

One-month Individual Stock Return Reversals and Industry Return Momentum

Marc W. Simpson*

Department of Finance
Northern Illinois University
DeKalb, IL 60115
815-753-6394 (Voice)
msimpson@niu.edu

Emiliano Giudici

Department of Economics and Finance
Stephen F. Austin State University
Nacogdoches, TX 75965
936-468-1437 (Voice)
giudicie@sfasu.edu

John T. Emery

School of Business and Public Administration
California State University, Bakersfield
Bakersfield, CA 93311
661-654-2023 (Voice)
jemery@csub.edu

* Corresponding Author

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Abstract:

There is a large stream of literature that documents one-month return reversal patterns for individual stocks. Some studies term this reversal pattern overreaction, while others simply skip one-month returns in order to examine longer term momentum patterns in stocks. At the same time, the literature documents that momentum patterns in stock returns tend to be related to momentum patterns in returns to industry portfolios. Further, industry portfolios tend to exhibit return momentum, even at one-month horizons. This paper examines the relationship between individual stock return reversals and industry momentum. We find that individual stock return reversals tend to be related to return reversions within industries. Thus, the predictions of the overreaction hypothesis do not hold, market-wide, but rather within industries. This leads to a dramatically different trading strategy than those suggested by either the overreaction hypothesis or by industry momentum. That is, a strategy that buys the losers within the previous month's winning industry and shorts the winners in the previous month's losing industry significantly outperforms an overreaction-based strategy that simply buys losers and shorts winners in the market overall, and it outperforms a industry-momentum-based strategy that simply buys the previous month's winning industry portfolio and shorts the previous month's losing industry portfolio.

1. Introduction

Many studies have documented that stock returns tend to reverse from one month to the next (see, for example, Debondt and Thaler, 1985). Some attribute the reversal pattern to overreaction on the part of investors; others simply ignore this pattern in order to explore longer-term momentum patterns in stock returns; hence the phrase, “skip-month,” (Jagdeesh, 1995). At the same time, some researchers, in exploring momentum patterns, have noted that industrial portfolios tend to exhibit momentum even at one-month frequencies (see, for example, Hong, et.al., 2007; and Moskowitz and Grinblatt, 1999).

This current study investigates the confluence of these two anomalies. Specifically, we consider the theoretical returns to strategies based on the two documented anomalies along with some implications from the combining of the two hypotheses. That is, the overreaction hypothesis, predicated on reversion in stock returns, leads to a trading strategy that would buy those stocks that have had the worst performance in a given month and short those stocks that have had the best performance in the given month. Alternately, a strategy based upon industry momentum would buy the industry portfolio of the industry with the strongest performance in a given month and short the industry portfolio of the industry with the weakest performance. This investigation proposes that one should consider both of these anomalies at the same time. Thus, one would buy the poorest performing stocks in the best-performing industry while shorting the best-performing stocks in the poorest performing industry.

Using Fama-French’s ten-industry definitions and the stock returns from 1931 to 2010 we demonstrate that the strategy proposed in this paper outperforms both a strategy based on the overreaction hypothesis and a strategy based upon industry momentum.

The remainder of the paper is organized as follows: section two describes the data in the methodology employed, section four presents the results of the analyses, and section five concludes the paper.

2. Data and methodology

2.1 One-month stock returns and industry identification

For each year from 1931 to 2010 we gathered all stock returns in the CRSP database, at the beginning of each year, we then exclude all firms that do not have at least 36 months of previous return data. Further we gather the SIC code as of December the previous year. For each year, then, these firms form the universe of stocks used in the analysis. If a particular firm is missing return information for any month after it has been included it is excluded for the remainder of the analysis. Thus, firms enter the universe at the beginning of each year, and some firms drop out during the year.

2.2 The overreaction hypothesis strategy

In order to examine the returns to the trading strategy based on the overreaction hypothesis over the 960 months from January 1931 to December 2010, the returns of all of the stocks in the universe in a particular month are sorted into deciles. The performance of those stocks in the next month is then captured. The overreaction hypothesis strategy then involves buying the stocks in the lowest decile and shorting the stocks in the highest decile.

2.3 The industry momentum strategy

In order to capture the performance of a trading strategy based on industry momentum, the stocks are sorted into 10 industries based on the Fama-French 10 industry definitions given their SIC as of the previous December. The performance of each industry portfolio is then noted and the industries are ranked from best-performing to worst-performing. The performance of the strategies in the next month is then recorded. A strategy based on industry momentum would consistently buy industry portfolio of the best-performing industry and short industry portfolio of the worst-performing industry.

2.4 The joint hypothesis strategy

In order to calculate the returns to a strategy that uses both the overreaction hypothesis and the industry momentum we first sort the stocks in each month into their respective industries and then rank them into deciles based on performance within each industry. The performance, in the next month, of the deciles within each industry is then examined. A strategy based on the joint overreaction and industry momentum hypotheses would buy the poorest-performing stocks in the best-performing industry and short the best-performing stocks in the worst-performing industry.

3. Results

Table 1 reports the returns to the different decile portfolios. The reversal phenomenon is clear in the results. The previous month's losers have very high positive returns and the previous month's winners have low returns.

Table 2 reports results when the industry portfolios are ranked by performance. The momentum effect is very clear in the one-month returns. Those industries that have performed well in the previous month continue to have high positive returns, while those industries that have performed poorly on the previous month continue to have low returns.

Table 3 reports the results from when returns are sorted in the portfolios based on industry performance and based on within industry performance. It is apparent that the winner stocks in each industry tend to have lower returns than the loser stocks in each industry. It is also apparent that the better performing industries tend to exhibit momentum. The culmination of these two effects is that the loser stocks in the winning industry have very high positive returns and the winners stocks from the losing industry have negative returns.

Table 4 reports the results of the trading strategies based on the three hypotheses. Furthermore, table four reports the results of one-tailed t-tests of the hypothesis that the returns from the joint hypotheses trading strategy are equal to the returns from the trading strategy based on the overreaction hypothesis and equal to the returns from the trading strategy based on industry momentum. These two t-tests reject the null hypotheses, therefore the joint hypotheses trading strategies exhibit statistically significant outperformance of the other two strategies.

4. Conclusion

This paper examines the relationship between individual stock return reversals and industry momentum. We find that individual stock return reversals tend to be related to return reversions within industries. Thus, the predictions of the overreaction hypothesis do not hold, market-wide, but rather within industries. This leads to a dramatically different trading strategy than those suggested by either the overreaction hypothesis or by industry momentum. That is, a strategy that

buys the losers within the previous month's winning industry and shorts the winners in the previous month's losing industry significantly outperforms an overreaction-based strategy that simply buys losers and shorts winners in the market overall, and it outperforms a industry-momentum-based strategy that simply buys the previous month's winning industry portfolio and shorts the previous month's losing industry portfolio.

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Table 1: Performance of the Overreaction Hypothesis Strategy.

Decile	Average Return (T-stat)
1 (previous loser)	3.43 (9.43 ^{***})
2	1.91 (6.85 ^{***})
3	1.59 (6.40 ^{***})
4	1.45 (6.36 ^{***})
5	1.38 (6.17 ^{***})
6	1.31 (6.15 ^{***})
7	1.23 (5.41 ^{***})
8	1.13 (4.98 ^{***})
9	0.85 (3.59 ^{***})
10 (previous winner)	0.18 (0.67)

***, **, * Indicates statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 2: Performance of the Industries based on previous performance.

Decile	Average Return (T-stat)
1 (previous loser)	0.58 (2.24 ^{**})
2	1.06 (4.00 ^{***})
3	0.95 (3.99 ^{***})
4	1.44 (5.52 ^{***})
5	1.46 (5.93 ^{***})
6	1.50 (6.07 ^{***})
7	1.63 (6.99 ^{***})
8	1.69 (6.73 ^{***})
9	1.92 (7.39 ^{***})
10 (previous winner)	2.16 (8.28 ^{***})

***, **, * Indicates statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 3: Performance of the top and bottom decile of stocks in each industry based on previous performance.

Industry	Top Decile	Bottom Decile
1 (previous loser)	-0.69 (-2.19 ^{**})	1.64 (4.60 ^{***})
2	-0.18 (-0.66)	2.12 (5.85 ^{***})
3	-0.31 (-1.18)	2.18 (6.57 ^{***})
4	0.53 (1.79 [*])	2.85 (7.70 ^{***})
5	0.47 (1.66 [*])	2.91 (7.25 ^{***})
6	0.54 (1.90 [*])	2.77 (8.32 ^{***})
7	0.68 (2.60 ^{***})	2.85 (7.80 ^{***})
8	0.59 (2.21 ^{**})	3.24 (8.76 ^{***})
9	1.11 (3.89 ^{***})	3.46 (9.96 ^{***})
10 (previous winner)	1.39 (4.66 ^{***})	3.49 (8.83 ^{***})

***, **, * Indicates statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 4: Comparison of trading strategies.

	Joint Hypothesis	Overreaction	Industry Momentum
Average Return	4.08	3.25	1.59
t-test of Difference			
vs. Overreaction	1.95 ^{***}		
vs. Industry Momentum	6.03 ^{***}		

***, **, * Indicates statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.