



About Those Short-Term Market Trends

The Logic Of Pivot Trading

This methodology takes advantage of the short-term trends in the market and applies a pivot trading technique to earn superior returns.

by Jim White

In 1998 I wrote a paper that became the foundation of a trading methodology I refer to as *pivot trading*. This methodology takes advantage of a fundamental characteristic of freely traded markets — that is, the persistence of price movement. This article will describe the underlying logic of the methodology, provide an example of the statistical verification of persistence, and outline how traders can use it to their advantage.

WHAT IS PERSISTENCE?

Persistence is the tendency of a market to move in one direction over a period of time before reversing course. The movements can also be referred to as *runs* or *short-term trends*. Those who claim that markets are random admit to the existence of persistence but explain it as a consequence of *run theory*, where each day has an equal probability of being up or down and the probability of continuing a run declines as the run gets longer. These market participants believe there is no feedforward of information from one day's activity to influence a future day's activity.

I, however, believe that market movements are the result of knowledgeable participants reacting to information impulses and trading accordingly. In this view, market persistence is an

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expression of the sentiment of market participants over a period of time. Participants make conscientious decisions to buy and sell and are influenced by previous activity.

MEASURING PERSISTENCE

In the January 2002 STOCKS & COMMODITIES, Gordon Gustafson showed that persistence of price movement could be used to develop a profitable trading system. Gustafson used the direction of the close from bar to bar to measure the length of a persistent run.

A more meaningful measure of a run uses the progression of higher highs or lower lows rather than the relative movement of the close. Runs are measured by the number of higher highs or lower lows before a reversal. The highs and lows are used because they represent the limits of perceived value at that particular time. For each bar there are no willing buyers above the high and no willing sellers below the low. Therefore, in an up run a progression of higher highs and higher lows indicates an increasing bullish perception of value for the market. Similarly, in a down run a progression of lower highs and lower lows indicates an increasing bearish perception of value for the market. Inside bars are ignored in measuring persistence, since they give us no new information about the perceived value of the market.

REVERSALS

A reversal of sentiment marks the end of a run and the beginning of an opposite run. A reversal bar occurs when the high or low of the last bar is penetrated. In an up run the reversal occurs when, after a series of higher highs and higher lows, the market trades below the low of the bar with the highest high.

The penetration of this low indicates the existence of willing sellers below a previous limit in perceived value and the first sign of a potential change in sentiment from bullish to bearish. In a down run, a reversal occurs when, after a series of lower highs and lows, the market trades above the high of the bar with the lowest low. The penetration of this high indicates the existence of willing buyers above the previous limit in perceived value and the first sign of a potential change in sentiment from bearish to bullish.

Outside bars are questionable, however, since they give contradictory information, with both a higher high and a lower low than the previous bar. A reversal is not counted until the high or low of the outside bar is penetrated in the direction of the reversal. So in an up run, a trade below the low of the outside bar is necessary to record a reversal and new

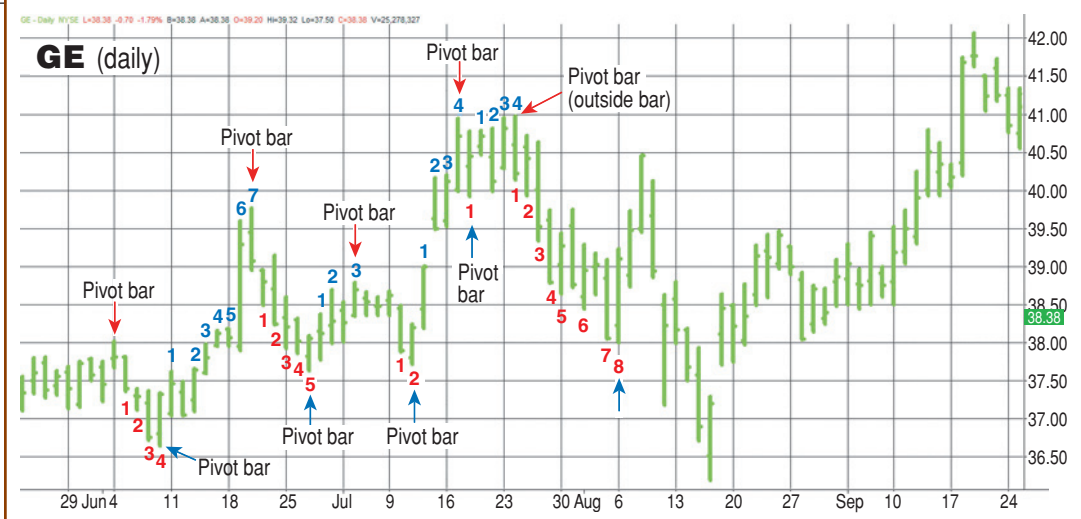


FIGURE 1: MEASURING PERSISTENCE AND IDENTIFYING PIVOT BARS. This blue numbers measure the number of higher highs in an uptrend and the red numbers measure the number of lower lows in a downtrend.

run. In a down run, a trade above the high of the outside bar is necessary to record a reversal.

I call the reversal bar that marks the end of a run in price *the pivot bar*. Examples of measuring persistence and identifying pivot bars terminating the runs can be seen in Figure 1. The blue numbers measure the number of higher highs in an upward run and the red numbers measure the number of lower lows in a downward run.

WHAT THE DATA SHOWS

To illustrate the potential of persistence to current trading opportunities, I analyzed General Electric over a five-year period from December 31, 2001, to December 29, 2006, with 1,477 bars of daily data. In this study the rules of measuring the persistence of a run were observed. Runs of only one bar were considered losing opportunities and runs greater than one bar were considered profitable. Both long and short opportunities were measured.

The data summarized in Figure 2 shows that 63.59% of the up runs would have given profitable opportunities and 69.02% of the down runs would have given profitable opportunities. For both up and down runs, 66.3% profitable opportunities existed. Of the 368 pivots measured, only 36 or 9.78% would have resulted in losing trades on the day of entry. Figure 3 shows the distribution of up and down runs.

I have conducted similar studies over many markets and time frames to verify that persistence exists and can be utilized for profitable trading opportunities. Traders are encouraged to conduct their own studies to identify the characteristics of persistence for their markets of interest.

WHAT IS PIVOT TRADING?

Pivot trading is simply entering trades as close to the pivot bars as possible and taking profits as the run continues in the direction of the trade. Compounding the result of many profitable trades can maximize your expected portfolio return, while trading near the pivot points can minimize risk of loss when a trade fails. Let's examine the logic of these statements.

Year	Up runs	Profitable	% Profitable	Down runs	Profitable	% Profitable
2002	39	22	56.41	39	29	74.36
2003	34	22	64.71	34	23	67.65
2004	33	24	72.73	33	24	72.73
2005	43	25	58.14	43	25	58.14
2006	35	24	68.57	35	26	74.29
Totals	184	117	63.59%	184	127	69.02%

FIGURE 2: POTENTIAL OF PERSISTENCE. Here you see that 63.59% of the up runs and 69.02% of the down runs would have given profitable opportunities.

the previous bar, the risk of the trade then essentially becomes the range of the pivot bar. We can select trades with risk potential that we are comfortable with. By trading as close to the pivot point as possible, we minimize the loss of a bad trade and preserve our capital for better trades.

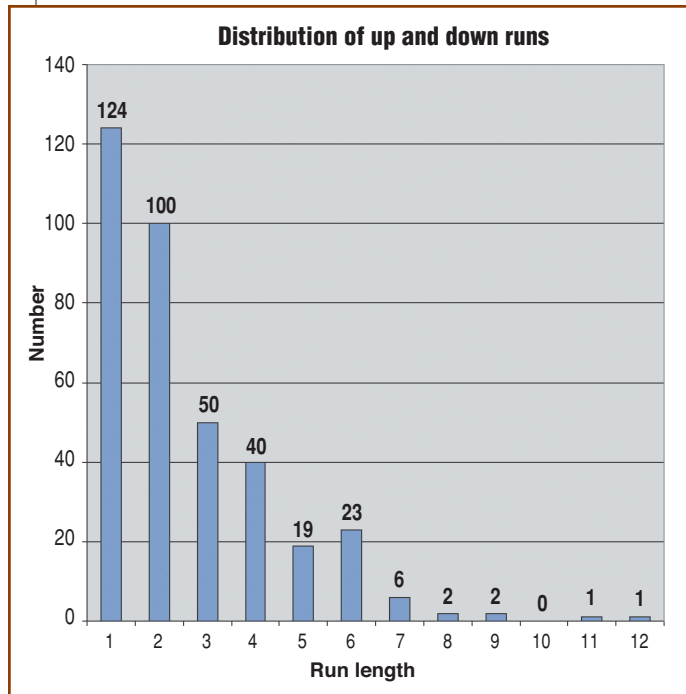


FIGURE 3: DISTRIBUTION OF UP AND DOWN RUNS. Clearly there are several profitable trading opportunities available.

MINIMIZING RISK

First of all, let's define the risk of a trade. I propose that the risk is the cost of the trade being wrong. It is the exit price of the trade minus the entry price once the trader has given up on the trade. It is a well-known axiom of trading that to preserve capital, traders should always have a defined exit point for a losing trade. By trading near the pivot points, you can quantify and minimize the risk of the trade based on what the market is telling you.

For example, let's look at a stock we want to take a long position in. The trouble is, it's in a downward price run with lower highs and lower lows. If the price trades above the high of the previous bar, we know that there may have been a change in sentiment since traders are willing to buy at higher prices than they were the bar before. We also know that the lowest low represents the price below which there were no willing sellers. If the market trades below that low, we know that something has changed and now there are willing sellers below a previous limit.

We don't know how long the selling will continue or at what price it will end, so we should exit the trade and look for a better buying opportunity. We could therefore set our stop-loss at just below the low of the pivot bar. If the buy point for a long position was set as a buy-stop at just above the high of

MAXIMIZING PROFITS

If we enter the trade near the pivot point, we also maximize the profit potential of the trade during that run. We don't know exactly how long a run will continue, so in pivot trading we are quick to take or protect profits and move on to another trade. As price moves favorably in our direction, we can raise the exit price first to break even and then to a minimum profit objective. The profit objective may be tailored to the volatility of the market. However, I recommend 1% to 3% of the entry price.

Outside bars are problematic for pivot trading since they can take you out of a trade without a potential profit. However, my work indicates outside bars occur at pivots only about 15% of the time, while profitable runs can be expected about 65% to 70% of the time. Placing the protective stop-loss minimizes the potential loss from an outside bar.

TRADING THE PIVOTS

Another characteristic of freely traded markets is that they are fractal in nature and exhibit the same characteristics in different time frames. Traders who are trying to enter trades as close to the pivot points as possible can use this to their advantage. For example, if you are anticipating a pivot on a daily chart, you can drop down to an intraday chart and enter the trade much closer to the reversal point. I identify expected daily reversals and on the next day, monitor a 30-minute chart to identify a pivot point and enter the trade.

The beauty of this technique is that it can be applied no matter what your time period of interest is. If you like to hold positions for longer periods, you may trade a weekly chart and enter trades using daily pivots. The same principles apply.

IDENTIFYING THE PIVOTS

That all sounds well and good, but how are the pivot bars identified and anticipated? Here's how. I have done some work on coming up with signals to warn me of coming reversals, and I will share some of those techniques with you.

First, I have found that price channels can be effective in signaling price levels where reversals can be expected. There are many types of channels to consider, but whatever you choose, it should display an upper boundary, a lower boundary, and a midline. The best trades are those that occur when

For those who want to try the pivot trading methodology, the most important thing to remember is to be disciplined in your approach.



FIGURE 4: TRADING THE PIVOTS. Here you see how pivots are traded at the Bollinger band channel lines.

the upper or lower boundaries are penetrated. Midlines can be used for projecting price levels for the run. In a longer-term trend, corrections often terminate at the channel midlines before continuing the longer-term trend. An example using Bollinger bands can be seen in Figure 4.

Oscillators may also be used to provide reversal signals. I have also found that %R with the proper inputs often acts as a predictor of reversals. Combining the location of price relative to a channel boundary and a signal from an oscillator can be a start to getting reliable pivot signals.

BE DISCIPLINED

For those of you who want to try the pivot trading methodology, the most important thing to remember is to be disciplined in your approach. Don't let price run beyond your stop-loss. Raise your stop price to break even or to protect a

profit as soon as possible and set reasonable profit goals. Remember, in this type of trading, there are always other trades and opportunities.

Jim White is the founder of Pivot Research & Trading Co. and the developer of "The Pivot Trading Methodology" and "The Near Impulse Theory." He has been a full-time trader since 2001.

SUGGESTED READING

Gustafson, Gordon [2002]. "Price Persistency," *Technical Analysis of STOCKS & COMMODITIES*, Volume 20: January.
White, James [1998]. "A New Paradigm For Stock Market Investing: Maximizing Return And Minimizing Risk By Short Term Trading," PivotTrader.com.

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