

# Final Project

## Financial Packages and Applications



元智大學  
Yuan Ze University

### Team members

Jennie(1082761)

Russie(1072774)

Francesca(1082741)

Linda(1082720)

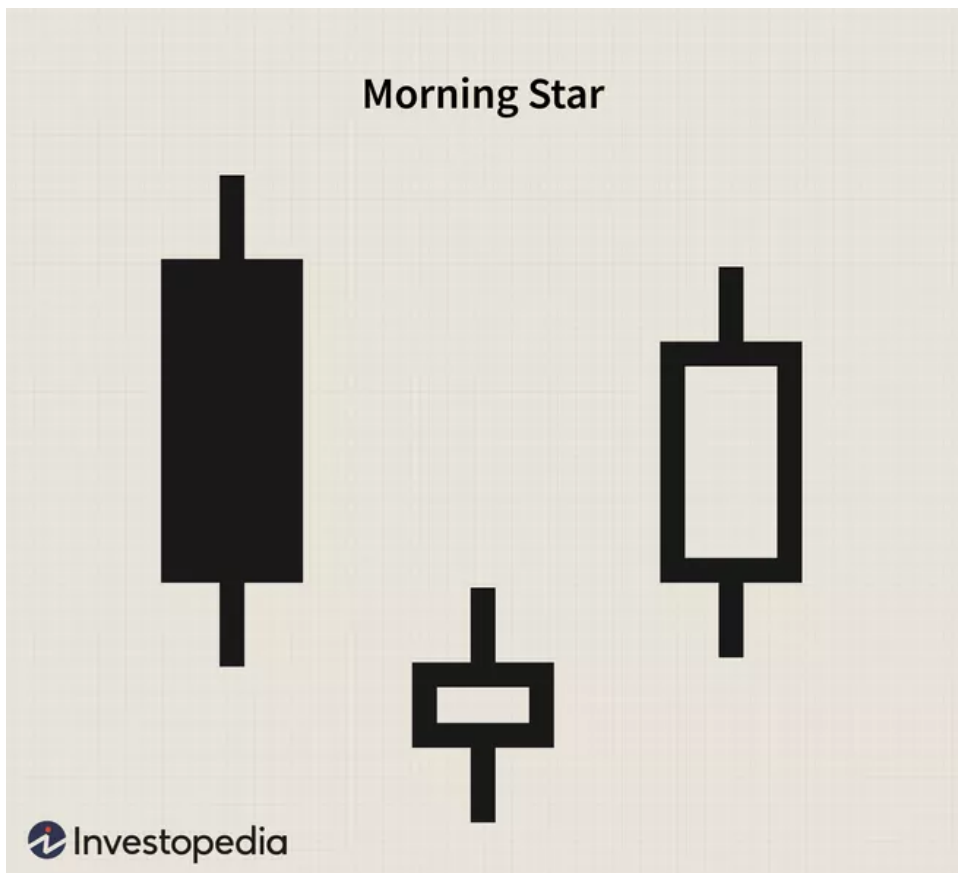
### Outline

1. Motivation and Purpose.....
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## 1. MOTIVATION & PURPOSE

With the stressful epidemic situation taking place all over the world, businesses have suffered extremely heavy losses, which must also be reflected very clearly in their financial statements as well as their stock prices. Despite the bad situation of the epidemic, the shipping industry recorded a large amount of growth in profit as well as share price on the Taiwan stock exchange. In this project, we work on analyzing the upside potential of this industry group as well as finding the best plan to trade for optimal profit. The two candlestick signals that we focus on analyzing in this project are Morning star and Dark Cloud Cover and the indicator RSI.

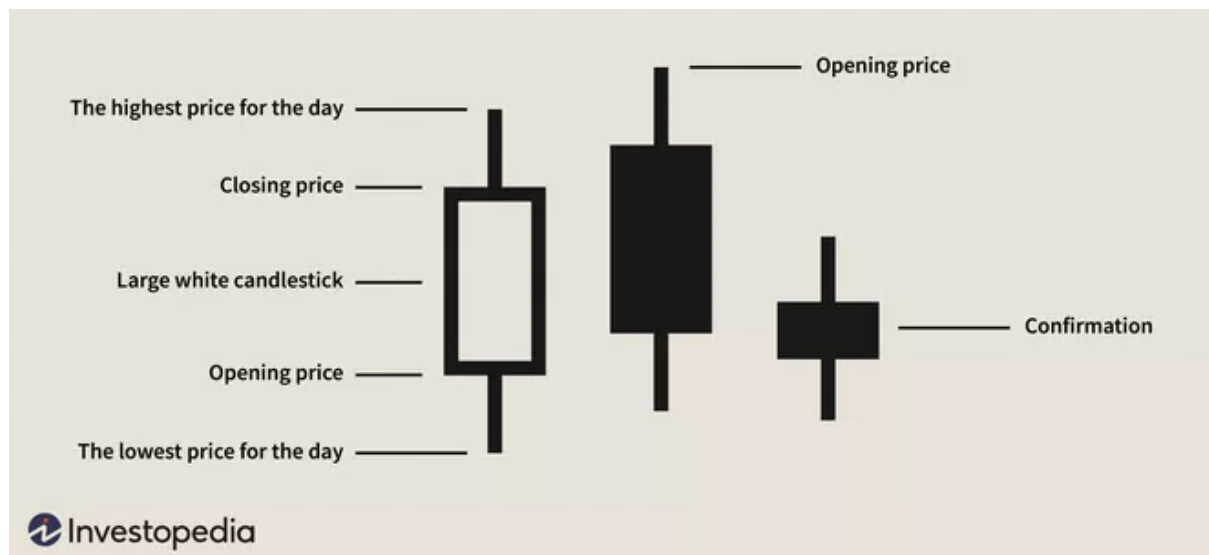
As the name indicates, the Morning Star is a sign of hope and a new beginning in a gloomy downtrend. The pattern consists of three candles: one short-bodied candle (called a doji or a spinning top) between a preceding long black candle and a succeeding long white one. The color of the real body of the short candle can be either white or black, and there is no overlap between its body and that of the black candle before. It shows that the selling pressure that was there the day before is now subsiding. The third white candle overlaps with the body of the black candle and shows a renewed buyer pressure and a start of a bullish reversal, especially if confirmed by the higher volume.



Dark Cloud Cover is a bearish reversal candlestick pattern where a down candle (typically black or red) opens above the close of the prior up candle (typically white or green), and then closes below the midpoint of the up candle.

The pattern is significant as it shows a shift in the momentum from the upside to the downside. The pattern is created by an up candle followed by a down candle. Traders look for the price to continue lower on the next (third) candle. This is called confirmation.

The Dark Cloud Cover pattern involves a large black candle forming a "dark cloud" over the preceding candle. As with a bearish engulfing pattern, buyers push the price higher at the open, but sellers take over later in the session and push the price sharply lower. This shift from buying to selling indicates that a price reversal to the downside could be forthcoming.



The relative strength index (RSI) is a momentum indicator used in technical analysis that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of a stock or other asset. The RSI is displayed as an oscillator (a line graph that moves between two extremes) and can have a reading from 0 to 100.

When the RSI surpasses the horizontal 30 reference level, it is a bullish sign, and when it slides below the horizontal 70 reference level, it is a bearish sign. Put another way, one can interpret that RSI values of 70 or above indicate security is becoming overbought or overvalued and may be primed for a trend reversal or corrective price pullback. An RSI reading of 30 or below indicates an oversold or undervalued condition.

During trends, the RSI readings may fall into a band or range. During an uptrend, the RSI tends to stay above 30 and should frequently hit 70. During a downtrend, it is rare to see the

RSI exceed 70, and the indicator frequently hits 30 or below. These guidelines can help determine trend strength and spot potential reversals.



## 2. INNOVATION

Instead of only observing the change of the stock market of the shipping industry based on one kind of signal, we conduct an analysis using those two strategies with the aim of comparing the results and concluding the strategy which is better for observing, evaluating and predicting the market.

### ***Candle Strategy***

Morning star patterns can be used as a visual sign for the start of a trend reversal from bearish to bullish, but they become more important when other technical indicators back them up. Another important factor is the volume that is contributing to the pattern formation.

The Dark Cloud Cover pattern is useful only if it occurs following an uptrend or an overall rise in price. As prices rise, the pattern becomes more important for marking a potential move to the downside. If the price action is choppy the pattern is less significant since the price is likely to remain choppy after the pattern. There is no profit target for a Dark Cloud Cover pattern. Traders utilize other methods or candlestick patterns for determining when to exit a short trade based on Dark Cloud Cover.

### ***RSI Strategy***

RSI measures the speed of change but does not offer a guarantee that reversal is impending.

RSI works best when used to confirm what we see in traditional price patterns, candlestick formations, or in combinations of both.

### **3. DEFINE SIGNAL**

#### **Strategy 1:**

Morning Star: an easily recognizable downtrend

Dark Cloud Cover: a reversal to the downside

#### **Strategy 2:**

RSI: a means of identifying opportunities to enter or exit a position.

$RSI \approx 0$ , The rise is far less than the fall degree ( $up < down$ ).

$RSI \approx 100$ , The upside is far greater than the downside ( $up > down$ ).

$RSI \approx 50$ , It is approximately equal to the downward force ( $up \approx down$ ).

RSI6 - 6-day RSI: It corresponds to 80 and 20 bands, which means if 6-day RSI is over 80, it is an indicator of overbought for short term.

RSI14 - 14-day RSI: It uses 70 and 30 bands, which means if 14-day RSI is over 70, it is an indicator of overbought for short term.

RSI24 - 24-day RSI: It uses 60 and 40 bands, which means if 24-day RSI is over 60, it is an indicator of overbought for short term.

Gold Cross: It appears when a stock's short-term moving average crosses above its long-term moving average. It indicates a long-term bull market going forward

Death Cross: It happens as the shorter moving average forms a crossover down through the longer moving average. It signals a long-term bear market.

### **4. TRADING STRATEGIES**

#### **Strategy 1:**

Buy the stock when we see the Morning Star and keep purchasing until seeing the sell signal.

Sell the stock when seeing the Dark Cloud Cover

#### **Strategy 2:**

We use the Relative Strength Index(RSI) to determine stocks with RSI and know the buying and selling situation, and then predict the future price trend of the stock.

Buy the stock when " $RSI6 < RSI20$ " or " $RSI6$  go up and through  $RSI24$ " or "Gold Cross"

Sell the stock when " $RSI6 > RSI80$ " or " $RSI6$  go down and through  $RSI24$ " or "Death Cross"

If there are any conflicts, we don't either buy or sell.

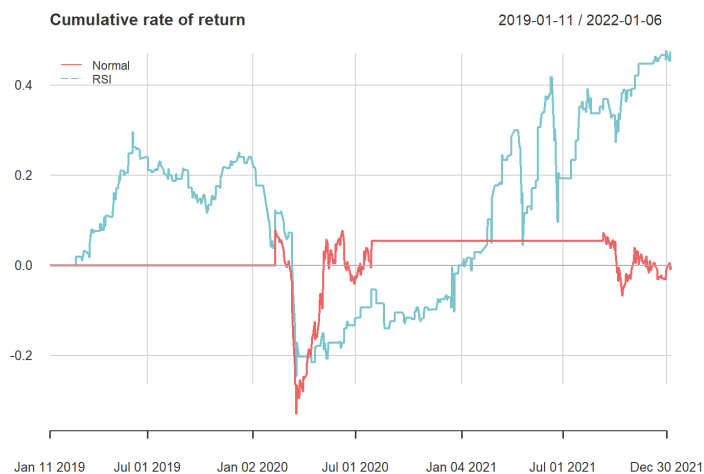
#### **\*Evaluation**

> Name

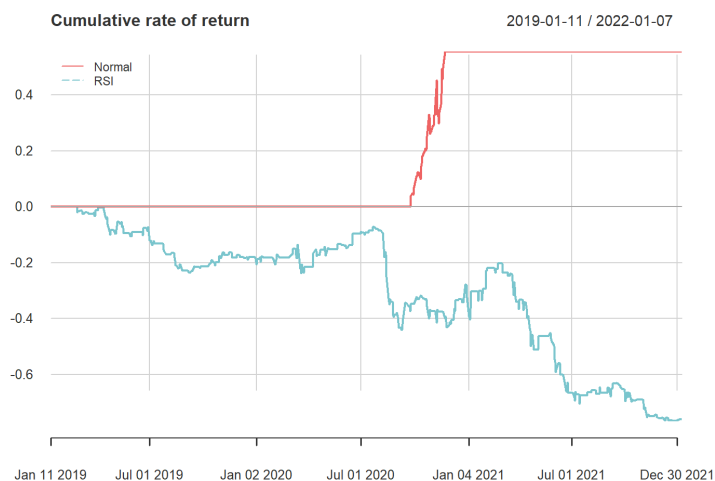
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[3]	"2605 Sincere Navigation"	"2606 U-Ming Marine"
[5]	"2607 EITC"	"2608 Kerry TJ"
[7]	"2609 Yang Ming Marine"	"2610 China Airlines"
[9]	"2611 Tze Shin"	"2612 CMT"
[11]	"2613 China Container"	"2615 Wan Hai Lines"
[13]	"2617 Taiwan Navigation"	"2618 EVA Airways"
[15]	"2630 AACL"	"2633 THSRC"
[17]	"2634 AIDC"	"2636 T3EX"
[19]	"2637 Wisdom"	"2642 Pelican"
[21]	"5607 Farglory FTZ Holding"	"5608 Shih Wei Navigation"
[23]	"8367 CS"	

### The cumulative rate of return

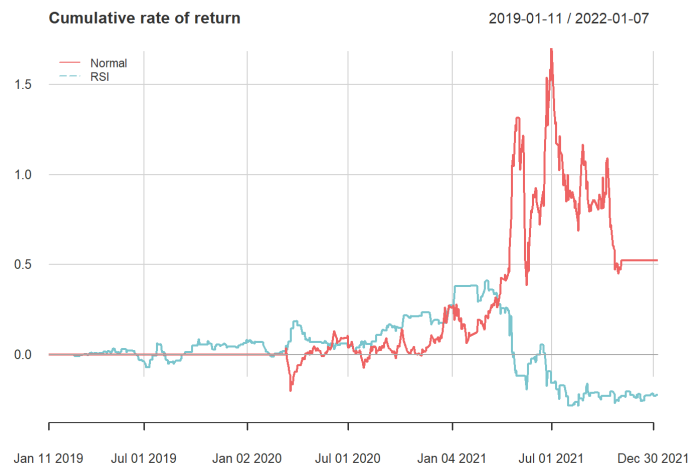
- 2208 CSBC



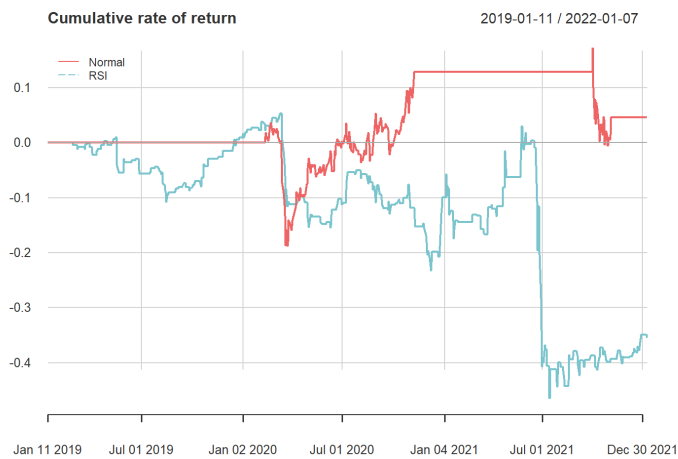
- 2603 Evergreen Marine



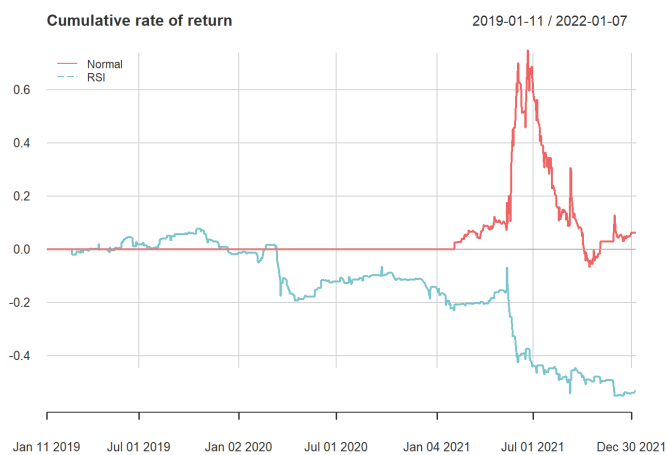
- **2605 Sincere Navigation**



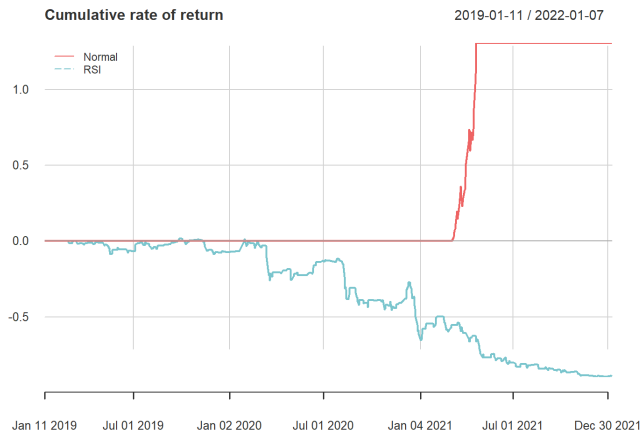
- **2606 U-Ming Marine**



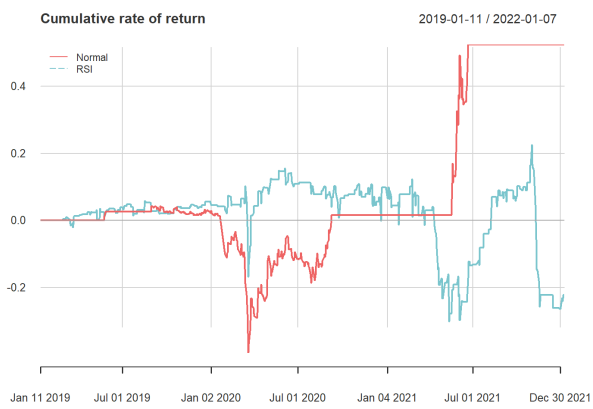
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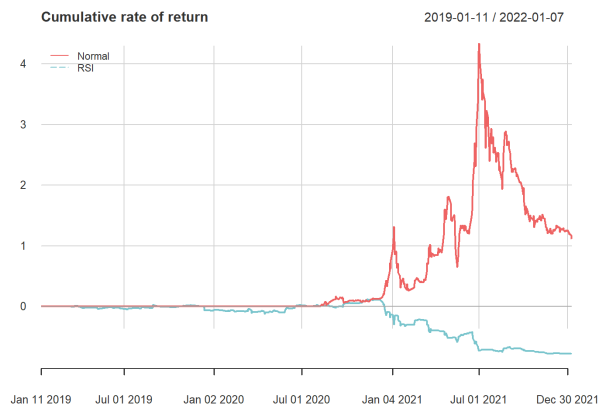
- **2608 Kerry TJ**



- **2609 Yang Ming Marine**

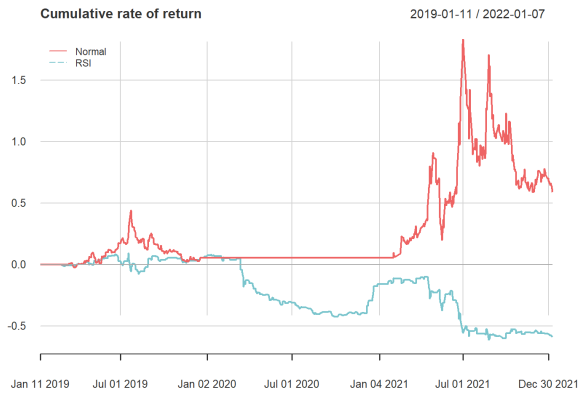


- **2610 China Airlines**

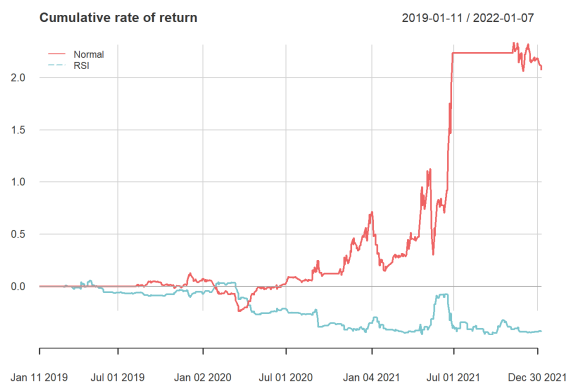


- **2611 Tze Shin**

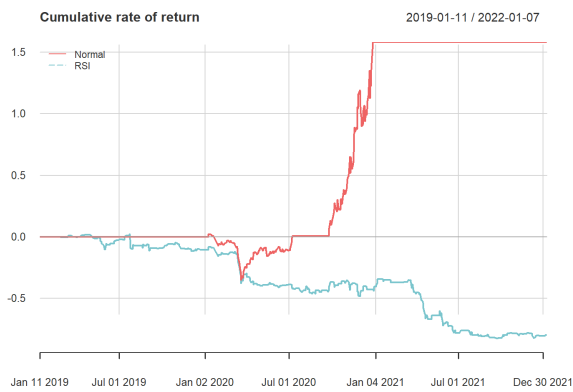




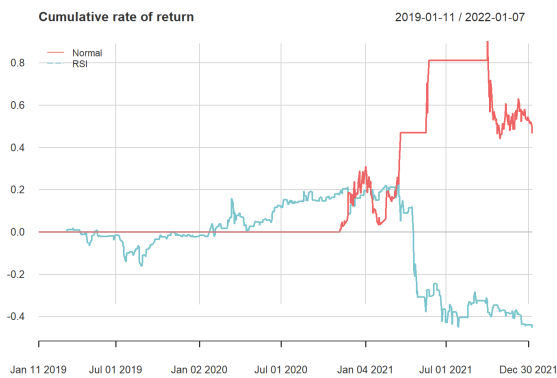
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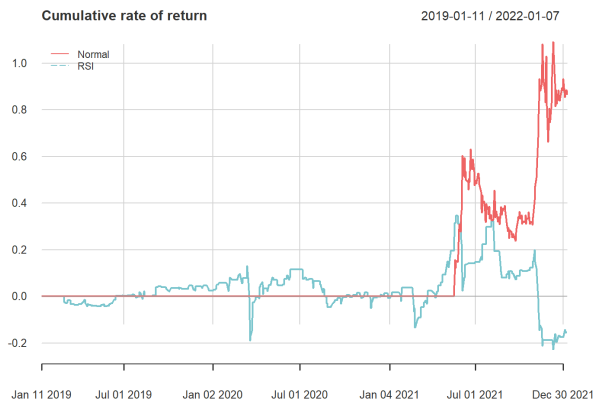
- **2613 China Container**



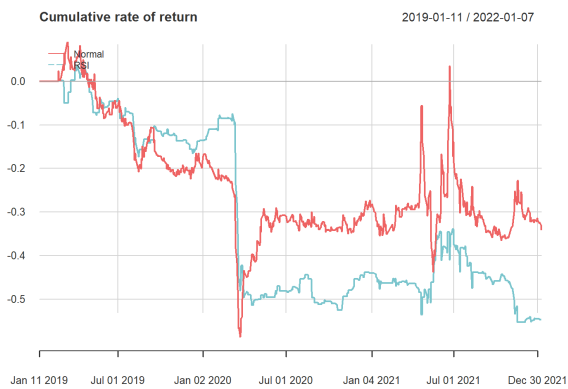
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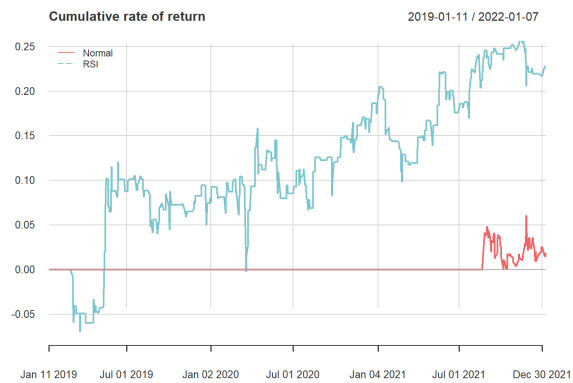
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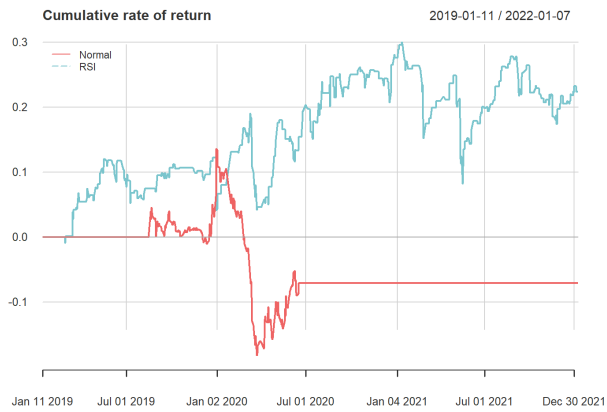
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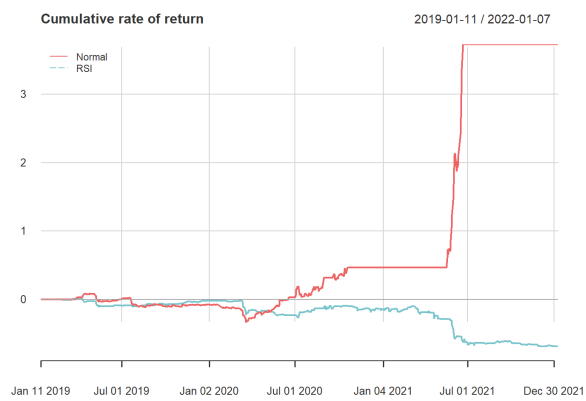
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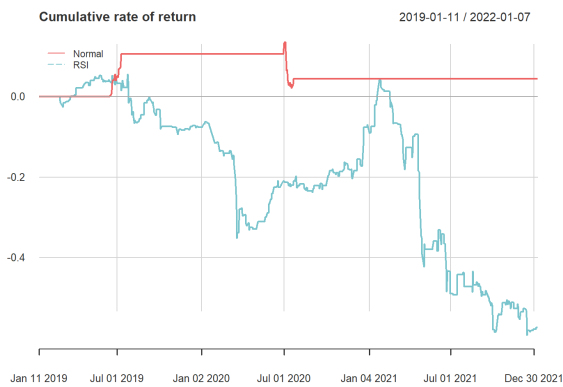
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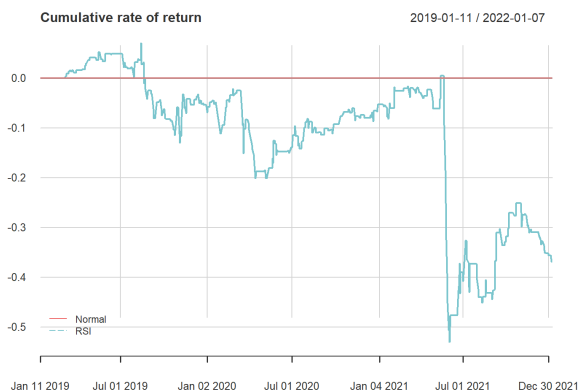
- **2636 T3EX**



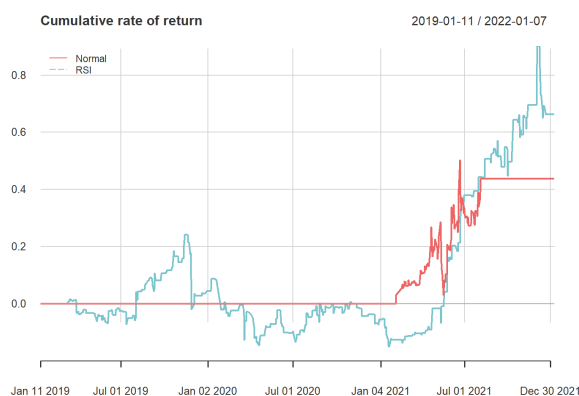
- **2637 Wisdom**



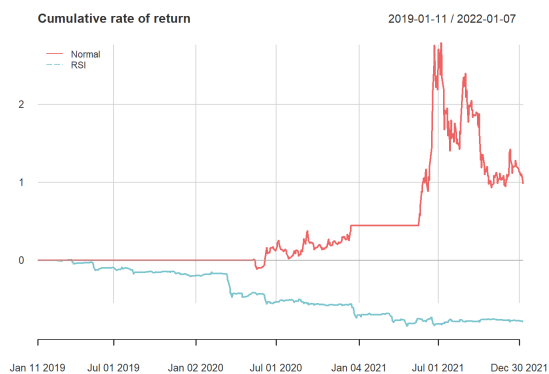
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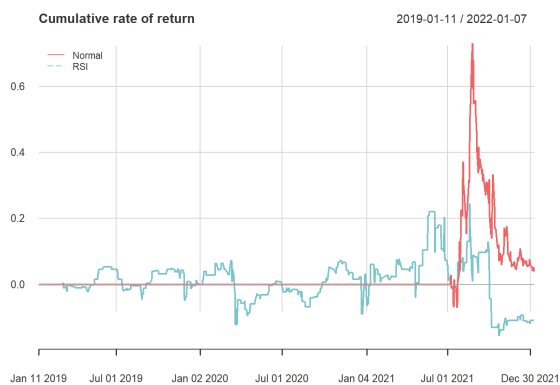
- **5607 Farglory FTZ Holding**



- **5608 Shih Wei Narigation**



- **8367 CS**



**Win Rate**

<b>Stock Number</b>	<b>Strategy 1: Normal</b>	<b>Strategy 2: RSI</b>
[2208]	0.1222527	0.5384615
[2605]	0.03703704	0.4414716
[2606]	0.2139918	0.479021
[2607]	0.2674897	0.5031646
[2608]	0.13344307	0.4897119
[2609]	0.1179698	0.452459
[2610]	0.03429355	0.4754601
[2611]	0.1687243	0.5274725
[2612]	0.2345679	0.4753521
[2613]	0.2812071	0.4662379
[2617]	0.3264746	0.4485294
[2618]	0.1316872	0.465035
[2630]	0.1056241	0.5189003
[2633]	0.1138546	0.5510204
[2634]	0.39369	0.4476534
[2636]	0.0521262	0.5261194
[2637]	0.1193416	0.5191638

<b>[2638]</b>	<b>0.2757202</b>	<b>0.4444444</b>
<b>[2639]</b>	<b>0.03017833</b>	<b>0.5016722</b>
<b>[2642]</b>	<b>0</b>	<b>0.4893617</b>
<b>[2647]</b>	<b>0.0781893</b>	<b>0.5313653</b>
<b>[5608]</b>	<b>0.2139918</b>	<b>0.4758842</b>
<b>[8367]</b>	<b>0.07956104</b>	<b>0.5175097</b>

## 5. CONCLUSION

For strategy one, the middle candle of the Morning Star captures a moment of market indecision where the bears begin to give way to bulls. The third candle confirms the reversal and can mark a new uptrend, so we can know at what price we can buy in the stock. Morning star patterns can be used as a visual sign for the start of a trend reversal from bearish to bullish, but they become more important when other technical indicators back them up as previously mentioned. Another important factor is the volume that is contributing to the pattern formation.

Generally, a trader wants to see volume increasing throughout the three sessions making up the pattern, with the third day seeing the most volume. High volume on the third day is often seen as a confirmation of the pattern (and a subsequent uptrend) regardless of other indicators. A trader will take up a bullish position in the stock/commodity/pair/etc. as the morning star forms in the third session and rides the uptrend until there are indications of another reversal.

For strategy two, Dark Cloud Cover is a candlestick pattern that shows a shift in momentum to the downside following a price rise. The pattern is composed of a bearish candle that opens above but then closes below the midpoint of the prior bullish candle, so this pattern shows a signal which can sell the stock. Furthermore, the five criteria for the Dark Cloud Cover pattern are:

1. An existing bullish uptrend.
2. An up (bullish) candle within that uptrend.
3. A gap up on the following day.
4. The gap up turns into a down (bearish) candle.
5. The bearish candle closes below the midpoint of the previous bullish candle.

Traders may use the Dark Cloud Cover pattern in conjunction with other forms of technical analysis. For example, traders might look for a relative strength index(RSI) greater than 70, which provides a confirmation that the security is overbought. A trader may also look for a breakdown from a key support level following a Dark Cloud Cover pattern as a signal that a downtrend may be forthcoming.

So through these two strategies, we can find out what time to buy and sell the stock. Nobody can always win in the market, if we can win big and lose small, then we are the winners in the stock market.

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