First Touch in Technical Analysis

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Course: Sp.20 Software Engineering Web Application

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Date: Feb 19,2020

1. Trend lines and channels

Trend lines are the most directed impression for us on a stock about where it is heading for. For example, when a see a stock, the first image is how the price is changed over time, however, we can deduce a line for the price of the stock if it is going up or slopping down. Also, the price of the stock is always waving, which means we cannot directly see a single line of the price which is moving up or going down. So we need channels to describe the brief trend of the stock price. Ideally, the channel line will be based off two reaction highs or reaction lows. A channel can be classified to two kinds: bullish price channel, which is a good trend for the investors. Bearish price channel, which will describe the price is continuously slopping down. Here I use BTC-USD as an example of trend lines and channels. **Figure 1** describes the main trend lines of BTC-USD.

Figure 1

From the begging of September to 18th Feb, BTC-USD shows two different trend is six months. The first trend of BTC-USD is shown in the **Figure 1.** We can directly see the stock price is slopping down dramatically from $10916 to $7047. Another trend started on 16th Dec to 18th Feb. Main-trend line 2 is a good indicator for investors that it is the right time for them to buy the stock but we do not know when it is going down just like we did not know when the stock price will stop falling down from the main-trend1. We will use patterns to do the prediction of the price trend later. However, if we view it carefully, we can find the size of two channels is different. The first channel is much larger that the second channel. That means the price of the stock is not stable. An ideall robust stock should have small channels to moving up and down. Larger size channel means investing in this stock could be a very high risk. Also, I observe the trade volume of BTC-USD in the six months. The trade volume is larger when the main trend is heading up but a lower trade volume when it is going down.

2. Major trend reversals

I will use the same example of BTC-USD to explain what is a major trend reversal. As what we can see in the **figure 1**, there are two major trends in heading for different directions. A major trend reversal means that there are two trends on the chart, with a reversal in between them where either a bull trend has reversed into a bear trend or a bear trend has reversed into a bull trend. Our example is the later one. This kind of reversal can bring the largest benefit for the investors if we know when it is going be happen. However, this is also the most unpredictable price changes in the stock market since the stock is like a wave, there are many up and down reversals but only one reversal is going to break the main trend line and creates another main trend.

3. Fundamental analysis

Fundamental analysis means a investor will predict the further trend of how a stock is going to be. There are many methods for the fundamental analysis, like conducting a company stock valuation and predict its possible price evolution and make a projection on its business performance. From many aspects that **not belong to technical analysis**. Somehow, there are like two kind of different stock price analysis method. Fundamental analysis mainly focus on long term stock trend even though there are some reversals in the price trend. Technical analysis is kind of like a method focusing on short term benefit for most investors. I will also use the BTC-USD as our example in **figure 2**.

Figure 2

The reason why I keep using BTC-USD as my example is it is so typical that it includes a super bull market and also a super bear market. As we know BTC-USD is not famous when it is published. Not so many people would believe this is the future virtual online trading coin. So the price keeps low in the first two and a half years until the end of 2017. At that time I believe bitcoin is a term that everybody in computer science would know, even for many normal people who did unrelated job to science area. That is when most of investors see a huge market that could even been. Many investors began mining in block chain and bought BTC stock. They are not wrong about what they had seen at that time, but just not the right time to join a total free market of BTC. With high expectation of bitcoin, BTC started to rise dramatically high. Then, the tragedy happened just what we have seen in the beginning of 2018. Bitcoin had almost lost its value and many brokers lost confidence to block chain. That means, fundamental analysis could be risky, not a guaranteed method to win even in long term investing. However, they were not totally wrong, as we can seen the price for BTC-USD is still keep rising after that big fall. It is still worth to believe block chain is a technology with a huge market behind it. That is why it can rise from $139 to $9627 to now.

4. Support and resistance

Briefly speaking, support means the reversal in the stock price which will prevent the stock price falling too dramatically. Resistance is just as the opposite of support. Resistance will stop the price rising too dramatically. These two concepts are undoubtedly two of the most highly discussed attributes of technical analysis. I will use JPM(JPMorgan Chase &Co.) as my example to show what is a support and what is a resistance.

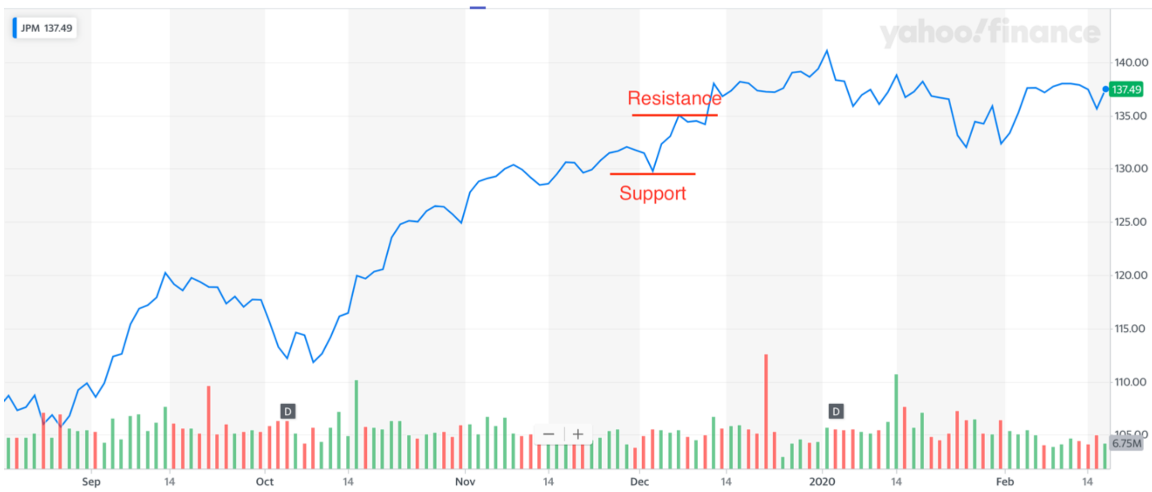

Figure 3

As what we can see from **figure 3**, a chart for the price of JPM stock in the near 6 months. Support usually happens at the bottom of a reversal where the stock is going down. Resistance is on the top of a reversal where stock is going up. Comparing the main trend reversal, here the reversal is what usually happens in stock price like a waving. The main trend reversal is just a special kind of reversal in stock. Normally, a support and resistance would not infect the main trend of the stock price but influence the investors confidence about their investment. Also, if we look at the trading volume, there would be small trading volume when a support/resistance happens.

5. Head-and-shoulders pattern, flags, pennants

Head-and-shoulders is a special pattern in the stock technical analysis. Why I say it is special? That is because it is also hard to predict and can bring the most benefit for the investors. The pattern is kind of like main trend reversal but more specific.

Figure 4

I will also use BTC-USD as my example, since there was a hug price change in the history of it. Head the highest price of the stock and shoulders are the two last wave which is near the head. If investors knows when the head or shoulder is coming, investors will definitely make a fortune by selling/buy the stock at the right time. We can consider that head is the highest beneficial point and shoulders are two signals showing there is a huge change to the stock price. Also, the trade volume is extremely high at that time comparing to other time.

Flag pattern is a price pattern that, in a shorter time frame, moves counter to the prevailing price trend observed in a longer time frame on a price chart. It is named because of a flag on a flagpole.

Figure 5

Here I use the price of NVDA(NVIDIA Corporation) when it started as an typical example in **figure 5**. A flag sign usually represents if this stock is going to continuously rise/fall or incoming a huge reversal. Figure 5 shows a continuously rise even though with a head-shoulder pattern ahead. Flag pattern is a sign for the investors to decide if it is the right time to sell/buy the stock, a signal for opportunities. Flag patterns signify trend reversals or breakouts after a period of consolidation.

A pennant is a continuation pattern in technical analysis formed when there is a large movement in a security, known as the flag, followed by a consolidation period with converging trend lines. Here pennant is similar to the structure to flag pattern but a little bit different. It has converging trend lines during the consolidation period and last from one to three weeks.

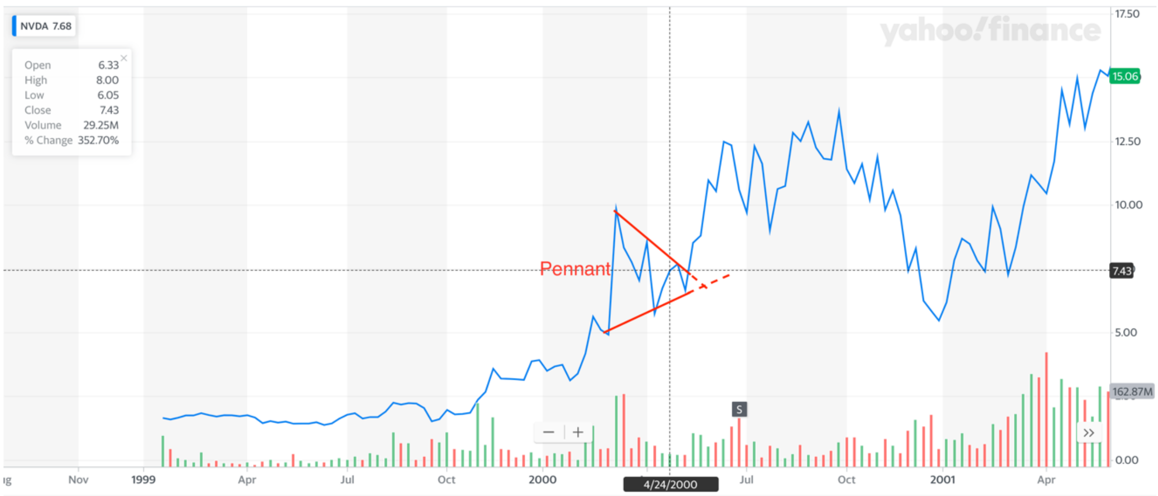

Figure 6

Figure 6 shows a typical pennant in NVDA stock in the middle of 2000. We call the end of converging area as the breakout point of pennant. Usually, the trading volume of pennant is large at the beginning of it where it is quite open. Then the trading volume will decrease during the consolidation period. When the stock reaches its breakpoint, a large trading volume will come. In my perspective, pennant is also a trading signal for investors to catch some opportunities. The stop-loss is often set at the lowest point of pennant pattern, since a breakpoint from these levels would invalidate the pattern and could mark the beginning of a long-term reversal.

6.Conclusion

What we have learnt from the pattern of stock price is helpful in technical analysis, though some professional financial investors do not trust in it. From the trend line and channel we know the brief trend of where a stock is heading. And from those small patterns we know what is a signal for an investor should care about. It is not a 100 percent correct prediction but we can learnt from the previous stock price change to assess the benefit and risk.

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