Dow Theory

Introduction

Dow Theory is the name given to the ideas that derive from Charles Dow, the first editor of the Wall Street Journal and inventor of the stock market average, known today as the Dow Jones Average. What we know today as Dow Theory is the cumulative work of Charles Dow, William Hamilton, who followed Dow as editor of the Wall Street Journal, and Robert Rhea who pulled together the work of Dow and Hamilton into a coherent theory.

Dow devised the stock market average because he saw that most stocks moved together in the general up and down movements of the markets. By taking a basket of stocks and averaging their prices, he was able to plot the general rise and fall of the stock market as a single value.

Many later commentators describe Dow as not primarily interested in the stock market itself. Rather, it was said that he had observed that by the time news of improved business conditions made its way into the Wall Street Journal, the stock market was found to have been already moving up for some time. The reverse could also be observed, that when bad news began to appear, the stock market had already been falling. Thus, they say that Dow concluded that the stock market anticipated changes in general business conditions and is what we know in economic jargon as a 'leading indicator'. Thus, Dow's primary motivation in studying the stock market was as a way of anticipating changes in the real economy. While this may be true and have been one of Dow's motivations, his editorials are clearly about trading individual stocks and he repeatedly talks of swings in the prices of those stocks as well as of the overall market.

The interesting thing is that Hamilton, who wrote extensively on Dow Theory, only ever applied it to the overall market. Hamilton was not a trader, he was a journalist commentator, and this probably explains why he did not pick up Dow's ideas and apply them to individual stocks. Since Rhea used Hamilton's writings as a primary source, it is not surprising that he also saw Dow Theory as having application primarily to analysing the overall stock market movement, with the objective of determining its trend. This is probably the origin of later commentators' inaccurate observation that Dow was concerned only with the business cycle.

Because of the way what has come to be known as Dow Theory was developed by Hamilton and Rhea, it deals primarily with analysing the swings in the overall market. However, many of Dow's other observations about trading, which are not generally included in the umbrella of Dow Theory, were also novel insights into market behaviour. Many of them have been picked up and developed by later analysts and underlie much of modern technical analysis. In the remaining discussion of Dow Theory, we will only deal with the ideas that are accepted as making up the theory, as it applies to analysis of the overall market.

Dow's Original Main Ideas

There is no doubt that Dow had many insights into the way markets operate. However, he wrote few of them down. He must have discussed them with his colleagues though, because Hamilton seemed able to refer to Dow's thinking beyond what was conveyed in his writing. SA Nelson also records that he unsuccessfully tried to persuade Dow to write a book on his ideas. The only written record of Dow's ideas is in a few Wall Street Journal editorials he wrote in 1901 and the first half of 1902, just before his death. Nelson republished them in his book *The ABC of Stock Speculation* in 1903 and it was Nelson who first called them *Dow's Theory*.

As might be expected from its title, Nelson's book is about trading stocks and Dow's editorials were incorporated as chapters within it, because they also had their primary focus on trading stocks. The references to analysis of the overall market are really quite sparse and some of the references that Hamilton and Rhea took to apply to the overall market were framed by Dow with reference to trading individual stocks. Instead, we have to rely on Hamilton to add other ideas, which he claimed were Dow's. Whether what Hamilton adds was purely Dow's work is open to question. Indeed, Hamilton's ideas seemed to evolve over time as he wrote regularly for the Wall Street Journal and Barron's, so we will probably never know precisely who is the real father of each part of the theory. In turn, Rhea tried to add rigour to the definition of the theory and his contribution must also be recognised.

The following are the quotations from Dow's editorials that pertain to what is now called Dow theory:

Bull markets and bear markets run four and five years at a time. Determine by the average prices, which one is under way. Nelson page 33.

The market is always to be considered as having three movements, all going on at the same time. The first is the narrow movement from day to day. The second is the short swing, running from two weeks to a month or more; the third is the main movement covering at least four years in duration.

The day to day movement should be disregarded by everybody, except traders who pay no commissions. The medium swing is the one for ordinary consideration. The outside trader should not attempt to deal in more than two or three stocks at a time. He should keep a chart of the price movements of these stocks so as to know their swings for months or years, and thus be able to tell readily where in the general swing his particular stocks appear to be.

He should keep with his price movement a record of the volume of transactions. ... He should observe the movement of the general market as indicated by the averages published daily, as this shows the market more clearly than is shown by any one stock. Nelson pages 36 and 37.

Many people seem to think that the change in prices in any one day is complete in itself and bears no relation to larger movements which may be under way. This is not so.

Nothing is more certain than that the market has three well defined movements which fit into each other. The first is the daily variation due to local causes and the balance of buying and selling at that particular time. The secondary movement covers a period ranging from ten days to sixty days, averaging probably between thirty and forty days. The third move is the great swing covering from four to six years.

It is a bull period as long as the average of one high point exceeds that of previous high points. It is a bear period when the low point becomes lower than the previous low points. It is often difficult to judge whether the end of an advance has come because the movement of prices is that which would occur if the main tendency had changed. Yet it may only be an unusually pronounced secondary movement.

It seems to be a fact that a primary movement in the market will generally have a secondary movement in the opposite direction......

It is impossible to tell in advance the length of any primary movement, but the further it goes, the greater the reaction when it comes, hence the more certainty of being able to trade successfully on that reaction.   Nelson pages 39 to 44.

There comes a time when a stock with a good degree of activity will stay within a narrow range of prices, say 2 points, until there has formed quite a long horizontal line ... The formation of such a line sometimes suggests that the stock has been accumulated or distributed...   Nelson page 42.

The market is not like a balloon plunging hither and thither in the wind. As a whole, it represents a serious, well considered effort on the part of far-sighted and well-informed men to adjust prices to such values as exist or which are expected to exist in the not too remote future.   Nelson page 45.

These quotations give a taste of Dow's writings on the overall market. They also contain Dow's principal ideas on the overall market which were taken by Hamilton and Rhea and developed into what is now known as Dow Theory.

Hamilton wrote a book and a great many editorial articles on Dow Theory. Rhea painstakingly assembled all of Hamilton's writings and distilled what he thought was Dow's Theory. However, Rhea added his own thinking in the sense that he needed to interpret ideas that were sometimes unclear or inconsistent. It is Rhea's version that is accepted today as the definitive statement of Dow Theory.

The Basic Principles of Dow Theory

The Averages Discount Everything

The fluctuations of the daily closing prices of the Dow-Jones rail and industrial averages afford a composite index of all the hopes, disappointments and knowledge of everyone who knows anything of financial matters and for that reason the effects of coming events (excluding acts of God) are always properly anticipated in their movement. The averages quickly appraise such calamities as fires and earthquakes.   Rhea page 12.

We have already met this powerful idea in the article *Introduction to Technical Analysis* as a basic assumption of all of technical analysis. Clearly it has application beyond the averages to individual stocks and to any other financial market.

The Market has Three Movements

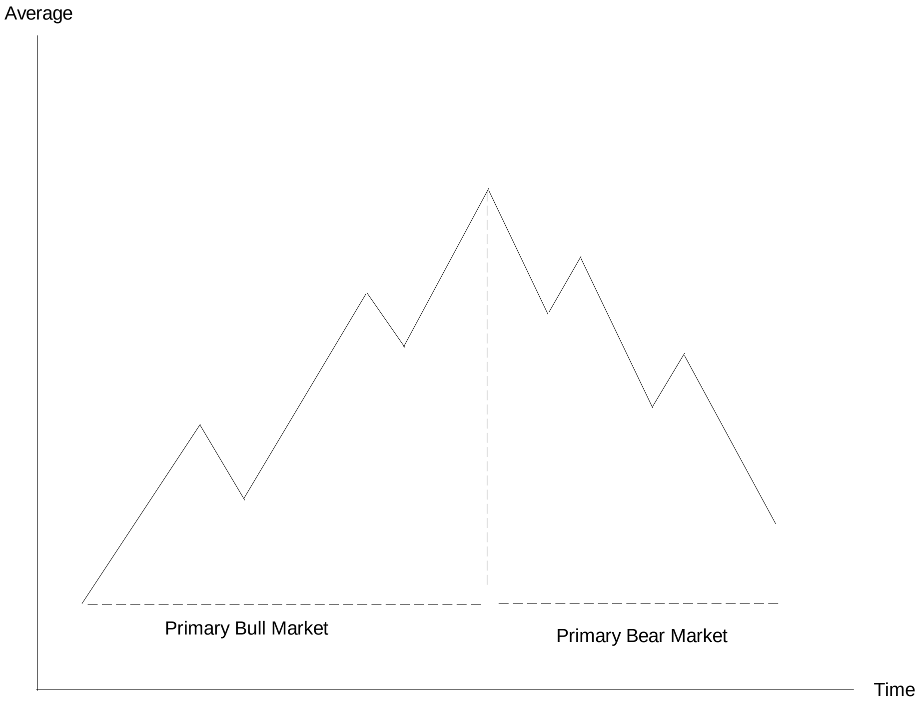
There are three movements of the averages, all of which may be in progress at one and the same time.

- *The first, and most important, is the primary trend: the broad upward or downward movements known as bull or bear markets, which may be of several years duration.*
- *The second, and most deceptive movement, is the secondary reaction: an important decline in a primary bull market or a rally in a primary bear market. These reactions usually last from three weeks to as many months.*
- *The third, and usually unimportant, movement is the daily fluctuation.*

Rhea page 12 and 13 (bullets added).

Neither Dow, Hamilton nor Rhea used diagrams to explain these points, but they are easier to grasp if presented visually:

The big picture of the primary movements will look like this:



Primary movements are the principal focus of Dow theory:

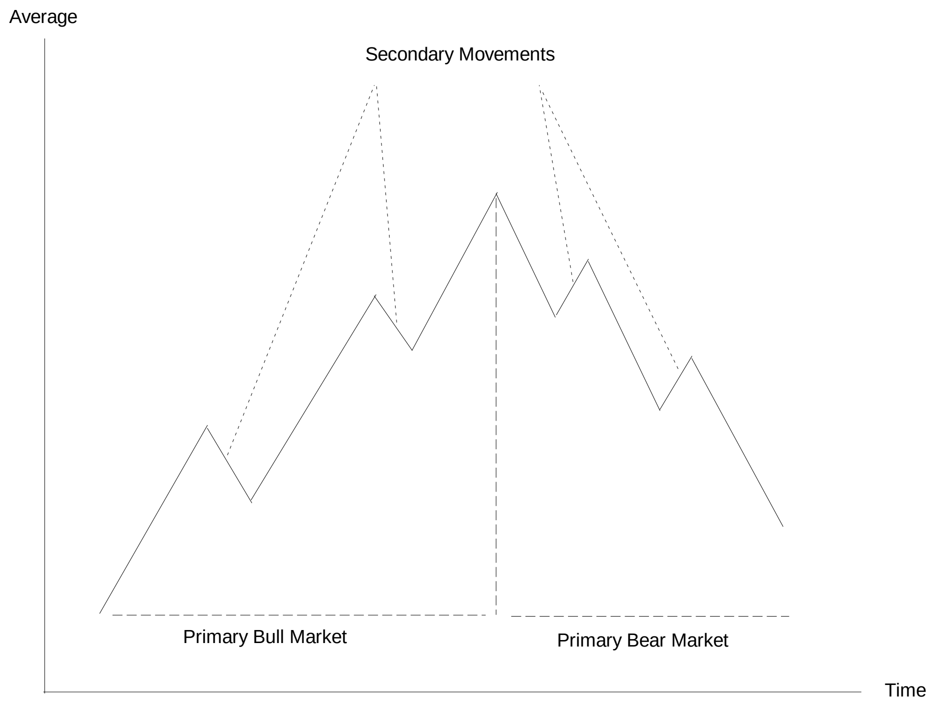
The primary movement is the broad basic trend generally known as a bull or bear market extending over periods which have varied from less than a year to several years. The correct determination of the direction of this movement is the most important factor in successful speculation. There is no known method of forecasting the extent or duration of a primary movement.

A primary bull market is a broad upward movement, interrupted by secondary reactions and averaging longer than two years. During this time, stock prices advance because of a demand created by both investment and speculative buying caused by improving business conditions and increased speculative activity.

A primary bear market is the long downward movement interrupted by important rallies. It is caused by various economic ills and does not terminate until stock prices have thoroughly discounted the worst that is apt to occur. Rhea page 13.

We will return to discuss primary markets in more detail later in this article.

Secondary movements will look like this:

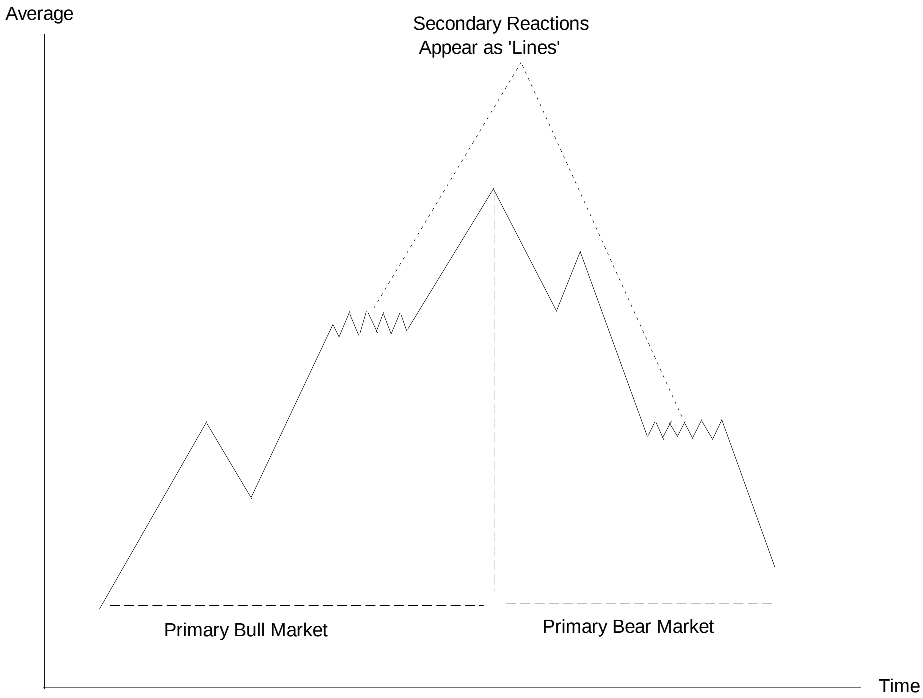


.... a secondary reaction is considered to be an important decline in a bull market or advance in a bear market,

- *usually lasting from three weeks to as many months,*
- *during which intervals the price movement generally retraces from 33% to 66% of the primary price change since the termination of the last secondary reaction.*

These reactions are frequently erroneously assumed to represent a change of primary trend, because obviously the first stage of a bull market must always coincide with a movement which might have proved to have been merely a secondary reaction in a bear market, the contra being after the peak has been attained in a bull market.
Rhea page 14 (bullets added).

A secondary reaction may take the form of a “line”:

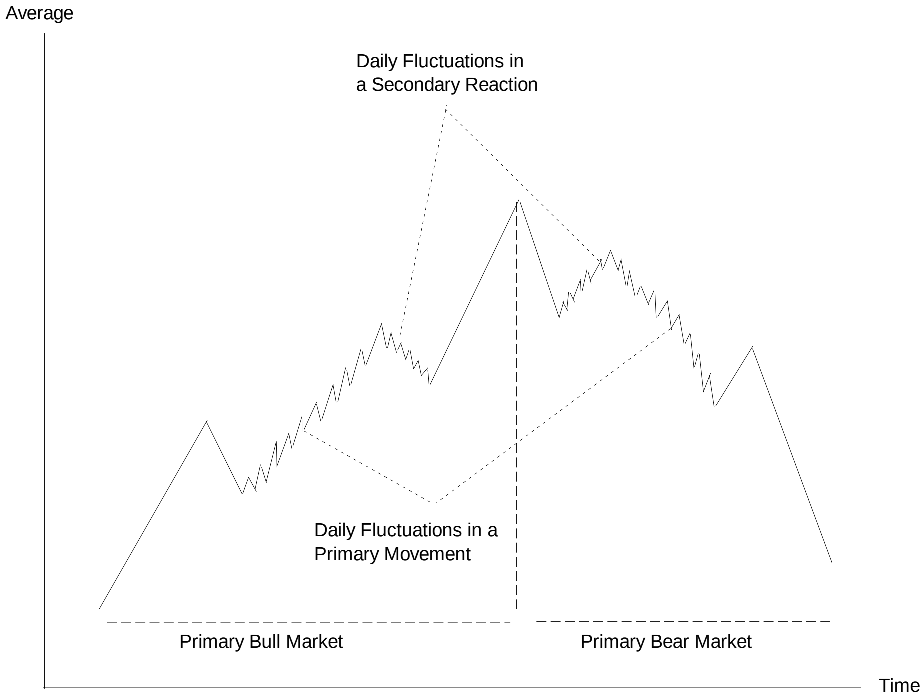


A “line” is a price movement extending two to three weeks or longer, during which period the price variation of both averages move within a range of approximately five percent. Such a movement indicates either accumulation or distribution.

- *Simultaneous advances above the limits of the “line” indicate accumulation and predict higher prices; conversely,*
- *simultaneous declines below the “line” imply distribution and lower prices are sure to follow.* Rhea page 15 (bullets added).

Rhea required that the “line” appear on both the Industrial and Rail averages. However, later Dow theorists might allow a line on one and a normal secondary movement on the other.

The daily fluctuations occur all the time and will look like this:

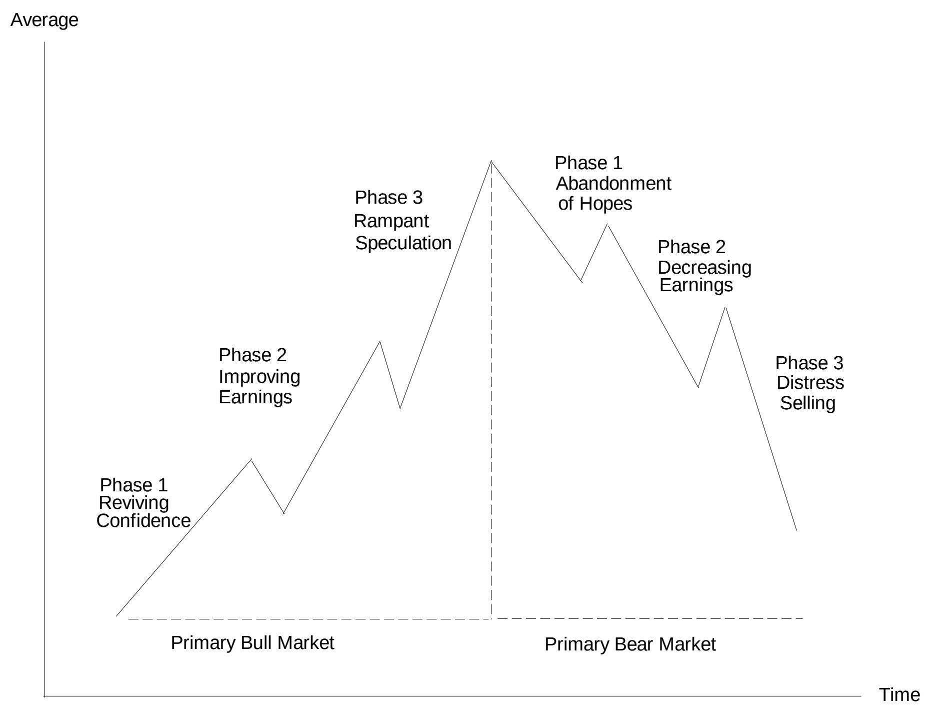


Daily fluctuations are of no importance for determining the trend of the overall market and were regarded by Dow, Hamilton and Rhea as misleading and to be ignored. It must be remembered that they were concerned with the primary and secondary movements only. Much of modern technical analysis is concerned with short term trading and seeks to analyse the daily fluctuations.

Primary Movements Have Three Phases

There are conceptually three phases to primary movements. These phases are the market behaviour we are trying to detect by studying the chart of the averages. This is not a precise matter, though, with the start and finish of each phase blending into one another.

Conceptually, the three phases can be visualised like this:



There are three phases of a bull period:

- *the first is represented by reviving confidence in the future of business;*
- *the second is the response of stock prices to the known improvement in corporate earnings, and*
- *the third is the period when speculation is rampant and inflation apparent- a period when stocks are advanced on hopes and expectations.*

There are three principal phases of a bear market:

- *the first represents the abandonment of the hopes upon which stocks were purchased at inflated prices;*
- *the second reflects selling due to decreased business and earnings, and*
- *the third is caused by distress selling of sound securities, regardless of their value, ...*

Rhea page 13 (bullets added).

It is interesting that Dow, Hamilton and Rhea sought to describe the market behaviour that was reflected in the charts of the averages. The chart was not something they looked at as a tool divorced from what was happening in the market. They were concerned with the way the averages reflected the behaviour of market participants in the various phases of the business cycle and used it as a way of mapping where they were in the cycle. Today, technical analysts are not concerned only with the business cycle, but also with short term trading. However, the most effective use is made of technical analysis when it is employed as a way of discerning the behaviour of market participants, from which a strategy for trading can be conceived.

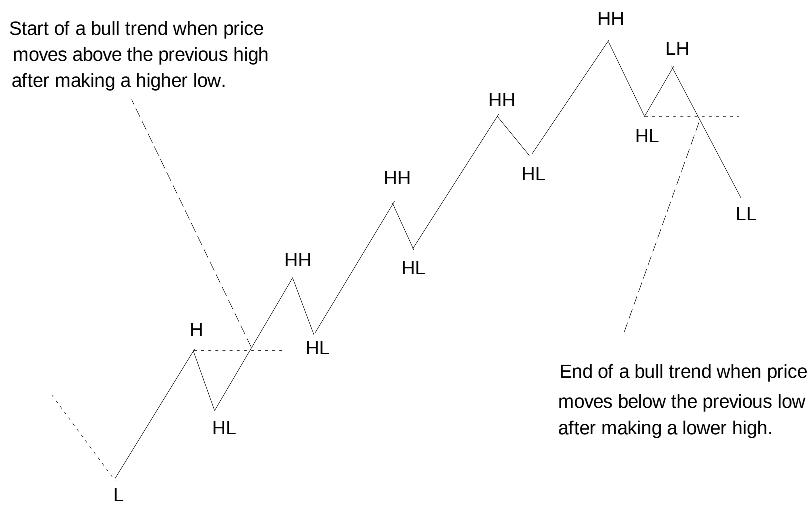
Determining the Trend

Rhea distilled the ideas of Dow and Hamilton into a precise definition of trend:

- *Successive rallies penetrating preceding high points, with ensuing declines terminating above preceding low points, offer a bullish indication.*
- *Conversely, failure of rallies to penetrate previous high points, with ensuing declines carrying below former low points is bearish.* Rhea page 14 (bullets added).

This is probably the most important single idea in Dow theory and is absolutely fundamental to a large part of modern technical analysis. The concept of trend may be visualised in the following diagrams:

Basic Dow Bull Trend:



There are two important observations to be made from this diagram:

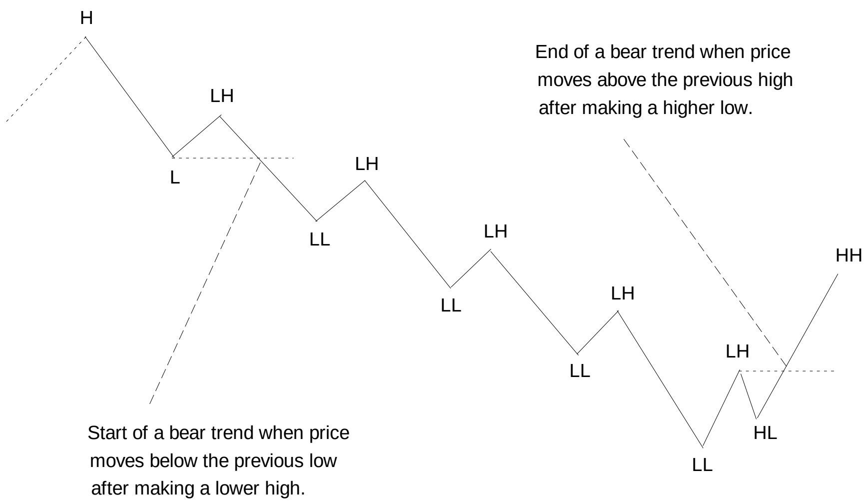
- We need a higher low and then a higher high before a bull trend can be said to be in place.
- The emergence of a lower high and then a lower low ends the bull trend.

Notice how every high and low is not validated until price moves past the previous opposite swing. i.e. A new high validates the last low and a new low validates the last high. This is because, if price turns down after an up movement, it may just be a daily fluctuation. It may just move down a little and then resume the up movement, passing the last “high”. So, we cannot be sure of a new high until a new low is made and of a new low until a new high is made.

This observation allows us to be precise about ***where the bull trend starts***: Once price turns up without reaching the previous low and then moves above the previous high, a higher low is in place and wherever the up move ends must be a higher high.

This observation also allows us to be precise about ***where the trend changes***: Once price turns down without reaching the previous high and then moves below the previous low, a lower high is in place and wherever the down move ends must be a lower low.

Basic Dow Bear Trend:



There are two important observations to be made from this diagram:

- We need a lower high and then a lower low before a bear trend can be said to be in place.
- The emergence of a higher low and then a higher high ends the bear trend.

Notice how every low and high is not validated until price moves past the previous opposite swing. i.e. A new low validates the last high and a new high validates the last low. This is because, if price turns up after a down movement, it may just be a daily fluctuation. It may just move up a little and then resume the down movement, passing the last "low". So, we cannot be sure of a new low until a new high is made and of a new high until a new low is made.

This observation allows us to be precise about ***where the bear trend starts***: Once price turns down without reaching the previous high and then moves below the previous low, a lower high is in place and wherever the down move ends must be a lower low.

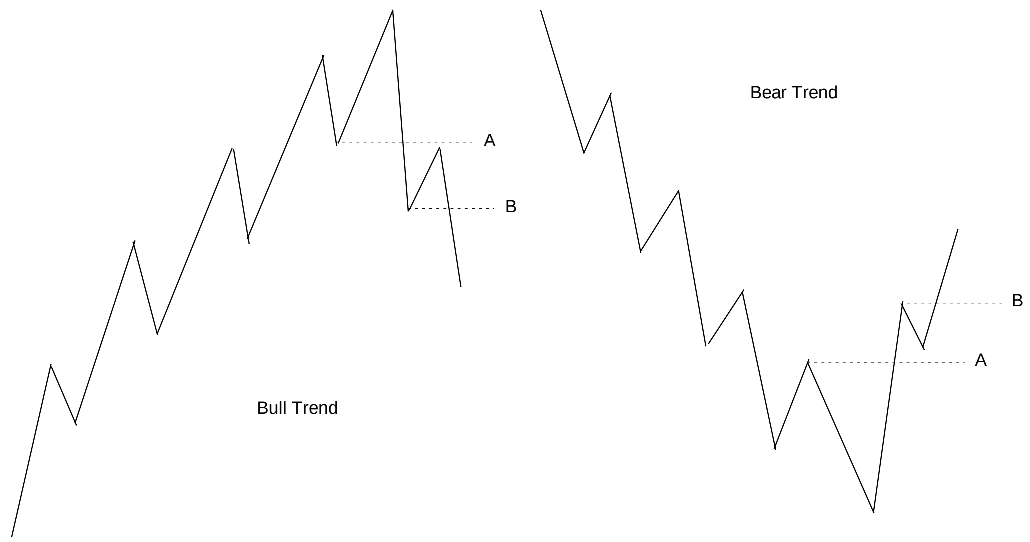
This observation also allows us to be precise about ***where the trend changes***: Once price turns up without reaching the previous low and then moves above the previous high, a higher low is in place and wherever the up move ends must be a higher high.

The Large Correction Dilemma

The Dow theory as set out by Rhea defined trend in terms of the highs and lows made by swings in the average. Thus, as already explained, a bull trend is a succession of higher highs AND lows, while a bear trend is a succession of lower lows AND highs. The dilemma arises when we consider what is needed for a reversal of the trend from bull to bear and back again. On the one hand, we can use Rhea's conservative approach and require an opposite trend to be in place before we call the end of the previous trend. This is the situation we see at B in the diagram below.

The other logical approach considers that an intact trend must have BOTH the highs and lows in the correct configuration. Once either a high or low breaks the sequence, the trend is no longer in place. Thus, a higher high in a bear trend or a lower low in a bull trend would change the trend. This is the situation we see at A in the figure below.

The Large Correction Dilemma



Dow theorists are not agreed on this issue. Some say this is sufficient for a trend ending, while others will insist on Rhea's conservative definition. The answer seems to lie in going back to the origin of the Dow Theory. Dow stated quite clearly that a bull trend only required higher highs and once there was a lower low, there was a bear trend. It was Rhea, influenced by Hamilton, who insisted on both highs and lows changing configuration. So, clearly, Dow would seem to have allowed the situations shown at A in the figure above as trend changes.

Quite clearly, Rhea's definition is very tidy and symmetrical and would have appealed to his organised and logical mind. It is also the most conservative and will probably result in fewer misleading signals. However, experience has shown that misleading signals still occur, even with the conservative definition, and that any greater certainty comes at the price of missing large parts of some bull markets on both entry and exit. ***On balance it seems better to allow the large correction as a valid Dow Theory signal***. This means that, where situation A in the figure above occurs before situation B, then A is a valid Dow trend change signal.

Both Averages Must Confirm

Originally, Dow constructed only one market average. Later, he split the Industrial stocks and the Railroad stocks into two separate averages.

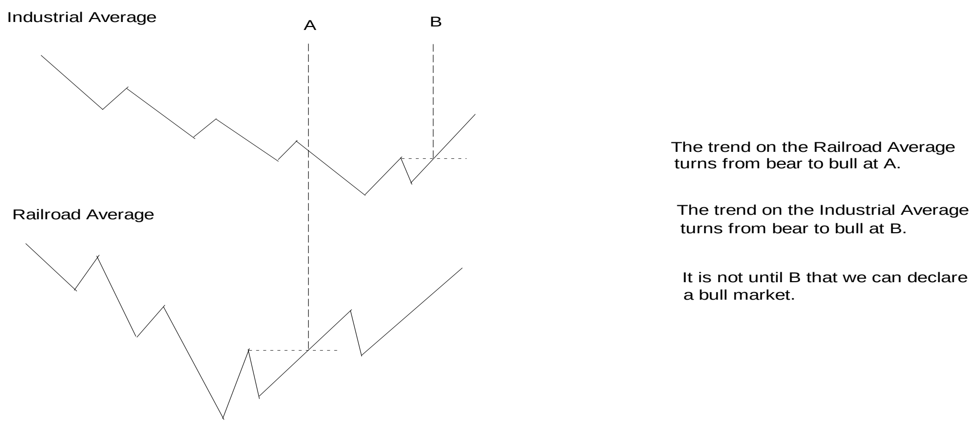
The importance of having the two averages can be understood as follows: The Industrial average represented manufacture and sale of goods. The Railroad average represented the movement of goods to the market. The profit outlook for railroads with high fixed or overhead costs, was very sensitive to the volume of goods being carried. Tonnages carried were reported regularly, as was basic manufacturing output. At the start of a bull cycle, orders pick up and inventory runs down before the level of manufacturing output picks up. Likewise, at the start of a bear cycle, orders fall away and inventory builds up before the level of manufacturing output is cut back. Therefore, statistics of manufacturing output will lag behind changes in the level of orders. Those with knowledge of order levels will adjust the prices of industrial stocks accordingly. However, the change in order levels will be quickly reflected in railroad tonnages. It follows that greater confidence could be had that a change in activity level was evident, rather than just a burst of speculative activity in one average, if an upturn or downturn in the Industrial average was confirmed by a change in the same direction of the Railroad average.

The movements of both the railroad and industrial stock averages should always be considered together. The movement of one price average must be confirmed by the other before reliable inferences may be drawn. Conclusions based upon the movement of one average, unconfirmed by the other, are certain to prove misleading. ... Such movements have but little authority unless confirmed in direction by both averages, ***but the confirmation need not occur on the same day****.* Rhea pages 14 and 15 (emphasis added).

It follows that we can be precise about the start of a bull or bear market:

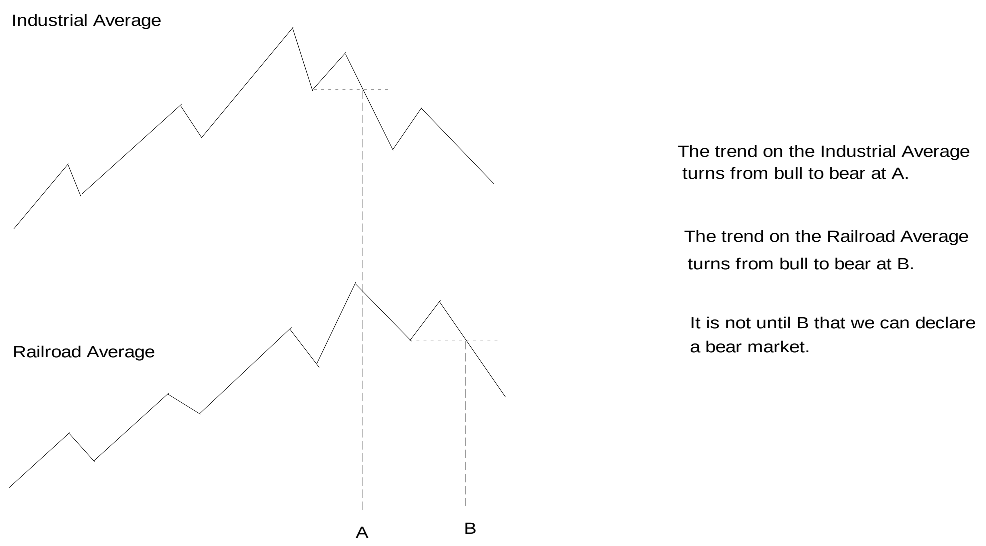
- A bull market can be declared when one average has begun a bull trend and the other average also begins a bull trend. The precise point is when the second average moves above a previous high after making a higher low. This is shown in the figure below:

Bull Market Declared:



- A bear market can be declared when one average has begun a bear trend and the other average also begins a bear trend. The precise point is when the second average moves below a previous low after making a lower high. This is shown in the figure below:

Bear Market Declared:



Volume Provides Additional Evidence

The volume of transactions on the stock market can provide useful additional evidence.

A market which has been overbought becomes dull on rallies and develops activity on declines; conversely, when a market is oversold, the tendency is to become dull on declines and active on rallies. Bull markets terminate in a period of excessive activity and begin with comparatively light transactions. Rhea page 15.

It is generally acknowledged that volume provides corroborative evidence only. Price trend is always the defining mechanism.

Other Aspects

There were several other aspects to Dow Theory, that are of minor importance:

(a) The Theory is Not Infallible

The Dow Theory is not an infallible system for beating the market. Its successful use as an aid in speculation requires serious study and the summing up of evidence must be impartial. The wish must never be allowed to father the thought. Rhea page 12.

It is generally agreed that Dow Theory has enabled correct identification of most US bull and bear market turns in the last century. However, there were a few failures which underline Rhea's warning.

(b) Manipulation

Manipulation was rife when Dow, Hamilton and Rhea did their work. They had to consider that manipulation could distort their findings. However, their conclusion was that while manipulation affected the day to day fluctuations and might, to a more limited degree, affect secondary reactions, the primary trend could not be manipulated.

Manipulation is less of a concern today because of greater regulation of markets. Greater opportunities for arbitrage also reduce its possibility of succeeding in distorting trends.

(c) Double Tops and Double Bottoms

This formation was described by Dow as a way of identifying trend endings, although he described it in relation to speculation in individual stocks. However, Hamilton found many instances where they did not identify trend endings in analysing the overall market and Rhea concluded that they were deceptive more often than not.

On the other hand, later analysts have verified that these formations are of value in the analysis of individual stocks and other financial markets and should not be ignored. I will discuss them in a later article, when we look at chart patterns.

(d) Individual Stocks

Individual stocks tend to move in the direction of their market average. However, any one of them can move contrary to its average to the extent that it reflects conditions not applicable to the overall market.

(e) Trend Assumed in Existence

We have seen how very precise conditions are required for the ending of a trend and the start of a new one. However, from time to time the situation can become very unclear. The clear implication from Dow Theory is that we should always assume the current trend is still in effect until the opposite trend is definitely in place. Some commentators have stated this to be a tenet of Dow Theory. However, it seems to be only a logical implication.

(f) Closing Prices

Similarly, some commentators have stated that the use of only closing prices is a tenet of Dow Theory and do not allow use of intra-day price extremes. This claim is a little tenuous. Dow, Hamilton and Rhea mainly referred to daily prices. This seems to derive from the fact that the Dow-Jones averages were originally calculated from closing prices only. This was obviously due to the problem of identifying prices of many stocks at any one point during the day. The mandate to use only closing prices may also have been introduced later, akin to the principle of conservatism in accounting. We will meet this idea again as a filter, when we look at indicators in a later article.

Some commentators have also suggested that weekly and monthly prices should not be used. This is another area where it is difficult to be dogmatic. While Dow, Hamilton and Rhea mainly referred to daily prices, they also said that daily fluctuations are unimportant. Indeed, Rhea discussed whether any movement above or below a previous swing was sufficient to generate a signal and settled for a 3% minimum. Also, while Hamilton provided an appendix of daily data in his book, he also included only monthly charts. A sensible conclusion would be that daily prices are the main tool, but that weekly and monthly prices can be useful in seeing the bigger picture.

The Problem Areas

There are also a few problem areas, some of which manifest themselves as criticisms of Dow Theory:

(a) The Decline of Railroads

Since the Dow Theory was conceived, railroads have declined in importance in moving manufactured goods, in favour of road and air transport. Also, imports and exports have become more important, dominated by sea transport. This has been dealt with by the evolution of the

Dow-Jones Railroad average into the Dow-Jones Transport average. The use of the wider index seems to have worked well. However, there may be another problem on the horizon. That is the dramatic and continuing growth in services as a proportion of national output in industrialised economies. Further, there has been an enormous growth in electronic commerce, where not goods are actually shipped, but business is done on the internet. It remains to be seen whether these developments will erode the usefulness of confirmation by both averages.

A further issue for Australian investors and traders is that there is now no transport index to use for Dow Theory. This means that we are unable to use the Both Averages Must Confirm tenet in our analysis of the Australian market.

(b) Markets Other than the US

Hamilton and Rhea suggested that the Dow Theory was applicable to other markets if the relevant averages were created. Indeed there is no logical reason why the theory should not work in any economy similar to the US. As far as the Australian stock market is concerned, there is another issue to consider. Australian market has a relatively large resources sector and the economy has a relatively large agricultural sector which is poorly represented on the ASX. Both of these sectors exert great influence on the business cycle in Australia and it has been suggested that Dow Theory ignores them. However, this is patently not so. Remember that the stock market discounts all information and expectations. Anyone trading industrial stocks will take account of their overall outlook for the economy as a whole, which will include the rural and resources sectors, when they form their expectations for industrial stocks.

(c) Dow Theory Signals are Late

Those who criticise Dow Theory for giving late signals refer to the fact that it does not pick the top or bottom of the market. Such a criticism is unfounded, because it assumes incorrectly that Dow Theory is designed to pick the top and bottom of market cycles. The Dow Theory was created as a barometer of the business cycle, for which it is a leading indicator. It was never intended to be more than an aid to speculation on the stock market itself, beyond indicating the direction of the primary trend, in which direction it is most prudent to trade individual stocks.

The Record of Dow Theory

The Dow Theory makes the case for market timing versus a "buy and hold" strategy:

Starting in 1897, an investor who purchased the stocks in the Dow Jones Industrial Average following each Dow theory buy signal, liquidated the position on sell signals, and reinvested the money on the next buy signal, would have seen the original investment of $44 in 1897 grow to about $51,268 by January 1990. If instead the investor had held onto the original $44 investment throughout the period, the investment would have grown, but only to about $2500. In reality, the substantial profit earned by following the Dow Theory would have been trimmed by transaction costs and capital gains taxes. Even if a wide margin of error is allowed, the investment performance using this approach would still have been far superior to the results of a buy-and-hold strategy. Pring: *Technical Analysis Explained* page 31.

However, this account of its potential must be balanced by a caution. Dow Theory is not an easy and simple road to riches. It has a large element of subjectivity and is best used by someone who has spent time studying the past to develop experience in its interpretation. In short, it requires hard work and patience.