time 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 Research Analyst 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 Research Analyst 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 retail 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 overall performance of the stock recommendations

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.”

issued by these two sets of securities firms.

We also test the implicit (if not explicit) allegation made by the SEC in its individual complaints against the investment banks that analyst conflicts-of-interest resulted in a reluctance to downgrade buy-rated stocks during the bear market of the early 2000's. If banking analysts were issuing buy recommendations during this period when holds or sells were deserved, then we should observe their buy recommendations underperforming those of independent research firms over this time. Moreover, with potential analyst conflicts-of-interest arguably strongest for covered firms with recent investment banking activity, underperformance should be greatest for the buy recommendations issued on those firms. Conversely, with banking analysts reluctant to issue holds and sells during the bear market, such recommendations, when issued, are likely to reflect quite unfavorable news; consequently, they should outperform (that is, earn more negative returns than) than those of analysts at independent research firms (who presumably do not have a similar reluctance to issue hold and sell recommendations). Since the SEC's allegation focuses on the bear market, there are no relative performance predictions for the bull market.

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. For our entire sample period of 1996 through mid-2003, 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 those of the independent research firms by a significant and economically large -1.8 basis points daily (-4½ percentage points yearly).

We next partition our time frame into the period prior to March 10, 2000, the date of the NASDAQ market peak (sometimes referred to below as the bull market) and the period subsequent to that date (sometimes referred to below as the bear market).³ We find that during the bull market 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. In contrast, during the bear market investment banks' buy recommendations underperform, on average, by a significant and quite large 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.

For analysts' hold/sell recommendations, we find that investment bank outperformance is

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 Research Analyst Settlement* were listed on NASDAQ.

concentrated almost entirely in the bear market, where investment bank hold/sell recommendations outperform those of the independent research firms by -3.5 basis points per day. Furthermore, those investment bank hold/sell recommendations outstanding subsequent to equity offerings significantly outperform those of the independent research firms during this period by an even greater -8.8 basis points (-22 percent annually). Taken together, our results suggest that a significant portion of the underperformance (outperformance) of investment banks' buy (hold/sell) recommendations is due to a reluctance on the part of banking analysts to downgrade stocks whose prospects dimmed during the bear market, as claimed in the SEC's *Global Research Analyst Settlement*.

Since the SEC chose to sanction only ten investment banks, it is natural to ask whether there is any difference in the performance of their recommendations relative to those of the non-sanctioned banks. We address this question by partitioning 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

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

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 requiring that independent research be provided to clients, may not be justified.

Comparing performance *across* investment banking categories for our whole sample 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, since a number of syndicate members are essentially independent research firms. At such firms investment banking activity consists solely of distributing shares allocated to them 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

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

Our paper contributes to the extant literature in several ways. First, by directly comparing the recommendation performance of investment banks and independent research firms, it provides empirical support for analyst conflict-of-interest claims standing behind the *Global Research Analyst Settlement*. Second, it employs a more expansive definition of investment bank, to include all those that participated in at least one equity offering during our sample period (rather than just including the lead banks from each covered firm's offerings), thereby recognizing that all investment banking analysts face potential conflicts of interest. Third, it documents similarities between the recommendation performance of the sanctioned banks and other investment banks, thus calling into question the appropriateness of requiring only the sanctioned banks to provide independent research to their clients. Finally, it finds sharp differences between the performance of analyst recommendations during the bull and bear markets, highlighting the importance of including the recent bear market period in any analysis of analyst recommendations.

Recently, a few papers have independently examined issues similar to those we explore here.⁶ Clarke et al. (2004) find that long-term average abnormal returns for upgrades issued by analysts at investment banks, independent research firms, and brokerages are insignificantly different from each other. The same is true for their downgrades. In drawing their conclusions, Clarke et al. (2004) do not separately analyze abnormal returns for the bull and bear market periods or for stocks with investment banking business around the time of recommendation

⁶Prior studies that examine the interaction between investment banking activities and various facets of analysts' earnings forecasts and stock recommendations include Agrawal and Chen (2004), Bradshaw et al. (2004), Cowen et al. (2003), Dechow et al. (2000), Iskoz (2003), Kolasinski and Kothari (2004), Lin and McNichols (1998), and Michaely and Womack (1999).

issuance; this likely accounts for their not finding any significant recommendation return differences.⁷ Cliff (2004) compares the average abnormal return to the recommendations of analysts at independent research firms to that of analysts at lead investment banks. Like us, he finds that independent research firms' buy recommendations significantly outperform those of the lead investment banks, while their sell recommendations underperform. He does not, though, provide comparisons of abnormal returns for the bull market and bear market periods or for firms with and without recent securities offerings. He also does not examine the performance of the recommendations issued by analysts at non-lead investment bankers. Lin et al. (2004) look at the time pattern of analysts' recommendation revisions. They find that analysts employed by lead investment bankers are significantly slower than other analysts to revise downward their buy and hold recommendations. The evidence is not as strong, though, with respect to downgrades from strong buy.

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. Consequently, 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, or bolster the contention, that research on any particular stock by any given investment bank was

⁷Also working against their finding significant differences, Clarke et. al (2004) use a 250-day holding period for all recommended stocks, whether or not the recommendations were dropped or changed during this time.

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. Robustness tests are presented in Section V. In Section VI we examine whether the recommendation returns of the ten sanctioned banks differ from those of the non-sanctioned banks. A summary and conclusions appears in Section VII.

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.⁸

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

⁸We 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.⁹ 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.¹⁰

II. Research Design

Our initial set of analyses compares the recommendation returns of the independent research firms and those of our entire set of investment banks. 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 either 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 either downgraded to hold, sell, or strong sell, or initiated, resumed, or reiterated coverage with a hold, sell, or strong sell rating.¹¹

⁹This 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.

¹⁰The 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.

¹¹We 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) would likely 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 many investors, especially small ones, likely become aware of upgrades only with a delay.¹² 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:

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

¹²Returns 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 $t-1$. (The variable x_{it} equals 1 for a stock recommended on day $t-1$.) 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 :¹³

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

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 portfolio of stocks with low recent returns.¹⁴ The regression yields parameter estimates of α_j , β_j ,

¹³We also compute market-adjusted returns. Results are qualitatively similar to those derived from the four-factor model.

¹⁴We 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).

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 stocks. 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.¹⁵ Column 3 reveals that, after holding fairly steady for the years 1996-2000, the number of covered firms dropped sharply for the years 2001 and 2002. Among possible reasons for this decrease is a fall-off in the number of listed companies (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, reflecting a slowdown in the new issues market), a tendency by securities firms to discontinue coverage of stocks that have been performing badly, and a general cut-back in the level of research services provided by securities firms.¹⁶

¹⁵See Barber et al. (2005) for a detailed description of NASD 2711 and its impact on the distribution of analysts' recommendations.

¹⁶See 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.

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 independent research 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. (2005) 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 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. Preliminaries

In this section we begin by calculating and comparing the average daily abnormal returns to our entire sample of investment bank and independent research firm buy and hold/sell recommendations. We then partition our sample along a number of dimensions to test the implicit, if not explicit, allegation made by the SEC (in its individual complaints against the investment banks) that analyst conflicts-of-interest resulted in a reluctance to downgrade buy-rated stocks during the bear market of the early 2000's.¹⁷

The SEC's allegation has a number of empirical implications. They can be visualized with the help of Figure 1, which depicts, in a simple fashion, the recommendation decision of an analyst at an independent research firm (panel A) and at an investment bank (panel B). As reflected in the figure, the analyst's recommendation depends on his/her expectation for the covered stock's return. If it is greater than a certain threshold, denoted by T_{IND} (T_{IB}) for the independent research firm (investment bank) analyst, then he/she will issue a buy recommendation. If it is below this threshold, then the analyst will rate the stock as either hold or sell.

A reluctance to downgrade buy-rated stocks during the bear market is captured by setting

¹⁷As an example, 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."

T_{IB} lower than T_{IND} in Figure 1. The implication of this is that banking analysts would be issuing buy recommendations for a wider range of expected returns during the bear market than would analysts at independent research firms; consequently, the average realized return on their buy-rated stocks over this period should be lower than that of the independent research firms. The threshold, T_{IB} , is likely to be even lower relative to T_{IND} for firms with recent investment banking activity (where potential analyst conflicts-of-interest are arguably strongest).¹⁸ Consequently, underperformance should be greater for this subset of recommendations.

Conversely, a lower threshold expected return for issuing buy recommendations means that banking analysts are more selective in rating stocks as hold or sell than are analysts at independent research firms during the bear market. Therefore, such recommendations, when issued, should outperform (that is, earn more negative returns than) those of analysts at independent research firms.¹⁹ Since the SEC's allegation focuses on the bear market, it does not lead to predictions for relative performance during the bull market.²⁰

B. Buy Recommendations

Table 3 presents the average daily abnormal returns to the buy portfolios of the investment banks and independent research firms. As reflected in panel A (columns 1-2) for our full sample of recommendations and our entire time period, the portfolio of investment bank buy

¹⁸Thirty-three of the 38 stocks which were specifically alleged to have been the subject of biased research in the *Global Research Analyst Settlement* participated in IPOs and/or SEOs during our sample period.

¹⁹While threshold differences have definite implications for the relative sizes of investment bank and independent research firm buy recommendation returns and, separately, their hold/sell recommendation returns, there are no specific implications for the relative sizes of their hedge portfolio returns (buy recommendation returns minus hold/sell recommendation returns).

²⁰Alternatively stated, the relative positioning of T_{IND} and T_{IB} is ambiguous during the bull market.

recommendations has an insignificant average daily abnormal return of 0.7 basis points.²¹ This compares to a significant average daily abnormal return of 3.8 basis points for the independent research firms. The investment bank buy portfolio underperforms that of the independent research firms by 3.1 basis points (almost 8 percent annualized), a number that is both significant and economically large.²²

To test the claim that conflicts-of-interest resulted in a reluctance on the part of banking analysts to downgrade buy-rated stocks during the early 2000's bear market, we first partition our sample time frame into two subperiods – the period prior to March 10, 2000, the date of the NASDAQ market peak (the bull market period), and the period subsequent to that date (the bear market period).²³ As presented in panel A, columns 3-6, the buy recommendation return results for the two subperiods are fundamentally different. 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. The difference, 0.4 basis points, is not statistically significant.²⁴ In contrast, during the bear market (columns 5-6) the independent research firms

²¹While 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.

²²Untabulated results from running regression (2) on the difference between investment bank and independent research firm buy portfolio returns reveal positive and significant coefficients on the market return and size factors and a negative and significant coefficient on the book-to-market factor. This implies that the investment banks tend to issue buy recommendations on smaller, riskier, and higher growth firms than do the independent research firms.

²³The day of the market peak is included in our bear market period.

²⁴Rounding errors are the cause for tabulated return differences to occasionally differ slightly from the differences in individual tabulated returns.

outperformed the investment banks by a significant and economically quite large 6.9 basis points per day, on average (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. The strong outperformance of the independent research firms, present only during the bear market, is clearly consistent with the allegation that banking analysts were reluctant to downgrade stocks whose fortunes dimmed after the market peak.²⁵

We next partition our recommendations into two subsamples, according to investment banking activity. 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 (unless they also occur within the two years after an IPO or another SEO). The second subsample consists of all other recommendations and is referred to below as the non-IPO/SEO

²⁵Previous research (Stickel (1995), Womack (1996), and Barber et al. (2001)) has shown that the strongest market reaction to recommendations occurs during the first few weeks after their announcement. (Moreover, the strong market reaction extends for a longer period of time for the negative recommendations than for the positive ones.) To examine whether shortening the holding period of our recommendations would sharpen our results, we replicated our analysis, restricting the holding period of recommended stocks in our portfolios to no longer than, successively, 2 months, 1 month, and 2 weeks. Untabulated results show that, over our entire sample period, the difference between the average daily abnormal returns of the recommendations of the independent research firms and investment banks attains its highest value, 6.2 basis points (15.5 percent on an annual basis), employing a 2-week holding period. No holding period yields a significant return difference for the bull market period. For the bear market, the difference in abnormal returns reaches its highest level, 9.9 basis points (almost 25 percent annually), again with a 2-week holding period.

recommendations.

Table 3, panel B (C) presents the return results for the IPO/SEO (non-IPO/SEO) recommendation subsample. Over the entire sample period the IPO/SEO buy recommendations of the investment banking analysts generate a negative and significant average abnormal return of -1.8 basis points per day, or $-4\frac{1}{2}$ percent annualized. The average abnormal return for the independent research firms' buy 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 ($9\frac{1}{2}$ percent annualized). In stark contrast, during the bear market the 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 ($6\frac{1}{2}$ 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).

Comparing bear market abnormal returns across recommendation subsamples reveals that investment banks' non-IPO/SEO recommendations perform relatively better than their IPO/SEO ones in that (1) the non-IPO/SEO (IPO/SEO) recommendations earn significantly positive (negative) abnormal returns and (2) investment banking underperformance is more pronounced in the IPO/SEO subsample. (Untabulated results reveal, though, that the difference in underperformance between the IPO/SEO and non-IPO/SEO recommendation subsamples, 3.4 basis points, while economically large, is not statistically significant.) Overall, this is additional evidence supportive of the SEC's conflicts-of-interest allegation made against investment banking analysts.

C. Alternative Explanations for the Underperformance of Investment Bank Buy Recommendations

Apart from analyst bias, there are at least two other potential explanations for the overall underperformance of investment banking analysts' buy recommendations. The first is that analysts at independent research firms are superior at gathering and processing information than are their counterparts at investment banks. The second 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.

That we observe independent research firm outperformance only during the bear market is inconsistent with either of these alternative explanations. 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 bull and bear markets.²⁶ If independent research firm analysts simply devote more effort to research activities than do analysts at investment banks during periods of heightened investment banking activity, then we would expect greater underperformance by investment banks during the bull market, when investment banking activity was arguably much more vibrant.²⁷ Moreover, neither of these alternative explanations would predict the stronger performance for investment banks' non-IPO/SEO recommendations, relative to their IPO/SEO ones, that we find for the bear market.

D. Hold and Sell Recommendations

Table 4, panel A presents the hold/sell recommendation returns for our entire sample of covered firms. They paint a much different picture of the relative performance of the analysts at investment banks and independent research firms, but one that is again consistent with our initial conjectures. 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 the independent research firms by a significant -1.8 basis

²⁶Their hold/sell recommendations would also be expected to outperform those of investment banks. However, as we report in the next subsection, they do not.

²⁷The *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.

points daily (-4½ percent annually), on average, over the full sample period.²⁸ The return difference is almost entirely attributable to the outperformance of -3.5 basis points per day during the bear market.²⁹

As reflected in panels B and C, respectively, the IPO/SEO and non-IPO/SEO hold/sell recommendation subsamples display the same general return patterns as do the full recommendation sample. Furthermore, the abnormal returns for the IPO/SEO recommendations are much more negative than are those for the non-IPO/SEO ones. This is also true for the level of investment bank outperformance, both over the full sample period and during the bear market.³⁰ In fact, the greatest investment bank outperformance, -8.8 basis points (-22 percent annualized), 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 is once again consistent with a reluctance on the part of banking analysts to downgrade stocks during the market downturn, in particular those that had recently generated investment banking business.

²⁸Untabulated results from regressing the difference between investment bank and independent research firm hold/sell portfolio returns on the four factors reveal positive and significant coefficients on the market return and size factors and negative and significant coefficients on the book-to-market and price momentum factors. This means that investment banks tend to issue hold/sell recommendations on smaller, riskier, and higher growth firms, with lower price momentum than do the independent research firms.

²⁹Again, we examine whether shorter recommendation holding periods increase the difference between the daily abnormal returns of the recommendations of the investment banks and independent research firms. Untabulated results reveal that for our entire sample period the performance difference is most negative, -4.0 basis points (-10.0 percent on an annual basis), using a 2-month holding period. While no holding period yields a significant return difference for the bull market, in the bear market the difference, -5.5 basis points (almost 14 percent annually), is again greatest for a 2-month holding period.

³⁰Untabulated results reveal that the difference in investment bank outperformance between the two recommendation subsamples, while economically quite large, is not reliably different from zero.

Apparently, a very negative expected return was required, in general, for a banking analyst to issue a downgrade under these circumstances.

V. Robustness Tests

Our principal analysis controls for differences in covered firm characteristics between the investment banks and independent research firms by including factors for firm size, book-to-market ratio, and prior price momentum in our abnormal return calculations. In this section we report the results of two supplementary sets of tests, also designed to control for differences in firm characteristics, in order to ensure that such differences are not driving our results.

For our first set of analyses we augment the four-factor model with industry-specific factors. The initial step in implementing this industry factor model is to construct a series of value-weighted daily returns for each of ten industry segments (as defined by Ken French). The next step is to compute each industry segment's daily excess return (over the risk-free rate). Finally, the industry segments' excess returns are added to the other independent variables in regression (2), used to compute abnormal returns.

Industry-adjusted average daily abnormal returns for our full recommendation sample appear in Table 5. Overall, these results are quite similar, both qualitatively as well as quantitatively, to our previous findings. For the entire sample period investment banks' buy recommendations (panel A) underperform those of the independent research firms by a significant 2.7 basis points (as compared to 3.1 basis points in our four-factor model). The difference in average abnormal returns is once again insignificant during the bull market. In the bear market investment banks' buy recommendations underperform those of the independent

research firms by a significant 5.6 basis points (compared to 6.9 basis points previously).

Turning to the hold/sell recommendations (panel B), investment banks outperform independent research firms during our entire sample period by a marginally significant -1.6 basis points (as compared to -1.8 basis points using the four-factor model). Again, the difference in returns for the bull market is insignificantly different from zero. In the bear market investment banks' hold/sell recommendations outperform those of the independent research firms by a marginally significant -2.4 basis points (compared to -3.5 basis points previously). Overall, the industry factor model provides corroborating evidence that our results are not a manifestation of differences in covered firm characteristics between the investment banks and independent research firms.

Our second set of analyses focuses on providing an additional control for differences in covered firm size. The specific focus on firm size is motivated by the prior research of Barber et al. (2001), Stickel (1995), and Womack (1996) who document that small firms exhibit a greater absolute price response to recommendations than do large ones (likely reflective of small stock research reports conveying more information to the market than those issued on large firms). It is also motivated by the finding of Barber et al. (2001) and Womack (1996) that the post-recommendation price drift is more pronounced for small stocks (indicative of investors reacting more slowly to the information contained in these recommendations). Since we begin cumulating returns at the end of the day that a recommendation is issued, more of the price reaction to small stock recommendations is likely to fall within our return accumulation period, compared to that of larger firms.

We control for size differences by partitioning the stocks in our portfolios into small,

medium, and large firms, and replicating our main tests for each size subsample. Small firms are defined as those with market capitalizations that place them within the bottom 30% of all firms (using cutoffs provided by Ken French), medium-sized firms are those in the middle 40%, and large firms are those in the top 30%. Abnormal return results for each size category appear in Table 6. They are notable in a number of respects. Most importantly, the small stock abnormal return differences display a pattern identical to that of our full sample. In particular, small stock buy (hold/sell) recommendations issued by the independent research firms significantly outperform (underperform) those of the investment banks over both the full sample period and the bear market. Moreover, small stock abnormal return differences are larger in absolute magnitude than those of our sample as a whole. Over the entire sample period, independent research firms' small stock buy recommendations outperform those of the investment banks by 5.4 basis points per day, as compared to 3.1 basis points for our sample as a whole, while bear market outperformance is 10.2 basis points per day, versus 6.9 basis points for our entire set of firms (panels A and C). For the small stock hold/sell recommendations, the investment banks outperform the independent research firms over our entire sample period by -7.5 basis points daily, as compared to -1.8 basis points for all our firms, while the bear market outperformance is -9.7 basis points daily, versus -3.5 basis points for our full firm sample (panels D and F).

Abnormal return differences for the medium-sized and large firms are smaller in magnitude than those of our small firm subsample, with most abnormal return differences not reliably different from zero. The bear market buy recommendations of the medium-sized firms are one notable exception, where independent research firms outperform the investment banks by a significant 5.3 basis points per day. That there are stronger return differences for small stock

recommendations is not surprising, given the greater impact they have on prices and the greater post-recommendation price drift that they exhibit.

The existence of significant abnormal return differences in the small firm partition, and to a lesser degree, in the medium-sized one, is strong evidence that differences in investment bank and independent research firm size tilts are not driving our results. They do suggest that either banking analyst conflicts-of-interest are concentrated in the smaller firms or that the absolute market response to recommendations is greater for these firms (or both).

VI. Recommendation Returns Across Investment Banking Categories

Table 7 presents the average daily abnormal returns to the buy and hold/sell recommendations of the sanctioned banks, the non-sanctioned lead underwriters, the non-lead syndicate member investment banks, and the independent research firms. As reported in panel A, for the entire sample period the buy recommendations of all three categories of investment banks significantly underperform those of the independent research firms. 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 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. These results are qualitatively quite similar to those of our banking sample as a whole.³¹

³¹We also separately compute average daily abnormal returns for the IPO/SEO and non-IPO/SEO buy recommendation subsamples. Untabulated results reveal subsample returns to be qualitatively similar to those of our full sample, in that the buy recommendations of each investment banking category underperform those of the independent research firms, during both the entire sample period and the bear market. For the whole sample period the average daily underperformance for the IPO/SEO recommendation subsample ranges from 1.9 basis points (for the syndicate members) to 2.7 (for the sanctioned banks). In the bear market it ranges from 5.9 basis points (for the syndicate members) to 9.2 (for the lead underwriters). For the non-IPO/SEO recommendation subsample average

The uniform underperformance notwithstanding, F -tests reveal that there are significant abnormal return differences across the three investment banking categories for the entire sample period ($F = 3.67$), as well as during the bear market subperiod ($F = 5.23$). 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, in contrast, 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, since some syndicate members are really hybrids between investment banks and independent research firms.³² 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. The analysts in these firms likely face less severe potential conflicts of interest than those employed by lead underwriters and sanctioned banks.

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.

³²One notable example, mentioned in the introduction, is Sanford Bernstein. Another is The Buckingham Research Group, which the 2000 edition of *Nelson's Directory of Investment Research* describes 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."

Panel B 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. Each banking category's hold/sell recommendations exhibit significant outperformance, relative to those of the independent research firms, 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 banking category's hold/sell recommendations during the bear market (ranging up to 3.9 basis points per day for the lead underwriters); however, it is statistically significant only for the sanctioned banks and lead underwriters.³³ Unlike the buy recommendation results, though, *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.

Overall, these results provide strong 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 have been justified.

VII. Summary and Conclusions

Motivated by the requirement that ten of the largest investment banks begin providing

³³Untabulated return results for the IPO/SEO and non-IPO/SEO hold/sell recommendation subsamples are quite similar to those for our investment banking 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 bear market, where the average daily abnormal return of the sanctioned banks' (lead underwriters') recommendations 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 period or during the two subperiods.

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 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 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 that are 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 Research Analyst Settlement* that at least some investment banking analysts were reluctant 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 Research Analyst 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. This uniform 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 our results apply to a relatively narrow window, coinciding with a period of intense media and regulatory scrutiny into potential analyst conflicts-of-interest. 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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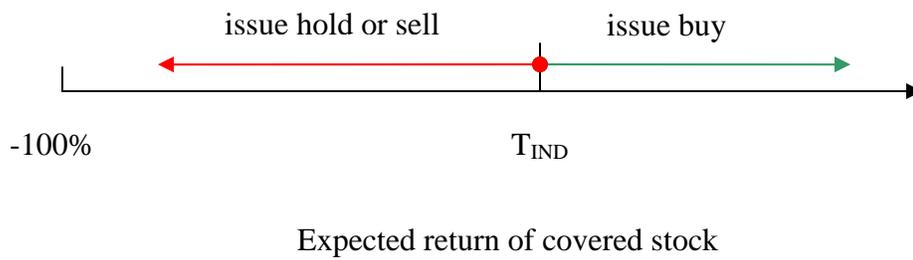
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Figure 1
Analyst's Recommendation Decision

Panel A: Recommendation decision of independent research firm analyst



Panel B: Recommendation decision of investment banking analyst

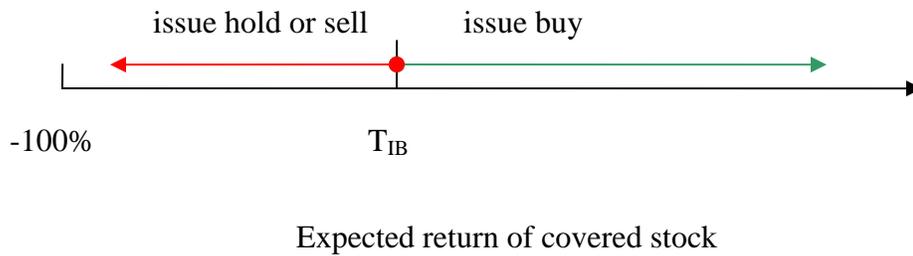


Table 1
Descriptive Statistics on Analyst Stock Recommendations:
January 1996 to June 2003

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. Panel A reports the results for the full recommendation sample. The IPO/SEO recommendation subsample (panel B) 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 C) 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: Full recommendation sample

	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

Panel B: 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 C: 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 4

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. Panel A reports the results for the full recommendation sample. The IPO/SEO recommendation subsample (panel B) 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 C) consists of all other recommendations. 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.

Panel A: Full recommendation sample

	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

Panel B: 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 C: 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 5

Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy (Panel A) and Hold/Sell (Panel B) Portfolios of All Investment Banks and Independent Research Firms, Controlling for Industry Composition

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, panel A), and hold/sell recommendations (downgrades to hold, sell, or strong sell, or initiations/resumptions/reiterations with a hold, sell, or strong sell rating, panel B), for all investment banks and independent research firms. The difference in returns between the investment banks' buy (hold/sell) portfolio and the buy (hold/sell) portfolio 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) industry excess returns (value-weighted daily excess returns for each of ten industry segments as defined by Ken French), (2) the excess of the market return over the risk-free rate, (3) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (4) 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 (5) 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: Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Recommendations

	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	2.74	0.014	2.59	0.012	1.39
Independent research firms (IND)	0.041	4.59	0.010	0.89	0.068	4.91
IB - IND	-0.027	-3.16	0.004	0.37	-0.056	-4.14

Panel B: Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Recommendations

	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	-3.25	-0.025	-5.00	-0.017	-1.59
Independent research firms (IND)	-0.003	-0.34	-0.020	-1.93	0.007	0.53
IB - IND	-0.016	-1.90	-0.004	-0.43	-0.024	-1.81

Table 6

Daily Portfolio Buy-and-Hold Abnormal Returns (%) by Size of Firm Covered

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) and 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 independent research firms. The difference between the recommendation returns of the investment banks and independent research firms is also presented. For the buy (hold/sell) recommendations, panel A (D) pertains to the entire sample period, while panels B and C (E and F) pertain to the period through March 10, 2000 (the date of the NASDAQ market peak), and subsequent to March 10, 2000, respectively. For each panel columns 1-2 report the average daily abnormal returns, and associated t -statistics, for the small firms while columns 3-4 and 5-6 present the average daily abnormal returns, and associated t -statistics, for the medium-sized and large firms, 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: Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Recommendations - February 1996 to June 2003

	Small		Medium		Large	
	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	0.020	2.67	0.003	0.39	0.007	1.09
Independent research firms (IND)	0.074	3.82	0.019	1.54	0.005	0.48
IB - IND	-0.054	-2.93	-0.016	-1.37	0.002	0.16

Panel B: Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Recommendations - February 1996 to March 10, 2000

	Small		Medium		Large	
	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	0.022	2.86	0.005	0.68	0.010	1.45
Independent research firms (IND)	0.049	1.92	-0.006	-0.43	-0.018	-1.54
IB - IND	-0.026	-1.05	0.012	0.81	0.028	2.22

Panel C: Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Recommendations - March 11, 2000 to June 2003

	Small		Medium		Large	
	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	0.000	0.03	-0.005	-0.42	0.004	0.33
Independent research firms (IND)	0.102	3.38	0.047	2.41	0.023	1.42
IB - IND	-0.102	-3.77	-0.053	-2.80	-0.019	-1.11

Panel D: Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Recommendations - February 1996 to June 2003

	Small		Medium		Large	
	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	-0.045	-4.39	-0.013	-1.66	-0.005	-0.81
Independent research firms (IND)	0.031	1.20	-0.017	-1.35	-0.008	-0.85
IB - IND	-0.075	-2.94	0.003	0.28	0.004	0.41

Panel E: Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Recommendations - February 1996 to March 10, 2000

	Small		Medium		Large	
	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	-0.039	-4.25	-0.030	-3.83	-0.012	-2.00
Independent research firms (IND)	0.026	0.69	-0.051	-3.09	-0.021	-2.09
IB - IND	-0.064	-1.76	0.022	1.26	0.009	0.93

Panel F: Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Recommendations - March 11, 2000 to June 2003

	Small		Medium		Large	
	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic	Avg. abnormal daily return (%)	t -statistic
	(1)	(2)	(3)	(4)	(5)	(6)
All investment banks (IB)	-0.072	-3.72	-0.005	-0.32	-0.003	-0.27
Independent research firms (IND)	0.025	0.75	0.016	0.90	0.000	0.01
IB - IND	-0.097	-2.80	-0.020	-1.21	-0.003	-0.20

Table 7

**Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy (Panel A) and Hold/Sell (Panel B) 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, panel A), and hold/sell recommendations (downgrades to hold, sell, or strong sell, or initiations/resumptions/reiterations with a hold, sell, or strong sell rating, panel B), for all investment banks and independent research firms. The difference in returns between the investment banks' buy (hold/sell) portfolio and the buy (hold/sell) portfolio 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) industry excess returns (value-weighted daily excess returns for each of ten industry segments as defined by Ken French), (2) the excess of the market return over the risk-free rate, (3) the difference between the daily returns of a value-weighted portfolio of small stocks and one of large stocks, (4) 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 (5) 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: Average Daily Percentage Buy-and-Hold Abnormal Returns to Buy Recommendations

	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	

Panel B: Average Daily Percentage Buy-and-Hold Abnormal Returns to Hold/Sell Recommendations

	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)	-0.020	-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
F -statistic for differences in IB abnormal returns	0.28		1.27		1.98	