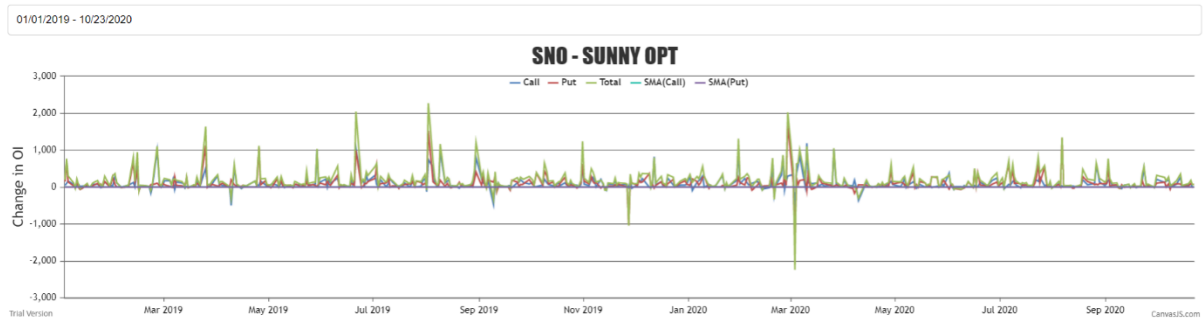


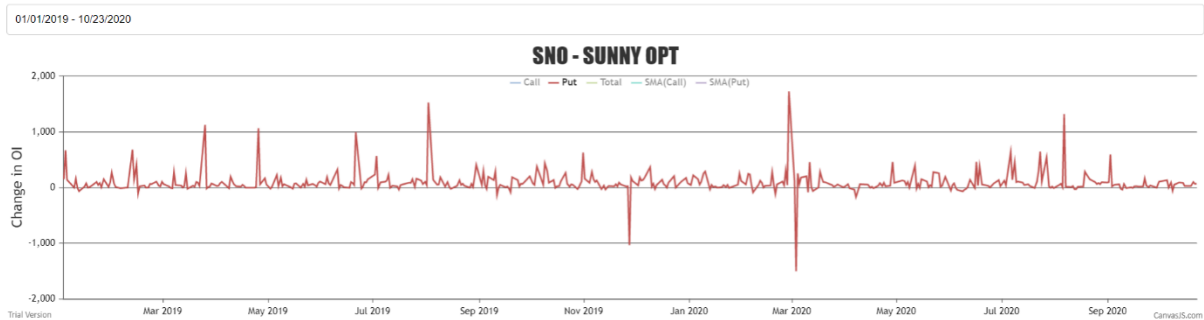
<https://brendanlui.azurewebsites.net/>

\*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.

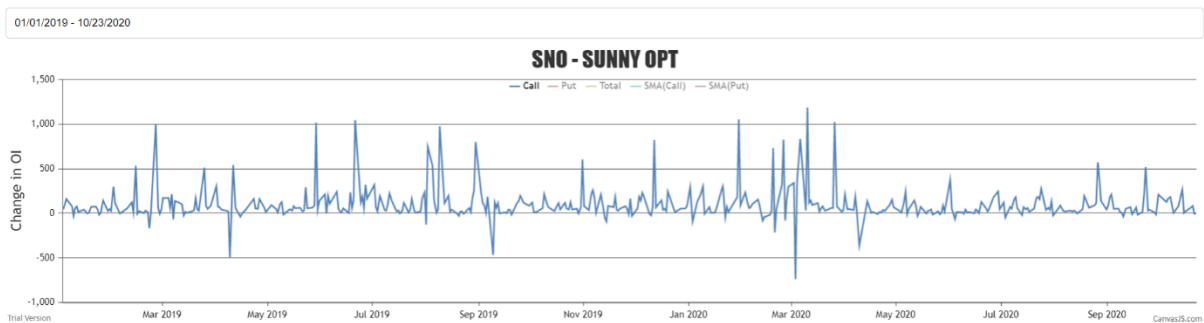
## Diagram 1: Change in OI



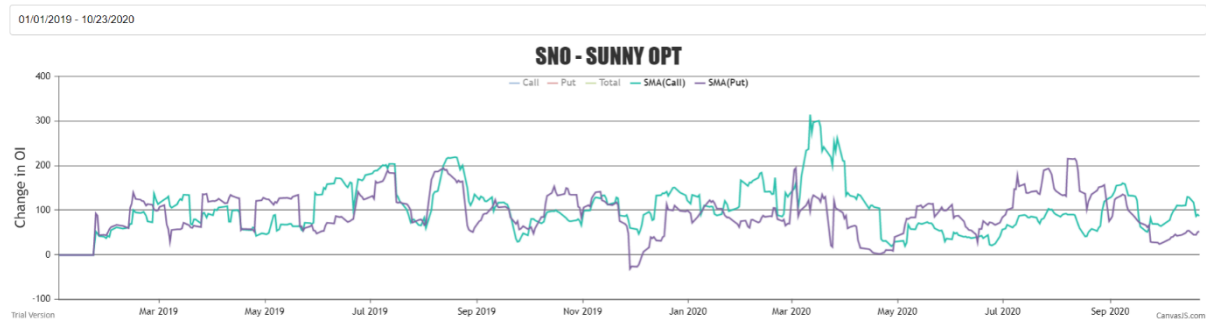
Show the sum of the number of the **change of open interest** per day when strike price is less than close price in PUT option which will be expired after a month.



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.



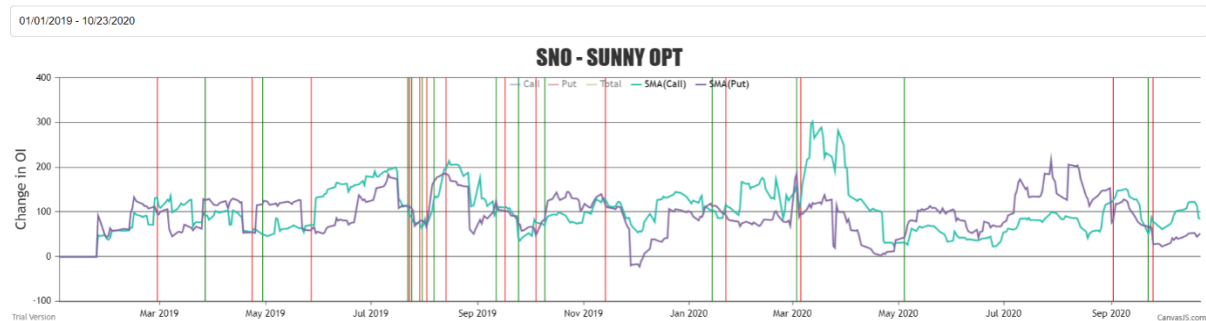
Show the SMA of the **change of open interest** in CALL & PUT option



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

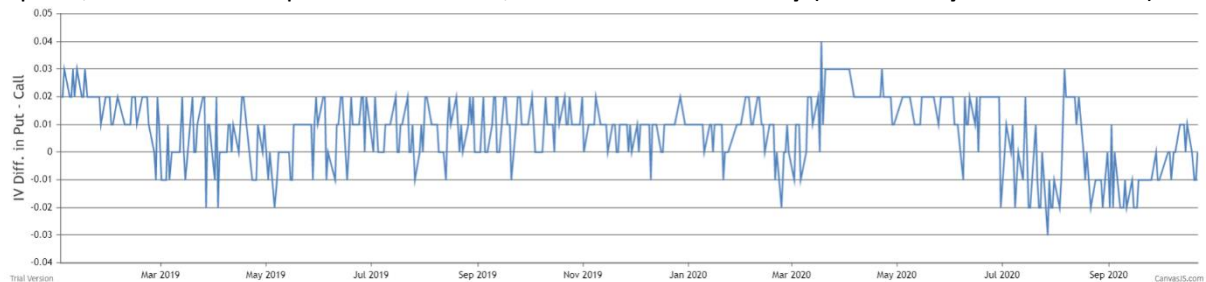
SMA from Change in OI (Call & Put) : Range from 1 - 100 day(s).

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



## Diagram 2: IV Diff. in Put - Call

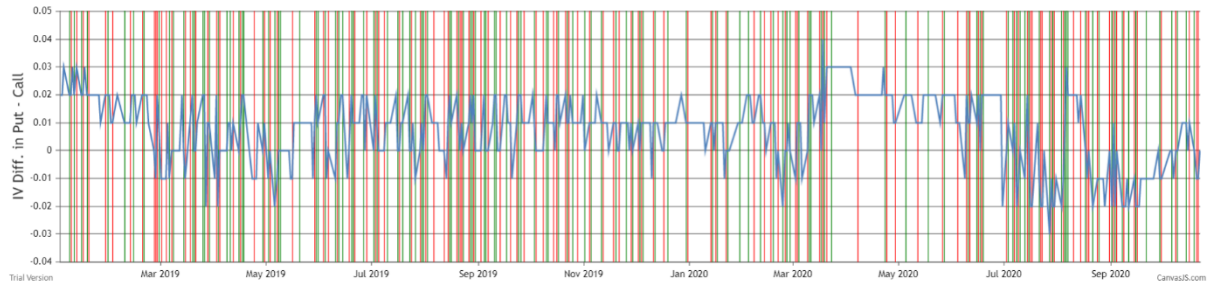
If the input value moneyness difference is 10, it will put the **IV** in PUT option to minus the **IV** in CALL option, which will be expire after a month, with both **out of money** (10% moneyness difference).



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 1<sup>st</sup> SMA crosses 2<sup>nd</sup> 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

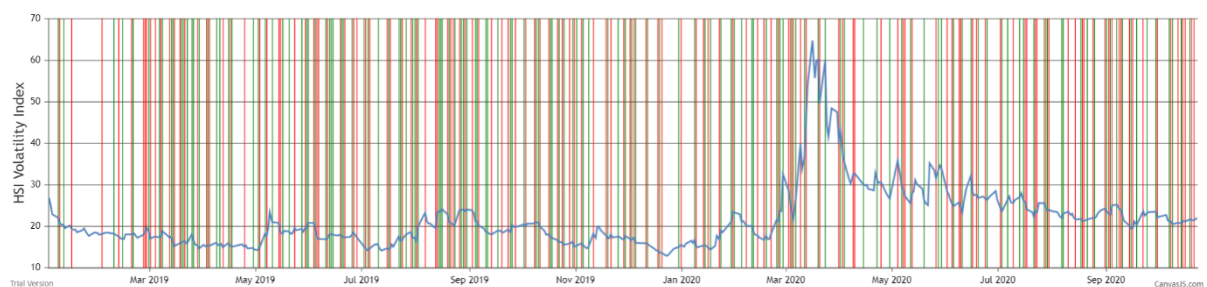
chart?dateFrom=84dat-99998stock-SHO:1118

# Diagram 3: HSI Volatility Index



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

Before:

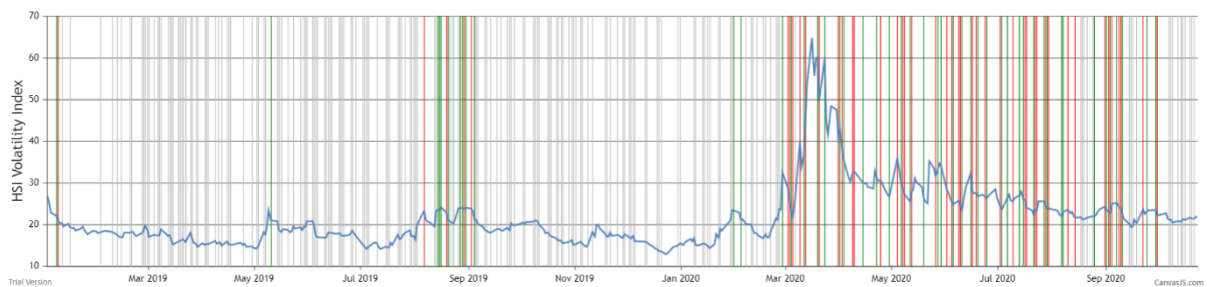


Filter:

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

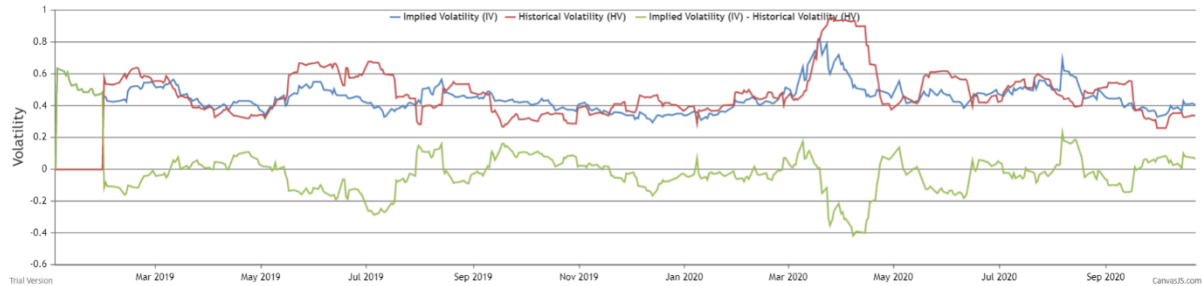


After:



# 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).

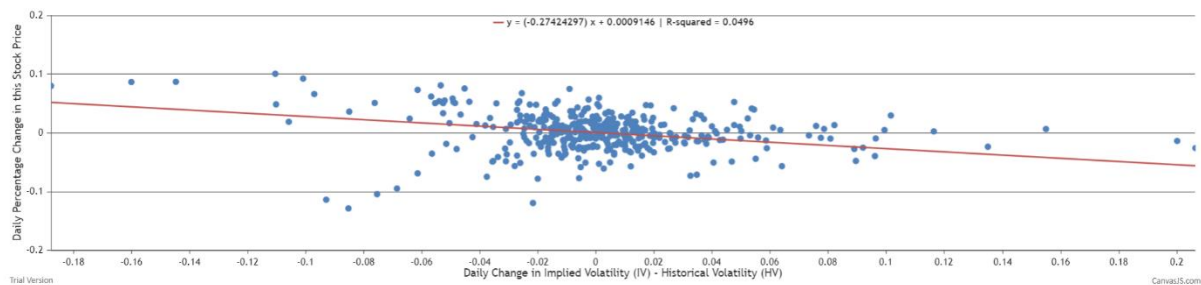


## Diagram 5: Linear Relationship (1)

Daily Percentage Change in this Stock Price

VS

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

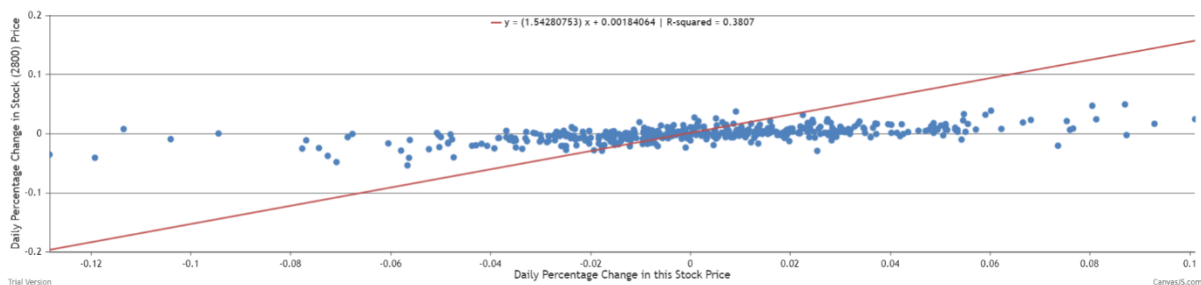


## Diagram 6: Linear Relationship (2)

Daily Percentage Change in this Stock Price

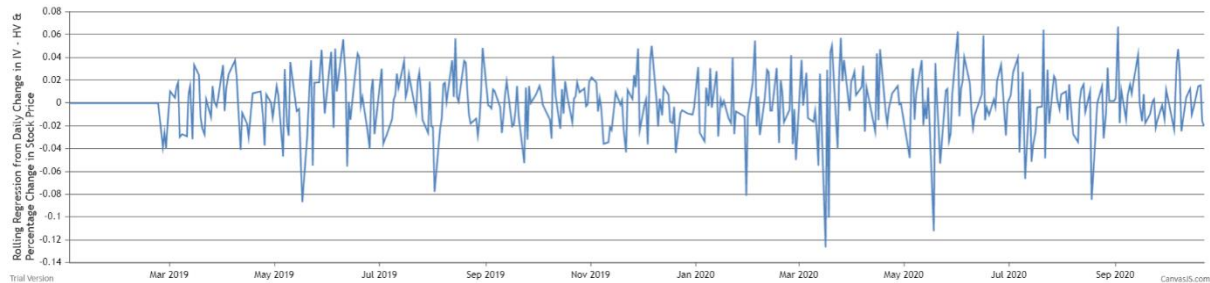
VS

Daily Percentage Change in Stock (2800) Price

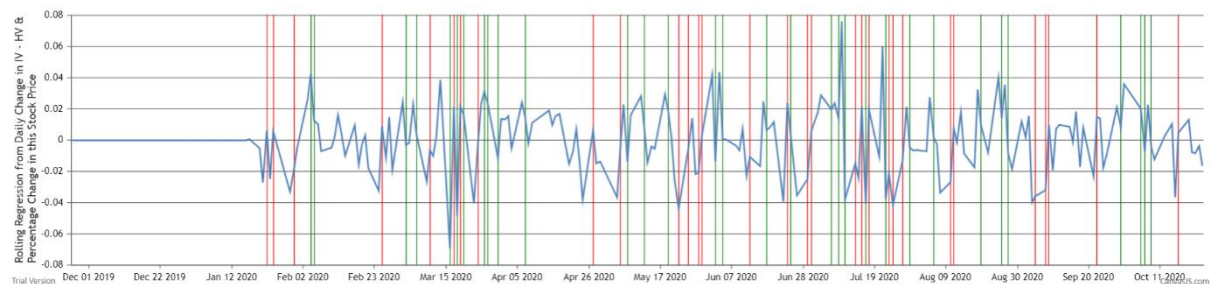


## Diagram 7: Rolling Regression with above 2 linear relationship

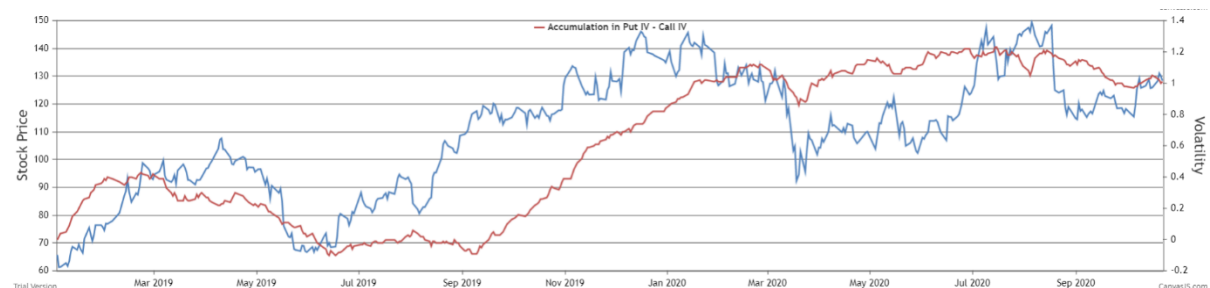
Show the predicted value by using the linear equation from past rolling regression day you input.



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



## 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.

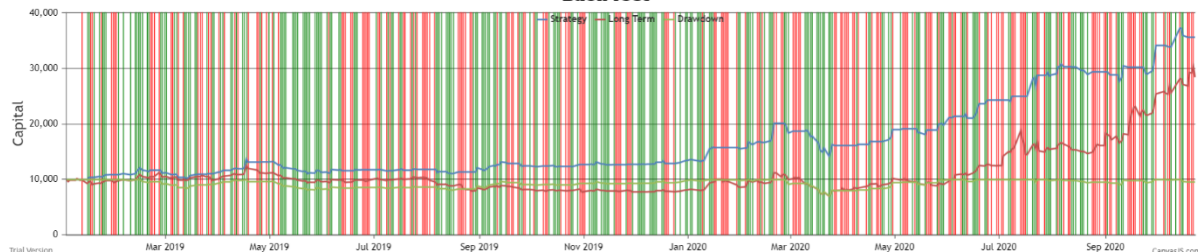
☐ Higher Priority

Apply Strategy



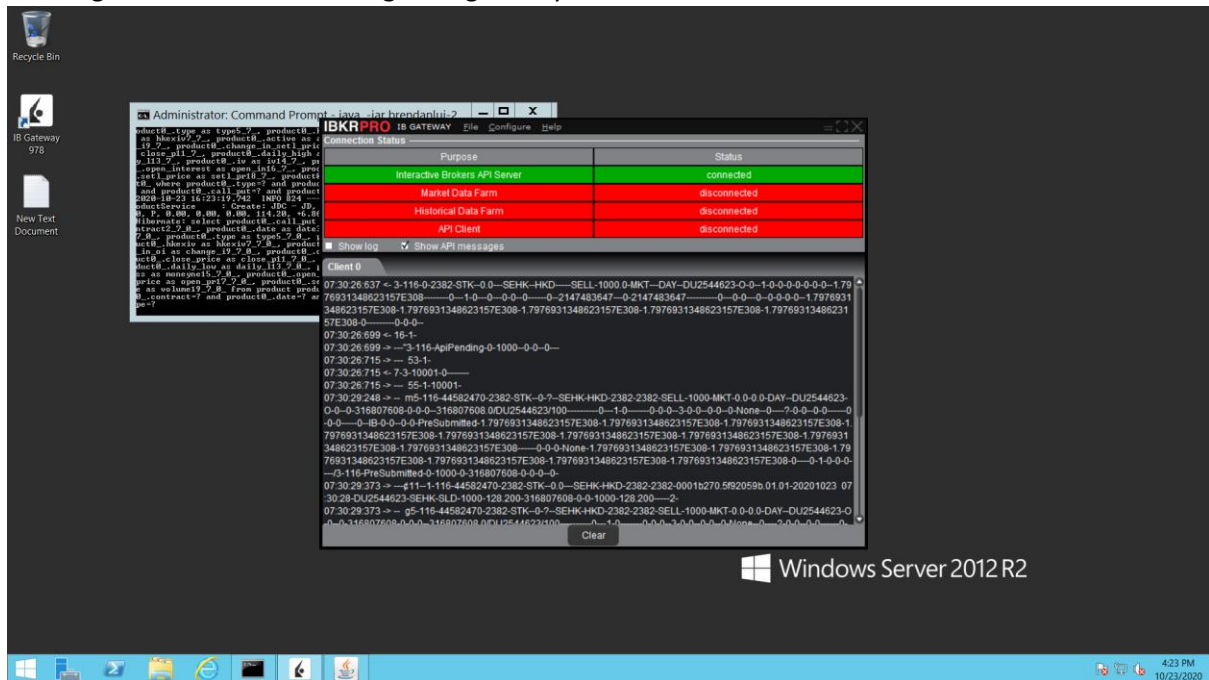
Model	Working Day(s) Hold	Signal(s) Reversed	Moneyness Diff.	Short / Long	Maximum Drawdown	Next Day Action
IV Diff. in Put - Call	999999999	False	+/-9%	Long only	-29.1%	SELL
Sharpe Ratio (Strategy)	Sharpe Ratio (Long Term)	No. of Sell/Buy (Long)	No. of Sell/Buy (Short)	Win Rate (Long)	Win Rate (Short)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

## Back Test



# 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