報告

108062313黃允暘

使用資料

- 台指期
- 日盤
- 樣本內： 2022-04-24 ~ 2022-12-24(8個月)
- 樣本外： 2022-12-24 ~ 2023-04-24(4個月)
- 手續費：百萬分之33(原百萬分之2加20元)

使用指標

- 威廉指標(Williams %R)

$$\text{Wiliams } \%R = \frac{\text{Highest High} - \text{Close}}{\text{Highest High} - \text{Lowest Low}}$$

- 簡單移動平均線(SMA)

策略(5分K)

```
WL = 65
OB = -15
stop_pct = 1 #表示0.x%
OS = -80
L = 2
```

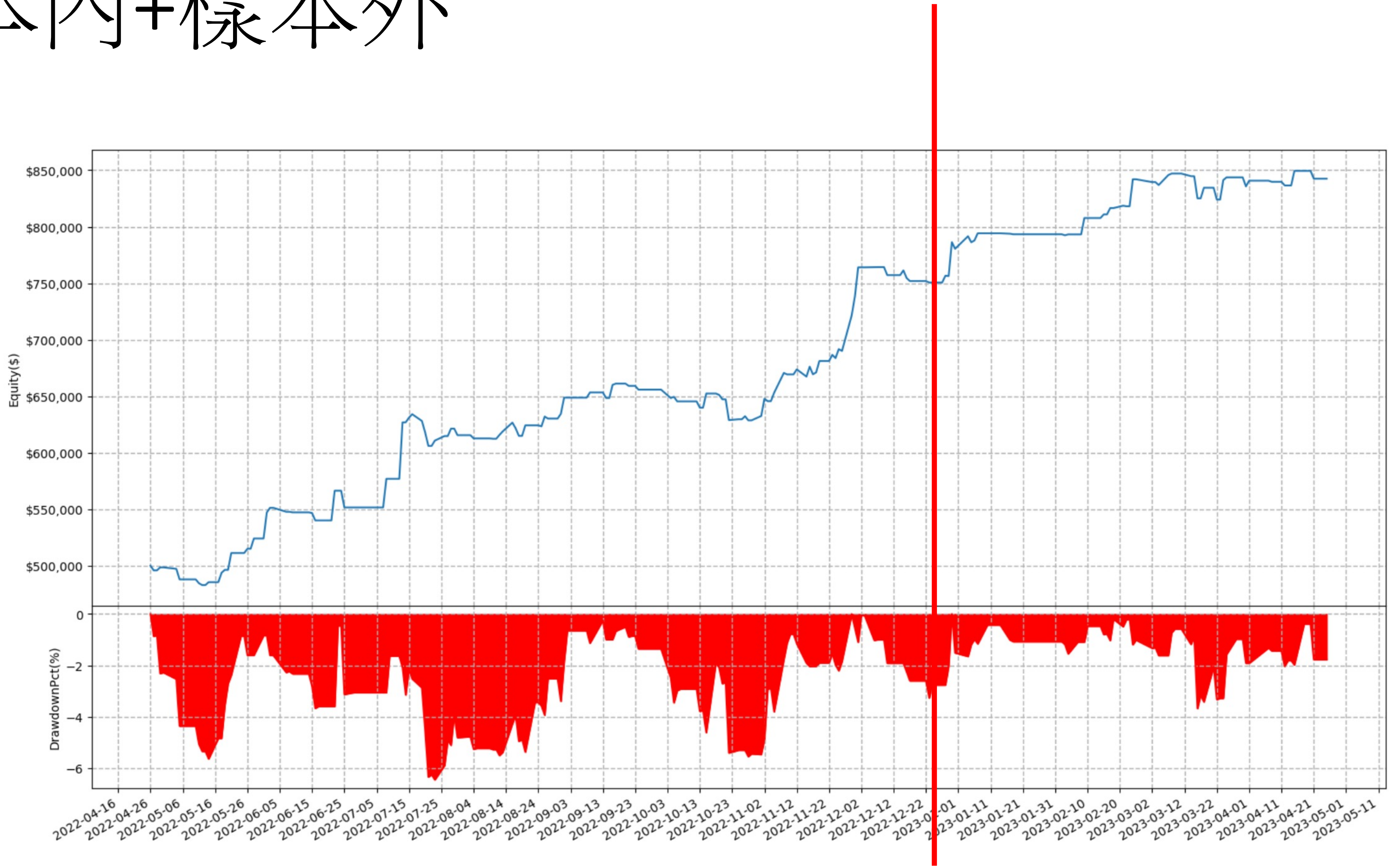
多單策略：

- 進場：
  - WR向上超越超買區
  - 開盤15分鐘後進場
- 出場：
  - 百分比停損 0.5%
  - 跌破3根低點停利停損
  - WR跌出超買區
  - 13.30平倉

空單策略：

- 進場：
  - WR向下超越超賣區
  - 開盤15分鐘後進場
- 出場：
  - 百分比停損 0.5%
  - 超出3根高點停利停損
  - WR向上超出超賣區
  - 13.30平倉

樣本內+樣本外



$850,000
$800,000
$750,000
$700,000
$650,000
$600,000
$550,000
$500,000
Equity($)
0
−2
−4
−6
DrawdownPct(%)
2022-04-16
2022-04-26
2022-05-06
2022-05-16
2022-05-26
2022-06-05
2022-06-15
2022-06-25
2022-07-05
2022-07-15
2022-07-25
2022-08-04
2022-08-14
2022-08-24
2022-09-03
2022-09-13
2022-09-23
2022-10-03
2022-10-13
2022-10-23
2022-11-02
2022-11-12
2022-11-22
2022-12-02
2022-12-12
2022-12-22
2023-01-01
2023-01-11
2023-01-21
2023-01-31
2023-02-10
2023-02-20
2023-03-02
2023-03-12
2023-03-22
2023-04-01
2023-04-11
2023-04-21
2023-05-01
2023-05-11

改進方向

1. 考慮SMA指標

Start	2022-04-25 08:50:00
End	2023-04-24 13:45:00
Duration	364 days 04:55:00
Exposure Time [%]	14.698217
Equity Final [$]	842512.1692
Equity Peak [$]	857712.1692
Return [%]	68.502434
Buy & Hold Return [%]	-6.465904
Return (Ann.) [%]	71.790443
Volatility (Ann.) [%]	31.505727
Sharpe Ratio	2.278647
Sortino Ratio	9.958428
Calmar Ratio	11.119848
Max. Drawdown [%]	-6.456063
Avg. Drawdown [%]	-0.977277
Max. Drawdown Duration	47 days 22:45:00
Avg. Drawdown Duration	3 days 19:53:00
# Trades	289
Win Rate [%]	37.716263
Best Trade [%]	1.762669
Worst Trade [%]	-0.784983
Avg. Trade [%]	0.039912
Max. Trade Duration	2 days 19:05:00
Avg. Trade Duration	0 days 00:54:00
Profit Factor	1.799678
Expectancy [%]	0.040195
SQN	2.902457

策略 (5分K)

```
WL = 65
OB = -15
stop_pct = 1 #表示0.x%
OS = -80
L = 2

n1 = 15
n2 = 55
```

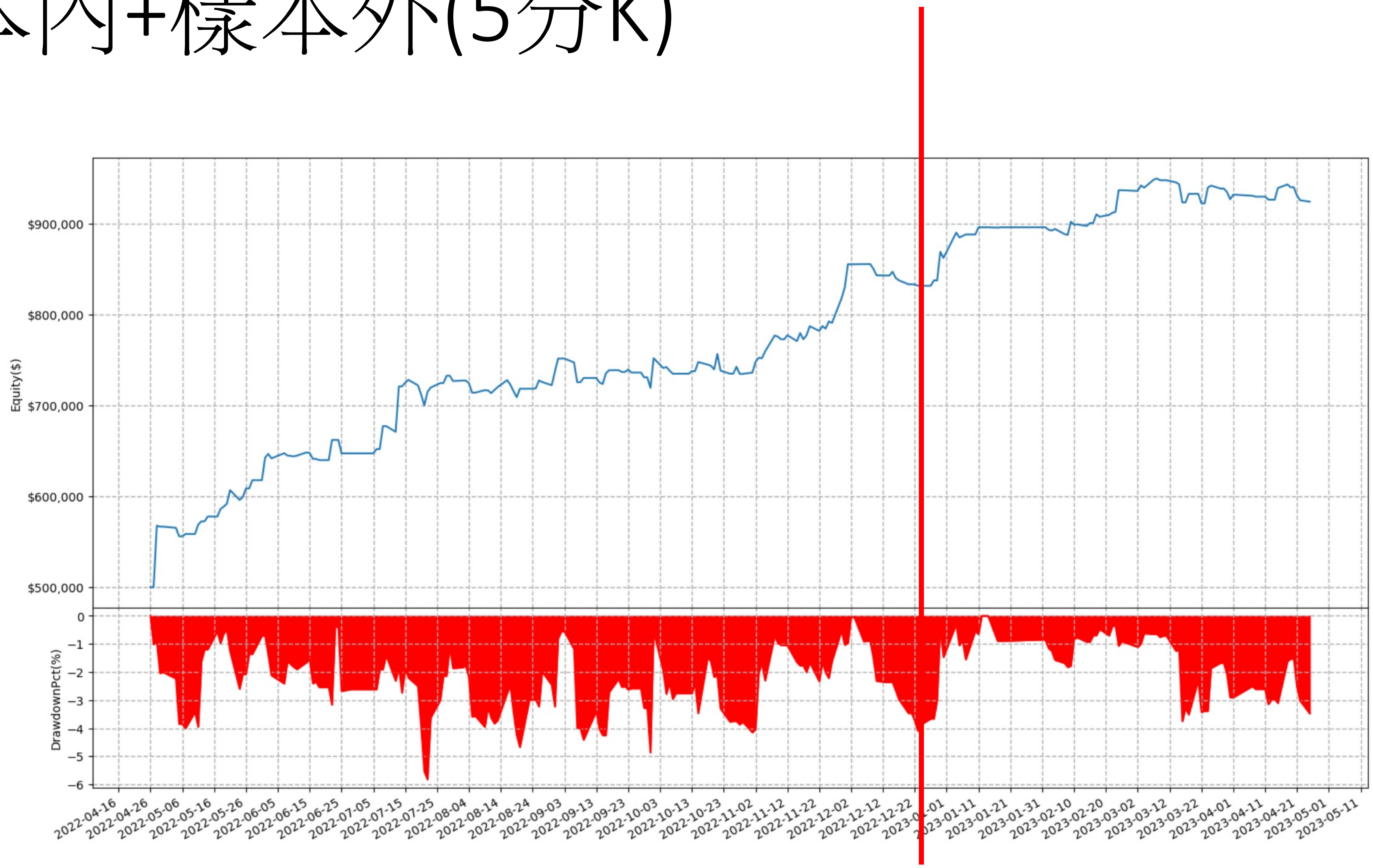
多單策略：

- 進場：
  - WR向上超越超買區
  - SMA黃金交叉
  - 開盤15分鐘後進場
- 出場：
  - 百分比停損 0.5%
  - 跌破3根低點停利停損
  - WR跌出超買區
  - SMA死亡交叉
  - 13.30平倉

空單策略：

- 進場：
  - WR向下超越超賣區
  - SMA死亡交叉
  - 開盤15分鐘後進場
- 出場：
  - 百分比停損 0.5%
  - 超出3根高點停利停損
  - WR向上超出超賣區
  - SMA黃金交叉
  - 13.30平倉

樣本內+樣本外(5分K)



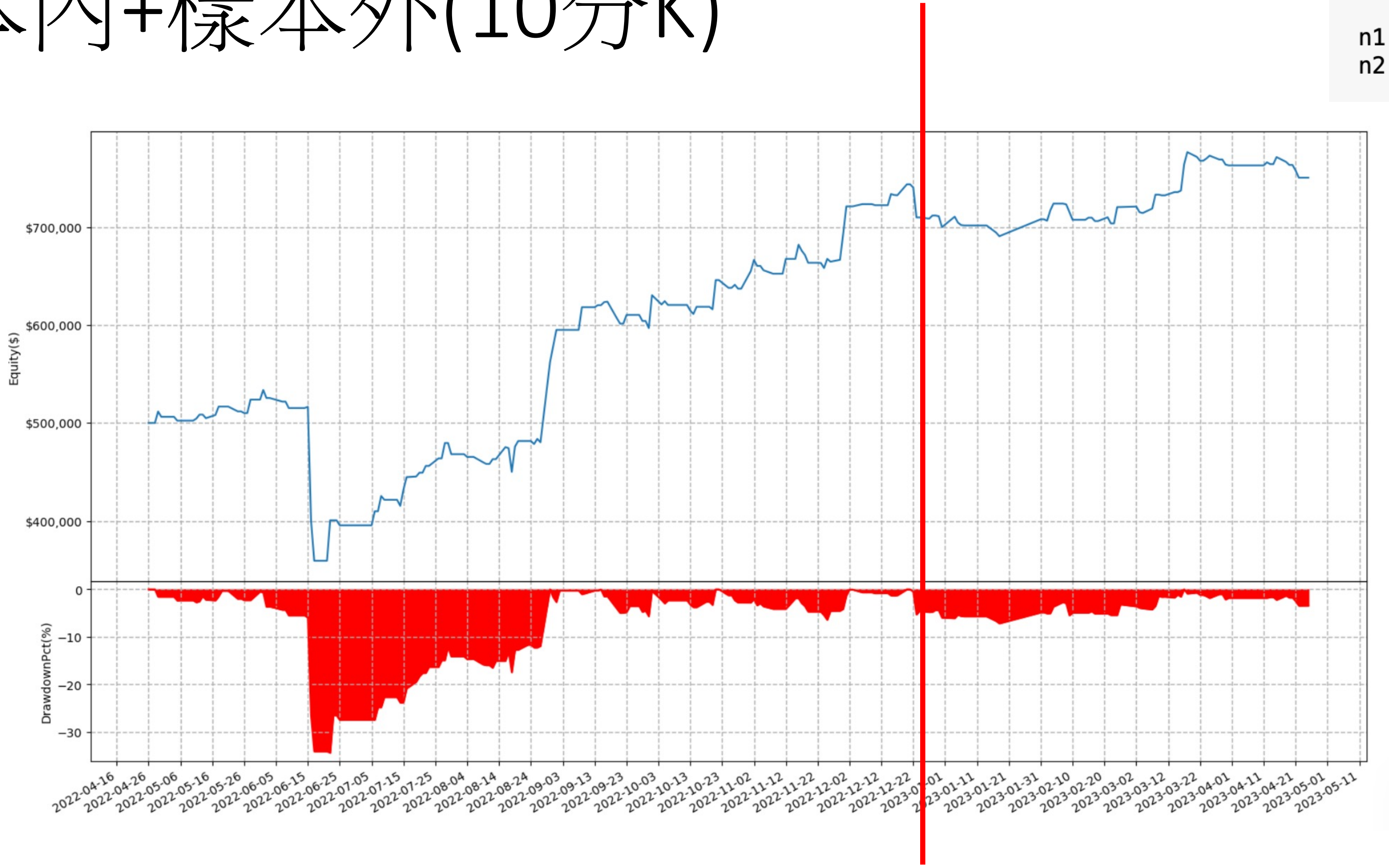
Equity($)
$900,000
$800,000
$700,000
$600,000
$500,000
DrawdownPct(%)
0
−1
−2
−3
−4
−5
−6
2022-04-16
2022-04-26
2022-05-06
2022-05-16
2022-05-26
2022-06-05
2022-06-15
2022-06-25
2022-07-05
2022-07-15
2022-07-25
2022-08-04
2022-08-14
2022-08-24
2022-09-03
2022-09-13
2022-09-23
2022-10-03
2022-10-13
2022-10-23
2022-11-02
2022-11-12
2022-11-22
2022-12-02
2022-12-12
2022-12-22
2023-01-11
2023-01-21
2023-01-31
2023-02-10
2023-02-20
2023-03-02
2023-03-12
2023-03-22
2023-04-01
2023-04-11
2023-04-21
2023-05-01
2023-05-11

Start	2022-04-25 08:50:00
End	2023-04-24 13:45:00
Duration	364 days 04:55:00
Exposure Time [%]	19.176955
Equity Final [$]	924556.7612
Equity Peak [$]	954970.3448
Return [%]	84.911352
Buy & Hold Return [%]	-6.465904
Return (Ann.) [%]	89.169499
Volatility (Ann.) [%]	43.020648
Sharpe Ratio	2.072714
Sortino Ratio	11.080693
Calmar Ratio	15.310945
Max. Drawdown [%]	-5.823906
Avg. Drawdown [%]	-0.895672
Max. Drawdown Duration	50 days 00:05:00
Avg. Drawdown Duration	3 days 06:06:00
# Trades	380
Win Rate [%]	38.684211
Best Trade [%]	2.167931
Worst Trade [%]	-0.784983
Avg. Trade [%]	0.037078
Max. Trade Duration	3 days 19:05:00
Avg. Trade Duration	0 days 01:18:00
Profit Factor	1.669008
Expectancy [%]	0.037419
SQN	2.791139

樣本內+樣本外(10分K)

```
WL = 65
OB = -15
stop_pct = 1 #表示0.x%
OS = -85
L = 2

n1 = 5
n2 = 40
```

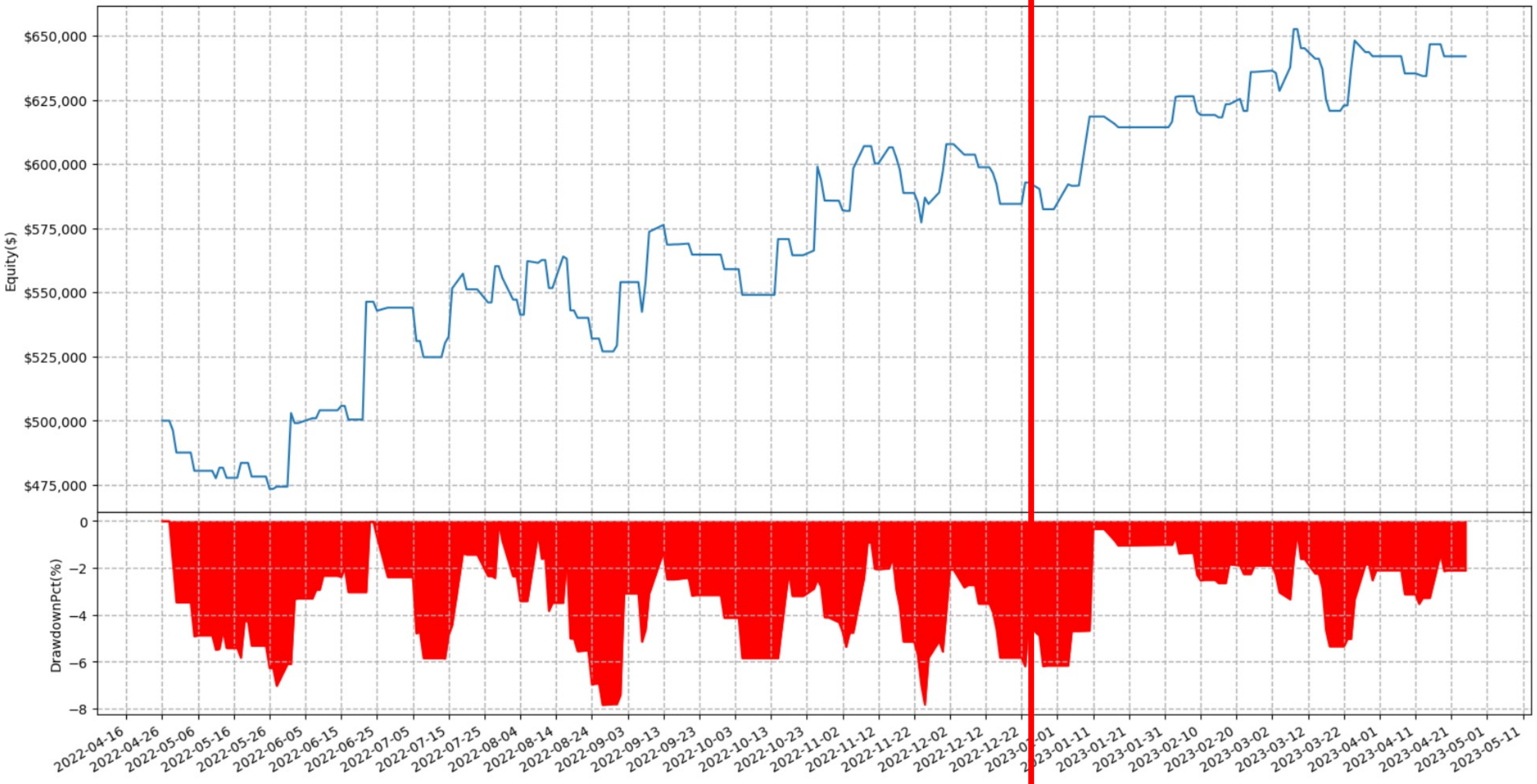


```
Start                     2022-04-25 08:50:00
End                       2023-04-24 13:50:00
Duration                    364 days 05:00:00
Exposure Time [%]                   20.323908
Equity Final [$]                  750238.2882
Equity Peak [$]                   776725.5646
Return [%]                          50.047658
Buy & Hold Return [%]               -6.465904
Return (Ann.) [%]                   52.319754
Volatility (Ann.) [%]                61.42227
Sharpe Ratio                         0.851804
Sortino Ratio                        1.926358
Calmar Ratio                         1.521286
Max. Drawdown [%]                  -34.391789
Avg. Drawdown [%]                     -1.6857
Max. Drawdown Duration       88 days 22:20:00
Avg. Drawdown Duration        5 days 16:28:00
# Trades                                  217
Win Rate [%]                        39.170507
Best Trade [%]                       2.610049
Worst Trade [%]                       -3.3581
Avg. Trade [%]                       0.040082
Max. Trade Duration           2 days 19:00:00
Avg. Trade Duration           0 days 02:38:00
Profit Factor                        1.439274
Expectancy [%]                       0.040978
SQN                                  1.320278
_strategy                                  WL
_equity_curve                             ...
_trades                         Size  Entry...
dtype: object
```

樣本內+樣本外(15分K)

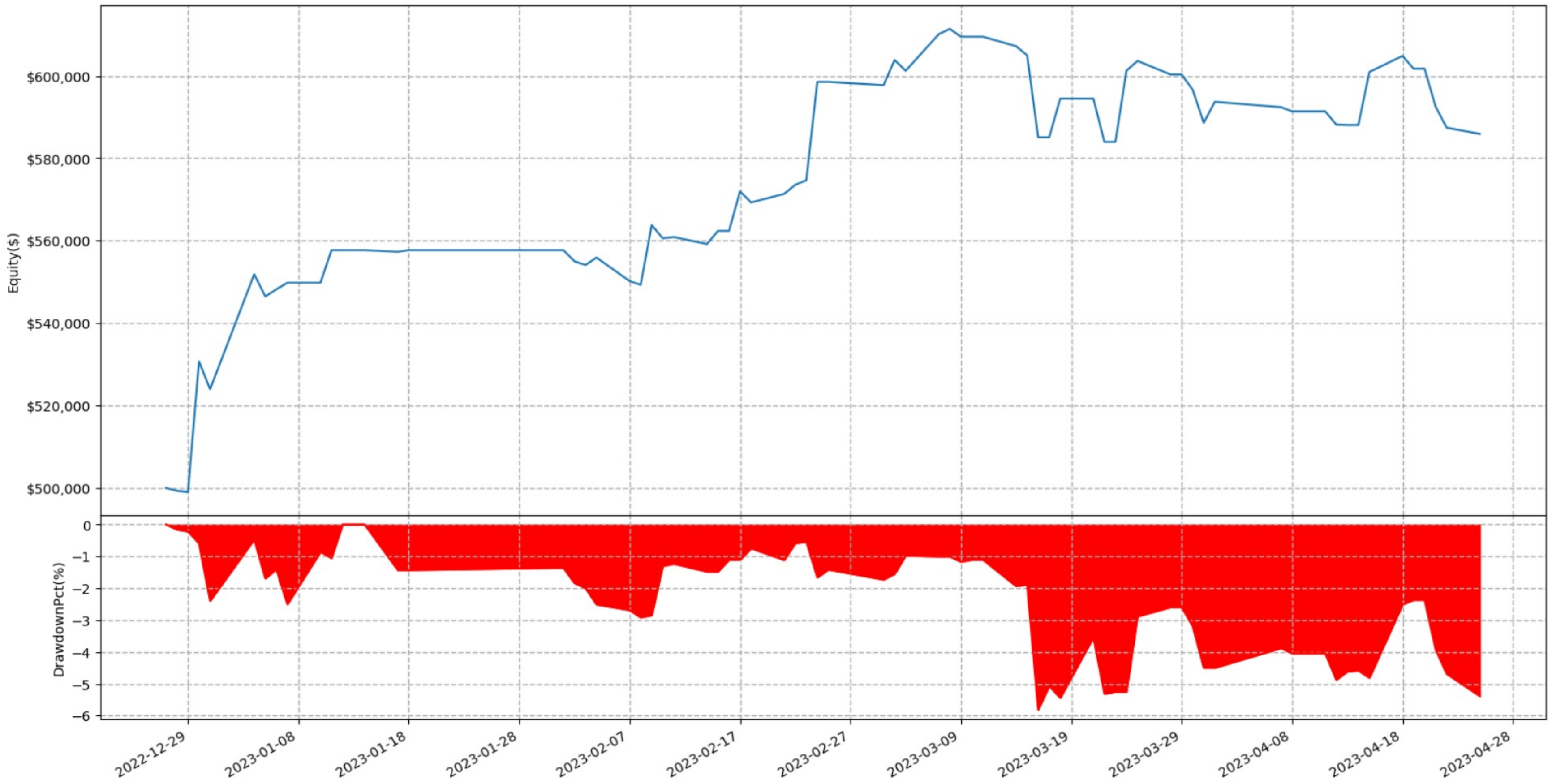
```
WL = 65
OB = -10
stop_pct = 1 #表示0.x%
OS = -90
L = 2

n1 = 5
n2 = 35
```



```
Start                     2022-04-25 09:00:00
End                       2023-04-24 13:45:00
Duration                    364 days 04:45:00
Exposure Time [%]                   18.930041
Equity Final [$]                  642015.9022
Equity Peak [$]                   655797.8952
Return [%]                           28.40318
Buy & Hold Return [%]               -6.437897
Return (Ann.) [%]                   29.597644
Volatility (Ann.) [%]               27.032123
Sharpe Ratio                         1.094906
Sortino Ratio                        3.181201
Calmar Ratio                         3.775462
Max. Drawdown [%]                   -7.839476
Avg. Drawdown [%]                   -2.412603
Max. Drawdown Duration       78 days 01:15:00
Avg. Drawdown Duration       12 days 07:25:00
# Trades                                  162
Win Rate [%]                        37.654321
Best Trade [%]                        1.51711
Worst Trade [%]                     -0.507974
Avg. Trade [%]                       0.030262
Max. Trade Duration           0 days 04:15:00
Avg. Trade Duration           0 days 01:11:00
Profit Factor                        1.357883
Expectancy [%]                       0.030718
SQN                                  1.251768
_strategy                                  WL
_equity_curve                             ...
_trades                        Size  Entry...
dtype: object
```

樣本外(5分K)



Equity($)
$600,000
$580,000
$560,000
$540,000
$520,000
$500,000
DrawdownPct(%)
0
−1
−2
−3
−4
−5
−6
2022-12-29
2023-01-08
2023-01-18
2023-01-28
2023-02-07
2023-02-17
2023-02-27
2023-03-09
2023-03-19
2023-03-29
2023-04-08
2023-04-18
2023-04-28

```
Start                     2022-12-26 08:50:00
End                       2023-04-24 13:45:00
Duration                    119 days 04:55:00
Exposure Time [%]                   18.356481
Equity Final [$]                  585919.0686
Equity Peak [$]                   616332.6522
Return [%]                          17.183814
Buy & Hold Return [%]                9.874112
Return (Ann.) [%]                   74.195406
Volatility (Ann.) [%]                39.68126
Sharpe Ratio                         1.869785
Sortino Ratio                         7.81668
Calmar Ratio                        12.759724
Max. Drawdown [%]                   -5.814813
Avg. Drawdown [%]                   -1.005255
Max. Drawdown Duration       49 days 02:55:00
Avg. Drawdown Duration        4 days 11:25:00
# Trades                                  109
Win Rate [%]                        40.366972
Best Trade [%]                       1.052798
Worst Trade [%]                     -0.784983
Avg. Trade [%]                       0.026632
Max. Trade Duration           3 days 19:05:00
Avg. Trade Duration           0 days 01:43:00
Profit Factor                          1.5604
Expectancy [%]                       0.026848
SQN                                  1.309573
_strategy                                  WL
_equity_curve                             ...
_trades                         Size  Entry...
dtype: object
```