Are Stars' Opinions Worth More? The Relation between Analyst Reputation and Recommendation Values

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Abstract

We study the effect of reputation on the values of analysts' stock recommendations. Using 1994-2003 U.S. data, we measure personal reputation using the *Institutional Investor* All-American awards and bank reputation using Carter-Manaster ranks and study the values of various analyst groups' buy and sell recommendations. We find major differences between tech sector and non-tech sector analysts. In tech sector All-Americans significantly outperform non-AAs and their buy portfolios earn annual alphas averaging 15.48%. In contrast, values of buy portfolios by non-All-American analysts at reputable banks significantly erode during bear years, despite their strong performance during bull years. The result is consistent with top-tier non-AAs being overly optimistic due to conflicts of interest during market downturns. Non-All-American analysts at non-reputable banks consistently perform poorly in bear and bull years. Thus, in tech sector reputation is strongly positively correlated with investment values even in the presence of conflict. Annualized alphas of buy-sell portfolio spreads for top-tier AAs, lower-status AAs, top-tier non-AAs, and lower-status non-AAs are 19.97%, 13.52%, 11.80%, and 6.77%, respectively.

In non-tech sector only sells earn significantly positive alphas in bull years for all groups, consistent with non-tech analysts being overly optimistic during bull years. The alphas are also smaller than in tech sector: buy-sell portfolio spreads for top-tier AAs, lower-status AAs, top-tier non-AAs, and lower-status non-AAs earn 9.37%, 7.93%, 9.72%, and 6.97%, respectively. Overall, results in non-tech sector suggest that either reputation is not significantly correlated with stock-picking skill, or that skill is offset by conflict so as to make various analyst subgroups' relative performance indistinguishable from each other. Taken together, these results suggest that analyst reputation matters more in tech sector and that tech-sector AAs' stock recommendations have significant investment values both because they are skilled and also because they are able to resist pressures from conflicts of interest better than their non-reputable counterparts.

JEL classification: G1, G2
Keywords: Analyst reputation; Stock recommendations; Bank reputation; Conflict of interest; Investment banking

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1. Introduction

The idea that Wall Street research is subject to conflict of interest has long been around in the academic literature, but it is only the fall of Enron and other high profile corporate scandals in recent years that brought the issue into spot light. Moreover, some of the highly publicized cases of conflict of interest have involved former-"star" analysts, leading some critics to view the prevailing incentive schemes facing analysts as seriously flawed. Amid the collapse of Wall Street's credibility, regulators rushed to the scene and passed a slew of regulations aimed at enforcing the integrity of sell-side analyst research. These regulations include, among other things, requirements that they contract with no fewer than three independent research firms to provide an unbiased view of the prospects of the companies they cover.[1]

Without doubt, the earnest aim of the new regulations is to increase transparency in Wall Street research and reduce the potential conflict of interest. The implicit assumption is that the research provided by investment banking firms is necessarily biased, and that investors are harmed by such research. Although the example of Enron, WorldCom, and a few other cases make these assumptions appear compelling, they are assumptions nonetheless, and their truthfulness is an empirical question. To what extent are the stock recommendations made by analysts working at big investment banks biased? And, perhaps more importantly, to what extent are investors harmed by their recommendations? Do investors gain by differentiating between analysts with and without personal reputation? Do investors gain by following recommendations of analysts unaffiliated with those large underwriters? These are the central questions that we attempt to answer in this paper.

The existing literature provides inconclusive and incomplete evidence with regard to these questions. Most of the existing work that concludes conflict of interest has examined the specific context of new stock issues (IPOs and SEOs). Here, researchers find that conflict of

[1] As part of the $1.4 billion settlement with SEC reached on January 15, 2003, 10 of the country's biggest brokerage firms were also required to spend anywhere from $7.5 million to $75 million each on independent research during the next five years. The independent research service started in July, 2004.

interest exists as affiliated analysts tend to be more bullish than non-affiliated analysts and the value of their recommendations are correspondingly lower. Notable work in this vain include Michaely and Womack (1999) which examine post-IPO recommendations, Dechow, Hutton, and Sloan (2000) which examine long term earnings forecasts around IPOs and SEOs, and Lin and McNichols (1998) which examine earnings forecasts as well as stock recommendations around IPOs. However, the evidence on conflict of interest is much less clear-cut in the more general context without stock issues. Two recent papers, Agrawal and Chen (2007b) and Iskoz (2003) both conclude that *in general*, there is no evidence that affiliated or investment bank analysts are more biased than analysts from independent research firms.[2] Furthermore, it is not clear that less biased recommendations of unaffiliated analysts are necessarily *more valuable* to investors.

Given that the evidence on the effect of potential bias on the *investment value* of analyst recommendations is far from being conclusive, our first empirical question is the *economic* consequence of following analysts' recommendations.[3] However, the main contribution of our paper is to focus on the relation between personal and bank reputation and the investment values of stock recommendations, which has not been systematically examined before.

The role of reputation on recommendation quality is *a priori* ambiguous and thus a largely empirical question. At the personal reputation level, to the extent that star analysts are elected on the basis of past research quality (forecast accuracy and recommendation value), in the absence of conflict of interest, one would expect star-analysts' recommendations to have higher investment value. On the other hand, it is possible that star analysts are particularly conflicted

[2] Even in the context of stock issues, the empirical result is not entirely consistent. While Michaely and Womack (1999) and Dechow, Hutton, and Sloan (2000) favor the view that affiliated analysts opinions provide lower investment values, Lin and McNichols (1998) did not find lower investment value from affiliated analysts' recommendations. Ljungqvist et al. (2006) report that although affiliated analysts are more aggressitve in their recommendation levels and upgrades prior to stock issues, their behavior did not increase their bank's probability of winning an underwriting mandate. Furthermore, it is possible that in equilibrium, even if analysts are biased, rational investors can undo the effect of biased recommendations by under-weighing recommendations made by conflicted analysts. This theoretical possibility is outside the scope of this paper. See, for example, Agrawal and Chen (2007a), for further empirical evidence.

[3] For studies examining this question using earlier data, see, among others, Elton, Gruber, and Grossman (1986), Womack (1996) and Barber et al. (2001). They find significant abnormal returns from following analyst recommendations in a timely fashion.

when it comes to recommendations, precisely because they are expected to leverage their influence and visibility in cultivating good relationships with investment banking clients.

The analysis is further complicated by the fact that there are two distinct aspects to an analyst's job: One is to issue earnings forecasts, and the other is to issue stock recommendations. The effect of personal reputation on these two distinct aspects can be quite different. While earnings forecasts are precise numbers whose accuracy can be easily gauged by investors (*ex post*), recommendation is a softer target. Thus, it is conceivable that an analyst might strategically use the two aspects of his job to satisfy both the desire of maintaining a good reputation (by issuing accurate forecasts), and the desire of exhibiting optimism for investment banking clients (by issuing somewhat inflated opinions, or recommendations of the stocks).[4]

In a paper that examines the effect of personal reputation on earnings forecasts, Fang and Yasuda (2007a) find that personal reputation plays a mitigating role in the conflict of interest problem. The authors find that, consistent with the existence of conflict of interest, the normally superior accuracy among analysts working at top-tier investment banks (large underwriters) goes down during hot IPO markets. Moreover, consistent with the mitigating role of personal reputation, the deterioration of forecast quality is driven only by non-star analysts; star-analysts, in comparison, remain accurate during peak years. In light of the forgoing argument on the difference between forecasts and recommendations, however, it is not clear that the mitigating effect of reputation should necessarily hold for recommendations. Thus the effect of personal and bank reputation on investment values of recommendations remains an empirical question and thus is a focus of this paper.

Our findings can be summarized as follows.

[4] This notion of strategic behavior on the part of analysts is echoed in the business press: In an interview with the *Wall Street Journal*, Chuck Hill, former head of stock research at Thomson First Call, said that "any conflicts would be more likely to show up in analyst recommendations than earnings and price forecasts, which inherently demand such a level of precision that they're more difficult to fudge." Wall Street Journal (Eastern Edition). New York, N.Y.:August 6, 2004. p. C.3

1. In buy category, both AAs and top-tier bank analysts outperform their non-reputable counterparts, especially in bull years. The only group that fails to consistent outperform the market on a risk-adjusted basis is the lower-status, non-AA group.
2. In sell category, all analyst groups earn significantly positive alphas which are larger than in buy category, and they continue to perform more strongly in bull years rather than bear years. The top-tier bank analysts perform significantly better than lower-status bank analysts, which is driven by poor performance of lower-status, non-AA analysts in bull years. Overall, the poor performance of the least reputable group (lower-status bank non-AAs) stands out.
3. The results 1 and 2 hold for both tech and non-tech sectors, i.e., the reputable groups earn significantly positive alphas and outperform the non-reputable groups in each category. Lower-status, non-AAs significantly underperform, especially in buy category. Interestingly, tech (non-tech) analysts perform better in bull (bear) years in buy category, and in bear (bull) years in sell category.
4. The above results are robust to trading cost adjustment and, in fact, are strengthened by it because non-reputable groups incur higher trading costs.
5. Finally, we examine whether the conflict of interest contaminated the information content of "strong buy" (as compared to buy) and "hold" (as compared to sell and strong sell), and find that strong buys issued by lower-status, non-AA analysts had significantly lower investment values than their buys, in overall sample period and especially in bull years.

These results support the view that reputable analysts' stock recommendations have significant investment values both because they are skilled and also because they are able to resist pressures from conflicts of interest better than their non-reputable counterparts. These findings have significant implications in light of recent regulations that arguably reduced the incentives of analysts with personal and/or bank reputation.

The rest of the paper is organized as follows. Section 2 details our research questions and empirical approach. Section 3 discusses the data and presents summary statistics. Section 4 presents the main empirical results. Section 5 examines the conflict issue. Section 6 concludes.

2. Research Questions and Empirical Approach

2.1. Research Questions

The first question we are interested in is whether recommendations made by sell-side analysts have investment value in general. This question is relevant because it examines the fundamental role of active research, and provides a baseline for further, more nuanced analysis.

In recent years, as conflict of interest emerges as the paramount issue, this basic question has been largely ignored. In fact, the numerous new regulations that recently came into effect implicitly assume that not only are sell-side analysts' recommendations biased, but investors also suffer economic losses from following these recommendations. Popular sentiment not withstanding, this allegation does not square with existing evidence. Among the few papers that examine the overall investment value of Wall Street research, Womack (1996) and Barber et al. (2001) both find that significant excess returns can be gained from following analyst recommendations in a timely fashion. These results paint a different picture from the view that self-serving, conflicted analysts deliberately cheat investors. Instead, they are consistent with the Grossman and Stiglitz (1980) notion of market efficiency: In the presence of information costs, information collecting activities such as active research is rewarded. In light of the recent scandals, however, there is a genuine concern as to whether the Womack (1996) and Barber et al. (2001) type of result still holds in recent years. Thus we start off by re-examining this issue and re-establishing the basic role of active research.

The second question we are interested in builds on the first and concerns whether and how personal reputation (star-status) and bank reputation of an analyst are related to the investment value of his recommendations. The motivation of this question is the simple

observation that numerous analysts exposed in the conflict of interest probe were once-star analysts employed at top-tier banks.[5] Are they representative of the whole star-analyst sample? If the answer is yes, the evidence will support the view that the star-election process is a "beauty contest" and yet another marketing tool that serves the narrow interest of the investment banks and the individual analysts. If the answer is no, however, then the evidence will suggest normalcy in the market functions in the sense that the star-election process and analysts' labor markets are overall efficient, and that reputation is an important concern that can help self-regulate sell-side analysts. We examine this issue and provide new evidence on this question.

In summary, these are the baseline empirical questions we investigate in this paper:

1. *Do sell-side analysts' recommendations have investment value in general?*

2. *How is an analyst's personal reputation related to the investment value of his stock recommendations?*

3. *How is bank reputation (top-tier bank versus lower-status bank) related to the value of its analysts' stock recommendations?*

The first question concerns with the role of active research in general; the second and the third question examine the effect of reputation at personal and bank level.

2.2. Empirical Approach

To study the investment value of analysts' recommendations, we form dynamic portfolios based on the recommendations as they are issued.[6] Since we are interested in the performance of

[5] Henry Blodget, the internet analyst for Merrill Lynch, and Jack Grubman, the telecom analyst for Salomon Smith Barney/Citigroup, both paid multi-million-dollar fines in their settlements with the prosecutors in 2003 and were barred from the securities industry for life. Both were All-American analysts prior to their falls. In contrast, the technology analyst at Morgan Stanley Mary Meeker, once-called the "Queen of the Net", was never charged and continued to produce research after the stock bubble burst. She was an All-American from 1994-2000, and has been re-elected to an AA (runner-up) title in 2003 and 2004.

[6] According to I/B/E/S manual, the date in the I/B/E/S database is the date that the recommendation is entered into the database. Thus, there is likely a delay from the actual issue date of the recommendation. Barber et al. (2004) uses recommendations data from First Call. According to Barber et al., the First Call data more accurately reflects the issue dates of the recommendations. Using somewhat stale data biases our results against finding excess return performance. Green (2003) shows that the return to a strategy that follows analyst recommendations is increasing with the promptness of the trade. Thus, if anything, our

various sub-groups of analysts, we start out by classifying each recommendation in our sample along two dimensions: personal reputation and bank reputation. The most obvious measure of an analyst's reputation is the All-American title that is granted by the influential *Institutional Investor* magazine.[7] For bank reputation, we identify the nine underwriters with the highest Carter-Manaster ranks provided in Carter, Dark, and Singh (1998) as the "top-tier" group. These top-tier banks are: Alex Brown & Sons, First Boston Corporation, Goldman Sachs & Company, Hambrecht & Quist, Merrill Lynch, Morgan Stanley & Company, Paine Webber, Prudential-Bache, and Salomon Brothers.[8] The two-way sorting results in a partitioning of all the recommendations into four sub-sets: top-tier-AA recommendations, top-tier-non-AA recommendations, lower-status-AA recommendations, and lower-status-non-AA recommendations.

One way of studying the investment value of the four groups of analysts is to form one long-short portfolio for each group. For instance, we could create a long-short portfolio for the top-tier-AA group by longing the stocks that this group of analysts recommend as "buy", and shorting the stocks that they recommend to "sell". However, the overall performance of the long-short portfolios would mask the source of the performance. Thus, for each group, we form two separate dynamic portfolios: A buy portfolio which follows any recommendation that has a buy or strong buy rating issued by that group of analysts, and a sell portfolio which follows any recommendations that has a hold, sell, or strong sell rating by that group of analysts.[9] The

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results understate the magnitude of the gain or loss by following various types of recommendations.

[7] Every year, *Institutional Investor* conducts a large survey among buy-side managers, asking them to evaluate sell-side analysts along the following four dimensions: stock picking, earnings forecasts, written reports, and overall service. The result of this survey leads to the annual election of the All-American analysts, which is featured in the October issues of the magazine every year. Ljungqvist et al. (2007) document that institutional investors play a moderating role in conflict of interest in sell-side research.

[8] The Carter, Dark, and Singh (1998) listing includes Drexel Burham Lambert as one of the firms having the highest ranking. This is because their ranking is based on data from 1983 to 1991. We exclude Drexel in out top tier list because our sample period starts from 1994, at which time Drexel has already become defunct.

[9] In the reported results, the portfolio formation is based on all available recommendations, i.e., including initiations, reinstatements, and up-/down-grades to a specific rating. Results using sub-samples of the recommendations, e.g., initiations only, are broadly consistent with the results using all data.

relative performance of either the buy or sell recommendations of the analyst groups are obtained by comparing the portfolio returns.

In forming the portfolios, correct assignment of AA and bank status is important. Since AA elections occur in October of every year, only those recommendations made by an AA analyst from October of the election year to the end of September of the following year are considered AA-recommendations. The assignment of the bank status depends on the analyst's employment affiliation at the time the recommendation is issued. Since we use a time-invariant definition of bank status, only those recommendations made by analysts working in the nine top-tier banks at the time of issue are considered top-tier recommendations.[10]

In forming the dynamic portfolios, we follow the methodology in Barber et al. (2007). Each recommended stock enters its respective portfolio on the close of the issue date of the recommendation. For each recommendation i, let $\mathbf{X_{it}}$ denote the cumulative total return of stock *i* from the recommendation date to a future date *t*. That is,

$$X_{it} = R_{i,recdat_i+1} * R_{i,recdat_i+2} * \ldots * R_{i,t}, \qquad (1)$$

where R_{it} is the total return of stock *i* on date *t*.

Assuming a $1 initial investment in each recommendation, the date *t* return on the portfolio containing recommendation *i* is simply given by:

$$R_{pt} = \frac{\sum_{i=1}^{N_{pt}} X_{i,t-1} R_{it}}{\sum_{i=1}^{N_{pt}} X_{i,t-1}}, \qquad (2)$$

where N_{pt} is the number of stocks held in portfolio *p* on date *t*. To see this, note that X_{it} is the cumulative value of $1 invested in a previously issued recommendation *i* from the recommendation date up to (the close of) date *t-1*. Thus, the denominator of (2) is simply the

[10] Another rationale for using the time-invariant definition of bank reputation is that these portfolios are *ex ante* well-defined.

open value of portfolio *p* on date t. Since X_{it} also represents the value-weight of recommendation *i* in portfolio *p*, equation (2) correctly calculates the value-weighted return of portfolio *p* on date *t*.[11]

Thus for each portfolio, equation (2) yields a time-series of daily returns. In our empirical analyses, we examine the investment performance of each portfolio by looking at three different return measures: the unadjusted return, the market-adjusted return, and the Fama-French 3-factor adjusted return.

3. Data and Descriptive Statistics

We collect information on analyst recommendations – company identification, analyst and broker codes, recommendation date and level – from the I/B/E/S Detailed History file. Since I/B/E/S started comprehensive data coverage on recommendations in October 1993, we define our sample period to be January 1994 to December 2003.

Analysts' AA status is obtained from the October issue of the *Institutional Investor* for each year in the sample. For confidentiality, I/B/E/S uses numeric codes to identify brokers and analysts in the details file; the names are available upon request in a separate translation file. We matched the names of the AA analysts from the *Institutional Investor* listings with the names in the translation file.

Table I reports the number of firms, analysts, and recommendations in each year of the sample.[12] Number of firms receiving analyst recommendations peaked in 1998 at 5,745; since then it has come down to 4,379 in 2003. In contrast, the number of analysts hit a plateau at around 3,600 at the end of the last decade and has not significantly changed since then. The ratio of AAs to non-AAs in the sample is relatively stable. With the only exception of the first year of

[11] To be complete, we need to define X_{it} to be 1 on the issue date of recommendation *i*, and 0 after the stop date of the recommendation.

[12] Since AAs are elected in October of each year, we report the numbers of applicable AA and non-AA analysts (and other statistics) from October of previous year to September of current year in each row. So "1994" in the year column refers to the period from October 1993 to September 1994.

data when coverage is less comprehensive, AAs comprise about 8% of all analysts. This means that becoming an AA is fairly competitive.

Table I shows that the total number of recommendations peaked in 1999, declined in 2000 and 2001, and then sharply increased again in 2002. This last spike is likely because of a large number of reinstatements issued as a result of NASD Rule 2711 that required security firms to disclose the fractions of recommendations that are in each category. (This rule came into effect on September 9, 2002).

Finally, it is interesting to note that the non-AA to AA ratio in head count is always larger than the same ratio in the number of recommendations issued. For instance, in 1996, the non-AA to AA head-count ratio was 11.48, but the non-AA to AA total-recommendations ratio was only 6.87. This indicates that AAs tend to issue more recommendations per year than non-AAs.

That AAs tend to carry a larger work load is further evidenced from Table II, which reports summary statistic on the analysts' work patterns. The three panels of this table reports the number of firms covered by an analyst, the average frequency of updating a recommendation, and the total number of recommendations issued during a year, respectively. AAs on average cover almost twice as many firms as non-AAs. Over the whole sample period, the average number of firms an AA cover in a year is 11.67, whereas the same average is 6.68 for non-AAs. AAs also update recommendations more frequently than non-AAs, and thus AAs issue more recommendations overall as well.

Table III compares select characteristics of firms covered by AAs with those covered by non-AAs. This table reveals that AAs cover significantly larger (measured by market capitalization) and less risky (measured by lower volatility) firms. AA-covered firms also have higher book-to-market, lower P/E ratio, and higher dividend yield, and are more likely to be listed on NYSE than non-AA-covered firms. We later use some of these systematic differences in firm attributes when controlling for portfolio-specific trading costs.

Table IV presents the median and mean levels of recommendations for our four analyst groups for each year in our sample. Panel A compares AA analysts with non-AA analysts; Panel B compares top-tier-bank analysts with lower-status-bank analysts. Banks often have distinct rating systems for coding their analyst recommendations, so what is a "buy" in one bank's system may not necessarily translate to a "buy" in another's. I/B/E/S addresses this issue by creating its own numeric coding system of analysts' stock recommendations on a scale of 1 to 5. 1 refers to the strongest positive recommendation and 5 to the strongest negative recommendation. Using this coding system, we re-classify recommendations of 1 and 2 as "buy". Typical designations of these ratings are "strong buy" and "buy". Correspondingly, we classify recommendations of 3, 4, and 5 as "sell". These ratings frequently represent "hold", "sell", and "strong sell", respectively.

First, the median recommendation levels for all four groups are 2 in most years, which is a "buy". This confirms the widely-held view that sell-side recommendations are on average inflated, in the sense that an average firm with analyst coverage gets an above-average rating. Notable exceptions occur in 2002, when the median rating for AAs and top-tier-bank analysts is lowered to 3, or "hold", and in 2003, when the median rating for lower-status group goes down to 3, as well. These changes in the median rating are most likely associated with the new rule introduced in 2002 that requires sell-side research providers to disclose the proportions of their outstanding ratings in each category. As of 2003, the only group that maintains a median rating of 2, or "buy" is the non-AA group.

Comparison of mean ratings between AAs and non-AAs reveals that AAs are significantly more conservative than non-AAs in most years. However, in 1999, the peak of the market, they were significantly more bullish than non-AAs. Interestingly, in the post-bubble market of 2000, while AAs become more conservative, non-AAs turned even more bullish, with their mean rating dipping below 2. This time-series pattern suggests that AAs may be better market-timers than non-AAs, or that they are leaders while non-AAs are followers. Both suggest

that AAs are more skilled. We will explicitly examine this issue in our portfolio return analysis in the next section.

Comparison of mean ratings between top-tier-bank and lower-status-bank analysts (Panel B) shows similar overall as well as time-series pattern. Overall, top-tier analysts are significantly more conservative than lower-status analysts. This is somewhat surprising given the established view that affiliated analysts are more positively biased, and top-tier-bank analysts are more likely to have underwriting affiliations. We interpret the finding as indicating that taking the data as a whole, rather than focusing only on periods around security issuance (as is done in the previous literature), top-tier-bank analysts are in general more conservative than lower-status-bank analysts.

The only exception to this general rule occurs in 1999, when the top-tier group becomes more aggressive in their overall recommendation level. Interestingly, while their rating remains unchanged in 2000, the lower-status group surpasses them in their bullishness. In retrospect, with the knowledge of the peak and trough of the stock market in those two years, this pattern suggests that top-tier analysts were better market-timers than lower-status analysts, or that they were leaders while the lower-status analysts were followers. This indicates that, like AA-status, bank status can be an effective screening device for skill in analysts' labor market. This point has also been made in Fang and Yasuda (2007a).

4. Baseline Results

In this section, we study the baseline investment values of buy and sell recommendations. We are interested in the performance of all analysts' recommendations against the broad market in general, and the relative performance of AAs versus non-AAs, and that of top-tier analysts versus lower-status-bank analysts in particular. For each comparison, we present four sets of results, using raw, market-adjusted, Fama-French 3-factor-adjusted, and 4-factor-adjusted returns, respectively.

4.1. Buy Recommendations: AAs versus non-AAs

Panel A of Table V compares the unadjusted annual returns of following AAs' buy recommendations with those of following non-AAs' buy recommendations. The first vertical panel pertains to the whole sample; the second and the third panels pertain to the top-tier-bank and lower-status-bank sub-samples, respectively.

Several observations can be made. First, judging from the average annual total returns, AAs out-perform non-AAs in all three samples. The average annual difference in returns is 2.18% for the whole sample (1994-2002)[13], while it is 0.36% for the top-tier-bank sub-sample and 2.89% for the lower-status sub-sample. This means that AAs in lower-status banks out-perform their non-AA colleagues by a larger margin than AAs at top-tier banks.

As a visual summary for the raw investment performances, Figure 1 plots the cumulative returns of investing $1 in each dynamic portfolio from 1/1994 to 12/2003. For ease of comparison, the total returns on the CRSP value-weighted index over the same period is also shown. It is evident from this figure that the lower-status non-AA analysts underperform the other subgroups. This is consistent with the notion that both AA status and bank status are screening devices in analysts' labor market. As a result, AAs tend to be more skilled than non-AAs, and top-tier-bank analysts tend to be more skilled than lower-status-bank analysts, on average. The magnitude of cumulative out-performance is economically significant for the top-tier AA group. $1 invested in January 1994 in CRSP index is worth about $2.72 as of December 2003. Had investors followed buy recommendations by top-tier AA analysts, $1 invested in January 1994 would have been worth $4.51 by December 2003, providing an excess return of 5.72% per year.

[13] As documented in Section 4.3 and by others such as Kadan et al. (2007), there was an artificial surge in the number of sell recommendations issued in 2003 after the investment banks were required by the regulators to disclose the overall distributions of their outstanding recommendations to investors (Rule 2711). This resulted in the sell portfolio actually performing better than the overall market in 2003. Thus, we generally use the 1994-2002 as the overall sample and remove 2003 from our analysis.

According to Figure 1, it seems that even the worst-performing group still outperforms the overall market over the 10-year period. However, we must not hasten to conclusion that all analysts out-perform the overall market, because first, the graph does not allow us to judge the statistical significance, and second, the out-performances can be driven by higher risks or firm characteristics.

Taking these issues into account, Panels B, C, and D of Table V adjust the raw performances reported above for the market return, the Fama-French 3-factor returns, and the Carhart 4-factor returns, respectively. In other words, Panel B reports alphas from market model regressions:

$$R_{p,t} - R_{f,t} = \alpha_p + \beta_p (R_{m,t} - R_{f,t}) + \varepsilon_{p,t}; \quad (3)$$

Panel C reports alphas from Fama-French 3-factor regressions:

$$R_{p,t} - R_{f,t} = \alpha_p + \beta_{p1} (R_{m,t} - R_{f,t}) + s_p SMB_t + h_p HML_t + \varepsilon_{p,t}. \quad (4)$$

and Panel D reports alphas from the Carhart 4-factor regressions:

$$R_{p,t} - R_{f,t} = \alpha_p + \beta_{p1} (R_{m,t} - R_{f,t}) + s_p SMB_t + h_p HML_t + m_p WML_t + \varepsilon_{p,t} \quad (5)$$

where $R_{p,t}$ is portfolio p's return on date t; $R_{m,t}$ and $R_{f,t}$ are the market return and risk-free rate on date t, respectively; and SMB_t, HML_t, and WML_t are the size, book-to-market, and momentum factor, respectively.[14] Reported alphas are daily excess returns in basis points. We use stars to indicate alphas that are significantly different from zero (t-statistics suppressed), and we also report p-values for the equality of alphas across groups.[15]

Looking at the market-adjusted returns (Panel B), the first observation is that on a risk-adjusted basis, only AA's buy recommendations continue to out-perform the overall market. The subsample results indicate that this is driven by underperformance of lower-status, non-AAs. Overall, AAs out-perform the market by 4.72% per annum.

[14] Market returns, risk-free rates, size, book-to-market, and momentum data are obtained from Kenneth French's website.
[15] The p-values are based on F-statistics for coefficient equality.

Second, in terms of relative performance, AAs out-perform non-AAs in all three samples. The difference in annual alphas is 1.89% (4.72% - 2.83%) in the all sample. Since the previous sub-section shows that the difference in raw returns between the two groups is 2.18%, this means that approximated 87% (1.89%/2.18%) of the overall performance difference between AAs and non-AAs is attributable to their stock-picking ability, while 13% is attributable to differences in risk characteristics of the firms they pick.

Comparing Panel B with Panel C and D indicates that all except the least reputable group (lower-status, non-AAs) consistently earn significantly positive alphas in all models, albeit they are smaller than in the CAPM model in Panel B. Also, the alphas in multi-factor models are significant only in bull years; analysts perform less well in bear years. The cross-group performance differentials are significant only in case of lower-status AAs vs. lower-status non-AAs in Panel B.

Thus, the overall conclusion we draw from this subsection is that, while all analyst group's buy recommendation generate larger raw returns than the market, only the performances of 3 reputable groups survive risk adjustments. Analysts perform better in bull years than in bear years. The least reputable group does not earn positive alphas in most models and the difference from the other 3 groups is marginally significant.

4.2. Buy Recommendations: Top-tier vs. Lower-status

Table VI compares the buy performances of top-tier-bank analysts versus lower-status-bank analysts. Panels A, B, C, and D exhibit raw, market-adjusted, Fama-French 3-factor adjusted, and Carhart 4-factor adjusted returns, respectively. In each set of results, the first vertical panel pertains to the whole sample; the latter two pertain to the AA and non-AA sub-groups, respectively.

Looking first at the raw returns (Panel A), we find that top-tier analysts' buy recommendations yield a higher return than the lower-status-bank portfolio in most years.[16] This is consistent with the overall efficiency of the labor market for analysts, and top-tier analysts being generally more skilled.

In Panel B, we find that only top-tier analysts earn significant alphas after controlling for the beta risk, and that they significantly outperform the lower-status analyst group. The annual alpha for the top-tier group is 4.25%. In Panel C and D, all groups earn significant alphas, but the top-tier analysts earn significantly higher alphas than lower-status group. This is driven by the relatively poor performance of lower-status, non-AA analysts, and the differential performance is concentrated in bull years (e.g., 1997, 1999). Together with the results in Section 4.1, the buy recommendation results indicate that both personal and bank reputation are positively correlated with superior investment performance.

4.3. Sell Recommendation: AAs vs. non-AAs

Table VII compares the sell performances of AAs and non-AAs. Panels A, B, C, and D exhibit raw, market-adjusted, Fama-French 3-factor adjusted, and Carhart 4-factor adjusted returns, respectively. In each set of results, the first vertical panel pertains to the whole sample; the latter two pertain to the top-tier-bank and lower-status-bank sub-samples, respectively.

Focusing first on the raw returns (Panel A), we find that AAs outperform better than non-AAs in sell recommendations, though the magnitude is smaller than in buys. Note that since our returns are reported as buy-and-hold returns, better performance mean poorer stock returns on the

[16] Interestingly, the year in which top-tier analysts most significantly under-performed lower-status-bank analysts is the post-regulation year of 2003. In this year, both AAs and no-AAs in top-tier banks significantly under-performed their lower-status-bank counterparts. As noted earlier, there was a flurry of restatements of recommendations in the fall of 2002 following the new rule (Rule 2711) requiring banks to disclose proportions of their outstanding recommendations in each rating category. It is possible that this rule had a larger impact on top-tier banks because they were under heightened media scrutiny. Though the evidence is superficial, it does hint on the possibility that some of the new regulations might have inadvertently created distortion in the market for information production.

"sell" recommended stocks. AAs perform better than non-AAs in bull years, but this is canceled out by poor relative performance in bear years (particularly true of lower-status AAs).

Examining the individual years, we report that, in 2003, the sell-recommendation portfolios of both AAs and non-AAs do spectacularly better than the market (47.27% and 55.29%, respectively, against the market return of 33.05%). This makes us suspect that many of these sell recommendations in 2003 were due to the pressure that these analysts faced from their employers to artificially increase the number of outstanding sells, in preparations for rule 2711. Thus, we repeat all the all-year analysis for 1994-2002, and make our inferences mostly from the sample period excluding 2003.

Panel B reports market-adjusted alphas. Note that in panels B-D in sell analysis, we always report alphas as the negative of the annual alphas, as a measure of the investment value of sell recommendations. First, we find that all groups earn significantly positive alphas. Second, AAs perform significantly better than non-AAs in bull years, but this is offset by mediocre performance in bear years, and there is no statistically significant differences between the two groups in all-year sample.

Panel C and D report alphas after adjusting for Fama-French three factors, and Carhart four factors, respectively. First, the alphas are in fact larger in magnitudes in the 3-factor models than in the CAPM model (though they go down in magnitude again in the 4-factor model). This indicates that the sell recommendations made by sell-side analysts have investment value in general, and in particular, the value-added seems to be explained by skill. The sell-portfolio alphas are also generally larger in magnitudes than the buy-portfolio alphas. Second, the alphas are now significantly positive in bear years as well as in bull years. Third, AAs continue to significantly outperform the non-AAs in bull years.

The fact that analysts do better in the sell category than in the buy category is interesting. Perhaps it is easier to identify losers than to pick winners. But a more compelling explanation is that sell-side analysts' recommendations have a bias towards buy. Since buy recommendations

are issued with less scrutiny, their investment value is not very high. Sell recommendations, on the other hand, are unwelcome (by both recommended firms and the investment banks). Since they are issued more sparingly, they are more informative and have larger investment value for investors. Also, sell recommendations have significant investment values during the bear years as well as bull years whereas buy recommendations are valuable only in bull years.

4.4. Top-tier vs. Lower-status banks

Table VIII compares the sell performances of top-tier-bank analysts with that of lower-status-bank analysts. Panels A, B, C, and D exhibit raw, market-adjusted, Fama-French 3-factor adjusted, and Carhart 4-factor adjusted returns, respectively. In each set of results, the first vertical panel pertains to the whole sample; the latter two pertain to the AA and non-AA sub-samples, respectively.

In terms of raw returns (Panel A), top-tier analysts out-perform lower-status-bank analysts in all 3 subsamples and in all subperiods. The magnitude of the performance difference is of 1.74% per year for the whole sample, which is marginally significant in economic terms.

In Panel B, we find that all groups earn significantly positive alphas. Top-tier analysts significantly outperform lower-status bank analysts, and this is true for both AAs and non-AAs. Turning to Panels B and C, we report that the results are robust to using multifactor models. All groups earn significantly positive alphas, and top-tier bank analysts do significantly better than lower-status analysts. This result is driven by bull-year performance differentials. Lower-status non-AAs in particular perform poorly in bull years such as 1996 and 1997. Better performance among top-tier-bank analysts is again consistent with higher ability, which in turn suggests that competition for top-tier-bank jobs serves as a useful screening in the job market for security analysts. This result has also been noted in Fang and Yasuda (2007a), which examine analysts' earnings forecasts.

Time-series patterns in the alphas shown in Panels B, C and D, and the comparison between the two panels are largely consistent with results in the previous sub-section. Again, we observe that the 3-factor and 4-factor adjusted alphas are not diminished in comparison with those in the CAPM model, and in some cases improve. This indicates that skill explains at least part of the value-added in sell recommendations.

4.5. Tech vs. Non-tech Sector Analysis

Since market activities and incentives facing analysts may be markedly different for technology and non-technology sectors, we conduct sector-specific analyses in this subsection where we form sector-specific portfolios for each analyst subgroups and repeat our alpha regressions for each sector. For example, it is interesting to examine whether reputable analysts continue to perform well both relative to the market and to their counterpart groups in tech sector, where the pressure from the conflicts of interests during the boom years of the late 90's might be particularly acute.

We follow the methodology described in Appendix D of Loughran and Ritter (2004) to divide our sample of firms into tech and non-tech firms. Tech firms include internet firms (such as e-commerce firms). Overall, tech firms account for 12% of all recommendations in our sample.

The raw return and alpha regression results are reported in Table IX. Panel A reports the results for tech sector analysts; Panel B reports the results for non-tech sector analysts. Each panel consists of four sub-panels corresponding to the all-sector analysis presented in Tables V-VIII (AA vs. non-AA buy, Top vs. Lower buy, AA vs. non-AA sell, and Top vs. Lower sell). For the economy of space only the all-year and subperiod results are shown.

In Panel A-1-1, we report that tech sector AA portfolios earn higher raw returns than non-AA portfolios in all three subsamples. The performance differential is much larger in magnitudes (9.95%) than in the all-sector sample (2.18%) reported in Table V, Panel A. In Panels A-1-2 -

A-1-4, we find that AAs earn significantly positive alphas and perform significantly better than non-AAs in all models. The magnitude of the annual alpha is large --- 10.15%-15.69% for AAs in all-year sample, and 19.61%-21.91% in bull years. Looking at the 4 subgroups, it is clear that the least reputable group, the lower-status, non-AAs, performs the most poorly. The group's performance is not significantly positive in any of the models, and is significantly worse than that of the lower-status AA group (the comparison group). In comparison, the other 3 reputable groups earn significantly positive alphas in the 3-factor and the 4-factor models. Top-tier non-AAs also perform significantly poorly relative to top-tier AAs in bull years.

In Panel A-2, we report that top-tier bank analysts perform significantly better than lower-status bank analysts in all three models. They also earn significantly positive and large alphas in the 3-factor and 4-factor models. The subgroup comparison results are similar to those in Panel A-1: the poor performance of lower-status, non-AAs stands out, where the other three groups appear to possess significant skills. Finally, the performance is better in bull years than in bear years.

The poor absolute (in the sense of zero alpha) and relative performance of lower-status non-AA analysts is consistent with them having poor stock-picking skills. It is also consistent with them being more conflicted, but the results here do not allow us to distinguish between the two hypotheses. We return to this question in Section 5.

In Panel A-3, the AA vs. non-AA comparison results of sell recommendations in tech sector is reported. In A-3-1, we show that AAs do better than non-AAs, though this is result is driven by top-tier AAs; lower-status AAs actually do worse than lower-status, non-AAs in terms of raw returns. In A-3-2 – A-3-4, we find that tech sector sell portfolios do not consistently earn significantly positive alphas. This is in contrast to the all sector results, where all groups earn large and significantly positive alphas in sell portfolios. Top-tier AAs earn significantly positive alphas in 2 of the 3 models, and also perform significantly better than top-tier non-AAs in some

models. Interestingly, sell portfolios in tech sector perform better in bear years than bull years, suggesting that short selling (any) tech stocks during hot markets is unlikely to be profitable.

Finally, Panel A-4 compares the top-tier vs lower-status performance results. Here, top-tier analysts do not perform better than lower-status analysts because top-tier non-AAs perform poorly. Top-tier AAs, in contrast, perform significantly better than top-tier non-AAs in the 3-factor model. No group earns significant alphas in the 4-factor model, however, and this is because they are hurt by negative alphas during bull years (i.e., the stocks they recommend "sell" beat the market in those years). In contrast, the alphas are significantly positive and large in magnitude (e.g., 18.65% for the top-tier group) in bear years.

To summarize, in tech sector analysis, we find that (i) buy portfolios of 3 reputable groups earn large significant alphas while the least reputable group performs quite poorly; (ii) sell portfolios do not consistently earn positive alphas, and do significantly better in bear years than in bull years; and (iii) personal reputation is more strongly associated with better performance in sells than bank reputation. Overall top-tier AAs' recommendations appear to have the best investment values in the tech sector. These results largely confirm the all sector results that both personal and (to somewhat lesser extent) bank reputation is positively correlated with superior investment values, even in the tech sector.

In Panel B, we present the results of non-tech sector analysis. In Panel B-1-1, we note that the raw return differentials between AAs and non-AAs are much smaller than that in tech sector. Corroborating this observations, Panels B-1-2 – B-1-4 show that AAs in non-tech sector do not perform better than non-AAs in their buy portfolios. In Panel B-2, we similarly find that bank reputation is not significantly correlated with better investment performance. Top-tier AAs and top-tier non-AAs earn significantly positive alphas in all three models, whereas the lower-status subgroups (both AAs and non-AAs) deliver positive alphas in 2 out of 3 models. Looking at the subperiods, every group performs better in bear years than in bull years, which is the opposite of buy portfolio performance in tech sector.

Moving on to sell recommendations, in Panel B-3 we find that AAs perform significantly better than non-AAs. This is particularly true in bull years, and is driven by poor performance of lower-status non-AAs. Similarly, in Panel B-4 we find that top-tier analysts do significantly better than lower-status analysts, especially in bull years. Also, all groups perform better in bull years than in bear years, which again is the opposite of the tech sector. Statistically, sell portfolios have better investment values in the non-tech sector than in the tech sector. Non-tech sell portfolio alphas are also economically significant: they range from 4.72%-7.84% for AAs and 5.34%-6.13% for top-tier analysts.

To summarize the non-tech sector analysis, we find that (i) buy portfolios do better in bear years than in bull years; (ii) sell portfolios do better in bull years than in bear years; and (iii) AAs perform better than non-AAs, and top-tier analysts do better than lower-status analysts, particularly in sells.

Comparing the tech and non-tech results, we note that tech buy portfolios and non-tech sell portfolios recommended by reputable groups earn significant and large positive alphas in bull years, whereas non-tech buy portfolios earn significant and positive alphas in bear years. Personal and bank reputation are highly correlated with superior investment performance in both sectors.

4.6. Transaction Cost Adjustment

Both the raw and risk-adjusted returns that are calculated are gross of any trading costs arising from the bid-ask spread or brokerage commissions. To assess the size of these costs and their effects on relative performances of analyst subgroups we calculate a measure of daily turnover for each portfolio. Specifically, for each portfolio, we calculate the average daily % of portfolio bought ($Turnover_t^B$) and sold ($Turnover_t^S$) in year t for each of our sample year. Next, we calculate the average buy and sell cost ($Cost_t^B$ and $Cost_t^S$) for a typical stock in each portfolio in

year *t* as a function of firm size and listed exchange following Keim and Madhavan (1997). Then, the annual trading cost for a given portfolio in year *t* is defined as:

$$Annual\ Cost_t = (Turnover_t^B * Cost_t^B + Turnover_t^S * Cost_t^S) * \text{number of trading days} \quad (6)$$

The raw returns and risk-adjusted returns net of trading costs are reported in Table X. In Panel A, we report the size and listed exchange composition of each analyst portfolios in our sample. The main observation here is that AAs and top-tier bank analysts have lower unit trading cost because higher portions of their portfolios are invested in large, NYSE-listed stocks, which are cheaper to trade than small, NASDAQ-listed stocks.

In Panel B, we present the results for all sector portfolios. In Panels B-1 and B-2, buy portfolio raw returns and annual alphas net of trading costs are presented. For each comparison groups, *t*-stats for equality of the (net) alphas assuming independence of the estimated alphas and the calculated trading costs are also tabulated. In Panels B-3 and B-4, the raw returns net of trading costs is calculated as the negative of the return minus the trading cost, to indicate the implied profit (or loss) from shorting the stock and incurring the trading cost. The reported alphas are (as before) the negative of the annual alpha minus the trading cost in these sell portfolios.

First, we find that the annual alphas are positive after adjusting for trading cost. Second, AAs perform significantly better than non-AAs (Panel B-1) in buy portfolios. Third, top-tier bank analysts perform significantly better than lower-status bank analysts (Panel B-2). Both of these results are driven by poor net-of-transaction-cost performance of lower-status, non-AA analysts. Turning to sell portfolios, we find that AAs are not significantly better than non-AAs except in the 4-factor model. In contrast, top-tier analysts are significantly better than lower-status analysts. These results are qualitatively similar to the gross return results. In fact, the

results are modestly stronger because the already poor-performing lower-status, non-AA group looks even worse after adjusting for their relatively high trading cost.

In Panel C, we repeat the analysis for the tech sector. The qualitative results are similar to the results shown in Table IX. AAs perform better than non-AAs and top-tier analysts perform better than lower-status analysts in buys. In sells, top-tier AAs are marginally better than top-tier non-AAs and lower-status AAs.

In Panel D, alphas for the non-sector net of trading costs are still positive, but smaller. There are no significant performance differences among the 4 groups in buys. In sells, both personal reputation and bank reputation is associated with significantly better performance.

In summary, the qualitative results of the gross returns (presented in Table V-IX) are robust to netting out the trading costs and in fact are modestly strengthened by the trading cost adjustment because the lower-status non-AAs, already the poorest performing group, suffers even more from their high trading cost.

5. Does Conflict Matter?

Our results in the previous sections suggest that both personal and bank reputation are positively associated with superior investment performance of analyst recommendations. What consistently stands out is how lower-status, non-AA analyst group performs both poorly on an absolute scale, often earning zero alphas, and also on a relative scale, performing significantly worse than the other more reputable groups. A plausible explanation of these results is that reputation picks up the ability of analysts. Since AA selection is competitive, AAs are on average higher-ability analysts than non-AAs. Similarly, since jobs at top-tier investment banks are highly desirable, competition in the labor markets implies that analysts working at these banks are on average higher-ability analysts than those employed at lower-status banks.

Alternatively, reputation may mitigate the conflict of interest problem that these analysts allegedly faced during the hot markets. It may serve as a disciplinary device if either these

reputable analysts are better able to resist the conflict of interest (because they benefit from the long-run benefits of preserving reputation) or they face fewer such pressures than their non-reputable colleagues. Of course, these two explanations are not mutually exclusive. Furthermore, the reputation measures we use could pick up both the ability factor and the incentive factor.

To isolate the potential disciplinary effect of reputation on investment values of analyst recommendations, we conduct the following analysis. First, we form 3 new portfolios consisting of buying buy-recommended stocks and selling sell-recommended stocks for each analyst group. These buy-sell spread portfolios consist of the followings categories of recommendations:

(A) The baseline portfolio: (Strong buy + Buy) – (Hold + Sell + Strong Sell)

(B) Strong buy removed from buy: (Buy) – (Hold + Sell + Strong Sell)

(C) Hold removed from sell: (Strong buy + Buy) – (Sell + Strong Sell)

The portfolio construction is motivated by the reports in the media during analyst scandals that conflicted analysts kept "strong buy" recommendations for too long for stocks which they privately loathed, such as Enron and WorldCom. If such conflicts tainted the analysts' selection of strong buy stocks, portfolio (B) may perform better than (A). If, on the other hand, analysts are not conflicted and issue strong buys only for stocks which they privately had positive signals about, then (B) should not be better than (A).[17] The logic for comparing (A) with (C) is similar: If analysts are currying favor with some clients which they knew were troubled by assigning hold rather than sell or strong sell, portfolio (A) may perform better than (C). If analysts are not conflicted, then to the extent that analysts have ability, portfolio (C) should perform better than (A).

The results are presented in Table XI. We conduct the tests for 4 subgroups: top-tier AAs, lower-status AAs, top-tier non-AAs, and lower-status non-AAs. In Panel A, we first

[17] If analysts have no ability and randomly assign buy vs. strong buy, then the two portfolios should be equal. If analysts have ability and strong buys perform better than buys on average, then (B) should be worse than (A). Either way, in the absence of conflicts of interest, we predict ret(A) ≥ ret(B).

observe that the baseline spread portfolios always earn significant and positive alphas. Next, we find that portfolio (B) earns slightly higher returns than (A), though the difference is not statistically significant. In contrast, portfolio (C) always earns higher returns than portfolio (A). The magnitude is economically significant, especially in bear years (5.83%-6.02%), but is not statistically significant. Overall, there is no evidence of conflicts of interest for this group.

In Panel B, we present the results for lower-status bank AAs. The results are similar to Panel A in that the performance differentials between portfolios are largely insignificant. The exception is in the 3-factor model results for bull years, where portfolio (B) earns higher return than portfolio (A) and the difference is marginally significant. The finding suggests that though this group overall delivers significantly positive alphas in most models, they may be subject to some conflicts of interest during bull years. In Panel C, we present the results for top-tier non-AAs. The results here are quite similar to those of top-tier AAs in Panel A. There is no evidence of conflicts for this group.

Finally, in Panel D, we present the results for lower-status, non-AAs. Here, unlike in other groups, we find that portfolio (B) earns significantly higher return portfolio (A) in all 3 models. This is especially true in bull years. The results suggest that when this group issues strong buys in bull years, these recommendations on average have worse investment values than their buys. The finding is consistent with the reputation as having a disciplinary effect on the investment values of analyst recommendations, and with the least reputable group to be more subject to the conflicts of interest. Thus, not only are they (probably) less skilled, but these analysts are also more conflicted, which further diminishes the investment values of their recommendations, particularly in bull years.

6. Conclusion

We study the investment value of analysts' stock recommendations. We are interested in three questions. First, can investors gain abnormal return by following analysts'

recommendations in general? Second, how does personal reputation, as measured by the AA status, affect the investment value of analysts' stock recommendations? Third, how does bank reputation affect the investment value of recommendations? These questions are relevant as the first question addresses the role of active research in general; the second and the third question examine the effect of reputation.

Regarding the first question – do investors gain from following sell-side analyst research – our answer, combining evidence from both buy and sell recommendations, using raw returns as well as factor-adjusted returns, and examining tech and non-tech sector is, (not surprisingly) "it depends".

On the buy front, the only group of analysts that fails to consistently provide valuable investment advice is the lower-status non-AAs. Other more reputable groups' out-performance over and above the market is economically significant: for example, top-tier AAs' raw return out-performs the market by an average of 5.72% per year, and their market, 3-factor, and 4-factor adjusted alphas are 4.56%, 3.49%, and 3.00% per year, respectively.

Interestingly, on the sell front, we find that all four analyst groups (top-tier AA, top-tier non-AA, lower-status AA, lower-status non-AA) provide valuable recommendations on a risk-adjusted basis. In both buys and sells, we find that AAs perform better than non-AAs and that top-tier bank analysts perform better than lower-status bank analysts. Overall, the poor performance of the least reputable group (lower-status bank non-AAs) stands out.

The above results hold for both tech and non-tech sectors, i.e., the reputable groups earn significantly positive alphas and outperform the non-reputable groups in each category. Lower-status, non-AAs significantly underperform, especially in buy category. Interestingly, tech (non-tech) analysts perform better in bull (bear) years in buy category, and in bear (bull) years in sell category. The qualitative results are robust to trading cost adjustment and, in fact, are strengthened by it because non-reputable groups incur higher trading costs.

Finally, we examine whether the conflict of interest contaminated the information content of "strong buy" (as compared to buy) and "hold" (as compared to sell and strong sell), and find that strong buys issued by lower-status, non-AA analysts had significantly lower investment values than their buys, in overall sample period and especially in bull years. This is consistent with the reputation as having a disciplinary effect on the investment values of analyst recommendations, and with the least reputable group to be more subject to the conflicts of interest. Thus, not only are they (probably) less skilled, but these analysts are also more conflicted, which further diminishes the investment values of their recommendations, particularly in bull years.

These results support the view that reputable analysts' stock recommendations have significant investment values both because they are skilled and also because they are able to resist pressures from conflicts of interest better than their non-reputable counterparts. This has significant implications in light of recent regulations that arguably reduced the incentives of analysts with personal and/or bank reputation. Contrary to the (popular) image of a corrupt star analyst, we find that stock recommendations issued by reputable groups (measured by both personal and bank reputation) provide significantly positive investment values, in both buy and sell categories, and in both tech and non-tech sectors. The poorest investment advice was provided by non-AAs employed at banks other than the big investment banks. This calls into question the virtue of diminishing sell-side research by forcing investment banks to purchase outsourced "independent" research and reduce their own in-house research budget. Rather than dismantling the existing reputation mechanisms, investors might be better served by mandatory disclosures of both institutional and personal reputation measures (as well as past research quality history) so that they can incorporate this valuable information into their evaluations of different groups of analysts and weigh them accordingly.

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Figure 1. Investment Values of Buy Recommendations

This figure plots the total value of a $1-investment in dynamic portfolios constructed by following four different analyst groups' buy recommendations. The four different analyst groups are: top-tier-bank AAs, top-tier-bank non-AAs, lower-status-bank AAs, and lower-status-bank non-AAs. Total return on the CRSP value weighted index are also graphed. The dynamic portfolios are constructed to mimic a strategy that buys each stock with a buy-rating (including buy and strong buy) on the close of the date that the recommendation is issued. See Section 2 for details of the portfolio construction.

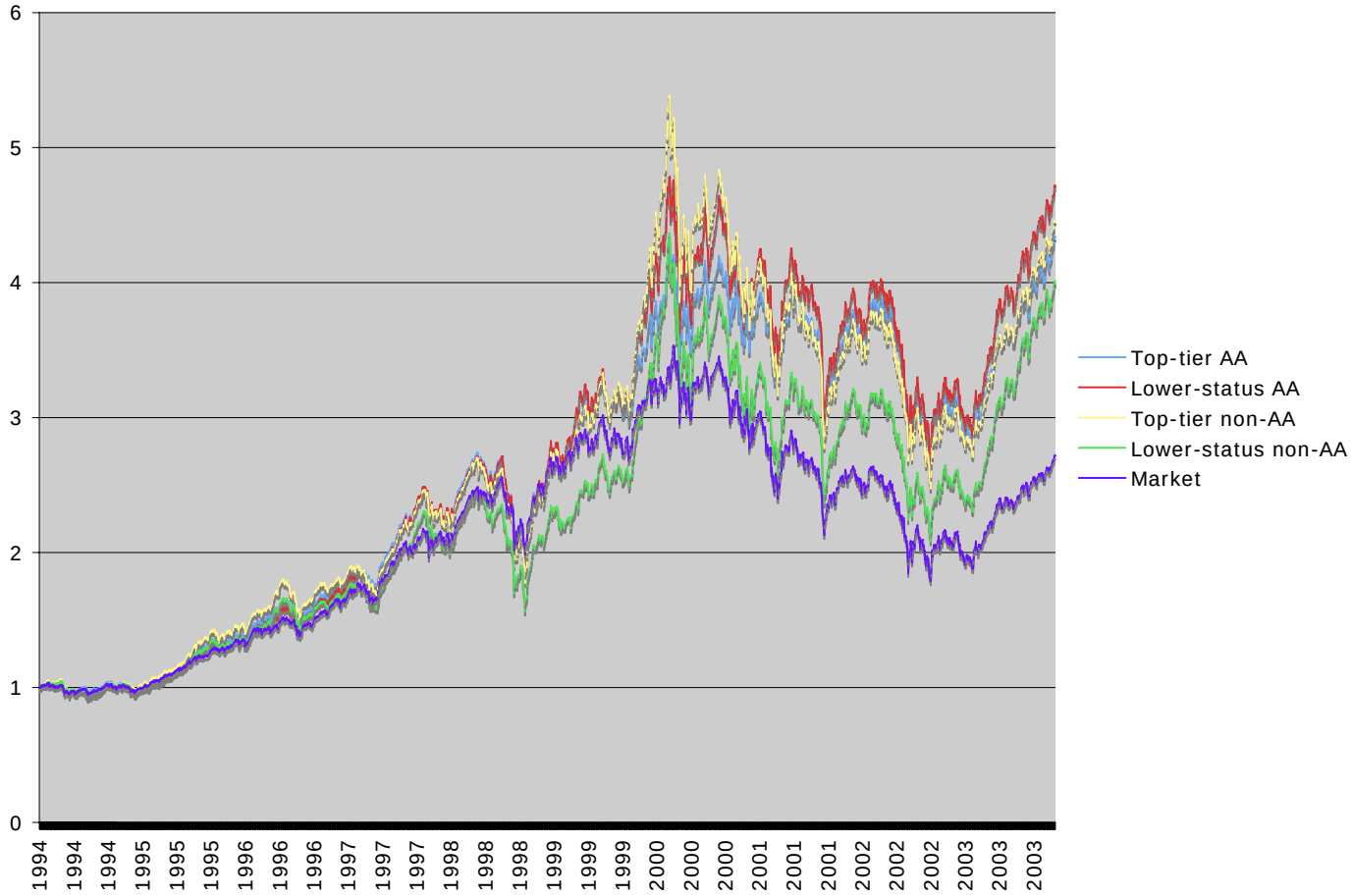


Table I. Descriptive Statistics

This table presents summary statistics of the I/B/E/S recommendations sample. The first vertical panel shows the number of firms receiving recommendations in the whole sample. The second vertical panel shows the number of analysts in the sample. The third vertical panel tabulates the total number of recommendations recorded in the sample. "AA" refers to All-American analysts. These are the star-analysts elected by the *Institutional Investor* magazine after conducting a large survey from buy-side managers. The list of AAs in each year is obtained from the October issue of the magazine. Since AAs are elected in October of each year, we report the applicable statistics (including the number of AAs) from October of previous year to September of current year in each row. So "1994" in the year column refers to the period from October 1993 to September 1994.

Year	Firms	Analysts				Recommendations			
		All	AA	Non-AA	Non-AA to AA Ratio	All	AA	Non-AA	Non-AA to AA Ratio
1994	4,598	1,897	306	1,591	5.20	34,079	8,306	25,773	3.10
1995	4,654	2,145	307	1,838	5.99	26,322	5,208	21,114	4.05
1996	5,141	2,415	213	2,202	10.34	26,603	3,907	23,506	6.02
1997	5,398	2,795	224	2,571	11.48	26,061	3,310	22,751	6.87
1998	5,745	3,258	265	2,993	11.29	30,407	3,642	26,765	7.35
1999	5,504	3,606	307	3,299	10.75	32,550	4,087	28,463	6.96
2000	5,102	3,517	309	3,208	10.38	27,081	3,317	24,484	7.38
2001	4,366	3,391	290	3,101	10.69	27,893	3,537	24,356	6.89
2002	4,430	3,640	298	3,342	11.21	41,275	6,446	34,829	5.40
2003	4,379	3,613	288	3,325	11.55	37,230	5,127	32,103	6.26

Table II. Analysts' Work Patterns

This table presents summary statistics of analysts' work pattern. The first vertical panel shows the average number of firms receiving recommendation from an analyst. "AA" refers to All-American analysts. These are the star-analysts elected by the *Institutional Investor* magazine after conducting a large survey from buy-side managers. The list of AAs in each year is obtained from the October issue of the magazine. The second vertical panel shows the average number of times an analyst's updates his recommendation on a firm that he covers. The third vertical panel tabulates the average total number of recommendations issued by an analyst during a year.

Year	**Coverage**			**Updating Frequency**			**Total Recommendations**		
	AA	Non-AA	T-Stat	AA	Non-AA	T-Stat	AA	Non-AA	T-Stat
1994	19.22	11.41	10.99	1.43	1.37	2.53	27.14	16.20	10.94
1995	11.28	7.70	8.35	1.46	1.39	1.81	16.96	11.49	6.78
1996	10.45	7.53	6.10	1.36	1.33	1.20	14.54	10.68	5.19
1997	10.33	6.62	6.87	1.36	1.28	3.62	14.78	8.85	6.81
1998	10.26	6.47	8.16	1.31	1.32	-0.33	13.74	8.94	7.26
1999	9.06	5.99	8.89	1.31	1.33	-1.09	13.31	8.63	7.74
2000	8.12	5.72	7.19	1.27	1.27	0.04	10.74	7.63	6.15
2001	8.50	5.56	8.07	1.38	1.32	2.66	12.20	7.85	7.26
2002	13.06	6.49	14.37	1.59	1.50	4.41	21.63	10.42	13.05
2003	10.75	6.36	9.19	1.57	1.43	3.98	17.80	9.66	8.34
All Years	11.67	6.68	30.02	1.41	1.35	6.35	16.42	9.62	27.84

Table III. Comparison of Firm Characteristics

This table compares select firm characteristic for firms covered by AAs and those covered by non-AAs. Panel A presents results for "buy" recommendations; Panel B presents results for "sells". "Firm Size" is the firm's market capitalization of equity, computed by shares outstanding times the year-end closing price. The unit of measure is millions of dollars. "Leverage" is the firm's debt to asset ratio, computed as total debt divided by total assets. "Stock-Return Volatility" is the market-model residual return standard deviation computed using 120 days of returns data prior to each recommendation date. "Listing Status" is an indicator variable equaling 1 if the firm is listed on the NYSE, and 0 otherwise. ***, **, and * denote that the t-statistic is statistically significantly at the 1, 5, and 10 percent levels, respectively, based on a two-tailed test.

Panel A: Buy Recommendations

Panel A-1: Firm Size

	All			Top-tier Banks			Lower-status Banks		
Year	AA	non-AA	t-stat	AA	non-AA	t-stat	AA	non-AA	t-stat
1994	5049.8	3025.6	11.03	4825.5	2709.8	8.27	5354.5	3110.8	8.03
1995	4886.5	3137.3	8.49	4337.2	2627.7	6.38	5498.0	3260.8	7.00
1996	4829.6	3703.0	4.53	5212.0	3852.7	4.45	4450.0	3740.7	2.05
1997	5536.8	3861.2	6.11	5662.3	4596.3	2.49	5403.2	3659.7	4.73
1998	9466.4	5579.2	9.64	8402.5	6633.8	3.26	11279.0	5331.3	8.43
1999	11969.0	8273.7	6.07	12473.0	9371.8	3.32	11165.0	8068.6	3.55
2000	17743.0	12384.0	5.05	17285.0	14057.0	2.23	18651.0	12048.0	3.58
2001	16130.0	11356.0	5.27	16183.0	12998.0	2.38	16043.0	11141.0	3.30
2002	17540.0	10550.0	9.11	19029.0	13573.0	4.71	14879.0	10026.0	4.31
2003	16164.0	7890.5	9.08	18188.0	12759.0	3.65	13855.0	7310.3	5.55
All years	10753.0	7310.2	17.36	11303.0	7930.5	11.29	9973.4	7183.8	9.98

Panel A-2: Book-to-Market

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	0.3762	0.3361	5.17	0.3911	0.2815	7.21	0.3560	0.3512	0.44
1995	0.4298	0.4142	1.88	0.4340	0.3645	5.10	0.4251	0.4262	-0.09
1996	0.3576	0.3483	1.13	0.3518	0.3096	3.26	0.3835	0.3650	0.49
1997	0.3222	0.3151	0.81	0.3269	0.2894	2.95	0.3172	0.3220	-0.45
1998	0.3018	0.3002	0.26	0.3093	0.2670	4.60	0.2891	0.3080	-2.04
1999	0.3519	0.3574	-0.67	0.3562	0.3618	-0.43	0.3449	0.3565	-0.96
2000	0.3145	0.3012	1.54	0.3121	0.2783	2.74	0.3194	0.3058	0.93
2001	0.3367	0.3240	1.25	0.3462	0.3381	0.54	0.3214	0.3222	-0.04
2002	0.3892	0.4172	-3.76	0.3976	0.3966	0.09	0.3743	0.4208	-3.91
2003	0.5247	0.5334	-0.69	0.5136	0.4936	1.34	0.5001	0.5353	-2.05
All years	0.3685	0.3626	2.21	0.3731	0.3301	10.39	0.3620	0.3692	-1.80

Panel A-3: Stock Return Volatility

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	0.0219	0.0272	-26.19	0.0214	0.0282	-21.39	0.0225	0.0269	-14.47
1995	0.0208	0.0255	-23.07	0.0209	0.0264	-16.09	0.0207	0.0253	-16.12
1996	0.0211	0.0268	-22.12	0.0211	0.0268	-13.24	0.0211	0.0268	-17.25
1997	0.0234	0.0293	-21.17	0.0231	0.0276	-10.28	0.0237	0.0298	-15.56
1998	0.0204	0.0291	-21.55	0.0233	0.0279	-13.38	0.0252	0.0293	-10.74
1999	0.0323	0.0370	-14.28	0.0306	0.0356	-10.91	0.0349	0.0373	-3.98
2000	0.0350	0.0422	-16.76	0.0346	0.0410	-9.83	0.0357	0.0425	-9.59
2001	0.0411	0.0488	-16.04	0.0406	0.0450	-5.75	0.0420	0.0493	-9.56
2002	0.0314	0.0383	-22.50	0.0303	0.0342	-8.45	0.0335	0.0390	-11.10
2003	0.0317	0.0360	-10.88	0.0305	0.0308	-0.49	0.0332	0.0367	-6.16
All years	0.0281	0.0341	-11.15	0.0277	0.0323	-8.03	0.0288	0.0346	-13.74

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Panel A-4 P/E Ratio

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	33.259	34.297	-0.49	33.138	34.577	-0.46	33.428	34.224	-0.3
1995	23.923	27.356	-3.06	23.456	30.064	-4.2	24.437	26.72	-1.23
1996	38.347	38.267	0.02	41.198	43.075	-0.29	35.517	37.1	-0.42
1997	41.518	42.388	-0.22	35.084	49.403	-3.06	48.476	40.507	1.11
1998	45.178	46.331	-0.21	42.58	57.196	-1.92	49.781	43.79	0.51
1999	73.166	53.485	2.1	77.718	50.644	1.95	65.34	54.021	1.13
2000	55.969	91.586	-6.34	60.446	89.461	-3.04	46.725	92.025	-8.39
2001	48.689	60.478	-1.55	56.832	48.264	0.72	34.851	62.183	-5.58
2002	52.696	51.098	0.45	51.752	52.072	-0.06	54.511	50.908	0.52
2003	31.212	32.694	-0.68	27.476	31.206	-1.4	35.9	32.888	0.75
All years	44.15	48.514	-2.75	45.715	49.625	-1.56	41.869	48.281	-3.17

Panel A-5: Listing Status

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	0.7282	0.5184	22.43	0.7496	0.4922	17.52	0.699	0.5256	12.55
1995	0.8185	0.5376	16.58	0.7157	0.5318	11.3	0.7215	0.539	12.91
1996	0.7038	0.5123	15.8	0.7004	0.5426	8.89	0.7071	0.5047	12.06
1997	0.6667	0.4832	16.16	0.6534	0.5609	5.34	0.6808	0.4618	13.91
1998	0.7059	0.4942	21.01	0.7213	0.583	9.55	0.6794	0.4731	12.7
1999	0.6874	0.5042	17.9	0.7297	0.5351	9.01	0.619	0.4868	7.96
2000	0.6532	0.459	17.24	0.6574	0.5416	7.17	0.6447	0.4421	10.76
2001	0.6509	0.4693	15.18	0.6623	0.5923	3.87	0.6326	0.4528	9.86
2002	0.7388	0.5214	24.24	0.7706	0.688	6.14	0.6817	0.4914	12.69
2003	0.7425	0.5181	19.1	0.7838	0.7518	1.76	0.6953	0.4887	11.88
All years	0.7021	0.5005	60.96	0.7178	0.5814	27.24	0.6797	0.4837	39.2

Panel A-6: Dividend Yield

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	1.61%	1.14%	12.51	1.69%	0.95%	13.13	1.50%	1.19%	5.61
1995	1.70%	1.43%	5.52	1.71%	1.20%	6.67	1.57%	1.44%	3.07
1996	1.39%	1.13%	5.32	1.37%	1.13%	3.15	1.41%	1.13%	4.23
1997	1.14%	0.93%	5.12	1.27%	1.03%	3.55	1.00%	0.90%	1.9
1998	1.18%	0.85%	8.54	1.29%	0.96%	5.61	0.91%	0.80%	3.5
1999	1.13%	0.97%	3.54	1.30%	1.12%	2.37	0.85%	0.94%	-1.49
2000	1.32%	0.93%	6.56	1.32%	1.15%	1.98	1.31%	0.89%	4.25
2001	1.12%	0.86%	4.88	1.11%	1.16%	-0.63	1.15%	0.82%	3.5
2002	1.05%	0.94%	2.91	1.12%	1.45%	-3.46	0.93%	0.85%	1.37
2003	1.33%	0.98%	6.29	1.43%	1.67%	-2.38	1.21%	0.90%	5.35
All years	1.28%	0.99%	20.8	1.33%	1.12%	8.58	1.23%	0.97%	12.11

Panel B: Sell Recommendations

Panel B-1: Firm Size

	All			Top-tier Banks			Lower-status Banks		
Year	AA	non-AA	t-stat	AA	non-AA	t-stat	AA	non-AA	t-stat
1994	4860.5	3521.3	7.25	4376.0	2772.9	6.00	5488.9	3723.4	5.27
1995	4328.6	3467.1	3.20	3938.4	2859.8	3.46	4737.3	3815.2	2.99
1996	4333.2	4090.2	0.84	4381.1	3976.4	0.93	4289.8	4113.7	0.42
1997	8592.8	4972.0	6.02	8423.5	5284.3	3.79	8778.8	4891.8	4.27
1998	8672.1	6773.7	3.49	7577.0	5487.2	3.06	10247.0	7088.4	3.38
1999	9983.1	8206.6	2.16	11108.0	8274.5	2.08	8872.0	8194.3	0.66
2000	11834.0	11022.0	-1.99	11348.0	9843.0	0.98	12708.0	11258.0	0.75
2001	14373.0	10536.0	3.78	15148.0	11275.0	2.83	12720.0	10394.0	1.54
2002	10402.0	9359.1	2.35	9887.6	9688.7	0.31	11480.0	9270.1	2.77
2003	9447.9	6837.4	5.73	12402.1	8600.4	2.49	8119.6	6525.6	2.65
All years	8581.0	7085.5	8.42	8769.5	7107.3	6.23	8311.7	7080.7	4.80

Panel B-2: Book-to-Market

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	0.4382	0.4202	1.96	0.4647	0.4232	2.86	0.4060	0.4193	-1.16
1995	0.4927	0.4898	0.31	0.4923	0.4599	2.10	0.4932	0.4961	-0.23
1996	0.4053	0.4206	-1.47	0.3901	0.3887	0.08	0.4193	0.4271	-0.58
1997	0.3836	0.3784	0.50	0.3897	0.3459	2.53	0.3768	0.3866	-0.78
1998	0.3645	0.3551	1.01	0.3905	0.3650	1.69	0.3266	0.3527	-2.52
1999	0.4264	0.4391	-0.91	0.4353	0.4219	0.58	0.4176	0.4423	-1.32
2000	0.3892	0.4041	-1.02	0.3868	0.4039	-0.80	0.3935	0.4041	-0.44
2001	0.4142	0.3591	3.67	0.4147	0.3644	2.24	0.4132	0.3581	2.26
2002	0.4940	0.4783	1.91	0.4967	0.4962	0.03	0.4884	0.4734	1.18
2003	0.6244	0.5885	3.25	0.6257	0.5888	2.19	0.6225	0.5885	2.01
All years	0.4726	0.4508	6.03	0.4793	0.4437	6.38	0.4629	0.4524	2.00

Panel B-3: Stock Return Volatility

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	0.0213	0.0250	-14.83	0.0208	0.0263	-13.23	0.0218	0.0246	-7.69
1995	0.0204	0.0233	-12.55	0.0203	0.0246	-10.43	0.0206	0.0231	-7.77
1996	0.0212	0.0246	-9.94	0.0213	0.0254	-7.13	0.0211	0.0245	-7.47
1997	0.0209	0.0273	-17.09	0.0208	0.0272	-10.79	0.0210	0.0273	-12.18
1998	0.0243	0.0280	-10.65	0.0238	0.0274	-7.15	0.0251	0.0282	-5.71
1999	0.0322	0.0354	-6.19	0.0314	0.0353	-4.74	0.0330	0.0354	-3.33
2000	0.0337	0.0381	-7.81	0.0331	0.0363	-3.85	0.0350	0.0385	-4.06
2001	0.0415	0.0508	-14.10	0.0422	0.0483	-6.20	0.0401	0.0513	-10.42
2002	0.0338	0.0403	-19.70	0.0336	0.0381	-9.27	0.0342	0.0408	-12.13
2003	0.0326	0.0354	-8.69	0.0312	0.0323	-2.27	0.0346	0.0360	-2.92
All years	0.0284	0.0331	-9.62	0.0282	0.0324	-7.64	0.0287	0.0334	-10.84

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Panel B-4: P/E Ratio

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	38.482	40.699	-0.57	41.779	43.424	-0.23	34.081	39.998	-1.52
1995	22.716	26.061	-2.75	24.088	27.906	-1.69	21.254	25.681	-3.14
1996	35.392	31.251	0.81	41.854	35.642	0.78	29.309	30.374	-0.15
1997	37.543	35.063	0.41	32.89	42.469	-1.62	42.792	33.193	0.83
1998	34.98	41.248	-1.65	36.453	46.556	-1.33	32.79	39.955	-1.98
1999	67.059	46.869	1.45	65.419	45.999	0.84	68.703	47.024	1.34
2000	50.738	65.755	-1.96	52.888	54.842	-0.17	46.757	67.927	-2.37
2001	43.053	54.041	-1.37	42.448	52.726	-0.8	44.254	54.304	-1.16
2002	42.757	55.21	-3.99	43.597	48.427	-1.06	41.089	57.131	-3.26
2003	30.042	33.362	-1.87	29.79	30.972	-0.47	30.426	33.792	-1.18
All years	37.957	42.221	-2.89	39.103	42.326	-1.38	36.326	42.198	-2.95

Panel B-5: Listing Status

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	0.7469	0.5725	16.55	0.7594	0.5336	13.45	0.7305	0.5831	9.67
1995	0.7368	0.6005	12.3	0.7301	0.5907	7.47	0.744	0.6027	8.63
1996	0.7129	0.5673	9.7	0.7137	0.5845	5.14	0.7122	0.5637	7.32
1997	0.7309	0.5293	13.54	0.7418	0.5662	7.76	0.7189	0.5198	9.39
1998	0.6973	0.5317	9.57	0.6825	0.5718	5.11	0.6538	0.5218	5.93
1999	0.6516	0.5416	6.81	0.6937	0.6139	3.18	0.6103	0.5281	3.63
2000	0.6686	0.5169	9.49	0.6631	0.5848	3.31	0.6786	0.503	6.9
2001	0.6536	0.4505	13.87	0.6398	0.5431	4.54	0.6829	0.4323	10.32
2002	0.6888	0.5104	21.36	0.6884	0.6388	4.13	0.6896	0.4751	15.65
2003	0.7303	0.5471	20.41	0.7621	0.7314	2.28	0.6858	0.5132	12.52
All years	0.706	0.5352	45.3	0.7123	0.6084	18.12	0.6969	0.5188	31.5

Panel B-6: Dividend Yield

	All			Top-tier Banks			Lower-status Banks		
Year	AA	Non-AA	t-stat	AA	Non-AA	t-stat	AA	Non-AA	t-stat
1994	2.13%	1.77%	6.99	2.20%	1.77%	5.22	2.03%	1.77%	3.61
1995	2.14%	1.97%	3.07	2.22%	1.80%	4.43	2.06%	2.00%	0.72
1996	1.55%	1.54%	0.25	1.60%	1.50%	0.89	1.51%	1.54%	-0.48
1997	1.75%	1.22%	7.92	1.87%	1.22%	6.22	1.62%	1.23%	4.49
1998	1.25%	1.09%	2.9	1.35%	1.27%	0.94	1.11%	1.05%	0.8
1999	1.35%	1.27%	1.03	1.53%	1.43%	0.68	1.17%	1.23%	-0.67
2000	1.87%	1.52%	2.12	2.05%	1.70%	1.56	1.55%	1.49%	0.24
2001	1.56%	1.04%	5.85	1.47%	1.34%	1.22	1.33%	0.93%	3.19
2002	1.36%	1.18%	3.85	1.31%	1.65%	-3.76	1.46%	1.04%	6.2
2003	1.92%	1.38%	7.13	2.07%	2.00%	0.69	1.71%	1.26%	3.56
All years	1.70%	1.37%	14.38	1.76%	1.60%	4.13	1.63%	1.32%	9.25

Table IV. Overall Levels of Stock Recommendations

This table presents summary statistics on the overall levels of stock recommendations by different groups of analysts. Panel A compares AAs' recommendations levels with non-AAs' recommendation levels. Panel B repeats the comparison for top-tier-bank analysts versus lower-status bank analysts. "AA" refers to All-American analysts. These are the star-analysts elected by the *Institutional Investor* magazine after conducting a large survey from buy-side managers. The list of AAs in each year is obtained from the October issue of the magazine. According to I/B/E/S convention, a recommendation of "1" corresponds to the most positive recommendation (normally a "strong buy"), and a recommendation of "5" corresponds to the least favorable recommendations (normally a "strong sell").

Panel A: AA versus non-AA

	AA			Non- AA			
Year	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**	**t-stat for Mean**
1994	2.24	2	0.90	2.24	2	0.97	0.18
1995	2.31	2	0.93	2.20	2	0.97	7.36
1996	2.08	2	0.89	2.12	2	0.95	-2.02
1997	2.10	2	0.81	2.06	2	0.91	2.77
1998	2.09	2	0.78	2.09	2	0.86	-0.02
1999	1.97	2	0.82	2.03	2	0.85	-4.50
2000	2.04	2	0.80	1.99	2	0.83	3.47
2001	2.19	2	0.83	2.14	2	0.85	3.00
2002	2.60	3	0.93	2.38	2	0.97	18.37
2003	2.74	3	0.92	2.50	2	1.02	15.82
All years	2.28	2	0.91	2.19	2	0.94	19.29

Panel B: Top-tier Banks versus Lower-status Banks

	Top-tier Banks			Low-status Banks			
Year	**Mean**	**Median**	**Standard Deviation**	**Mean**	**Median**	**Standard Deviation**	**t-stat for Mean**
1994	2.30	2	0.99	2.22	2	0.87	6.35
1995	2.25	2	0.84	2.21	2	1.01	3.49
1996	2.08	2	0.80	2.12	2	0.98	-1.06
1997	2.07	2	0.80	2.06	2	0.92	0.41
1998	2.10	2	0.77	2.08	2	0.88	1.19
1999	2.00	2	0.78	2.03	2	0.87	-2.56
2000	2.02	2	0.78	1.99	2	0.84	2.28
2001	2.26	2	0.86	2.12	2	0.85	10.94
2002	2.58	3	0.95	2.35	2	0.97	21.50
2003	2.74	3	0.99	2.49	3	1.01	19.23
All years	2.26	2	0.89	2.18	2	0.95	20.76

Table V. Investment Value of Buy Recommendations: AA versus Non-AA

This table compares the investment value of buy recommendations issued by AAs versus those issued by non-AAs. Panel A presents raw (un-adjusted) returns; Panels B-D presents market-adjusted, Fama-French 3-factor adjusted, and Carhart 4-factor adjusted excess returns (alphas), respectively. *, **, and *** indicate that the alphas are significantly different from zero at the 10%, 5%, and 1% level, respectively. *P*-values for the difference in alphas between the AAs and non-AAs are also tabulated.

Panel A: Raw Returns

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**non-AA**	**Diff.**	**AA**	**non-AA**	**Diff.**	**AA**	**non-AA**	**Diff.**
1994	-0.41%	0.28%	-0.69%	0.40%	2.02%	-1.63%	-1.50%	-0.15%	-1.35%
1995	38.29%	38.91%	-0.61%	39.24%	44.56%	-5.32%	36.91%	37.42%	-0.51%
1996	27.83%	22.82%	5.01%	27.54%	21.95%	5.59%	28.23%	23.06%	5.16%
1997	31.81%	25.55%	6.26%	29.31%	27.62%	1.69%	34.57%	24.98%	9.59%
1998	14.80%	7.57%	7.23%	15.10%	12.54%	2.56%	15.13%	6.25%	8.89%
1999	45.32%	54.42%	-9.11%	41.72%	64.67%	-22.95%	50.73%	51.87%	-1.13%
2000	-0.44%	-0.04%	-0.39%	-1.62%	-7.26%	5.64%	-7.37%	-7.24%	-0.13%
2001	-1.10%	-1.51%	0.41%	-0.50%	-7.81%	7.32%	-2.02%	-0.46%	-1.56%
2002	-19.17%	-20.62%	1.45%	-19.07%	-19.02%	-0.05%	-19.40%	-20.86%	1.46%
2003	46.26%	59.23%	-12.96%	43.23%	51.47%	-8.24%	49.87%	60.36%	-10.49%
1994-2002	13.32%	11.14%	2.18%	13.10%	12.74%	0.36%	13.55%	10.66%	2.89%
1994-2003	16.25%	15.21%	1.04%	15.80%	16.12%	-0.32%	16.74%	14.84%	1.90%
bull years	33.60%	35.96%	-2.36%	33.52%	35.34%	-1.82%	32.31%	32.73%	-0.42%
bear years	-5.64%	-8.32%	2.68%	-5.91%	-7.87%	1.96%	-5.56%	-7.58%	2.01%

Panel B: Market-adjusted Returns(Annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994	0.60%	1.30%	0.70	1.26%	3.66%	0.42	-0.30%	0.71%	0.57
1995	-0.55%	-1.59%	0.66	0.35%	-1.10%	0.68	-1.85%	-1.70%	0.95
1996	6.06%*	1.11%	0.08	5.90%	-0.75%	0.08	6.27%	1.62%	0.12
1997	3.37%	-0.95%	0.07	1.77%	-0.25%	0.48	5.14%	-1.14%	0.02
1998	-6.22%	-12.75%	0.04	-5.64%	-8.96%	0.33	-6.39%	-13.78%*	0.06
1999	16.23%***	22.55%***	0.04	14.88%***	27.55%***	0.01	18.07%**	21.26%***	0.47
2000	14.31%	10.43%	0.48	13.60%*	9.79%	0.56	15.15%	10.58%	0.45
2001	10.77%*	12.08%	0.76	11.24%*	5.67%	0.24	10.12%	13.12%*	0.50
2002	1.63%	-0.26%	0.61	1.38%	2.03%	0.86	2.02%	-0.61%	0.50
2003	8.31%**	17.93%***	0.00	6.73%*	14.69%***	0.00	10.15%**	18.43%***	0.02
1994-2002	4.72%**	2.83%	0.11	4.56%**	4.19%*	0.79	4.91%**	2.42%	0.06
1994-2003	5.19%***	4.26%*	0.41	4.91%***	4.93%**	0.98	5.50%***	3.98%*	0.23
bull years	5.00%**	5.03%*	0.97	4.58%**	6.04%**	0.35	5.49%**	4.70%*	0.58
bear years	6.90%**	6.11%	0.71	6.92%**	5.47%	0.55	6.87%*	6.19%	0.76

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Table V. Investment Value of Buy Recommendations: AA versus Non-AA

Panel C: Fama-French 3-factor Adjusted Returns (Annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994	1.30%	2.12%	0.51	1.94%	4.25%*	0.32	0.44%	1.59%	0.45
1995	-1.36%	-0.08%	0.41	0.02%	1.86%	0.46	-3.36%	-0.59%	0.10
1996	5.49%***	1.73%	0.03	5.84%***	0.59%	0.04	5.01%**	2.04%	0.21
1997	0.74%	-3.09%	0.03	-0.22%	-0.82%	0.80	1.84%	-3.71%*	0.05
1998	4.98%*	2.80%	0.29	5.73%*	4.77%	0.74	4.47%	2.28%	0.42
1999	11.15%***	12.56%***	0.52	12.85%***	17.13%***	0.18	8.00%	11.39%***	0.77
2000	8.08%*	6.10%	0.52	7.56%	4.63%	0.58	8.84%	6.43%	0.36
2001	-0.63%	0.10%	0.80	0.38%	-4.40%	0.25	-2.18%	0.84%	0.37
2002	-0.22%	-1.04%	0.77	-0.35%	1.39%	0.61	-0.03%	-1.40%	0.70
2003	1.39%	5.23%*	0.06	0.59%	7.49%**	0.01	2.39%	5.06%*	0.29
1994-2002	3.79%***	2.88%**	0.22	3.49%***	4.39%***	0.43	4.25%***	2.43%**	0.11
1994-2003	3.21%***	2.87%**	0.63	2.85%**	4.09%***	0.25	3.70%***	2.47%**	0.25
bull years	3.12%**	2.98%**	0.86	2.60%**	4.86%***	0.06	3.85%**	2.47%**	0.27
bear years	2.87%	2.75%	0.92	3.10%	2.53%	0.78	2.55%	2.75%	0.91

Panel D: Four-Factor Adjusted Returns (Annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**P-Value**	**AA**	**Non-AA**	**P-Value**	**AA**	**Non-AA**	**P-Value**
1994	0.96%	1.88%	0.45	1.65%	3.69%	0.37	0.03%	1.43%	0.35
1995	-2.30%	-1.20%	0.48	-1.36%	0.19%	0.54	-3.65%	-1.55%	0.28
1996	5.47%***	1.70%	0.03	5.85%***	0.51%	0.03	4.97%**	2.04%	0.18
1997	0.38%	-3.12%	0.04	-0.36%	-0.73%	0.88	1.26%	-3.78%*	0.04
1998	6.04%**	3.57%	0.23	7.01%**	5.29%	0.55	5.25%	3.11%	0.45
1999	11.12%***	12.47%***	0.53	12.84%***	16.97%***	0.19	7.94%	11.32%***	0.43
2000	6.64%	4.12%	0.42	7.89%*	1.54%	0.21	4.47%	4.69%	0.97
2001	-0.76%	-0.33%	0.88	0.76%	-5.59%	0.11	-3.17%	0.52%	0.29
2002	-0.39%	0.34%	0.75	-0.84%	2.63%	0.24	0.32%	0.00%	0.91
2003	1.13%	4.91%*	0.07	0.62%	6.57%**	0.03	1.71%	4.76%*	0.23
1994-2002	2.94%***	2.27%*	0.37	3.00%**	3.52%**	0.65	2.83%*	1.89%	0.40
1994-2003	2.59%**	2.40%**	0.79	2.50%**	3.45%**	0.38	2.65%*	2.07%*	0.57
bull years	3.38%***	2.93%**	0.58	3.09%**	4.73%***	0.17	3.76%**	2.49%**	0.31
bear years	2.37%	2.39%	0.99	2.72%	2.11%	0.76	1.85%	2.41%	0.75

Table VI. Investment Value of Buy Recommendations: Top-tier versus Lower-status

This table compares the investment value of buy recommendations issued by top-tier-bank analysts versus those issued by lower-status-bank analysts. Panel A presents raw (un-adjusted) returns; Panels B-D presents market-adjusted, Fama-French 3-factor adjusted, and Carhart 4-factor adjusted excess returns (alphas), respectively. *, **, and *** indicate that the alphas are significantly different from zero at the 10%, 5%, and 1% level, respectively. *P*-values for the difference in alphas between the top-tier-bank analysts and lower-status-bank analysts are also tabulated.

Panel A: Raw Returns

		All			AA			non-AA	
Year	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**	**Top**	**Lower-**	**Diff.**
1994	1.24%	-0.35%	1.60%	0.40%	-1.50%	1.89%	2.02%	-0.15%	2.18%
1995	42.49%	37.38%	5.11%	39.24%	36.91%	2.33%	44.56%	37.42%	7.14%
1996	23.42%	23.44%	-0.03%	27.54%	28.23%	-0.69%	21.95%	23.06%	-1.11%
1997	28.03%	25.77%	2.25%	29.31%	34.57%	-5.26%	27.62%	24.98%	2.63%
1998	13.02%	6.85%	6.17%	15.10%	15.13%	-0.03%	12.54%	6.25%	6.30%
1999	56.77%	51.80%	4.96%	41.72%	50.73%	-9.02%	64.67%	51.87%	12.80%
2000	-4.77%	-6.95%	2.18%	-1.62%	-7.37%	5.75%	-7.26%	-7.24%	-0.02%
2001	-4.99%	-0.54%	-4.45%	-0.50%	-2.02%	1.52%	-7.81%	-0.46%	-7.36%
2002	-19.03%	-20.78%	1.76%	-19.07%	-19.40%	0.33%	-19.02%	-20.86%	1.84%
2003	48.31%	59.62%	-11.30%	43.23%	49.87%	-6.64%	51.47%	60.36%	-8.89%
1994-2002	12.81%	10.85%	1.96%	13.10%	13.55%	-0.45%	12.74%	10.66%	2.08%
1994-2003	15.94%	14.97%	0.97%	15.80%	16.74%	-0.94%	16.12%	14.84%	1.27%
bull years	34.49%	32.95%	1.54%	33.52%	32.31%	1.21%	35.34%	32.73%	2.60%
bear years	-7.20%	-7.55%	0.35%	-5.91%	-5.56%	-0.35%	-7.87%	-7.58%	-0.29%

Panel B: Market-adjusted Returns(Annual Alhpas, in %)

		All			AA			Non-AA	
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994	2.47%	0.56%	0.12	1.26%	-0.30%	0.33	3.66%	0.71%	0.14
1995	-0.57%	-1.72%	0.46	0.35%	-1.85%	0.31	-1.10%	-1.70%	0.79
1996	1.07%	1.97%	0.52	5.90%	6.27%	0.89	-0.75%	1.62%	0.21
1997	0.24%	-0.61%	0.56	1.77%	5.14%	0.21	-0.25%	-1.14%	0.59
1998	-8.24%	-13.26%*	0.01	-5.64%	-6.39%	0.81	-8.96%	-13.78%*	0.02
1999	23.38%***	21.03%***	0.31	14.88%***	18.07%**	0.58	27.55%***	21.26%***	0.02
2000	11.25%	10.80%	0.91	13.60%*	15.15%	0.82	9.79%	10.58%	0.83
2001	7.83%	12.94%*	0.08	11.24%*	10.12%	0.78	5.67%	13.12%*	0.01
2002	1.77%	-0.47%	0.45	1.38%	2.02%	0.84	2.03%	-0.61%	0.37
2003	11.67%***	17.85%***	0.07	6.73%*	10.15%**	0.21	14.69%***	18.43%***	0.28
1994-2002	4.25%*	2.58%	0.04	4.56%**	4.91%**	0.80	4.19%*	2.42%	0.05
1994-2003	4.84%**	4.07%*	0.35	4.91%***	5.50%***	0.63	4.93%**	3.98%*	0.29
bull years	5.31%**	4.78%*	0.56	4.58%**	5.49%**	0.52	6.04%**	4.70%*	0.22
bear years	5.97%*	6.19%	0.89	6.92%**	6.87%*	0.98	5.47%	6.19%	0.64

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Panel C: Fama-French 3-factor Adjusted Returns (Annual Alhpas, in %)

	All			AA			Non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994	3.10%*	1.42%	0.12	1.94%	0.44%	0.31	4.25%*	1.59%	0.17
1995	1.07%	-0.90%	0.20	0.02%	-3.36%	0.11	1.86%	-0.59%	0.23
1996	2.01%	2.25%	0.86	5.84%***	5.01%**	0.74	0.59%	2.04%	0.40
1997	-0.70%	-3.25%	0.05	-0.22%	1.84%	0.44	-0.82%	-3.71%	0.08
1998	4.84%	2.43%	0.12	5.73%*	4.47%	0.69	4.77%	2.28%	0.18
1999	15.74%***	11.14%***	0.03	12.85%***	8.00%	0.31	17.13%***	11.39%***	0.03
2000	5.73%	6.55%	0.75	7.56%	8.84%	0.84	4.63%	6.43%	0.60
2001	-2.54%	0.66%	0.13	0.38%	-2.18%	0.53	-4.40%	0.84%	0.04
2002	0.70%	-1.33%	0.33	-0.35%	-0.03%	0.91	1.39%	-1.40%	0.25
2003	4.90%*	4.84%*	0.98	0.59%	2.39%	0.49	7.49%**	5.06%*	0.26
1994-2002	4.01%***	2.54%**	0.02	3.49%***	4.25%***	0.55	4.39%***	2.43%**	0.02
1994-2003	3.57%***	2.55%**	0.11	2.85%**	3.70%***	0.47	4.09%***	2.47%**	0.05
bull years	3.85%***	2.58%**	0.10	2.60%**	3.85%**	0.37	4.86%***	2.47%**	0.01
bear years	2.69%	2.70%	0.99	3.10%	2.55%	0.79	2.53%	2.75%	0.87

Panel D: Four-Factor Adjusted Returns (Annual Alhpas, in %)

	All			AA			Non-AA		
Year	**Top**	**Lower**	**P-Value**	**Top**	**Lower**	**P-Value**	**Top**	**Lower**	**P-Value**
1994	2.70%*	1.22%	0.15	1.65%	0.03%	0.27	3.69%	1.43%	0.21
1995	-0.48%	-1.79%	0.39	-1.36%	-3.65%	0.28	0.19%	-1.55%	0.39
1996	1.96%	2.24%	0.84	5.85%***	4.97%**	0.73	0.51%	2.04%	0.37
1997	-0.67%	-3.36%	0.04	-0.36%	1.26%	0.54	-0.73%	-3.78%	0.06
1998	5.57%*	3.25%	0.13	7.01%**	5.25%	0.57	5.29%	3.11%	0.24
1999	15.64%***	11.07%***	0.03	12.84%***	7.94%	0.30	16.97%***	11.32%***	0.03
2000	3.69%	4.66%	0.70	7.89%*	4.47%	0.57	1.54%	4.69%	0.35
2001	-3.07%	0.30%	0.11	0.76%	-3.17%	0.32	-5.59%	0.52%	0.01
2002	1.26%	0.01%	0.52	-0.84%	0.32%	0.68	2.63%	0.00%	0.28
2003	4.32%	4.53%*	0.91	0.62%	1.71%	0.68	6.57%**	4.76%*	0.40
1994-2002	3.20%**	1.95%*	0.06	3.00%**	2.83%*	0.89	3.52%**	1.89%	0.05
1994-2003	2.98%**	2.10%*	0.17	2.50%**	2.65%*	0.90	3.45%**	2.07%*	0.09
bull years	3.95%***	2.59%**	0.07	3.09%**	3.76%**	0.63	4.73%***	2.49%**	0.02
bear years	2.25%	2.33%	0.93	2.72%	1.85%	0.67	2.11%	2.41%	0.83

Table VII. Investment Value of Sell Recommendations: AA versus non-AA

This table compares the investment value of sell recommendations issued by AAs versus those issued by non-AAs. Panel A presents raw (un-adjusted) returns; Panels B-D presents market-adjusted, Fama-French 3-factor adjusted, and Carhart 4-factor adjusted excess returns (alphas), respectively. *, **, and *** indicate that the alphas are significantly different from zero at the 10%, 5%, and 1% level, respectively. *P*-values for the difference in alphas between the AAs and non-AAs are also tabulated.

Panel A: Raw Returns

	All			Top-Tier Banks			Lower-status Banks		
Year	**AA**	**non-AA**	**Diff.**	**AA**	**non-AA**	**Diff.**	**AA**	**non-AA**	**Diff.**
1994	-1.83%	-2.20%	0.37%	-1.57%	-2.97%	1.40%	-2.13%	-2.06%	-0.07%
1995	25.18%	29.06%	-3.88%	25.71%	30.72%	-5.01%	24.81%	28.60%	-3.79%
1996	15.02%	12.81%	2.21%	15.15%	8.40%	6.75%	14.95%	13.77%	1.19%
1997	21.96%	18.74%	3.23%	18.26%	12.23%	6.03%	25.45%	20.36%	5.09%
1998	-5.28%	-3.16%	-2.12%	-7.72%	-5.14%	-2.58%	-1.72%	-2.67%	0.94%
1999	11.15%	19.72%	-8.57%	13.25%	19.59%	-6.34%	9.52%	19.76%	-10.24%
2000	-12.15%	-10.84%	-1.31%	-14.77%	-11.58%	-3.19%	-8.03%	-10.64%	2.60%
2001	-0.38%	-2.46%	2.08%	-2.00%	-3.88%	1.88%	2.43%	-2.18%	4.60%
2002	-27.68%	-30.96%	3.28%	-28.67%	-30.58%	1.91%	-26.04%	-31.10%	5.06%
2003	47.27%	55.29%	-8.02%	46.83%	59.35%	-12.52%	48.02%	54.37%	-6.35%
1994-2002	1.55%	1.83%	-0.27%	0.53%	0.36%	0.17%	3.14%	2.15%	0.99%
1994-2003	5.40%	6.21%	-0.82%	4.42%	5.11%	-0.69%	6.94%	6.46%	0.48%
bull years	18.17%	20.83%	-2.66%	17.46%	19.24%	-1.78%	19.19%	21.19%	-2.00%
bear years	-11.22%	-12.46%	1.25%	-12.49%	-13.01%	0.52%	-9.13%	-12.36%	3.23%

Panel B: Market-adjusted Returns(Negative of the annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**non-AA**	**p-value**	**AA**	**non-AA**	**p-value**	**AA**	**non-AA**	**p-value**
1994	1.38%	1.68%	0.85	1.19%	2.42%	0.59	1.60%	1.55%	0.98
1995	6.71% **	3.92%	0.16	6.53% **	4.23%	0.40	6.75% **	3.84%	0.23
1996	3.66%	5.29%	0.39	3.04%	9.58% **	0.03	4.21%	4.37%	0.95
1997	2.39%	4.98%	0.31	5.44%	10.82% **	0.10	-0.42%	3.57%	0.18
1998	23.86% ***	21.55% ***	0.52	25.78% ***	23.62% ***	0.60	21.02% ***	21.04% ***	1.00
1999	7.13%	-1.05%	0.02	4.80%	-1.39%	0.16	9.20%	-0.98%	0.07
2000	5.09%	3.58%	0.77	7.81%	4.93%	0.67	0.70%	3.23%	0.71
2001	-11.69%	-10.74%	0.83	-10.18%	-8.88%	0.77	-14.34% *	-11.12%	0.60
2002	8.05%	11.93%	0.40	9.31%	11.67%	0.62	5.98%	12.06%	0.26
2003	-7.59%	-12.40% *	0.10	-7.17%	-15.63% **	0.01	-8.33%	-11.67% *	0.28
1994-2002	6.01% ***	5.70% ***	0.80	6.99% ***	7.11% ***	0.93	4.43% **	5.39% **	0.53
1994-2003	4.16% **	3.38%	0.48	5.07% ***	4.35% **	0.59	2.70%	3.16%	0.75
bull years	5.43% ***	3.02%	0.04	5.61% ***	4.29% *	0.37	5.08% **	2.73%	0.13
bear years	0.97%	1.88%	0.67	2.27%	2.82%	0.82	-1.23%	1.69%	0.28

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Panel C: Fama-French 3-factor Adjusted Returns (Negative of the annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**non-AA**	**p-value**	**AA**	**non-AA**	**p-value**	**AA**	**non-AA**	**p-value**
1994	0.66%	0.93%	0.84	0.42%	1.74%	0.53	0.92%	0.78%	0.92
1995	9.72% ***	5.22% ***	0.01	9.30% ***	5.82% **	0.17	10.07% ***	5.06% ***	0.02
1996	5.25% **	6.55% ***	0.44	4.50% *	10.37% ***	0.03	5.91% **	5.73% ***	0.94
1997	8.59% ***	8.72% ***	0.95	10.60% ***	14.05% ***	0.24	6.79% ***	7.44% ***	0.81
1998	13.72% ***	8.58% ***	0.09	15.79% ***	10.05% ***	0.11	10.89% **	8.24% ***	0.55
1999	4.78%	0.60%	0.19	0.75%	-1.50%	0.58	9.37%	1.17%	0.14
2000	17.17% ***	15.59% ***	0.71	18.23% ***	18.80% ***	0.93	15.08% **	14.84% ***	0.97
2001	0.90%	2.65%	0.68	1.97%	4.12%	0.64	-0.93%	2.35%	0.56
2002	10.60% **	12.86% **	0.55	11.78% ***	12.79% **	0.82	8.65% *	12.93% **	0.36
2003	1.74%	0.78%	0.65	1.36%	-3.95%	0.08	2.10%	1.81%	0.91
1994-2002	8.54% ***	7.65% ***	0.38	9.46% ***	9.36% ***	0.94	7.02% ***	7.26% ***	0.87
1994-2003	7.89% ***	6.84% ***	0.27	8.71% ***	8.05% ***	0.59	6.53% ***	6.56% ***	0.98
bull years	8.56% ***	6.25% ***	0.02	8.80% ***	7.63% ***	0.37	8.08% ***	5.93% ***	0.14
bear years	6.71% **	7.58% **	0.64	7.59% ***	8.70% ***	0.64	5.16% *	7.35% **	0.37

Panel D: Four-Factor Adjusted Returns (The negative of the annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994	0.58%	0.88%	0.82	0.31%	1.70%	0.51	0.87%	0.72%	0.93
1995	8.71% ***	4.92% ***	0.03	8.37% ***	5.04% **	0.19	8.97% ***	4.89% ***	0.06
1996	4.98% **	6.37% ***	0.40	4.22% *	10.10% ***	0.03	5.66% **	5.57% ***	0.97
1997	7.92% ***	7.97% ***	0.98	9.93% ***	12.88% ***	0.31	6.12% **	6.77% ***	0.81
1998	10.50% ***	6.24% ***	0.16	12.12% ***	6.76% **	0.14	8.05% *	6.17% ***	0.67
1999	4.40%	0.31%	0.19	0.39%	-1.83%	0.59	8.99%	0.90%	0.15
2000	10.49% **	10.67% **	0.96	11.18% *	13.95% **	0.66	9.08%	9.87% **	0.90
2001	4.99%	7.77%	0.50	6.23%	9.26%	0.50	2.82%	7.46%	0.40
2002	8.50% **	8.45% **	0.98	9.78% **	8.49% *	0.73	6.42%	8.49% **	0.61
2003	4.86% *	4.17%	0.74	5.05% *	-0.13%	0.09	4.39%	5.13%	0.77
1994-2002	5.86% ***	4.48% ***	0.17	6.56% ***	6.12% ***	0.74	4.71% ***	4.11% ***	0.68
1994-2003	5.69% ***	4.26% ***	0.13	6.31% ***	5.39% ***	0.46	4.64% ***	4.01% ***	0.63
bull years	6.79% ***	4.72% ***	0.04	6.81% ***	5.64% ***	0.37	6.58% ***	4.51% ***	0.16
bear years	5.39% ***	5.88% ***	0.78	6.22% ***	7.05% ***	0.72	3.91%	5.63% **	0.47

Table VIII. Investment Value of Sell Recommendations: Top-tier versus Lower-status

This table compares the investment value of sell recommendations issued by top-tier-bank analysts versus those issued by lower-status-bank analysts. Panel A presents raw (un-adjusted) returns; Panels B-D presents market-adjusted, Fama-French 3-factor adjusted, and Carhart 4-factor adjusted excess returns (alphas), respectively. *, **, and *** indicate that the alphas are significantly different from zero at the 10%, 5%, and 1% level, respectively. *P*-values for the difference in alphas between the top-tier-bank analysts and lower-status-bank analysts are also tabulated.

Panel A: Raw Returns

	All			AA			non-AA		
Year	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**
1994	-2.24%	-2.09%	-0.15%	-1.57%	-2.13%	0.56%	-2.97%	-2.06%	-0.91%
1995	28.47%	28.03%	0.44%	25.71%	24.81%	0.90%	30.72%	28.60%	2.13%
1996	10.35%	13.90%	-3.55%	15.15%	14.95%	0.20%	8.40%	13.77%	-5.37%
1997	13.81%	20.79%	-6.98%	18.26%	25.45%	-7.19%	12.23%	20.36%	-8.14%
1998	-5.86%	-2.61%	-3.25%	-7.72%	-1.72%	-5.99%	-5.14%	-2.67%	-2.47%
1999	17.65%	18.99%	-1.34%	13.25%	9.52%	3.72%	19.59%	19.76%	-0.18%
2000	-12.23%	-10.47%	-1.76%	-14.77%	-8.03%	-6.74%	-11.58%	-10.64%	-0.95%
2001	-3.19%	-1.83%	-1.36%	-2.00%	2.43%	-4.42%	-3.88%	-2.18%	-1.70%
2002	-29.86%	-30.85%	0.98%	-28.67%	-26.04%	-2.63%	-30.58%	-31.10%	0.52%
2003	54.45%	53.81%	0.64%	46.83%	48.02%	-1.19%	59.35%	54.37%	4.98%
1994-2002	0.45%	2.18%	-1.74%	0.53%	3.14%	-2.61%	0.36%	2.15%	-1.79%
1994-2003	4.86%	6.45%	-1.59%	4.42%	6.94%	-2.52%	5.11%	6.46%	-1.35%
bull years	18.44%	21.01%	-2.57%	17.46%	19.19%	-1.73%	19.24%	21.19%	-1.95%
bear years	-12.64%	-12.17%	-0.47%	-12.49%	-9.13%	-3.36%	-13.01%	-12.36%	-0.65%

Panel B: Market-adjusted Returns(Negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994	1.78%	1.58%	0.84	1.19%	1.60%	0.78	2.42%	1.55%	0.55
1995	5.29% *	4.28%	0.45	6.53% **	6.75% **	0.92	4.23%	3.84%	0.84
1996	7.64% **	4.33%	0.04	3.04%	4.21%	0.67	9.58% **	4.37%	0.01
1997	9.40% **	3.23%	0.00	5.44%	-0.42%	0.04	10.82% **	3.57%	0.00
1998	24.24% ***	21.06% ***	0.16	25.78% ***	21.02% ***	0.27	23.62% ***	21.04% ***	0.30
1999	0.49%	-0.23%	0.81	4.80%	9.20%	0.52	-1.39%	-0.98%	0.89
2000	5.45%	3.08%	0.53	7.81%	0.70%	0.36	4.93%	3.23%	0.68
2001	-9.32%	-11.37%	0.43	-10.18%	-14.34% *	0.36	-8.88%	-11.12%	0.43
2002	10.81%	11.78%	0.71	9.31%	5.98%	0.37	11.67%	12.06%	0.88
2003	-12.38% **	-11.37% *	0.64	-7.17%	-8.33%	0.63	-15.63% **	-11.67% *	0.10
1994-2002	7.06% ***	5.36% **	0.03	6.99% ***	4.43% **	0.09	7.11% ***	5.39% **	0.05
1994-2003	4.62% **	3.17%	0.05	5.07% ***	2.70%	0.09	4.35% **	3.16%	0.14
bull years	4.93% **	2.94%	0.02	5.61% ***	5.08% **	0.74	4.29% *	2.73%	0.10
bear years	2.45%	1.53%	0.49	2.27%	-1.23%	0.15	2.82%	1.69%	0.43

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Panel C: Fama-French 3-factor Adjusted Returns (Negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994	1.06%	0.83%	0.81	0.42%	0.92%	0.73	1.74%	0.78%	0.51
1995	7.37% ***	5.79% ***	0.24	9.30% ***	10.07% ***	0.72	5.82% **	5.06% ***	0.69
1996	8.63% ***	5.74% ***	0.08	4.50% *	5.91% **	0.61	10.37% ***	5.73% ***	0.02
1997	13.12% ***	7.37% ***	0.00	10.60% ***	6.79% ***	0.19	14.05% ***	7.44% ***	0.00
1998	11.70% ***	8.46% ***	0.14	15.79% ***	10.89% **	0.26	10.05% ***	8.24% ***	0.46
1999	-0.79%	1.78%	0.32	0.75%	9.37%	0.19	-1.50%	1.17%	0.35
2000	18.12% ***	14.87% ***	0.30	18.23% ***	15.08% **	0.69	18.80% ***	14.84% ***	0.30
2001	3.36%	2.11%	0.59	1.97%	-0.93%	0.52	4.12%	2.35%	0.50
2002	12.46% **	12.78% **	0.88	11.78% ***	8.65% *	0.39	12.79% **	12.93% **	0.95
2003	-1.87%	1.87%	0.02	1.36%	2.10%	0.75	-3.95%	1.81%	0.01
1994-2002	9.39% ***	7.29% ***	0.00	9.46% ***	7.02% ***	0.11	9.36% ***	7.26% ***	0.01
1994-2003	8.30% ***	6.61% ***	0.01	8.71% ***	6.53% ***	0.12	8.05% ***	6.56% ***	0.06
bull years	8.22% ***	6.13% ***	0.01	8.80% ***	8.08% ***	0.65	7.63% ***	5.93% ***	0.08
bear years	8.15% ***	7.23% **	0.43	7.59% ***	5.16% *	0.32	8.70% ***	7.35% **	0.32

Panel D: Four-Factor Adjusted Returns (The negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994	0.97%	0.77%	0.83	0.31%	0.87%	0.70	1.70%	0.72%	0.50
1995	6.53% ***	5.50% ***	0.44	8.37% ***	8.97% ***	0.78	5.04% **	4.89% ***	0.94
1996	8.35% ***	5.57% ***	0.07	4.22% *	5.66% **	0.61	10.10% ***	5.57% ***	0.02
1997	12.08% ***	6.71% ***	0.00	9.93% ***	6.12% **	0.19	12.88% ***	6.77% ***	0.00
1998	8.32% ***	6.33% ***	0.33	12.12% ***	8.05% *	0.35	6.76% **	6.17% ***	0.80
1999	-1.14%	1.51%	0.30	0.39%	8.99%	0.19	-1.83%	0.90%	0.33
2000	12.50% **	9.84% **	0.40	11.18% *	9.08%	0.79	13.95% **	9.87% **	0.30
2001	8.16%	7.13%	0.66	6.23%	2.82%	0.45	9.26%	7.46%	0.49
2002	9.06% **	8.50% **	0.78	9.78% **	6.42%	0.36	8.49% *	8.49% **	1.00
2003	1.88%	5.09% *	0.05	5.05% *	4.39%	0.78	-0.13%	5.13%	0.02
1994-2002	6.29% ***	4.20% ***	0.00	6.56% ***	4.71% ***	0.22	6.12% ***	4.11% ***	0.02
1994-2003	5.75% ***	4.10% ***	0.01	6.31% ***	4.64% ***	0.23	5.39% ***	4.01% ***	0.08
bull years	6.21% ***	4.71% ***	0.06	6.81% ***	6.58% ***	0.89	5.64% ***	4.51% ***	0.23
bear years	6.61% ***	5.56% **	0.36	6.22% ***	3.91%	0.34	7.05% ***	5.63% **	0.29

Table IX. Tech vs. non-tech Sector Analysis

This table presents the sussample analysis of tech sector analysts vs. non-tech sector analysts. Panel A reports the results for tech sector analysts; Panel B reports the results for non-tech sector analysts. Each panel consists of four sub-panels corresponding to the all-sample analysis presented in Tables V-VIII (AA vs. non-AA buy, Top vs. Lower buy, AA vs. non-AA sell, and Top vs. Lower sell). For brevity only the all-year and subperiod results are shown. *, **, and *** indicate that the alphas are significantly different from zero at the 10%, 5%, and 1% level, respectively. *P*-values for the difference in alphas between subgroups are also tabulated.

Panel A: Tech Sector Analysts

Panel A-1: Buy Recommendations: AA vs. non-AA

Panel A-1-1: Raw Returns

	All			Top-tier Banks			Lower-status Banks		
Period	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**
1994-2002	18.72%	8.77%	9.95%	17.14%	13.69%	3.45%	19.66%	6.97%	12.69%
1994-2003	21.52%	14.77%	6.75%	19.62%	18.48%	1.14%	22.81%	13.17%	9.64%
bull years	66.27%	71.46%	-5.19%	62.79%	73.12%	-10.33%	59.31%	59.45%	-0.13%
bear years	-24.07%	-32.56%	8.50%	-28.28%	-30.59%	2.31%	-21.33%	-32.32%	11.00%

Panel A-1-2: Market-adjusted Returns(The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	10.15% *	1.30%	0.00	8.62%	5.97%	0.41	11.70%	-0.41%	0.00
1994-2003	9.14% *	3.21%	0.01	7.53%	6.51%	0.73	10.71% *	1.81%	0.01
bull years	19.61% ***	16.74% ***	0.31	16.25% ***	21.45% ***	0.18	22.96% ***	14.95% ***	0.10
bear years	-3.59%	-12.95%	0.01	-2.22%	-11.67%	0.05	-5.00%	-13.52%	0.08

Panel A-1-3: Fama-French 3-factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	15.69% ***	6.67% *	0.00	13.50% ***	11.85% **	0.60	18.08% ***	4.83%	0.00
1994-2003	13.48% ***	7.03% *	0.00	11.23% ***	11.28% ***	0.99	15.87% ***	5.42%	0.00
bull years	21.91% ***	18.14% ***	0.18	17.84% ***	23.87% ***	0.11	26.18% ***	16.11% ***	0.04
bear years	-0.60%	-10.38%	0.00	0.64%	-8.02%	0.07	-1.93%	-11.16% *	0.06

Panel A-1-4: Four-Factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	15.48% ***	7.83% **	0.00	13.23% ***	13.10% ***	0.97	18.07% ***	6.06%	0.00
1994-2003	13.20% ***	7.85% **	0.01	10.84% ***	12.17% ***	0.65	15.80% ***	6.31% *	0.01
bull years	19.39% ***	16.10% ***	0.24	15.84% ***	21.47% ***	0.14	23.10% ***	14.23% ***	0.07
bear years	0.01%	-9.07%	0.00	0.94%	-6.57%	0.10	-0.88%	-9.86%	0.06

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Panel A-2: Buy Recommendations: Top-tier vs. Lower-status

Panel A-2-1: Raw Returns

	All			AA			non-AA		
Period	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**
1994-2002	15.15%	7.91%	7.24%	17.14%	19.66%	-2.51%	13.69%	6.97%	6.72%
1994-2003	19.30%	13.98%	5.32%	19.62%	22.81%	-3.19%	18.48%	13.17%	5.31%
bull years	68.53%	60.53%	8.00%	62.79%	59.31%	3.48%	73.12%	59.45%	13.67%
bear years	-28.95%	-31.81%	2.86%	-28.28%	-21.33%	-6.95%	-30.59%	-32.32%	1.74%

Panel A-2-2: Market-adjusted Returns(The annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	7.04%	0.50%	0.00	8.62%	11.70%	0.48	5.97%	-0.41%	0.00
1994-2003	7.11%	2.54%	0.00	7.53%	10.71% *	0.43	6.51%	1.81%	0.02
bull years	20.13% ***	15.52% ***	0.03	16.25% ***	22.96% ***	0.23	21.45% ***	14.95% ***	0.01
bear years	-8.80%	-12.75%	0.11	-2.22%	-5.00%	0.63	-11.67%	-13.52%	0.54

Panel A-2-3: Fama-French 3-factor Adjusted Returns (The annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	12.62% ***	5.86%	0.00	13.50% ***	18.08% ***	0.29	11.85% **	4.83%	0.00
1994-2003	11.58% ***	6.28% *	0.00	11.23% ***	15.87% ***	0.24	11.28% ***	5.42%	0.00
bull years	22.32% ***	16.86% ***	0.01	17.84% ***	26.18% ***	0.13	23.87% ***	16.11% ***	0.00
bear years	-5.36%	-10.32%	0.04	0.64%	-1.93%	0.65	-8.02%	-11.16% *	0.30

Panel A-2-4: Four-Factor Adjusted Returns (The annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	13.32% ***	6.97% *	0.00	13.23% ***	18.07% ***	0.26	13.10% ***	6.06%	0.00
1994-2003	12.01% ***	7.08% *	0.00	10.84% ***	15.80% ***	0.21	12.17% ***	6.31% *	0.00
bull years	20.00% ***	14.85% ***	0.02	15.84% ***	23.10% ***	0.18	21.47% ***	14.23% ***	0.00
bear years	-4.28%	-9.04%	0.04	0.94%	-0.88%	0.74	-6.57%	-9.86%	0.28

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Panel A-3: Sell Recommendations: AA vs. non-AA

Panel A-3-1: Raw Returns

	All			Top-tier Banks			Lower-status Banks		
Period	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**
1994-2002	-5.22%	-2.67%	-2.55%	-9.07%	-1.22%	-7.84%	-0.83%	-3.02%	2.18%
1994-2003	1.08%	3.78%	-2.70%	-2.43%	5.83%	-8.27%	4.94%	3.26%	1.68%
bull years	39.82%	47.01%	-7.19%	34.54%	47.42%	-12.88%	43.96%	46.79%	-2.82%
bear years	-37.86%	-38.45%	0.58%	-39.75%	-35.62%	-4.12%	-34.69%	-39.07%	4.38%

Panel A-3-2: Market-adjusted Returns(The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	12.10% *	9.87% *	0.54	16.21% ***	8.20%	0.11	6.36%	10.20% *	0.53
1994-2003	8.87%	6.57%	0.49	12.27% **	4.30%	0.08	4.19%	7.07%	0.60
bull years	-5.50%	-8.97% *	0.37	-2.68%	-10.27% *	0.15	-8.33%	-8.63% *	0.96
bear years	22.26% **	25.16% **	0.62	25.80% **	21.47% **	0.59	14.83%	25.94% **	0.21

Panel A-3-3: Fama-French 3-factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	8.15%	6.64%	0.68	13.03% **	5.83%	0.15	1.52%	6.75%	0.39
1994-2003	6.61%	5.14%	0.66	10.70% **	3.83%	0.13	1.14%	5.39%	0.44
bull years	-5.75%	-8.66% **	0.45	-1.96%	-8.75% *	0.20	-9.52%	-8.64% **	0.90
bear years	20.76% **	25.08% ***	0.46	24.07% **	21.56% **	0.76	13.38%	25.84% ***	0.16

Panel A-3-4: Four-Factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	2.16%	0.40%	0.63	6.74%	-1.31%	0.11	-4.54%	0.72%	0.39
1994-2003	1.93%	0.25%	0.61	5.73%	-1.78%	0.10	-3.52%	0.67%	0.45
bull years	-5.70%	-8.80% **	0.43	-2.51%	-9.68% **	0.18	-8.97%	-8.57% **	0.95
bear years	17.20% **	21.14% ***	0.50	20.55% **	17.34% **	0.69	9.62%	21.95% ***	0.17

Panel A-4: Sell Recommendations: Top-tier vs. Lower-status

Panel A-4-1: Raw Returns

	All			AA			non-AA		
Period	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**
1994-2002	-3.36%	-2.74%	-0.62%	-9.07%	-0.83%	-8.23%	-1.22%	-3.02%	1.79%
1994-2003	3.58%	3.51%	0.07%	-2.43%	4.94%	-7.37%	5.83%	3.26%	2.57%
bull years	44.24%	46.95%	-2.71%	34.54%	43.96%	-9.42%	47.42%	46.79%	0.64%
bear years	-36.97%	-38.81%	1.84%	-39.75%	-34.69%	-5.06%	-35.62%	-39.07%	3.45%

Panel A-4-2: Market-adjusted Returns(Negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	10.54% *	9.90% *	0.80	16.21% ***	6.36%	0.17	8.20%	10.20% *	0.50
1994-2003	6.63%	6.84%	0.93	12.27% **	4.19%	0.21	4.30%	7.07%	0.31
bull years	-8.29% *	-8.71% *	0.88	-2.68%	-8.33%	0.50	-10.27% *	-8.63% *	0.62
bear years	23.13% **	25.38% **	0.56	25.80% **	14.83%	0.29	21.47% **	25.94% **	0.34

Panel A-4-3: Fama-French 3-factor Adjusted Returns (Negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	7.91% *	6.35%	0.52	13.03% **	1.52%	0.10	5.83%	6.75%	0.75
1994-2003	5.83%	5.05%	0.73	10.70% **	1.14%	0.14	3.83%	5.39%	0.57
bull years	-6.99% *	-8.83% **	0.50	-1.96%	-9.52%	0.36	-8.75% *	-8.64% **	0.97
bear years	22.65% **	25.23% ***	0.50	24.07% **	13.38%	0.30	21.56% **	25.84% ***	0.36

Panel A-4-4: Four-Factor Adjusted Returns (The negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	1.06%	0.36%	0.78	6.74%	-4.54%	0.11	-1.31%	0.72%	0.49
1994-2003	0.43%	0.37%	0.98	5.73%	-3.52%	0.15	-1.78%	0.67%	0.37
bull years	-7.78% *	-8.71% **	0.73	-2.51%	-8.97%	0.43	-9.68% **	-8.57% **	0.74
bear years	18.65% **	21.36% ***	0.48	20.55% **	9.62%	0.29	17.34% **	21.95% ***	0.32

Panel B: Non-tech Sector Analysts

Panel B-1: Buy Recommendations: AA vs. non-AA

Panel B-1-1: Raw Returns

	All			Top-tier Banks			Lower-status Banks		
Period	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**
1994-2002	13.56%	12.82%	0.74%	13.29%	13.80%	-0.51%	13.98%	12.52%	1.46%
1994-2003	16.44%	16.43%	0.02%	15.97%	16.83%	-0.85%	17.10%	16.22%	0.88%
bull years	30.00%	31.23%	-1.23%	29.97%	31.03%	-1.06%	29.24%	29.54%	-0.30%
bear years	-1.29%	-2.10%	0.81%	-0.41%	-1.64%	1.22%	-1.49%	-1.23%	-0.26%

Panel B-1-2: Market-adjusted Returns(The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	5.07% ***	4.45% *	0.62	4.87% ***	5.26% **	0.79	5.43% ***	4.20% *	0.38
1994-2003	5.66% ***	5.62% ***	0.97	5.34% ***	5.89% ***	0.68	6.14% ***	5.47% **	0.61
bull years	3.28% *	3.47%	0.88	3.09%	3.80%	0.64	3.54% *	3.33%	0.88
bear years	9.88% ***	11.00% ***	0.63	9.43% ***	10.27% ***	0.73	10.67% ***	11.10% ***	0.87

Panel B-1-3: Fama-French 3-factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	3.10% ***	3.65% ***	0.48	2.92% **	4.40% ***	0.20	3.43% **	3.41%	0.98
1994-2003	2.70% **	3.46% ***	0.29	2.47% **	4.06% ***	0.15	3.04% **	3.25% ***	0.83
bull years	0.83%	1.08%	0.76	0.70%	2.12%	0.24	1.06%	0.82%	0.83
bear years	4.77% **	6.59% ***	0.18	4.69% **	6.09% **	0.49	4.95% *	6.67% ***	0.35

Panel B-1-4: Four-Factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	2.56% **	2.72% **	0.83	2.80% **	3.33% **	0.63	2.19%	2.52% **	0.76
1994-2003	2.34% **	2.77% **	0.55	2.44% **	3.30% **	0.43	2.15%	2.59% **	0.66
bull years	1.62%	1.39%	0.77	1.62%	2.45%	0.49	1.67%	1.15%	0.64
bear years	4.34% **	5.99% ***	0.22	4.46% **	5.47% **	0.61	4.19% *	6.07% ***	0.30

Panel B-2: Buy Recommendations: Top-tier vs. Lower-status

Panel B-2-1: Raw Returns

	All			AA			non-AA		
Period	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**
1994-2002	13.49%	12.62%	0.87%	13.29%	13.98%	-0.70%	13.80%	12.52%	1.27%
1994-2003	16.40%	16.28%	0.12%	15.97%	17.10%	-1.13%	16.83%	16.22%	0.61%
bull years	30.27%	29.67%	0.59%	29.97%	29.24%	0.73%	31.03%	29.54%	1.49%
bear years	-1.69%	-1.27%	-0.42%	-0.41%	-1.49%	1.07%	-1.64%	-1.23%	-0.41%

Panel B-2-2: Market-adjusted Returns(The annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	4.99% **	4.27% *	0.42	4.87% ***	5.43% ***	0.65	5.26% **	4.20% *	0.26
1994-2003	5.56% ***	5.50% **	0.94	5.34% ***	6.14% ***	0.48	5.89% ***	5.47% **	0.64
bull years	3.28%	3.37%	0.92	3.09%	3.54% *	0.71	3.80%	3.33%	0.65
bear years	9.95% ***	11.02% ***	0.53	9.43% ***	10.67% ***	0.58	10.27% ***	11.10% ***	0.62

Panel B-2-3: Fama-French 3-factor Adjusted Returns (The annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	3.75% ***	3.40% ***	0.61	2.92% **	3.43% **	0.68	4.40% ***	3.41%	0.25
1994-2003	3.36% ***	3.23% ***	0.85	2.47% **	3.04% **	0.61	4.06% ***	3.25% ***	0.32
bull years	1.34%	0.85%	0.51	0.70%	1.06%	0.77	2.12%	0.82%	0.17
bear years	5.54% ***	6.52% ***	0.37	4.69% **	4.95% *	0.90	6.09% **	6.67% ***	0.68

Panel B-2-4: Four-Factor Adjusted Returns (The annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	2.97% **	2.49% **	0.48	2.80% **	2.19%	0.60	3.33% **	2.52% **	0.34
1994-2003	2.81% **	2.54% **	0.68	2.44% **	2.15%	0.79	3.30% **	2.59% **	0.39
bull years	1.90%	1.20%	0.34	1.62%	1.67%	0.96	2.45%	1.15%	0.17
bear years	5.03% **	5.90% ***	0.42	4.46% **	4.19% *	0.89	5.47% **	6.07% ***	0.67

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Panel B-3: Sell Recommendations: AA vs. non-AA

Panel B-3-1: Raw Returns

	All			Top-tier Banks			Lower-status Banks		
Period	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**	**AA**	**Non-AA**	**Diff.**
1994-2002	2.72%	3.83%	-1.11%	2.03%	2.05%	-0.02%	3.67%	4.22%	-0.55%
1994-2003	6.15%	7.58%	-1.43%	5.44%	6.03%	-0.59%	7.13%	7.92%	-0.79%
bull years	16.10%	18.18%	-2.08%	15.67%	16.15%	-0.48%	16.59%	18.64%	-2.05%
bear years	-7.20%	-6.57%	-0.63%	-8.23%	-7.53%	-0.70%	-5.64%	-6.37%	0.73%

Panel B-3-2: Market-adjusted Returns(The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	4.72% **	3.62% *	0.32	5.38% ***	5.31% **	0.95	3.78% *	3.25%	0.71
1994-2003	3.19% *	1.79%	0.18	3.84% **	3.17%	0.59	2.24%	1.49%	0.56
bull years	6.54% ***	4.31% **	0.05	6.58% ***	5.99% **	0.67	6.49% ***	3.93% *	0.07
bear years	-2.20%	-2.94%	0.70	-1.23%	-1.63%	0.86	-3.72%	-3.21%	0.84

Panel B-3-3: Fama-French 3-factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	7.84% ***	6.16% ***	0.07	8.39% ***	8.11% ***	0.83	7.04% ***	5.72%	0.30
1994-2003	7.40% ***	5.72% ***	0.05	7.92% ***	7.23% ***	0.56	6.62% ***	5.37% ***	0.29
bull years	9.85% ***	7.62% ***	0.02	9.87% ***	9.24% ***	0.62	9.76% ***	7.23% ***	0.05
bear years	4.24% *	3.55%	0.68	4.81% *	5.04% *	0.92	3.31%	3.23%	0.97

Panel B-3-4: Four-Factor Adjusted Returns (The annual Alhpas, in %)

	All			Top-tier Banks			Lower-status Banks		
Year	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**	**AA**	**Non-AA**	**p-value**
1994-2002	5.79% ***	4.13% ***	0.08	6.15% ***	6.11% ***	0.97	5.28% ***	3.69% ***	0.21
1994-2003	5.68% ***	4.03% ***	0.06	6.04% ***	5.54% ***	0.67	5.14% ***	3.68% ***	0.21
bull years	7.86% ***	5.98% ***	0.05	7.77% ***	7.21% ***	0.66	7.92% ***	5.70% ***	0.08
bear years	3.30%	2.53%	0.64	3.83% *	4.11% *	0.90	2.45%	2.19%	0.91

Panel B-4: Sell Recommendations: Top-tier vs. Lower-status

Panel B-4-1: Raw Returns

	All			AA			non-AA		
Period	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**	**Top**	**Lower**	**Diff.**
1994-2002	2.05%	4.16%	-2.11%	2.03%	3.67%	-1.63%	2.05%	4.22%	-2.17%
1994-2003	5.80%	7.84%	-2.04%	5.44%	7.13%	-1.69%	6.03%	7.92%	-1.89%
bull years	15.77%	18.46%	-2.69%	15.67%	16.59%	-0.92%	16.15%	18.64%	-2.49%
bear years	-7.57%	-6.33%	-1.24%	-8.23%	-5.64%	-2.59%	-7.53%	-6.37%	-1.16%

Panel B-4-2: Market-adjusted Returns(Negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	5.34% ***	3.31% *	0.01	5.38% ***	3.78% *	0.25	5.31% **	3.25%	0.02
1994-2003	3.45% *	1.57%	0.01	3.84% **	2.24%	0.21	3.17%	1.49%	0.04
bull years	6.41% ***	4.16% *	0.01	6.58% ***	6.49% ***	0.94	5.99% **	3.93% *	0.03
bear years	-1.69%	-3.23%	0.25	-1.23%	-3.72%	0.30	-1.63%	-3.21%	0.28

Panel B-4-3: Fama-French 3-factor Adjusted Returns (Negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	8.21% ***	5.85% ***	0.00	8.39% ***	7.04% ***	0.33	8.11% ***	5.72%	0.01
1994-2003	7.52% ***	5.50% ***	0.00	7.92% ***	6.62% ***	0.30	7.23% ***	5.37% ***	0.02
bull years	9.68% ***	7.46% ***	0.01	9.87% ***	9.76% ***	0.93	9.24% ***	7.23% ***	0.04
bear years	4.77% **	3.25%	0.20	4.81% *	3.31%	0.53	5.04% *	3.23%	0.19

Panel B-4-4: Four-Factor Adjusted Returns (The negative of the annual Alhpas, in %)

	All			AA			non-AA		
Year	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**	**Top**	**Lower**	**p-value**
1994-2002	6.13% ***	3.84% ***	0.00	6.15% ***	5.28% ***	0.53	6.11% ***	3.69% ***	0.00
1994-2003	5.76% ***	3.82% ***	0.00	6.04% ***	5.14% ***	0.48	5.54% ***	3.68% ***	0.02
bull years	7.59% ***	5.90% ***	0.03	7.77% ***	7.92% ***	0.91	7.21% ***	5.70% ***	0.11
bear years	3.83% *	2.23%	0.17	3.83% *	2.45%	0.57	4.11% *	2.19%	0.16

Table X. Transaction Cost Adjustment

This table presents the investment values of analyst recommendations after adjusting for transaction costs. Panel A reports the size and listed-exchange composition of portfolio holdings of analyst subgroups, which are used to calculate the overall portfolio transaction cost for each group. Panel B presents the annualized raw net returns, market-adjusted model net alpha, 3-factor model net alpha, and 4-factor model net alpha for all sectors (for the period 1994-2002); Panels C and D present the tech sector and non-tech sector results, respectively. Raw net returns for sell portfolios are calculated as – raw gross return – trading cost; similarly, net alphas for sell portfolios are computed as the negative of (annual) alpha – trading cost. *T*-stats for the difference in alphas (net of transaction costs) between subgroups assuming independence between gross returns and trading costs are also tabulated.

Panel A: Size and listed exchange composition of portfolio holdings

Overall market composition

	Small	2	3	4	Big
NYSE	0.6%	1.5%	3.3%	8.4%	65.7%
NASDAQ	2.1%	2.2%	2.4%	3.1%	10.7%

AA buy portfolio

	Small	2	3	4	Big
NYSE	0.1%	0.5%	1.7%	6.5%	75.8%
NASDAQ	0.2%	0.5%	1.1%	2.0%	11.7%

AA sell portfolio

	Small	2	3	4	Big
NYSE	0.1%	0.7%	2.5%	9.1%	75.0%
NASDAQ	0.2%	0.6%	1.1%	2.0%	8.8%

Non-AA buy portfolio

	Small	2	3	4	Big
NYSE	0.3%	1.0%	2.7%	7.6%	68.5%
NASDAQ	1.1%	1.8%	2.2%	3.0%	11.9%

Non-AA sell portfolio

	Small	2	3	4	Big
NYSE	0.3%	1.0%	2.8%	8.3%	70.6%
NASDAQ	0.9%	1.3%	1.7%	2.5%	10.7%

Top-tier-bank buy portfolio

	Small	2	3	4	Big
NYSE	0.1%	0.6%	2.0%	6.8%	72.9%
NASDAQ	0.3%	0.9%	1.5%	2.5%	12.5%

Top-tier-bank sell portfolio

	Small	2	3	4	Big
NYSE	0.2%	0.9%	2.9%	9.5%	73.5%
NASDAQ	0.4%	0.8%	1.4%	2.5%	7.9%

Lower-status-bank buy portfolio

	Small	2	3	4	Big
NYSE	0.3%	1.0%	2.7%	7.6%	68.6%
NASDAQ	1.1%	1.8%	2.2%	2.9%	11.7%

Lower-status-bank sell portfolio

	Small	2	3	4	Big
NYSE	0.3%	1.0%	2.8%	8.3%	70.6%
NASDAQ	0.8%	1.3%	1.7%	2.5%	10.8%

Top-AA buy portfolio

	Small	2	3	4	Big
NYSE	0.0%	0.3%	1.4%	5.7%	77.0%
NASDAQ	0.1%	0.3%	0.8%	1.7%	12.6%

Top-AA sell portfolio

	Small	2	3	4	Big
NYSE	0.1%	0.6%	2.2%	8.5%	77.5%
NASDAQ	0.1%	0.5%	0.9%	1.8%	8.0%

Lower-AA buy portfolio

	Small	2	3	4	Big
NYSE	0.0%	0.4%	1.4%	5.8%	77.3%
NASDAQ	0.1%	0.5%	0.9%	1.7%	11.9%

Lower-AA sell portfolio

	Small	2	3	4	Big
NYSE	0.1%	0.6%	2.1%	8.5%	77.3%
NASDAQ	0.2%	0.5%	0.8%	1.5%	8.6%

Top-non-AA buy portfolio

	Small	2	3	4	Big
NYSE	0.1%	0.5%	1.8%	6.5%	71.8%
NASDAQ	0.3%	0.9%	1.5%	2.6%	14.0%

Top-non-AA sell portfolio

	Small	2	3	4	Big
NYSE	0.2%	0.7%	2.7%	9.4%	73.8%
NASDAQ	0.4%	0.8%	1.5%	2.7%	7.8%

Lower-non-AA buy portfolio

	Small	2	3	4	Big
NYSE	0.3%	1.0%	2.7%	7.5%	68.6%
NASDAQ	1.1%	1.8%	2.2%	3.0%	11.9%

Lower-non-AA sell portfolio

	Small	2	3	4	Big
NYSE	0.3%	1.0%	2.7%	8.1%	70.8%
NASDAQ	0.8%	1.3%	1.7%	2.5%	10.8%

Panel B: Net returns for all sector portfolios

Panel B-1: Buy Recommendations: AA vs. non-AA

	All			Top-tier Banks			Lower-status Banks		
Model	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**
Net raw return (%)	12.31%	9.59%	2.72%	12.14%	11.48%	0.66%	12.46%	9.04%	3.42%
Market model alpha (%)	3.71%	1.28%	2.07	3.60%	2.93%	0.47	3.82%	0.80%	2.27
3-factor model alpha (%)	2.79%	1.33%	1.94	2.53%	3.14%	-0.53	3.16%	0.80%	2.10
4-factor model alpha (%)	1.94%	0.72%	1.63	2.04%	2.26%	-0.20	1.74%	0.27%	1.33

Panel B-2: Buy Recommendations: Top-tier vs. Lower-status

	All			AA			non-AA		
Model	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**
Net raw return (%)	11.65%	9.27%	2.38%	12.14%	12.46%	-0.32%	11.48%	9.04%	2.44%
Market model alpha (%)	3.10%	1.01%	2.54	3.60%	3.82%	-0.16	2.93%	0.80%	2.38
3-factor model alpha (%)	2.85%	0.97%	2.89	2.53%	3.16%	-0.49	3.14%	0.80%	2.77
4-factor model alpha (%)	2.04%	0.37%	2.56	2.04%	1.74%	0.23	2.26%	0.27%	2.37

Panel B-3: Sell Recommendations: AA vs. non-AA

	All			Top-tier Banks			Lower-status Banks		
Model	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**
Net raw return (%)	-2.87%	-3.78%	0.91%	-1.86%	-2.17%	0.31%	-4.47%	-4.15%	-0.33%
Market model alpha (%)	4.68%	3.75%	0.80	5.67%	5.30%	0.26	3.09%	3.39%	-0.19
3-factor model alpha (%)	7.21%	5.69%	1.49	8.14%	7.56%	0.44	5.69%	5.26%	0.30
4-factor model alpha (%)	4.54%	2.52%	1.99	5.24%	4.32%	0.69	3.37%	2.12%	0.89

Panel B-4: Sell Recommendations: Top-tier vs. Lower-status

	All			AA			non-AA		
Model	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**
Net raw return (%)	-2.08%	-4.12%	2.04%	-1.86%	-4.47%	2.62%	-2.17%	-4.15%	1.98%
Market model alpha (%)	5.43%	3.43%	2.56	5.67%	3.09%	1.69	5.30%	3.39%	2.20
3-factor model alpha (%)	7.76%	5.36%	3.34	8.14%	5.69%	1.61	7.56%	5.26%	2.73
4-factor model alpha (%)	4.65%	2.27%	3.30	5.24%	3.37%	1.23	4.32%	2.12%	2.60

Panel C: Net returns for tech sector portfolios

Panel C-1: Buy Recommendations: AA vs. non-AA

	All			Top-tier Banks			Lower-status Banks		
Model	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**
Net raw return (%)	17.86%	7.58%	10.28%	16.35%	12.67%	3.69%	18.68%	5.72%	12.96%
Market model alpha (%)	9.28%	0.10%	3.99	7.83%	4.94%	0.90	10.73%	-1.66%	3.25
3-factor model alpha (%)	14.82%	5.48%	4.10	12.71%	10.82%	0.60	17.10%	3.58%	3.56
4-factor model alpha (%)	14.62%	6.63%	3.55	12.44%	12.08%	0.11	17.09%	4.81%	3.24

Panel C-2: Buy Recommendations: Top-tier vs. Lower-status

	All			AA			non-AA		
Model	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**
Net raw return (%)	14.20%	6.69%	7.51%	16.35%	18.68%	-2.32%	12.67%	5.72%	6.95%
Market model alpha (%)	6.09%	-0.72%	4.04	7.83%	10.73%	-0.66	4.94%	-1.66%	3.19
3-factor model alpha (%)	11.68%	4.63%	4.24	12.71%	17.10%	-1.01	10.82%	3.58%	3.53
4-factor model alpha (%)	12.37%	5.74%	4.00	12.44%	17.09%	-1.07	12.08%	4.81%	3.54

Panel C-3: Sell Recommendations: AA vs. non-AA

	All			Top-tier Banks			Lower-status Banks		
Model	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**
Net raw return (%)	3.71%	0.79%	2.92%	7.62%	-0.62%	8.24%	-0.82%	1.13%	-1.95%
Market model alpha (%)	10.59%	7.99%	0.71	14.77%	6.35%	1.69	4.71%	8.31%	-0.59
3-factor model alpha (%)	6.64%	4.76%	0.52	11.59%	3.98%	1.52	-0.13%	4.86%	-0.83
4-factor model alpha (%)	0.65%	-1.48%	0.58	5.30%	-3.15%	1.69	-6.19%	-1.17%	-0.83

Panel C-4: Sell Recommendations: Top-tier vs. Lower-status

	All			AA			non-AA		
Model	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**
Net raw return (%)	1.63%	0.86%	0.77%	7.62%	-0.82%	8.44%	-0.62%	1.13%	-1.75%
Market model alpha (%)	8.81%	8.02%	0.32	14.77%	4.71%	1.41	6.35%	8.31%	-0.66
3-factor model alpha (%)	6.18%	4.48%	0.70	11.59%	-0.13%	1.66	3.98%	4.86%	-0.30
4-factor model alpha (%)	-0.67%	-1.51%	0.34	5.30%	-6.19%	1.62	-3.15%	-1.17%	-0.67

Panel D: Net returns for non-tech sector portfolios

Panel D-1: Buy Recommendations: AA vs. non-AA

	All			Top-tier Banks			Lower-status Banks		
Model	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**
Net raw return (%)	12.54%	11.24%	1.29%	12.31%	12.52%	-0.21%	12.89%	10.87%	2.01%
Market model alpha (%)	4.05%	2.87%	0.92	3.89%	3.98%	-0.06	4.34%	2.55%	1.26
3-factor model alpha (%)	2.08%	2.07%	0.01	1.95%	3.12%	-1.02	2.33%	1.76%	0.54
4-factor model alpha (%)	1.54%	1.14%	0.52	1.82%	2.05%	-0.21	1.10%	0.87%	0.21

Panel D-2: Buy Recommendations: Top-tier vs. Lower-status

	All			AA			non-AA		
Model	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**
Net raw return (%)	12.32%	11.02%	1.30%	12.31%	12.89%	-0.58%	12.52%	10.87%	1.64%
Market model alpha (%)	3.81%	2.67%	1.27	3.89%	4.34%	-0.36	3.98%	2.55%	1.51
3-factor model alpha (%)	2.57%	1.80%	1.13	1.95%	2.33%	-0.32	3.12%	1.76%	1.59
4-factor model alpha (%)	1.79%	0.89%	1.33	1.82%	1.10%	0.62	2.05%	0.87%	1.38

Panel D-3: Sell Recommendations: AA vs. non-AA

	All			Top-tier Banks			Lower-status Banks		
Model	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**	**AA**	**Non-AA**	***Diff./t*-stat**
Net raw return (%)	-4.03%	-5.76%	1.74%	-3.34%	-3.83%	0.49%	-4.98%	-6.19%	1.22%
Market model alpha (%)	3.42%	1.69%	1.56	4.08%	3.53%	0.41	2.47%	1.28%	0.85
3-factor model alpha (%)	6.54%	4.22%	2.46	7.08%	6.33%	0.59	5.73%	3.75%	1.57
4-factor model alpha (%)	4.49%	2.19%	2.43	4.85%	4.33%	0.40	3.97%	1.71%	1.78

Panel D-4: Sell Recommendations: Top-tier vs. Lower-status

	All			AA			non-AA		
Model	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**	**Top**	**Lower**	***Diff./t*-stat**
Net raw return (%)	-3.66%	-6.07%	2.41%	-3.34%	-4.98%	1.64%	-3.83%	-6.19%	2.37%
Market model alpha (%)	3.73%	1.40%	3.01	4.08%	2.47%	1.16	3.53%	1.28%	2.58
3-factor model alpha (%)	6.61%	3.94%	3.69	7.08%	5.73%	0.98	6.33%	3.75%	3.03
4-factor model alpha (%)	4.53%	1.93%	3.59	4.85%	3.97%	0.63	4.33%	1.71%	3.06

Table XI. Does Conflict Matter? Buy-Sell Spread Analysis

This table presents the analysis of comparing the investment values of (A) the baseline buy-sell portfolio with (B) buy-sell portfolios where only strong buys are considered as buys, and (C) buy-sell portfolios where only sells and strong sells are considered sells. Panels A-D present the results for top-tier AAs, lower-status AAs, top-tier non-AAs, and lower-status non-AAs, respectively. *P*-values for the difference in alphas between (i) portfolio A vs. portfolio B (the investment values of strong buys) and (ii) portfolio A vs. portfolio C (the investment values of sells and strong sells) are tabulated.

Panel A: Top-tier-bank AA analysts

Panel A-1: Market-adjusted model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	11.55%	6.52	11.82%	6.35	14.05%	2.14	-0.26%	0.58	2.49%	0.68
Bull years	12.48%	7.07	13.20%	7.15	14.24%	1.60	-0.72%	0.22	1.76%	0.83
Bear years	9.19%	2.77	9.23%	2.64	15.02%	1.53	-0.04%	0.96	5.83%	0.51

Panel A-2: 3-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	12.95%	7.89	13.32%	7.81	16.20%	2.49	-0.36%	0.44	3.24%	0.60
Bull years	13.40%	8.51	14.12%	8.43	15.84%	1.80	-0.72%	0.22	2.44%	0.77
Bear years	10.69%	3.44	10.78%	3.36	16.71%	1.74	-0.10%	0.90	6.02%	0.49

Panel A-3: 4-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	9.56%	7.29	9.87%	7.15	12.55%	1.95	-0.31%	0.52	2.99%	0.63
Bull years	11.29%	7.56	11.77%	7.45	12.27%	1.39	-0.49%	0.41	0.99%	0.91
Bear years	8.94%	4.00	9.02%	3.82	14.95%	1.59	-0.09%	0.91	6.02%	0.49

Panel B: Lower-status-bank AA analysts

Panel B-1: Market-adjusted model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	9.34%	4.13	10.30%	4.31	8.50%	1.32	-0.96%	0.19	-0.84%	0.89
Bull years	12.45%	5.52	13.73%	5.28	15.07%	2.61	-1.28%	0.18	2.62%	0.60
Bear years	5.64%	1.33	5.81%	1.35	-0.94%	-0.07	-0.17%	0.88	-6.58%	0.59

Panel B-2: 3-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	11.27%	5.57	12.19%	5.61	9.33%	1.46	-0.91%	0.21	-1.94%	0.75
Bull years	13.63%	6.71	15.18%	6.57	17.55%	3.29	-1.56%	0.10	3.92%	0.42
Bear years	7.70%	2.03	7.22%	1.84	-3.41%	-0.27	0.49%	0.66	-11.11%	0.36

Panel B-3: 4-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	7.54%	4.41	8.27%	4.47	4.43%	0.71	-0.74%	0.32	-3.11%	0.61
Bull years	10.76%	5.63	12.07%	5.51	11.76%	2.27	-1.31%	0.17	1.00%	0.84
Bear years	5.76%	1.96	5.26%	1.70	-5.53%	-0.45	0.49%	0.66	-11.29%	0.36

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Panel C: Top-tier-bank non-AA analysts

Panel C-1: Market-adjusted model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	11.30%	5.06	11.11%	4.86	10.91%	1.76	0.19%	0.64	-0.39%	0.68
Bull years	12.90%	5.92	12.49%	5.59	6.65%	0.74	0.41%	0.36	-6.25%	0.83
Bear years	8.29%	1.96	8.39%	1.94	14.48%	1.72	-0.10%	0.89	6.19%	0.51

Panel C-2: 3-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	13.76%	7.18	13.62%	7.01	13.50%	2.23	0.14%	0.73	-0.26%	0.60
Bull years	14.44%	8.21	14.08%	7.76	8.72%	1.00	0.36%	0.43	-5.72%	0.77
Bear years	11.23%	3.03	11.16%	3.00	16.73%	2.05	0.07%	0.92	5.50%	0.49

Panel C-3: 4-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	9.64%	6.44	9.44%	6.23	9.38%	1.58	0.20%	0.62	-0.26%	0.63
Bull years	11.20%	7.13	10.76%	6.63	5.15%	0.59	0.44%	0.33	-6.05%	0.91
Bear years	9.16%	3.42	9.10%	3.36	14.77%	1.90	0.06%	0.93	5.61%	0.49

Panel D: Lower-status-bank non-AA analysts

Panel D-1: Market-adjusted model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	7.81%	4.11	8.35%	4.43	8.05%	5.09	-0.54%	0.09	0.24%	0.89
Bull years	7.78%	5.11	8.69%	5.78	8.66%	5.26	-0.91%	0.02	0.88%	0.60
Bear years	7.87%	2.05	8.42%	2.21	8.01%	2.79	-0.55%	0.29	0.14%	0.59

Panel D-2: 3-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	9.69%	6.22	10.26%	6.73	10.79%	1.46	-0.57%	0.07	1.11%	0.75
Bull years	8.74%	8.05	9.65%	8.62	10.06%	3.29	-0.91%	0.01	1.32%	0.42
Bear years	10.10%	3.12	10.67%	3.39	11.59%	-0.27	-0.57%	0.27	1.49%	0.36

Panel D-3: 4-factor model (alphas in daily basis points)

	Portfolio A (Baseline)		Portfolio B (Strong buy removed)		Portfolio C (Hold removed)		diff. bet. A&B		diff. bet. A&C	
Period	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**alpha**	***t*-stat**	**(%)**	***p*-value**	**(%)**	***p*-value**
All years	6.01%	5.32	6.76%	5.97	7.76%	4.02	-0.75%	0.02	1.76%	0.61
Bull years	6.92%	6.97	7.79%	7.60	8.34%	4.45	-0.87%	0.02	1.43%	0.84
Bear years	8.04%	4.00	8.71%	4.36	9.85%	2.77	-0.66%	0.18	1.81%	0.36