Technical Analysis

Presented by

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COMTRADE LIMITED

Technical Analysis

- Technical Analysis is the forecasting of future financial price movements based on an examination of past price movements. technical analysis can help investors anticipate what is "likely" to happen to prices over time. Technical analysis uses a wide variety of charts that show price over time.
- Dow Theory – Assumptions
  - Price Discounts Everything
  - Price Movements Are Not Totally Random
  - What is More Important than Why

Technical Analysis

Definition 1: A method of evaluating future security prices and market directions based on statistical analysis of variables such as trading volume, price changes, etc., to identify patterns.

Definition 2: Analysis applied to the price action of the market to develop trading decisions, irrespective of fundamental factors.

Premises on Technical Analysis

- **Market Action discounts everything**
  - Supply Vs. Demand factors.
  - Fundamental, Political and Psychological factors.
- **Prices move in trends**
  - Identify new and existing trend.
  - Prices move in trends– Trend in motion is more likely to continue than to reverse.
- **History repeats itself**
  - Future is the repetition of past

Technical Vs. Fundamental

- **Fundamental:**
  - Study the cause of market movement.
  - Supply-demand factor.
  - Government interventions.
- **Technical:**
  - Study the effect of movement.
  - Charts, price, volume, Trend

Theories Supports Technical Analysis

- Dow Theory

  Assumptions:

    - Averages discounts everything.
    - The market has three trends.
    - Major trend have three phases.
    - Volume must confirm the trend.

- Elliot Wave Theory

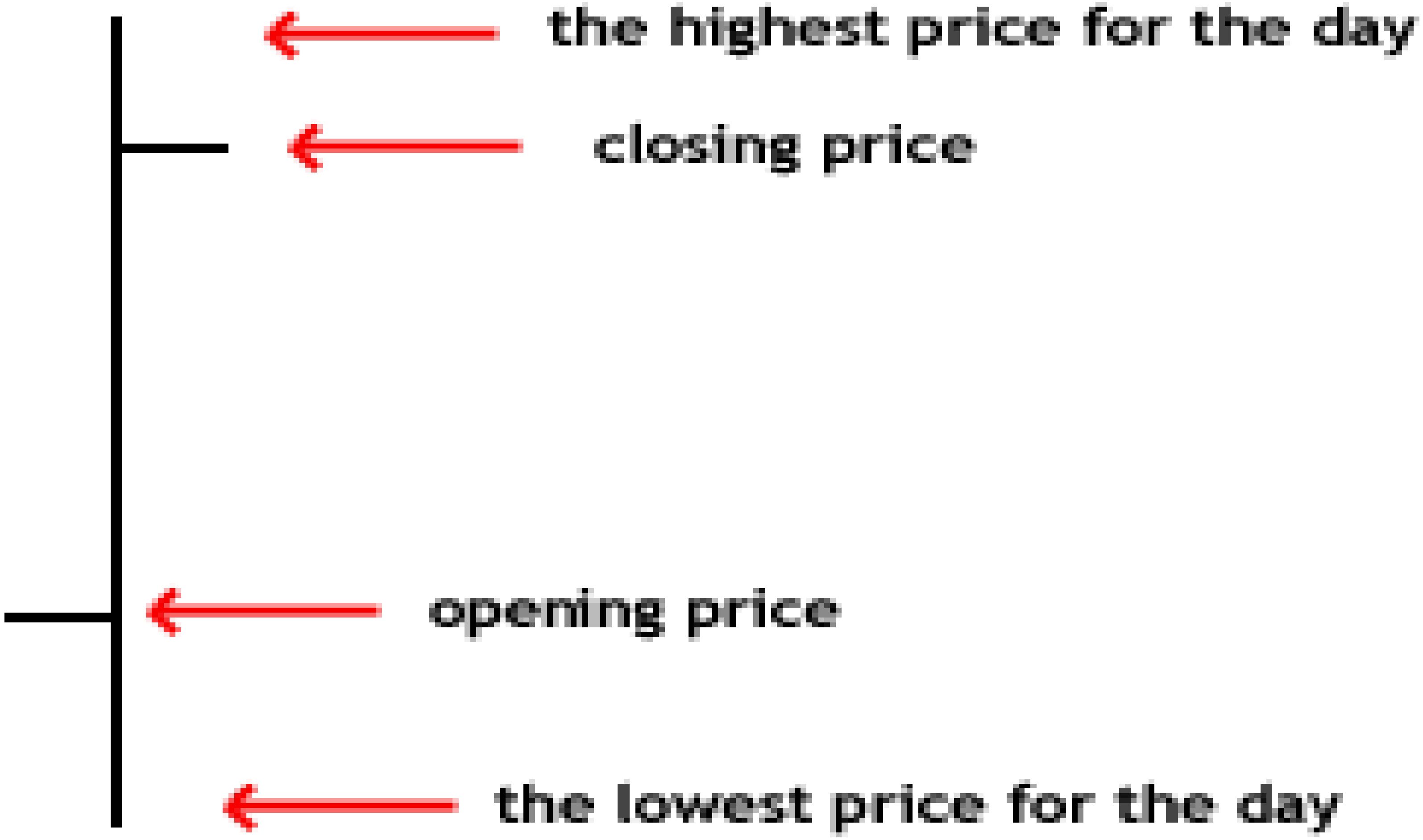
  Elliott Wave Theory, which states that security prices are governed by cycles founded upon the Fibonacci series (1-2-3- 5-8-13-21...).

Types of Charts

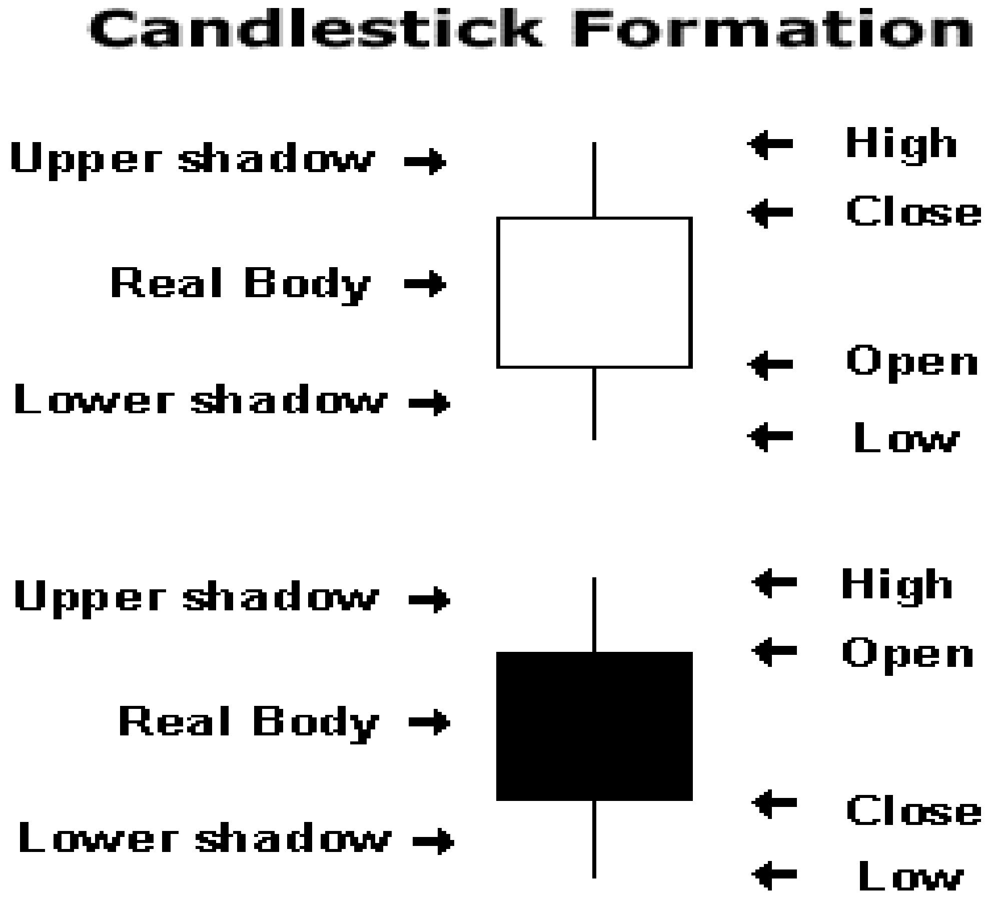
- Line Chart.
- Candlesticks chart.
- Bar Chart.
- Point & Figure Chart.

Candlesticks charts have become very popular among all chartist.

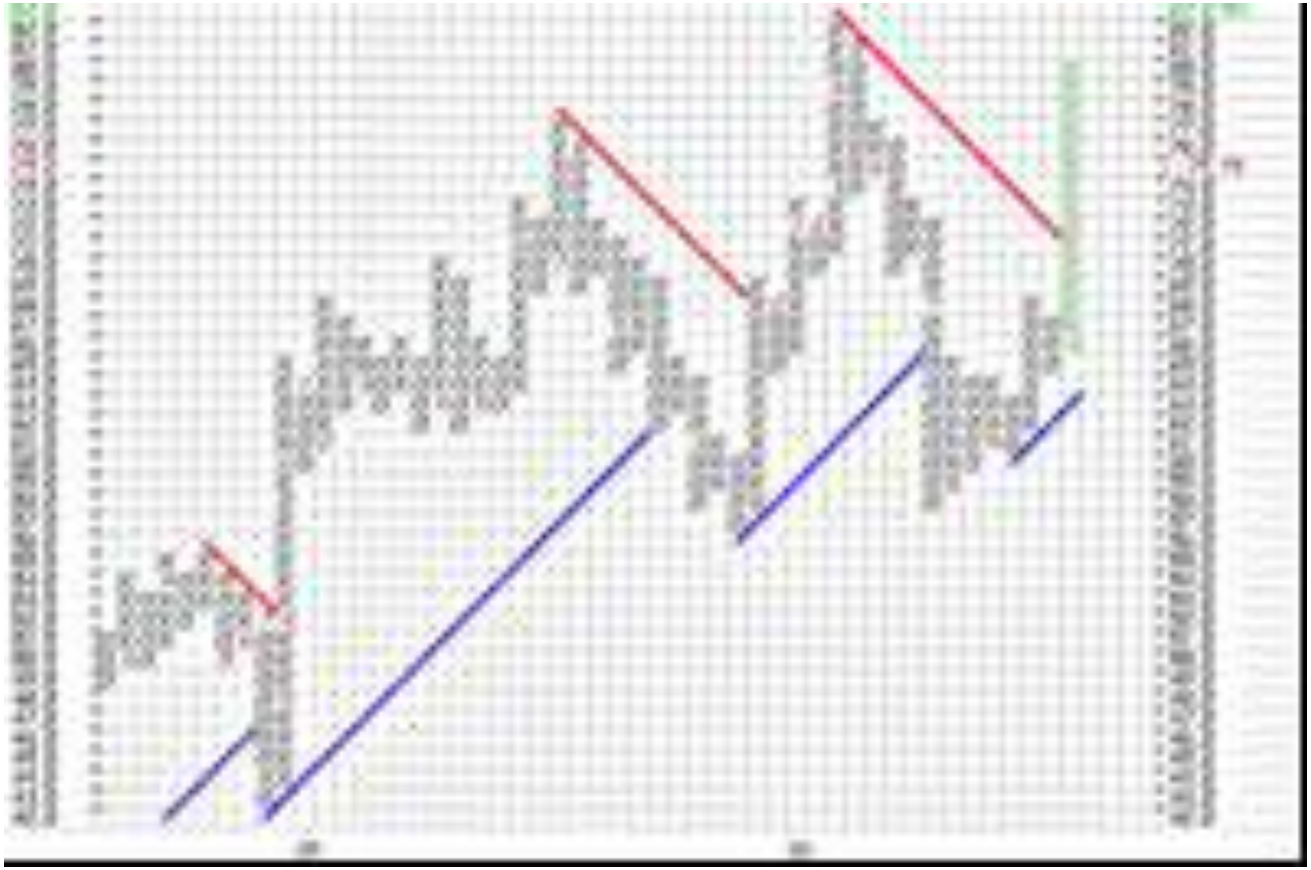
Bar Chart


the highest price for the day
closing price
opening price
the lowest price for the day

Candlesticks Chart


Candlestick Formation
Upper shadow →
Real Body →
Lower shadow →
← High
← Close
← Open
← Low
Upper shadow →
Real Body →
Lower shadow →
← High
← Open
← Close
← Low

Point & Figure chart



X's represent increasing prices . O's represent decreasing prices. Does not consider open and close prices.

What are moving averages??

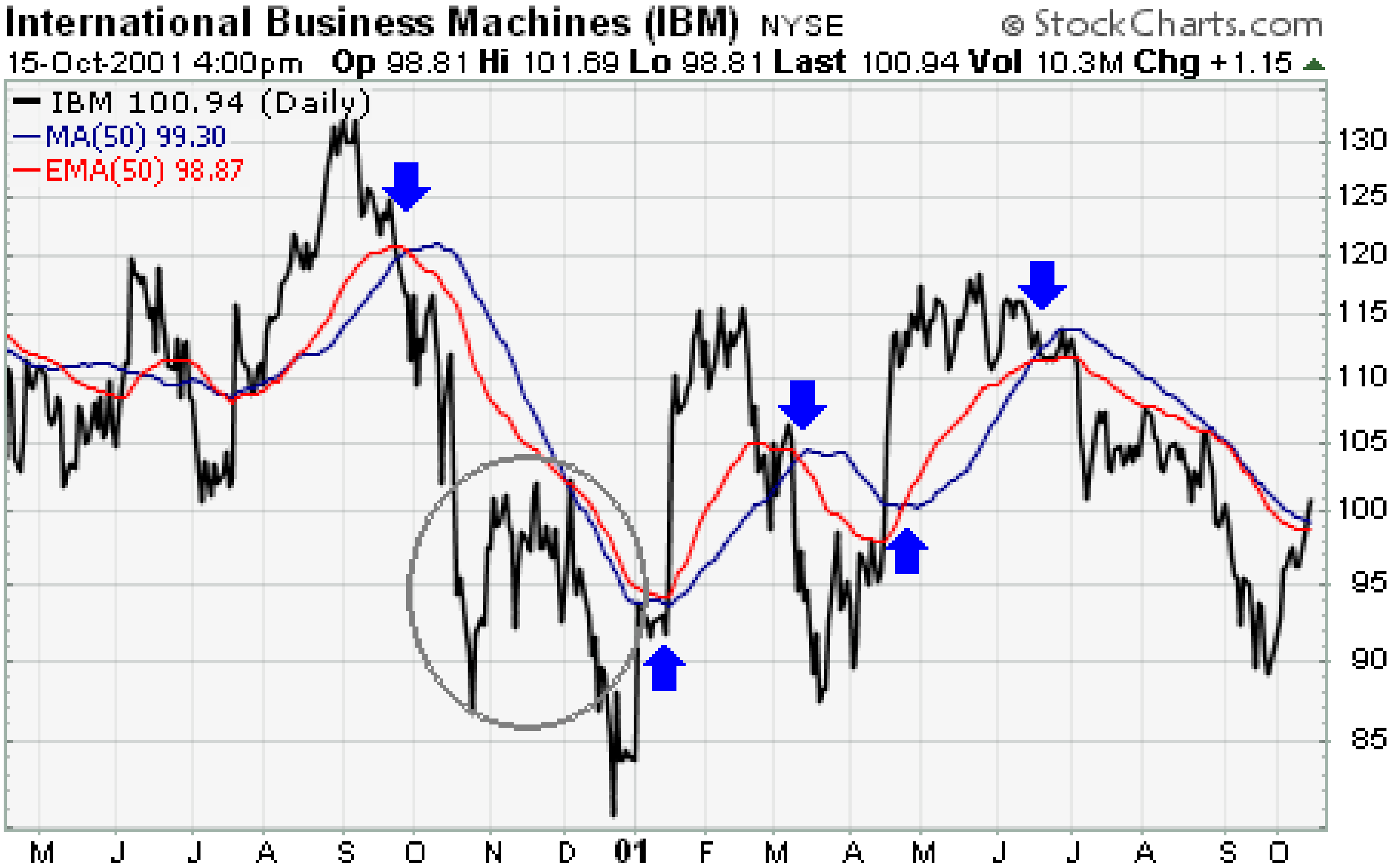
- An average of a number of specified historical time periods from the point on the chart. Moving averages offer an indication of the clear direction and slope of the trend in the market.

- The two most popular types of moving averages are the Simple Moving Average (SMA) and the Exponential Moving Average (EMA).

- SMA is formed by computing the average (mean) price of a security over a specified number of periods. While it is possible to create moving averages from the Open, the High, and the Low data points, most moving averages are created using the closing price.

- EMA in order to reduce the lag in simple moving averages, technicians often use exponential moving averages (also called exponentially weighted moving averages).

SMA & EMA Chart..



Approaches of Technical Analysis

- **Supports & Resistances**
  - Pivot Analysis
  - Trend Channel Supports & Resistances
- **Trend line theory**
  - Fibonacci method
  - GANN Theory
  - Bollinger Band
- **Patterns**
  - Continuation and Reversal
- **Market Indicators**
  - Volume indicators
  - Momentum indicators

Supports & Resistances

Pivot Analysis Calculation:

Pivot Point = (H+L+C)/3

Resistance Level 1 = (2*PP)-L

Support Level 1 = (2*PP)-H

Resistance Level 2 = (PP-S1) + R1

Support Level 2 = PP - (R1 - S1)

Resistance Level 3 = H + 2*(PP - L)

Support Level 3 = L - 2*(H - PP)

Midpoint calculations:

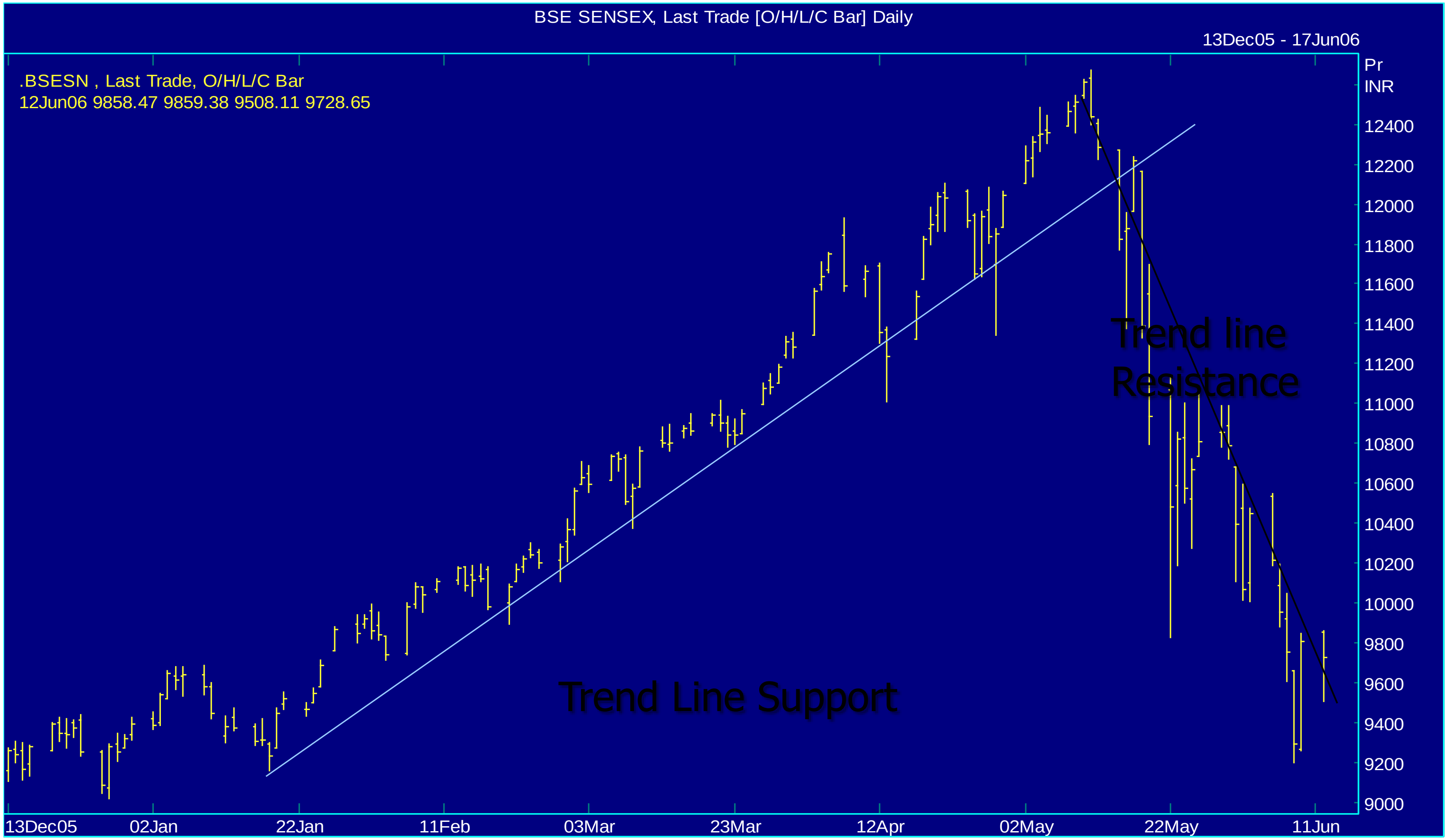
M1= (S2+S1)/2

M2= (S1+PP)/2

M3 = (R1+PP)/2

M4 = (R2+R1)/2

Trend Channel Supports & Resistances



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Trend line theory

Fibonacci Theory:

The Fibonacci numbers are 0, 1, 1, 2, 3, 5, 8, 13, ... (add the last two to get the next)

The series proceeds, any given number is 1.618 times the preceding number and 0.618% of the next number.

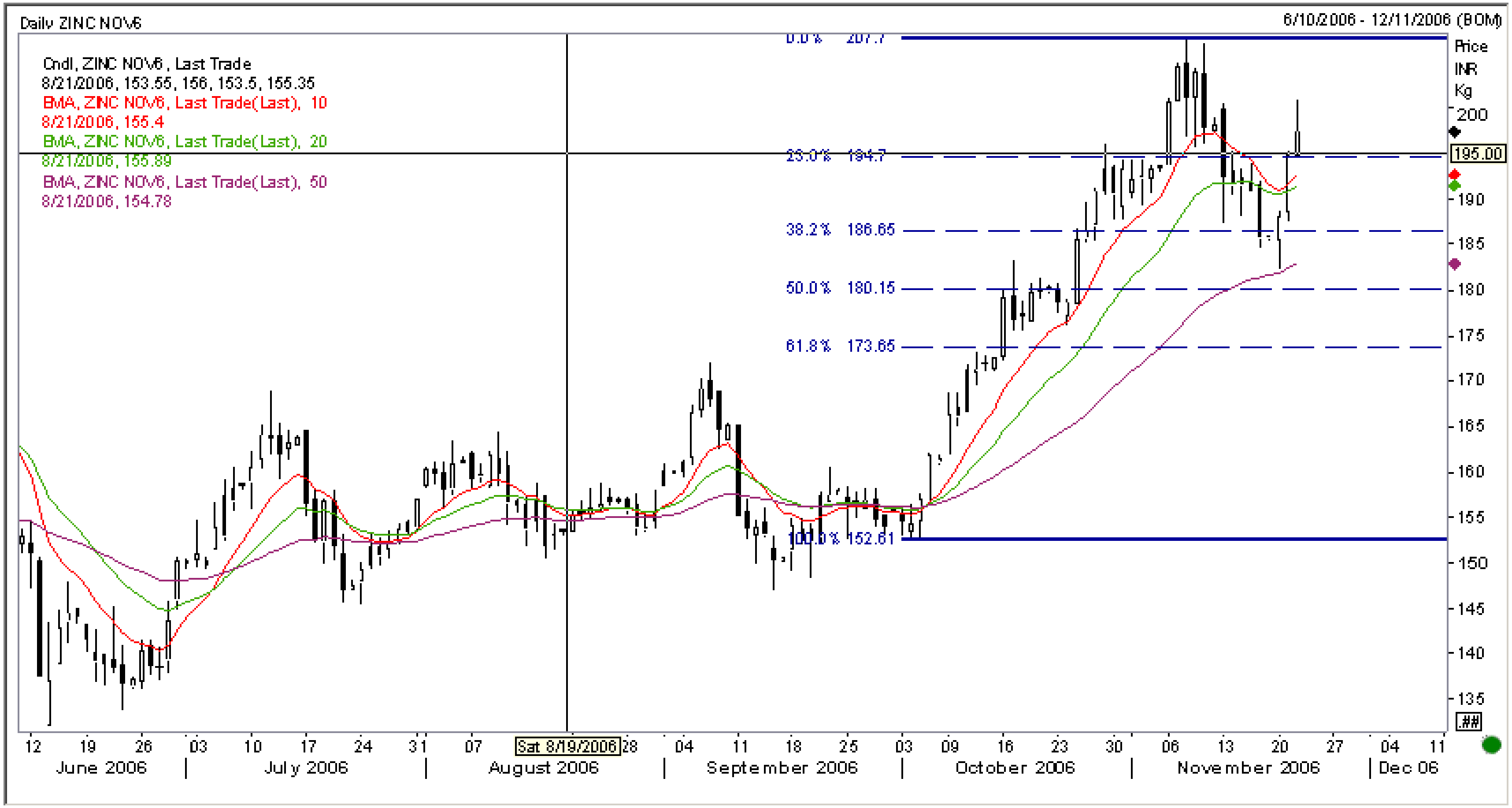
(34/55 = 55/89 = 144/233 =0.618) (55/34 =89/55 =233/144 =1.618), and 1.618 =1/0.618.

The other Fibonacci numbers are 0.382 and 0.50 commonly used in technical analysis have a less impressive background but are just as powerful in Technical analysis.

0.382=(1-.618)=(0.618*0.618), and 0.5 is the mean of the two numbers.

Continued…..

Fibonacci numbers are commonly used in Technical Analysis with or without a knowledge of Elliot wave analysis to determine potential support, resistance, and price objectives



GANN Theory

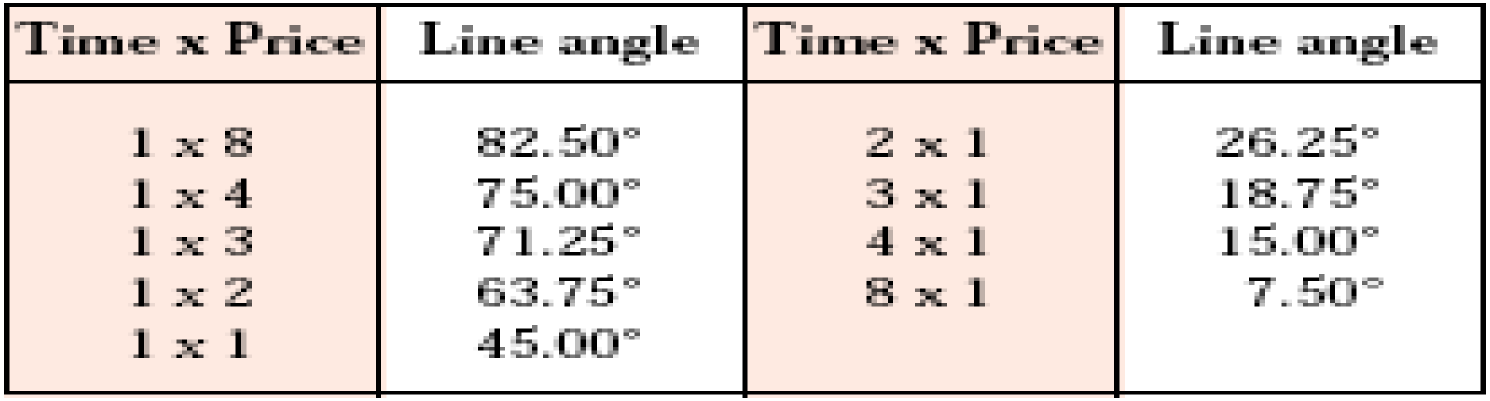
- **Features:**
  - Price, time and range are the only three factors to consider
  - The markets are cyclical in nature
- Based on these three premises, Gann's strategies revolved around three general areas of prediction

Price study– This uses support and resistance lines, pivot points and angles.
Time study – This looks at historically reoccurring dates, derived by natural and social means

Pattern study – This looks at market swings using trend lines and reversal patterns

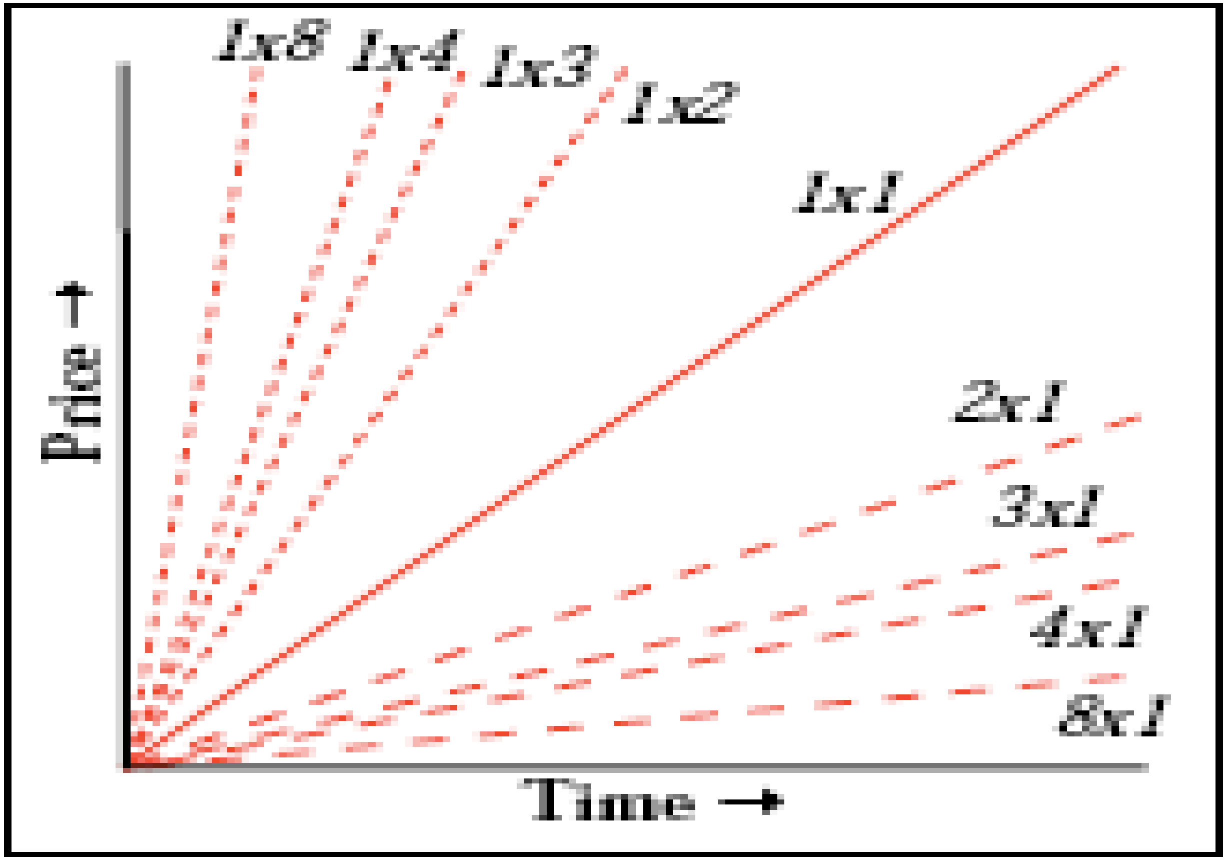
Continued…..

- Gann noted that there was a relationship between the extent of a price movement and the time the price took to reach its new level. If a share price moves one unit of price per one unit of time this results in a trend line of 45 . Gann described this as a 1 x 1 relationship or squaring of price and time.
- Gann reasoned that if the price breaks through the trend line the new trend line will have a mathematical relationship with the original one. For example, it could be 2x, 3x or 4x the price or it could be 1/2, 1/3, or 1/4 of the original.
- A Gann chart uses a series of parallel horizontal lines which act as price targets together with a series of trend lines which fan out at the various Gann ratios from the start of a trend.

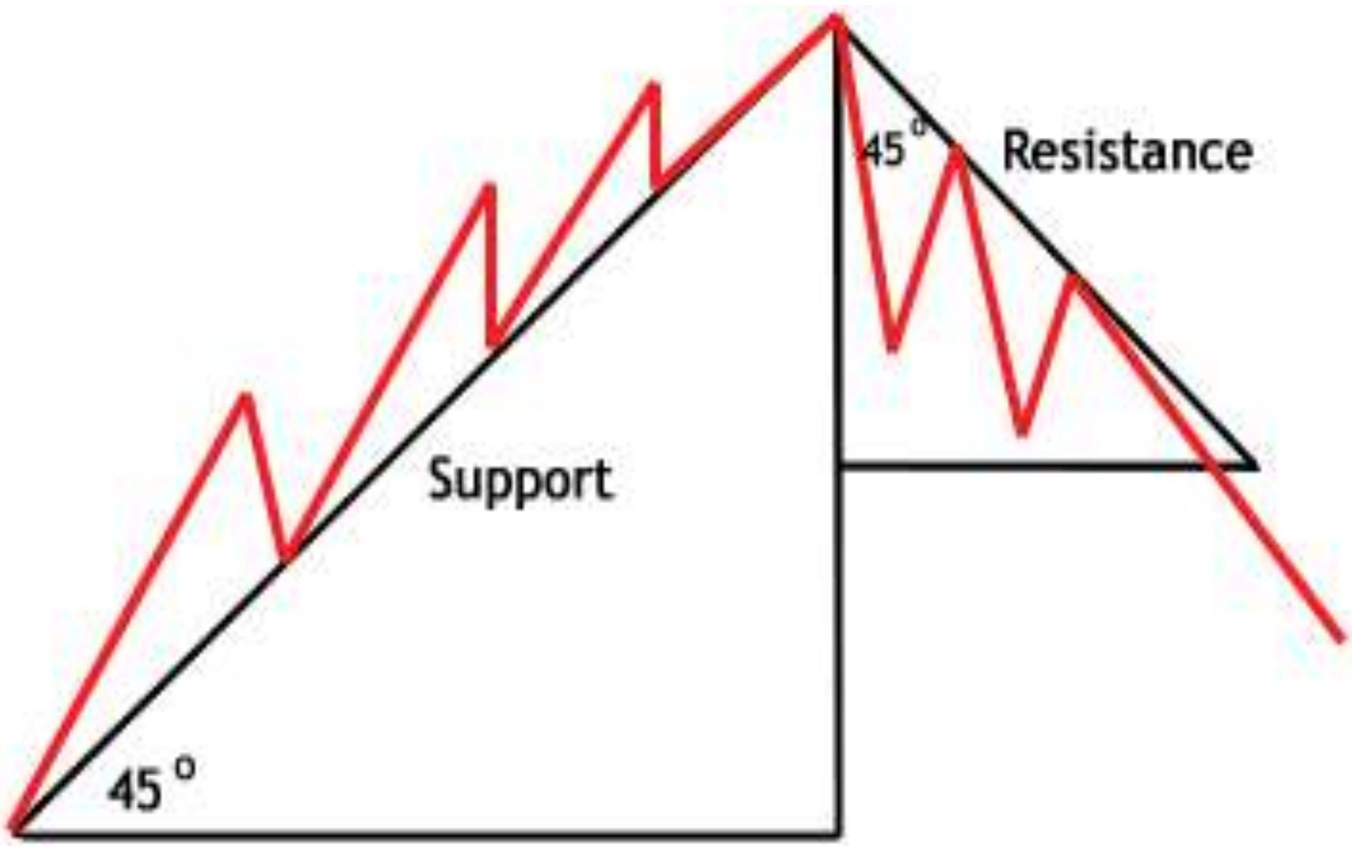


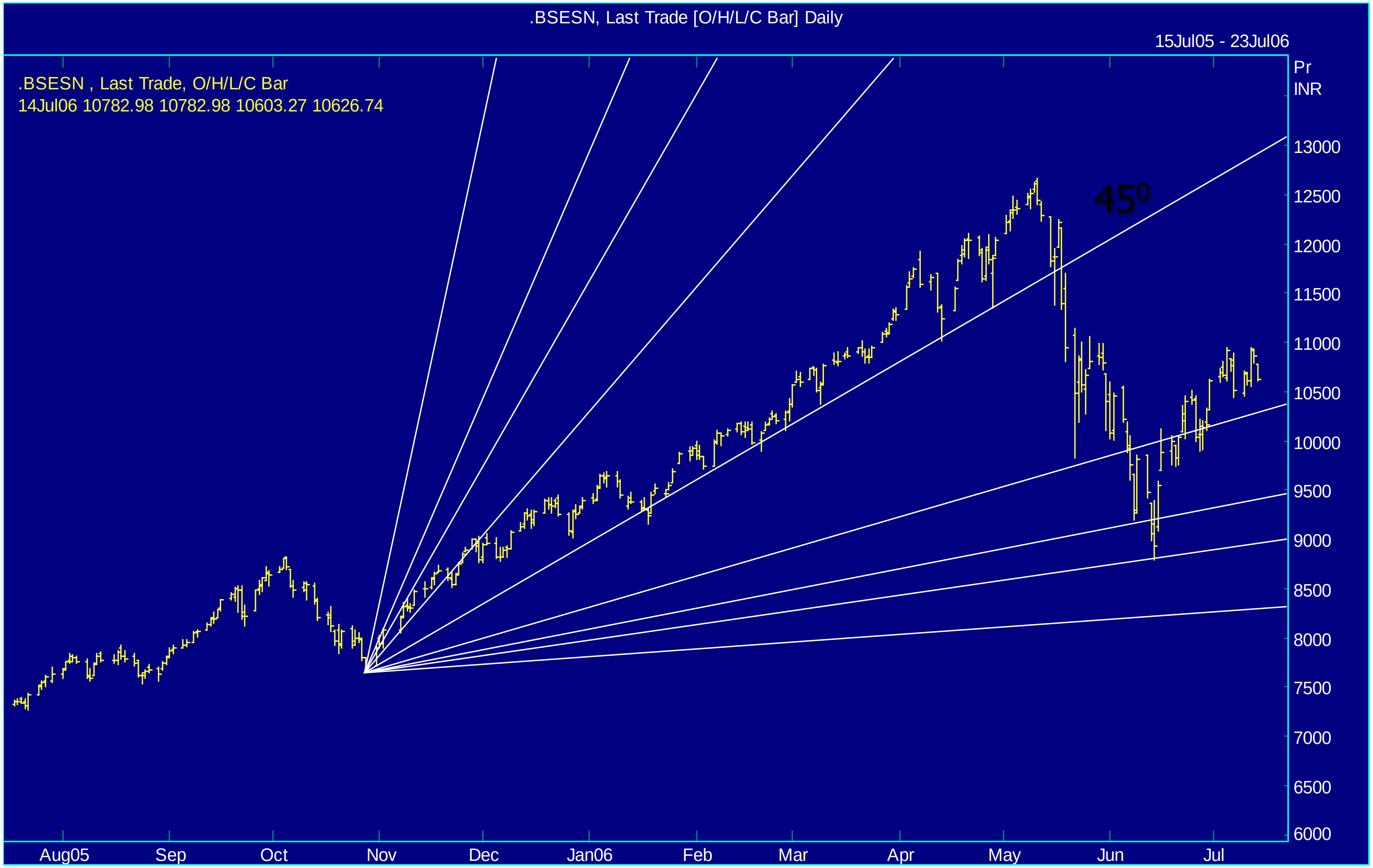
Time x Price	Line angle	Time x Price	Line angle
1 x 8	82.50°	2 x 1	26.25°
1 x 4	75.00°	3 x 1	18.75°
1 x 3	71.25°	4 x 1	15.00°
1 x 2	63.75°	8 x 1	7.50°
1 x 1	45.00°		

Gann Chart…


1x8
1x4
1x3
1x2
1x1
2x1
3x1
4x1
8x1
Price →
Time →

Gann Angle..


45°
Resistance
Support
45°


.BSESN, Last Trade [O/H/L/C Bar] Daily
15Jul05 - 23Jul06
.BSESN , Last Trade, O/H/L/C Bar
14Jul06 10782.98 10782.98 10603.27 10626.74
Pr
INR
45⁰
13000
12500
12000
11500
11000
10500
10000
9500
9000
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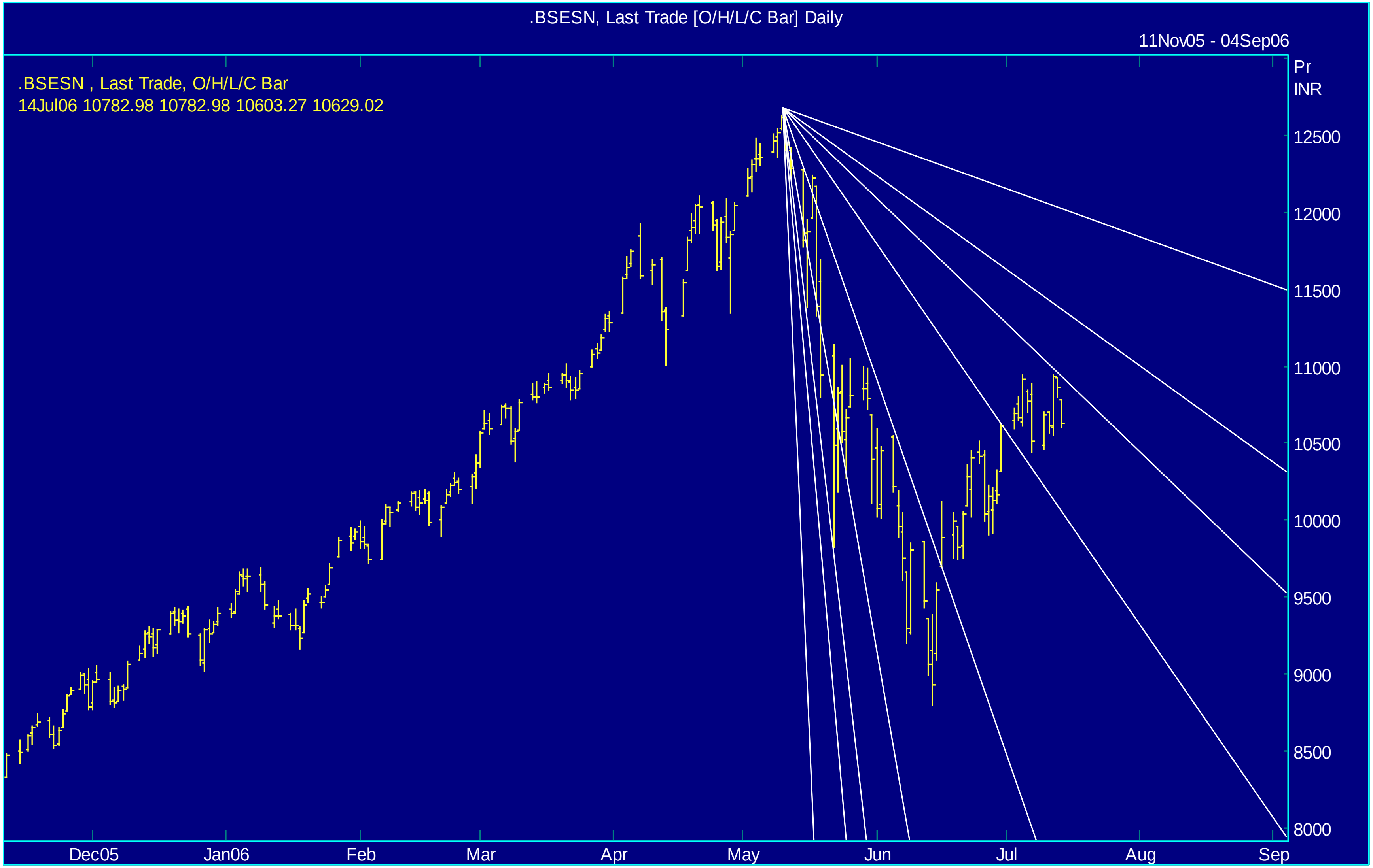
Jan06
Feb
Mar
Apr
May
Jun
Jul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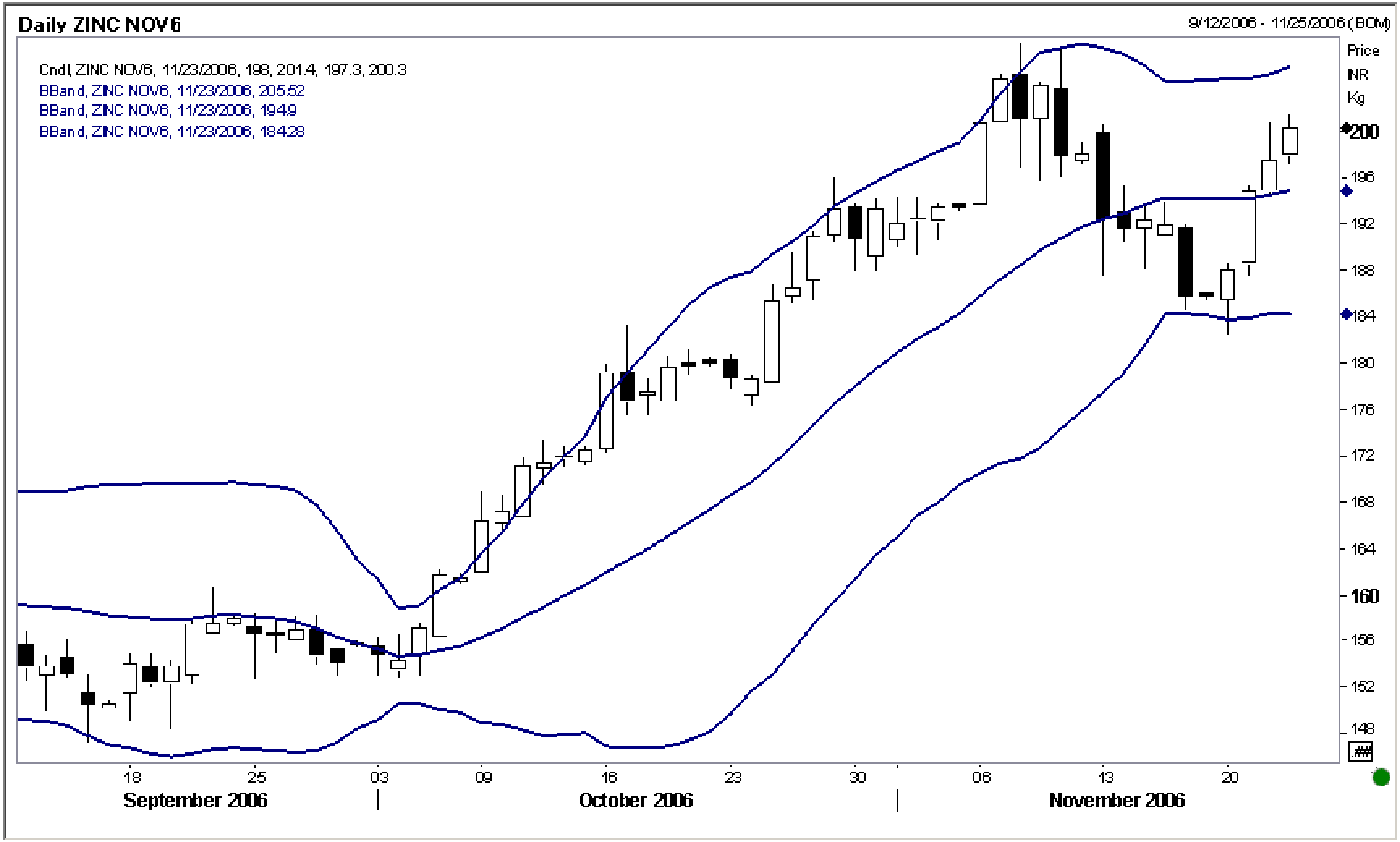
11Nov05 - 04Sep06
.BSESN , Last Trade, O/H/L/C Bar
14Jul06 10782.98 10782.98 10603.27 10629.02
Pr
INR
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
Dec05
Jan06
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep

Bollinger Band

- Identify overbought & oversold markets.
- Used in combination with oscillator for buy/sell signals.
- With other indicators they can warn of impending price moves.
- With other indicators they can signal potential tops & bottoms.

continued…

Bollinger Band chart



- A simple moving average in the middle (sometimes omitted)
- An upper band (SMA plus 2 standard deviations)
- A lower band (SMA minus 2 standard deviations)
- Standard deviation is a statistical tool that provides a good indication of volatility. The bands react quickly and reflect periods of high and low volatility.

continued..

- Closing prices are most often used to compute Bollinger Bands. Other variations, including typical and weighted prices, can also be used.
- Typical Price = (high + low + close)/3

  Weighted Price = (high + low + close + close)/4
- Bollinger recommends using a 20-day simple moving average for the center band and 2 standard deviations for the outer bands.
- The length of the moving average and number of deviations can be adjusted to better suit individual preferences and specific characteristics of an instrument.

- Double bottom buy: A double bottom buy signal is given when prices penetrate the lower band and remain above the lower band after a subsequent low forms.

- Double top sell: A sell signal is given when prices peak above the upper band and a subsequent peak fails to break above the upper band. The bearish setup is confirmed when prices decline below the middle band.

Patterns….

- Identifying chart patterns is simply a form of technical analysis
- Research has proven that some chart patterns have high forecasting probabilities.
- Two types of chart pattern…
    - Continuation.
    - Reversal.

Continuation Pattern…

Continuation pattern is nothing but continuation of the trend.

- Triangles.

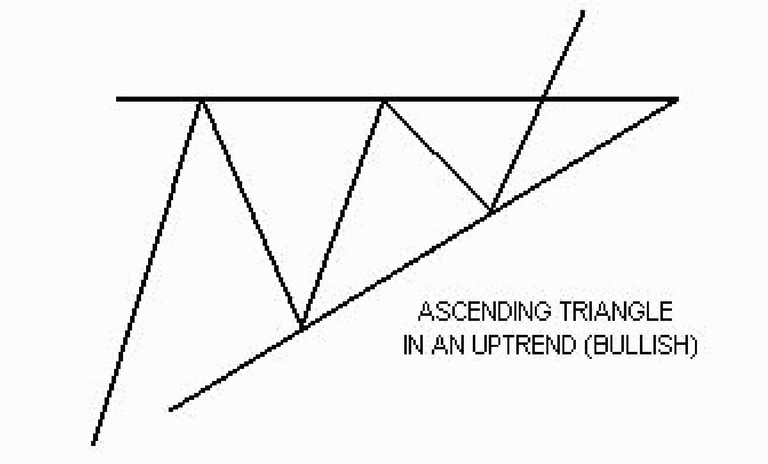
  (Ascending, Descending & Symmetric)

- Flags & Pennants.
- GAP Theory.

Triangle..

- Ascending Triangle:
  - Ascending triangles are generally considered bullish and are most reliable when found in an uptrend.

- The top part of the triangle appears flat, while the bottom part of the triangle has an upward slant.

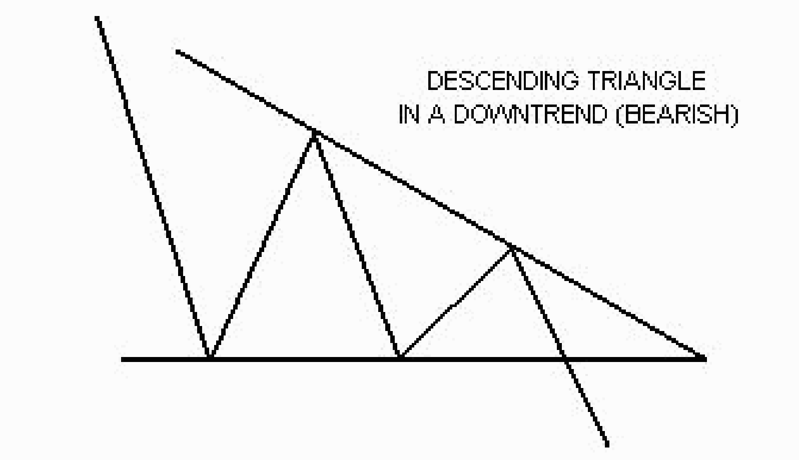

ASCENDING TRIANGLE
IN AN UPTREND (BULLISH)

Triangle..

- Descending Triangle:

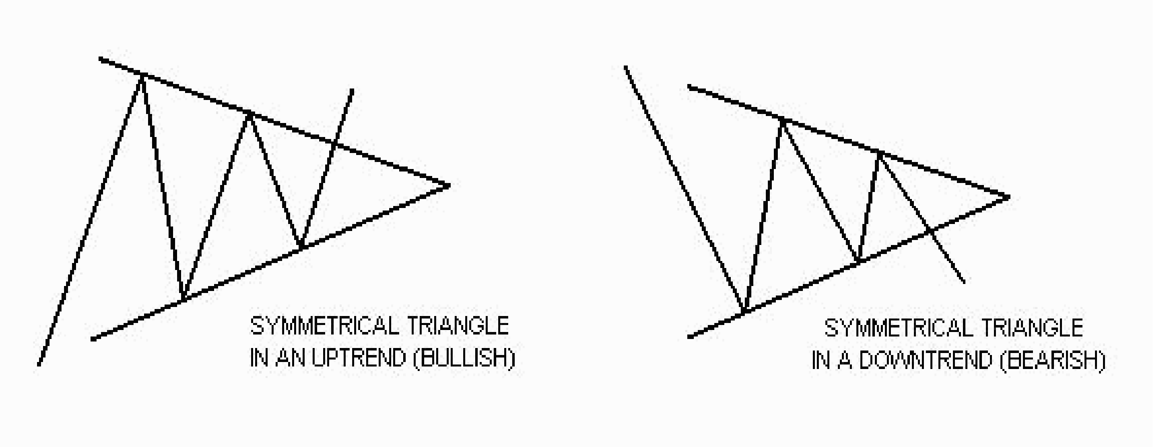
  The descending triangle is generally considered to be bearish and is usually found in downtrends.

- The top part of the triangle has a downward slant and the bottom is flat.


DESCENDING TRIANGLE
IN A DOWNTREND (BEARISH)

Triangle..

- Symmetric Triangle.
  - Symmetrical triangles can be characterized as areas of indecision.
  - A market pauses and future direction is questioned.
  - Eventually, this indecision is met with resolve and usually explodes out of this formation (often on heavy volume.)


SYMMETRICAL TRIANGLE
IN AN UPTREND (BULLISH)
SYMMETRICAL TRIANGLE
IN A DOWNTREND (BEARISH)

Flags & Pennants…

- Flags and Pennants…
  - Flags and pennants can be categorized as continuation patterns.
  - Usually represent only brief pauses in a dynamic market.
  - They are typically seen right after a big, quick move.
  - The market then usually takes off again in the same direction.
  - Bullish flags are characterized by lower tops and lower bottoms, with the pattern slanting against the trend. But unlike wedges, their trend lines run parallel.

Continued..

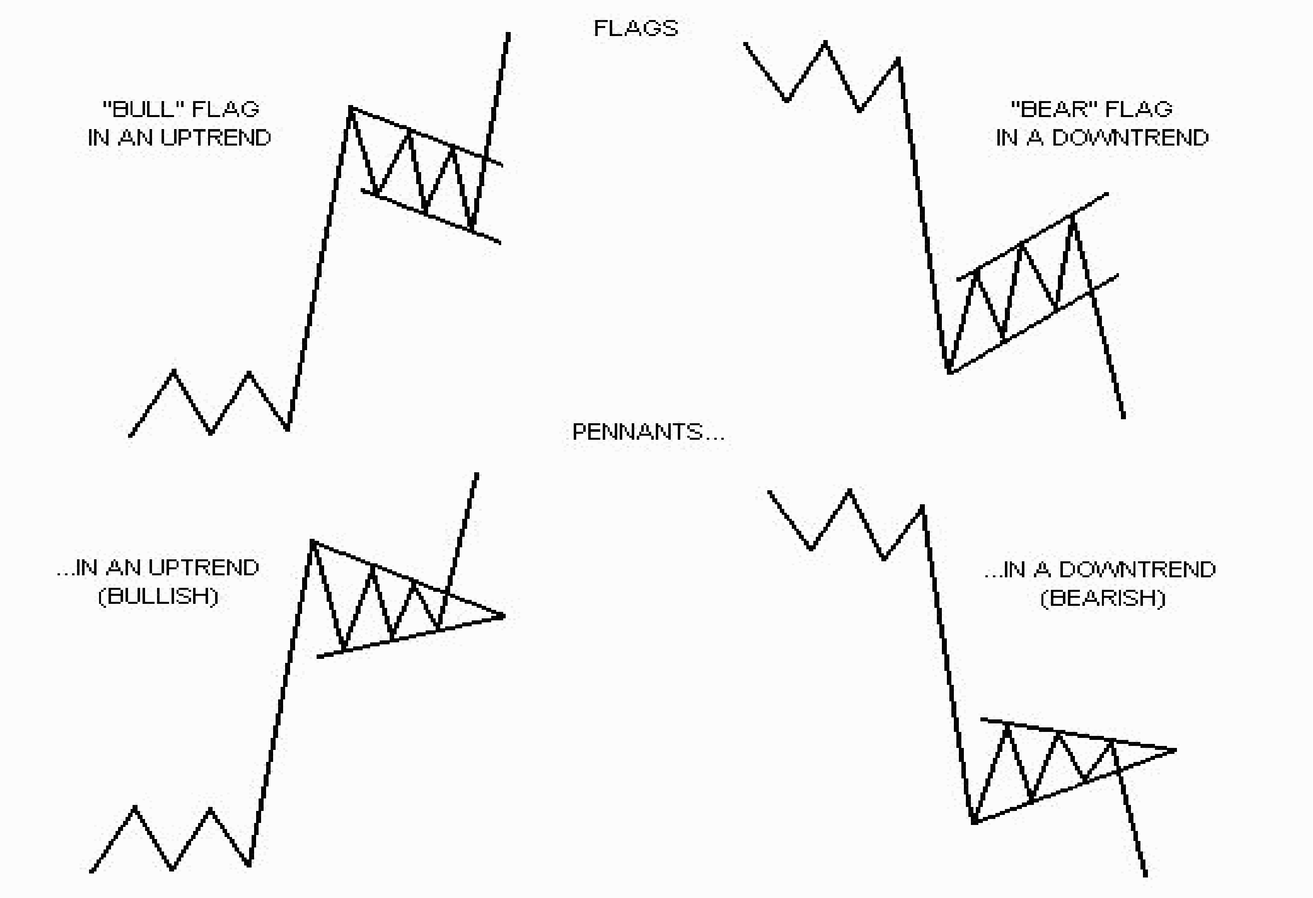
Flags & Pennants…

- Bearish flags are comprised of higher tops and higher bottoms. "Bear" flags also have a tendency to slope against the trend.
- Pennants look very much like symmetrical triangles. But pennants are typically smaller in size (volatility) and duration.
- Volume generally contracts during the pause with an increase on the breakout.

Continued….

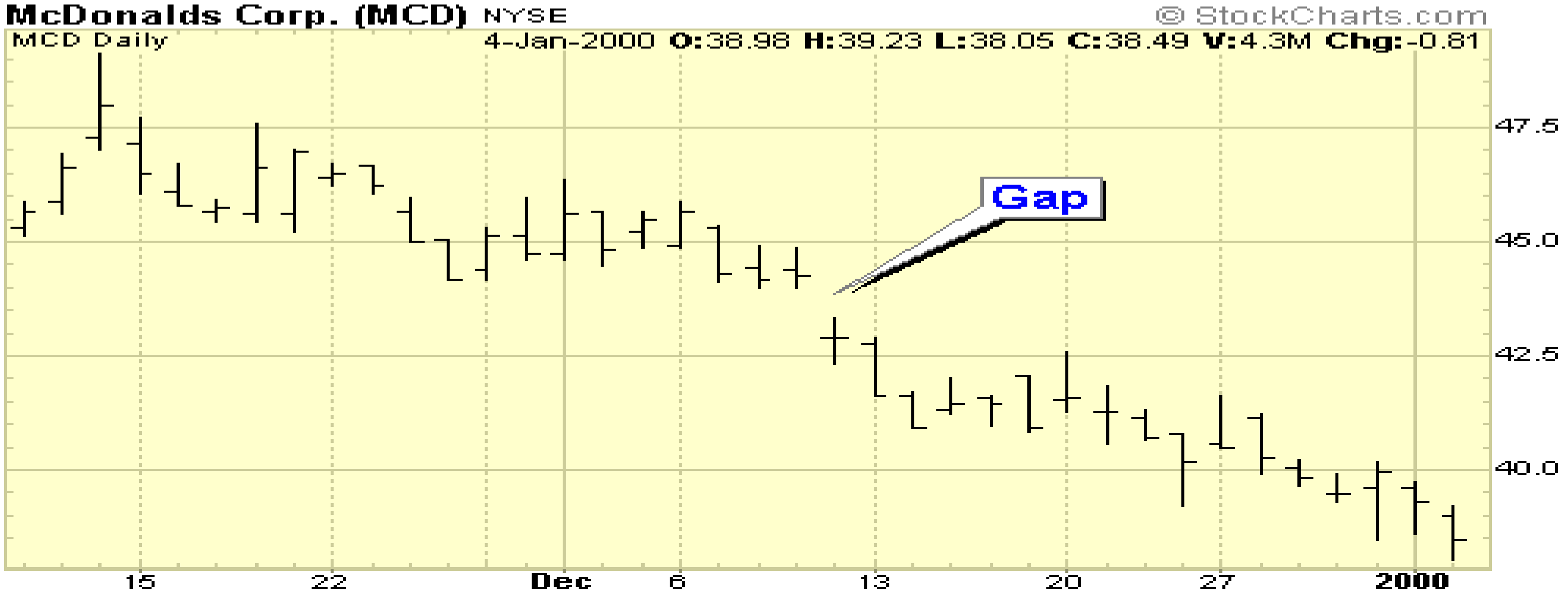
Flags & Pennants…

Charts…


FLAGS
"BULL" FLAG
IN AN UPTREND
"BEAR" FLAG
IN A DOWNTREND
PENNANTS...
...IN AN UPTREND
(BULLISH)
...IN A DOWNTREND
(BEARISH)

GAP Theory…

- A gap is an area on a price chart in which there were no trades.
- Normally this occurs after the close of the market on one day and the next day's open.

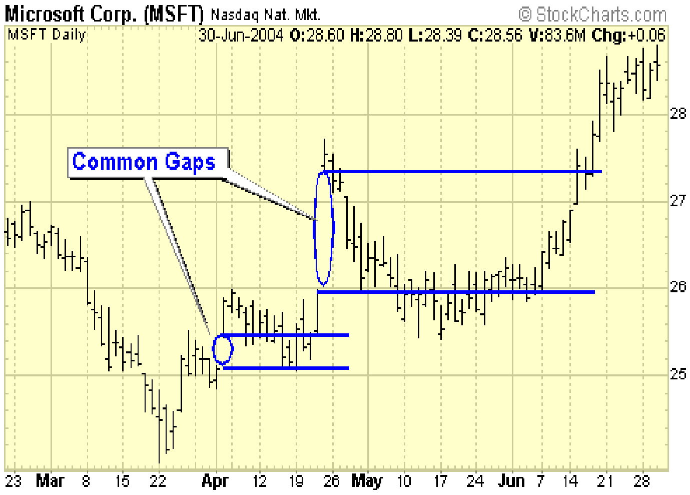


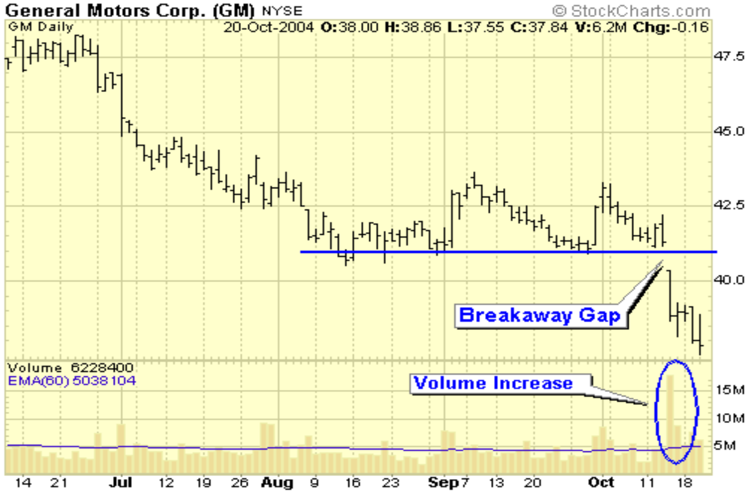
Types of Gaps…

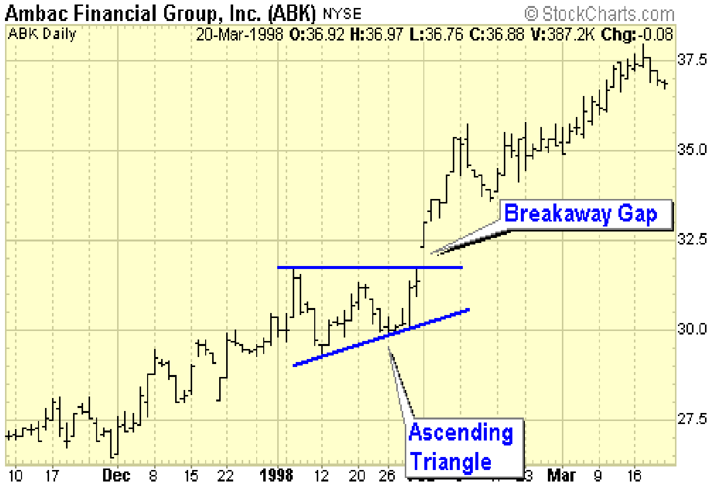
- **Common Gaps**
  - A trading gap or an area gap, the common gap is usually uneventful.
  - They appear in trading range or congestion area.
- **Breakaway Gaps**
  - Occur when the price action is breaking out of their trading range or congestion area. (Price range in which market has traded for some period of time.)
  - Volume increases instantly.
- **Runaway Gaps**
  - Increase interest in the security. Represents traders who failed to get into the security during initial move.
- **Exhaustion Gaps**
  - Starts near the end of a good up or down trend.
  - Signals the end of the move.

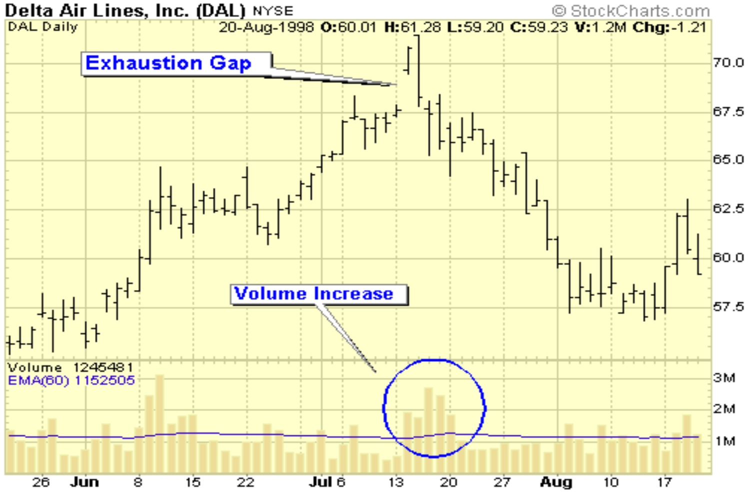
Continued….

Gaps Charts…


Microsoft Corp. (MSFT) Nasdaq Nat. Mkt.
© StockCharts.com
MSFT Daily
30-Jun-2004 O:28.60 H:28.80 L:28.39 C:28.56 V:83.6M Chg:+0.06
Common Gaps
28
27
26
25
23 Mar 8 15 22 Apr 12 19 26 May 10 17 24 Jun 7 14 21 28


General Motors Corp. (GM) NYSE
© StockCharts.com
GM Daily
20-Oct-2004 O:38.00 H:38.86 L:37.55 C:37.84 V:6.2M Chg:-0.16
47.5
45.0
42.5
40.0
Breakaway Gap
Volume 6228400
EMA(60) 5038104
Volume Increase
15M
10M
5M
14 21 Jul 12 19 26 Aug 9 16 23 Sep 7 13 20 Oct 11 18


Ambac Financial Group, Inc. (ABK) NYSE
© StockCharts.com
ABK Daily
20-Mar-1998 O:36.92 H:36.97 L:36.76 C:36.88 V:387.2K Chg:-0.08
37.5
35.0
32.5
30.0
27.5
Breakaway Gap
Ascending Triangle
10 17 Dec 8 15 22 1998 12 20 26 Mar 9 16


Delta Air Lines, Inc. (DAL) NYSE
© StockCharts.com
DAL Daily
20-Aug-1998 O:60.01 H:61.28 L:59.20 C:59.23 V:1.2M Chg:-1.21
Exhaustion Gap
70.0
67.5
65.0
62.5
60.0
57.5
Volume Increase
Volume 1245481
EMA(60) 1152505
3M
2M
1M
26 Jun 8 15 22 Jul 6 13 20 27 Aug 10 17

Reversal Patterns…

- **Double top**
  - Double Tops appear on a chart in the shape of the letter "M" and are quite common.
  - Volume is important to confirm the formation. (Greater volume in the 1st peak than the 2nd one.
- **Double bottom**
  - A double bottom is the opposite of a double top and appears as a letter "W" on a chart.
  - Volume (Greater volume in the 2nd peak than the 1st one.)
- **Triple top/bottom**
  - The triple top is a reversal pattern made up of three equal highs followed by a break below support. In contrast to the bottom.
- **Rounding tops/ Bottom**
  - The rounding top reflects the market's perception that the underlying fundamentals driving the prices are changing, but the turn is markedly slow.

Continued…

Reversal Patterns…

- Head & Shoulder.
- A technical analysis term used to describe a chart formation in which a stock's price:

  1. Rises to a peak and subsequently declines.
  2. Then, the price rises above the former peak and again declines.
  3. And finally, rises again, but not to the second peak, and declines once more.

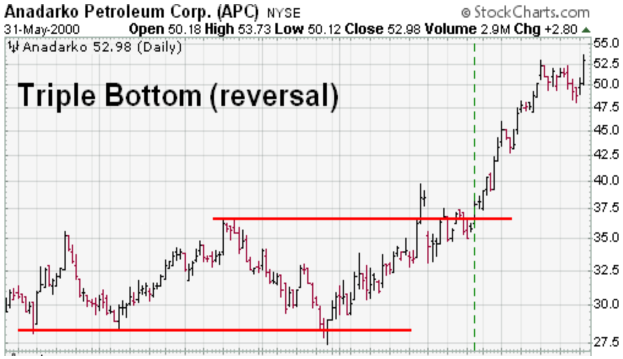
- The first and third peaks are shoulders, and the second peak forms the head.
- The "head-and-shoulders" pattern is believed to be one of the most reliable trend-reversal patterns.

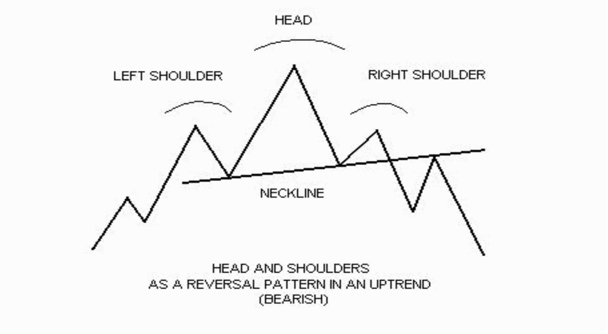
Continued….

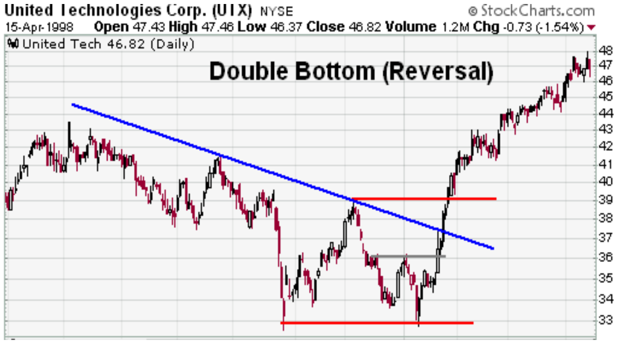
Reversal Patterns…

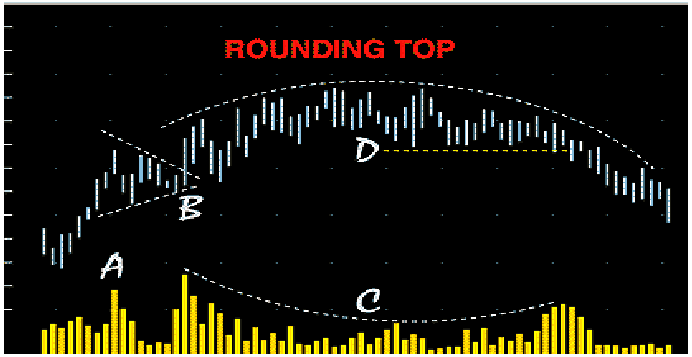
- **Wedges**
  - Draw trend lines along both the bottom and top of a security price chart, you will sometimes get a trend channel and you'll sometimes get a wedge shape similar to the one below
  - If the wedge is pointing upwards, the security price will fall when the price line cuts across the lower line of the wedge
  - If the wedge is pointing downwards (a falling wedge), the share price will rise when the price line cuts across the upper line of the wedge
  - If the wedge is level - in other words not pointing up or down - then this is a consolidation' pattern and you can expect the trends to continue. (i.e. no reversal)
  - wedge formations take place over a period of 3-4 weeks. This is because they occur as reversals of intermediate and minor trends

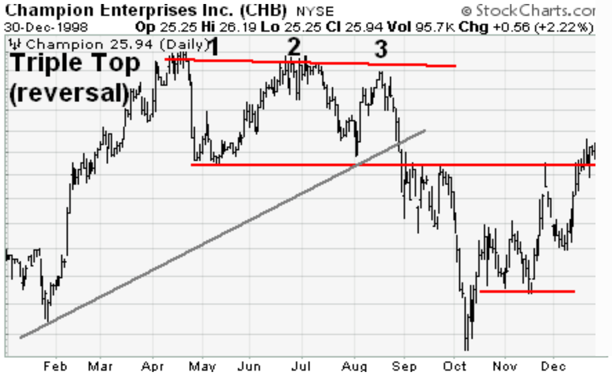
Reversal Patterns chart..

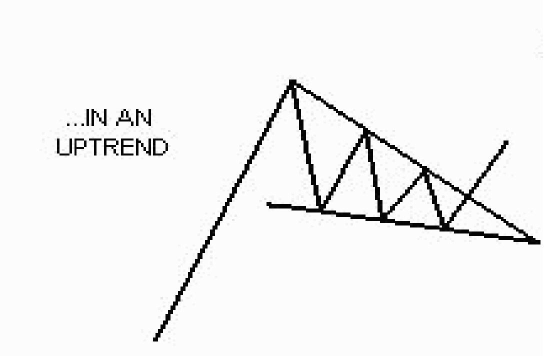


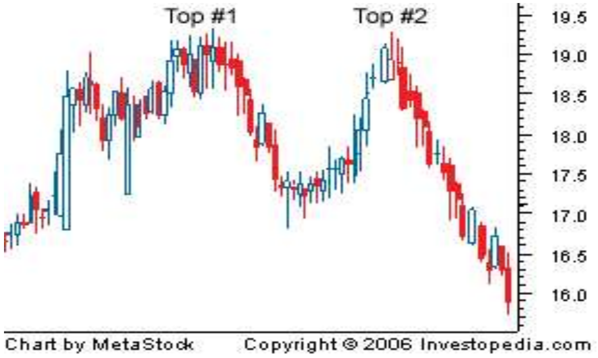

HEAD
LEFT SHOULDER
RIGHT SHOULDER
NECKLINE
HEAD AND SHOULDERS
AS A REVERSAL PATTERN IN AN UPTREND
(BEARISH)








...IN AN
UPTREND



Market Indicators

- Volume Indicators:
  - Volume Price Trend Indicator (VPT): A technical indicator consisting of a cumulative volume line that adds or subtracts a multiple of the percentage change in security prices trend and current volume, depending upon their upward or downward movements.
  - This indicator is used to determine the balance between a security's demand and supply. The percentage change in the share price trend denotes the relative supply or demand of a particular security, while volume indicates the actual size of the forces.

- Momentum Indicators:

  Momentum is the changing velocity of a price when related to security analysis. Momentum indicators are designed to track momentum in the price of a tradable to help identify the relative enthusiasm of buyers and sellers involved in the price trend development.

- Types of Momentum indicators:
  - Relative Strength Index (RSI)
  - Moving Average Convergence and Divergence (MACD)
  - Stochastic Oscillator

Momentum Indicators

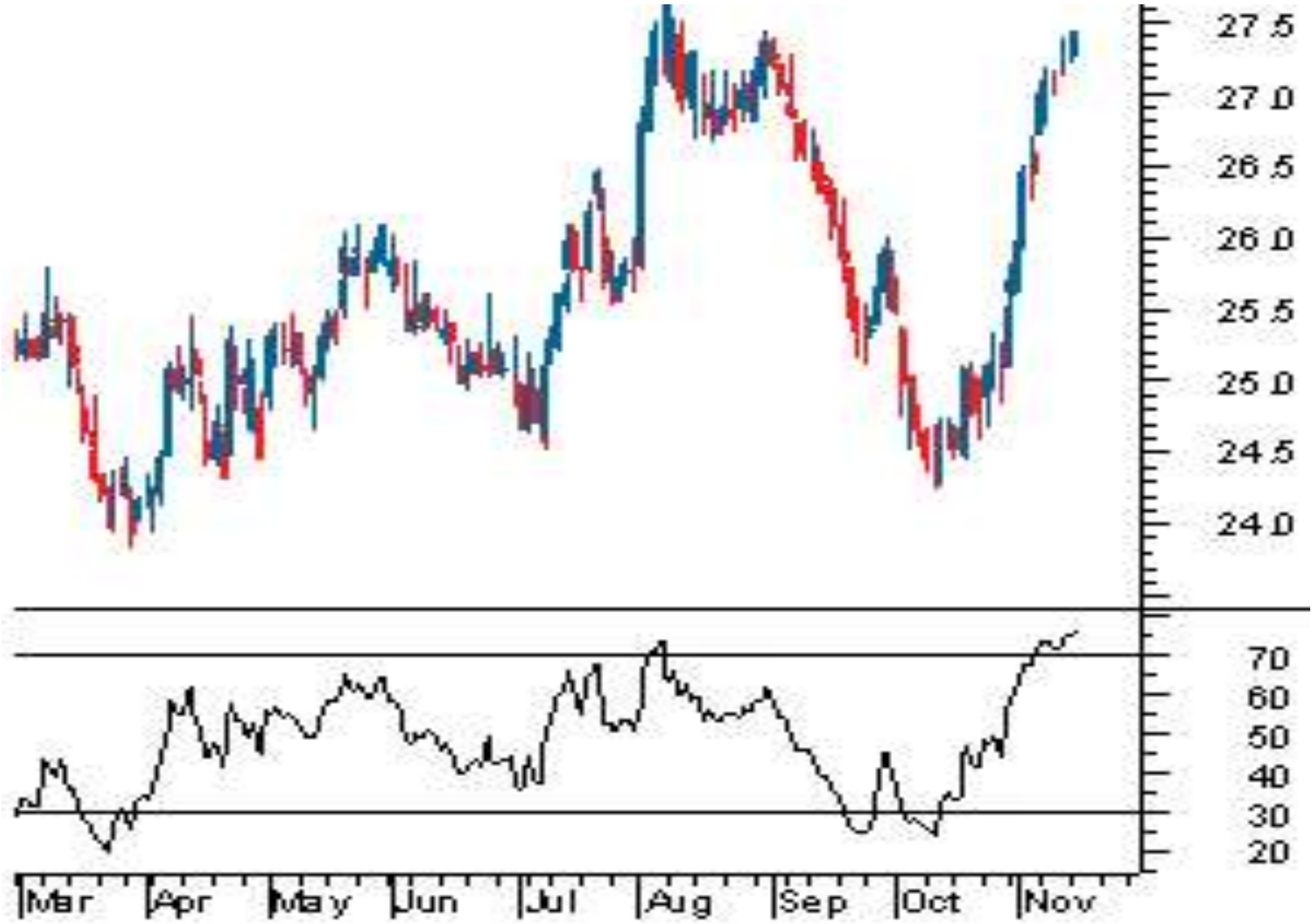
- Relative Strength Index:
- A technical momentum indicator that compares the magnitude of recent gains to recent losses in an attempt to determine overbought and oversold conditions of an asset.

formula: $$\text{RSI} = 100 - \frac{100}{1+\text{RS}}$$

- RS = Average of x days' up closes / Average of x days' down closes

The RSI ranges from 0 to 100. An asset is deemed to be overbought once the RSI approaches the 70 level, meaning that it may be getting overvalued and is a good candidate for a pullback. Likewise, if the RSI approaches 30, it is an indication that the asset may be getting oversold and therefore likely to become undervalued

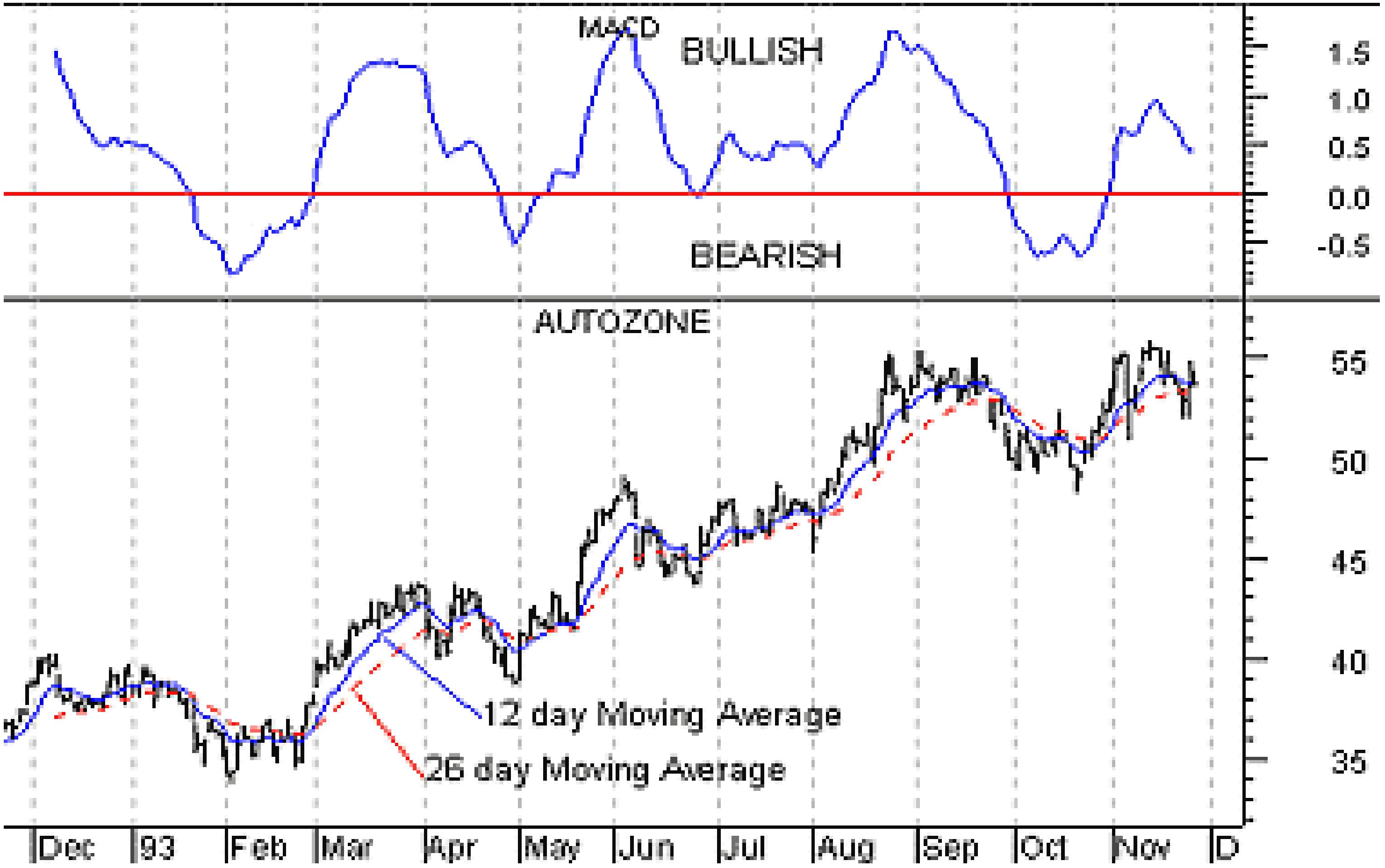
RSI Chart


27.5
27.0
26.5
26.0
25.5
25.0
24.5
24.0
70
60
50
40
30
20
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov

MACD…

- The most popular formula for the "standard" MACD is the difference between a security's 26-day and 12-day exponential moving averages.
- Usually, a 9-day EMA of MACD is plotted along side to act as a trigger line.
- A bullish crossover occurs when MACD moves above its 9-day EMA and a bearish crossover occurs when MACD moves below its 9-day EMA.

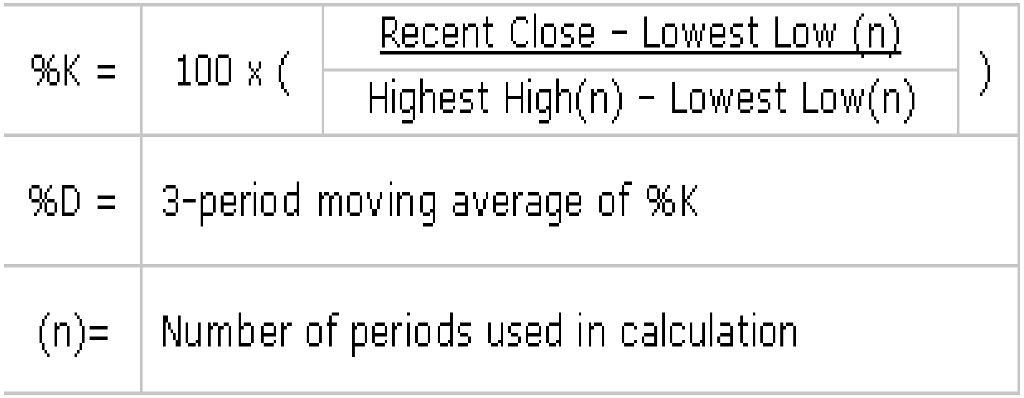
MACD Chart…


MACD
BULLISH
BEARISH
1.5
1.0
0.5
0.0
-0.5
AUTOZONE
55
50
45
40
35
12 day Moving Average
26 day Moving Average
Dec
93
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
D

Stochastic Oscillator

- The Stochastic Oscillator is a momentum indicator that shows the location of the current close relative to the high/low range over a set number of periods. Closing levels that are consistently near the top of the range indicate accumulation (buying pressure) and those near the bottom of the range indicate distribution (selling pressure).
- Three types of Stochastics: Fast (%k), Slow (%D) and Full.

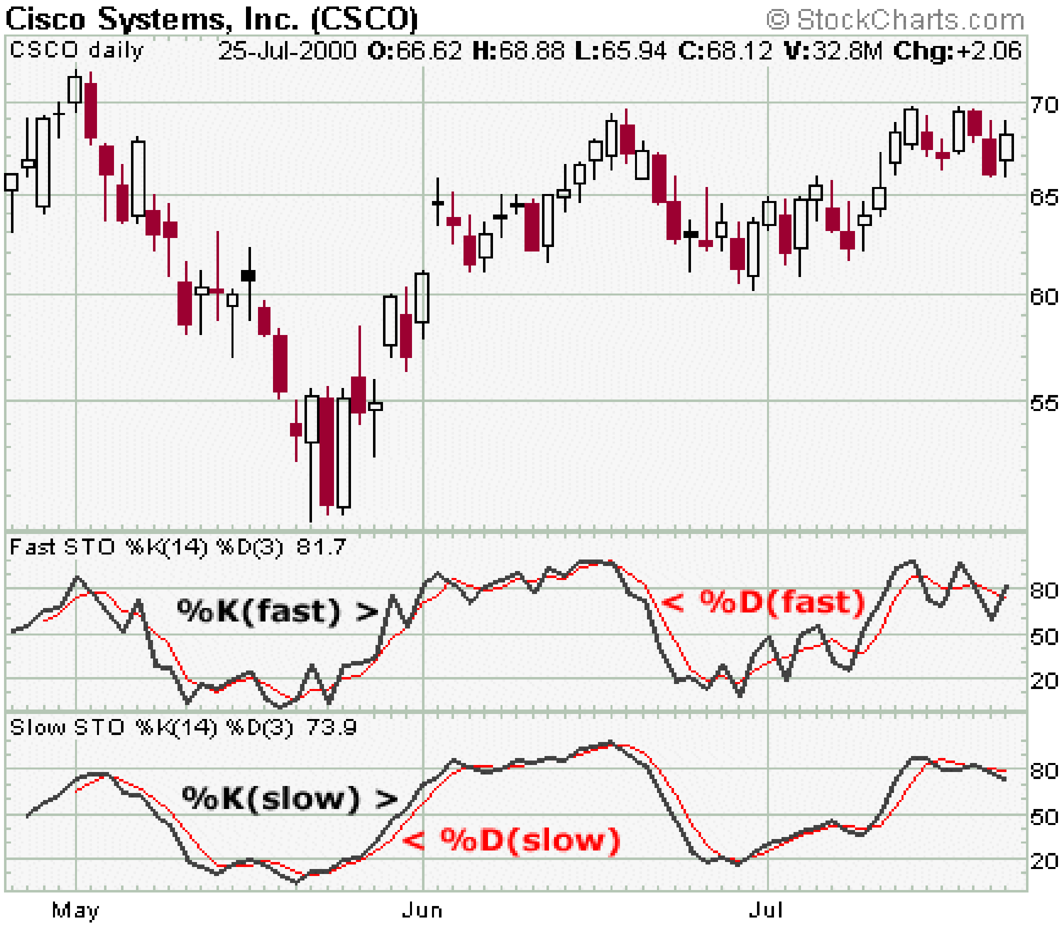
Calculation:



%K =	100 x (	$\frac{\text{Recent Close - Lowest Low (n)}}{\text{Highest High(n) - Lowest Low(n)}}$	)
%D =	3-period moving average of %K		
(n)=	Number of periods used in calculation		

Continued…

Stochastic Chart…

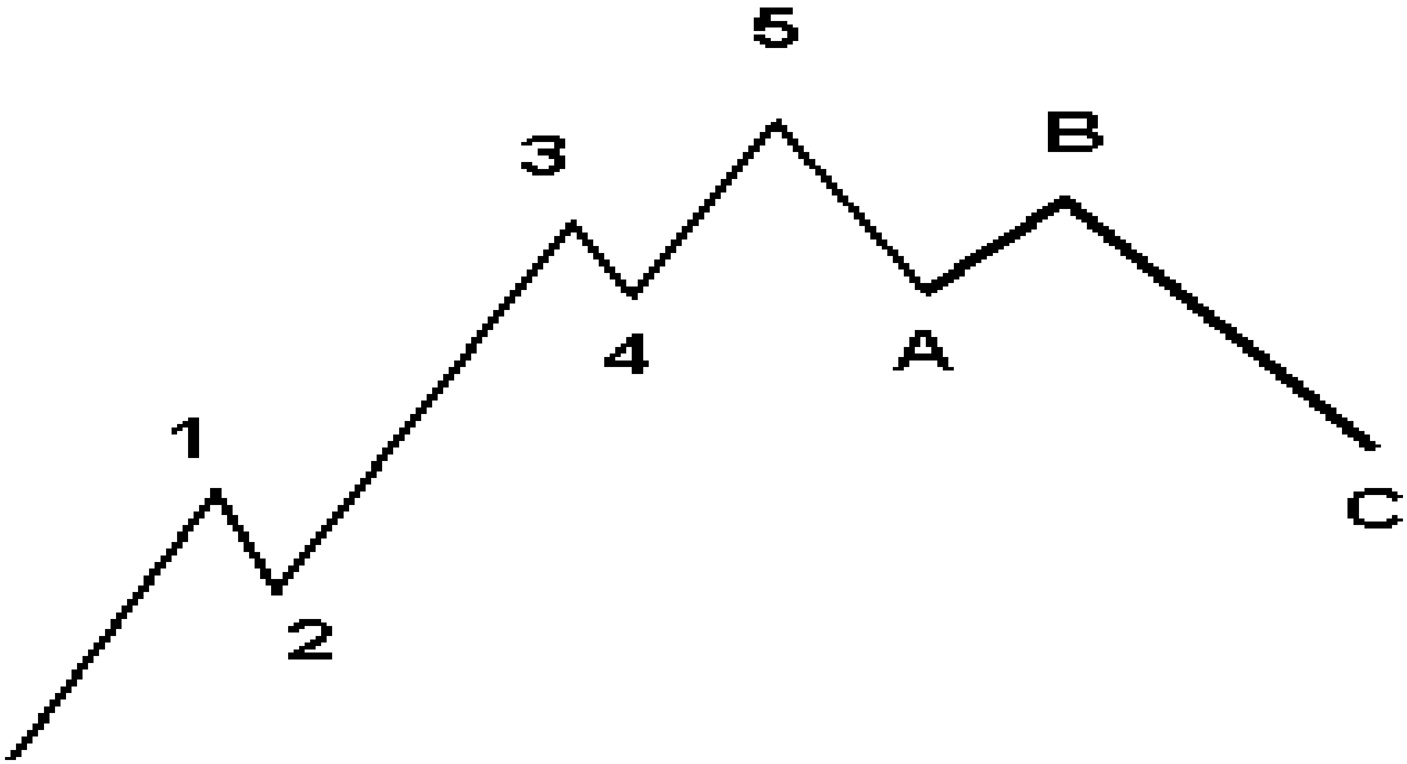


ELLIOT WAVE THEORY

Elliot Wave Theory….

Elliott Wave Theory interprets market actions in terms of recurrent price structures. Basically, Market cycles are composed of two major types of Wave : ***Impulse Wave and Corrective Wave.*** For every impulse wave, it can be sub-divided into 5 - wave structure (1-2-3-4-5), while for corrective wave, it can be sub-divided into 3 - wave structures (a-b- c).

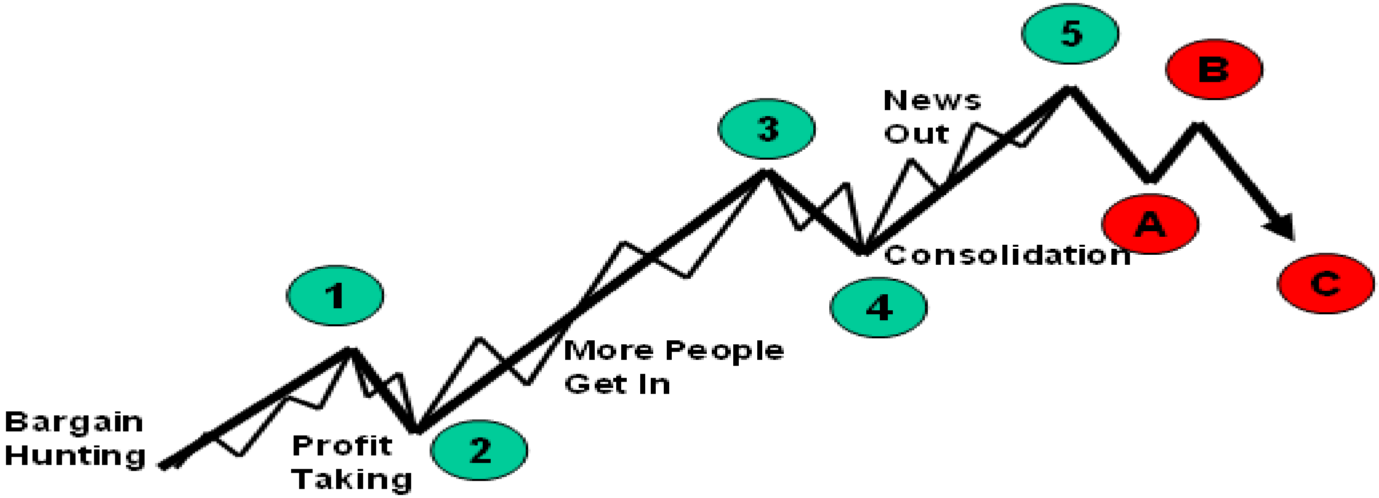
Elliot Wave Theory….



Elliot Wave Theory….

- Practically all developments which result from (human) social-economic processes follow a law that causes them to repeat themselves in similar and constantly recurring serials of waves or impulses of definite number and pattern..."

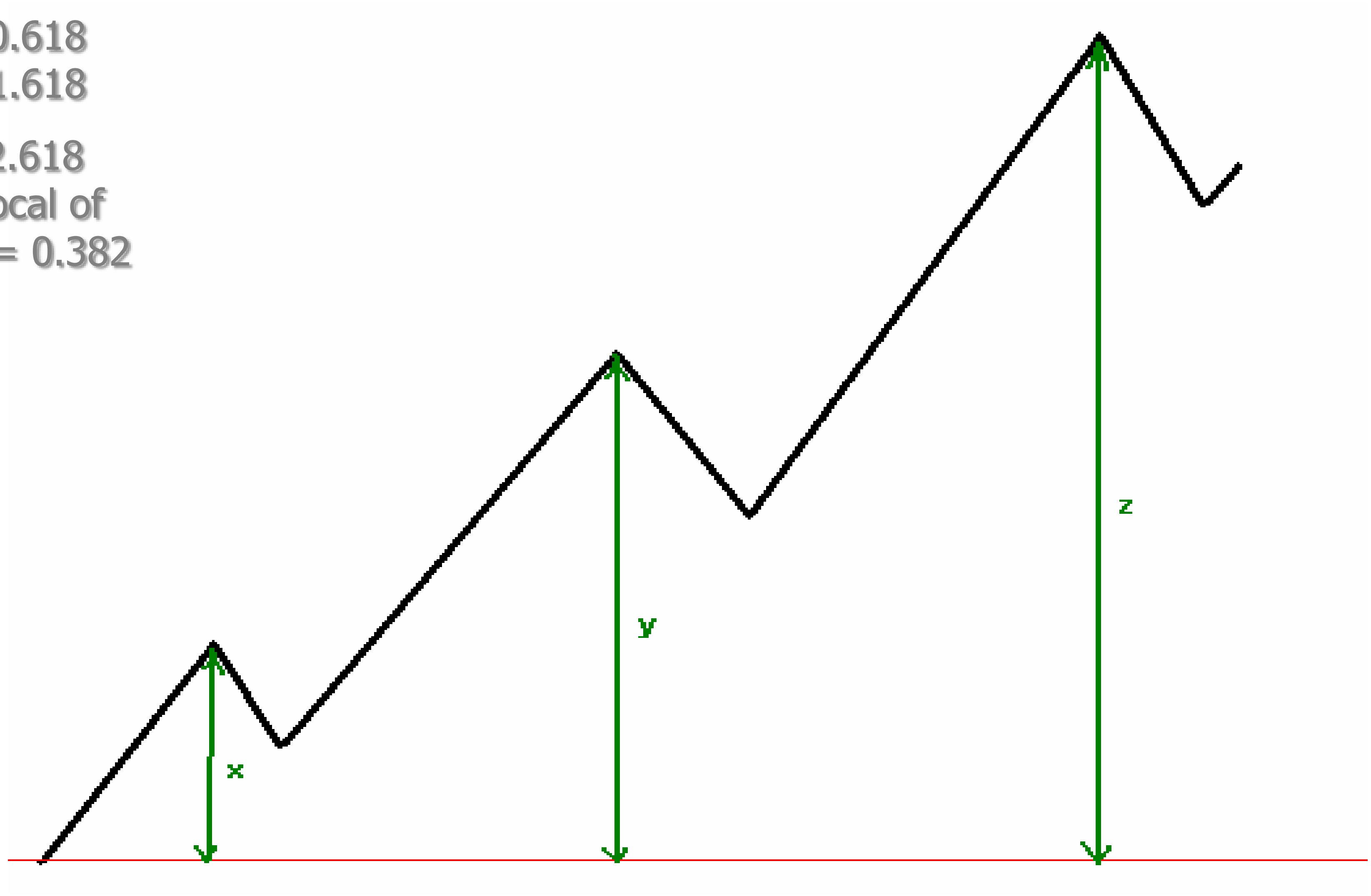
  R. N. Elliott, Nature's Law-The Secret of the Universe.


5
B
News
Out
3
A
Consolidation
C
1
4
More People
Get In
Bargain
Hunting
Profit
Taking
2

Elliot Wave Theory….

x/y = 0.618
y/x = 1.618

z/x = 2.618
Reciprocal of
2.618 = 0.382

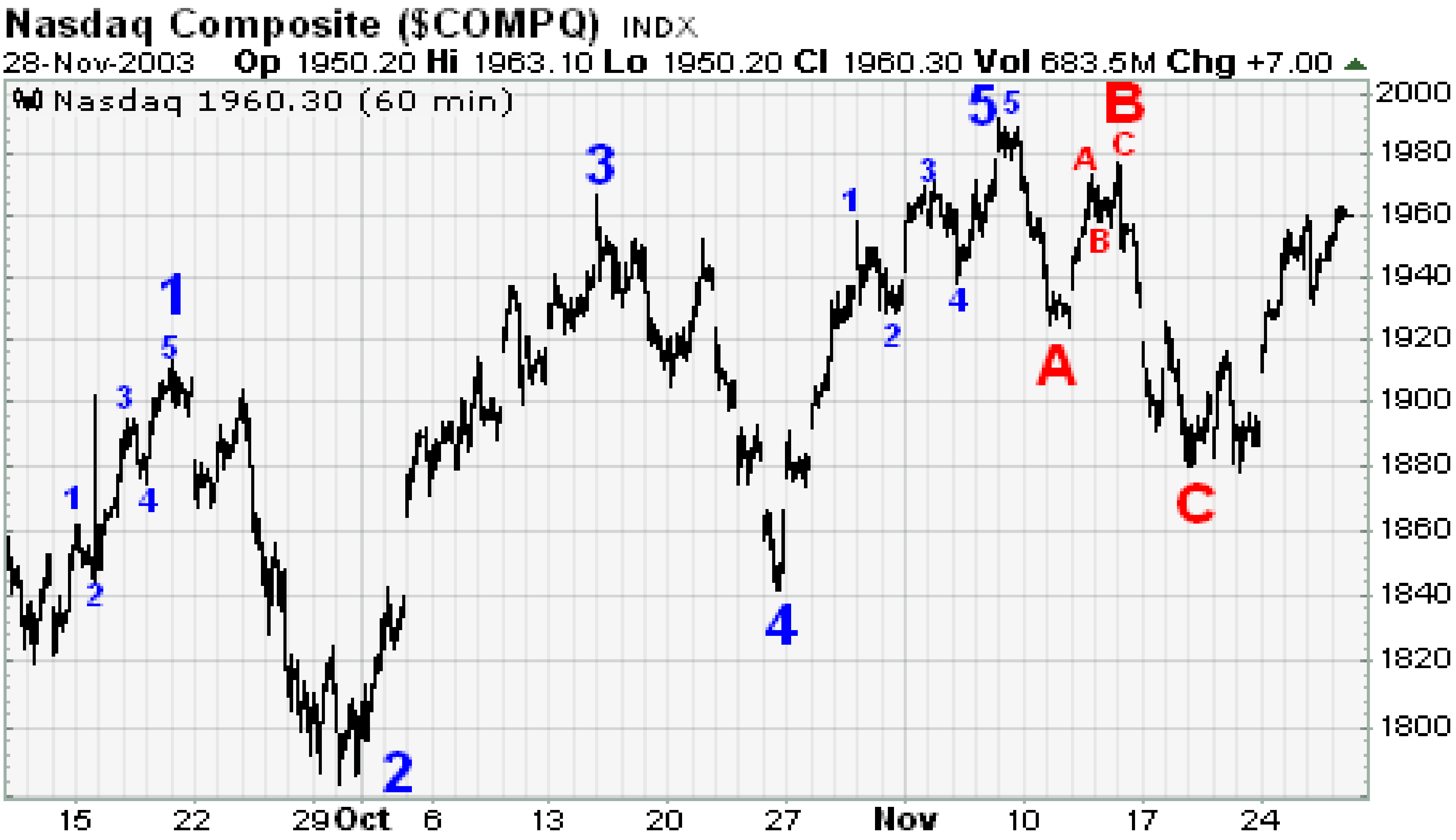


Elliot Wave Theory….

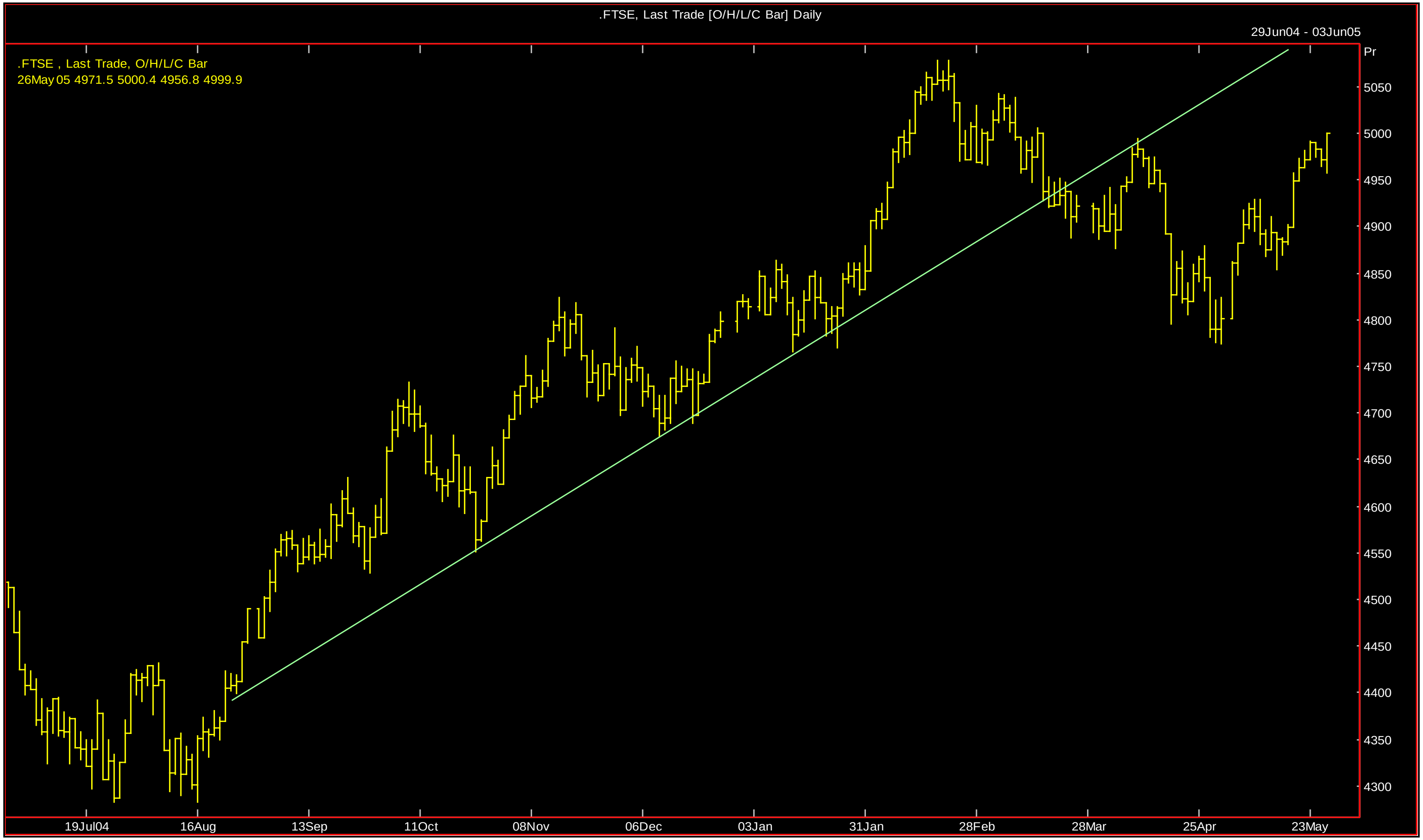
By getting the wave count right you are able to -

- Time the entry and catch the big move.
- Project the end of the trend (accurately), take profits there and do a reverse trade.
- Sometimes project more than one wave forward and with a built in timing. A good stress reliever.
- Remember every wave and where you are within the 5 or the 3 (Especially useful for salespeople)

Elliot Wave Theory….



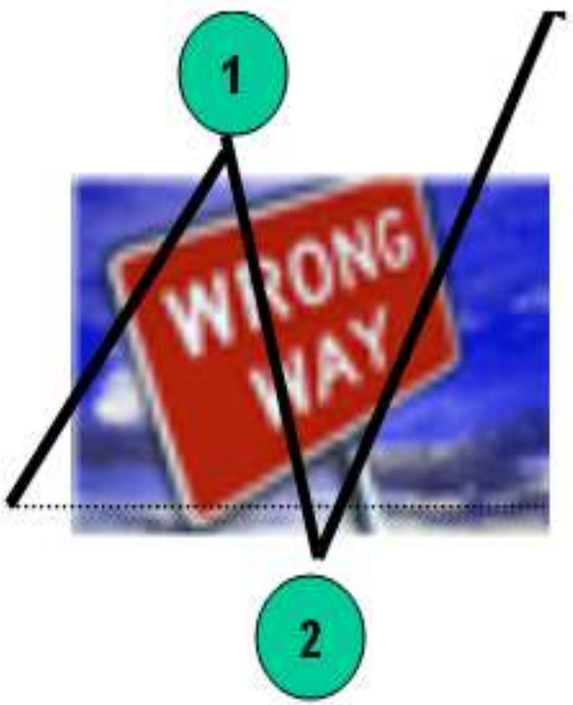
Elliot Wave Theory….

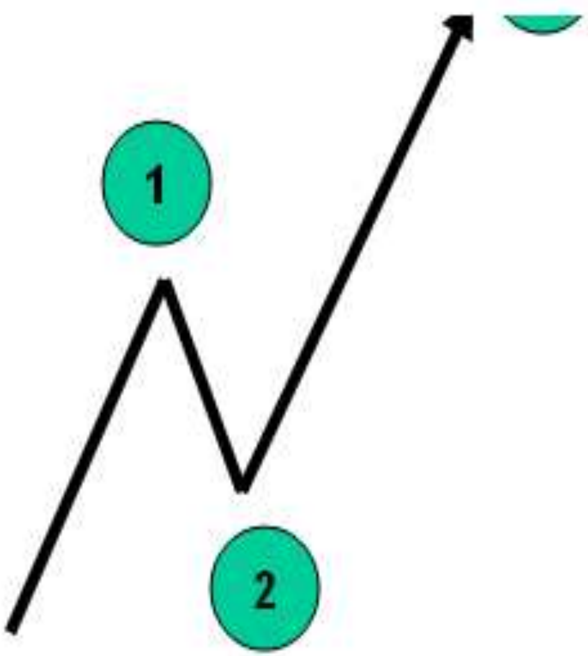


Elliot Wave Theory….

Rule-1

Wave 2 should not overlap the start of Wave 1


1
WRONG
WAY
2

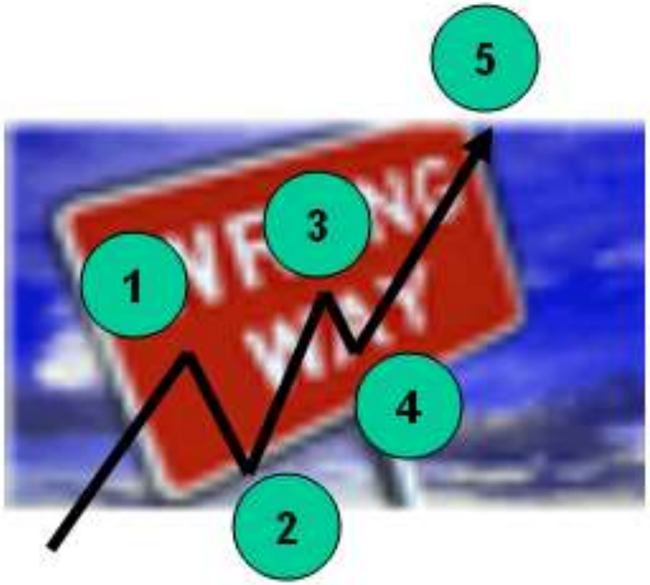


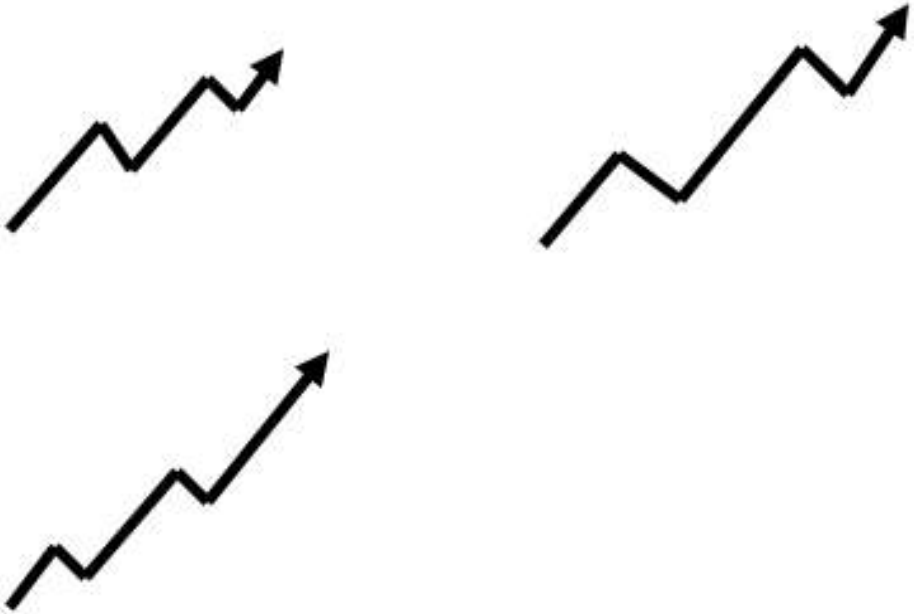
Elliot Wave Theory….

Rule-2:

Wave 3 should not be the shortest wave

among wave 1, 3 & 5

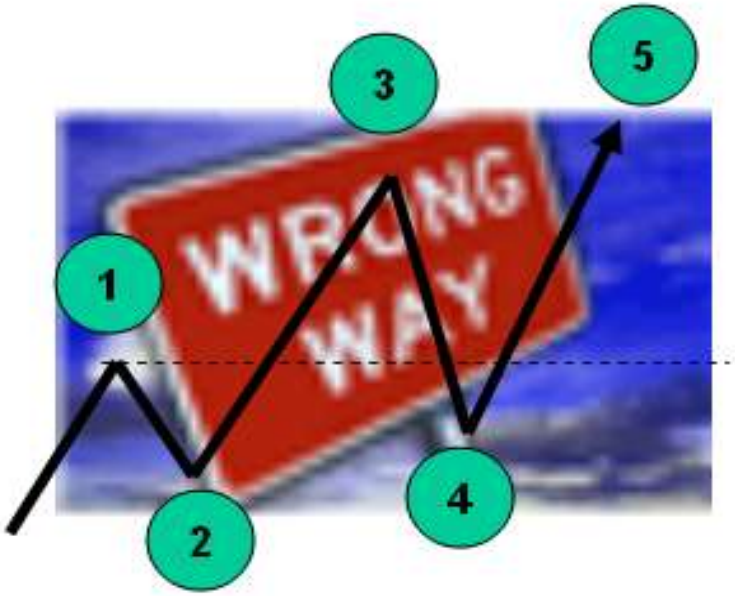

5
3
1
WRONG
WAY
4
2

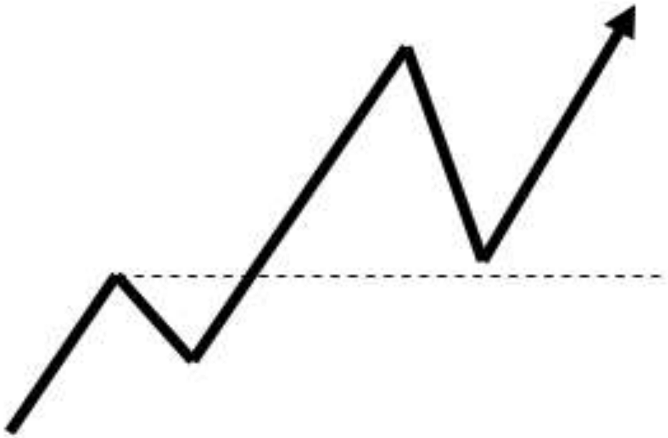


Elliot Wave Theory….

Rule-3

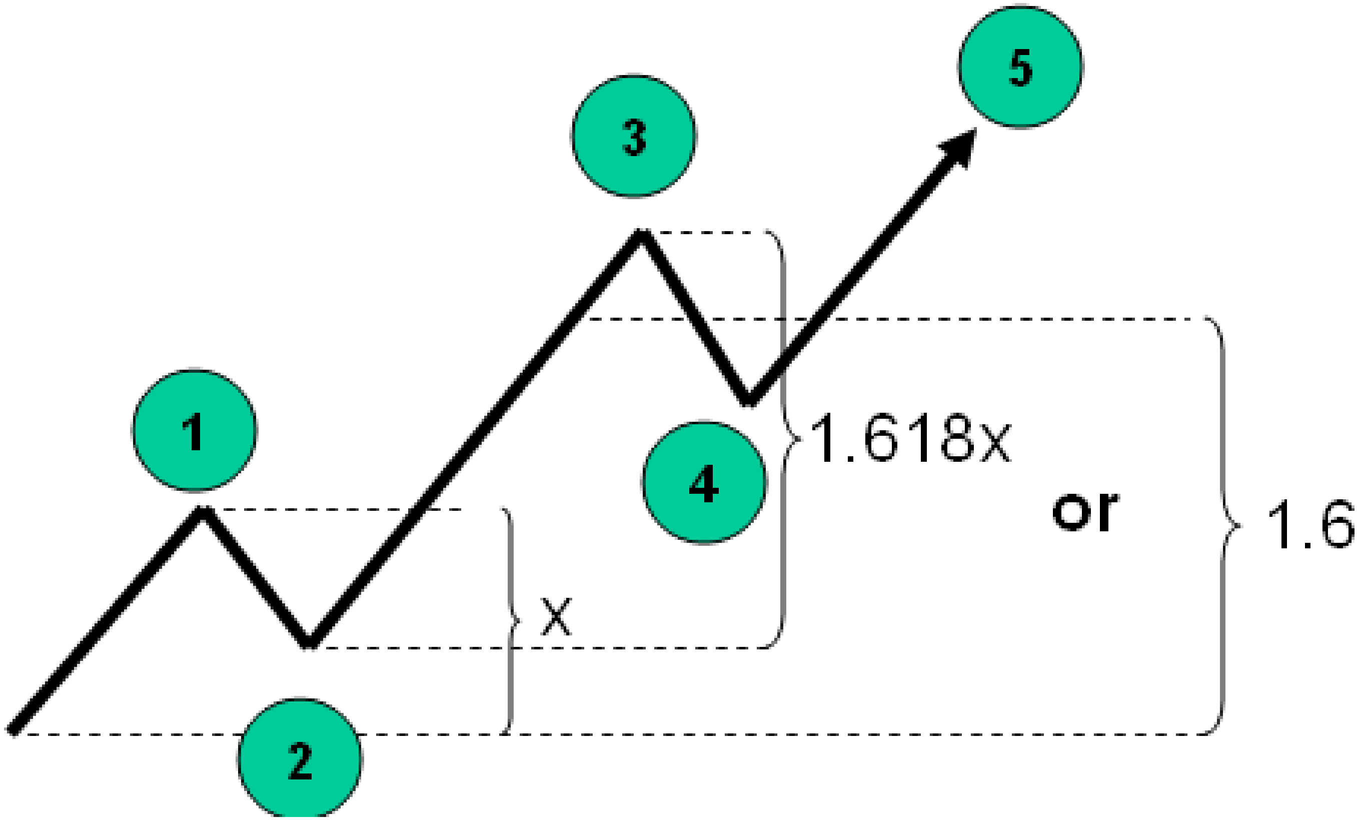
- Wave 4 should not overlap wave 1


5
3
WRONG
WAY
1
4
2



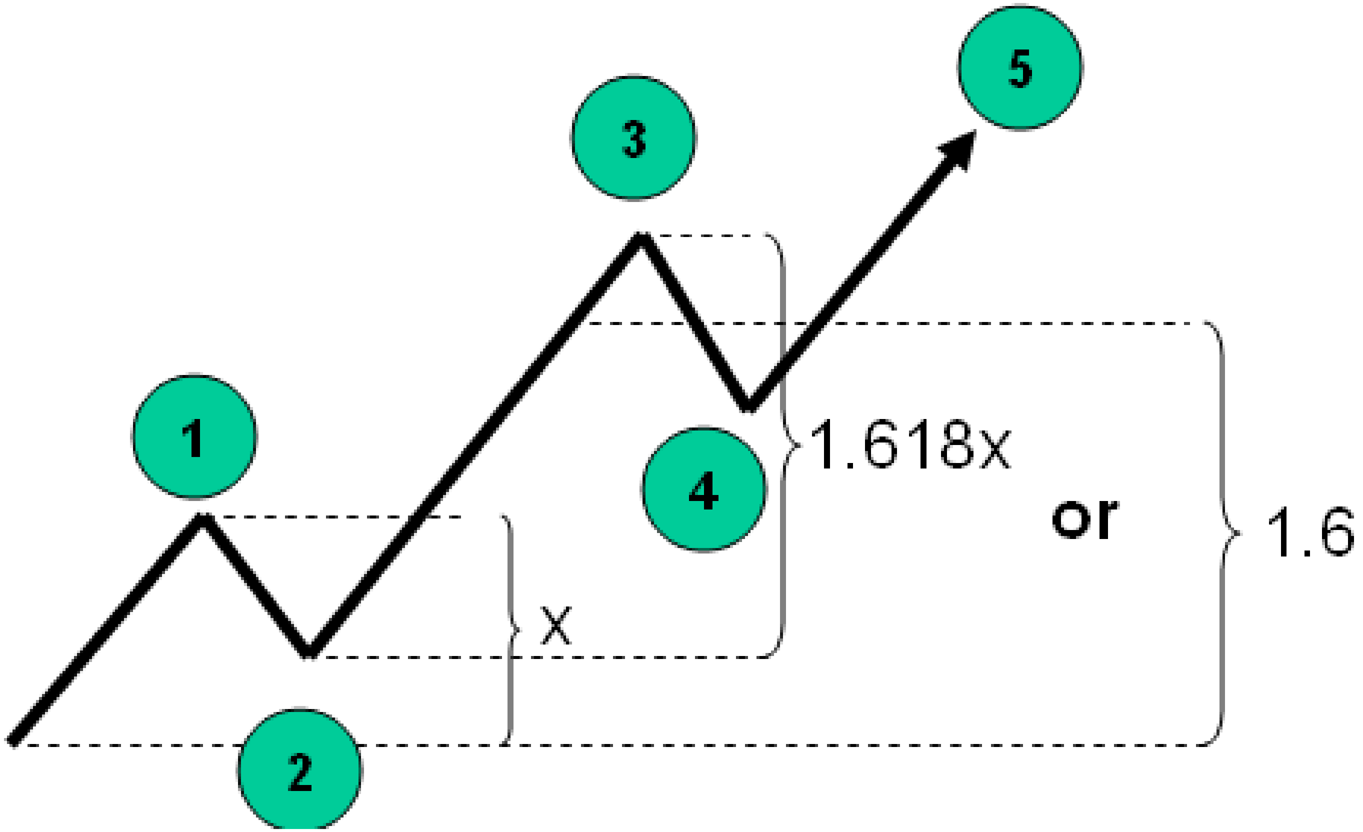
Elliot Wave Theory….

Wave 3 is approximately 1.618 of wave 1


5
3
1
4
2
1.618x
or
1.6
x

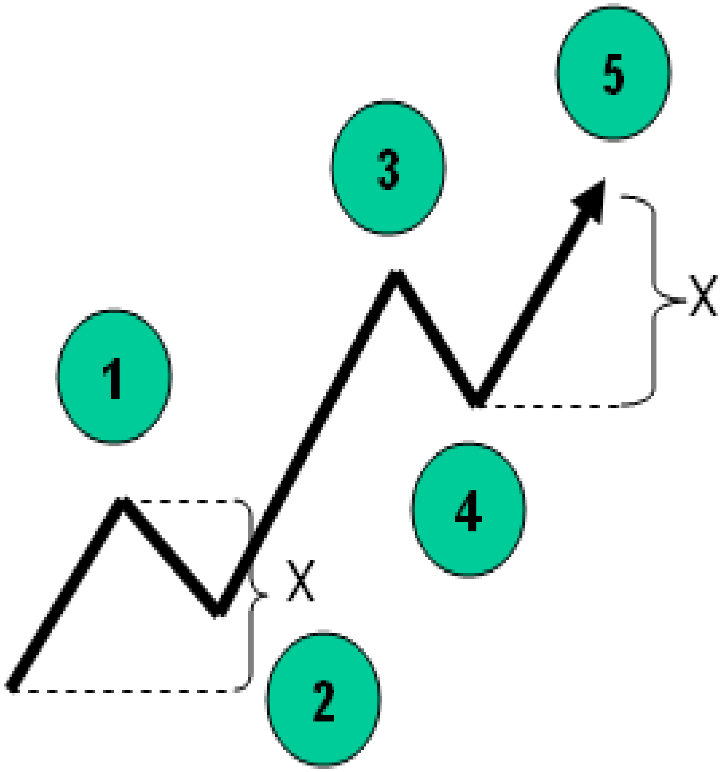
Elliot Wave Theory….

Wave 3 is approximately 1.618 of wave 1

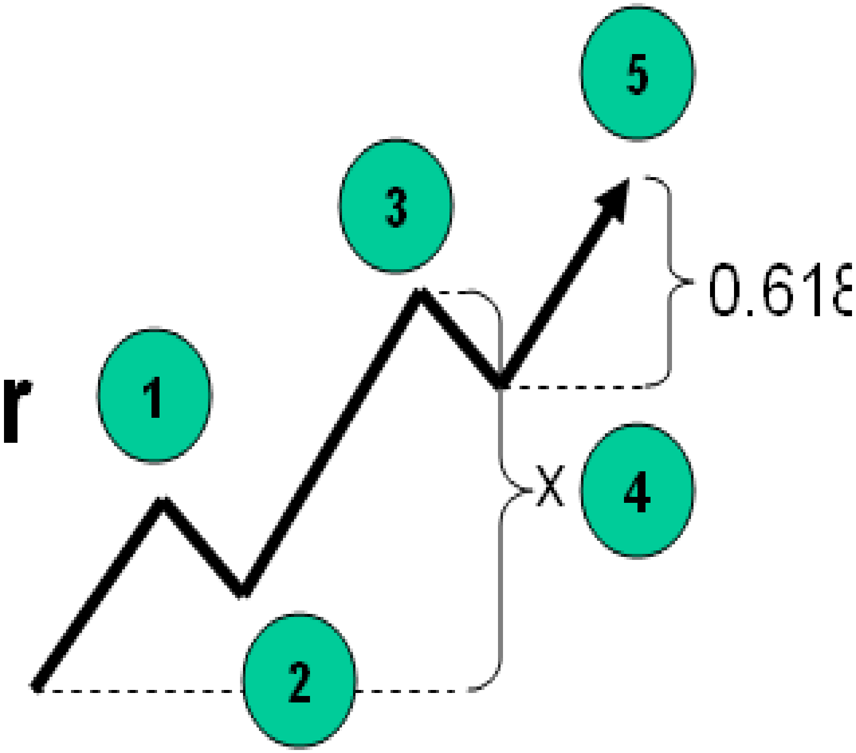

5
3
1
4
2
1.618x
or
1.6
x

Elliot Wave Theory….

Wave 5 is approximately equal to wave 1 or 0.618 of start of wave 1 to wave 3

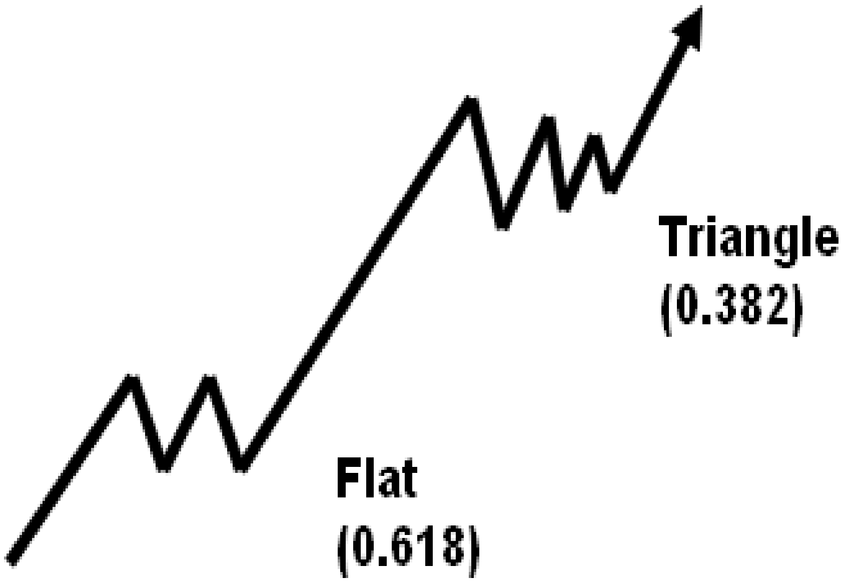


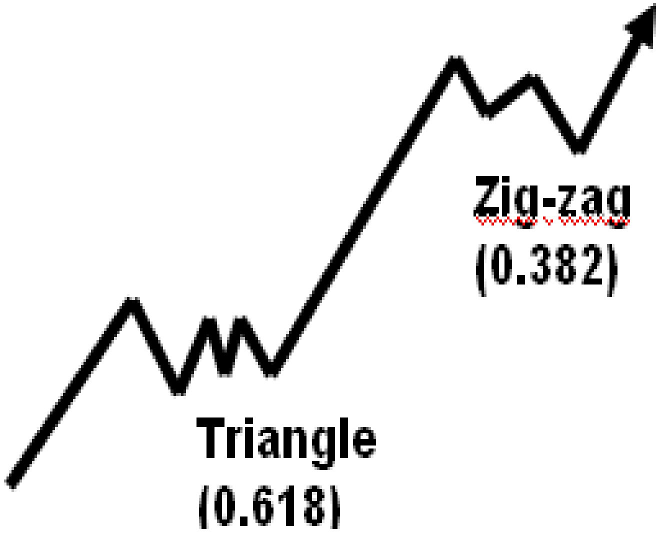
or


5
3
0.618
1
X
4
2

Elliot Wave Theory….

Wave 2 and 4 should unfold in two different wave forms. (Rule of Alternation)

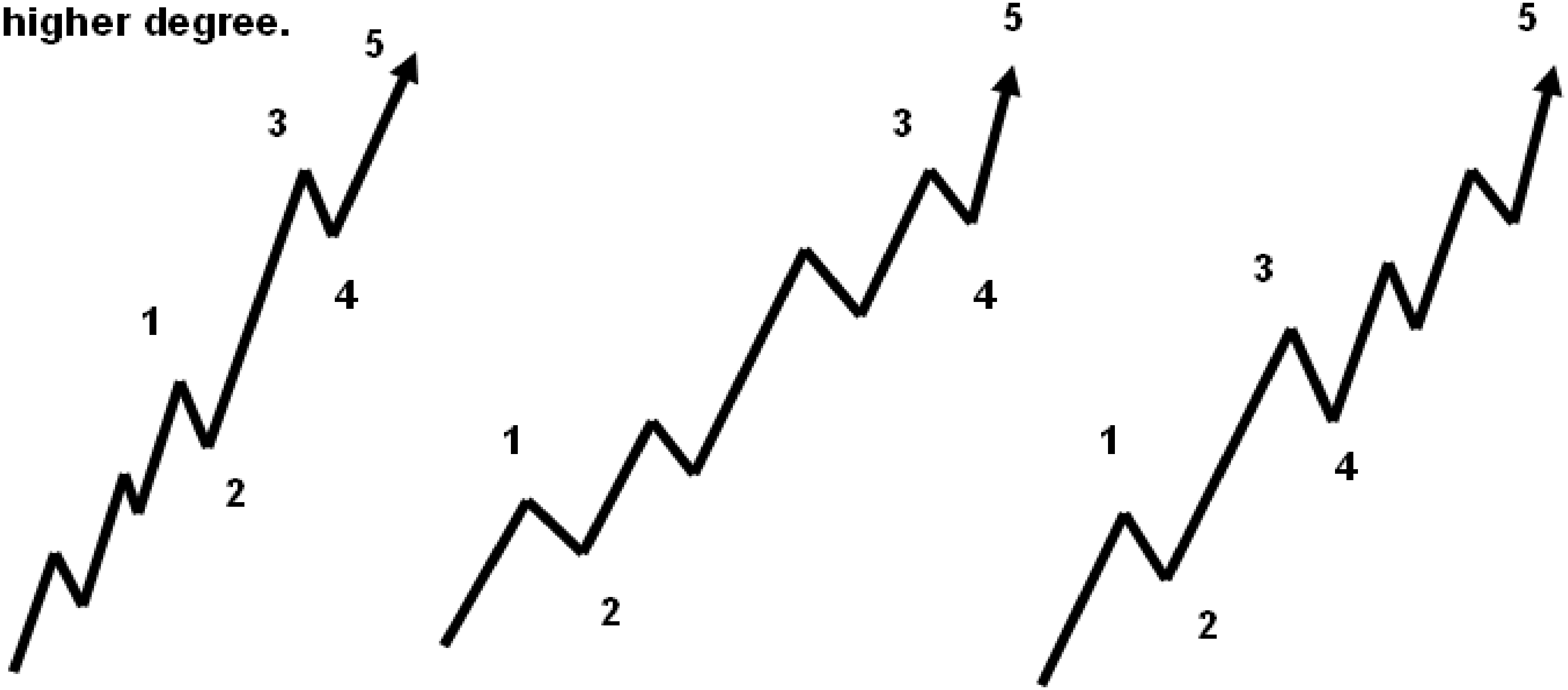

Triangle
(0.382)
Flat
(0.618)


Zig-zag
(0.382)
Triangle
(0.618)

Elliot Wave Theory….

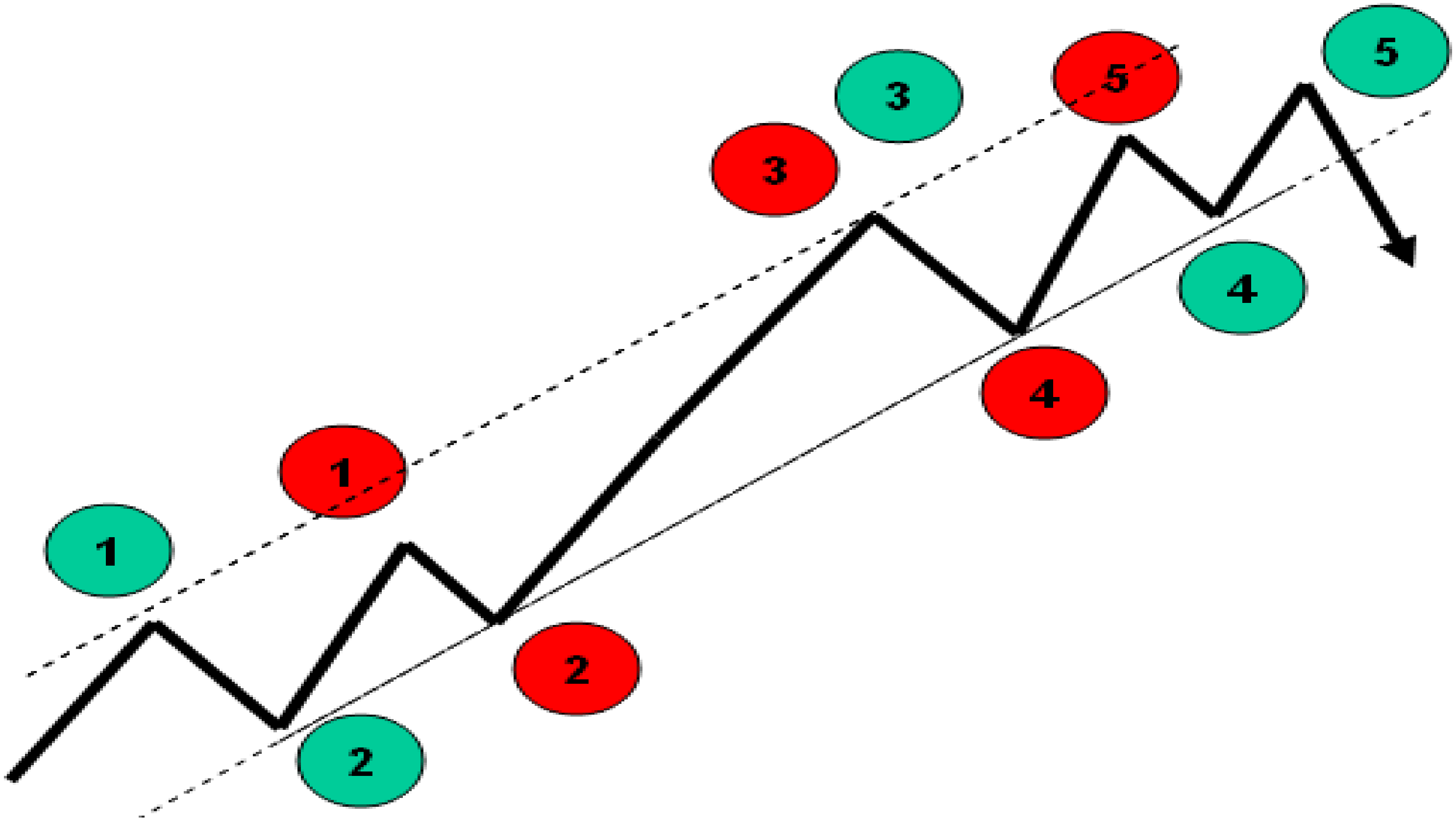
Special Features: Extension

Only one among 1,3 & 5 should unfold in extended form. 'Extension' means the wave consists of sub-waves that are conspicuous in relation to waves of higher degree.



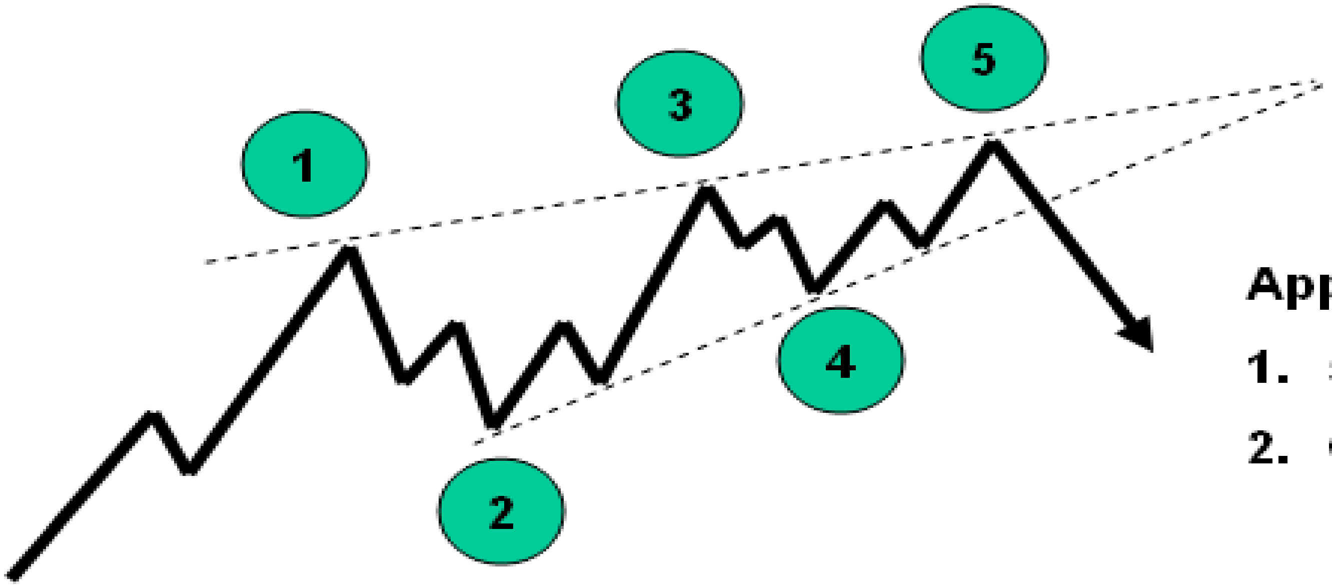
Elliot Wave Theory….

Special Features: Wave Channel


1
1
2
2
3
3
4
4
5
5

Elliot Wave Theory….

Special Features: Diagonal Triangle

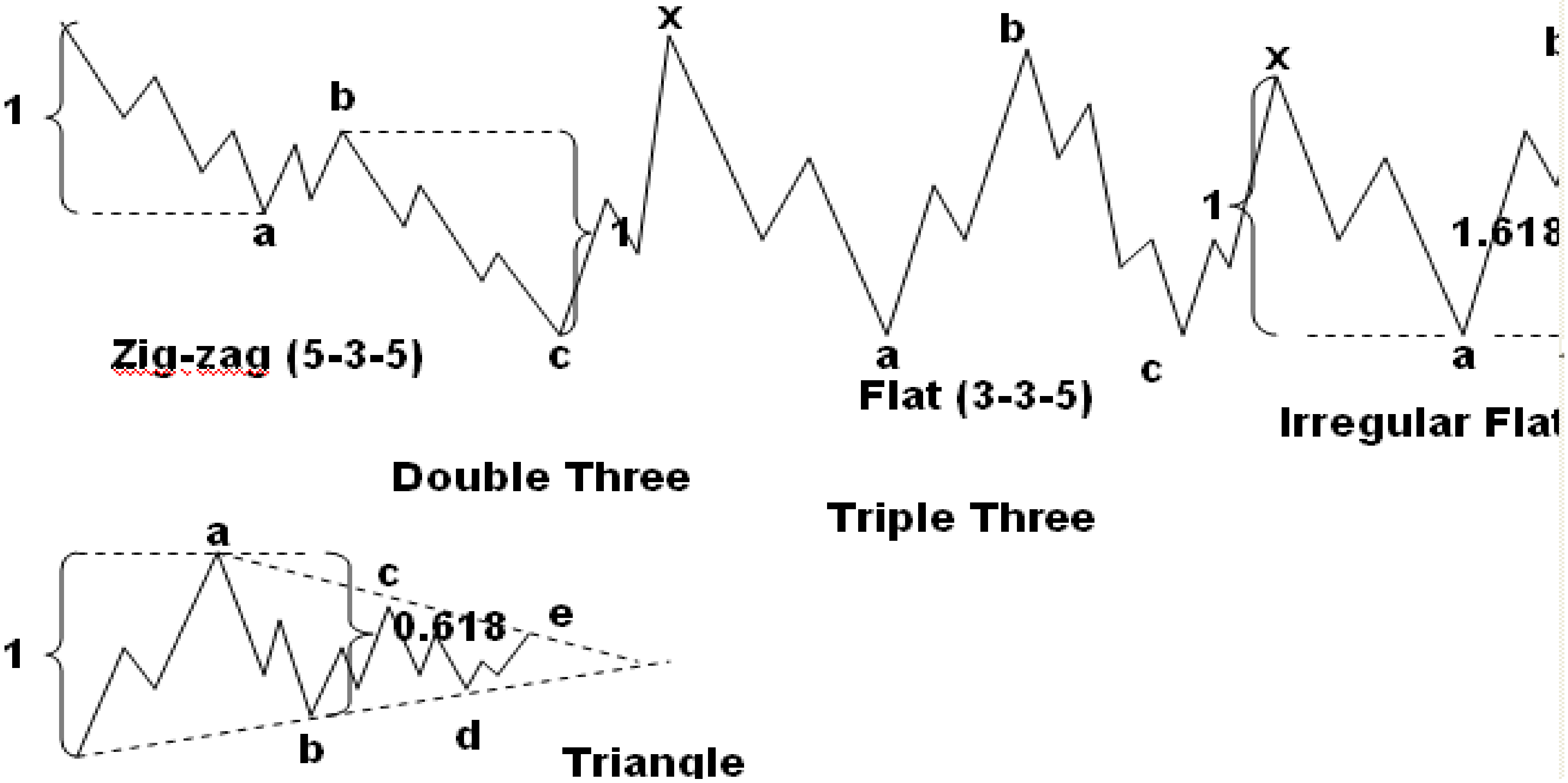


Appears normally

1. 5th wave
2. C wave

Elliot Wave Theory….

Corrective Waves


1
b
a
c
Zig-zag (5-3-5)
x
1
b
a
Flat (3-3-5)
c
x
1
1.618
a
Irregular Flat
Double Three
Triple Three
a
c
1
0.618
e
b
d
Triangle

THANK YOU

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aurobinda@karvy.com