

HOMEWORK 2

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TREND LINE & CHANNEL

Trend line, as what it is been called, describes a trend of the price movement of a security. It is based on the historical record of the stock you are looking into.

To draw a trend line, the first thing we need to get is the historical data of this stock. After we plot the data we get, we usually obtain a line chart. Since the price will go down and go up all the time, so we will have local min points and local max points, which is been called support point and resistance point. If we fit a line with three more support points, we get a **support trend line**. Otherwise, if we fit a line with three more resistance points, we get a **resistance trend line**. Between a support line and a resistance line is a channel, who predicts the whole price trend for us.

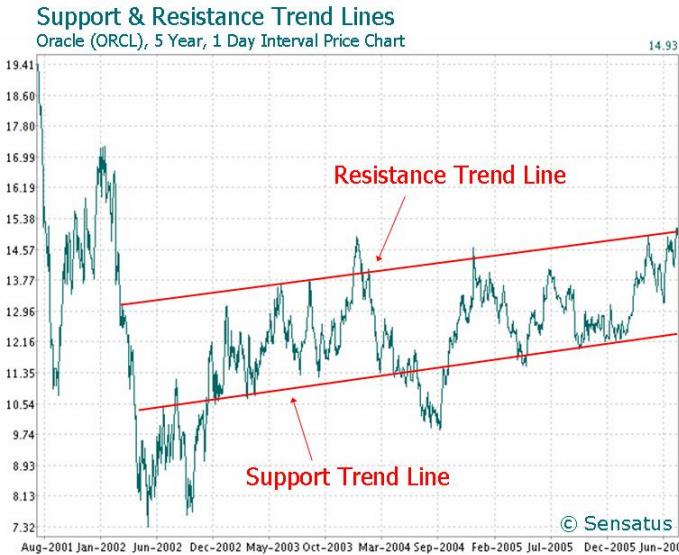


Fig. 1. In this plot the two red lines draw a channel

MAJOR TREND REVERSALS

Generally speaking, a major trend reversal means there are two trend exists in a same chart. It is usually not to be observed at the beginning and it is only can be confirmed after the trend has gone far enough.



Fig. 2. A major trend reversal will usually look like this.

PATTERNS

Head-and-shoulders Pattern

This pattern shows a major trend reversal.

Head and Shoulders formation consists of a left shoulder, a head, and a right shoulder and a line drawn as the neckline. Also there is an upside down version of this pattern.



Fig. 3. In this plot the two red lines draw a channel

Flags and Pennant Pattern

The following patterns are different from the Major Trend Reversal. The trend are usually tend to be steady and short lasting.

The flag pattern is encompassed by two parallel lines. These lines can be either flat or pointed in the opposite direction of the primary market trend.

A classic pattern for technical analysts, the pennant pattern is identifiable by a large price move, followed by a continuation period and a breakout.

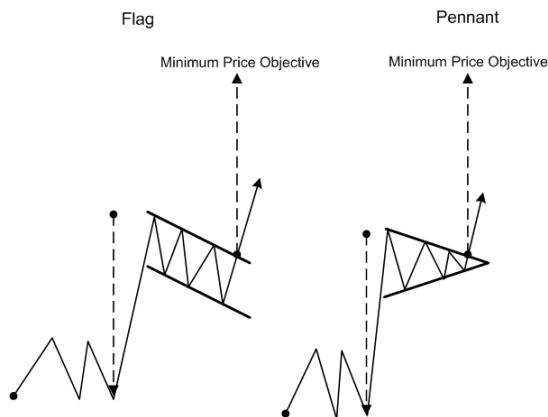
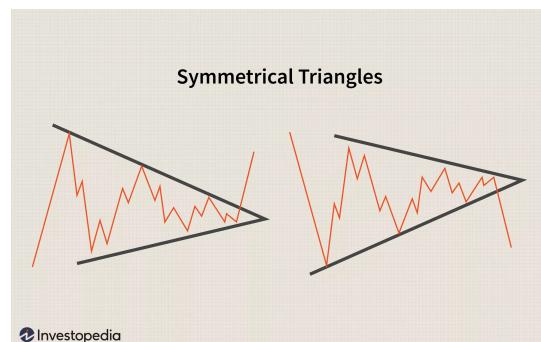
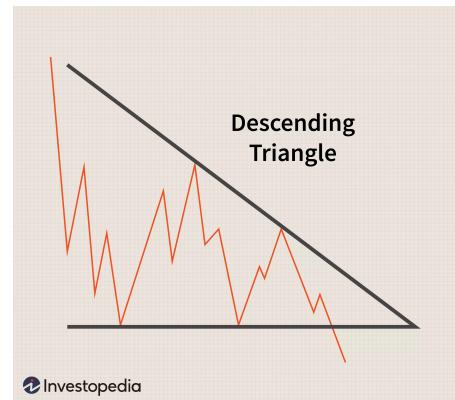


Fig. 4. This plot shows two different patterns.

As we can see in the above graph, there two different patterns are pretty similar to each other. The difference is that the support trend line and the resistance trend line of flags pattern are parallel to each other, but the two line of pennant pattern are intersected.



REFERENCES

- [1] [https://en.wikipedia.org/wiki/Trend_line_\(technical_analysis\)](https://en.wikipedia.org/wiki/Trend_line_(technical_analysis))
- [2] <https://onlinelibrary.wiley.com/doi/10.1002/9781119202622.ch3>
- [3] https://en.wikipedia.org/wiki/Flag_and_pennant_patterns#Flag_pattern
- [4] <https://www.investopedia.com/articles/technical/03/091003.asp>

Triangles Pattern

The pattern derives its name from the fact that it is characterized by a contraction in price range and converging trend lines, thus giving it a triangular shape. And the triangles are different from each other depends on whether it is ascending or decreasing or neither.

