



## Dow Theory Part 3

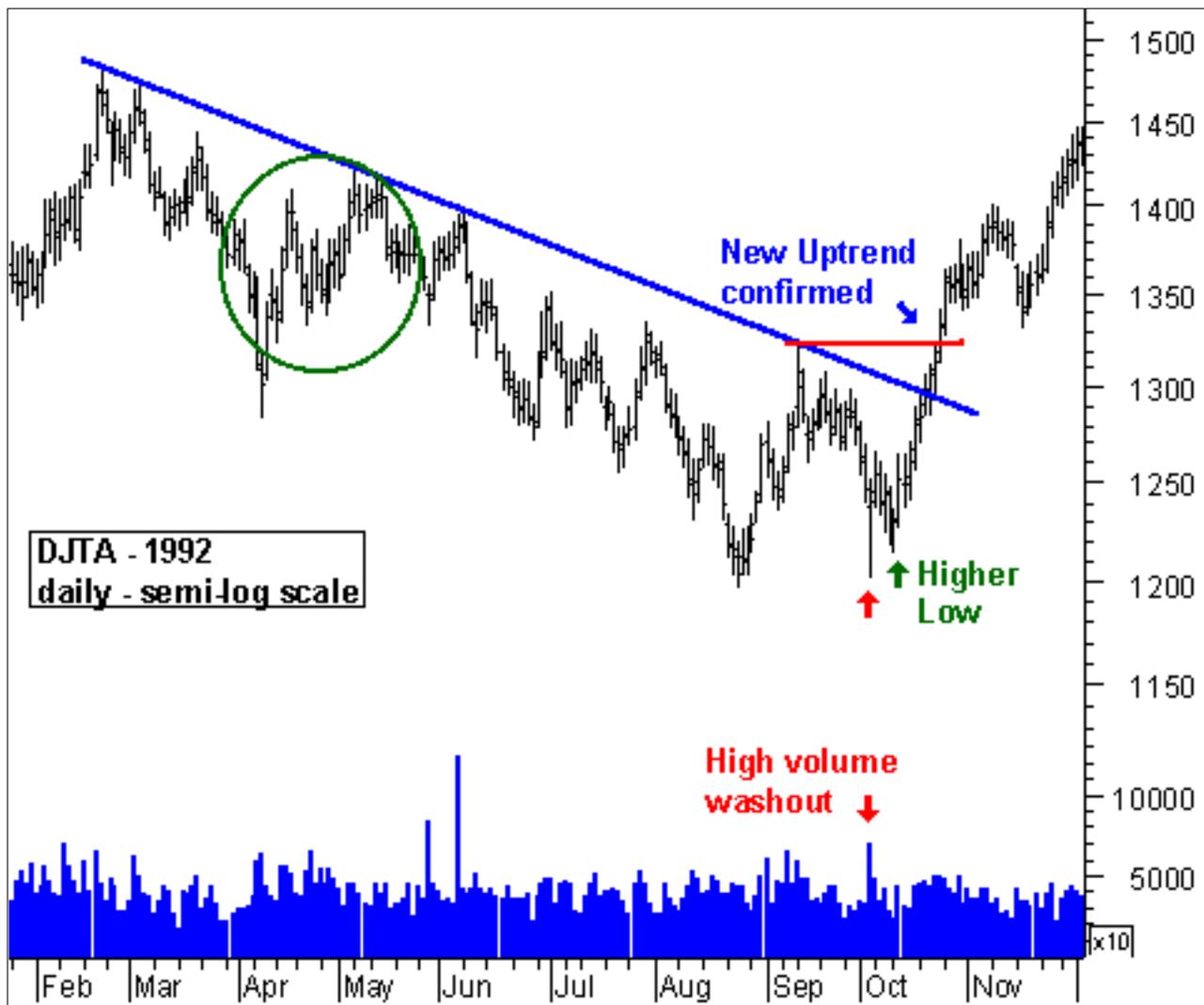
### Signals

Through the writings of Dow and Hamilton, [Rhea](#) identified 4 separate theorems that addressed trend identification, buy and sell signals, volume, and trading ranges. The first two were deemed the most important and serve to identify the primary trend as bullish or bearish. The second two theorems, dealing with volume and trading ranges, were not considered instrumental in primary trend identification by Hamilton. Volume was looked upon as a confirming statistic and trading ranges were thought to identify periods of accumulation and distribution.

### Identification of the Trend

The first step in identifying the primary trend is to identify the individual trend of the [Dow Jones Industrial Average \(DJIA\)](#), and [Dow Jones Transportation Average \(DJTA\)](#), individually. Hamilton used peak and trough analysis in order to ascertain the identity of the trend. An uptrend is defined by prices that form a series of rising peaks and rising troughs (higher highs and higher lows). In contrast, a downtrend is defined by prices that form a series of declining peaks and declining troughs (lower highs and lower lows).

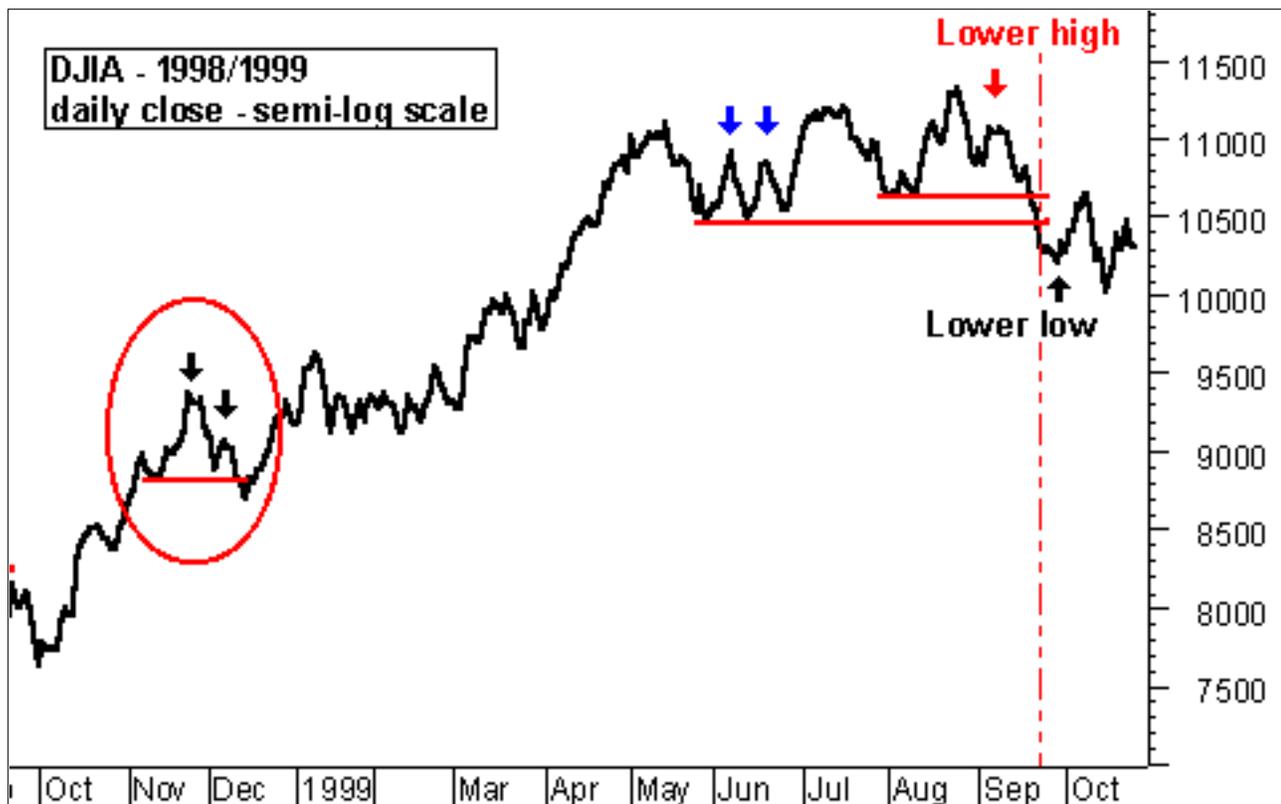
Once the trend has been identified, it is assumed valid until proven otherwise. A downtrend is considered valid until a higher low forms and the ensuing advance off of the higher low surpasses the previous reaction high. Below is a chart of the Dow Jones Transportation Average in 1992. Even though Hamilton and Dow did not make specific references to trendlines, a line has been drawn to emphasize the downward trajectory of the trend. Since the peak in February, a series of lower lows and lower highs formed to make a downtrend. There was a secondary rally in April and May (green circle), but the March high was not surpassed.



The DJIA continued down until the high volume washout day (red arrow). As discussed in [part 2](#) of this article, high volume days signal that a possible change is looming. Alone, a high volume washout day is not a buy signal, but rather an indication to monitor price action a little closer. After this high volume day, the DJIA dipped again and then moved above 1250, creating a higher low (green arrow). Even after the higher low is in place, it is still too early to call for a change in trend. The change of trend is not confirmed until the previous reaction high is surpassed (blue arrow).

Conversely, an uptrend is considered in place until a lower low forms and the ensuing decline exceeds the previous low. Below is a line chart of the closing prices for the DJIA. An uptrend began with the Oct-98 lows and the DJIA formed a series of higher highs and higher lows over the next 11 months. Twice, in Dec-98 (red circle) and Jun-99 (blue arrows), the validity of the uptrend came into question, but the uptrend prevailed until late September. (The Dec-98 price action is addressed below.) There were lower highs in Jun-99, but there were never any lower lows to confirm these lower highs and support held. Any bears that jumped the gun in June were made to sit through two more all-time highs in July and August. The change in trend occurred on September 23 when the June lows were violated. Some traders may have concluded that the trend changed when the late August lows were violated. This may indeed be the case, but it is worth noting that the June lows represented a more convincing support area. Keep in mind that the Dow theory is not a science and Hamilton points this out numerous times. The Dow theory is meant to offer insights and guidelines from which to begin careful study of the market movements and price action.

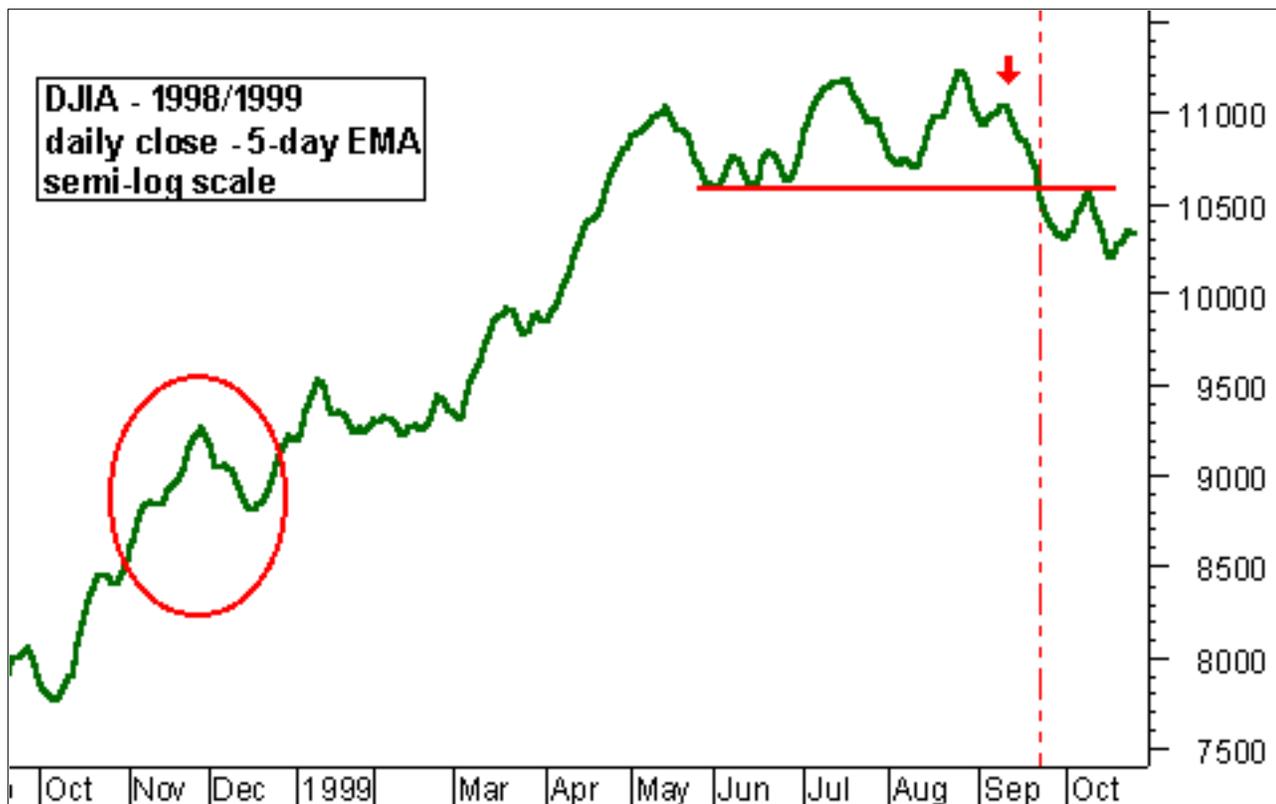
DJIA 1998/1999



Looking at the line chart above (DJIA 1998/1999 daily close semi-log scale), it may be difficult to distinguish between a valid change in trend and a simple correction. For instance: Was a change in trend warranted when the December low penetrated the November low? (red circle) After the November peak, a lower high formed in December and then the November reaction low was broken. In order to eliminate false signals, Hamilton suggested excluding moves of less than 3%. This was not meant to be a hard and fast rule, but the idea is worth noting. With the increased volatility of today's markets comes the need to smooth the daily fluctuations and avoid false readings.

Hamilton and Dow were interested in catching the big moves and would have been apt to use weekly charts to establish reaction highs and lows. However, in today's fast moving markets, weekly charts may not portray the detail that investors need. One possible solution is to apply a short moving average to the price plot. Although not mentioned by Hamilton and Dow, a 5-day [moving average](#) could be applied to smooth the price series and still allow for detail. The chart below (DJIA 1998/1999 daily close 5-EMA) uses a 5-day exponential moving average to smooth the price plot. Notice that the November reaction low now appears quite immaterial. Also, the September reaction high (red arrow) still shows up.

DJIA 1998/1999



### Averages Must Confirm

When the Dow theory was being developed at the turn of the century, the railroads were a vital link in the economy. Hamilton argued that many times activity would begin in the Rail Average before the Industrial Average. He attributed this to the fact that before economic activity began, raw materials would have to be moved from the suppliers to manufacturers. Before General Motors could increase production, more steel would need to be transported. Therefore, an increase in activity among the rail stocks would foreshadow an increase in business activity for the industrial stocks.

#### Why the Rails?

There is no doubt that today's economy is much different and the makeup of the DJIA has changed to favor the airlines. However, there is still some credibility in using the DJIA to confirm movements in the DJIA. Transport stocks are much more dependent on the economic environment than the average stock and will likely foreshadow economic growth.

- The airline business is cyclical and revenues are highly susceptible to economic changes.
- Airline companies typically carry above average levels of debt and will be more vulnerable to changes in interest rates.
- Energy and Labor costs form a large portion of expenses.

To reflect the added risks above, airline stocks have traditionally sold significantly below market multiples. If the PE for the S&P 500 is 28, the average airline might sell for only 8-10 times earnings.

Even though we are possibly entering into a "new economy," the majority of businesses will somehow be affected by changes in economic activity, interest rates, energy costs and labor costs. Airline companies, bearing the burden of all of the above, are still likely to act as a leading indicator of the general economic environment.

However, one caveat must be added as well. Possibly the greatest fear of the airlines is that people will stop flying in airplanes. Business travel accounts for a large portion of airline revenues, especially the high margin revenues. With the development of the Internet and networking, the need for business travel could be greatly reduced in the future. Federal Express has already experienced a slowdown in the quantity of business documents being shipped. This could ultimately spill over into the business of the airlines.

#### How Averages Confirm

Hamilton and Dow stressed that for a primary trend buy or sell signal to be valid, both the Industrial Average and the Rail Average must confirm each other. If one average records a new high or new low, then the other must soon follow for a Dow theory signal to be considered valid.



Combining the guidelines set forth for trend identification with the theorem on confirmation, it is now possible to classify the primary trend of the market. The chart above shows an array of signals that occurred during a 7-month period in 1998.

1. In April, both the DJIA and DJTA recorded new all-time highs (blue line). The primary trend was already bullish, but this confirmation validated the primary trend as bullish.
2. In July, trouble began to surface when the DJTA failed to confirm the new high set by the DJIA. This served as a warning sign, but did not change the trend. Remember, the trend is assumed to be in force until proven otherwise.
3. On July 31, the DJTA recorded a new reaction low. Two days later, the DJIA recorded a new reaction low and confirmed a change in the primary trend from bullish to bearish (red line). After this signal, both averages went on to record new reaction lows.
4. In October, the DJIA formed a higher low while the DJTA recorded a new low. This was another non-confirmation and served notice to be on guard for a possible change in trend.

5. After the higher low, the DJIA followed through with a higher high later that month. This effectively changes the trend for the average from down to up.
6. It was not until early November that the DJIA went on to better its previous reaction high. However, at the same time the DJIA was also advancing higher and the primary trend had changed from bearish to bullish.

## Volume

The importance of volume was alluded to in [part 2](#) with the chart of the Apr-97 bottom in the DJIA. Rhea notes that while Hamilton did analyze volume statistics, price action was the ultimate determinant. Volume is more important when confirming the strength of advances and can also help to identify potential reversals.

### Volume Confirmation

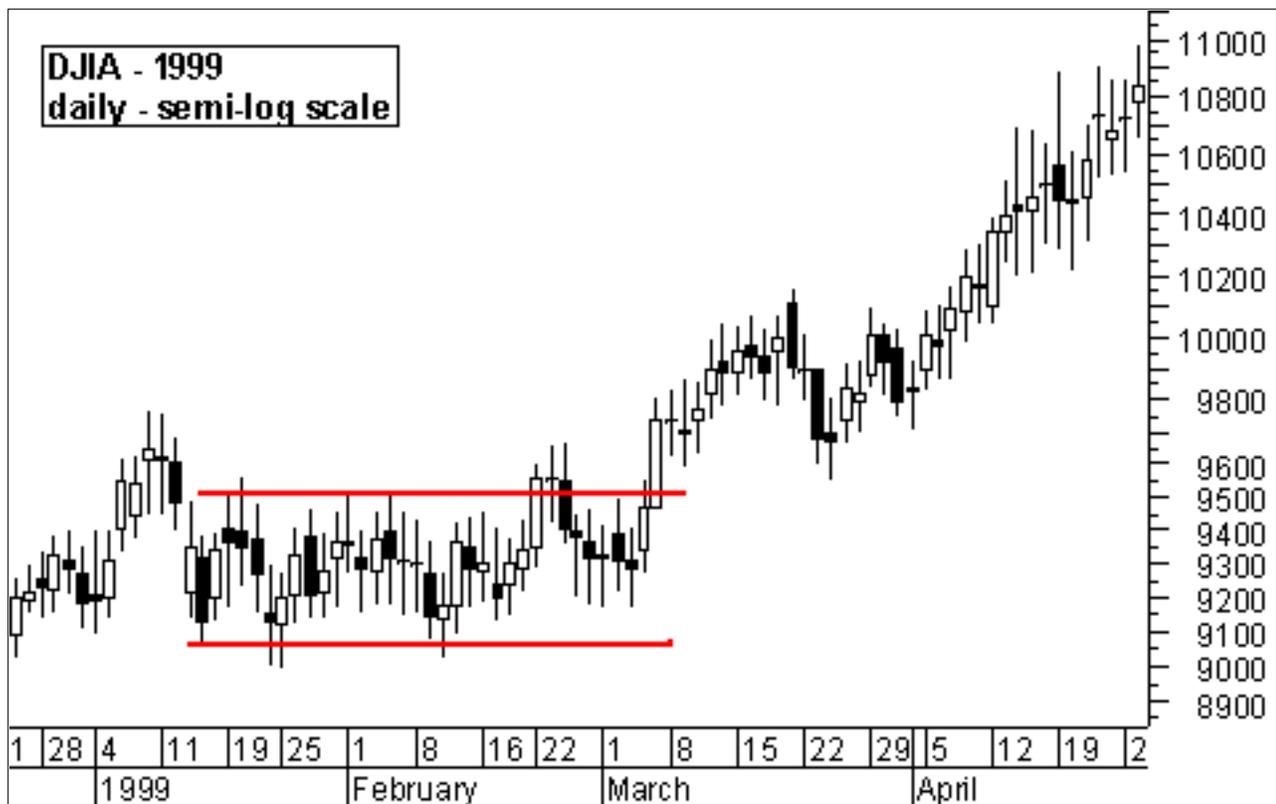
Hamilton thought that volume should increase in the direction of the primary trend. In a primary bull market, volume should be heavier on advances than during corrections. Not only should volume decline on corrections, but participation should also decrease. As Hamilton put it, the market should become "dull and narrow" on corrections, "narrow" meaning that the number of declining issues should not be expanding dramatically. The opposite is true in a primary bear market. Volume should increase on the declines and decrease during the reaction rallies. The reaction rallies should also be narrow and reflect poor participation of the broader market. By analyzing the reaction rallies and corrections, it is possible to judge the underlying strength of the primary trend.

### Volume and Reversals

Hamilton noted that high volume levels could be indicative of an impending reversal. A high volume day after a long advance may signal that the trend is about to change or that a reaction high may form soon. In his StockCharts.com commentary on [25-Jun-99](#), Rex Takasugi discusses the correlation between volume and peaks in the market. Even though his analysis reveals a lag time between volume peaks and market reversals, the relationship still exists. Takasugi's analysis reveals that since 1900 there have been 14 cycles and volume peaked on average 5.6 months ahead of the market. He also notes that the most recent volume peak occurred in Apr-99.

## Trading Ranges a.k.a. Lines

In his commentaries over the years, Hamilton referred many times to "lines." Lines are horizontal lines that form trading ranges. Trading ranges develop when the averages move sideways over a period of time and make it possible to draw horizontal lines connecting the tops and bottoms. These trading ranges indicate either accumulation or distribution, but it was virtually impossible to tell which until there was a break to the upside or the downside. If there were a break to the upside, then the trading range would be considered an area of accumulation. If there were a break to the downside, then the trading range would be considered an area of distribution. Hamilton considered the trading range neutral until a breakout occurred. He also warned against attempting to anticipate the breakout.



### Performance of the Dow Theory

Mark Hulbert, writing in the *New York Times* - 6-Sept-98, notes [a study](#) that was published in the *Journal of Finance* by [Stephen Brown](#) of New York University and [William Goetzmann](#) and [Alok Kumar](#) of Yale. They developed a neural network that incorporated the rules for identifying the primary trend. The Dow theory system was tested against buy-and-hold for the period from 1929 to Sept-98. When the system identified the primary trend as bullish, a long position was initiated in a hypothetical index fund. When the system signaled a bearish primary trend, stocks were sold and the money was placed in fixed income instruments. By taking money out of stocks after bear signals, the risk (volatility) of the portfolio is significantly reduced. This is a very important aspect of the Dow theory system and portfolio management. In the past few years, the concept of risk in stocks has diminished, but it is still a fact that stocks carry more risk than bonds.

Over the 70-year period, the Dow theory system outperformed a buy-and-hold strategy by about 2% per year. In addition, the portfolio carried significantly less risk. If compared as risk-adjusted returns, the margin of outperformance would increase. Over the past 18 years, the Dow theory system has underperformed the market by about 2.6% per year. However, when adjusted for risk, the Dow theory system outperformed buy-and-hold over the past 18 years. Keep in mind that 18 years is not a long time in the history of the market. The Dow theory system was found to underperform during bull markets and outperform during bear markets.

### Criticisms of Dow Theory

The first criticism of the Dow theory is that it is really not a theory. Neither Dow nor Hamilton wrote proper academic papers outlining the theory and testing the theorems. The ideas of Dow and Hamilton were put forth through their editorials in the *Wall Street Journal*. Robert Rhea stitched the theory together by poring over these writings.

Secondly, the Dow theory is criticized for being too late. The trend does not change from bearish to bullish until the previous reaction high has been surpassed. Many traders feel that this is simply too late and misses much of the move. Dow and Hamilton sought to catch the meat of the move and enter during the second leg. Even though this is where the bulk of the move will take place, it is also after the first leg and part way into the second leg. And, if one has to wait for confirmation from the other average, it could even be later in the move.

Thirdly, because it uses the DJIA and DJTA, the Dow theory is criticized as being outdated and no longer

an accurate reflection of the economy. This may be a valid point, but as outlined earlier, the DJTA is one of the most economically sensitive indices. The stock market has always been seen as a great predictor of economic growth. To at least keep the industrials up to speed, Home Depot, Intel, Microsoft and SBC Corp have been added to the average to replace Chevron, Goodyear, Sears and Union Carbide, as of 1-Nov-99.

## Conclusions

The goal of Dow and Hamilton was to identify the primary trend and catch the big moves. They understood that the market was influenced by emotion and prone to over-reaction both up and down. With this in mind, they concentrated on identification and following: identify the trend and then follow the trend. The trend is in place until proven otherwise. That is when the trend will end, when it is proven otherwise.

Dow theory helps investors identify facts, not make assumptions or forecast. It can be dangerous when investors and traders begin to assume. Predicting the market is a difficult, if not impossible, game. Hamilton readily admitted that the Dow theory was not infallible. While Dow theory may be able to form the foundation for analysis, it is meant as a starting point for investors and traders to develop analysis guidelines that they are comfortable with and understand.

Reading the markets is an empirical science. As such there will be exceptions to the theorems put forth by Hamilton and Dow. They believed that success in the markets required serious study and analysis that would be fraught with successes and failures. Success is a great thing, but don't get too smug about it. Failures, while painful, should be looked upon as learning experiences. Technical analysis is an art form and the eye grows keener with practice. Study both successes and failures with an eye to the future.

Written by Arthur Hill

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