Technical Analysis

- A process of identifying trend reversals at an earlier stage to formulate the buying and selling strategy.

- Technical analyst study the relationship between price-volume and supply-demand for the overall market and the individual stock.

Assumptions

- The market value of the scrip is determined by the interaction of supply and demand.
- The market discounts everything.
- The market always moves in trend.
- History repeats itself. It is true to the stock market also.

Origin of Technical Analysis

- Technical analysis is based on the doctrine given by Charles H. Dow in 1884, in the Wall Street Journal.
- A. J. Nelson, a close friend of Charles Dow formalised the Dow theory for economic forecasting.
- Analysts used charts of individual stocks and moving averages in the early 1920s.

Dow Theory

- Dow developed his theory to explain the movement of the indices of Dow Jones Averages.
- The theory is based on certain hypothesis:
  - The first hypothesis is that no single individual or buyer can influence the major trend of the market.
  - The second hypothesis is that market discounts every thing.
  - The third hypothesis is that the theory is not infallible.
- According to Dow theory the trend is divided into
  - Primary
  - Intermediate/Secondary
  - Short term/Minor

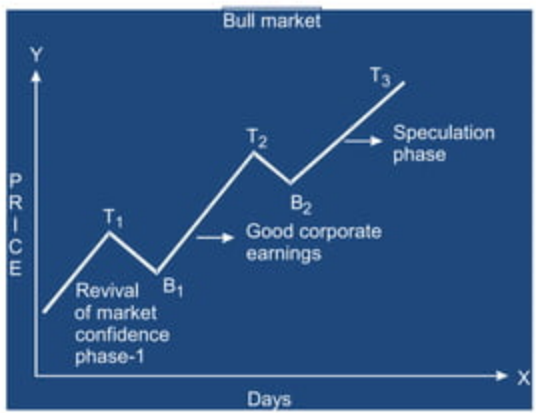
Primary Trend

- The security price trend may be either increasing or decreasing.

- When the market exhibits the increasing trend, it is called **'bull market'** and when it exhibits a decreasing trend it is called '**bear market**'.

Bull Market

- The bull market shows three clear-cut peaks.
- Each peak is higher than the previous peak.
- The bottoms are also higher than the previous bottoms.



Bear Market

- The market exhibits falling trend.
- The peaks are lower than the previous peaks.
- The bottoms are also lower than the previous bottoms.

The Secondary Trend

- The secondary trend or the intermediate trend moves against the main trend and leads to correction.
- The correction would be 33% to 66% of the earlier fall or increase.
- Compared to the time taken for the primary trend, secondary trend is swift and quicker.

Minor Trends

- Minor trends or tertiary moves are called random wriggles.
- They are simply the daily price fluctuations.
- Minor trend tries to correct the secondary trend movement.

Support and Resistance Level

- A **support level** exists at a price where considerable demand for the stock is expected to prevent a further fall in the price level. In the support level, the fall in the price may be halted for the time being or it may result even in price reversal.
- If the stock goes down to certain level and then rises there exists a support level. If the price goes below the support level , it means that the selling pressure has overcome the buying pressure and the price may fall further.
- At the **resistance level**, the supply of scrip is greater than the demand and further rise in price is prevented. Selling pressure is greater and the increase in price is halted for the time being.
- When the stock touches a certain level and then drops, it is called as resistance level. If the price moves above the resistance level it means that the buying pressure has overcome the selling pressure and the price may rise further.

Support and Resistance Level

Pivot Point

- **Pivot Point** : It is a technical analysis indicator used to determine the overall trend of the market over different time frames.
- The pivot point itself is simply the average of the high, low and closing prices from the previous trading day.
- On the subsequent day, trading above the pivot point is thought to indicate ongoing bullish sentiment, while trading below the pivot point indicates bearish sentiment.

- A pivot point and the associated support and resistance levels are often turning points for the direction of price movement in a market.
- In an up-trending market, the pivot point and the resistance levels may represent a resistance level in price above which the uptrend is no longer sustainable and a reversal may occur.
- In a declining market, a pivot point and the support levels may represent a low price level of stability or a resistance to further decline

Pivot level Calculation

- Standard Pivot Points:
- **Pivot = (H + L + C) / 3**
- R3 = H + 2(Pivot – L)
- R2 = Pivot + (H - L)
- R1 = (2 x Pivot) - L

- S1 = (2 x Pivot) – H
- S2 = Pivot - (H - L)
- S3 = L - 2(H - Pivot)

5-day pivot point chart of a stock for intra-day trading in October 2009

Monthly pivot point chart of the Dow Jones Industrial Average for the first 8 months of 2009, showing sets of first and second levels of resistance (green) and support (red). The pivot point levels are highlighted in yellow. Trading below the pivot point, particularly at the beginning of a trading period sets a bearish market sentiment and often results in further price decline, while trading above it, bullish price action may continue for some time

Gaps

- Gaps are those points or price levels where the scrip has not changed hands. They are formed in rising or falling price level.
- If the prices are moving upwards and the high of any day is lower than the next day's low, a gap is said to have occurred.
- Similarly, if the prices are falling, a gap is formed if the low price on a day is higher than the high price of next day.

Gap up


ASF (Administaff, Inc.) NYSE
©StockCharts.com
25-Apr-2006
Open 51.01 High 51.98 Low 50.68 Close 51.67 Volume 338.8K Chg +0.63 (+1.24%)
ASF (Daily) 51.67
Volume 338.82K, EMA(60) 368.88K
52
51
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
35
3M
2M
1M
Dec 12 19 27 2006 9 17 23 Feb 6 13 21 Mar 6 13 20 27 Apr 10 17 24

Gap Down


NDN (99 Cents Only Stores) NYSE
©StockCharts.com
25-Apr-2006
Open 12.14 High 12.14 Low 11.81 Close 11.98 Volume 347.2K Chg -0.16 (-1.32%)
NDN (Daily) 11.98
Volume 347.20K, EMA(60) 606.14K
13.75
13.50
13.25
13.00
12.75
12.50
12.25
12.00
11.75
11.50
11.25
11.00
10.75
10.50
10.25
10.00
9.75
9.50
3M
2M
1M
Dec 12 19 27 2006 9 17 23 Feb 6 13 21 Mar 6 13 20 27 Apr 10 17 24

Line Chart

- The most basic of the charts is the line chart. It represents only the closing prices over a set period of time.
- The line is formed by connecting the closing prices over the time frame.
- The closing price is often considered to be the most important price in stock data compared to the high and low for the day and this is why it is the only value used in line charts.

Bar chart

- The bar chart is made up of a series of vertical lines that represent each data point.
- This vertical line represents the high and low for the trading period, along with the closing price.
- The close and open are represented on the vertical line by a horizontal dash. The opening price on a bar chart is illustrated by the dash that is located on the left side of the vertical bar.
- The close is represented by the dash on the right

Point and Figure Chart

- It predicts the extent and direction of the price movements of a stock or market index.
- These Charts are on dimensional without any indication of time or volume.
- They show price changes in relation to previous prices
- It consists of a series of Xs and Os
- The Xs represent upward price trends and the Os represent downward price trends.

Point and Figure Chart

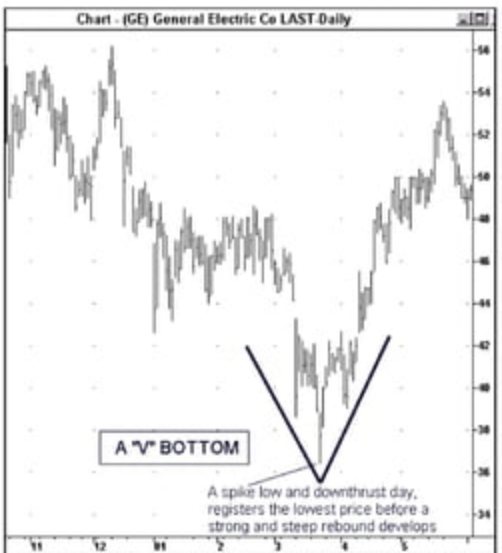
- The prices are given to the left of the figure.
- The prices can change in intervals of 1,2,3,5,and 10 points
- Higher points are chosen for high priced stocks
- At the starting point an X is placed and another X is placed if the price increases by 1 point.
- If the price decreases by one point a O is placed in the next column below the X and further O is placed if the price decreases.
- The chart helps in spotting the trend and trend reversal at any given point.

Chart pattern

- A chart pattern is a distinct formation on a stock chart that creates a trading signal, or a sign of future price movements. Chartists use these patterns to identify current trends and trend reversals and to trigger buy and sell signals.

V Formation

As the name indicates in the V formation there is a long sharp decline and a fast reversal. In the V pattern the market interest changes quickly from hope to fear and vice versa. In inverted V first the price rise occurs and then it declines



Tops and Bottoms

- Tops and Bottoms are formed at the beginning or end of a new trend. The investor should buy at the bottom and exit before the top has been reached.
- **Double Tops and Bottoms**
  This chart pattern that signals a trend reversal - it is considered to be one of the most reliable and is commonly used. These patterns are formed after a sustained trend and signal that the trend is about to reverse. The pattern is created when a price movement tests support or resistance levels twice and is unable to break through. This pattern is often used to signal intermediate and long-term trend reversals.
- In the case of the **double top pattern** , the price movement has twice tried to move above a certain price level. After two unsuccessful attempts at pushing the price higher, the trend reverses and the price heads lower.
- In the case of a **double bottom** , the price movement has tried to go lower twice, but has found support each time. After the second bounce off of the support, the security enters a new trend and heads upward.

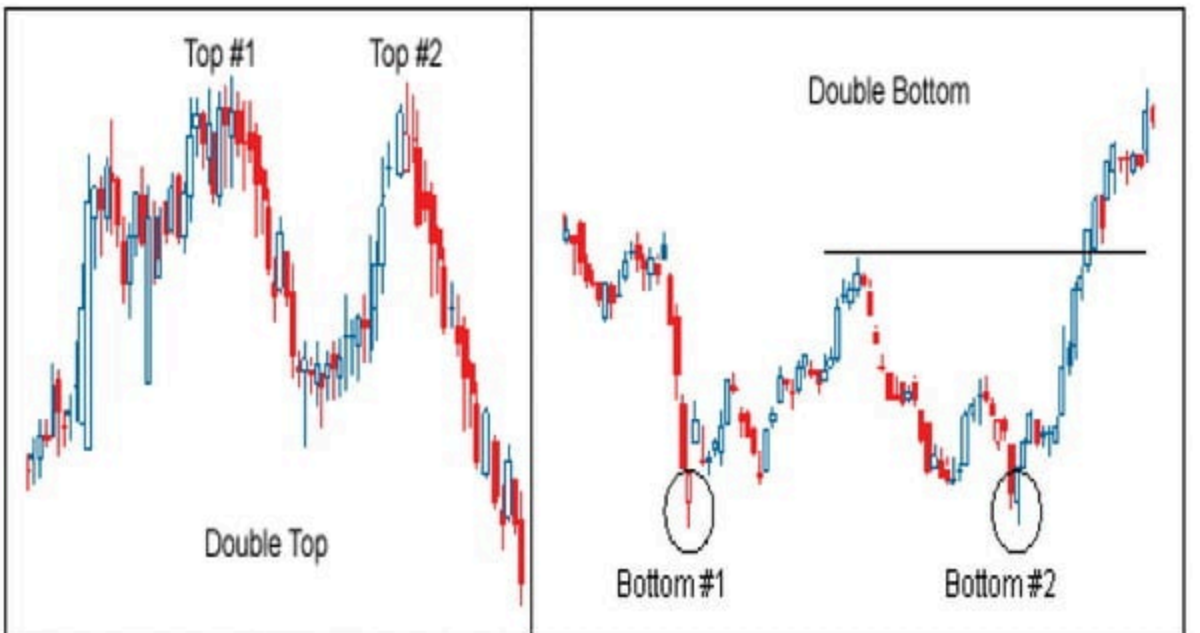
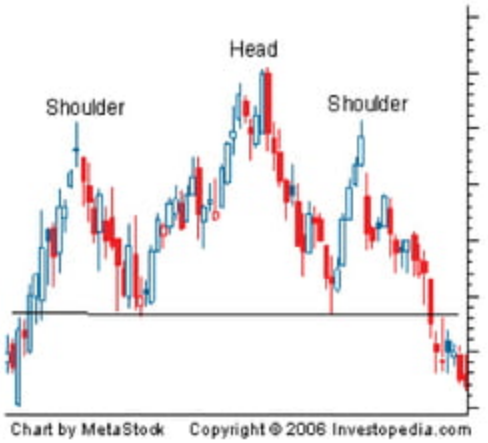


Chart by MetaStock

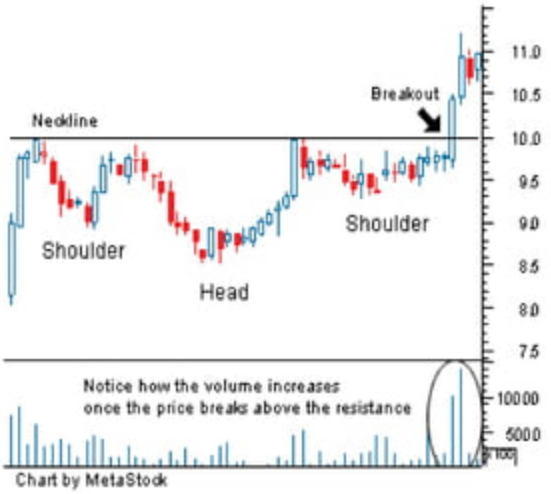
Head and Shoulders

- This is one of the most popular and reliable chart patterns in technical analysis.
- In the head and shoulder pattern there are three rallies resembling the left shoulder, a head and a right shoulder. A neck line is drawn connecting the lows of the tops.
- When the stock price cuts the neckline from above it signals a bear market. Head and shoulders top is a chart pattern that is formed at the high of an upward movement and signals that the upward trend is about to end



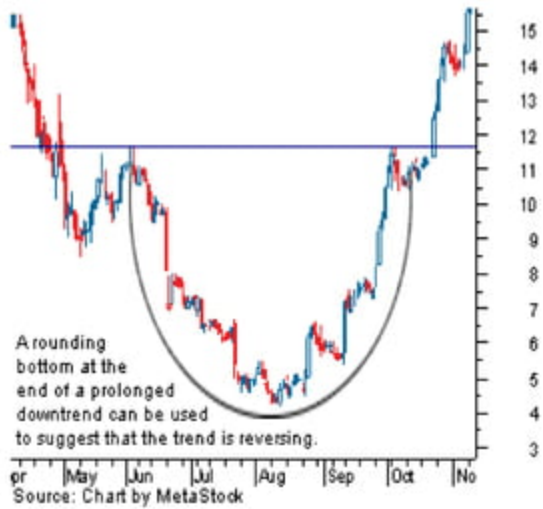
Inverted Head and Shoulders

- Inverted head and shoulders is used to signal a reversal in a downtrend.
- The price of the stock falls and rises which makes an inverted head and shoulder. The tops of the inverted head gives the neckline.
- When the price pierces the neckline from below it indicates the end of bear market and the beginning of the bull market.



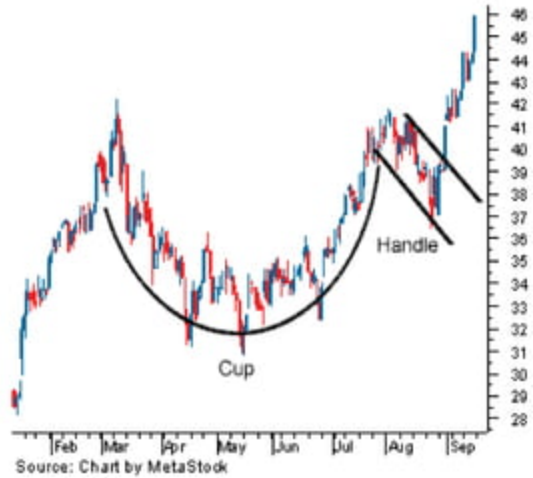
Rounding Bottom

- A rounding bottom is a long-term reversal pattern that signals a shift from a downward trend to an upward trend. This pattern is traditionally thought to last anywhere from several months to several years.
- It is U shaped and elongated
- The bottom low has to be a new low
- The decline and rise should take equal time
- The breakout should be higher than the beginning of the decline



Cup and Handle

- A cup and handle chart is a bullish continuation pattern in which the upward trend has paused but will continue in an upward direction once the pattern is confirmed.
- This price pattern forms what looks like a cup, which is followed by an upward trend. The handle follows the cup formation and is formed by a generally downward/sideways movement in the security's price.
- Once the price movement pushes above the resistance lines formed in the handle, the upward trend can continue. There is a wide ranging time frame for this type of pattern, with the span ranging from several months to more than a year

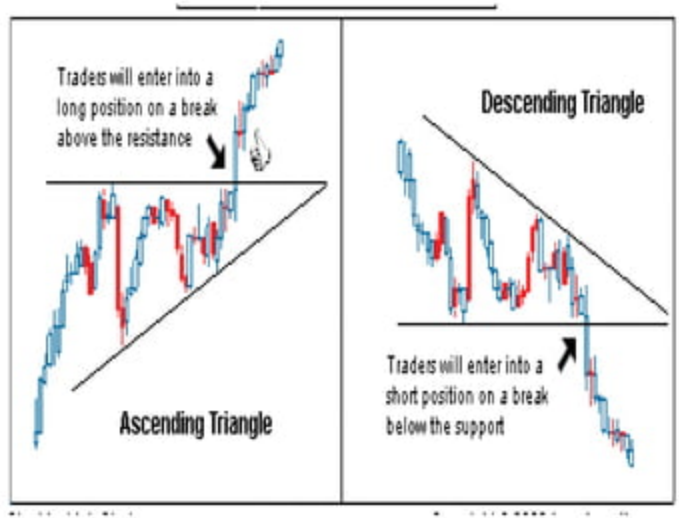


Triangles

- Triangles are well-known chart patterns used in technical analysis. The three types of triangles, which vary in construct and implication, are the symmetrical triangle, ascending and descending triangle. These chart patterns are considered to last anywhere from a couple of weeks to several months.
- **Symmetrical Triangle**
- The symmetrical triangle is a pattern in which two trend lines converge toward each other. This pattern is neutral in that a breakout to the upside or downside is a confirmation of a trend in that direction

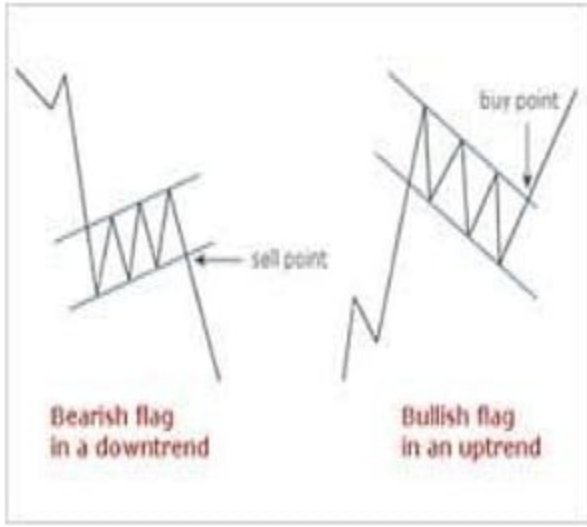
Ascending and Descending triangle

- In an ascending triangle, the upper trend line is flat, while the bottom trend line is upward sloping. This is generally thought of as a bullish pattern in which chartists look for an upside breakout.
- In a descending triangle, the lower trend line is flat and the upper trend line is descending. This is generally seen as a bearish pattern where chartists look for a downside breakout.



Flags

- Flags are a pause in the trend, where the price becomes confined in a small price range between parallel lines. This pause in the middle of a trend gives the pattern a flag like appearance.
- Flags are generally short in duration, lasting several bars, and do not contain price swings back and forth. Flags may be parallel or upward or downward sloping

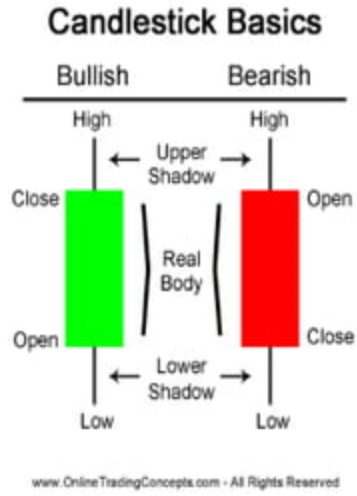


Pennants

- Pennants are similar to a triangle, yet smaller; pennants are generally created by only several bars.
- The pattern is created as prices converge, covering a relatively small price range mid-trend; this gives the pattern a pennant appearance

Candlestick Charts

- Candlestick chart, contains **open, high, low and close** values for each time period you want to display.
- The hollow or filled portion of the candlestick is called "the body" (also referred to as "the real body").
- The long thin lines above and below the body represent the high/low range and are called "shadows" (also referred to as "wicks" and "tails").
- The high is marked by the top of the upper shadow and the low by the bottom of the lower shadow.
- If the stock closes higher than its opening price, a hollow candlestick is drawn with the bottom of the body representing the opening price and the top of the body representing the closing price.
- If the stock closes lower than its opening price, a filled candlestick is drawn with the top of the body



Candlestick Patterns

- The power of Candlestick Charts is with multiple candlesticks forming reversal and continuation patterns. Some important patterns are

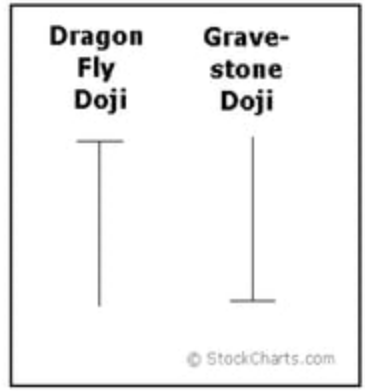
Doji	Dragonfly Doji
Hammer	Gravestone Doji
Hanging Man	Inverted Hammer
Bullish Engulfing Pattern	Bearish Engulfing Pattern
Evening Star	Shooting Star
Morning Star	Dark Cloud Cover
Harami	

Doji

- Doji are important candlesticks that provide information on their own and as components of in a number of important patterns.
- Doji form when a security's open and close are virtually equal. The length of the upper and lower shadows can vary and the resulting candlestick looks like a cross, inverted cross or plus sign.
- Alone, doji are neutral patterns. Any bullish or bearish bias is based on preceding price action and future confirmation..

Dragon Fly and Gravestone Doji

- Dragon fly doji forms when the open, high and close are equal and the low creates a long lower shadow. The resulting candlestick looks like a "T" with a long lower shadow and no upper shadow. It indicates a trend reversal. The reversal implications of a dragon fly doji depend on previous price action and future confirmation
- Gravestone doji form when the open, low and close are equal and the high creates a long upper shadow. The resulting candlestick looks like an upside down "T" with a long upper shadow and no lower shadow.



Hammer and Hanging Man

- Hammer candlesticks form with a long lower shadow, small body and very little upper shadow. Security moves significantly lower after the open, but rallies to close well above the intraday low. If this candlestick forms during a decline, then it indicates a bullish reversal.
- Hanging Man candlesticks form when a security moves significantly lower after the open, but rallies to close well above the intraday low. If this candlestick forms during an advance, then it indicates a bearish reversal

Hammer and Hanging Man

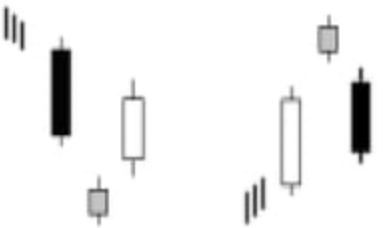
Inverted Hammer and Shooting Star

- Inverted Hammer is a one day bullish reversal pattern. In a downtrend, the open is lower, then it trades higher, but closes near its open, therefore looking like an inverted hammer.
- Shooting Star is a single day pattern that can appear in an uptrend. It opens higher, trades much higher, then closes near its open. It looks just like the Inverted Hammer except that it is bearish.

Inverted Hammer and Shooting Star

Morning Star and Evening Star

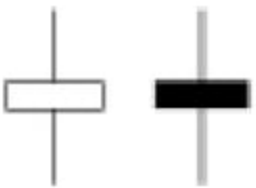
- Morning Star: A three day bullish reversal pattern consisting of three candlesticks - a long-bodied black candle extending the current downtrend, a short middle candle that gapped down on the open, and a long-bodied white candle that gapped up on the open and closed above the midpoint of the body of the first day.
- Evening Star: A bearish reversal pattern that continues an uptrend with a long white body day followed by a gapped up small body day, then a down close with the close below the midpoint of the first day.



Morning Star and Evening Star

Spinning Top

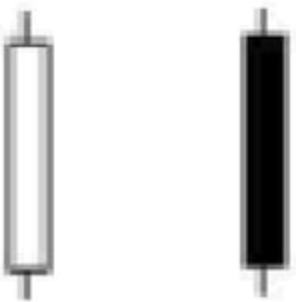
- Spinning Top: Candlestick lines that have small bodies with upper and lower shadows that exceed the length of the body. Spinning tops signal indecision among the traders



Spinning Top

Long Candles

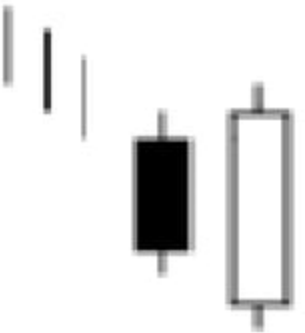
- Long Candles: A long Candle (Day) represents a large price move from open to close, where the length of the candle body is long. A long white body indicates a bullish trend and a long black body indicates a bearish trend



Long Candles

Engulfing Pattern

- Engulfing Pattern: A reversal pattern that can be bearish or bullish, depending upon whether it appears at the end of an uptrend (bearish engulfing pattern) or a downtrend (bullish engulfing pattern). The first day is characterized by a small body, followed by a day whose body completely engulfs the previous day's body.



Engulfing Pattern

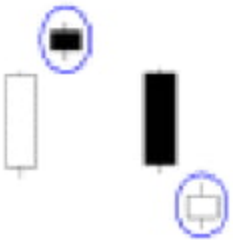
Marubozu

- Marubozu: A candlestick with no shadow extending from the body at either the open, the close or at both. The name means close-cropped or close-cut in Japanese, though other interpretations refer to it as Bald or Shaven Head.
- A White Marubozu shows that opening price is equal to its low price and closing price is its high price whereas a Black Marubozu shows tha.. opening price is equal to its High price and closing price is its low price.

Marubozu

Stars

- Stars: A candlestick that gaps away from the previous candlestick is said to be in star position. Depending on the previous candlestick, the star position candlestick gaps up or down and appears isolated from previous price action.



Star

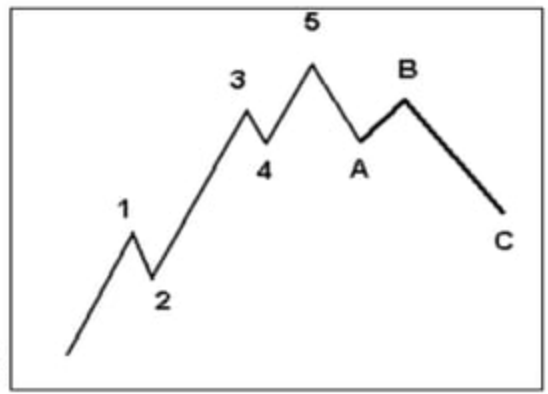
Harami

- Harami: A two day pattern that has a small body day completely contained within the range of the previous body, and is the opposite color. The second candle is located within the first.

Harami

Elliott Wave Theory

- Ralph Nelson Elliott developed the Elliott Wave Theory in the late 1920s by discovering that stock markets, thought to behave in a somewhat chaotic manner, in fact traded in repetitive cycles.
- Elliott discovered that these market cycles resulted from investors' reactions to outside influences, or predominant psychology of the masses at the time. He found that the upward and downward swings of the mass psychology always showed up in the same repetitive patterns, which were then divided further into patterns he termed "waves"

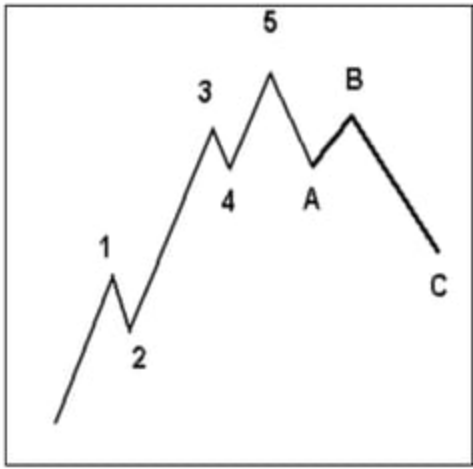


Market Predictions Based on Wave Patterns

- Elliott made predictions based on unique characteristics he discovered in the wave patterns. An **impulsive wave**, which goes with the main trend, always shows five waves in its pattern. On a smaller scale, within each of the impulsive waves, five waves can again be found. In this smaller pattern, the same pattern repeats itself infinitely. These ever-smaller patterns are labeled as different wave degrees in the Elliott Wave Principle.
- In the financial markets we know that "every action creates an equal and opposite reaction" as a price movement up or down must be followed by a contrary movement. Price action is divided into **trends** and **corrections** or **sideways** movements. Trends show the main direction of prices while corrections move against the trend. Elliott labeled these "impulsive" and "corrective" waves

Theory Interpretation

- The Elliott Wave Theory is interpreted as follows: Every action is followed by a reaction.
- Five waves move in the direction of the main trend followed by three corrective waves (a 5-3 move).
- A 5-3 move completes a cycle.
- This 5-3 move then becomes two subdivisions of the next higher 5-3 wave.
- The underlying 5-3 pattern remains constant, though the time span of each may vary.
- Let's have a look at the following chart made up of eight waves (five up and three down) labeled 1, 2, 3, 4, 5, A, B and C.
- We can see that the three waves in the direction of the trend are impulses, so these waves also have five waves within them. The waves against the trend are corrections and are composed of three waves.



Indicators

Volume of Trade

- Volume expands along with the bull market and narrows down in the bear market.
- Technical analyst use volume as an excellent method of confirming the trend.
- In a bullish market the volume of trade is large with rise in price whereas in bearish market the volume of trade is large with fall in price
- Volume confirm chart patterns

Breadth of the Market

- The net difference between the number of stock advanced and declined during the same period is the breadth of the market.
- A cumulative index of net differences measures the market breadth.
- In a bullish market , a bearish signal is given when the A/D line slopes down and the market is rising and vise versa.

Volume of Trade

Short sales

- This is a technical indicator also known as short interest.
- It refers to the selling of shares that are not owned. The bears are short sellers who sell now in hope of buying later at a lower price.
- When demand for a particular share increases, the outstanding short positions also increase. It indicates a future rise in prices.
- Short sales of a particular month are compared with the average daily volume of the preceding month. If the ratio is less than 1, the market is said to be weak or overbought and a decline can be expected. If the value is above 1 it indicates a bullish trend. If it is above 2 , the market is said to be oversold.

Moving Average

- Markets do not rise in a straight line. The underlying trend in the market can be studied by smoothening the data. This is done by using moving averages.
- The word moving means that the body of data moves ahead to include the recent observation.
- The moving average indicates the underlying trend in the scrip.
- They also form the building blocks for many other technical indicators and overlays, such as Bollinger Bands, MACD etc.
- For identifying short-term trend, 10 to 30 days moving averages are used.
- In the case of medium-term trend 50 to 125 days are adopted.
- To identify long-term trend 200 days moving average is used.
- The two most popular types of moving averages are the **Simple Moving Average (SMA)** and the **Exponential Moving Average (EMA)**

Simple Moving Average (SMA)

- A simple moving average is formed by computing the average price of a security over a specific number of periods. Most moving averages are based on closing prices. A 5-day simple moving average is the five day sum of closing prices divided by five.
- Old data is dropped as new data becomes available. This causes the average to move along the time scale

Exponential Moving Average

- Exponential moving average is a weighted moving average. Recent prices are given more weights than the older prices. The weighting applied to the most recent price depends on the number of periods in the moving average.
- **Exponential Moving Average Calculation**
- Exponent: E= (2 / (n + 1)) where n is period.
- For n=10, E= (2 / (10 + 1)) = 0.1818
- EMA: {Close - EMA(previous day)} x Exponent + EMA(previous day).

Average True Range (ATR)

- J. Welles Wilder developed the Average True Range (ATR). It is an indicator that measures volatility. The ATR is based on the value of true range. **True Range (TR)** is defined as the greatest of the following:
- Method 1: Current High less the current Low
- Method 2: Current High less the previous Close (absolute value)
- Method 3: Current Low less the previous Close (absolute value)
- Absolute values are used to ensure positive numbers. The previous closing price is used to measure the gap. Usually the ATR is measured for 14 periods. The average is smoothened using the following formula
- Current ATR = ((Previous ATR x 13) + TR)/ 14
- A high ATR indicates high probability of trend change and a low ATR indicates low probability of trend change.


MSFT (Microsoft Corp.) Nasdaq GS
© StockCharts.com
11-Jun-2010 Op 25.04 Hi 25.72 Lo 24.77 Cl 25.66 Vol 68.1M Chg +0.66 (+2.64%)
MSFT (Daily) 25.66
Lower priced stocks generally have lower ATR values
ATR(14) 0.801
ATR values for MFST are consistently below 1
Feb 8 16 22 Mar 8 15 22 29 Apr 12 19 26 May 10 17 24 Jun 7


GOOG (Google, Inc.) Nasdaq GS
©StockCharts.com
11-Jun-2010 Op 482.50 Hi 488.71 Lo 481.62 Cl 488.50 Vol 1.8M Chg +1.49 (+0.31%)
GOOG (Daily) 488.50
590
580
570
560
550
540
530
520
510
500
490
480
470
460
High priced stocks generally have higher ATR values.
Feb 8 16 22 Mar 8 15 22 29 Apr 12 19 26 May 10 17 24 Jun 7
ATR(14) 14.392
Google ATR values are consistently in double digits
16
14
12
10
Feb 8 16 22 Mar 8 15 22 29 Apr 12 19 26 May 10 17 24 Jun 7

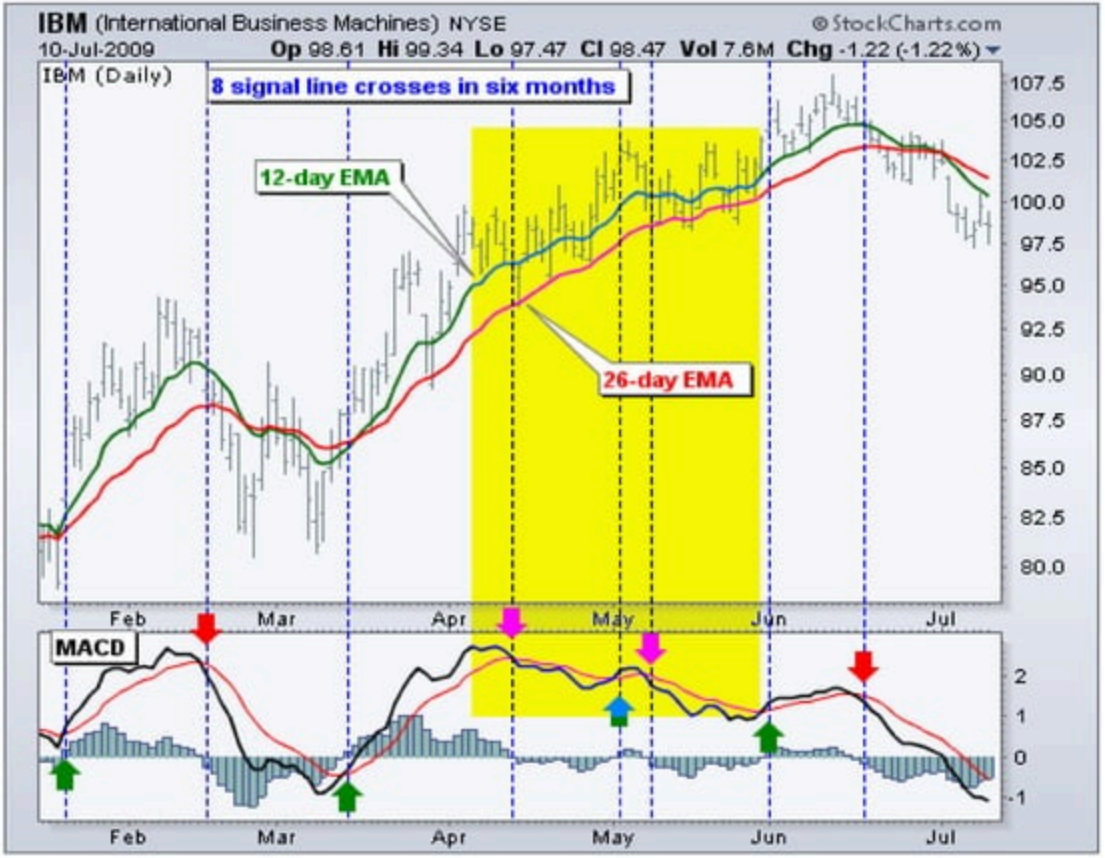
Oscillators

Oscillator shows the share price movement across a reference point from one extreme to another. The momentum indicates:

- Overbought and oversold conditions of the scrip or the market.
- Signaling the possible trend reversal.
- Rise or decline in the momentum.

Moving Average Convergence/Divergence oscillator (MACD)

- It is the difference between two exponential moving averages. It measures the convergence and divergence between two exponential moving averages of varying periods. The MACD fluctuates above and below the zero line as the moving averages converge, cross and diverge. Traders can look for signal line crossovers, centerline crossovers and divergences to generate signals.
- The MACD Line is the 12-day Exponential Moving Average (EMA) less the 26-day EMA. Closing prices are used for these moving averages. A 9-day EMA of the MACD Line is plotted with the indicator to act as a signal line and identify turns.


IBM (International Business Machines) NYSE
©StockCharts.com
10-Jul-2009 Op 98.61 Hi 99.34 Lo 97.47 Cl 98.47 Vol 7.6M Chg -1.22 (-1.22%)
IBM (Daily)
8 signal line crosses in six months
12-day EMA
26-day EMA
107.5
105.0
102.5
100.0
97.5
95.0
92.5
90.0
87.5
85.0
82.5
80.0
Feb
Mar
Apr
May
Jun
Jul
MACD
2
1
0
-1
Feb
Mar
Apr
May
Jun
Jul

Relative Strength Index (RSI)

- RSI was developed by Wells Wilder.
- It identifies the inherent technical strength and weakness of a particular scrip or market. RSI can be calculated for a scrip by adopting the following formula. RSI can be calculated for 5,7,9 and 14 days.

$$RSI = 100 - \left(\frac{100}{1 + Rs} \right)$$

$$Rs = \frac{\text{Average gain per day}}{\text{Average loss per day}}$$

- If RSI crosses 70 there may be down turn. If RSI falls below 30, there may be an uptrend.
- If the share price is falling and RSI is rising, a divergence is said to have occurred. Divergence indicates the turning point of the market.
- If RSI is rising in overbought zone, it indicates a fall in prices.
- If RSI is in oversold zone, it indicates a rise in prices.


MCD (McDonalds Corp.) NYSE
©StockCharts.com
5-Mar-2008
Op 50.04 Hi 50.35 Lo 49.52 Cl 50.14 Vol 7.6M Chg +0.29 (+0.58%)
MCD (Daily) 50.14
MA(1) 50.14
RSI is based on closing prices. The pink like shows the closing prices.
(1) oversold reading and bottom two weeks later
(2) several overbought readings during strong uptrend
(3) oversold reading and bottom two weeks later
58
56
54
52
50
48
46
44
42
Aug
Sep
Oct
Nov
Dec
2008
Feb
Mar
RSI(14) 45.67
overbought
oversold
90
70
50
30
10

Rate of Change (ROC)

- ROC measures the rate of change between the current price and the price 'n' number of days in the past.
- ROC helps to find out the overbought and oversold positions in a scrip. Closing prices are used to calculate ROC. Calculation of ROC for 12 weeks or 12 months is popular.
- ROC can be calculated by two methods.
  - In the first method current closing price is expressed as a percentage of the 12 days or weeks in past.
  - In the second method, the percentage variation between the current price and the price 12 days in the past is calculated.

- $ROC = \left\{ \frac{\text{Today's Price}}{\text{Price 'n' days back}} \times 100 \right\}$
- $ROC = \left\{ \frac{\text{Today's Price}}{\text{Price 'n' days back}} \times 100 \right\} - 100$

The main advantage of ROC is that it helps in identifying overbought and oversold positions. Historic high and low of ROC have to be identified to locate overbought and oversold regions.


AET (Aetna, Inc.) NYSE
© StockCharts.com
1-Apr-2010 Op 35.33 Hi 35.49 Lo 34.58 Last 34.93 Vol 4.3M Chg -0.18 (-0.51%)
AET (Daily) 34.93
MA(20) 33.33
20-day SMA
a little early
(1)
(2)
35
34
33
32
31
30
29
28
27
26
25
24
23
22
Apr May Jun Jul Aug Sep Oct Nov Dec 2010 Feb Mar Apr
ROC(12) 9.33%
oversold
20
10
0
-10
-20
Apr May Jun Jul Aug Sep Oct Nov Dec 2010 Feb Mar Apr