The sentiment of investors, large and small

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Abstract

Investors are not all alike and neither is their sentiment. The sentiment of Wall Street strategists is unrelated to the sentiment of individual investors or that of newsletter writers although the sentiment of the last two groups is closely related.

Sentiment can be useful for tactical asset allocation. There is a negative relationship between the sentiment of each of the three groups and future stock returns and that relationship is statistically significant for Wall Street strategists and individual investors.

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Alan Greenspan, Chairman of the Federal Reserve Board, warned against irrational exuberance in December 1996. In 1999 he warned against Internet mania. Greenspan told the Senate Budget Committee, on January 28, 1999, that the impulse that drives Internet investors is the not-quite-rational impulse that drives lottery ticket buyers. One day earlier, Arthur Levitt, Chairman of the Securities and Exchange Commission, warned day traders. Day traders, said Levitt, should trade only "with funds that can afford to lose." (Wessel (1999))

Small investors are the main concern of Greenspan, Levitt and a host of other commentators. But is the sentiment of small investors different from the sentiment of large investors? Does the sentiment of investors, large or small, predict stock returns? Do high returns turn investors into exuberant bulls? And do investors follow their sentiment with investment actions? These are the questions we answer in this paper.

We study three groups of investors, small, medium and large: small individual investors, medium writers of investment newsletters and large Wall Street strategists. Newsletter writers are often described as semi-professionals, midway between amateur individual investors and professional Wall Street strategists.

We find that the sentiment of the three groups of investors does not move in lockstep. There is a positive relationship between changes in the sentiment of individual investors and that of newsletter writers but there is virtually no relationship between changes in the sentiment of Wall Street strategists and that of either individual investors or newsletter writers.

The sentiment of all three groups points in the wrong direction; there is a negative relationship between sentiment and future S&P 500 Index returns. The sentiment of individual investors and Wall Street strategists are reliable contrary indicators; the negative relationship between them and future S&P Index 500 returns is statistically significant. Newsletter writers do well relative to their sorry associates. The negative relationship between the sentiment of newsletter writers and future S&P 500 Index returns is not statistically significant.

Individual investors are wiser in their investment actions than in their sentiment. While there is a negative and statistically significant relationship between the sentiment of individual investors and future S&P 500 Index returns, there is a positive, although not statistically significant, relationship between the stock allocation in portfolios of individual investors and future S&P 500 Index returns.

The S&P 500 Index is an index of mostly large stocks. Is there a link between the sentiment of small investors and the returns of small stocks? Lee, Shleifer and Thaler (1991) concluded that small investors concentrate their holdings in small stocks, creating a link between the sentiment of small investors and the returns of small stocks. Elton, Gruber and Busse (1998) disputed these conclusions. We find no special link between the sentiment of small investors and the returns of small stocks. Indeed, returns of large stocks affect the sentiment of small investors more than returns of small stocks. Moreover, the link between the sentiment of small investors and future returns of small stocks is weaker than the link between their sentiment and returns of large stocks.

Sentiment

Merrill Lynch compiles the sentiment of Wall Street sell side strategists since September 1985 and our Merrill Lynch data extend through July 1998. The number of strategists in the Merrill Lynch survey ranged over the years from 15 to 20. The sentiment of Wall Street strategists is defined as the mean allocation to stocks in their recommended portfolios. Merrill Lynch compiles the sentiment of strategists monthly and responses are received close to the end of each month.

Bernstein and Pradhuman (1994) found that the sentiment of Wall Street strategists is a useful contrary indicator. For example, they wrote in their December 20, 1994 Quantitative Viewpoint report that the stock allocations recommended by strategists in November were very low "and now clearly suggest that Wall Street is *too* bearish. Because the indicator is contrarian in nature, that extreme bearishness is a buy signal for the S&P 500. If one were looking for capitulation, it is apparently here."

Chartcraft, an investment services company, publishes Investors Intelligence, a survey of the sentiment of more than 130 investment newsletter writers. Investors Intelligence classifies newsletter writers into three categories, bullish, bearish or waiting for a correction and it promotes the sentiment data as a contrary indicator; investors are advised to sell when the proportion of bulls among newsletter writers is high. The headline of the January 22, 1999 issue of Investors Intelligence is TOO MANY BULLS. It says: "Situation continues to get more worrisome as our Sentiment Bulls are at the highest level since August 28, 1987, just less than two month before the crash."

Investors Intelligence compiles its sentiment data weekly since 1964. However, we use only data from September 1985 through July 1998 to facilitate comparisons with

Wall Street strategists and individual investors. We use the percentage of bullish newsletter writers in the last week of each month as the measure of the sentiment of newsletter writers, corresponding to the end of the month compilation of the sentiment of Wall Street strategists.

The American Association of Individual Investors (AAII) conducts a sentiment survey among its members since July 1987 and our data extend through July 1998. The AAII asks respondents to classify themselves as bullish, bearish or neutral. AAII's sentiment survey, like Investors Intelligence's survey, is weekly. The AAII mails 100 survey questionnaires each weekday and tallies on Thursday's of each week all questionnaires received that week and dated no earlier than the previous two weeks. The total number of questionnaires received during the last week of July 1998, for example, is 217. We use the percentage of bullish investors in the last week of each month as the measure of the sentiment of individual investors, corresponding to the measure of sentiment of newsletter writers.

Does sentiment move in lockstep?

Individual investors grow bullish when newsletter writers grow bullish, but not in lockstep. The correlation between changes in the monthly sentiment of the two groups is 0.47, highly statistically significant but hardly perfect. The relationship between the sentiment of Wall Street strategists and the sentiment of the other two groups is not nearly as strong. Changes in the sentiments of Wall Street strategists are virtually unrelated to changes in the sentiment of individual investors or newsletter writers. The correlation between changes in the sentiment of individual investors and Wall Street strategists is 0.01 and the correlation between changes in the sentiment of newsletter writers and Wall Street strategists is 0.03.

Does sentiment predict stock returns?

Solt and Statman (1988) and Clarke and Statman (1998) analyzed weekly Investors Intelligence observations since 1964 and found no statistically significant relationship between the sentiment of newsletter writers and DJIA and S&P 500 Index returns in the following four weeks, 26 weeks and 52 weeks. We use monthly sentiment observations only since 1985 but we reach the same conclusion. There is a negative relationship between the sentiment of newsletter writers and S&P 500 Index returns in the following month, but the relationship is not statistically significant. (See Figure 1)

Insert Figure 1

The S&P 500 Index is an index of mostly large stocks but the conclusions do not vary when the CRSP 9-10 Index of small stocks replaces the S&P 500 Index. There is a negative relationship between the sentiment of newsletter writers and small stock returns in the following month, but the relationship is not statistically significant.

The sentiment of individual investors, unlike the sentiment of newsletter writers, is a reliable contrary indicator of future S&P 500 Index returns. We find a negative and statistically significant relationship between the sentiment of individual investors and S&P 500 Index returns in the following month. An increase of one percentage point in the sentiment of individual investors associated with a 0.10 percentage point decrease in S&P 500 Index returns in the following month. The link between the sentiment of individual investors and future stock returns is stronger for large stocks than for small stocks. While there is a negative relationship between the sentiment of individual investors and CRSP 9-10 returns in the following month, that relationship is not statistically significant.

The sentiment of Wall Street strategists, like the sentiment of individual investors, is a reliable contrary indicator for future S&P 500 Index returns. We find a negative and statistically significant relationship between the sentiment of Wall Street strategists and S&P 500 Index returns in the following month. An increase of one percentage point in the sentiment of Wall Street strategists associated with a decrease of 0.24 percentage points in S&P 500 Index returns in the following month. There is also a negative relationship between the sentiment of Wall Street strategists and CRSP 9-10 Index returns in the following month, but that relationship is not statistically significant.

The combination of the sentiment of the three groups provides a good tool for forecasting future S&P 500 Index return. A multiple regression of S&P 500 Index returns in one month on the sentiment of the three investor groups in the preceding month yields an R^2 of 0.08, a figure that is statistically significant at the 0.01 level. An R^2 of 0.08 might seem low, it indicates that sentiment explain only 8 percent of S&P 500 Index returns. But the 0.08 figure is properly interpreted as high. Clarke, Fitzgerald, Berent and Statman (1989) showed that information reflected in such R^2 can add substantial value to a tactical asset allocation program. (See Table 1).

Insert Table 1

While sentiment is useful in forecasting future S&P 500 Index returns, it is not useful in forecasting CRSP 9-10 Index returns. The R^2 of a regression of CRSP 9-10 returns in one month on the sentiment of the three investor groups in the preceding month is not statistically significant.

What makes investors bullish?

Stock returns are prominent among factors that affect sentiment. But do investors forecast continuations of past returns or do they forecast reversals? Common investment proverbs provide no good answers because they reflect diametrically opposite perceptions of the processes underlying stock returns. For every proverb that implies one should expect reversals (e.g., "trees don't grow to the sky), there is a proverb implying that continuations are the rule (e.g., "don't fight the tape").

Clarke and Statman found that newsletter writers form their sentiment as if they expect continuations of short-term stock returns and reversals of longer-term returns. High S&P 500 Index returns over 4-week periods are associated with the migration of newsletter writers into the bullish camp. However, high S&P 500 Index returns over 26 and 52-week periods are associated mostly with "nervous bullishness," a migration of newsletter writes into the correction camp. We confirm the short-term effect here. We find a positive and statistically significant relationship between S&P 500 Index returns and changes in sentiment during the month. A one percentage point increase in S&P 500 Index returns is associated with a 0.98 percentage point increase in the sentiment of newsletter writers. (See Figure 2)

Insert Figure 2

Stock returns affect individual investors as they affect newsletter writers. We find, consistent with De Bondt (1993), a positive and statistically significant relationship between S&P 500 Index returns and changes in the sentiment of individual investors. A one percentage-point increase in S&P 500 Index returns is associated with a one percentage- point increase in the sentiment of individual investors. However, stock returns have little effect on the sentiment of Wall Street strategists. While there is a positive relationship between S&P 500 Index returns and changes in the sentiment of Wall Street strategists, that relationship is not statistically significant.

We find no support for the argument that the sentiment of "small" individual investors follows the performance of small stocks more closely than they follow the performance of large stocks. Indeed, we find that changes in the sentiment of individual investors are related more closely to S&P 500 Index returns than to CRSP 9-10 Index returns. Do individual investors follow their sentiment with investment actions?

The AAII conducts an asset allocation survey in addition to its sentiment survey. Individual investors are asked in the asset allocation survey to specify their *actual* portfolio allocations to stocks, bonds and cash. The asset allocation survey, unlike the sentiment survey, is monthly. The AAII mails 600 questionnaires at the beginning of each month and tallies the questionnaires received during the month. For example, the July 1998 tally consists of 144 questionnaires. Since the AAII asset allocation survey responses are centered roughly in the middle of each month, we use the mean of the weekly AAII sentiment figures during a month as the corresponding measure of sentiment.

Individual investors do follow their sentiment with investment actions but not forcefully. There is a positive and statistically significant relationship between the monthly changes in the sentiment of individual investors and the monthly changes in the stock allocation in their portfolios but the Adjusted R^2 of the regression of changes in allocation on changes in sentiment is only 0.02. (See Figure 3)

Insert Figure 3

It turns out that individual investors are wiser in their investment actions than in their sentiment. While there is a negative and statistically significant relationship between the sentiment of individual investors and future S&P 500 Index returns, there is a positive, although not statistically significant relationship between actual stock allocations and future S&P 500 Index returns.

Conclusions

Studies of the sentiment of investors are important for two reasons. First, they teach us about biases in the stock market forecasts of investors. Second, they teach us about opportunities to earn extra returns by exploiting these biases.

We study the sentiment of three groups of investors, large and small: "small" individual investors, "medium" newsletter writers and "large" Wall Street strategists. We find that the sentiment of the three groups does not move in lockstep. The correlation between changes in the sentiment of individual investors and newsletter writers is high but hardly perfect and there is virtually no correlation between changes in the sentiment of Wall Street strategists and changes in the sentiment of the other two groups.

The sentiment of both small investors and large ones are reliable contrary indicators for future S&P 500 Index returns. The relationship between the sentiment of individual investors and future S&P 500 Index returns is negative and statistically significant and so is the relationship between the sentiment of Wall Street strategists and future S&P 500 returns. While the relationship between the sentiment of newsletter writers and future S&P 500 Index returns is also negative, that relationship is not statistically significant. A combination of the sentiment of the three groups provides forecasts of future S&P 500 Index returns that can be used in a tactical asset allocation program.

Individual investors and newsletter writers form their sentiment as if they expect continuations of short-term returns. High S&P 500 Index returns during a month make them bullish. However, the sentiment of Wall Street strategists is little affected by stock returns. There is no statistically significant relationship between S&P 500 Index returns and changes in the sentiment of Wall Street strategists.

We find no support for the claim that the sentiment of small investors is influenced mostly by returns of small stocks while the sentiment of large investors is influenced mostly by returns of large stocks. Indeed, the correlation between changes in the sentiment of Wall Street strategists and the returns of small stocks is higher than the correlation with the returns of large stocks. Similarly, the correlation between changes in the sentiment of individual investors and the returns of large stocks is higher than the correlation with the returns of small stocks.

Individual investors are wiser in their investment actions than in their sentiment. While there is a negative and statistically significant relationship between the sentiment of individual investors and future S&P 500 Index returns, there is a positive, although not statistically significant relationship between the *actual* stock allocations in the portfolios of individual investors and future S&P 500 Index returns.

Much work remains to be done. The three groups of investors we studied are three of many. It is important that we study all groups and that we it is important the we study them in non-US markets as well. The sentiment we studied is explicit sentiment, collected in investor surveys. It is important to continue to study implicit measures of sentiment, such as the Market Volatility Index (Copeland and Copeland (1999)) as well as the relationship between explicit measures sentiment and implicit ones, such as the relationship between the sentiment of individual investors and the discount on the closed-end funds. (Brown (1999))

References

Bernstein, Richard and Satya D. Pradhuman. 1994. "A Major Change in Our Work II: 'Sell Side' Indicator Gives a 'Buy' Signal." *Merrill Lynch Quantitative Viewpoint*:1-4.

Brown, Gregory W. 1999. "Volatility, Sentiment, and Noise Traders." *Financial Analysts Journal*, (March/April): 82-90.

Clarke, Roger G., Michael T. Fitzgerald, Phillip Berent, and Meir Statman. 1989. "Market Timing with Imperfect Information." *Financial Analysts Journal.* (November/December):27-36.

Clarke, Roger G. and Meir Statman. 1998. "Bullish or Bearish?" *Financial Analysts Journal*, (May/June): 63-72.

Copeland, Maggie M. and Thomas E. Copeland. 1999. "Market Timing: Style and Size Rotation Using the VIX." *Financial Analysts Journal*, (March/April):73-81.

DeBondt, Werner. 1993. "Betting on Trends: Intuitive Forecasts of Financial Risk and Return." *International Journal of Forecasting,* vol. 9, no. 3 (November):355-71.

Elton, Edwin J., Martin J. Gruber, and Jeffrey A. Busse. 1998. "Do Investors Care about Sentiment?" *The Journal of Business*. Vol. 71, no. 4 (October):477-500.

Lee, Charles M., Andrei Shleifer, and Richard H. Thaler. 1991. "Investor Sentiment and the Closed-End Fund Puzzle." *Journal of Finance*, vol. 46, no. 1 (March):75-109.

Solt, Michael E. and Meir Statman. 1988. "How Useful is the Sentiment Index?" *Financial Analysts Journal*, vol. 44, no. 5 (September/October):45-55.

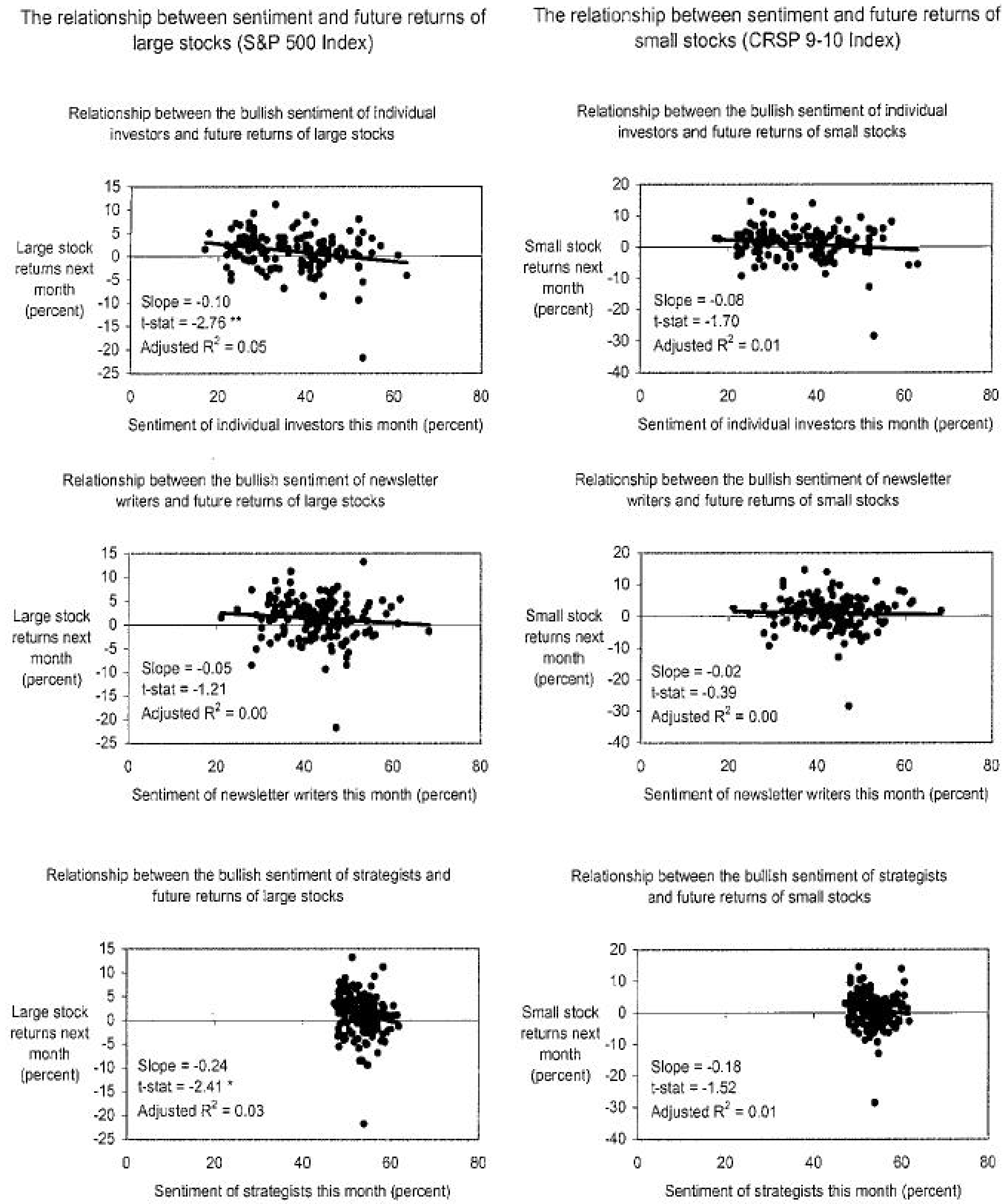
Wessel, David. 1999. "Internet mania is like lottery, Fed Chief says." *The Wall Street Journal*, January 29, 1999.

Table 1. How well does sentiment forecast stock returns?

Dependent Variable: Stock Returns Next Month	Intercept	Independent Variables: Sentiment of individual investors this month	Sentiment of newsletter writers this month	Sentiment of Wall Street strategists this month
Large stocks (S&P 500 Index)	17.48	-0.09 (-2.37*)	-0.01 (-0.16)	-0.24 (-2.43*)
				Adjusted R^2=0.08
Small stocks (CRSP 9-10 Index)	12.40	-0.08 (-1.45)	-0.00 (-0.06)	-0.16 (-1.25)
				Adjusted R^2=0.01

* Statistically significant at the 0.05 level.

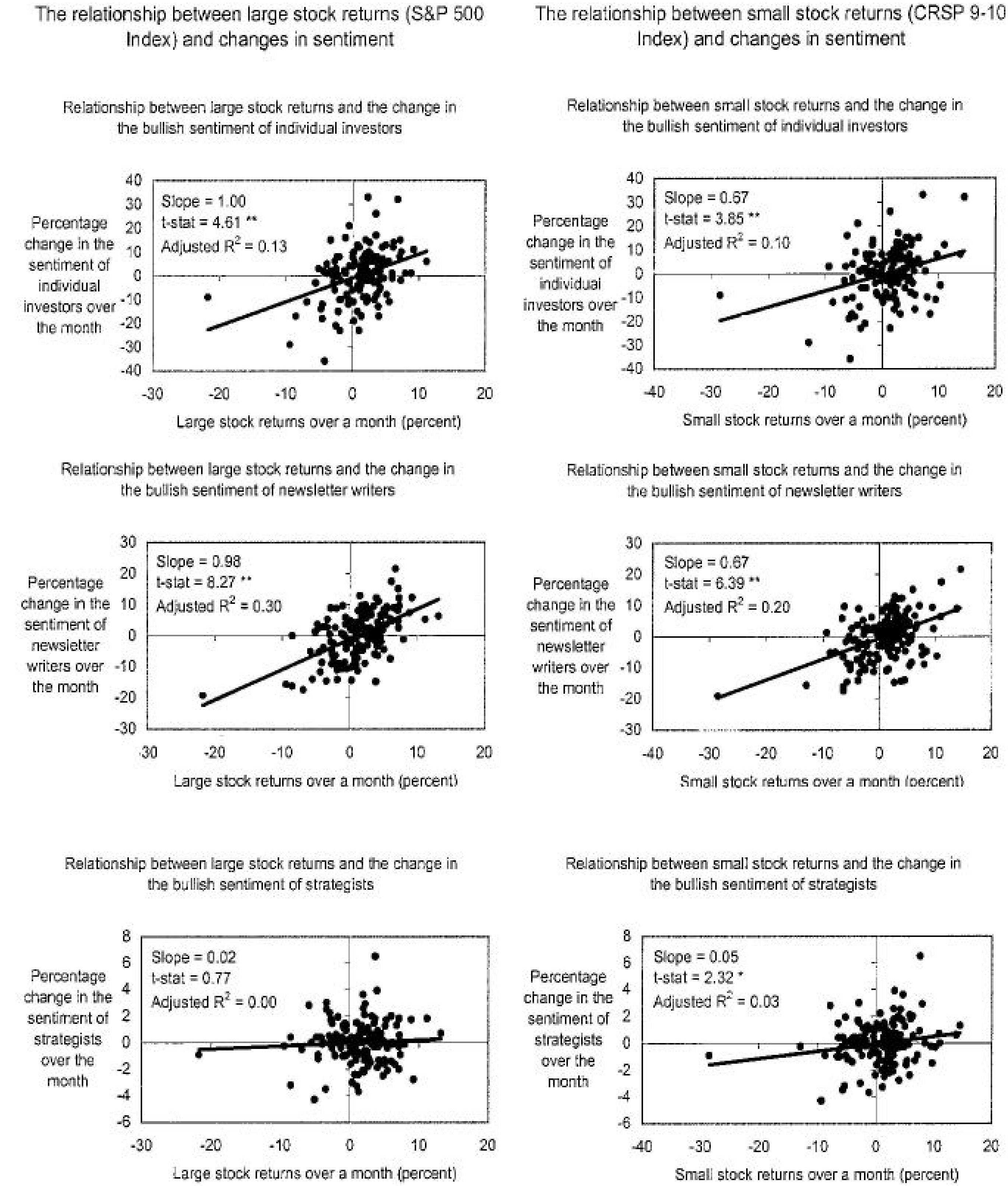
Figure 1: How well does sentiment forecast future stock returns?



* Statistically significant at the 5% level

** Statistically significant at the 1% level

Figure 2: How do stock returns affect sentiment?



* Statistically significant at the 5% level

** Statistically significant at the 1% level

Figure 3a: Do individual investors follow their sentiment with portfolio allocation?

Relationship between the change in the bullish sentiment of individual investors and the change in their stocks allocation

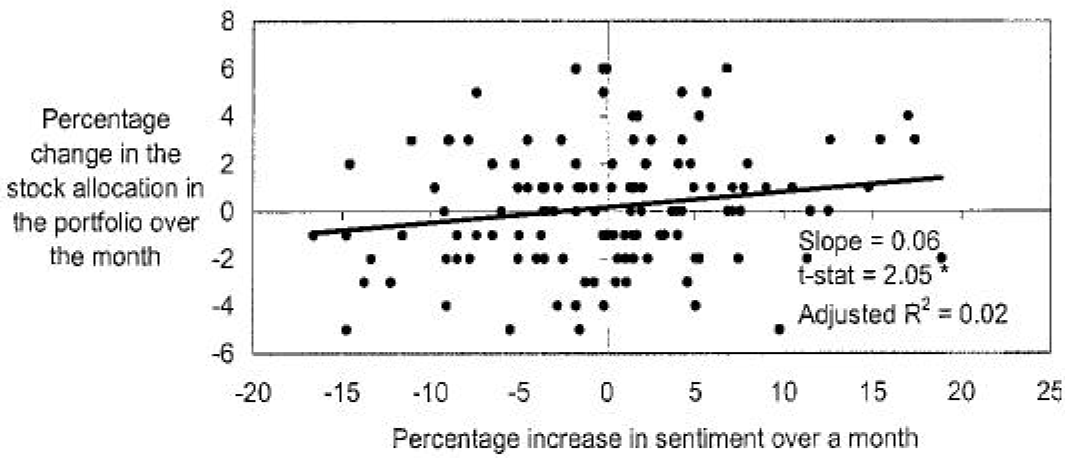


Figure 3b: Are investors wiser in their portfolio allocation than in their sentiment?

Relationship between the stock allocation of individual investors and large stock returns