The Technical Analysis

27th October 2008

Technical Analysis

- The oldest way of asset analysis.

- Some principles and process of technical analysis were used in Asia rice market in the 18th century.

- Modern history of technical analysis is related with Charles H. Dow (1851-1902).

- Others:

  - W. D. Gann that earned more than 50 millions dollars using by own principles and methods known as a Gann Theory. According to angles in charts he looked for moments when trend is going to turnover.

Background

- Technical analysis is method that want to prognoses future development of market trends on the basis of charts research.

- Charts represents past development of market.

  - Basic information source are
    - Development of security rates
    - Volume of trade
    - Development of index

Technical Analysis

- ## Criticism of fundamental analysis
  - Intrinsic value is not possible to describe real situation in the capital market because is not able to describe psychological aspects.
  - Technical analysis do not interest about fundamental factors that influence security rate but focus on activity and movement in the market.
    - Believe that in security rates have an impact factors that have unpredictable character and are not apprehensible by fundamental analysis.

Technical Analysis

- Technical analysis is summarized in three thesis:
- Security rate mirrors all known information. But reaction of security rate to new information is
  - successive and
  - slow
- This successive process of adjustment of new information founds market trend.
- Technical analysis does not care about reasons of security rate movement but about this movement in itself.

Technical Analysis

- There have been patterns of security rate movements

    - Users of technical analysis believe in pattern in security rate movements that try to identify.

    - If they are successful and in time recognize kind of the pattern they are able to prognoses future development of security rate.

- History is repeated

    - More than 100 years technical analyzers looked for patterns they classified and confronted them.

    - As the result they persuaded that the most of the patter is repeated because human psyche repeated as well.

Technical Analysis

- ## According to main mentioned thesis main problems
  - History is not repeated exactly and investor can not expect exact repeating of patterns. It leads to subjective opinion of analyzer and inaccuracy of analysis results.
  - It means that result of analysis is
    - framework that
    - happened with particular probability.
  - The technical analysis answers the question:
    - When and what is going to happen -> it means that it is used for timing
    - In contrast to fundamental analysis that is used for stock picking (technical analysis is not able to find over or under estimate securities)

Technical Analysis

- ## Main advantages
  - It is not data-intensive
  - Background of methods used by technical analysis is simple
  - Methods of technical analysis can by apply to markets of
    - Securities
    - Commodities or
    - Exchange currencies

Dow Theory

- On the basis of security rates study assumed conclusion that
  - As market barometry can be used the average closing rate of particular securities.
  - This can be used as a rate of whole market performance.
  - First application in 1884 - Railroad Average first index composes of 11 stocks (9 stocks of railroad companies)
  - In 1896 Dow created new index because Railroad Average was able to describe only part of the economy because of limited number of sector securities.
  - Dow Jones Industrial Average - average of closing rates of 12 securities
    - Highly speculative
    - Industry companies
  - In 1928 basis of DJIA extent to 30 titles.
  - Value of DJIA first published in Wall Street Journal in May 1896 its value was 40,96 points (that days 8.500 points)
  - Former Railroad Average is still used is known as a Dow Jones Transportation Average (DJTA) and is used as a benchmark of capital market or economy.
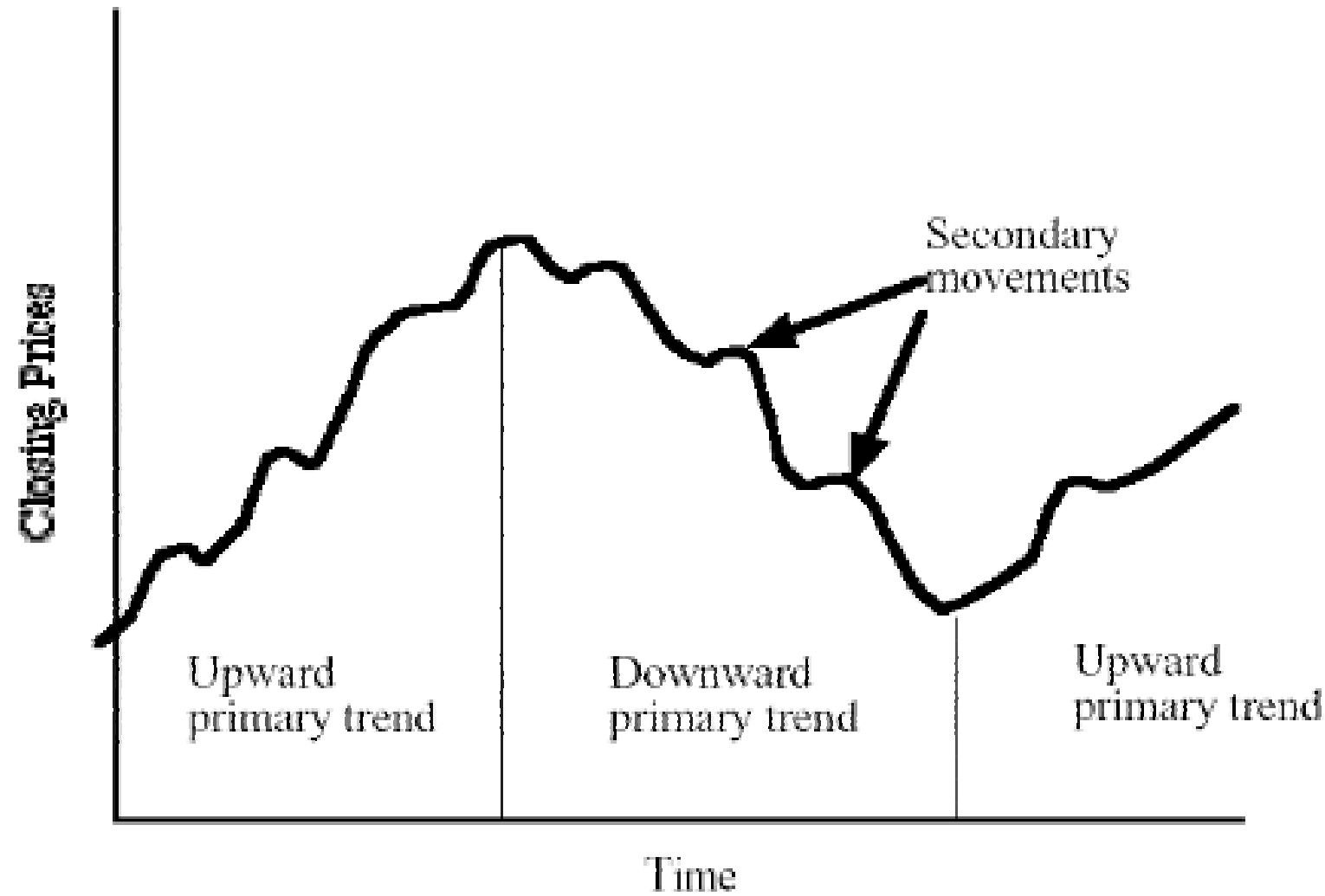
Main ideas of Dow Theory

- Study of historical performance of capital market gave him an evidence that averages of security rate are moved in trends.

- The most of the securities in the market perform similar development. The market performance can be describe by using of indices.

- All relevant factors that influence supply and demand are absorbed by index.

  - Index represents an accurate image of situation in the market.

Main ideas of Dow Theory

- Index that is constructed as an average of closing rate of securities includes all relevant information.
  - main thesis of technical analysis
- Movement of stock rates can be divided in three basic trend movements
  - Primary – takes one year or more and it is consider as a main trend or main way of development.
  - Secondary take – from 3 weeks to 3 mounts. It is consider to be counter development to main trend.
  - Tertiary – the shortest trend less then 3 weeks. It is consider to be insignificant development in primary or secondary trend.
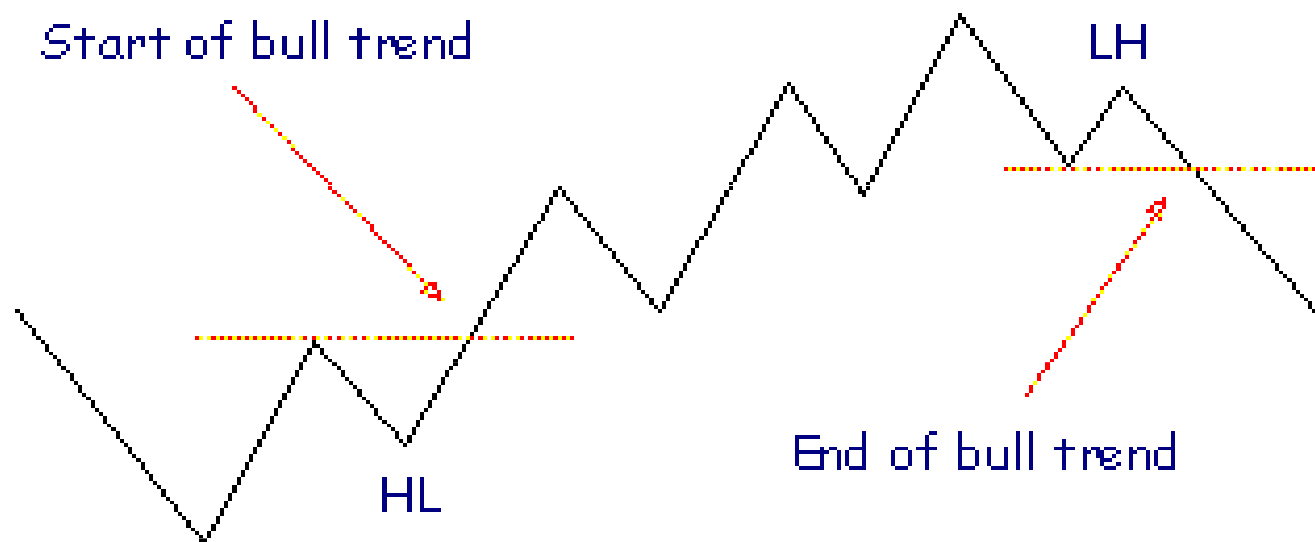
Main ideas of Dow Theory

Main ideas of Dow Theory

- Future development of security rates (it means continuing of trend or its turnover) can be derivate from recent market situation

  - Trend with rising peaks it means trend that every next peak is higher then previous peak and whose every bottom is higher then previous bottom is known as a rising trend or Bull Trend.

  - Trend with declining peaks and bottoms it means trend whose every bottom is lower then previous and every peak is lower then previous is known as a declining trend or Bear Trend.
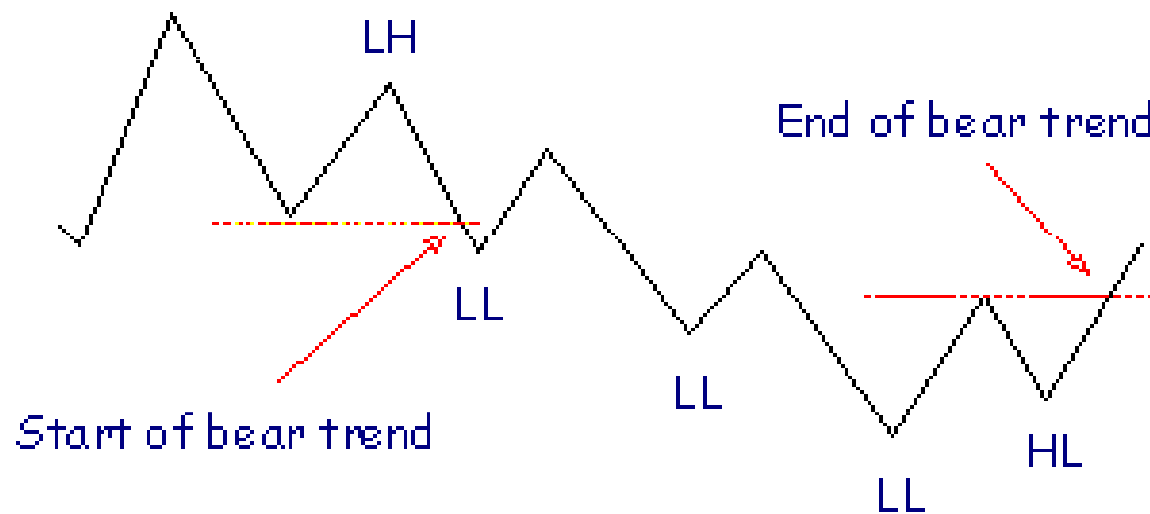
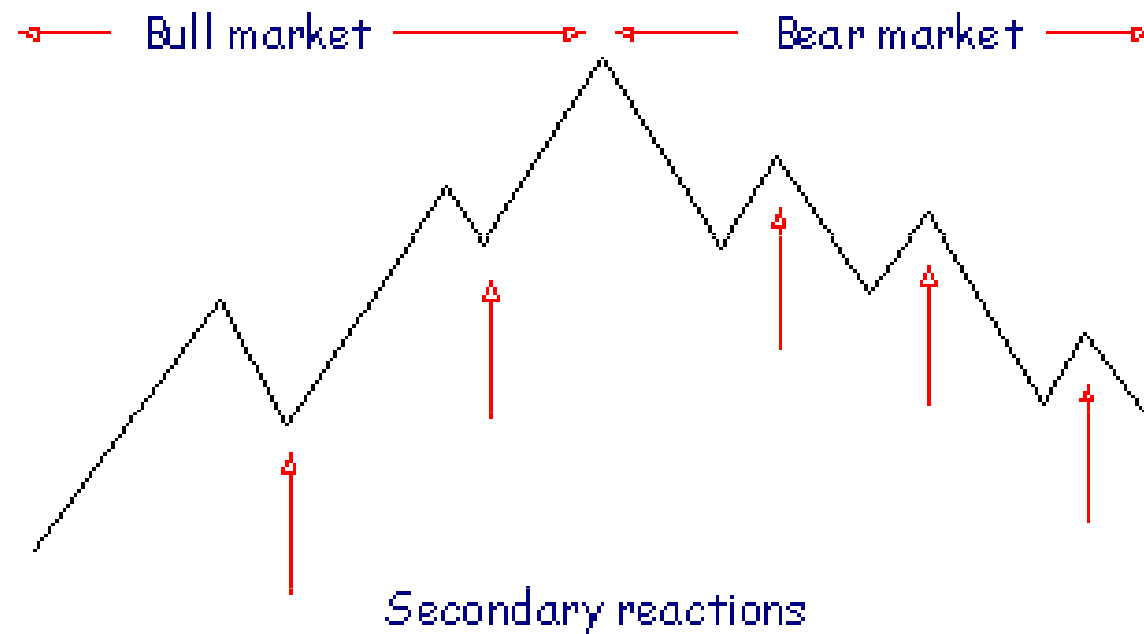# Bull Trend

Bull Trend: Start and End

Start of bull trend

HL

LH

End of bull trend

Bear Trend

Bear Trend

LH

End of bear trend

LL

Start of bear trend

LL

LL

HL

LH = Lower High
LL = Lower Low
HL = Higher Low

Primary Trend

Primary trends

Bull market — Bear market

Secondary reactions

Main ideas of Dow Theory

- The turnover of trend occurred if
  - Rising sequence of peaks and bottoms is interrupted in case of Bull Trend
  - Declining sequence of peaks and bottoms interrupted in case of Bear Trend.
  - In order to have an evidence of trend turnover is necessary to have interrupted sequence in development of both bottoms and peaks.

Main ideas of Dow Theory

- ## 1.The main trend consists of three phases
    - These three phases can be identify in bull or bear trend.
    - First phase
        - The best-informed investors start buying in situation when index reached its bottom - accumulate phases
        - Positive information about economy and profit growth occur movement in second phase. In Bull Trend is this phase characterized by massive growth of capital market and is known as a Growing phase. In this phase are trading institutional investors especially.
        - In third phase there are trading especially retail investors. This phase is known as a distribution phase. At the end of this phase optimistic stock euphoria is over. Security rate reaches its peak. Bull Trend is over and starts Bear Trend.

Main ideas of Dow Theory

- **2.Volume of trade must confirm trend**
  - Volume of trade reflects total market activity with particular instrument in determine time.
  - Volume of trade can be used as a supplement information that can confirms market signals. Trend is confirmed in the moment when the volume of trade is rising. The situation when volume of trade is decreasing it is signal of market weakness and investor can expect with high probability trend turnover.

Main ideas of Dow Theory

- 3.The trend exists until on the market are signals of new trend
  - This principle contain basic aim of the technical analysis that is identification of trend turnover.
    - Tools
      - Charting
      - Technical indicators
  - Main problems of Dow Theory
    - Signals that are identify by Dow theory come late it means that investors drop potential profit at the beginning of every trend.
      - Dow Theory is "Trend-Following" that reacts to circumstances then occurred
      - The aim of Dow theory is to identify kind of primary trend and its turnover on the market as a whole. Dow theory is not able to offer signals sell or buy signals of particular security.
      - Dow theory is oriented only on primary market trends
      - Dow theory is not able to define duration and power of primary trend.

Main ideas of Dow Theory

- Despite of all problems Dow Theory is theoretical resource of technical analysis
    - From 1897-1991 Dow Theory delivered 40 correct signals of trend turnover.
    - Wrong signals were only 5

Methods and tools of technical analysis

- **Charting**
  - Method base on using of charts to identify trend or to derive buy or sell signals.
  - Analyzers looking for standardized formation by studying of security rate development.
    - Standardized formation is pattern in security rate development.
  - Standardized formation are emerged repeatedly and their correct identification can be used in capital market prognoses.

Methods and tools of technical analysis

- **Two main formations**
  - Consolidated formation that confirms trend, or
  - Reverse formation that confirms turnover of trend
- **Several kinds of charts can be used by establishing of support level or resistance level.**
- **Existence of trend it means the direction in development of security rate is fundamental.**
- **The simplest tool how to find out trend is by Trend Line.**
  - In Bull Trend Line establishes if we join local bottoms
  - In Bear Trend Line establishes if we join local peaks

Trend Line

$GOLD (Gold - Continuous Contract (EOD)) INDX   © StockCharts.com
10-Mar-2006 2:30pm Open 545.95 High 547.10 Low 534.20 Last 541.95 Volume 0 Chg -4.15 ▼

— $GOLD (Daily) 541.95

# Trend Line

Methods and tools of technical analysis

- Trend Line can be
  - Rising in the case of Bull Trend
  - Declining in the case of Bear Trend, or
  - Stagnant in the case of market without significant trend
- Importance and predicate ability is determined
  - Duration of time period without any interruption of line
  - Number of bottom or peaks
- If the line is broken it is a signal of trend turnover.
  - As a break-out is consider growth or decline of rate about at least 3 % or for at least 2 trading days.

Methods and tools of technical analysis

- ## Trend channel
  - Completion of Trend Line by addition of line that joins peaks in case of Bull Trend or
  - Bottoms in the case of Bear Trend
  - Trend Channel is a spread in which is security rate developing.
  - Spread of correctly established Trend Channel can be used for prediction of short-time buy or sell signals.

Trend Channel
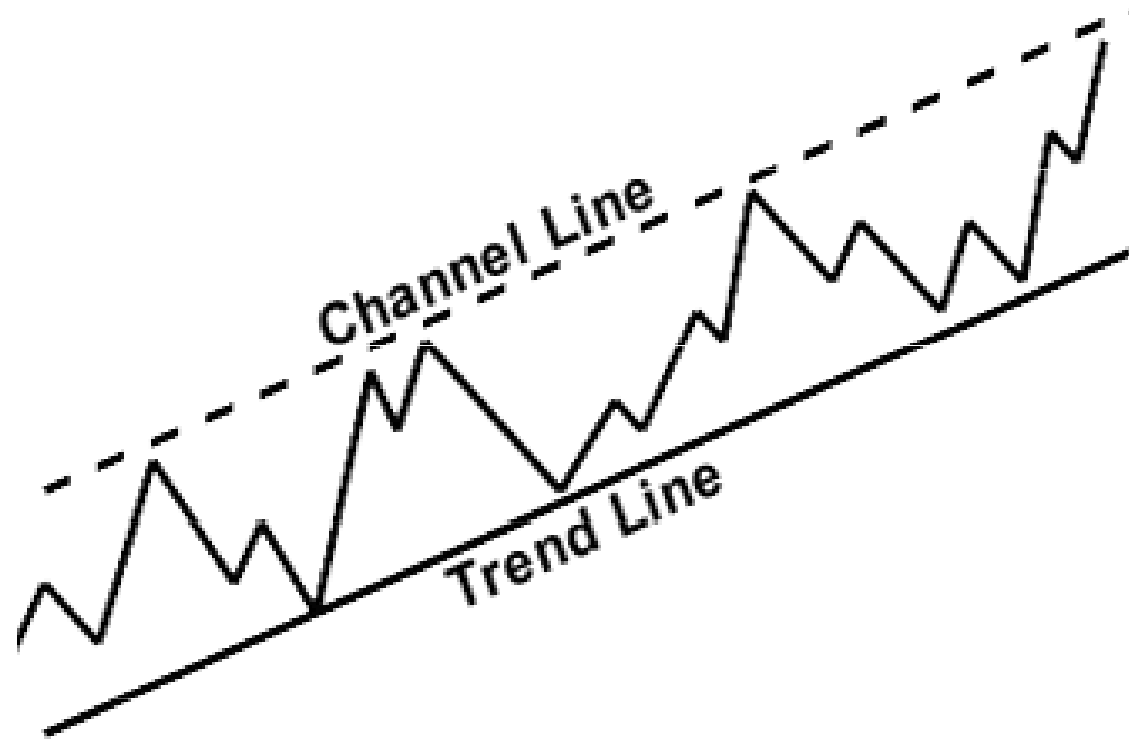
Methods and tools of technical analysis

- **Support level and Resistance Level**
  - Both base on psychological characters
  - Support level
    - Level in which investors stop their security sales because security rate is too low.
    - Securities their rates correspond with support level are very cheap and their supply is higher than demand.
    - Market that is developing near support level is also known as a oversold and in short time is expected rising demand about these cheap securities and growth of their prices.
    - Bull Trend will transfer to Bear Trend

Methods and tools of technical analysis

❑ **Resistance level**

- Represents level where the growth of security rates are finished.

- Investors find out that security rates are too high and securities are expensive.

- Demand is higher then supply.

- Market that is developing near Resistance Level is known as a overbought and in short time is expected decline in demand.

- Bull Trend is replaced by Bear Trend.

Methods and tools of technical analysis

- **Line Chart**
  - The simplest tool of Technical analysis
  - Base on closing security rates during determined period.
  - This data are draw as points in chart and join by line.
  - Axis x represents time
  - Axis y represents closing security rates.
  - This chart cen be amended by information about volume of trade that are represented by different high of column in axis x.

Line Chart

Line Chart with volume of trade

%QEC [10] - EURO   LAST: 1.4655   CHANGE: ▼ 0.0133   HIGH: 1.4783   LOW: 1.4634   8/15/2008

VOL (%QEC) = 261626 OI (%QEC) = 146079
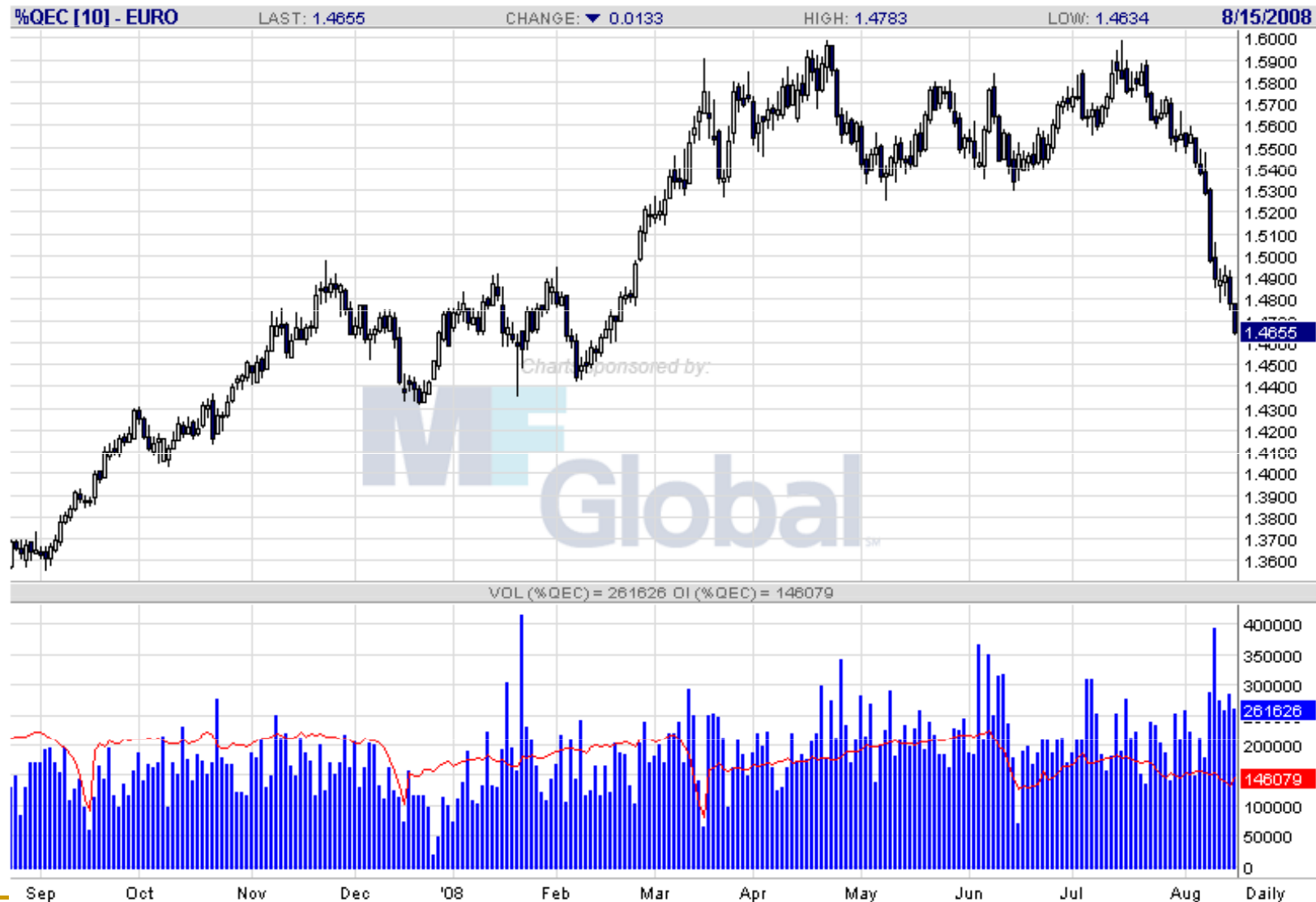
Methods and tools of technical analysis

- **Bar Chart**
  - The most common method of analysis.
  - Development of security rate is represented by different high of columns.
  - Axis x is represented by time
  - Axis y is represented by value of security rates
  - Bar Chart is created by columns with one or two beaks.
  - The high of column represent by spread between peak and bottom in determined period.
  - Open rate is marked by left oriented beak.
  - Close rate is marked by right oriented beak.
  - This chart can be amended by volume of trade in axis x by the different high of columns.

Bart Chart

Sun Microsystems, Inc. (SUNW) Nasdaq Nat. Mkt.   © StockCharts.com
14-Mar-2000 4:00pm   **Open** 46.12 **High** 47.38 **Low** 43.38 **Last** 43.69 **Volume** 33.8M **Chg** -1.75 ▼

ᴪ Sun Microsystems 43.69 (Daily)

Open/High/Low/Close Bars

High ➡
Close ➡
Open ➡
Low ➡

Methods and tools of technical analysis

- Point and Figure Chart
  - Development of security rates is represented by two symbols
    - X
    - 0
  - These symbols are draw in one column according to
    - Kind of trend
    - Its power and base parameters
  - This chart does not display value of security rate only significant security rate changes or spread between open and close rate.
  - All positive changes are represented by symbol "X", these symbols creates column that growth form bottom to top
  - All negative chnages are represented by symbol "0" these symbols created column that growth from top to bottom.
  - X represents rising trend
  - 0 represents declining trend

Methods and tools of technical analysis

- **Point and Figure Chart**
  - This chart brings information about supply and demand.
    - Column with "X" represents higher demand then supply
    - Column with "0" represents higher supply
  - This chart can be also used to determination signals to buy or sell
    - Charts bring signals to buy in situation if current appreciation of security rate described by X is higher then last column also described by X.
      - Current column with X is higher then last column with X
    - Charts bring signals to sell in situation if current depreciation of security rate described by 0 is higher then last column also described by 0.
      - Current column with 0 is higher then last column with 0

Methods and tools of technical analysis

- **Accuracy of Point and Figure Chart is determined by input parameter**
  - Box size: represents size of change that is reflected by chart. All changes lower than box size are consider to be insignificant and are not reflected by chart.
  - Reversal Amount: minimal length of column with symbols X or 0.
    - If reversal amount is 3 in every column has to be at least 3 "X" or 3 "0".

Methods and tools of technical analysis

- Candlestick Chart
  - This kind of chart works with
    - Minimum and maximum
    - Open and close rate
  - In determined time horizon, usually one day.
  - Every period is represented by one candlestick
    - Candlestick is composed from one body and two wicks
    - High of candlestick body represents spread between open and close rate
    - Wicks represents spread between maximal and minimal rate.
    - If open rate is higher than close rate – candlestick is black
    - If open rate is lower than close rate – candlestick is white
  - White candlestick represents situation when most of market participants is buying
  - Black candlestick represent situation when most of participants is selling

Point and Figure Chart

Candlestick Chart

Indicators of technical analysis

- **Moving Averages**
  - Trend-following methods. Signals of these indicators following trends.
- **Oscillators**
  - Value of these indicators vary about some volume or in some area. These indicators are able to bring sell or buy signals before trend.
- **Volume Indicators**
  - These indicators use volume of trade and development of security rate. Volume of trade is considered to be rate of strength or weakness of market. These methods brings most often fake signals or signals that are interpreters with difficulties.
- **Sentiment Indicators**
  - These indicators take notice of two group investors activities.
    - Smart money - sophisticate investors
    - Laic investors
    - Indicators finds out psychological factors and senses that influence in short time period situation in the market.

Thank you for your attention