

**PROPHETS AND LOSSES:  
REASSESSING THE RETURNS TO ANALYSTS' STOCK  
RECOMMENDATIONS**

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## **Abstract**

After a string of years in which security analysts' top stock picks significantly outperformed their pans, the years 2000 and 2001 were disasters. During those two years the stocks *least* favorably recommended by analysts earned an average annualized market-adjusted return of 13.44 percent while the stocks *most* highly recommended *underperformed* the market by 7.06 percent, a return difference of over 20 percentage points. This pattern prevailed during most months of 2000 and 2001 and was observed for both tech and non-tech stocks. Additional analyses suggest that these poor results were driven, at least in part, by analysts' tendency to recommend small growth stocks during those years, despite their having fallen out of favor. Whether or not this preference was motivated by a desire to attract and retain the most lucrative investment banking clients, our findings should add to the debate over the usefulness of analysts' stock recommendations. They should also serve to alert researchers to the possibility that excluding the years 2000 and 2001 from their sample period could have a significant impact on any conclusions they draw concerning analysts' stock recommendations.

## **PROPHETS AND LOSSES: REASSESSING THE RETURNS TO ANALYSTS' STOCK RECOMMENDATIONS**

Many segments of the investment community have grown increasingly dubious of the value of sell-side analysts' stock recommendations in recent years. With investment banking business booming during the late '90's and early 2000, the belief spread that these analysts were focused on attracting and retaining clients, rather than on writing research reports which accurately reflected their opinions of the firms they were following.<sup>1</sup> Adding to this belief was the disclosure of internal Merrill Lynch e-mails from this period which strongly suggested that fundamentally weak internet stocks were touted by some of Merrill's sell-side analysts. As a consequence, 'buy' and 'strong buy' recommendations have apparently become less meaningful to many investors, while 'sell' and 'strong sell' recommendations have become quite scarce. To shed light on the extent to which analysts' stock recommendations continue to have value to investors, this paper analyzes the returns to their buy and sell recommendations during the 1996-2001 period.

For the 1986-96 period, a time during which the impact of investment banking on analysts' research reports was arguably less of a concern, Barber, Lehavy, McNichols, and Trueman (2001) (BLMT) found sell-side analysts' stock recommendations to have significant value. Specifically, they documented that stocks with more favorable consensus (average) recommendations outperformed those with less favorable recommendations. A portfolio comprised of the most highly recommended stocks, for example, generated an average annual

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<sup>1</sup>See "Incredible Buys': Many Companies Press Analysts to Steer Clear of Negative Ratings" (*Wall Street Journal*, July 19, 1995), "The Fall of the Net Analyst" (*Business Week*, December 11, 2000), "Tech's Cheerleader Won't Say Die" (*Business Week*, April 30, 2001), and "Requiem for an Honorable Profession" (*New York Times*, May 5, 2002). The effect of investment banking relationships on analysts' stock recommendations has been studied empirically by Dugar and Nathan (1995), Lin and McNichols (1998), and Michaely and Womack (1999).

market-adjusted return of 3.97 percent while a portfolio of the least favorably recommended ones yielded an average annual market-adjusted return of -9.06 percent, a difference of over 13 percentage points.<sup>2</sup>

For the years 1996-99 we find market-adjusted returns that are similar in nature to those for the earlier period (the negative return on the least favorably recommended stocks is, in fact, larger than previously documented). The returns for the years 2000-01, however, are strikingly different. This is illustrated by Figure 1, in which the annual market-adjusted returns to the most highly and least favorably recommended stocks for the 1986-2001 period are plotted.<sup>3</sup> In all years *but* 2000 and 2001, the most highly rated stocks outperformed the least favorably recommended ones; in 2000 and 2001 the reverse was true. The market-adjusted return on the most favorably rated stocks in 2000 and again in 2001 was about -7 percent, which marked the lowest yearly return for this portfolio over the entire 16 year period. In contrast, the market-adjusted return on the least favorably recommended stocks was a quite large 17.6 percent in 2000 and 9.3 percent in 2001, the highest annual market-adjusted returns earned by these stocks over the entire period. The difference between the returns to the most highly rated and least favorably recommended stocks, almost -25 percentage points in 2000 and about -16 percentage points in 2001, reflects very poor years for analysts' recommendations. Additional analyses find that these poor returns were in evidence for most months of 2000 and 2001. They were more pronounced for technology firms (the strongest segment of the market leading into 2000) than for

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<sup>2</sup>Other papers examining the investment performance of security analysts' stock recommendations are Barber and Loeffler (1993), Bidwell (1977), Diefenbach (1972), Dimson and Marsh (1984), Groth, Lewellen, Schlarbaum, and Lease (1979), Stickel (1995), and Womack (1996). Copeland and Mayers (1982) studied the investment performance of the *Value Line Investment Survey* while Desai and Jain (1995) analyzed the return from following *Barron's* annual roundtable recommendations.

<sup>3</sup>The 1986-95 annual market-adjusted returns are untabulated findings of BLMT.

non-technology companies. Perhaps most surprisingly, the least favorably recommended tech stocks actually rose in the 2000-01 period, at a time when the sector as a whole suffered sharp declines. (This last finding should be viewed with some caution, however, given the relative scarcity of sell recommendations for technology companies in our sample.)

To gain insight into possible causes for analysts' poor performance during 2000-01 we calculate each portfolio's abnormal return, controlling for the return expected on the portfolio given the beta, size, book-to-market ratio, and price momentum of each of its component stocks. Similar to the conclusion reached for market-adjusted returns, we find in the 1996-99 period that the most highly recommended stocks earned a higher average annual abnormal return than did the least favorably recommended stocks. In contrast to the market-adjusted return results, though, the most highly rated stocks continued to earn higher average abnormal returns during the 2000-01 period as well (although the return difference was not reliably different from zero).

Key to understanding these divergent results and what they tell us about the analysts' poor market-adjusted performance is the additional finding that during both time periods the most highly recommended stocks were generally small, with low book-to-market ratios (so-called growth stocks), while the least favorably recommended stocks, although also small, had high book-to-market ratios (so-called value stocks). This is noteworthy, since over the 1996-99 period small growth stocks vastly outperformed small value stocks (the Russell 2000 Value Index, for example, lagged the Russell 2000 Growth Index by about 100 percentage points), but during 2000-01 value trounced growth (the Russell 2000 Value Index beat the Growth Index by about 37 percentage points). While analysts' most highly rated stocks outperformed the typical small growth company and their least favorably recommended stocks underperformed the typical

small value firm in 2000-01, their continuing tendency to recommend the now out-of-favor small growth segment of the market resulted in their picks underperforming their pans during this period.

Even with their poor performance in 2000-01, over the entire 1986-2001 period the most highly recommended stocks still generated significantly greater average annual market-adjusted returns than did those least favorably recommended (2.44 percent as compared to -9.94 percent). These relative returns reflect favorably on the long-term value of analysts' recommendations *as long as* the 2000-01 results are simply an aberration that is unlikely to be repeated. However, if they are reflective of an inability or reluctance on the part of analysts to adapt to changing market conditions (such as might be the case if analysts continue to favor small growth firms over small value firms due to their potentially greater investment banking business), then the 1986-2001 performance is less likely to be predictive of future returns. Only time will tell which is the case. Regardless of whether the 2000-01 results are an aberration, though, our findings should alert researchers to the possibility that excluding those years from their sample period could have a significant impact on any conclusions drawn regarding analysts' stock recommendations.

The plan of this paper is as follows. In Section I we describe our data and discuss our research design. In Section II we present the returns to portfolios of stocks formed according to their consensus analyst recommendations. A conclusions section ends the paper.

## I. THE DATA AND RESEARCH DESIGN

The source of the analyst recommendations used in this study is *First Call*, which obtains its data from hundreds of brokerage houses. There are two types of recommendations that are recorded in the *First Call* database – real-time and batch. Real-time recommendations come from live feeds, and provide the date and time when the report was published. (The large majority of recommendations received by *First Call* are now real-time.) Batch reports are generated from a weekly batch file sent by the brokerage houses. For these recommendations the precise date of publication is unknown. To ensure the accuracy of the dates used to measure investment returns, we include only real-time recommendations in our analysis.

Each database record contains the name of the firm covered, the brokerage house issuing the report, and a rating between 1 and 5. A rating of 1 reflects a strong buy recommendation, 2 a buy, 3 a hold, 4 a sell, and 5 a strong sell. This five-point scale is commonly used by analysts. If an analyst uses a different scale, *First Call* converts the analyst's rating to its five-point scale. The recommendations used in this study encompass the period from January 1996 (the *First Call* database has few real-time recommendations before that time) through December 2001.

Table I provides descriptive statistics for the *First Call* database.<sup>4</sup> For the entire 1996-2001 period the database recorded over 228,000 real-time recommendations made by 353 different brokerage houses, covering 9,941 distinct firms (see columns 2 through 4).<sup>5</sup> The annual number of real-time recommendations, number of covered firms, and number of brokerage firms contributing recommendations all increased over this period (although the number of covered

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<sup>4</sup>The descriptive statistics presented here for the years 1996-2000 differ somewhat from those reported in a previous version of our paper because of changes recently made by *First Call* in the compilation of their data.

<sup>5</sup>These totals exclude recommendations for firms without CUSIP numbers on the *First Call* database (a necessary input in order to obtain return data).

firms dropped off in 2001).<sup>6</sup> Analysts became more positive during 1999 and 2000, as reflected in the average analyst rating, which decreased from 2.05 in 1998 to 1.97 in 2000, the fraction of buy or strong buy recommendations, which increased from 66.4 percent of the total in 1998 to 72.1 percent in 2000, and the fraction of sell or strong sell recommendations, which decreased from 3.5 percent to just 1.6 percent (columns 5, 7, and 11, respectively). Analysts were clearly very reluctant to issue sell recommendations during those years. This trend reversed somewhat in 2001, as the average analyst rating increased to 2.18, the fraction of buy or strong buy recommendations decreased to 62.1 percent, and the fraction of sell or strong sell recommendations increased to 3.6 percent. Whether the decrease in analyst optimism was due in part to the weak stock market or to increased regulatory scrutiny of analysts' activity (or both) remains an open question.

The research design for our analysis closely follows that of BLMT and is described in brief here. (See BLMT for further details.) To determine whether more highly recommended stocks earned greater returns than less favorably recommended ones, we construct calendar-time portfolios based on the consensus rating of each covered firm. The consensus rating,  $A_{i\tau-1}$ , for firm  $i$  on date  $\tau-1$  is found by taking the simple average of the individual outstanding recommendations on that day (prior to the 4:00 pm Eastern time market close). Using these average ratings, each covered firm is placed into one of five portfolios as of the close of trading on date  $\tau-1$ , as follows:

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<sup>6</sup>The reduction in number of covered firms in 2001 is likely due, in part, to a nine percent decrease in the combined number of firms listed on the NYSE, AMEX, and Nasdaq that year. It is also consistent with that year's steep market decline and evidence in McNichols and O'Brien (1998) that analysts tend to drop coverage of firms that they expect to do poorly (rather than retain them and issue negative comments).



- Portfolio 1:  $1 \leq A_{i\tau-1} \leq 1.5$  (the most highly recommended stocks);
- Portfolio 2:  $1.5 < A_{i\tau-1} \leq 2$ ;
- Portfolio 3:  $2 < A_{i\tau-1} \leq 2.5$ ;
- Portfolio 4:  $2.5 < A_{i\tau-1} \leq 3$ ;
- Portfolio 5:  $A_{i\tau-1} > 3$  (the least favorably recommended stocks).

After determining the composition of each portfolio  $p$  as of the close of trading on date  $\tau-1$ , the portfolio's value-weighted return on date  $\tau$ , denoted by  $R_{p\tau}$ , is calculated.<sup>7</sup> For each month  $t$  in our sample period, the daily return is compounded to yield a monthly return,  $R_{pt}$ . We then calculate monthly market-adjusted returns for each of our constructed portfolios by subtracting the month  $t$  return on the *CRSP* NYSE/AMEX/Nasdaq value-weighted market index from the portfolio's monthly return.

By rebalancing the five portfolios only at the *close* of trading each day, we explicitly exclude from our monthly market-adjusted return calculations the first-day return to analysts' recommendations. Since investors are generally unable to act on analysts' recommendations before they are made public, this procedure better captures the return they would actually be able to earn on these recommendations. Later in the next section we examine the effect on our results of including these first-day returns.

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<sup>7</sup>The value-weighted return for portfolio  $p$  on date  $\tau$  is calculated by multiplying the date  $\tau$  return of each component stock  $i$  by the stock's share of the total portfolio market value as of the close of trading on date  $\tau-1$ . The daily security returns are value-weighted rather than equally-weighted because an equal weighting (and the implicit assumption of daily rebalancing) leads to portfolio returns that are severely overstated. (For more details see Barber and Lyon (1997), Blume and Stambaugh (1983), Canina, Michaely, Thaler, and Womack (1998), and Lyon, Barber, and Tsai (1999).) A value weighting also better captures the economic significance of our results, as the returns of the larger firms will be more heavily represented in the aggregate return than will those of the smaller firms.

## II. PORTFOLIO RETURNS

The monthly average market-adjusted returns to each of our five portfolios are presented in Table II. Taking the 1996-2001 sample period as a whole (column 3) there is no discernable pattern as we move from the most highly rated stocks (portfolio 1) to the middle-ranked stocks (portfolio 3). Moreover, while the average return on portfolio 1 exceeded that of portfolio 5, the difference is not reliably greater than zero. On the one hand, these results stand in contrast to those of BLMT for the 1986-96 period, who found a strictly monotonic decrease in mean market-adjusted returns moving from the more highly to the less highly recommended stocks. On the other hand, BLMT found a monthly return spread between the most highly rated stocks and the least favorably recommended ones of 1.018 percent – virtually identical to that for the 1996-2001 time period.<sup>8</sup>

The market-adjusted return pattern for 1996-99 (column 4) provides strong evidence of analyst ability during this subperiod. Similar to BLMT, there is a strictly monotonic decrease in market-adjusted returns as we move from portfolio 1 to portfolio 5. Furthermore, in each of the individual years but one, either portfolio 1 or portfolio 2 had the highest market-adjusted return, while portfolio 5 had the lowest (although most returns were generally insignificantly different from zero). Additionally, the average difference between the extreme portfolios was a significant 2.345 percent per month.

In contrast, the market-adjusted returns for the period 2000-01 are monotonically *increasing* as we move from portfolio 1 to portfolio 5. The difference between the returns of the most highly rated and least favorably recommended stocks, although not

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<sup>8</sup>The lack of statistical significance for the years 1996-2001 is likely a consequence of there being fewer observations during this shorter time period.

reliably greater than zero, was an economically large -1.686 percent per month. Sell-side analysts' stock recommendations clearly performed very poorly in 2000-01. Figure 1 reveals that the market-adjusted returns on portfolio 1 for 2000 and 2001 were lower than in any of the prior 14 years, while the market-adjusted returns on portfolio 5 were higher than in any of those prior years.<sup>9</sup>

The poor performance of analysts' stock recommendations in 2000-01 was not restricted to just a few months during those years, or to just periods in which the market was declining; it was quite widespread. As reported in Table III, panel A, for six of the months in 2000 and nine in 2001 the least favorably rated stocks had higher market-adjusted returns than the most highly recommended ones. These included four months during which the market as measured by the *CRSP* value-weighted market index rose. The largest monthly difference was 21.64 percentage points, in November 2000.

That the analysts' poor performance was present as early as January of 2000 greatly diminishes the possibility that it can be attributed to the imposition of Regulation FD (Fair Disclosure), which prohibits firms from revealing material non-public information to analysts. This regulation was imposed in October 2000. In any case, even if Reg FD were to reduce the value of analysts' recommendations overall, there is no reason to expect that the buy recommendations would do *worse* than the sell recommendations.

The poor showing in 2000-01 was more pronounced in the technology sector, which had the largest price runup in 1999 and early 2000, and a steep decline thereafter. We demonstrate this by dividing our sample into technology and non-technology firms and

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<sup>9</sup> For this comparison we used the market-adjusted returns from BLMT for the years 1986-95, along with the market-adjusted returns calculated here for 1996-99.

then separately calculating market-adjusted returns for each subsample.<sup>10</sup> The results are presented in Table III, panel B. Similar to the sample as a whole, the most highly rated tech stocks underperformed the least favorably rated ones; the same holds for the non-tech stocks. The magnitude of the return difference, though, was larger for the tech stocks (-2.024 percent per month), than for the non-tech stocks (-0.814 percent per month). These findings must be interpreted with some caution, however, given the small number of stocks in portfolio 5 for each set of firms (a daily average of eight for the technology stocks and 52 for the non-technology companies) and given that neither return difference was significantly different from zero.<sup>11</sup>

As previously mentioned, the results presented thus far exclude the first-day returns to analysts' stock recommendations, under the presumption that investors generally cannot act on them before they are made public. It could be argued, though, that the return on the first day is part of the overall return to these recommendations and should be included when analysts are judged. As well, some larger clients might receive advance knowledge of analysts' recommendations and be able to earn the first-day return that they generate.

We repeated our analysis to include these first-day returns. For the full 1996-2001 period untabulated results show a monotonic decline in market-adjusted returns as we move from the most highly recommended to the least favorably rated stocks. The difference between the returns on portfolios 1 and 5 has increased to 1.995 percent per month and is now significantly different from zero. For the years 1996-99 there

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<sup>10</sup>We used the industry classifications provided by *I/B/E/S* to divide our sample.

<sup>11</sup>Further analysis of the composition of portfolio 5 reveals that the subsample results were not driven by just a few firms with large positive returns.

continues to be a strictly monotonic decrease in returns as we move from portfolio 1 to portfolio 5, with the difference between the returns on these two portfolios increasing to a reliably positive 3.239 percent per month. The poor 2000-01 returns are also similar in nature to those already presented. While the market-adjusted return is no longer strictly monotonically increasing as we move from the most highly rated to the least favorably recommended stocks, the difference between the returns on the two extreme portfolios remains negative, though not reliably so.

To gain insights into possible causes for the sharp decline in the value of analysts' recommendations, we extend our analysis by calculating the average abnormal return for each portfolio, controlling for the return expected on the portfolio given the beta, size, book-to-market ratio, and price momentum of each of its component stocks. The monthly average abnormal return is estimated as the intercept from the following monthly time-series regression (referred to as the four-characteristic model):

$$RP_{pt} = \alpha_p + \beta_p RPM_t + s_p SMB_t + h_p HML_t + w_p WML_t + \varepsilon_{pt},$$

where:

$RP_{pt}$  = the excess return on portfolio  $p$  during month  $t$ ,<sup>12</sup>

$RPM_t$  = the excess return on the market during month  $t$ ,<sup>13</sup>

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

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<sup>12</sup>This is defined as the value-weighted return on portfolio  $p$  in month  $t$  less the risk-free rate that month.

<sup>13</sup>This is equal to the return on the CRSP NYSE/AMEX/Nasdaq value-weighted market index in month  $t$  less the corresponding risk-free rate.

$HML_t$  = the difference between the month  $t$  returns of a value-weighted portfolio of high book-to-market stocks and one of low book-to-market stocks,<sup>14</sup>

$WML_t$  = the difference between the month  $t$  returns of an equally-weighted portfolio of past stock market winners and one of past losers,<sup>15</sup> and

$\varepsilon_{pt}$  = the regression error term.

In addition to providing an estimate of the monthly abnormal return on portfolio  $p$ ,  $\alpha_p$ , this regression yields the coefficient estimates  $\beta_p$ ,  $s_p$ ,  $h_p$ , and  $w_p$ . These estimates provide insights into the nature of the firms in each portfolio. A value of  $\beta_p$  greater (less) than one means that the firms in portfolio  $p$  are, on average, riskier (less risky) than the market. A value of  $s_p$  greater (less) than zero signifies a portfolio tilted toward smaller (larger) firms. A value of  $h_p$  greater (less) than zero indicates a tilt toward stocks with a higher (lower) book-to-market ratio, conventionally thought of as value (growth) stocks. Finally, a value of  $w_p$  greater (less) than zero signifies a portfolio comprised, on average, of stocks that have performed well (poorly) in the recent past.

The results of running these regressions on portfolios 1 and 5 are presented in Table IV. Turning first to the 1996-99 period (panel A), we see that the average betas of the two portfolios are close to one (refer to column 3). The positive coefficients in column 4 for the two portfolios indicate that they were both tilted toward small stocks. The negative coefficient in column 5 for the most favorably rated stock portfolio reveals

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<sup>14</sup>The construction of the size and book-to-market portfolios is discussed in detail in Fama and French (1993). We thank Ken French for providing us with this data.

<sup>15</sup>More precisely, the past stock market winners (losers) are defined as those firms with the highest (lowest) 30 percent return over the eleven months through month  $t-2$ . This measure of price momentum has been used by Carhart (1997) among others.

a tendency to recommend growth stocks during this period, while the positive coefficient for the least favorably recommended stock portfolio reveals a tendency for analysts to pan value stocks. The positive intercept for portfolio 1 (column 2) indicates that the analysts' most highly recommended stocks earned positive (although insignificant) abnormal returns, after controlling for the return expected on each stock, given its beta, size, book-to-market ratio, and price momentum. The negative and significant coefficient for portfolio 5 implies that these stocks earned reliably negative abnormal returns. Consistent with the findings for the market-adjusted returns, the most highly recommended stocks significantly outperformed the least favorably recommended ones during 1996-99.

Results are quite similar, albeit less pronounced, for the 2000-01 period. Again, the most favorably recommended stocks tended to be small growth firms, while the least favorably recommended ones were more likely to be small value stocks. Additionally, consistent with BLMT and the 1996-99 findings, the abnormal return on portfolio 1 was positive, while that on portfolio 5 was negative (although neither return is reliably different from zero). The difference between these two returns is economically large (three-quarters of one percent per month), but is also not reliably different from zero.

These findings, taken together with the market-adjusted return results, suggests that a possible explanation for analysts' poor performance during 2000-01 was their continued tendency to recommend small growth stocks and pan small value stocks. That strategy paid off well during the 1996-99 period, when the Russell 2000 Growth Index advanced 180 percent while the Russell 2000 Value Index rose only 80 percent.<sup>16</sup> But, it

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<sup>16</sup>By touting small growth firms, it is possible that analysts actually helped fuel the sharp increase in their stock prices in the late '90's.

failed miserably during 2000-01, when the Growth Index fell 55 percent, compared to a drop of only 18 percent for the Value Index. While analysts' recommendations slightly outperformed the average small growth stock and their pans underperformed the average small value stock, the fact that value dramatically beat growth during this period resulted in the most highly rated stocks trailing those of the least favorably recommended ones. A question which cannot be answered by this analysis, though, is whether the reluctance of analysts to turn away from small growth stocks stemmed from a desire to attract and retain these potentially more lucrative investment banking clients or from a failure to appreciate the extent to which small growth stocks fell out of favor during 2000-01.

### **III. CONCLUSIONS**

This study analyzes the returns to analysts' stock recommendations over the 1996-2001 period. This was a time of increasing doubt as to the value of these recommendations, as analysts appeared to become increasingly involved in the investment banking side of their business. We show that the more highly recommended stocks earned greater market-adjusted returns during the 1996-99 period than did those that were less highly recommended. The opposite was true for 2000 and 2001, as the least favorably rated stocks earned the highest returns. These poor returns prevailed during most months of 2000 and 2001, while the market was rising and as it was falling, and was observed for both tech and non-tech stocks. We find evidence consistent with the possibility that this reversal was due to analysts' reluctance to turn away from small growth stocks during this period, a time when such stocks significantly underperformed the market. While we cannot conclude that analyst behavior was necessarily driven by a desire to attract and retain potentially more profitable investment banking clients, our



results should help inform the debate over the usefulness of analysts' stock recommendations. Additionally, our results should alert researchers to the possibility that excluding the years 2000-01 from their sample period could have a significant impact on any conclusions they draw regarding analysts' stock recommendations.

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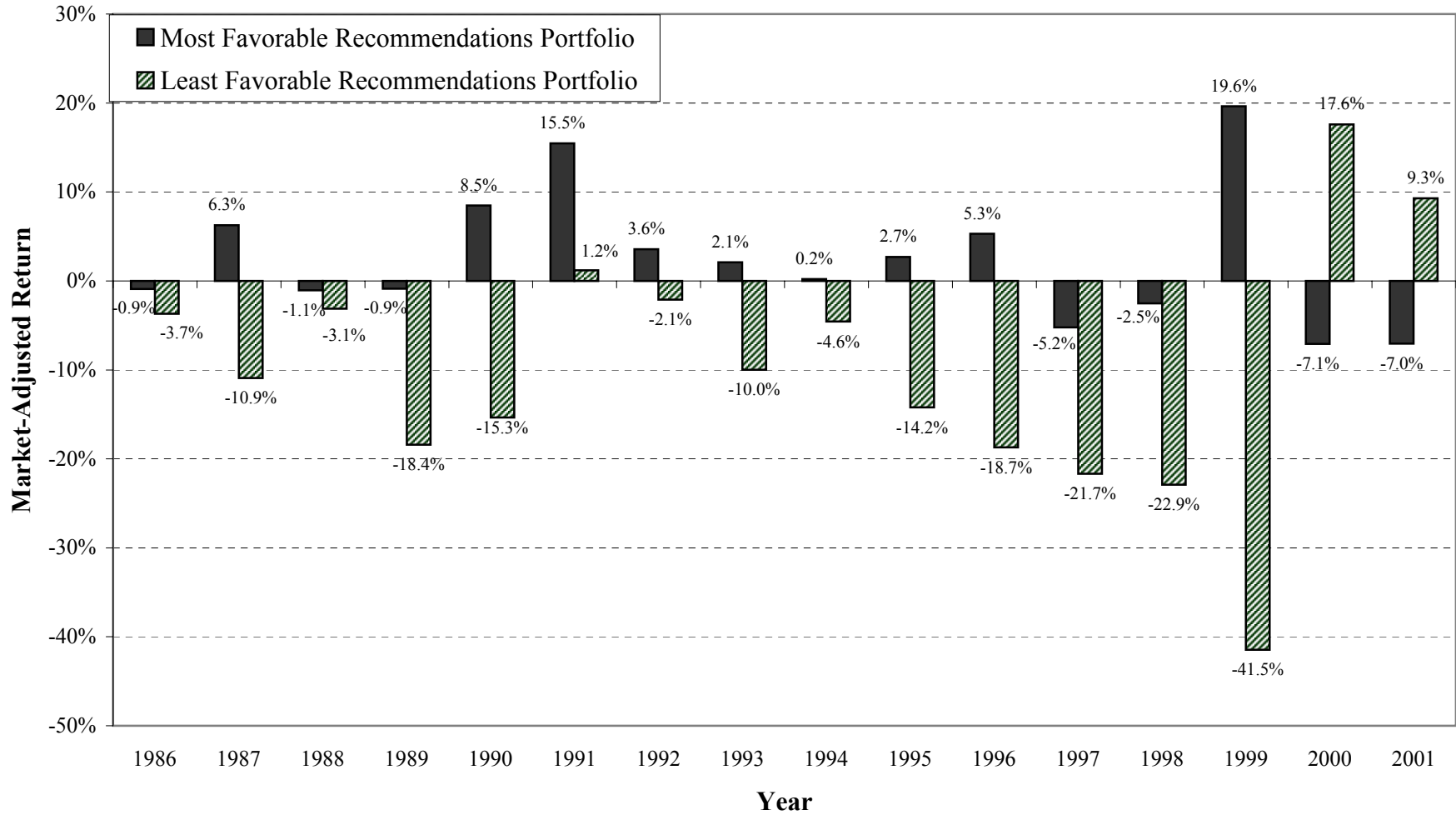
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**Figure 1**  
**Annualized Percentage Market-Adjusted Return Earned by Portfolios Formed on the Basis of**  
**Consensus Analyst Recommendations, 1986 to 2001**



**Table I: Descriptive Statistics on Analyst Stock Recommendations from the First Call Database, 1996-2001**

This table provides statistics on the First Call stock recommendation database. The panels present, by year, the number of observations, the number of firms with at least one report in the First Call database, the number of brokerage houses issuing reports, the average rating (where Strong Buy, Buy, Hold, Sell, and Strong Sell recommendations are coded from 1 to 5, respectively), and the number and percentage of total recommendations for each recommendation category, by year. To ensure accurate dating of analysts' reports, we include only observations coded by First Call as "real-time" (reports received from live feeds, carrying the date and time that the report was published).

Year	Number of Recommendations	Number of Firms	Number of Brokerage Houses	Average Rating	Recommendation Frequency					
					Strong Buy/Buy		Hold		Sell/Strong Sell	
					N	% of Total	N	% of Total	N	% of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1996	22,409	5,480	170	2.04	14,607	65.2%	7,007	31.3%	795	3.5%
1997	29,647	6,390	193	2.02	19,684	66.4%	8,929	30.1%	1,034	3.5%
1998	42,321	6,783	219	2.05	28,100	66.4%	12,754	30.1%	1,467	3.5%
1999	43,248	6,806	207	2.00	30,322	70.1%	11,728	27.1%	1,198	2.8%
2000	41,965	6,666	226	1.97	30,239	72.1%	11,037	26.3%	689	1.6%
2001	48,449	5,786	233	2.18	30,080	62.1%	16,615	34.3%	1,754	3.6%
Overall	228,039	9,941	353	2.05	153,032	67.1%	68,070	29.9%	6,937	3.0%

**Table II**

**Percentage Monthly Average Market-Adjusted Returns Earned by Portfolios Formed on the Basis of Analyst Recommendations, 1996 to 2001**

This table presents percentage monthly market-adjusted returns earned by portfolios formed according to average analyst recommendation. Portfolios 1-5 include stocks with consensus recommendations of [1-1.5], (1.5-2], (2-2.5], (2.5-3] and greater than 3, respectively. The difference between returns for portfolios 1 and 5 is shown next. Market-adjusted returns are the mean raw returns less the return on a value-weighted NYSE/AMEX/Nasdaq index. Each t-statistic pertains to the null hypothesis that the associated return is zero. The t-statistics for returns that are significant at a level of 10 percent or better are shown in bold. The average daily number of firms in each portfolio is reported in column (2).

Portfolio	Daily Average No. of Firms	Percentage Monthly Average Market-Adjusted Return								
		1996-2001	1996-1999	2000-2001	1996	1997	1998	1999	2000	2001
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>1 (Most Favorable)</b>	1,108	0.055 0.17	0.333 1.16	-0.502 -0.63	0.382 1.18	-0.318 -0.92	-0.047 -0.08	1.315 1.57	-0.431 -0.29	-0.572 -1.00
<b>2</b>	1,482	0.075 0.61	0.259 1.93	-0.294 -1.25	0.221 1.19	0.174 0.73	0.185 0.57	0.457 1.40	-0.328 -1.04	-0.260 -0.72
<b>3</b>	965	0.053 0.21	-0.245 -1.58	0.649 0.94	-0.526 <b>-2.96</b>	0.121 0.62	0.212 0.74	-0.787 -1.79	1.141 0.87	0.156 0.31
<b>4</b>	652	0.026 0.07	-0.512 -1.36	1.104 1.33	-0.039 -0.11	-0.129 -0.28	-0.833 -1.09	-1.048 -0.88	1.221 0.81	0.986 1.32
<b>5 (Least Favorable)</b>	60	-0.947 -1.65	-2.012 <b>-4.27</b>	1.184 0.87	-1.378 -1.80	-1.584 <b>-2.22</b>	-1.728 <b>-2.02</b>	-3.358 <b>-2.55</b>	1.593 0.66	0.776 0.58
<b>P1-P5</b>	1,168	1.001 1.38	2.345 <b>3.76</b>	-1.686 -1.00	1.761 1.83	1.266 1.39	1.681 1.50	4.672 <b>2.72</b>	-2.025 -0.66	-1.347 -0.84

**Table III****Percentage Monthly Market-Adjusted Returns Earned by Portfolios Formed on the Basis of Analyst Recommendations in 2000-2001**

This table presents percentage monthly market-adjusted returns earned by portfolios formed according to average analyst recommendation during 2000-01. Portfolios 1-5 include stocks with consensus recommendations of [1-1.5], (1.5-2], (2-2.5], (2.5-3] and greater than 3, respectively. Panel A presents monthly market-adjusted returns for the portfolios of the most favorably recommended and the least favorably recommended stocks. Panel B reports monthly average market-adjusted returns during 2000-01 for firms in the technology sector and the non-technology sectors. The difference between returns for portfolios 1 and 5 is shown next. Market-adjusted returns are the mean raw returns less the return on a value-weighted NYSE/AMEX/Nasdaq index. Each t-statistic pertains to the null hypothesis that the associated return is zero.

**Panel A: Monthly Market-Adjusted Return in 2000-2001**

	<b>1 (Most Favorable)</b>	<b>5 (Least Favorable)</b>	<b>P1-P5</b>
<b>2000</b>			
January	2.22	4.37	-2.15
February	11.23	10.14	1.09
March	-5.12	-4.37	-0.75
April	-1.78	-8.67	6.89
May	-4.23	7.73	-11.96
June	3.43	-10.31	13.74
July	-0.44	-2.51	2.06
August	5.23	-6.94	12.17
September	-0.29	5.00	-5.29
October	-3.64	11.48	-15.12
November	-7.17	14.47	-21.64
December	-4.61	-1.27	-3.34
<b>2001</b>			
January	0.79	0.96	-0.16
February	-2.62	7.37	-9.99
March	-2.15	5.74	-7.88
April	3.35	-3.18	6.53
May	0.51	-4.41	4.92
June	0.86	4.54	-3.68
July	-3.41	-0.45	-2.95
August	-1.24	6.67	-7.91
September	-3.03	-2.87	-0.16
October	-0.09	-6.44	6.35
November	-0.48	-1.62	1.14
December	0.63	3.02	-2.39

**Panel B: Monthly Average Market-Adjusted Return in 2000-2001**

<b>Portfolio</b>	<b>Non-Tech</b>	<b>Tech</b>
<b>1 (Most Favorable)</b>	-0.095 -0.22	-0.283 -0.13
<b>2</b>	0.617 1.00	-1.943 -1.00
<b>3</b>	0.998 0.98	-1.030 -0.56
<b>4</b>	1.338 1.38	-0.473 -0.22
<b>5 (Least Favorable)</b>	0.719 0.47	1.741 0.38
<b>P1-P5</b>	-0.814 -0.55	-2.024 -0.50



**Table IV**  
**Percentage Monthly Average Abnormal Returns and Coefficient Estimates**  
**Derived from Four-Characteristic Model, 1996-99 and 2000-01**

This table presents abnormal returns and descriptive statistics based on the four-characteristic model, for two portfolios. Portfolio 1 (portfolio 5) includes stocks with average daily recommendations between 1 and 1.5 (greater than 3). The difference between returns for portfolios 1 and 5 is shown next. The coefficient estimates are those from a monthly time series regression of the portfolio risk premium on the market risk premium (RPM), a zero-investment size portfolio (SMB), a zero-investment book-to-market portfolio (HML) and a zero-investment price momentum portfolio (WML). The t-statistics appear below the coefficient estimates. Each t-statistic pertains to the null hypothesis that the associated coefficient is zero, except for the t-statistics on the coefficient estimate for RPM for portfolios 1 and 5, for which the null hypothesis is that the coefficient is one. The t-statistics for coefficients that are significant at a level of 10 percent or better are shown in bold.

**Panel A: Results for 1996-1999**

Portfolio (1)	Coefficient Estimates for the 4-Characteristic Model				
	Intercept (2)	RPM (3)	SMB (4)	HML (5)	WML (6)
<b>1 (Most Favorable)</b>	0.059 0.24	1.077 1.23	0.148 <b>2.10</b>	-0.225 <b>-2.42</b>	0.057 1.07
<b>5 (Least Favorable)</b>	-1.495 <b>-3.27</b>	0.945 -0.46	0.259 1.95	0.490 <b>2.80</b>	-0.063 -0.63
<b>P1-P5</b>	1.554 <b>2.85</b>	0.133 0.94	-0.111 -0.70	-0.715 <b>-3.41</b>	0.120 1.01

**Panel B: Results for 2000-2001**

Portfolio (1)	Coefficient Estimates for the 4-Characteristic Model				
	Intercept (2)	RPM (3)	SMB (4)	HML (5)	WML (6)
<b>1 (Most Favorable)</b>	0.015 0.03	1.108 0.90	0.205 1.89	-0.237 -1.59	0.033 0.92
<b>5 (Least Favorable)</b>	-0.741 -0.51	0.495 1.69	0.474 1.74	0.424 1.13	-0.043 -0.47
<b>P1-P5</b>	0.756 0.48	0.613 1.86	-0.269 -0.90	-0.661 -1.61	0.076 0.77