

Industry Effects of Price Momentum - April 30, 2003

In previous studies we have examined the effectiveness of price momentum rankings across various market sectors. Whether the sectors are defined by size or industry group, it has been generally seen that price momentum does a good job of predicting relative performance within a sector. That is, after creating groups of stocks based on market capitalization or industry sector and sorting the stocks within each group by price momentum, on average, the stocks with the highest price momentum perform better over the subsequent 3 to 6 months than the average for the group. While this is interesting and very useful from a bottom up approach, the question arises: Can price momentum be used to identify which industries will be the best performers in the near term future? This study examines that question in terms of Ford's price momentum model.

For this study we created 15 industry groups based on our macro industry classifications for each quarterly period from December 1972 through December 2002. Equally weighted averages of Ford's price momentum, 1-year historical price gain, and 1-month historical price gain were computed quarterly for each of these industry groups. Each sector was ranked in descending order according to each of the averaging variables and equally-weighted average quarterly performance was computed for each sector.

The summary annual results for Ford's price momentum, 1-year historical price gain and 1-month price gain are shown below:

Price Momentum

The Ford price momentum model incorporates long (1-year), medium (1-quarter) and short term (1-month) historical price change into a single score to predict near term price performance. The original analysis, based on regression analysis of individual stock returns, found a positive correlation between 1-year historical price change and future performance. In addition, the 1-quarter and 1-month historical price changes were found to have a negative correlation with future performance. These negative relationships, sometimes referred to as a mean reversion effect, are represented by negative weightings in the price momentum model.

Ford's price momentum model

Sector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Universe
Annual Returns (%)	13.7	11.2	13.4	13	13.4	14.3	14.1	13.8	13.9	8.9	11.5	12.2	7.8	10.6	7.9	13.0

When viewed as an industry average indicator, the average performance for the industry groups with the highest price momentum shows only a very small advantage over the universe as a whole. Consequently, it seems that Ford's price momentum factor is not particularly helpful in predicting the industry groups that will have the best performance.

1-Year Historical Price Change

1-year historical price gain

Sector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Universe
Annual Returns (%)	18.2	17.3	17	17.5	13	13.7	11.6	13.6	9.9	12.6	9.3	9.1	5.1	9.5	3.1	13.0

Isolating 1-year historical price change confirms what other researchers have found. As the excess return of the top industries sector over the universe and the spread between the top industries and the bottom industries shows, there is an evident effect of industry momentum on industry average returns.

1-Month Historical Price Change

1-month historical price gain

Sector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Universe
Annual Returns (%)	15.3	18.5	15	15.3	14	13.7	11.3	11.5	9.9	14.6	8.1	11	8.8	7.5	5.1	13.0

The 1-month historical price change also shows a positive effect on industry average returns. This is interesting because, as noted in the description of the price momentum model, the 1-month price change has a negative correlation when looked at on an individual stock basis. This sign reversal of the 1-month gain term when averaged across an industry group may be the cause of the lackluster industry results when averaging the price momentum model.

Conclusion

Ford's price momentum model works better on a stock by stock basis than as an industry predictor. This is possibly due to the negation of the mean reversion effect of 1-month price gain when averaged across an industry. However, price momentum, defined as historical price gain, works well in predicting industry performance. The evidence suggests that a trading strategy may be employed that takes advantage of industry average effect of price momentum. One strategy might involve buying stocks in the industries exhibiting the strongest momentum and shorting stocks in those with the weakest. Alternatively, a strategy may employ a relative weighting scheme based on industry average 1-year price gain in an enhanced index process.

The top and bottom 1-year price average industry price gain groups for the past 10 years are listed below with their average total returns for the following quarter.

Date	Top 1-year price gain Industry Group	Average Return (%)	Bottom 1-year price gain Industry Group	Average Return (%)	Universe Return (%)
Dec-92	Financial	11.5	Oil & Gas	18.6	6.2
Mar-93	Financial	-1.6	Consumer Goods	-1.7	1.4
Jun-93	Technology	8.5	Food & Beverage	2.2	5.9
Sep-93	Technology	6.7	Food & Beverage	2.8	4.4
Dec-93	Metals & Mining	3.5	Food & Beverage	0.2	-1.3
Mar-94	Technology	-5.7	Utility	-5.0	-3.1
Jun-94	Primary Process	11.0	Utility	4.3	7.5
Sep-94	Metals & Mining	-9.4	Utility	-1.1	-1.9
Dec-94	Technology	8.9	Utility	5.2	6.8
Mar-95	Technology	21.1	Retail Stores	6.4	9.1
Jun-95	Technology	11.6	Automotive	3.4	8.6
Sep-95	Technology	-2.2	Automotive	-6.3	0.8
Dec-95	Financial	6.0	Automotive	8.6	6.7
Mar-96	Financial	2.8	Automotive	5.4	6.0
Jun-96	Machinery	-0.9	Primary Process	1.2	0.8
Sep-96	Oil & Gas	15.8	Transportation	5.6	5.1
Dec-96	Oil & Gas	-5.1	Utility	-3.3	-1.9
Mar-97	Oil & Gas	11.5	Metals & Mining	-0.8	14.7
Jun-97	Financial	15.5	Metals & Mining	4.1	15.3
Sep-97	Machinery	-5.6	Metals & Mining	-22.8	-3.3
Dec-97	Financial	9.2	Metals & Mining	13.4	11.7
Mar-98	Financial	-0.4	Metals & Mining	-13.7	-3.8
Jun-98	Retail Stores	-23.3	Metals & Mining	-9.7	-19.8
Sep-98	Utility	9.8	Oil & Gas	-15.8	16.0
Dec-98	Retail Stores	-2.8	Oil & Gas	4.5	-4.8
Mar-99	Retail Stores	15.1	Oil & Gas	22.7	18.1
Jun-99	Technology	3.1	Machinery	-8.1	-5.5
Sep-99	Technology	56.6	Construction	-2.8	14.9
Dec-99	Technology	29.5	Food & Beverage	-4.0	9.9
Mar-00	Technology	-12.2	Food & Beverage	3.8	-3.5
Jun-00	Technology	-4.5	Automotive	-0.3	3.4
Sep-00	Consumer Goods	-11.8	Automotive	-13.0	-9.3
Dec-00	Oil & Gas	-2.7	Automotive	13.1	0.7
Mar-01	Oil & Gas	-1.1	Technology	21.9	18.5
Jun-01	Financial	-6.9	Technology	-33.5	-19.6
Sep-01	Financial	7.5	Technology	53.9	27.1
Dec-01	Retail Stores	12.6	Utility	-11.7	4.8
Mar-02	Automotive	4.7	Utility	-14.0	-8.9
Jun-02	Automotive	-20.6	Technology	-29.9	-20.3
Sep-02	Automotive	0.6	Utility	16.3	11.2