

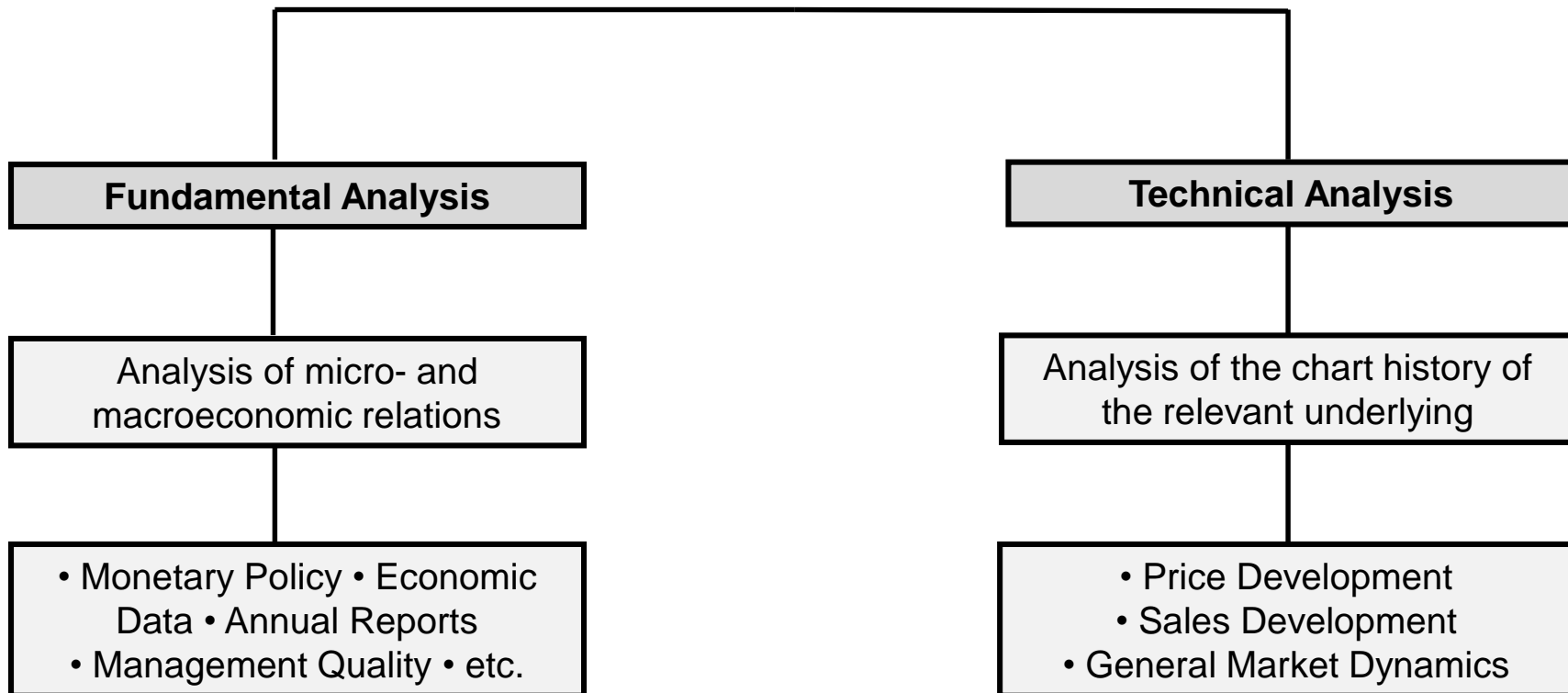


Basics of Technical Analysis

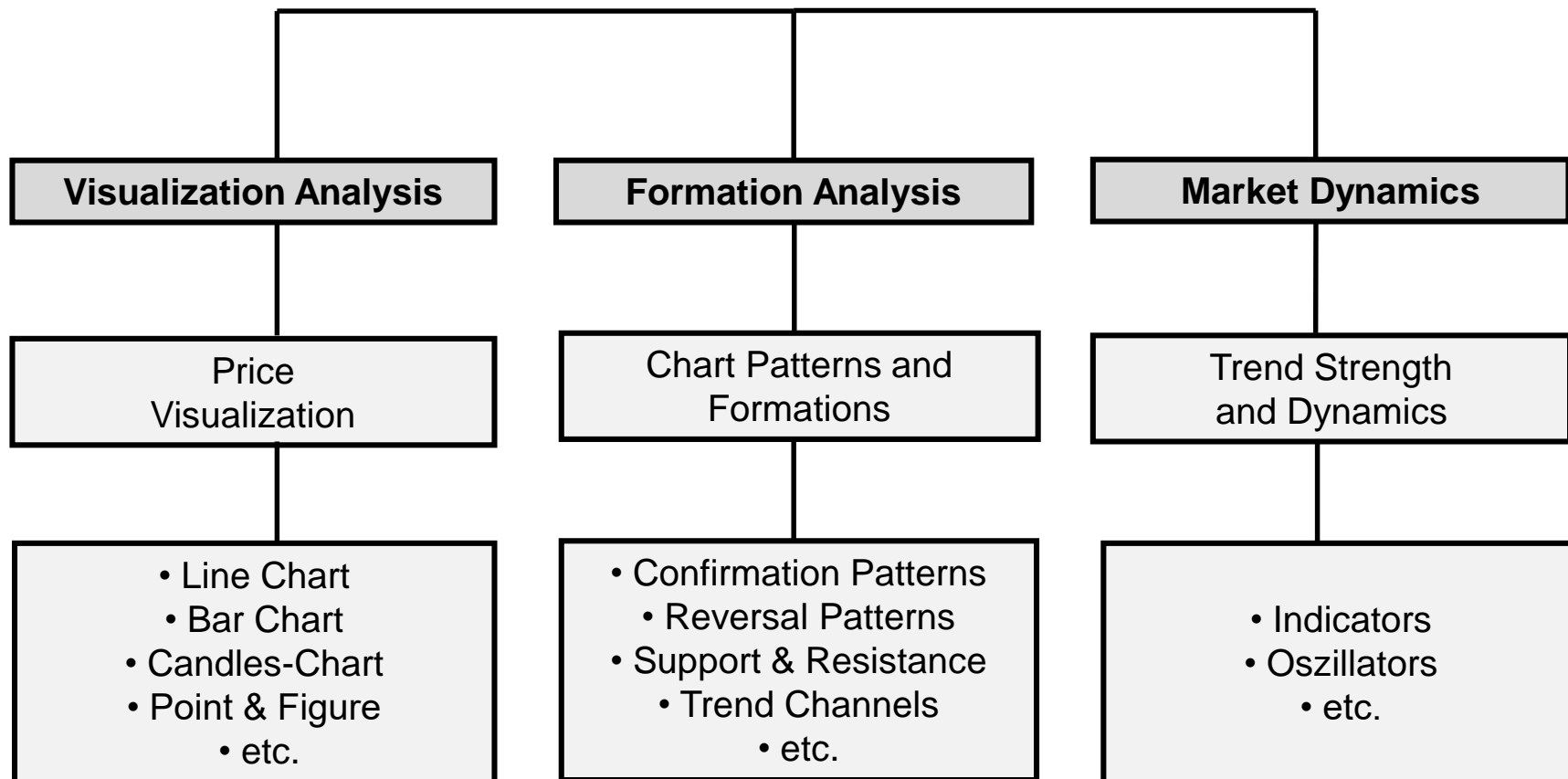
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Technical Analysis vs. Fundamental Analysis

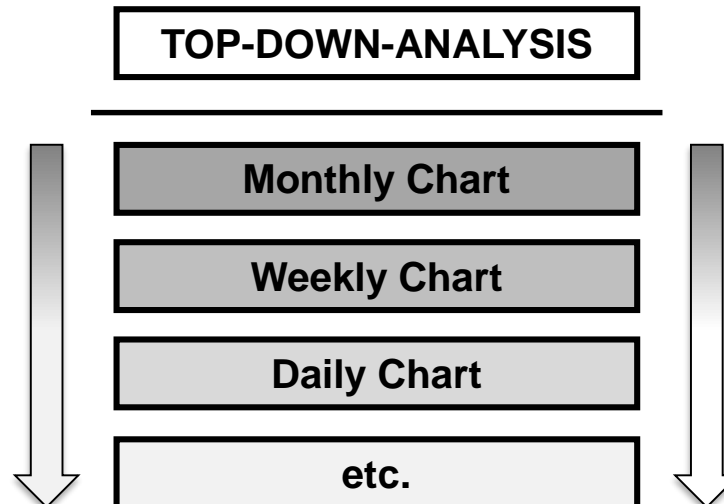


Technical Analysis



Time-oriented Direction

- A fundamental chart analysis should always start with monthly and weekly charts. Only after that one should deal with the daily chart. For a more precise fine-tuning you can then investigate intraday charts (top-down procedure)
- Daily and weekly charts are suitable for medium to long-term analysis. Intraday charts are optimal for short-term trading (displaying trading activities of only a few days).



Analysis of Visualization

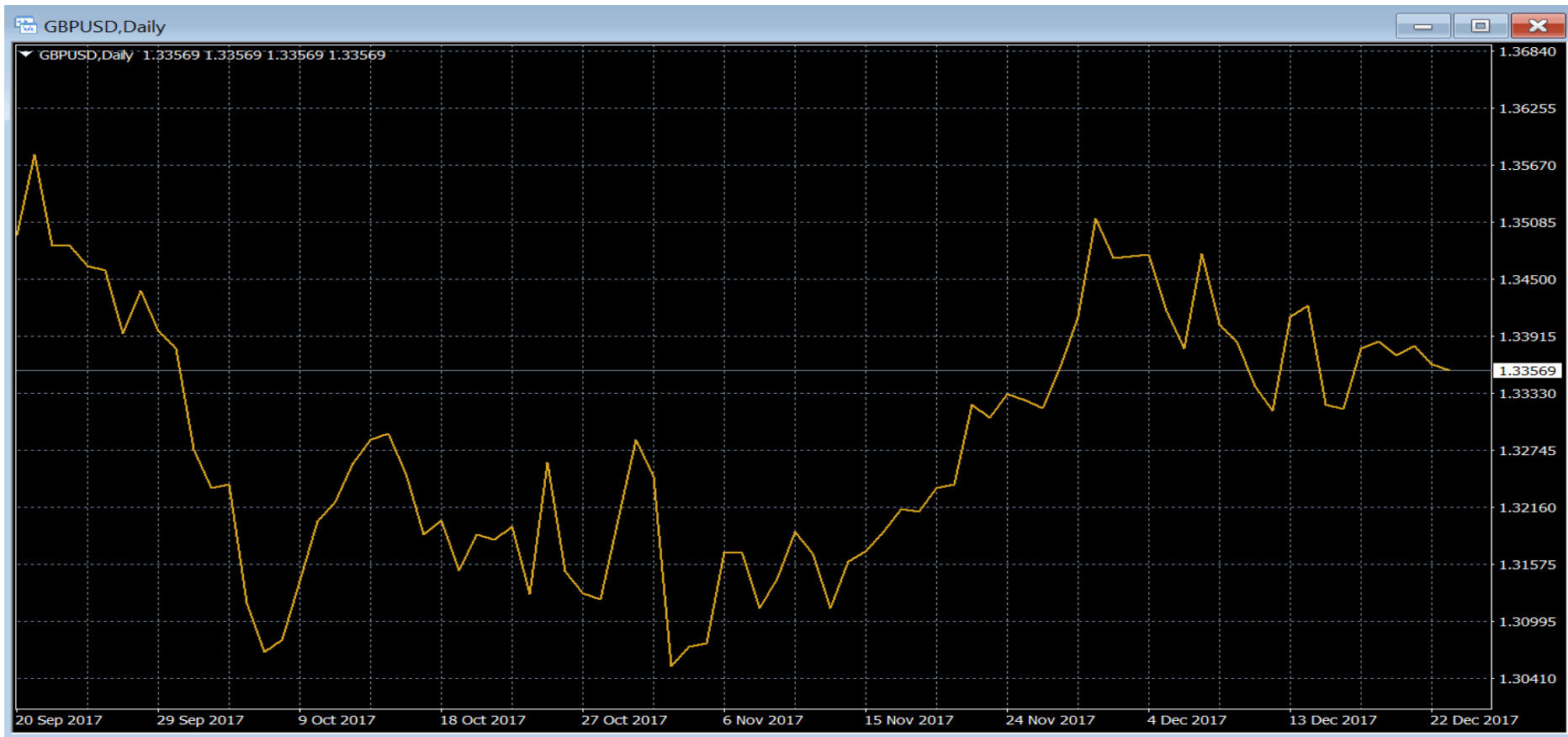
- The analysis of the price visualization focuses on the specific form of the chart representation and its possible interpretations.
- For example with:

Line Charts

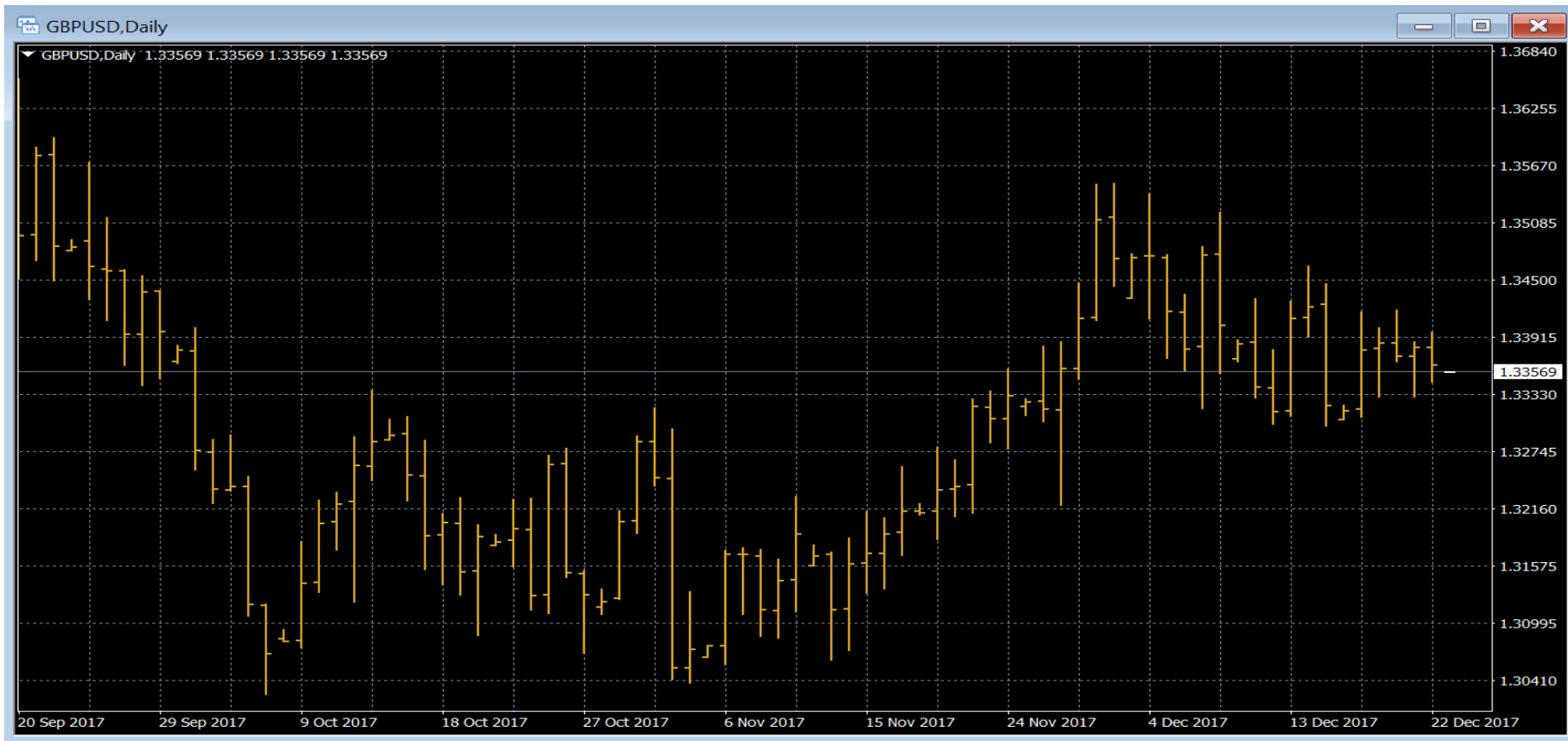
Bar-Charts

Candle Charts

Line Chart



Bar Chart



Candle Sticks



Hammer

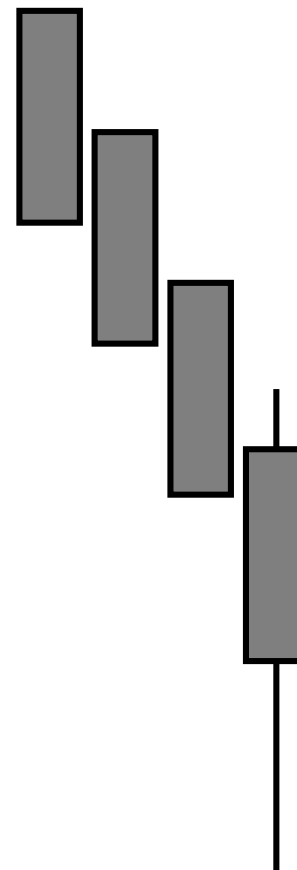
Strong Bullish Reversal Signal

Criteria

- 1.) Occurrence after downward movement
- 2.) Candle body at least twice the size of the wick and at most half the size of the fuse
- 3.) May be green or red

Trading Opportunities

- Open long positions open after exceeding the period highs of the last, penultimate or penultimate period.
- Stop: half of the fuse or a few ticks under fuse



Shooting Star

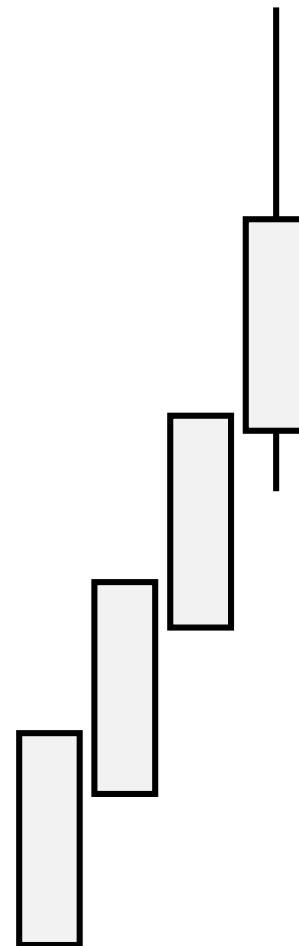
Strong bearish reversal signal

Criteria:

- 1.) Occurrence after upward movement
- 2.) Candle body at least twice as large as the fuse and at most half the size of the wick.
- 3.) May be red or green.

Trading opportunities:

- Open short positions open after falling below the period high of the last, penultimate or penultimate period.
- Stop: Half of the wick or a few ticks above wick.



Formation Analysis

- Formation analysis deals with the teaching of geometric course progressions. Certain chart patterns (trend confirmation and trend reversal formations) are used to forecast probabilities for the price trend in the future. For the same purpose, significant resistance and support zones as well as potential trend developments are identified.
- For example with:

Trend-confirming consolidation formations:

e. g. flags, triangles, pennants

Trend reversal formations:

e. g. double tops & bottoms, shoulder-head-shoulder

Supports & Resistances

Trend Lines & Trend Channels

Trend Line



Trend Channel, Flaggs, Pennants



Support, Resistance, Sideways Channel



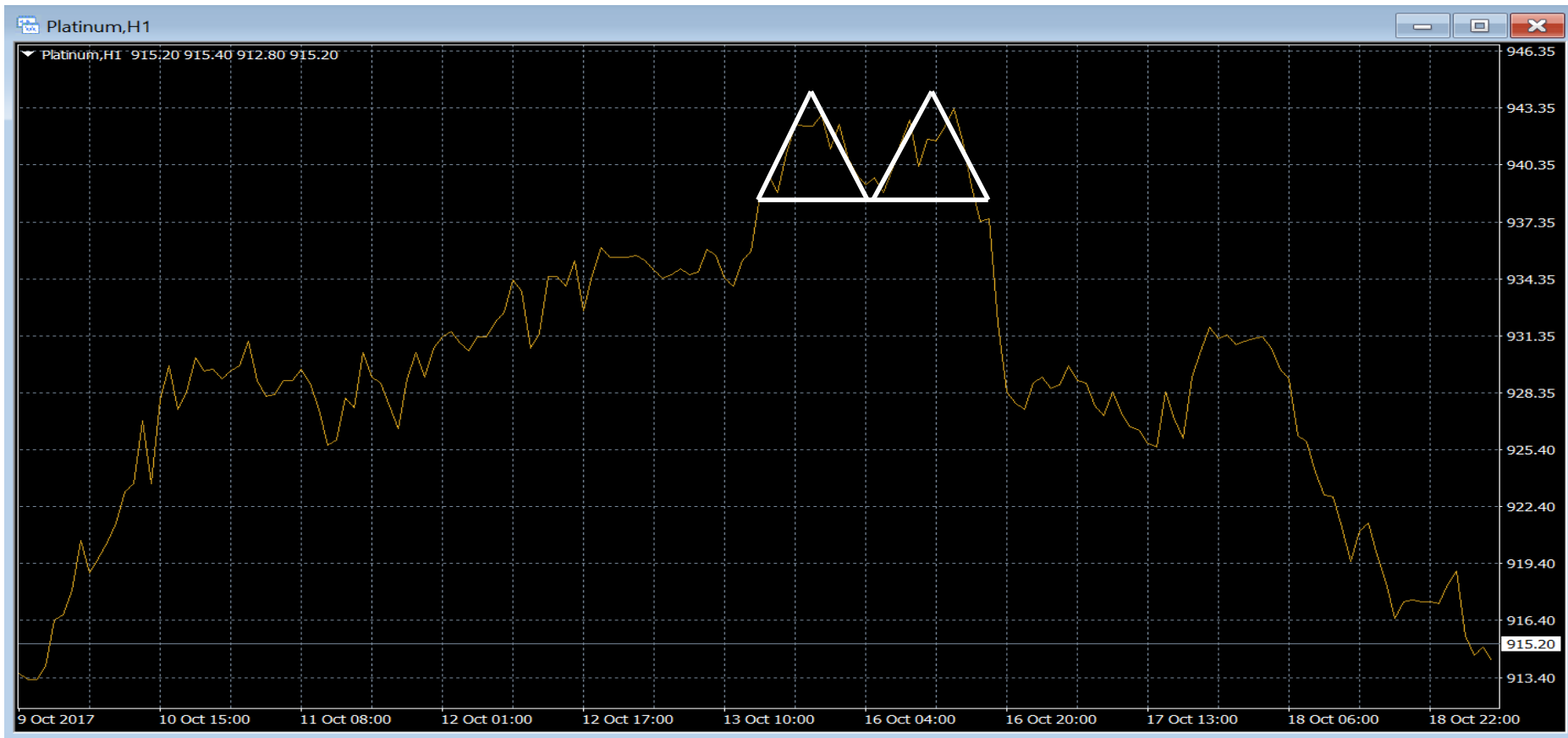
Sideways Channel, Trend Channel, Rising Triangle



Rounding Top, Double Bottom



Double Top



Shoulder-Head-Shoulder



Analysis of Market Dynamics

- The purpose of the analysis of market dynamics is to assess the trend strength of underlying assets and to identify potential 'overbought and oversold' scenarios. Against this background, entry and exit signals are also qualified.
- For example with:

Indicators:

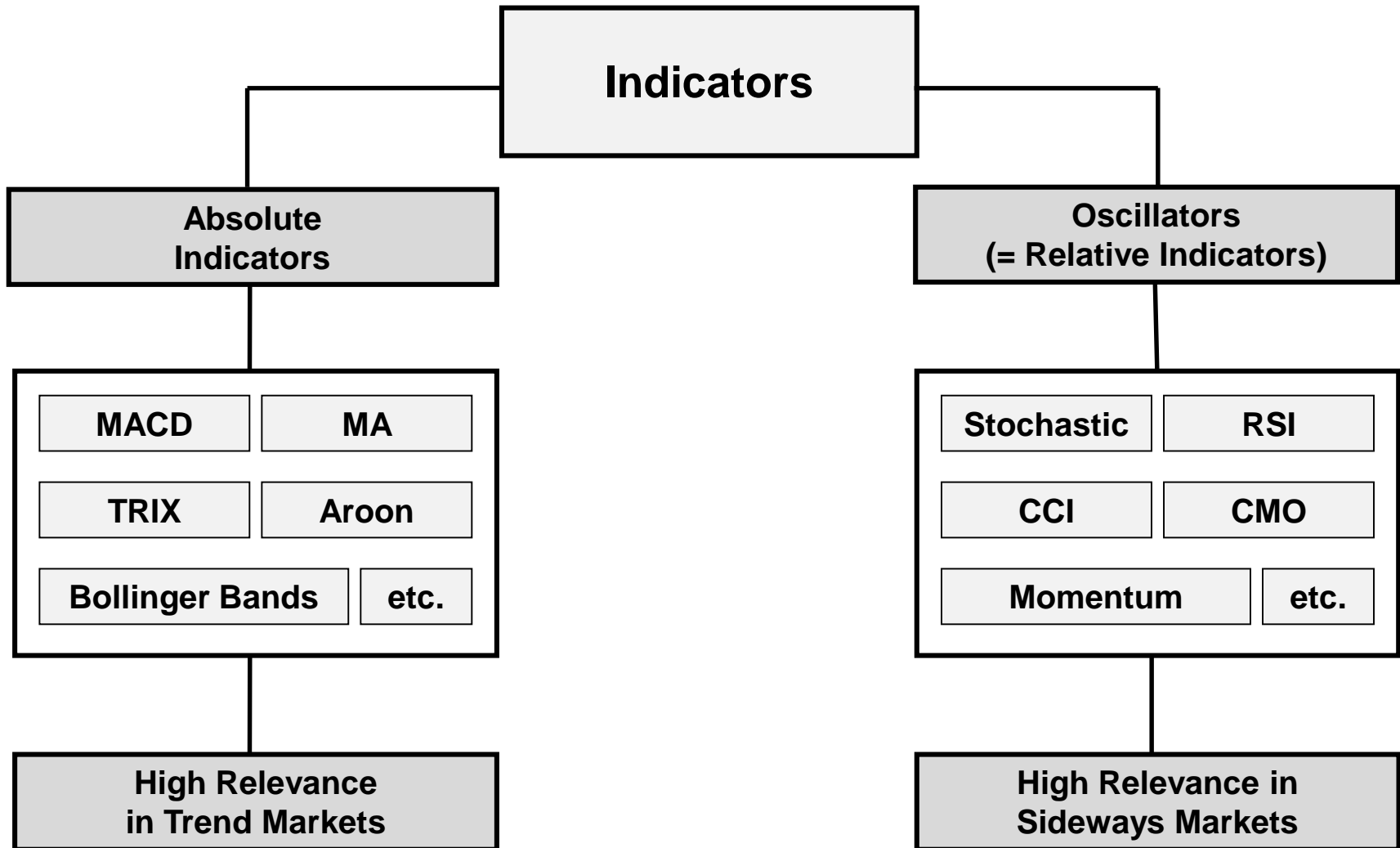
Determination of trend strength, trend direction and possible trend breaks

Oscillators:

Identification of potentially overbought or oversold market situations

Background: Indicators & Oscillators

- Mathematical models to make statements about the probability of future price or market behavior. Visualization of the result via graphical representation in the chart.
- Indicators are used to identify possible trend changes, identify probable trend directions or to determine the potential trend strength.
- Depending on the calculation basis, oscillators move within a certain bandwidth or around a midline (so-called trigger line) to determine possible overbought or oversold situations.



Moving Average (MA)

- Calculation:

Smoothing of the price development by calculating a price average of the rates over a freely selectable time period.

- Intention: Determination of ...

- a) the general trend direction based on the inclination of a long-term MA (= upwards, downwards or sideways)
- b) potential support and resistance zones
- c) explicit trading signals by crossing of prices and MA's as well as MA's with each other

Types of Calculation

- Basic variant: Simple moving average (SMA) = simple arithmetic mean of several prices in a time series (totaling of the closing prices and subsequent division by their number)
- Exponential MA (EMA) puts greater emphasis on recent price development.
- Weighted MA (Weighted Moving Average WMA): even stronger weighting of the recent price development (linear weighting)
- Example: Application of daily charts in medium to long-term trading:
 - ⇔ 200 MA for long-term trends (Big Picture)
 - ⇔ 50 to 120 employees for medium-term trends
 - ⇔ 20 to 50 employees for short-term trends

Trading Signals

- Intersections of the price with MA or MAs with each other are interpreted as trading signals:
 - a) Buy-signal: short-term MA cuts the long-term MA from bottom to top
 - b) Sell-signal: short-term MA cuts the long-term MA from top to bottom
- Conclusion: Good trading signals in trend markets, rather poor in sideways phases. However, the quality of the signals always depends on the current market situation and volatility. There is no magic number combination.

Moving Average (MA)



Moving Average (MA)



Bollinger Bänder (BBD)

- Intention: measurement of volatility, trend confirmation and reversal, outbreaks
- Calculation: The bands are usually based on the calculation of a single MA 20 and its double standard deviation (straps). The deviation of the bands from the MA depends on the fluctuation intensity (volatility) of the market.
- Wide bands = High price fluctuation ⇔ Narrow bands = Quiet market
- Trading signals: Chart technically speaking, Bollinger bands often represent strong support lines or resistance lines.
- Should the price touch, exceed or fall below a band several times in succession, a trend acceleration in the existing direction is expected.
- Extreme highs and lows outside the bands indicate a possible trend reversal. Narrowing of the ligaments can in turn indicate a possible impending breakout.

Bollinger Bänder (BBD)



Relative Strength Index (RSI)

- Intention: The Momentum Oscillator RSI visualizes the strength of a price movement. It is based on the ratio of closing prices to each other. This ratio can vary between 0 and 100.
- Trading Signals
 - a) Overbought: 70 - 100
 - b) Oversold: 0 - 30

If the RSI returns to the normal range, this represents a potential trading signal. In addition, trend divergences give indications of possible impending trend breakdowns.

- Do not use RSI in isolation, but always by complementing and confirmation other indicators.

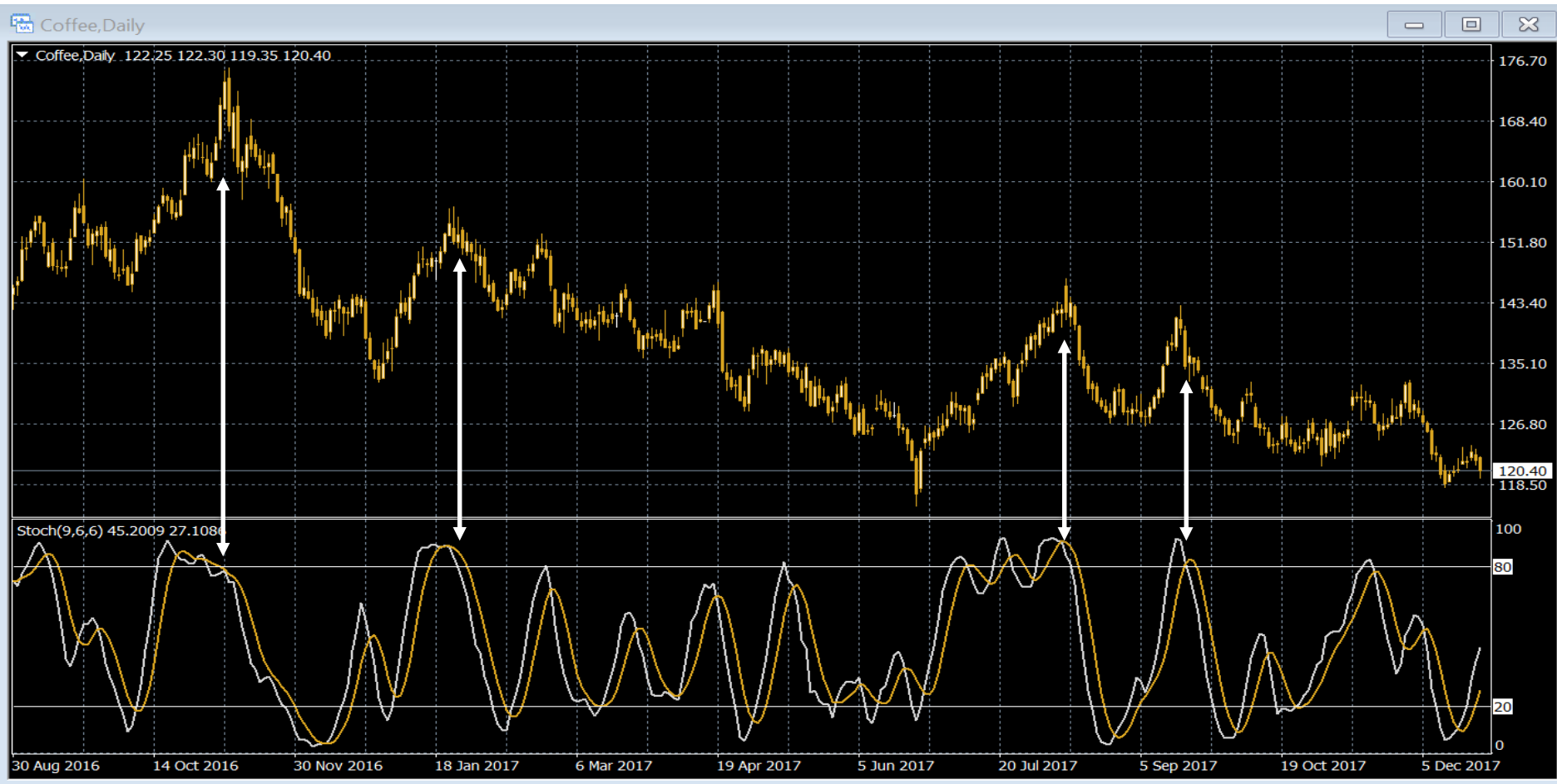
Relative Strength Index (RSI)



Stochastic

- Intention:
Prediction and identification of trend changes by visualizing a potentially overbought or oversold market situation
- Calculation:
Relation of the current closing price to the price history or to the highs and lows in the relevant time frame.
- Trading signals are generated similar to RSI. Leaving the extreme zones creates corresponding trading opportunities.
 - a) Overbought zone: 80 - 100
 - b) Normal range: 20 - 80
 - b) Over-sold zone: 0 - 20
- The stochastic indicator is particularly suitable for determining reversal points in volatile sideways and light trend phases.

Stochastic



Commodity Channel Index (CCI)

- Intention & Calculation:
Identification of cyclical developments by calculating the price difference to the correlating MA. Oscillation of the CCI around a zero line.
- Trading Signals
 - a) Normal range: -100 to + 100
 - b) Buy-signal: Indicator rises above ' -100-line' into the normal range
 - c) Sell-signal: Indicator falls below ' +100-line' into the normal range
- Wait for confirmation of the actual price before making a commitment and position it exclusively in the direction of the overriding trend.

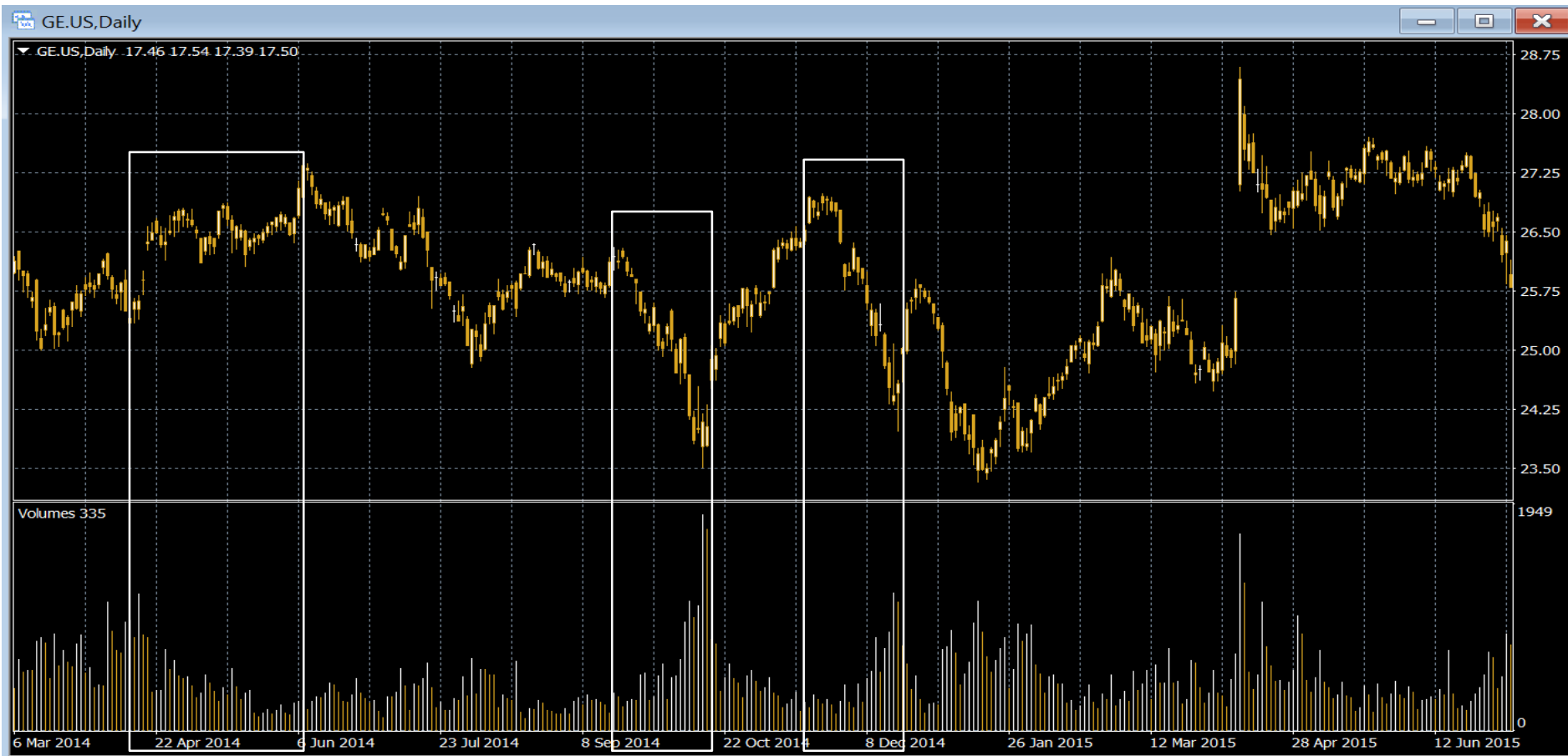
Commodity Channel Index (CCI)



Volume

- A bar chart shows the volume development by showing an increase or decrease in trading activities or turnover.
- Intention: Application for trend confirmation
- Calculation: Volume = number of transactions made or how many financial instruments have changed hands during the relevant period.
- Trend Confirmation Signal: Volume evolves with the trend.
- Vice versa, the volume is also used to indicate divergences.
- Volume divergence: A price movement is not supported or confirmed by a correlated volume increase, indicating a potential eruption (bull or bear trap).

Volume



Summary

- The technical analysis can be used for orientation purposes, in particular for timing within the framework of an entry strategy, as well as for placing meaningful stop-loss and take-profit orders in an exit strategy.
- The charting methods listed here allow conclusions to be drawn - exclusively from a statistical perspective - as to whether a particular underlying asset could be worth an investment or a trade. However, there is no guarantee of success.
- The various instruments of technical analysis should ideally be mutually supportive. From an isolated point of view, the significance is rather limited.
- In this context, technical analysis should also not be used as the sole decision-making criterion.
- Fundamental analysis is a useful supplement, especially with regard to medium- to long-term investment horizons.



Thank you for your Interest

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