Trading Dogecoin with Investors' Attention using Swing Strategy

1. Crypto Market Background

Crypto market is an emerging market which has gained more and more attention recently from financial institutions and retail investors. Compared to traditional financial market, crypto market has less restrictions. Firstly, crypto assets are tradable 24 hours a day, 7 days a week; secondly, investors can almost trade it on any amount they want. Due to such convenience, it is reasonable to consider that investors' attention is more likely to be converted into real invest actions. Also, overreaction associated with greed and fear would be exaggerated in such market. Therefore, this project aims to examine the effectiveness of the trading method of combining investors' attention with swing strategy.

2. Trading Instrument and Strategy

The back-testing period was from 2019-12-01 to 2021-10-01.

2.1 Instrument

I chose Dogecoin as the trading instrument since it is a popular crypto asset among retail investors recently. Compared to Bitcoin and Ethereum, two big brothers in crypto market, altcoins such as Dogecoin has more proportion of retail investors and thus gets more influence by the surge of their attention.

2.2 Trading Idea

There are different types of trading systems. For instance, day trading is a method of buying and selling within a day while position trading uses longer term chart and swing trading is more profitable when market tends to move in one direction.

A good trading system usually contains several components: entry point, exit point, stop loss, take profit and so on. In this project, I tried to use the surge of investors' attention as a signal to entry a long position and tried to utilize swing strategy to keep track of the price movement.

As inspired by Heyman, Lescrauwaet, and Stieperaere's work (2019), the google Search Volume Index (SVI) is taken as a measurement of investors' attention. I crawled daily scaled SVI of the keyword "DOGE" via *pytrends* API, then compute the abnormal SVI (ASVI) according to the following formula:

$$ASVI = (SVI_t - median(SVI_{t-1}, \dots, SVI_{t-7})) \,/\, median(SVI_{t-1}, \dots, SVI_{t-7}) * 100$$

where $SVI_t$is the SVI during the day t, $median(SVI_{t-1}, \dots, SVI_{t-7})$ the median value of SVI during the prior 7 days. Thus, ASVI is a robust measure of the short-term surge of investors' attention, it reflects the increase proportion of current SVI compared to median SVI of the past seven days. I set 200 of ASVI

value as an indicator of a surge of Dogecoin price, that is, it is regarded as a long position entry signal if the surge is over 200% of the median of past seven days. Also, I treated the fall in ASVI back to near zero as the exit signal, indicating the end of trend and must close all existing position. Usually, the high attention are expected to sustain for several days.

Once the entry point has been determined, I take 4-hours timeframe for swing trading. During the period between the entry signal and exit signal, I set a fixed loss limit 25%, if the price has fall under 75% of the entry price, all existing position should be cleared and wait for next chance. If the trend follows the prediction or at least does not touch the stop loss threshold, the long position will be hold until the exit signal appears or when other exit conditions meet.

During the trading period, the price may fluctuate up and down, the drawdown of the price creates some local minimal, once a local minimal (above initial stop loss price) forms, the stop loss order will be moved up to the local minimal, which means, if a second drawdown hit the previous local minimal, the position will be closed.

3. Experiment and Results

3.1 Google Search Volume

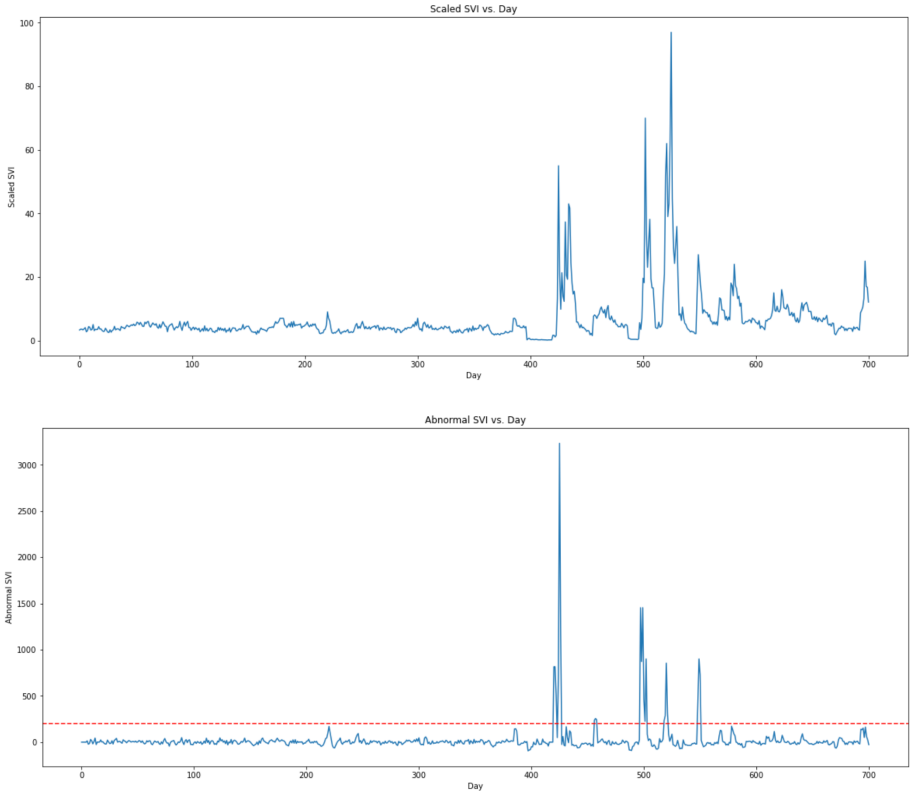

Figure 1: Scaled SVI and Abnormal SVI plot of back-testing period, red dash line indicates the threshold 200

As shown in *Figure 1*, there are five trading opportunities during the back-testing period, I will examine each of them in next session.

3.2 TRADE

3.2.1 Trade 1

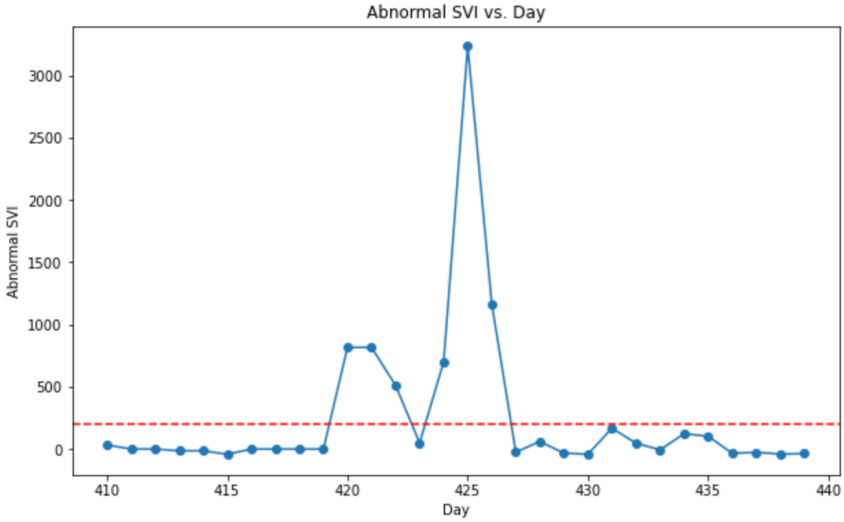

Figure 2: Trade 1 active period

From *figure 2*, the entry point is 2021-01-25 00:00 and exit point is 2021-02-01 00:00 as the ASVI has dropped back to near zero. Also, it has displayed the local minimal as updated stop loss. The profit of trade 1 is about 334%.

3.2.1 Trade 2

Figure 3: Trade 2 active period

Figure 3 has shown that trade 2 is less convinced compared to trade 1. The entry point is 2021-03-02 00:00 and exit point is 2021-03-05 00:00. Trade 2 got a loss about -1.4%.

3.2.1 Trade 3

Figure 4: Trade 3 active period

Figure 4 has shown the entry point is 2021-04-12 00:00 and exit point is 2021-04-18 00:00. Trade 3 got a profit about 269%.

3.2.1 Trade 4

Figure 5: Trade 4 active period

Figure 4 has shown the entry point is 2021-05-03 00:00 and exit point is 2021-05-07 00:00. Trade 4 got a profit about 53%.

3.2.1 Trade 5

Figure 6: Trade 5 active period

Figure 6 has shown the entry point is 2021-06-02 00:00 and exit point is 2021-06-05 00:00. Trade 5 got nearly no profit or loss.

4. CONCLUSION

The proposed trading strategy combines the investors' attention measured by google search volume index and swing strategy. Five significant surge of attention is detected during the past two-year back-

testing period, 3 of them got profit while 2 of them are not effective. The experiment results have shown that the surge of investor's attention and price are highly correlated, however, as time goes by, the surge of price detected by search volume index gets weaker.