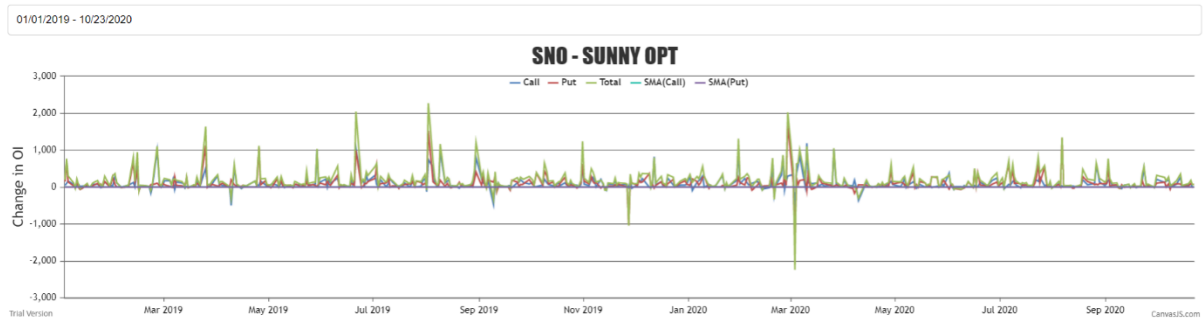


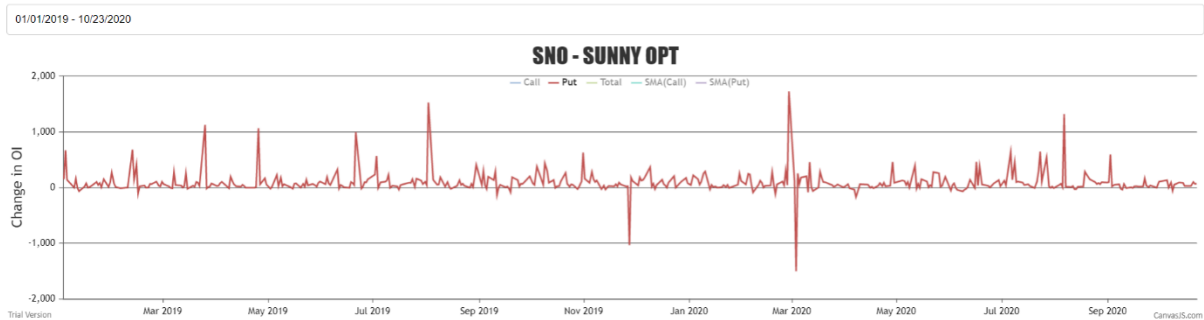
<https://brendanlui.azurewebsites.net/>

*This app service is **NOT** always on in free tier app service plan, so it will take a few minutes to load in the first time.

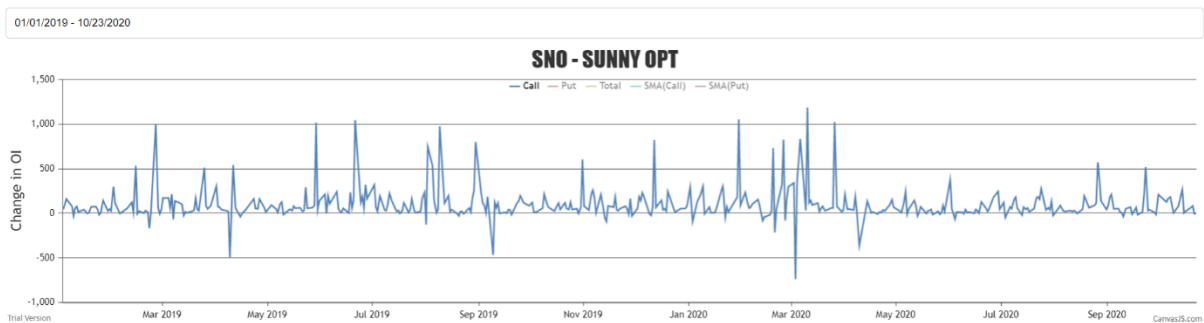
Diagram 1: Change in OI



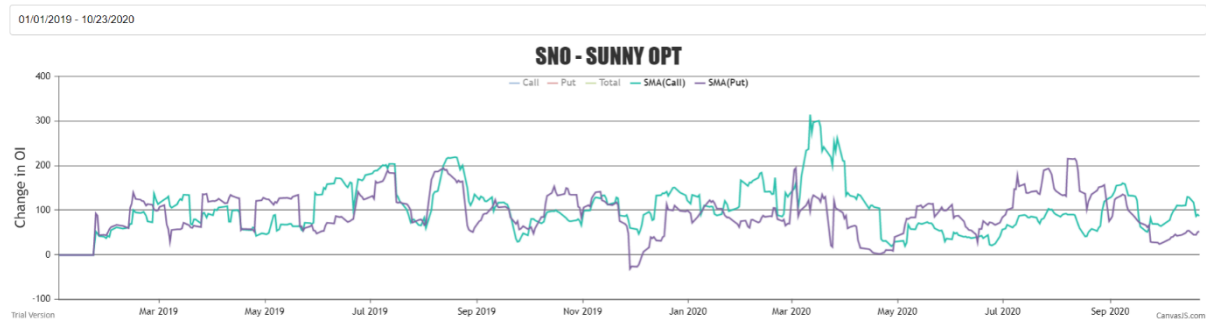
Show the sum of the number of the **change of open interest** per day when strike price is less than close price in PUT option which will be expired after a month.



Show the sum of the number of the **change of open interest** per day when strike price is larger than close price in CALL option which will be expired after a month.



Show the SMA of the **change of open interest** in CALL & PUT option



After inputting the SMA days, click the button to generate the signals if PUT SMA crosses CALL SMA.

SMA from Change in OI (Call & Put) : Range from 1 - 100 day(s).

Generate SMA from Change in OI (Call & Put) Signals)

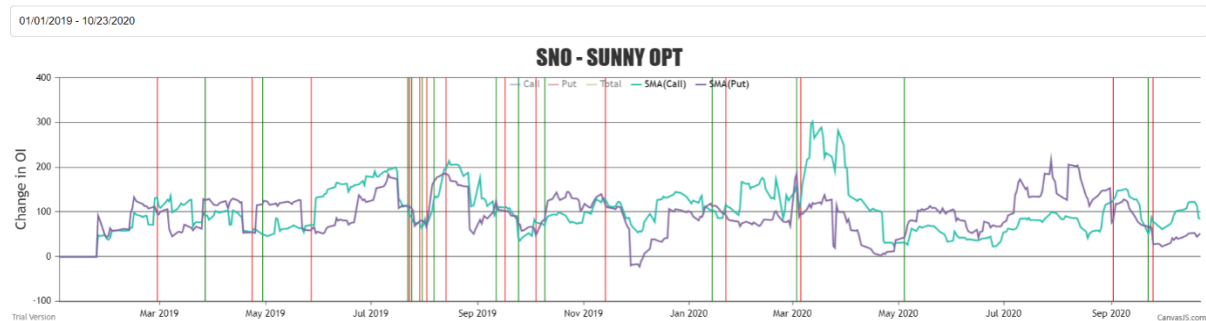
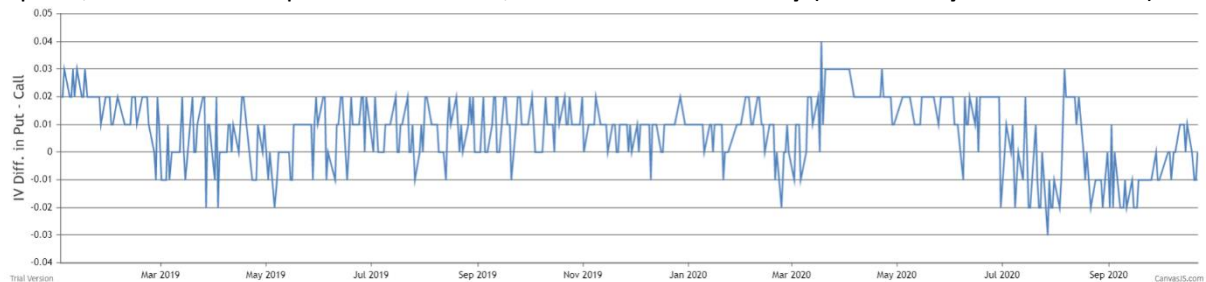


Diagram 2: IV Diff. in Put - Call

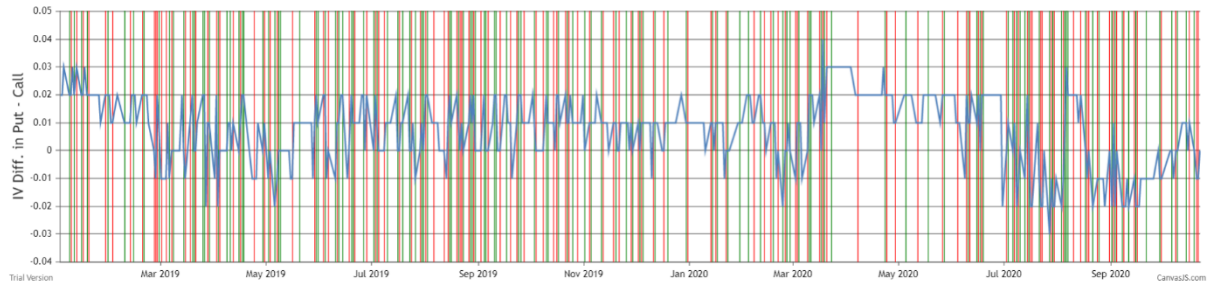
If the input value moneyness difference is 10, it will put the **IV** in PUT option to minus the **IV** in CALL option, which will be expire after a month, with both **out of money** (10% moneyness difference).



After inputting the moneyness difference value, click the button to generate the signals if today's value is larger than yesterday's value.

Money Diff. : +/-2% by default. Range from 2 - 10.

Generate IV Diff. in Put - Call from Money Diff. Signal(s)



After inputting two SMA days and moneyness difference value, click the button to generate the signals if 1st SMA crosses 2nd SMA.

SMA from IV Diff. (Put - Call) : Range from 1 - 100 day(s).

SMA from IV Diff. (Put - Call) : Range from 1 - 100 day(s).

Money Diff. : +/-2% by default. Range from 2 - 10.

Generate IV Diff. in Put - Call from SMA Signal(s)

After inputting the range and opening the console, click the button to loop through all possibility to get parameters in the global optimum solution.

SMA (From) SMA (To) Mon. Diff. (From) Mon. Diff. (To) Day Hold (From) Day Hold (To)

Generate the best solution from above IV Diff. in Put - Call from SMA Signal(s) in console



SMA from IV Diff. (Put - Call) : Range from 1 - 100 day(s).

Money Diff. : +/-2% by default. Range from 2 - 10.

Generate IV Diff. in Put - Call from SMA Signal(s)

5 10 2 7 3 10

Generate the best solution from above IV Diff. in Put - Call from SMA Signal(s) in console

Rolling Regression Day : 15 by default

Rolling Regression Signal Value

Generate Rolling Regression Signal(s) from Percentage Change in this Stock Price v.s. Daily Change in IV - HV

Generate Rolling Regression Signal(s) from Percentage Change in Stock (2600) Price v.s. Percentage Change in this Stock Price

Filter

Capital: \$10000 by default.

Day(s) Stock Hold: 999999999 working days by default.

☐ Higher Priority

Elements Console Sources Network

top

Default levels 4 hidden

[Deprecation] Synchronous XMLHttpRequest on the main thread is deprecated because of its detrimental effects to the end user's experience. For more help, check <https://xhr.spec.whatwg.org/>.

SMA1: 5, SMA2: 6, Mon. Diff.: 2, Day Hold: 3

chart?dateFrom=84dat-99998stock-SHO:1115

-68.27, -3.319

chart?dateFrom=84dat-99998stock-SHO:1116

-68.27, -3.319

chart?dateFrom=84dat-99998stock-SHO:1117

5_6_2_3, 5_6_2_3

chart?dateFrom=84dat-99998stock-SHO:1118

SMA1: 5, SMA2: 6, Mon. Diff.: 2, Day Hold: 4

chart?dateFrom=84dat-99998stock-SHO:1115

-68.73, -3.334

chart?dateFrom=84dat-99998stock-SHO:1116

-68.27, -3.319

chart?dateFrom=84dat-99998stock-SHO:1117

5_6_2_3, 5_6_2_3

chart?dateFrom=84dat-99998stock-SHO:1118

SMA1: 5, SMA2: 6, Mon. Diff.: 2, Day Hold: 5

chart?dateFrom=84dat-99998stock-SHO:1115

-68.99, -3.352

chart?dateFrom=84dat-99998stock-SHO:1116

-68.27, -3.319

chart?dateFrom=84dat-99998stock-SHO:1117

5_6_2_3, 5_6_2_3

chart?dateFrom=84dat-99998stock-SHO:1118

SMA1: 5, SMA2: 6, Mon. Diff.: 2, Day Hold: 6

chart?dateFrom=84dat-99998stock-SHO:1115

-69.25, -3.348

chart?dateFrom=84dat-99998stock-SHO:1116

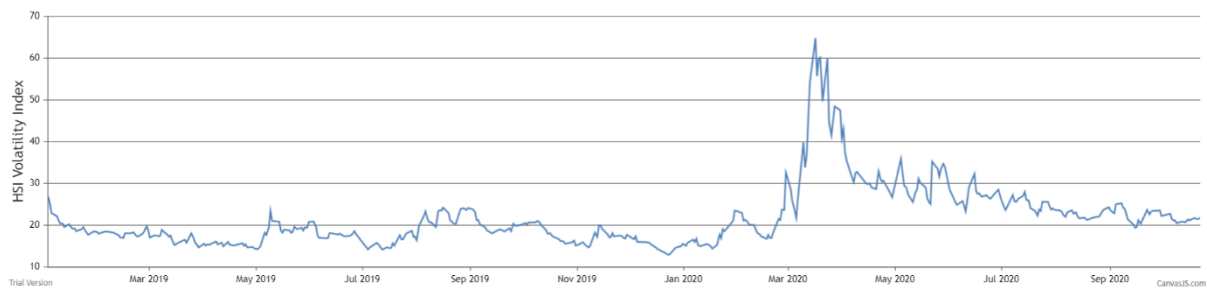
-68.27, -3.319

chart?dateFrom=84dat-99998stock-SHO:1117

5_6_2_3, 5_6_2_3

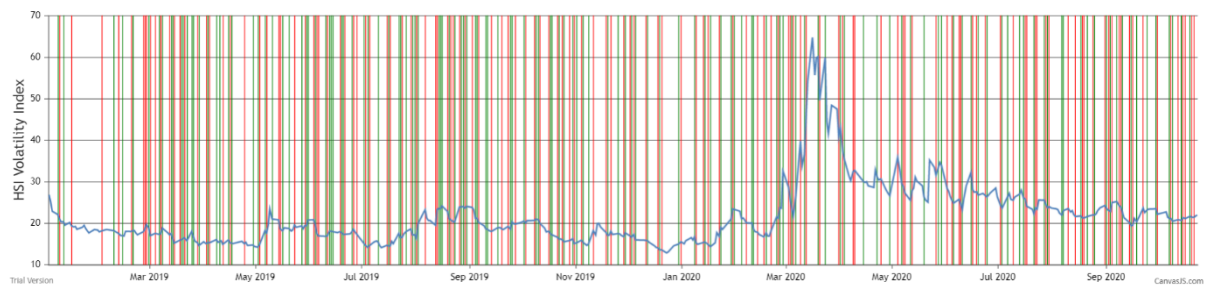
chart?dateFrom=84dat-99998stock-SHO:1118

Diagram 3: HSI Volatility Index



We can use this data to set some conditions to screen out the signals.

Before:



Filter:

| | | | | | |
|----------------------|---|---|---|----|-------------------------------------|
| HSI Volatility Index | + | 0 | < | 22 | <input checked="" type="checkbox"/> |
| | | | | | <input type="checkbox"/> |

Filter



After:

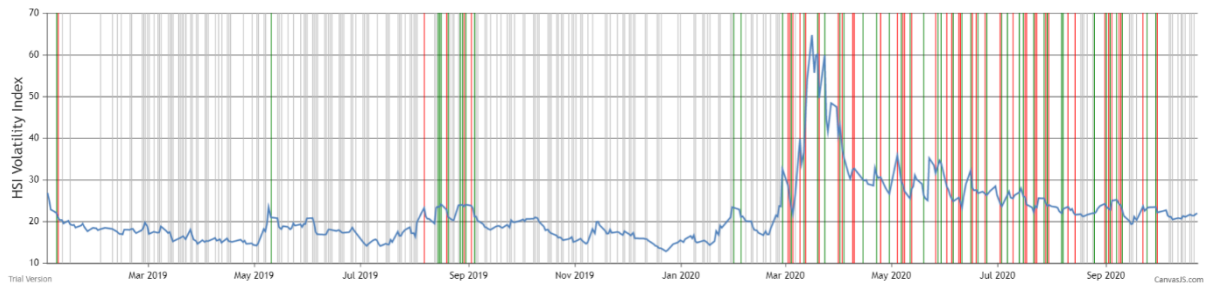


Diagram 4: Volatility

Show an average IV and HV in PUT option and CALL option, which will be expire after a month, with at the money (0% moneyness difference).

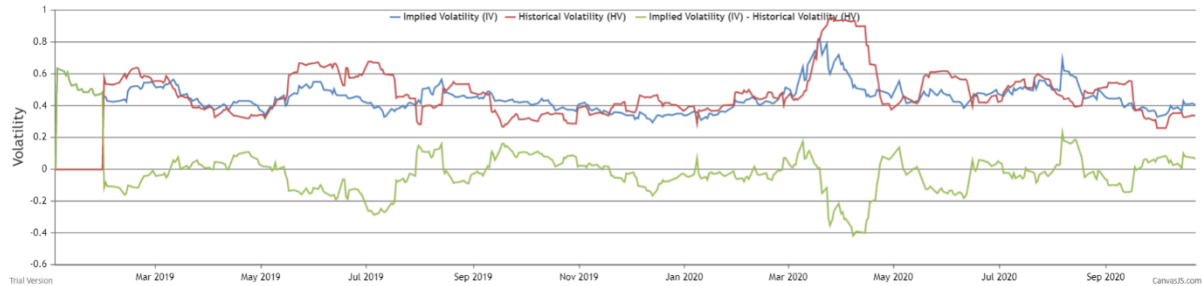


Diagram 5: Linear Relationship (1)

Daily Percentage Change in this Stock Price

VS

Daily Change in Implied Volatility (IV) - Historical Volatility (HV)

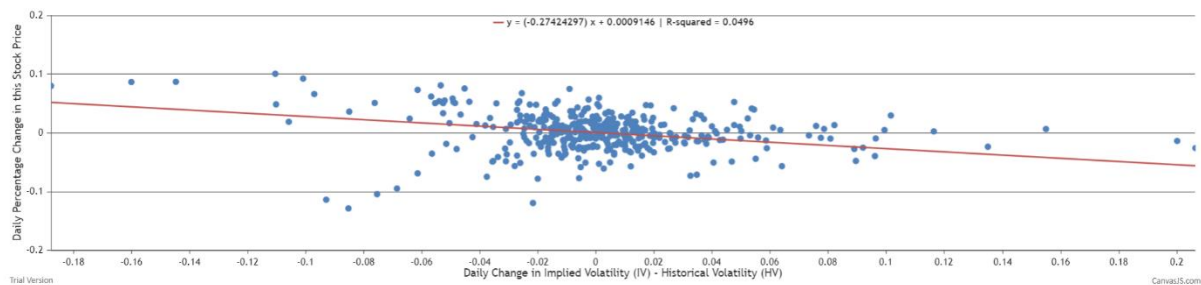


Diagram 6: Linear Relationship (2)

Daily Percentage Change in this Stock Price

VS

Daily Percentage Change in Stock (2800) Price

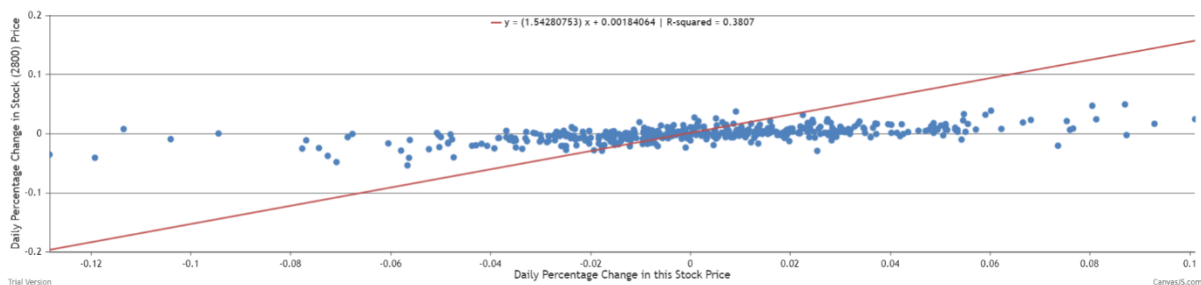
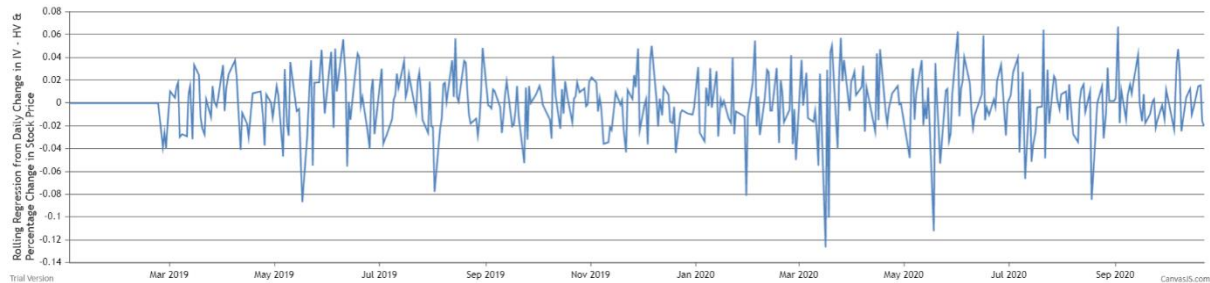


Diagram 7: Rolling Regression with above 2 linear relationship

Show the predicted value by using the linear equation from past rolling regression day you input.



After inputting the regression days and the bound value, click the button to generate the signals if rolling value exceeds the bound value range.

15

0.02

Generate Rolling Regression Signal(s) from Percentage Change in this Stock Price v.s. Daily Change in IV - HV

Generate Rolling Regression Signal(s) from Percentage Change in Stock (2000) Price v.s. Percentage Change in this Stock Price

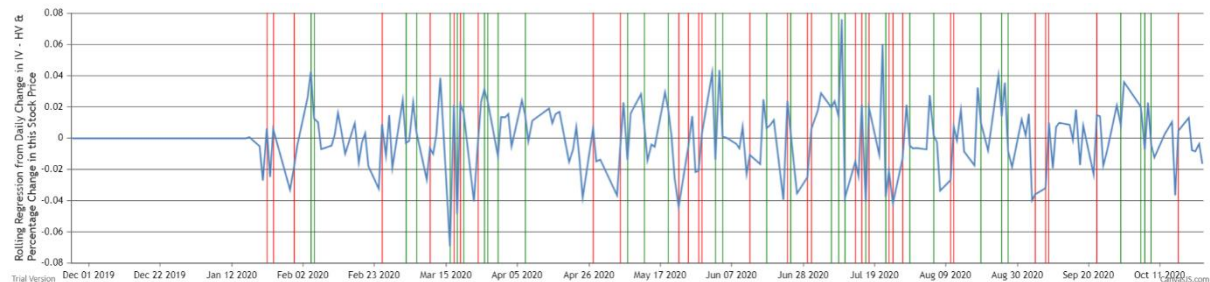
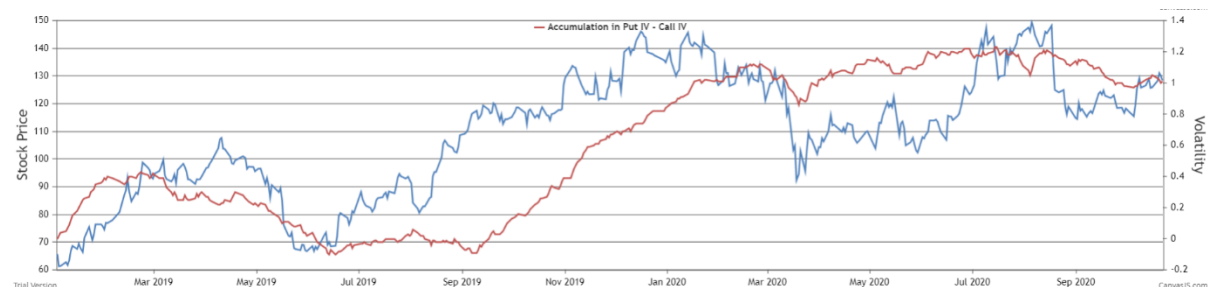


Diagram 8: Stock Price & Accumulation in Put IV -Call IV



Back Test Function:

- Long / Short
- Signal direction
- Any filter to screen out the signals
- Capital value
- Holding day(s)
- Choose whether Ignore the signals when the holding days is less than your input value or not

60  -0.2

Long only Reverse Signal(s) Clear all Signal(s)

16

Generate SMA from Change in OI (Call & Put) Signal(s)

Moneyness Diff. : +/-2% by default. Range from 2 - 10.

Generate IV Diff. in Put - Call from Moneyness Diff. Signal(s)

After that, click “Apply Strategy” to simulate the capital change according to all showed signal lines.

Capital: \$10000 by default.

Day(s) Stock Hold: 999999999 working days by default.

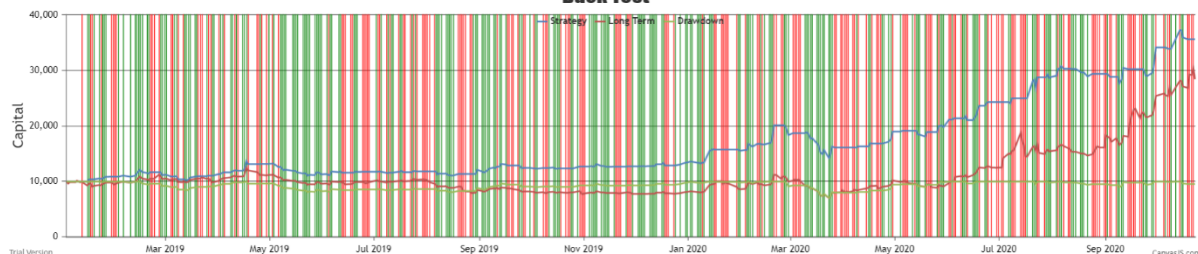
☐ Higher Priority

Apply Strategy



| Model | Working Day(s) Hold | Signal(s) Reversed | Moneyness Diff. | Short / Long | Maximum Drawdown | Next Day Action |
|-------------------------|--------------------------|------------------------|-------------------------|-----------------|------------------|-----------------|
| IV Diff. in Put - Call | 999999999 | False | +/-9% | Long only | -29.1% | SELL |
| Sharpe Ratio (Strategy) | Sharpe Ratio (Long Term) | No. of Sell/Buy (Long) | No. of Sell/Buy (Short) | Win Rate (Long) | Win Rate (Short) | Win Rate |
| 0.938 | 0.224 | 69/69 | 0/0 | 63.8% | NaN% | 63.8% |

Back Test



Sensitivity Test (for Diagram 1 & 2):

After inputting the values below

| |
|---|
| SMA from Change in OI (Call & Put) : Range from 1 - 100 day(s). |
| Generate SMA from Change in OI (Call & Put) Signal(s) |
| Moneyness Diff. : +/-2% by default. Range from 2 - 14. |
| Generate IV Diff. in Put - Call from Moneyness Diff. Signal(s) |
| Day(s) Stock Hold: 999999999 working days by default. |

and the range you want to cover, then click “Apply Sensitivity Test”

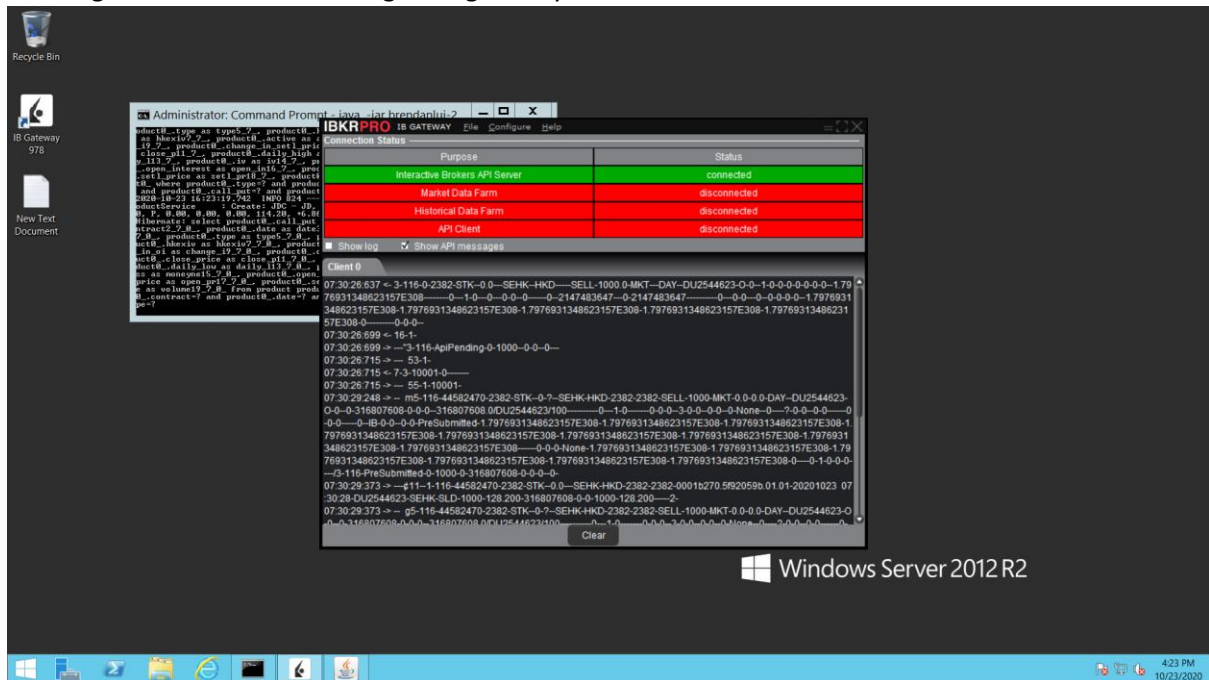
| |
|--|
| Range: +/- 5 working days by default. Range from 1 - 10. |
| Apply Sensitivity Test |



| Apply Sensitivity Test | | | | | | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Profit (%) : | | | | | | | | | | | | | | |
| Moneyness Diff. +/- % \ Day(s) Stock Hold | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| 2 | 11.8 | 20.95 | 25.07 | 33.13 | 22.94 | 23.51 | 23.51 | 23.51 | 23.51 | 23.51 | 23.51 | 23.51 | 23.51 | |
| 3 | 22.32 | 29.19 | 12.09 | 10.77 | 9.51 | 9.51 | 9.51 | 9.51 | 9.51 | 9.51 | 9.51 | 9.51 | 9.51 | |
| 4 | -7.66 | -9.09 | 2.77 | 2.6 | -0.59 | -0.59 | -0.59 | -0.59 | -0.59 | -0.59 | -0.59 | -0.59 | -0.59 | |
| 5 | 10.68 | 26.69 | 30.11 | 32.25 | 24.11 | 18.78 | 17.32 | 17.88 | 17.88 | 17.88 | 17.88 | 17.88 | 17.88 | |
| 6 | 40.54 | 30.14 | 41.19 | 43.39 | 34.51 | 34.51 | 34.51 | 34.51 | 34.51 | 34.51 | 34.51 | 34.51 | 34.51 | |
| 7 | -8.4 | -16.38 | -21.98 | -18.14 | -19.87 | -19.87 | -19.87 | -19.87 | -19.87 | -19.87 | -19.87 | -19.87 | -19.87 | |
| 8 | 1.86 | 7.72 | 1.47 | -3.5 | -3.45 | -4.63 | -4.63 | -4.63 | -4.63 | -4.63 | -4.63 | -4.63 | -4.63 | |
| 9 | -17.88 | -14.41 | -26.76 | -27.13 | -26.72 | -26.72 | -26.72 | -26.72 | -26.72 | -26.72 | -26.72 | -26.72 | -26.72 | |
| 10 | -10.2 | -9.27 | -18.05 | -15.76 | -16.74 | -16.74 | -16.74 | -16.74 | -16.74 | -16.74 | -16.74 | -16.74 | -16.74 | |
| 11 | 32.73 | 14.37 | 0.78 | -2.67 | -9.29 | -9.89 | -10.5 | -10.5 | -10.5 | -10.5 | -10.5 | -10.5 | -10.5 | |
| 12 | 24.21 | 21.63 | -7.15 | -0.18 | -4.71 | -7.03 | -9.34 | -10.76 | -10.76 | -10.76 | -10.76 | -10.76 | -10.76 | |
| Sharpe Ratio : | | | | | | | | | | | | | | |
| Moneyness Diff. +/- % \ Day(s) Stock Hold | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| 2 | 2.482 | 2.562 | 2.627 | 2.776 | 2.638 | 2.648 | 2.648 | 2.648 | 2.648 | 2.648 | 2.648 | 2.648 | 2.648 | |
| 3 | 2.619 | 3.029 | 1.895 | 1.859 | 1.783 | 1.783 | 1.783 | 1.783 | 1.783 | 1.783 | 1.783 | 1.783 | 1.783 | |
| 4 | 0.476 | 0.377 | 1.115 | 1.378 | 1.157 | 1.157 | 1.157 | 1.157 | 1.157 | 1.157 | 1.157 | 1.157 | 1.157 | |
| 5 | 2.722 | 2.295 | 2.313 | 2.311 | 2.227 | 2.178 | 2.163 | 2.177 | 2.177 | 2.177 | 2.177 | 2.177 | 2.177 | |
| 6 | 4.06 | 4.177 | 3.926 | 3.703 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 | 4.11 | |
| 7 | -0.537 | -0.587 | -0.633 | -0.621 | -0.668 | -0.668 | -0.668 | -0.668 | -0.668 | -0.668 | -0.668 | -0.668 | -0.668 | |
| 8 | 0.926 | 1.513 | 0.973 | 0.457 | 0.426 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | |
| 9 | -0.04 | 0.217 | -0.503 | -0.684 | -0.664 | -0.664 | -0.664 | -0.664 | -0.664 | -0.664 | -0.664 | -0.664 | -0.664 | |
| 10 | 0.9 | 1.116 | 0.026 | -0.008 | -0.009 | -0.009 | -0.009 | -0.009 | -0.009 | -0.009 | -0.009 | -0.009 | -0.009 | |
| 11 | 4.129 | 3.003 | 1.84 | 1.29 | 0.732 | 0.715 | 0.712 | 0.712 | 0.712 | 0.712 | 0.712 | 0.712 | 0.712 | |
| 12 | 3.271 | 3.736 | 1.031 | 0.971 | 0.775 | 0.74 | 0.496 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | |

Forward Test:

Running in Azure VM connecting to IB gateway.



Daily Trading EoD Report will be sent by E-mail.

| Strategy ID | Ticker | Request Time | Action | Average Price | Quantity | Commission | Stock Owned | Cash Owned | Capital | Profit |
|---------------------|--------|------------------------|--------|---------------|----------|------------|-------------|------------|-----------|--------|
| IVDIFF_SMA_2_3_10_R | 2382 | 2020-10-23 15:30:26.46 | SELL | 128.2 | 1000 | 235.0 | 0 | 200529.1 | 200529.08 | -0.22% |

| Strategy ID | Ticker | Stock Owned | Cash Owned | Capital | Profit |
|----------------------|--------|-------------|------------|-----------|--------|
| IVDIFF_SMA_1_7_10 | 27 | 0 | 96120.8 | 96120.79 | 0.0% |
| IVDIFF_SMA_18_19_5_R | 27 | 1000 | 39596.3 | 93846.32 | -0.58% |
| IVDIFF_SMA_2_3_10_R | 2382 | 0 | 200529.1 | 200529.08 | -0.22% |
| IVDIFF_SMA_3_6_8_R | 175 | 5000 | 11279.6 | 92779.56 | 0.0% |
| IVDIFF_SMA_5_10_9_R | 2628 | 0 | 98041.2 | 98041.2 | 0.0% |
| IVDIFF_SMA_5_18_8_R | 1810 | 4000 | 8348.7 | 95748.73 | -2.05% |
| IVDIFF_SMA_5_6_9 | 1211 | 0 | 107519.4 | 107519.41 | 0.0% |
| IVDIFF_SMA_7_10_6 | 2800 | 3500 | 11219.5 | 101169.47 | 0.49% |
| SMA_15_6D_R | 2628 | 5000 | 5156.8 | 100556.75 | 2.24% |

| | |
|-----------------|--------------|
| Capital (TD) : | HKD 986311.3 |
| Capital (LTD) : | HKD 986606.3 |
| Change : | HKD -295.0 |