

# Trading Strategies



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## Strategy-1 : VWAP Based Strategy

This strategy is based on indicator VWAP (Volume weighted average price). VWAP is indicator which is similar to Moving average but the difference is that it take volume in consideration while calculating average price. Since it involves use of volume, VWAP is very beneficial in determining price movement.

VWAP is intraday indicator and should be used only in smaller time frames viz. 1 minute ,3 minute , 5 minute and 15 minute.

### Strategy :-

Strategy involves use of an average line and builtin VWAP indicator of pine script. Here average = (close + open)/2 which when plotted will represent the movement of candles.

VWAP is plotted as `ta.vwap(close)` , this means we are plotting VWAP on close price. Whenever the price of share is above VWAP, we will enter the trade and buy and when price goes below the VWAP, we will exit the trade and sell. This is because, like MA , VWAP also act as an support to price.

```
1 //@version=5
2 strategy("Strategy", overlay=true, initial_capital = 3000)
3
4 average = (open+close)/2
5
6 if (average > ta.vwap(close))
7     stopLoss = low*0.97
8     target = high*1.13
9     strategy.entry("Long", strategy.long)
10    strategy.exit("Short", "Long", stop = stopLoss, limit = target)
11
12
13 plot(average, color = #00a500)
14 plot(ta.vwap(close), color = color.yellow)
15
```

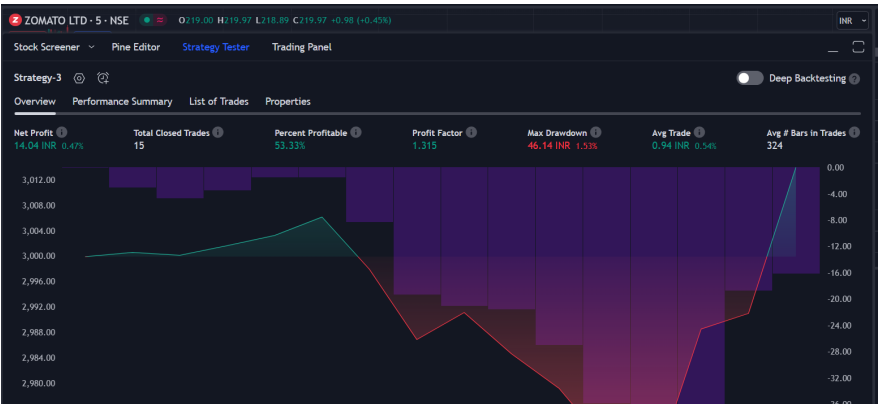
On each candle we will set the stop loss as  $low \times 0.97$  of most recent candle , similarly we will set the target as  $high \times 1.10$  of the most recent candle. This means that we are setting our reward to risk ratio as 10/3. The strategy gave pretty well results on many stocks. The success rate was however, less than 50%.

The results of strategy are shown below on some stocks.

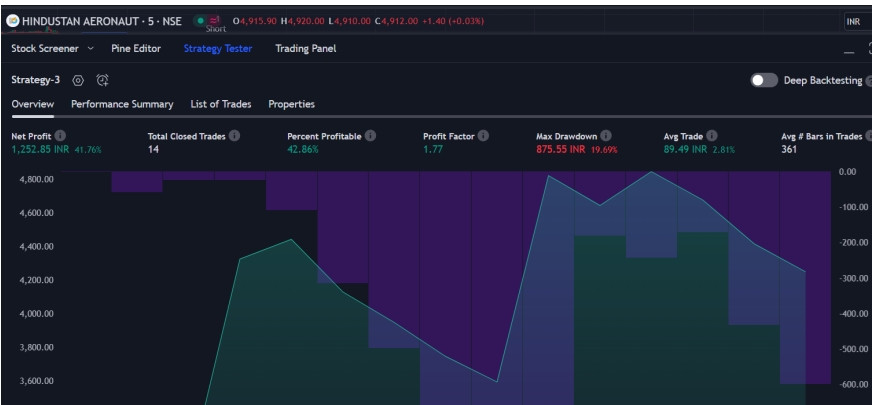
Strategy applied on IRFC share on 5minute time frame.



Strategy applied on Zomato share on 5minute time frame.



Strategy applied on HAL share on 5minute time frame.



## Strategy-2 : MACD and RSI Based Strategy

This strategy is based on use of MACD indicator. Along with this , RSI is also used to confirm the buying opportunity in market. In this strategy we will only take long position and short selling will be avoided.

### Strategy :-

We buy whenever there is crossover between MACD signal line and MACD and MACD gets above the signal line. To confirm the move we see that RSI is below 50 or not. An RSI below 50 tells that stock's price is not prone to fall and stock is fair priced so we can buy.

```
1 // @version 5
2 strategy("Strategy-2", overlay=true, initial_capital = 3000)
3
4 MACD = ta.ema(close,12) - ta.ema(close,26)
5 Buy_cond = ta.crossover(MACD,ta.ema(MACD,9))
6
7 if (Buy_cond) and (ta.rsi(close,14)<50)
8     stoploss = low*0.95
9     target = high*1.13
10    strategy.entry("long", strategy.long)
11    strategy.exit("exit","long",stop = stoploss,limit = target)
12
```

To calculate MACD we are using standard 12 period ema and 26 period ema. Also the RSI is calculated on 14 periods. The stop loss for a candle will be  $low * 0.95$  of the previous candle and target will be  $high * 1.13$  of the previous candle. This ensures the reward to risk ratio of 13/5.

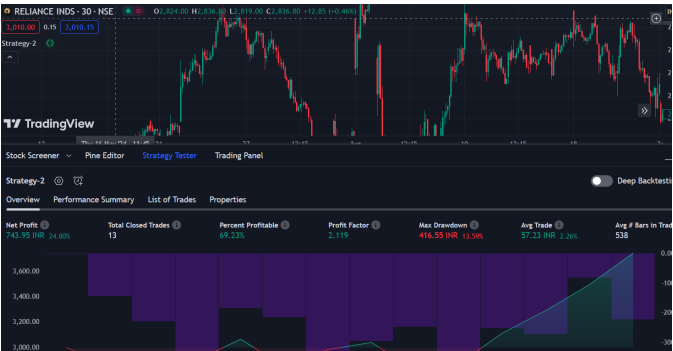
We are using this strategy in 30 min time frame, so it can be used in intraday trading as well as swing trading. The success rate for this strategy is very good and gave profit more than 50% of times in many cases.

The results of strategy are shown below on some stocks.

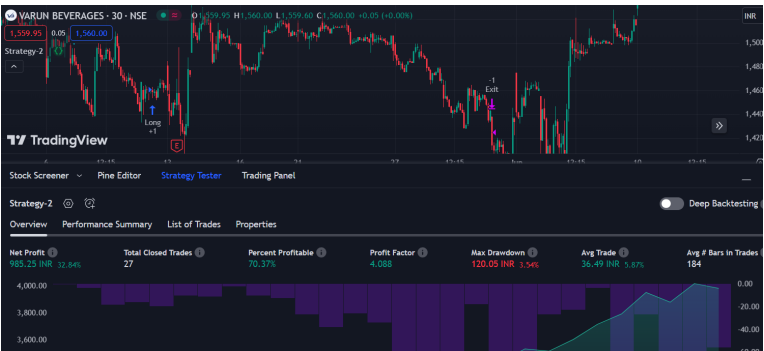
Strategy applied on HDFC share on 30 minute time frame.



Strategy applied on Reliance share on 30 minute time frame.



Strategy applied on VBL share on 30 minute time frame.



## Strategy-3 : MA Crossover With RSI MA

This strategy includes using a fast EMA and a slow EMA and their crossover as trading entry point. Along with this , for confirmation of the move we are using RSI MA over 14 periods.

### Strategy :-

Buy when 9 period EMA and a 21 period EMA crosses each other and 9 period EMA comes above the 21 period EMA. To confirm that the share is fairly priced, we are using MA with source as RSI over 14 period and period of MA is also 14. We will only buy when the RSI MA will be less than 50 to ensure fairness in price of share.

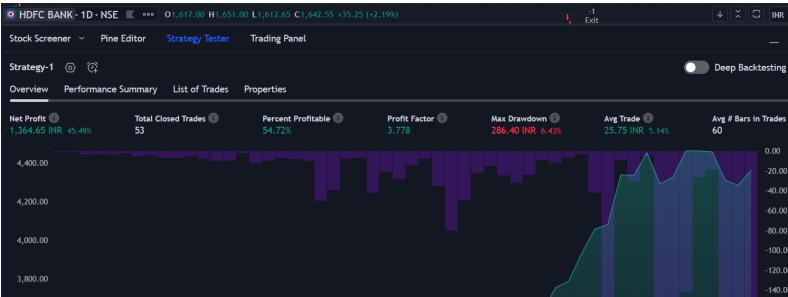
Sell when there is crossover of slow and fast EMA again and RSI is above 50 as well.

```
1 //version5
2 strategy("Strategy-1", overlay=true, initial_capital = 3000)
3
4 fastEMA = ta.ema(close, 9)
5 slowEMA = ta.ema(close, 21)
6 RSI = ta.rsi(close, 14)
7 RSI_MA = ta.ema(RSI, 14)
8
9 LongCond = ta.crossover(fastEMA, slowEMA) and (RSI_MA < 50)
10 if (LongCond)
11     strategy.entry("Long", strategy.long)
12
13 SellCond = ta.crossunder(fastEMA, slowEMA) and (RSI_MA > 50)
14 if (SellCond)
15     strategy.close("Long", "Exit")
16
17 plot(fastEMA, color = color.red)
18 plot(slowEMA, color = color.yellow)
19
20
```

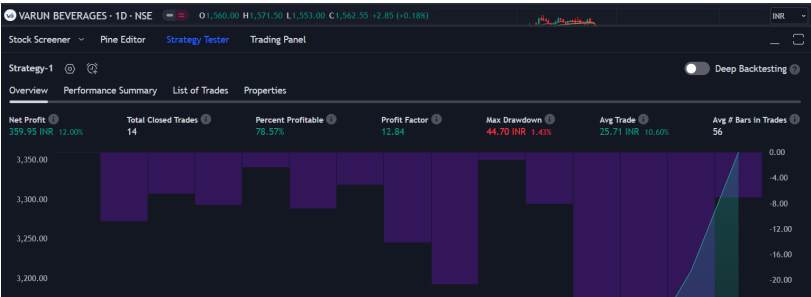
This simple strategy gave very nice result when applied to various stocks. Some of the results are shown below. In most of the cases success rate was around 50%-60%. The time frame we will be using in this strategy is daily time frame

The results of strategy are shown below on some stocks.

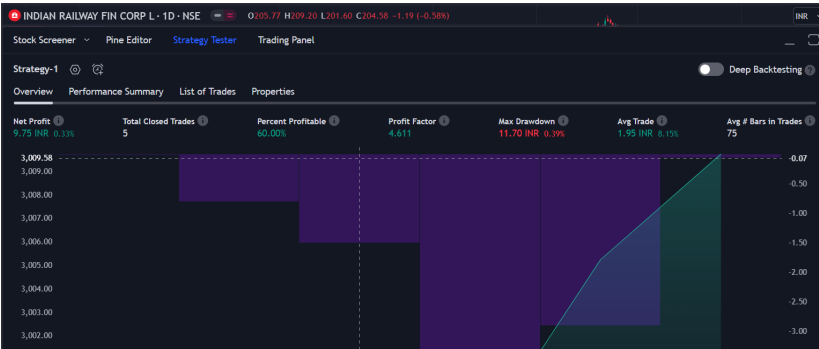
Strategy applied on HDFC share on daily time frame.



Strategy applied on VBL share on daily time frame.



Strategy applied on IRFC share on daily frame.



## Strategy-4 : Supertrend Based Strategy

This strategy is based on supertrend indicator, which basically tells about the trend in market. The supertrend used here has atr factor of 3 and atr length of 10.

### Strategy :-

We will buy when trend is positive /upwards , along with this to confirm the move we will only buy when there will be crossover of 9 period and 21 period EMA.

We will sell shares when a downtrend will start. However the downtrend can be for very short time and the upward motion of prices can continue as before. To prevent selling in this region we will sell only when the RSI is over 50 which indicates that share prices are slightly overvalued and we can sell them if we want.

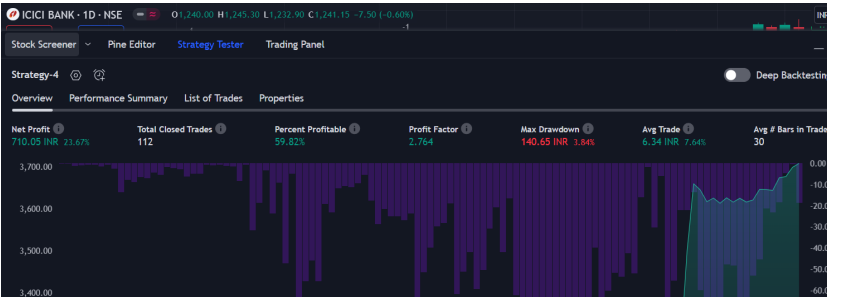
The time frame used for this strategy is daily time frame. So basically in this strategy we used Supertrend , MA and RSI to make profit. This strategy gave high success rate of 50-60% for many stocks.

```
1  //@version=5
2  strategy("Strategy-4", overlay=true, initial_capital = 3000)
3
4  atrFactor = input.float(3.0, title="ATR Factor")
5  atrLength = input.int(10, title="ATR Length")
6
7  [supertrendUpper, supertrendLower] = ta.supertrend(atrFactor, atrLength)
8
9  isUpTrend = close > supertrendLower
10 isDownTrend = close < supertrendUpper
11
12 COLOR = color.red
13 if isUpTrend
14     COLOR := color.green
15 if isDownTrend
16     COLOR := color.red
17
18 plot(supertrendUpper, color=COLOR)
19
20 plot(ta.ema(close,9), color = color.lime)
21 plot(ta.ema(close,21), color = color.yellow)
22
23
24 if isUpTrend and ta.crossover(ta.ema(close,9),ta.ema(close,21))
25     strategy.entry("long",strategy.long)
26 if isDownTrend and (ta.rsi(close,14) > 50)
27     strategy.close("long","Exit")
28
29
```

The results of strategy are shown below on some stocks.



Strategy applied on ICICI share on daily time frame.



Strategy applied on Axis Bank share on daily time frame.



Strategy applied on Reliance share on daily frame.



## Optimizing Strategy-4

The Strategy-4 already gave good results. But we can modify it to enhance it's success rate.

### Time-Frame

I am changing the time frame of strategy from 1 day to 3hrs time frame. One can use this strategy for swing trading.

### Selling Condition

For selling condition, instead of selling shares when down trend starts and RSI goes above 50, slight modification can improve the strategy. We will wait for RSI to go over 60 which will indicate that share is becoming overvalued and soon price can drop.

This will increase the profit. However, the number of trades will go down because of high limit for RSI, but the profit we will make on those trades as well as the success rate of the strategy will increase.

### Working of Strategy

The most important indicator used in this strategy is supertrend, which provides us with the trend in the market...When the trend is upwards it shows up with green plot , on the other hand when trend is downward , it shows a red plot. We can use supertrend alone to enter and exit a trade , but we are using it with two more indicators to confirm the buying and selling points.

Moving Average Crossover confirms the buying when fast EMA comes above the slow EMA. Buying should be done when trend is upwards, similarly selling should be done when trend is downwards. So when we are in up trend and MA crossover happens , we will enter the trade

When downtrend starts , ideally we can sell the shares but the downtrend can be just a correction so to avoid selling in these zones , we will sell when the shares become overvalued. So in selling condition I have added the condition for RSI to become greater than 60. At that point we will exit the trade.

```

//@version=5
strategy("Strategy-4", overlay=true, initial_capital = 3000)

atrFactor = input.float(1, title="ATR Factor")
atrLength = input.int(10, title="ATR Length")

[superTrendUpper, superTrendLower] = ta.supertrend(atrFactor, atrLength)

isUpTrend = close > superTrendLower
isDownTrend = close < superTrendUpper

COLOR = color.red
if isUpTrend
    COLOR = color.green
if isDownTrend
    COLOR = color.red

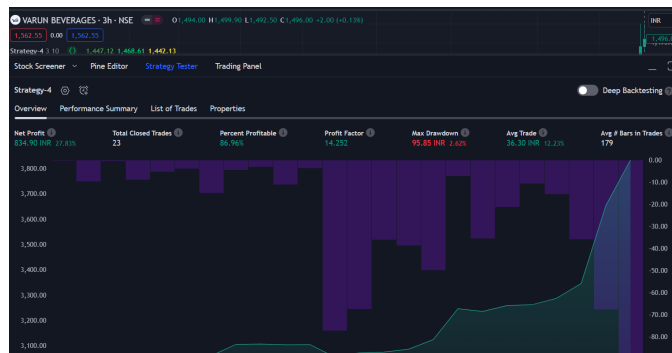
plot(superTrendUpper, color=COLOR, linewidth=3)

if isUpTrend and ta.crossover(ta.ema(close,9),ta.ema(close,21))
    strategy.entry("Long",strategy.long)
if isDownTrend and (ta.rsi(close,14) > 60)
    strategy.close("Long",true)

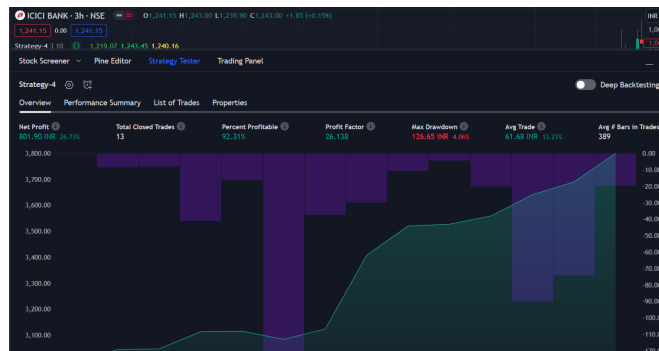
```

After making the changes in time frame and RSI condition the strategy gave much better results than old Strategy. Success ratio for some shares are shown below.

Strategy applied on VBL share on 3hrs time frame.



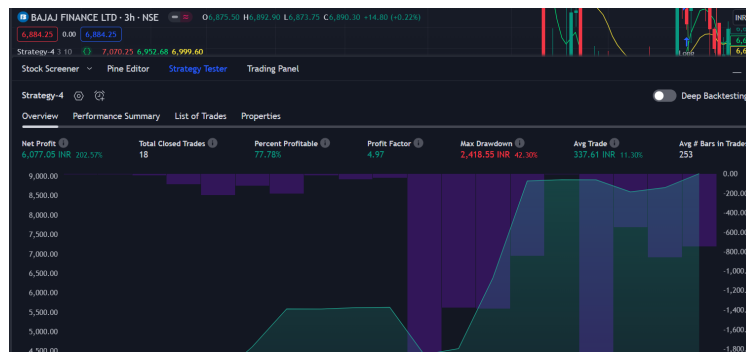
Strategy applied on ICICI Bank share on 3hrs time frame.



Strategy applied on Axis Bank share on 3hrs frame.



Strategy applied on Bajaj Finance share on 3hrs time frame.



Strategy applied on Nifty-50 Index share on 3hrs time frame.



Strategy applied on S&P CPX Nifty-50 Futures on 3hrs frame.

