

Money From Momentum: Positive Feedback Can Drive Returns

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Article Highlights

- Traders may buy a stock simply because it is going up in price, and as the price rises in response more traders are induced to buy it.
- The positive feedback trading hypothesis (PFTH) allows for prices to diverge from traditional notions of valuation.
- It is possible to outperform the market using momentum strategies, but there are serious limitations.

Positive feedback trading takes into account trends in the stock market. It posits an alternative to theories that advocate buying the market or tracking corporate performance.

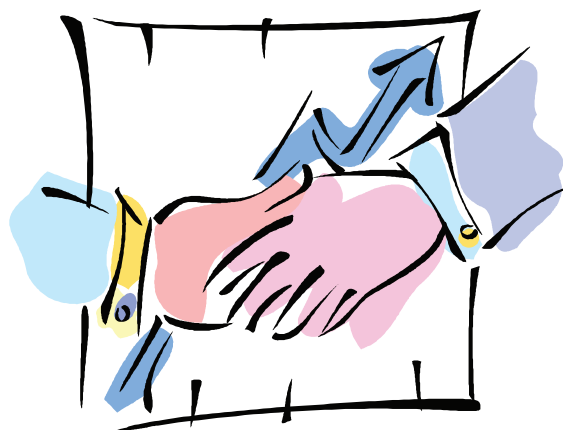
According to advocates of technical analysis, it is possible to discern trends and cycles in securities prices that can be traded profitably. The simplest form of this is momentum trading—buying securities with prices that are rising and selling those with prices that are falling. Recent studies find that this can work.

Increasingly, financial economists are uncovering evidence of price trends in various markets. Many markets that appear random are not. Rather, they are complex and hard to predict. The contradictions between experience and accepted theory have led researchers to look for an explanation.

Reacting to Momentum Is Rational

The positive feedback trading hypothesis (PFTH) is gaining increasing support among researchers as an explanation for momentum in securities markets. The idea is that at times traders may buy a security simply because it is going up in price. If a large number of traders buy the security, their combined buying pressure drives the price even higher, inducing even more traders to buy.

The buying frenzy is rational because people buy securities to make money, and with rising prices they are making



money. Eventually this rational bubble bursts, and prices collapse precipitously. People begin to sell because the prices are falling, and prices fall because people are selling. Momentum up, momentum down.

Positive feedback traders also include traders who use stop-loss orders to sell a security when the price reaches a certain level and portfolio insurers who hedge a portfolio against market risk by short-selling stock index futures.

At times, traders buy securities simply because prices are going up. Their buying pressure can drive prices even higher.

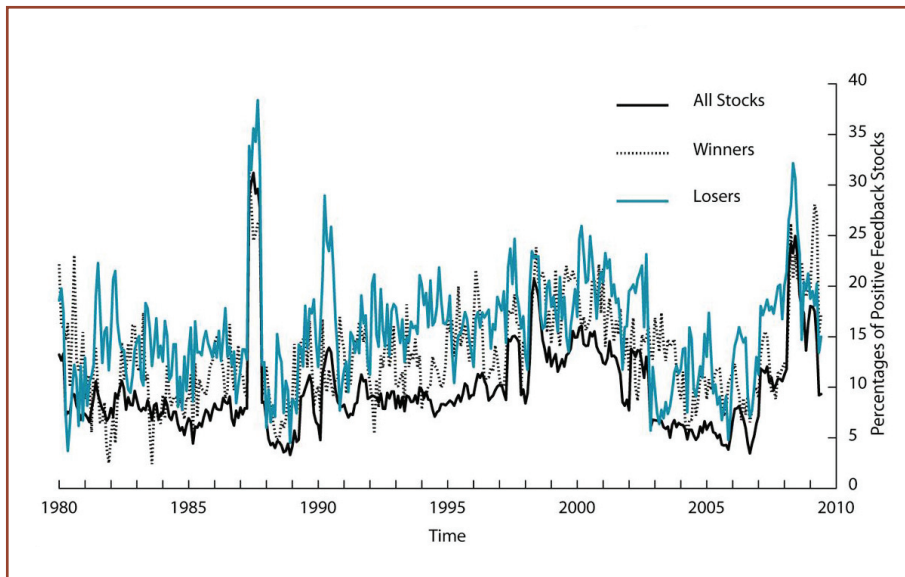
The positive feedback trading hypothesis is of particular interest to equity-market traders because the theory allows for market prices to diverge from any normal valuation of the securities. This is the key: Our traditional notions of valuation led us to believe that momentum profits in excess of normal returns were not possible.

Random Prices and Divergence From Fundamental Factors

Securities are intangible assets. The conventional view is that rational traders value assets based upon all available information regarding returns that can reasonably be expected. Their valuation is based on information regarding “the fundamentals”—profit margins, market share, sales force performance, and so on.

But information arrives randomly, so that the market

Figure 1. Time Series of Positive Feedback Trading Activities



valuation based on fundamentals is constantly shifting. Because investors and traders have a lot at stake, they are constantly re-valuing the securities in their portfolios based on news about fundamentals. The implication is that securities prices are also random, meaning that there are no trends in the prices to be exploited. This is the basis of the efficient markets hypothesis (EMH).

If stock prices are random, then picking stocks based on predicted prices will not generate higher profits than holding a randomized, diversified portfolio. This is the realization that has led to modern portfolio theory—a strategy for managing risk and return in diversified portfolios.

The high price volatility and the price bubbles experienced in the past few decades, in which market prices deviated far from fundamental values, provide real-world counter-evidence to the efficient markets hypothesis and random walk pricing. That's where the positive feedback trading hypothesis comes in.

A study published in the *Journal of Finance* (DeLong et al., 1990) showed in a theoretical framework that the presence of positive feedback trading can cause prices to diverge from fundamental levels even if all other trading is rational. Divergence from fundamentals leaves the door open for excess returns.

Traders who take advantage of this divergence are called feedback traders, or momentum traders. They are also called noise traders because they are basing decisions on factors other than corporate fundamentals.

The positive feedback trading of noise traders imposes risk for rational traders.

Suppose a rational trader predicts a price will fall and short-sells an asset, while positive feedback traders have driven up its price. The price may continue to be driven up by the noise traders within the time when the rational trader has to cover the short. To avoid this risk, rational investors tend to disregard their own information and follow the prevailing price movements. The resulting market prices will diverge from the levels determined by the fundamentals, giving rise to momentum profits.

Are Profits From Price Momentum Possible?

Using a comprehensive data set of U.S. stocks from 1980 to 2009, two researchers and I empirically examined the extent of positive feedback activities and momentum profits in the U.S. stock market and its implications. We eliminated stocks with prices lower than \$5 per share and those smaller

than the bottom 10% in the New York Stock Exchange. This ensured that our results were not driven by small and illiquid stocks.

Figure 1 shows the percentage of stocks that exhibited day-to-day positive feedback trading activity during any six-month period. The intensity of the positive feedback trading activities varied frequently over time, spiking during periods of market turmoil—for example, during the 1987, 1991, and 2008–2009 economic downturns. On average, around 9.4% of the stocks in our sample experienced day-to-day positive feedback trading over the entire sample period.

The figure also shows that for most of the time, loser portfolios (the bottom 10% of stocks with the lowest cumulative return) displayed stronger positive feedback trading than winner portfolios (the top 10% stocks with the highest cumulative return).

In order to determine whether day-to-day positive feedback trading could predict future momentum profits, we divided stocks into those that displayed positive feedback trading during the past six-month period (PF stocks) and those that did not (non-positive feedback stocks, or NPF stocks). We then formed momentum portfolios by buying the top 10% of stocks with the highest cumulative returns and short-selling the bottom 10% of stocks with the lowest cumulative returns.

Figure 2 shows the cumulative returns of PF and NPF momentum portfolios with the holding period varying from one to 60 months. For the first year, cumulative returns increased for both PF and NPF stocks, with PF stocks producing higher returns. After the first year, cumulative returns declined, and the decline was faster for PF portfolios. After year three, the cumulative returns of PF portfolios started to go below those of NPF portfolios.

Our study also showed that a higher level of information uncertainty will strengthen the positive feedback trading activities and lead to higher momentum profits. Theoretically, information uncertainty tends to add more noise and

induce uninformed traders to carry out more feedback trading. As a result, prices further diverge from the fundamental values, leading to a higher level of positive feedback trading and return momentum.

We found that stocks of firms with a higher degree of information uncertainty (firms that are small or exhibit lower trading volume, younger age, higher return volatility, or higher cash flow volatility) were more likely to evidence positive feedback trading activities. The discrepancy between the momentum returns of the PF and NPF stocks also widened with a higher degree of information uncertainty.

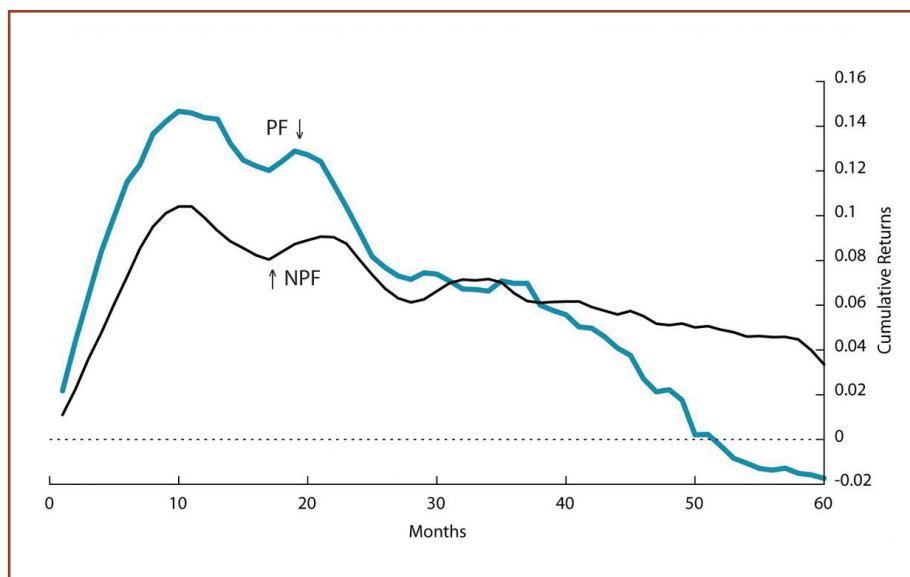
Limitations of Momentum Strategies

Our research and that of others show that it is possible to outperform the market using the momentum strategy. But there are serious limitations.

One comes from the divergence from fundamental values. Eventually the market will reach a point where many traders will start to sell. Then the positive feedback mechanism works again, but in a reversed direction. In addition, for ordinary investors, it is not easy to predict the price movement of a specific stock, especially the point where the cumulative return of momentum portfolios starts to decline.

Another drawback stems from the higher level of information uncertainty that creates the potential for momentum profits. Uncertainty, by definition, means higher risk. Besides, momentum is most evident among small-cap stocks, which are associated with a higher degree of information uncertainty. With small caps, the high investment-related costs make

Figure 2. Cumulative Returns for PF and NPF Momentum Portfolios



a momentum strategy less profitable.

Finally, any predictable and profitable pattern may lose its effect soon after it receives publicity. People learn quickly and exploit the predictable pattern to the extent that it becomes no longer profitable. No positive feedback patterns would be sufficiently stable to guarantee consistently superior results.

Faced with tempting profits and discouraging risk and costs, investors have to decide the extent to which they want to employ momentum trading strategies.

Instead of actively seeking positive effects from momentum, some mutual fund managers try to avoid the negative effects of momentum while maintaining their conventional strategy. When the price of a stock rises out of a range and signals a sell according to their traditional strategy, they may delay selling the stock to allow the opportunity of profits from an upward momentum.

Similarly, when the price of a stock falls and indicates a buy, they may postpone buying it to avoid possible losses from further price drops.

This wait-and-see approach, according to the reports of some mutual funds, has enhanced the performance of their portfolios. It seems that a “diversification” of the different strategies may be a productive solution.

As an individual investor, implementation of this approach is more difficult than you might think. So far, researchers have not established an easy-to-follow formula for momentum trading that ordinary investors can systematically exploit. Investors interested in momentum strategy would do well to proceed cautiously. The best course might be to find a mid-point between momentum strategy and traditional portfolio management based on the efficient market hypothesis and modern portfolio theory. ▲

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