報告

108062313黃允暘

使用資料

- 台指期
- 日盤+夜盤
- 樣本內： 2022-05-08 ~ 2023-01-08(8個月)
- 樣本外： 2023-01-08 ~ 2023-05-08(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)

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

策略(10分K)

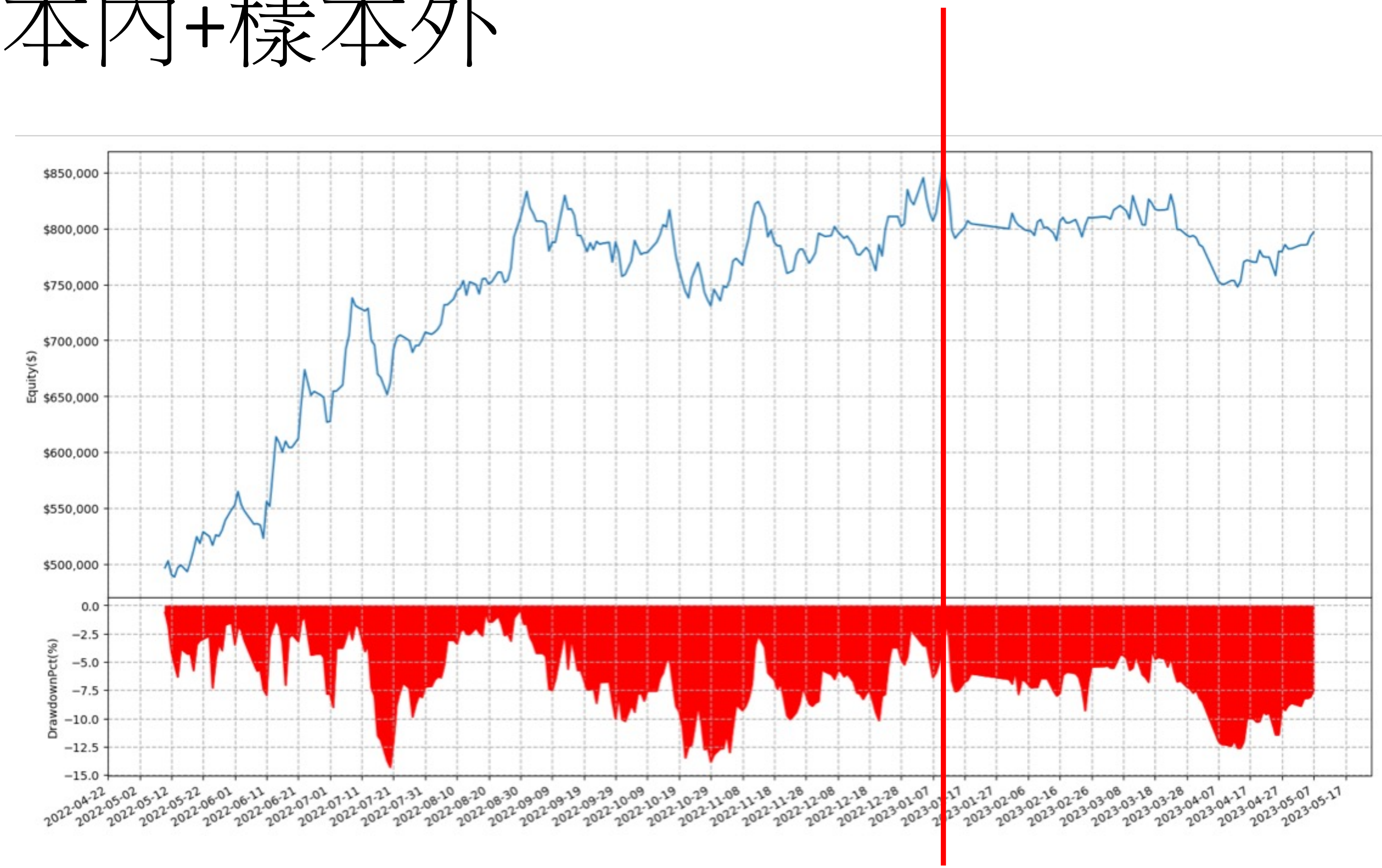
多單策略：

- 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%
  - 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%
  - WR向上超出超賣區
  - 13.30平倉

樣本內+樣本外



Equity($)
$850,000
$800,000
$750,000
$700,000
$650,000
$600,000
$550,000
$500,000
DrawdownPct(%)
0.0
−2.5
−5.0
−7.5
−10.0
−12.5
−15.0
2022-04-22
2022-05-02
2022-05-12
2022-05-22
2022-06-01
2022-06-11
2022-06-21
2022-07-01
2022-07-11
2022-07-21
2022-07-31
2022-08-10
2022-08-20
2022-08-30
2022-09-09
2022-09-19
2022-09-29
2022-10-09
2022-10-19
2022-10-29
2022-11-08
2022-11-18
2022-11-28
2022-12-08
2022-12-18
2022-12-28
2023-01-07
2023-01-27
2023-02-06
2023-02-16
2023-02-26
2023-03-08
2023-03-18
2023-03-28
2023-04-07
2023-04-17
2023-04-27
2023-05-07
2023-05-17

改進方向

1. 考慮SMA指標

```
Start                     2022-05-09 08:50:00
End                       2023-05-06 05:00:00
Duration                    361 days 20:10:00
Exposure Time [%]                   23.890626
Equity Final [$]                  796668.1666
Equity Peak [$]                   855594.2516
Return [%]                          59.333633
Buy & Hold Return [%]               -2.663124
Return (Ann.) [%]                   50.080797
Volatility (Ann.) [%]                42.20226
Sharpe Ratio                         1.186685
Sortino Ratio                        3.207633
Calmar Ratio                         3.493773
Max. Drawdown [%]                  -14.334304
Avg. Drawdown [%]                   -1.909453
Max. Drawdown Duration      124 days 06:10:00
Avg. Drawdown Duration        5 days 00:49:00
# Trades                                 1363
Win Rate [%]                        34.629494
Best Trade [%]                       1.634794
Worst Trade [%]                     -1.055191
Avg. Trade [%]                       0.006975
Max. Trade Duration           5 days 04:40:00
Avg. Trade Duration           0 days 01:41:00
Profit Factor                        1.117464
Expectancy [%]                       0.007193
SQN                                   1.30698
_strategy                                  WL
_equity_curve                             ...
_trades                           Size  Entr...
dtype: object
```

策略 (5分K)

```
WL = 75
OB = -10
stop_pct = 1 #表示0.x%
OS = -90
L = 2

n1 = 15
n2 = 50
```

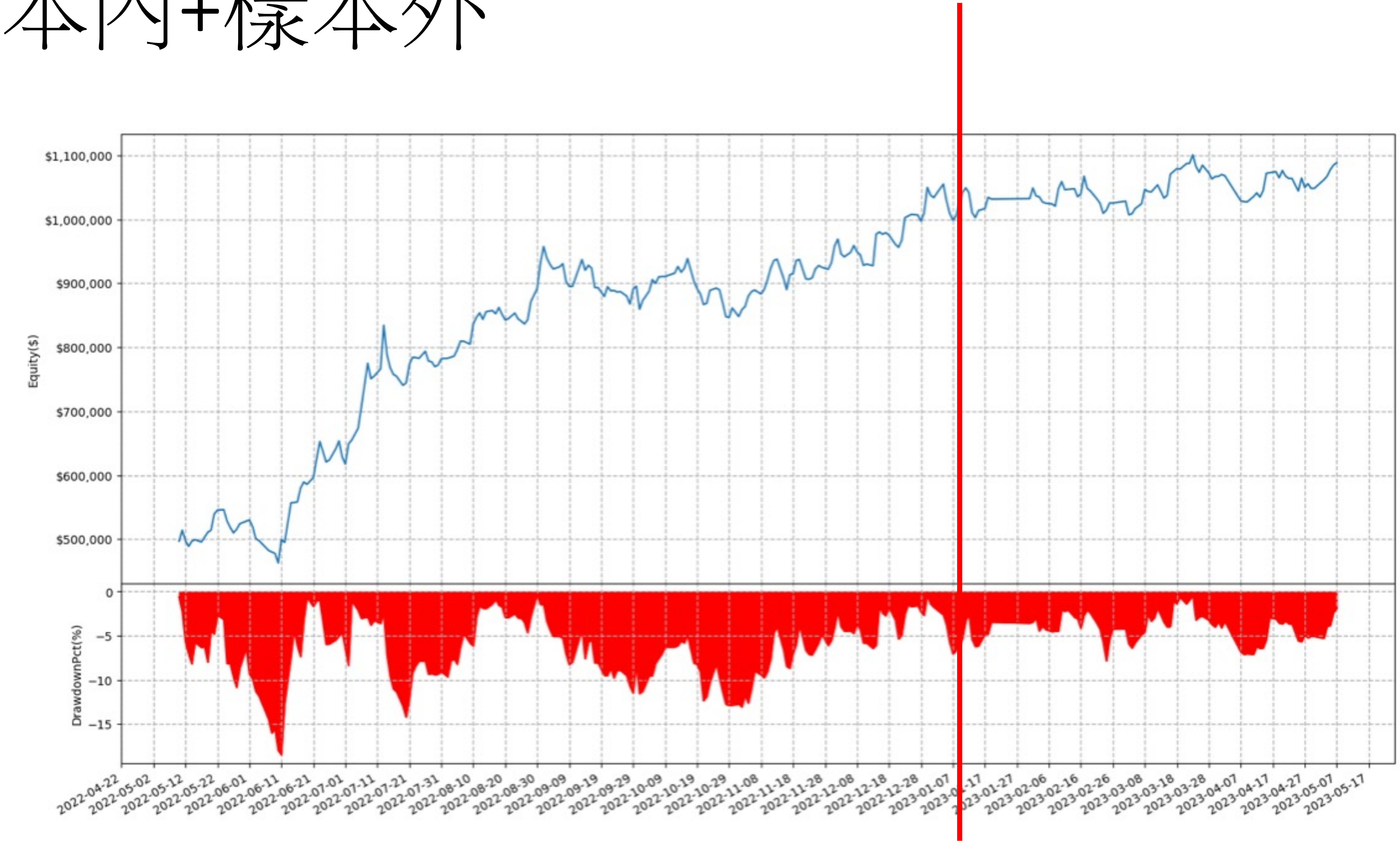
多單策略：

- 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%
  - 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%
  - WR向上超出超賣區
  - SMA黃金交叉
  - 13.30平倉

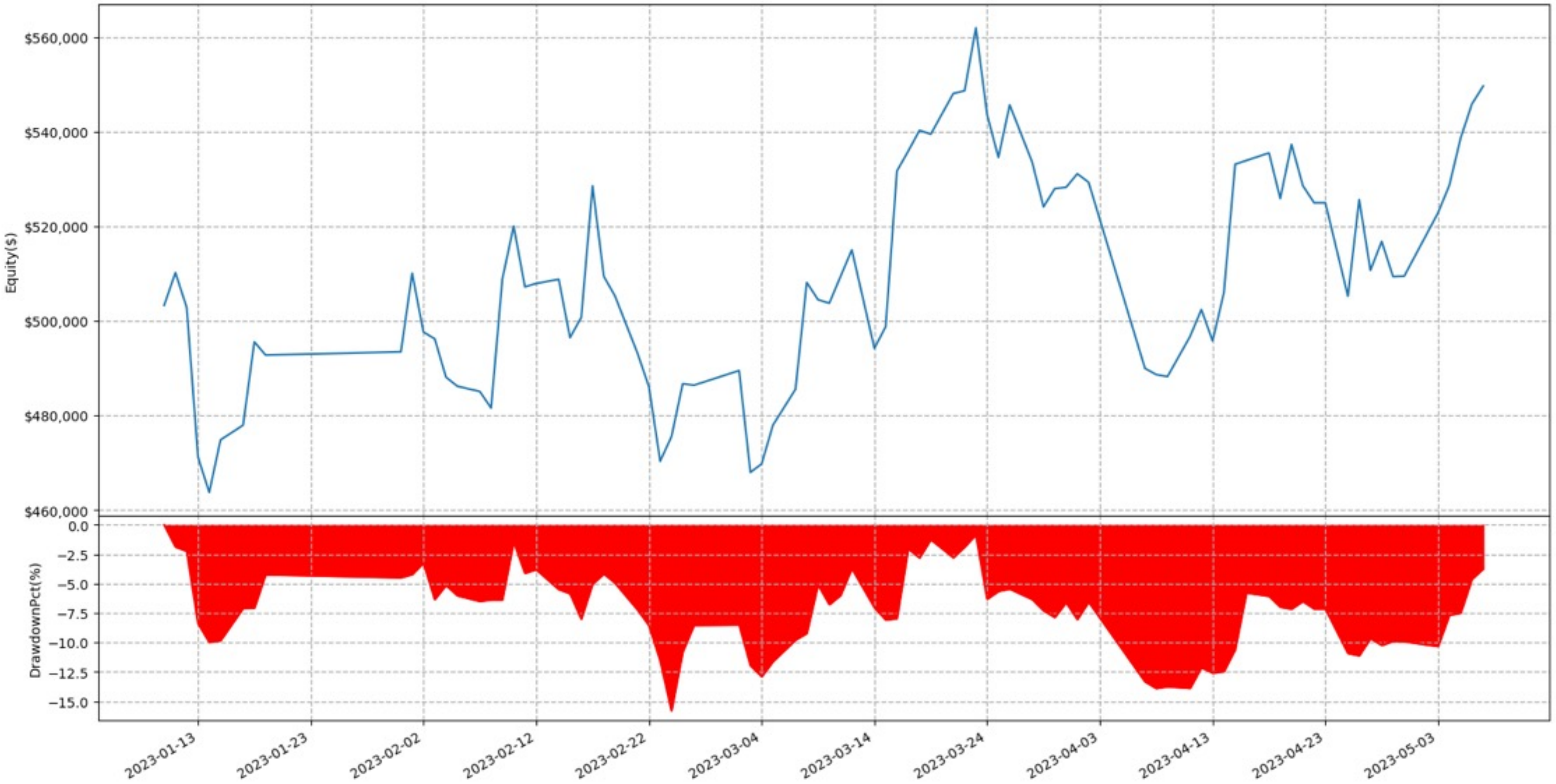
樣本內+樣本外



$1,100,000
$1,000,000
$900,000
$800,000
$700,000
$600,000
$500,000
Equity($)
0
−5
−10
−15
DrawdownPct(%)
2022-04-22
2022-05-02
2022-05-12
2022-05-22
2022-06-01
2022-06-11
2022-06-21
2022-07-01
2022-07-11
2022-07-21
2022-07-31
2022-08-10
2022-08-20
2022-08-30
2022-09-09
2022-09-19
2022-09-29
2022-10-09
2022-10-19
2022-10-29
2022-11-08
2022-11-18
2022-11-28
2022-12-08
2022-12-18
2022-12-28
2023-01-07
2023-01-27
2023-02-06
2023-02-16
2023-02-26
2023-03-08
2023-03-18
2023-03-28
2023-04-07
2023-04-17
2023-04-27
2023-05-07
2023-05-17

```
Start                     2022-05-09 08:50:00
End                       2023-05-06 05:00:00
Duration                    361 days 20:10:00
Exposure Time [%]                   36.092846
Equity Final [$]                 1088516.5046
Equity Peak [$]                  1104220.4158
Return [%]                         117.703301
Buy & Hold Return [%]               -2.663124
Return (Ann.) [%]                   96.297097
Volatility (Ann.) [%]               64.754679
Sharpe Ratio                         1.487106
Sortino Ratio                        5.477214
Calmar Ratio                         5.210765
Max. Drawdown [%]                  -18.480415
Avg. Drawdown [%]                   -1.713001
Max. Drawdown Duration       91 days 14:50:00
Avg. Drawdown Duration        3 days 06:39:00
# Trades                                 1761
Win Rate [%]                        35.945486
Best Trade [%]                        1.74158
Worst Trade [%]                     -1.055191
Avg. Trade [%]                       0.010994
Max. Trade Duration           5 days 04:40:00
Avg. Trade Duration           0 days 01:50:00
Profit Factor                        1.169016
Expectancy [%]                       0.011254
SQN                                   2.08986
_strategy                                  WL
_equity_curve                             ...
_trades                       Size  Entr...
dtype: object
```

樣本外



$560,000
$540,000
$520,000
$500,000
$480,000
$460,000
Equity($)
0.0
−2.5
−5.0
−7.5
−10.0
−12.5
−15.0
DrawdownPct(%)
2023-01-13
2023-01-23
2023-02-02
2023-02-12
2023-02-22
2023-03-04
2023-03-14
2023-03-24
2023-04-03
2023-04-13
2023-04-23
2023-05-03

```
Start                     2023-01-09 08:50:00
End                       2023-05-06 05:00:00
Duration                    116 days 20:10:00
Exposure Time [%]                   35.358236
Equity Final [$]                  549632.6146
Equity Peak [$]                   565336.5258
Return [%]                           9.926523
Buy & Hold Return [%]                7.646576
Return (Ann.) [%]                   29.055256
Volatility (Ann.) [%]                52.23748
Sharpe Ratio                         0.556215
Sortino Ratio                        1.088737
Calmar Ratio                         1.839228
Max. Drawdown [%]                  -15.797528
Avg. Drawdown [%]                   -2.482528
Max. Drawdown Duration       44 days 06:30:00
Avg. Drawdown Duration        4 days 10:48:00
# Trades                                  489
Win Rate [%]                        34.969325
Best Trade [%]                       1.112342
Worst Trade [%]                     -0.845298
Avg. Trade [%]                       0.003086
Max. Trade Duration           5 days 04:40:00
Avg. Trade Duration           0 days 02:02:00
Profit Factor                        1.059638
Expectancy [%]                       0.003228
SQN                                  0.429069
_strategy                                  WL
_equity_curve                             ...
_trades                         Size  Entry...
dtype: object
```