BY VICTOR NIEDERHOFFER, LAUREL KENNER AND DR. BRETT STEENBARGER

Three professional traders and analysts discuss the logic and practicality of Dow Theory.

Q. What do you think of the Dow Theory? The publisher of the Dow Theory Letters seems to be a very wealthy man who always has something useful to say. — T.D.

Brett: First, let's quickly summarize Dow Theory. In his book *A Short Course in Technical Trading* (John Wiley & Sons, 2003), Perry Kaufman identifies six major tenets of Dow Theory:

1. The averages discount everything (except "Acts of God").
2. There are three classifications of trends: Primary (measured in years); Secondary (measured in months and weeks); and Minor (measured in days).
3. Abull or bear market trend must be confirmed by at least two of the three Dow averages — Industrials, Transports and Utilities.
4. Volume increases with a trend, reaching its zenith at bull peaks and panic bear lows.
5. Closing prices best reflect the market's level for a trading period.
6. Trends persist until a reversal is definitively signaled.

The key, of course, is to know when a trend is in place. The original Dow Theory used a breakout criterion: When the market traded above a prior market peak, the trend was considered up; when it traded below a prior market bottom, the trend was considered down. (These breakouts needed to be confirmed by two of the three Dow Averages, as well as rising volume.)

However, while trends are easy to see in retrospect, they are not so easy to identify as they are happening. Richard Bauer, Jr. and Julie Dahlquist, in their book *Technical Market Indicators: Analysis and Performance* (John Wiley & Sons, 1999), find breakout criteria do not do a good job of yielding profitable trades. Analyzing breaks of short-, medium-, and long-term trendlines, pivot points and gaps, the authors conclude these fail to outperform buy and hold over 12 years of testing across 878 stocks. Bauer and Dahlquist found equally dismal results testing moving average crossover signals.

This is corroborated by data from www.barchart.com, which tabulates trading results for common technical systems across a universe of stocks. These systems include price crossovers of 20-, 50-, and 100-day moving averages. The Dow Jones Industrial Average index-tracking stock (DIA) has fared poorly over the past two years with these systems. Following moves above or below a 20-day moving average yielded 55 trades (only 22 of which were winners) and a loss of -6.35 points.

Using a longer-term moving average did not help the winning percentage but yielded more points. Trading moves above and below a 50-day moving average yielded 32 trades (11 winners) and a 20.65 profit over two years. Deriving signals from a 100-day moving average generated 24 trades, only four of which were profitable, and a -1.90-point loss.

Victor: Let's make this very simple. The essence of Dow Theory is when stocks are in an uptrend there is a greater expectation for future gains than when stocks are in a downtrend. That's false. Consider what happens to the average expectation when the Dow is in an uptrend vs. all days over the past 20 years.

Expectation for Dow change, next day

After 200-day moving average up	After 100-day moving average up	After 10 days up	All days
0.84	0.5	1.4	1.6

Thus, the expectation is higher (1.6 points a day) on all days vs. well below 1.6 when the moving average is in an uptrend.

Dow Theory itself is so complicated that practitioners bring out new *ad hoc* reasons completely consistent with randomness, like the ever-renewing heads of the hydra. The most important part of proper technical analysis or, for that matter, any scientific analysis, is formulating a question in a proper fashion. A good model here is a detective analyzing clues, or a little kid searching for knowledge. The question should be simple, precisely defined, capable of falsification or verification, and fruitful if answered correctly.

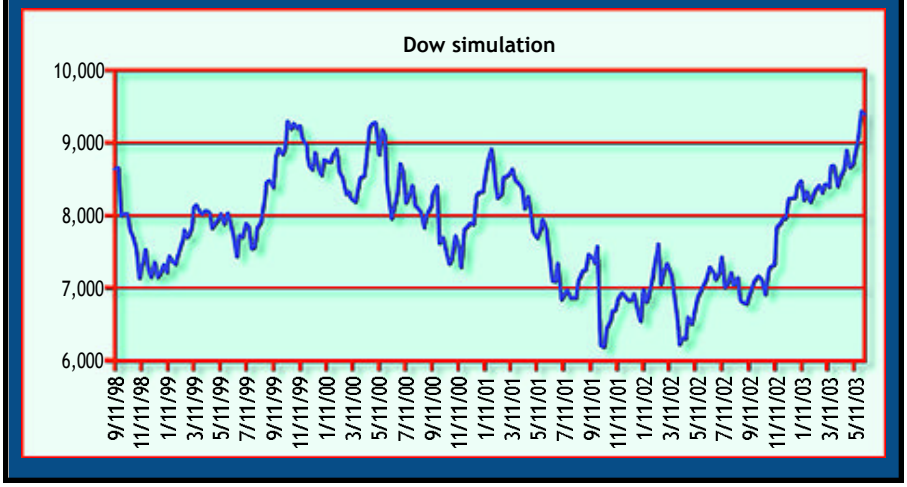
The biggest problem with typical market formulations is the questions they pose are complex, imprecise, non-falsifiable and unhelpful for market practitioners. The idea that rallies generally retrace 50 percent to 75 percent of the previous bull move, for example, is completely consistent with randomness when one tries to quantify it in any form.

It would take a book to fully explain everything that is wrong with the questions and point of view exemplified by the Dow Theory. To call it magic or mumbo-jumbo would not be overstatement. But let's start with a randomly generated chart of the Dow. We created it by taking the actual weekly changes in the Dow from year-end 1995 to year-end 2002 and running that data through a random number generator (see Figure 1, opposite page).

Obviously, there is no predictivity to this chart, as the numbers are drawn out of a hat. This chart was randomly chosen from 100 we constructed. Of course, in such a series there will be many sets of two points separated by a few months, where the point further in time is below the point earlier in time. The point to the right typically is between one-third and two-thirds of the ground lost. The right point was chosen to be below the left point to start with. And the left point was selected to be

FIGURE 1 VIRTUAL DOW

This chart is the result of taking the weekly changes in the Dow from 1996 through 2002 and running them through a random number generator.



above points to its left to start with — i.e., a point where the previous bull market ended.

I dare anyone to tell the difference between the randomly selected chart and the actual chart. Previous efforts by technical analysts to do so, reported in Paul H. Cootner's book *The Random Character of Stock Market Prices*, have failed. The number of peaks and troughs in a random series like this are also incapable of any meaningful kind of counting.

The best way of defining a market's state is the "multivariate distribution" of the move over the past x, y and z days — that is, how much it moved in the past one, five and 20 days, for example. This procedure leads to predictions about how random news will affect prices. Such predictions would show the greater the prevalence of declines in the previous periods, the more *bullish* the reaction of the market to random news. This is confirmed more directly by negative serial correlations over the past 20 years.

Brett: Vic, your random chart of the Dow reminds me of a London Business School study by Mark Fenton-O'Creevy. The illusion of control investigated by O'Creevy and his colleagues is actively fostered by the subjective analysis of chart patterns, market fundamentals and economic data. Such analysis helps us generate beliefs about the market's direction, which then provide a false sense of confidence in our predictions.

A little appreciated benefit of testable market hypotheses is the humility they impart. As you've noted many times in your CNBC Money Speculators column (www.moneycentral.com), it's generally not a pretty sight when a hypothesis runs into a test. We know from social-personality psychology research that people strive toward "cognitive consistency": Once they hold a belief, they tend to interpret events through that belief and guide their actions accordingly. Thus, once one becomes a bear, it is all too easy to selectively focus on the market, news and economic data that would support this stance even as the market powers higher.

Writer Robert Anton Wilson wryly notes, "Convictions make convicts." We are all too easily trapped inside our belief systems. Moreover, once we behave in ways that are consistent with our preconceived notions of the world, we tend to strengthen those beliefs further so as to avoid cognitive dissonance. The result is a circular process in which beliefs shape actions and actions reinforce beliefs. Given human nature, it's a wonder traders and market letter writers *ever* change their minds about the markets.

The advantage of objectively testing market beliefs is such tests allow us to break this circular process. The very notion of testing requires traders to treat their beliefs as hypotheses, not facts: educated guesses that are falsifiable, and often false. The humility of treating one's presuppositions as fallible brings with it a mental flexibility that is very helpful during periods when the economic statistics are doing one thing, and the market another.

Laurel: The venerable Dow Theory forecaster himself writes: "The 'hidden ingredient' for market success is the practitioner's own instincts or intuition. Market analysis, as so many have observed, is an art, not a science."

It's curious how people who rely on theories that aren't susceptible to testing or falsification often end up as "market artists." Technical analysts are constantly adjusting their unworkable theories.

In Vic's random chart there were many occasions when a high of the previous 100 days was not exceeded for long periods of time. Lengthy periods of that sort are a characteristic of random numbers, and that's why such observations are useless in forecasting. But the mystics will always be coming up with fancy Dow Theories and moving average theories.

It might lead to some fruitful statistical tests to count how long the periods without a subsequent breakout occur on Vic's simulated charts. Then we could measure the actual durations and compare the simulated and actual numbers vis-à-vis this and other visually striking patterns. Assuming such tests yielded nonrandom patterns, the next thing would be to find, once they occurred, if there was any predictivity in them. The two are separate questions and illustrate how many steps are involved in doing things the right way. But the best fish swim deep.

Have a question about trading? Trader Victor Niederhoffer, market psychologist Brett Steenbarger and financial writer Laurel Kenner team up to provide practical and hard-hitting answers. Send questions to gbuch@bloomberg.net.