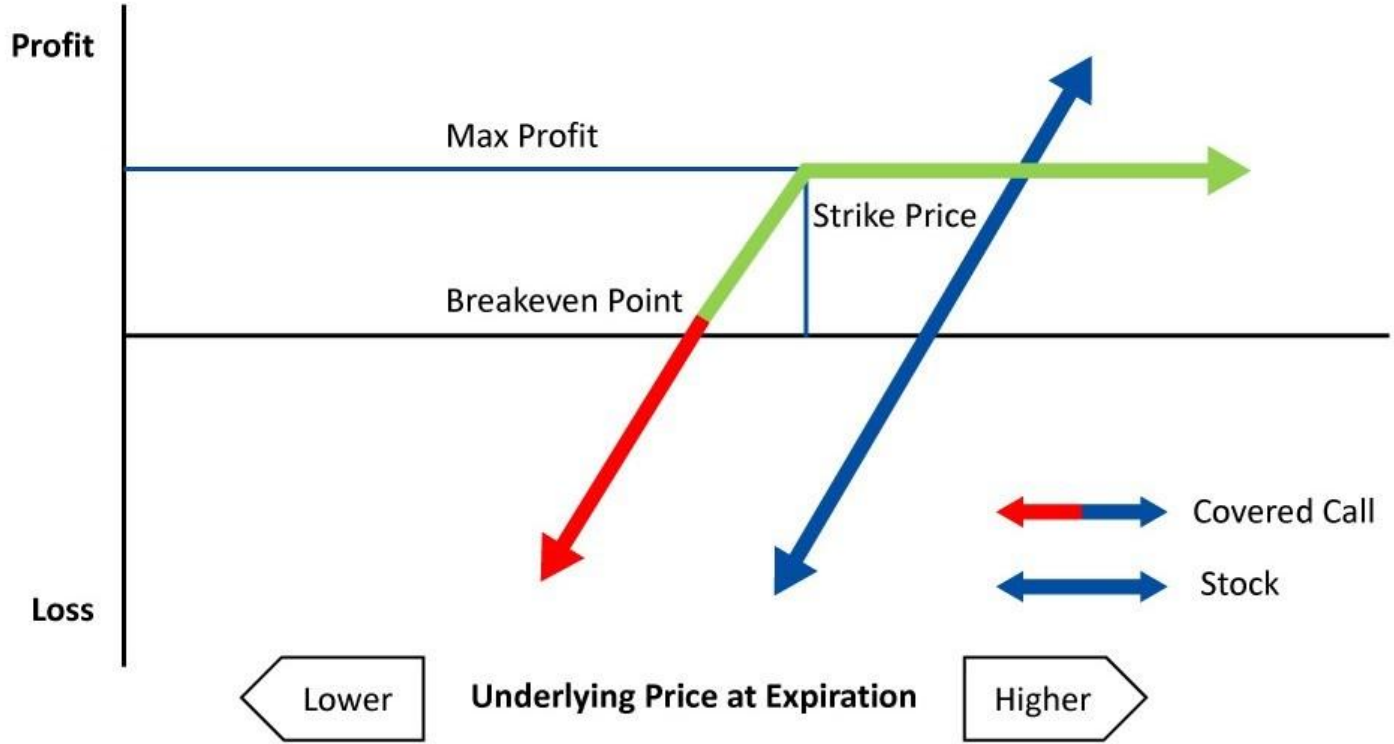
High yield
Structured product

Covered call payoff



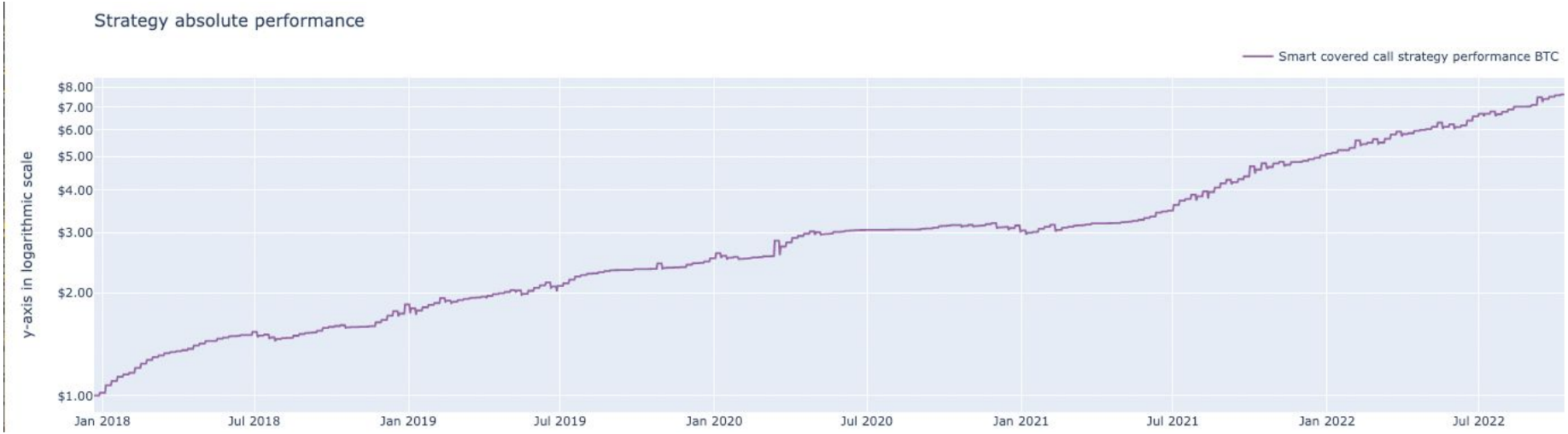
Two obvious strategies

- Low frequency one : triggered by a liquidity need and the will not to sell your BTCs : you sell covered calls in the money with a long duration (> 6months) and you get an immediate huge premium (around 50% of notional) but you have sold the upside of your BTCs, but at least you keep them if the price is under K at expiry

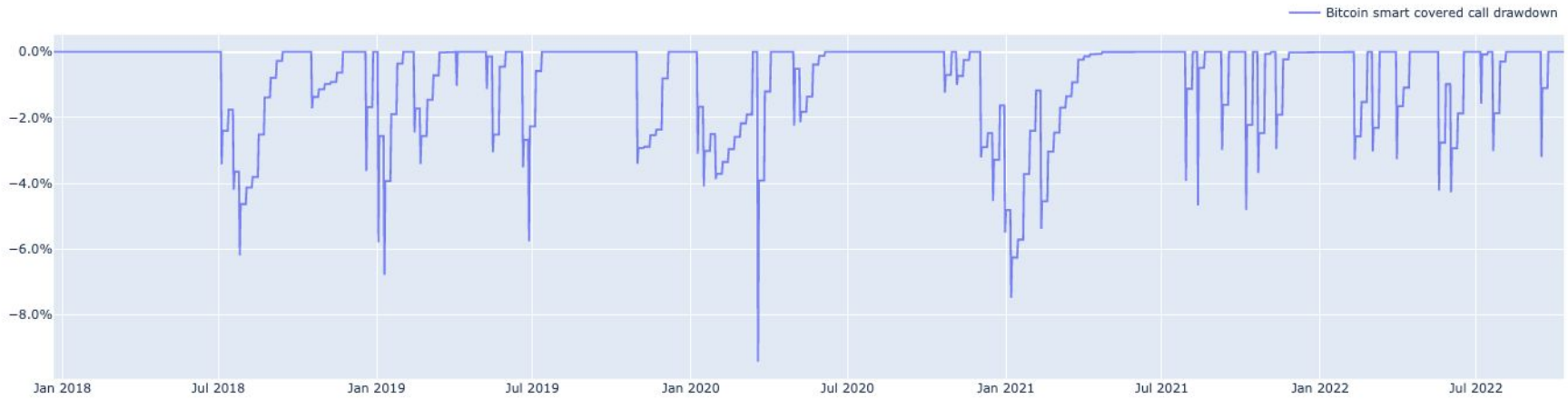
  => high yield structured products

- Middle frequency one : you roll call options on a weekly basis with a strike very unlikely to be hit (cumulated with a stop loss) and you compound the premium.

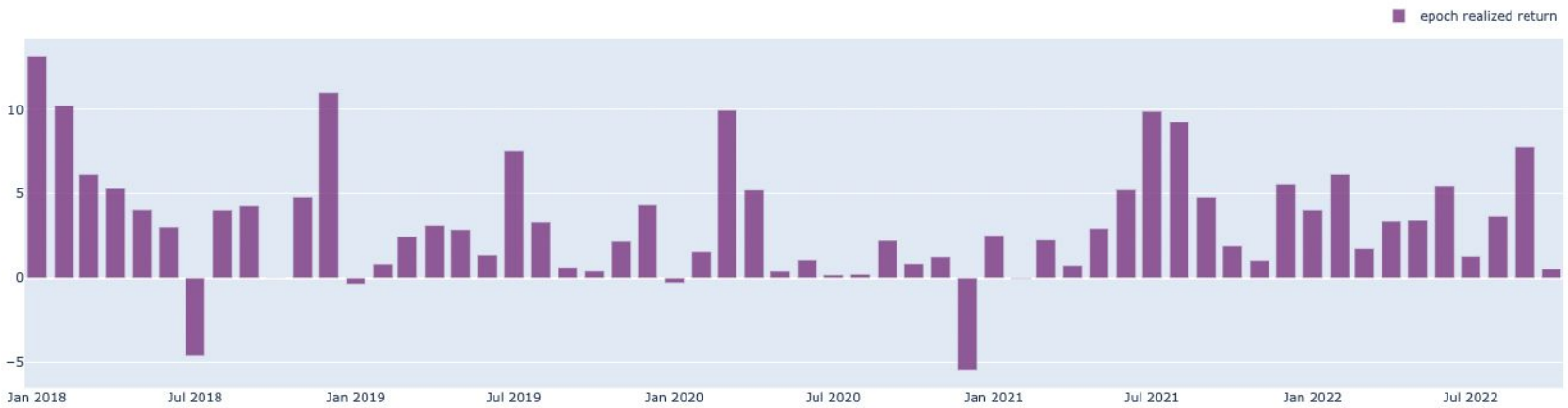
Weekly rolling covered call strategy



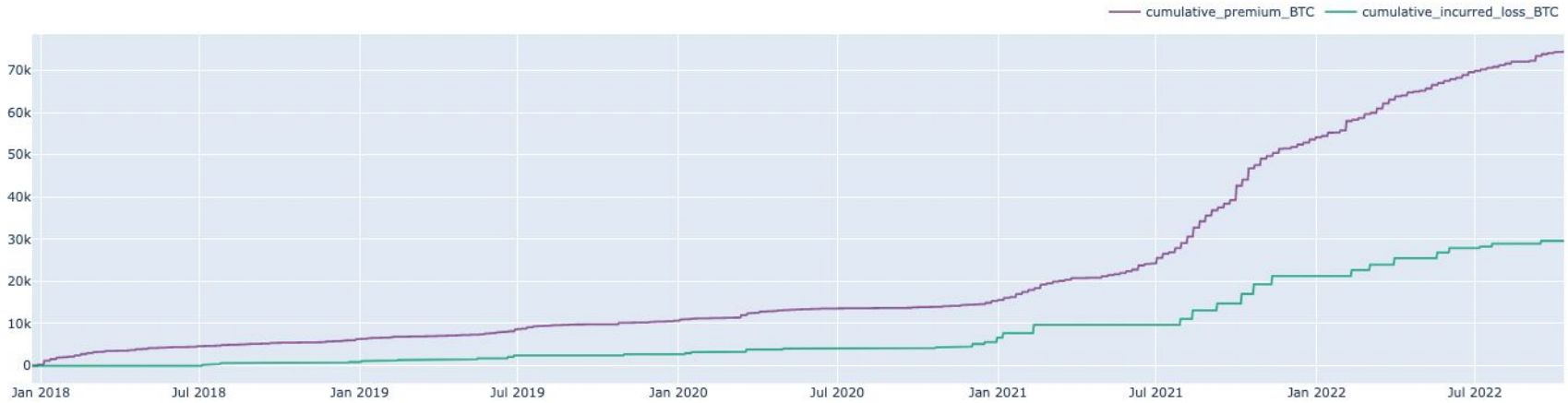
Drawdown chart



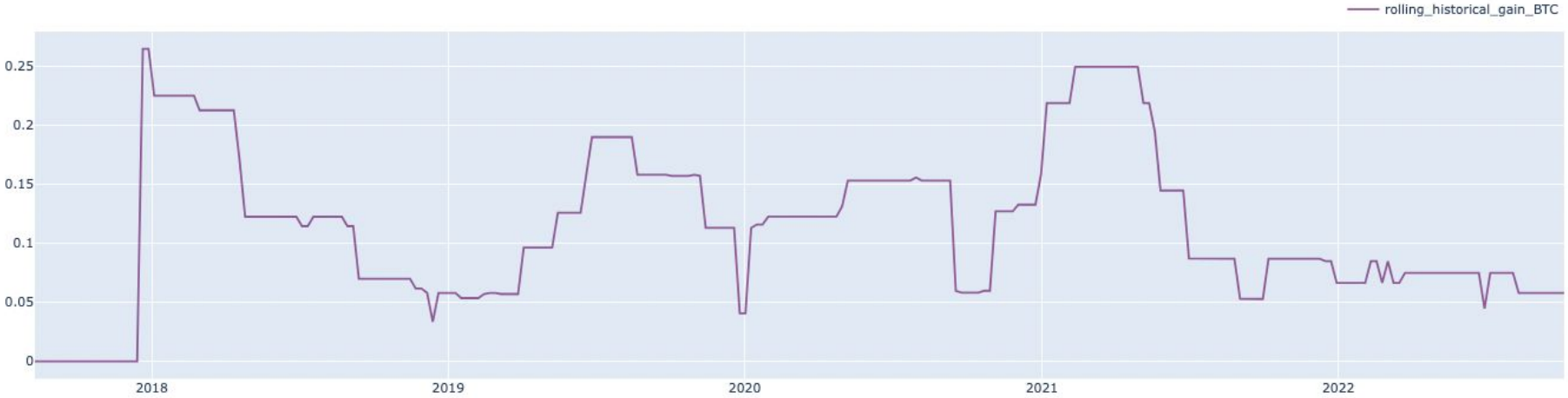
epoch realized return in percent (epoch frequency monthly)



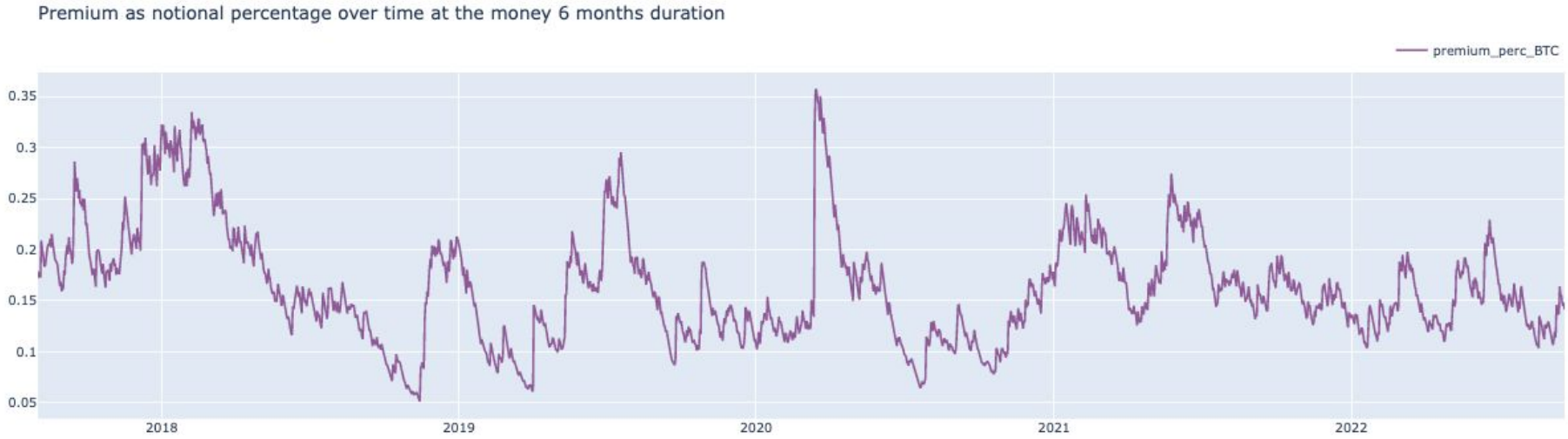
cumulated gain vs losses _BTC



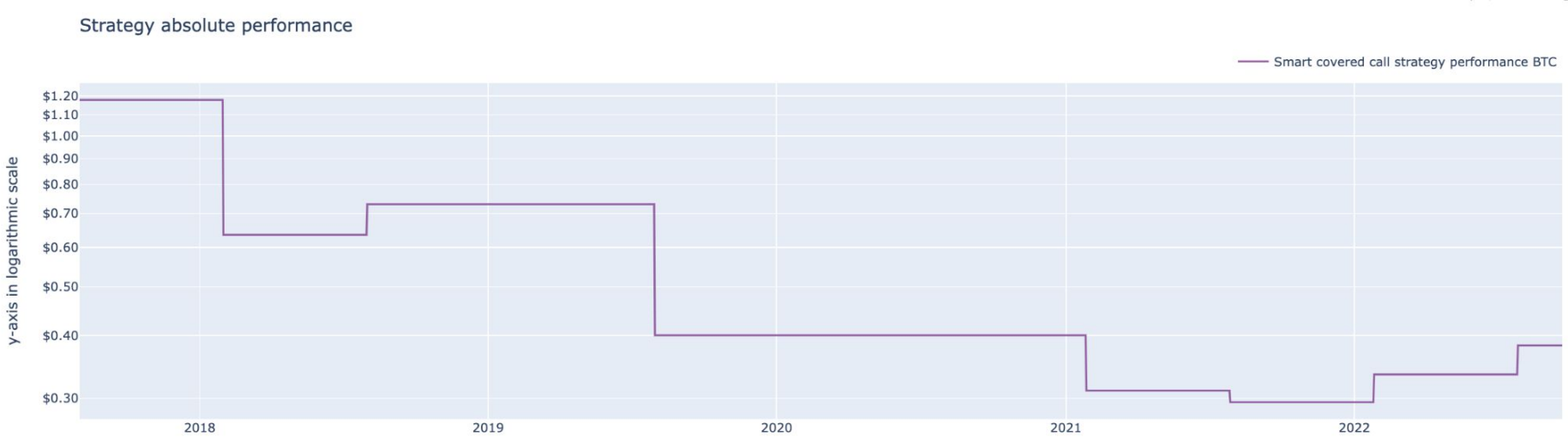
smart strike price from the spot in %



Structured Products/low frequency :
huge time to maturity : big premium



Systematic rolling covered call at the money 6 months: losing money



Making sure you earn at least R =15% on your BTC

- Compute the maturity T such that premium P(S0, T) in the money (strike S0) is such S0+P(S0,T) = S0*(1+R)

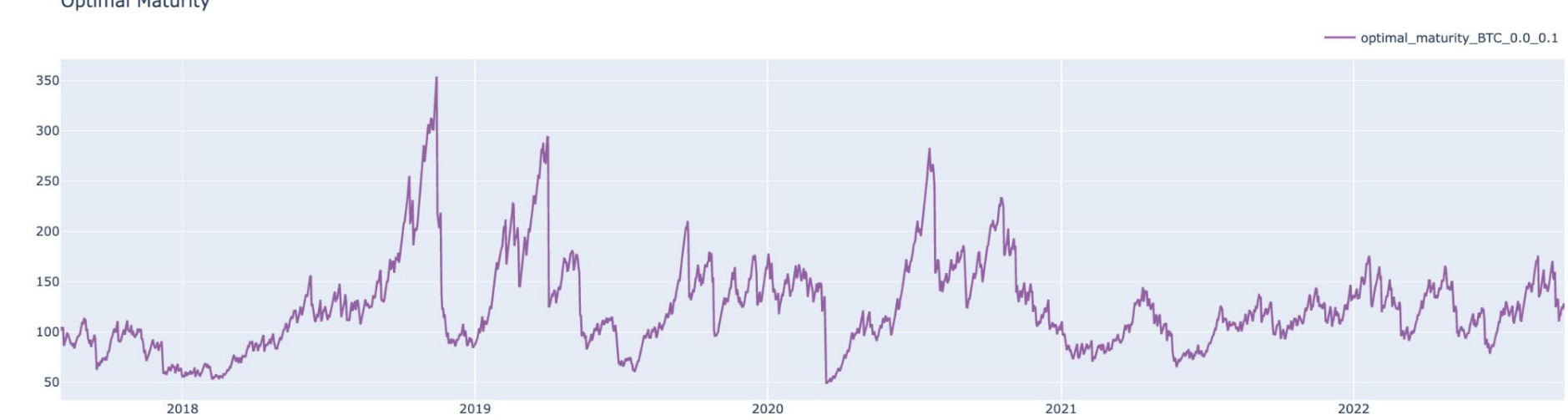
  => sell the call option at Toptim : you guarantee the yield but you cap your gain at S0

- We can adjust the strike price to allow a bullishness flavour : S1 = S0*(1+B), B being the bullishness flavour.

  => Compute the maturity T such that premium P(S1, T) slightly above the money (strike S1) is such S0+P(S1,T) = S0*(1+R)

Making sure you earn at least R% on your BTC (upside totally capped B=0)

Optimal Maturity



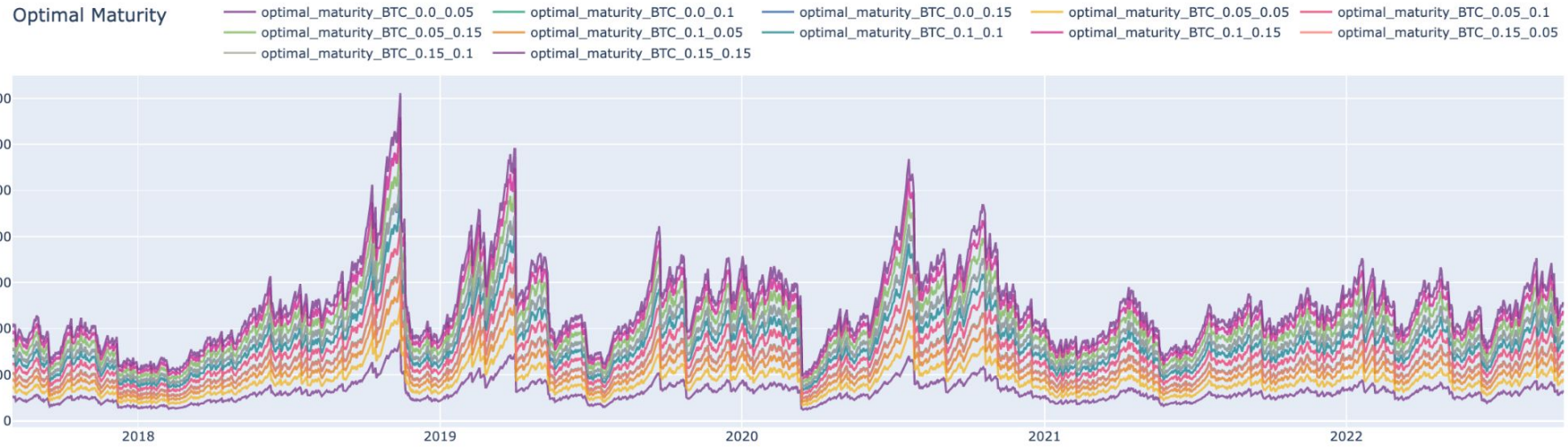
Optimal Maturity

Making sure you earn at least R% on your BTC (upside capped at B=5%)


Optimal Maturity
optimal_maturity_BTC_0.05_0.1
400
350
300
250
200
150
100
50
2018
2019
2020
2021
2022


Optimal Maturity
optimal_maturity_BTC_0.05_0.15
600
500
400
300
200
100
2018
2019
2020
2021
2022

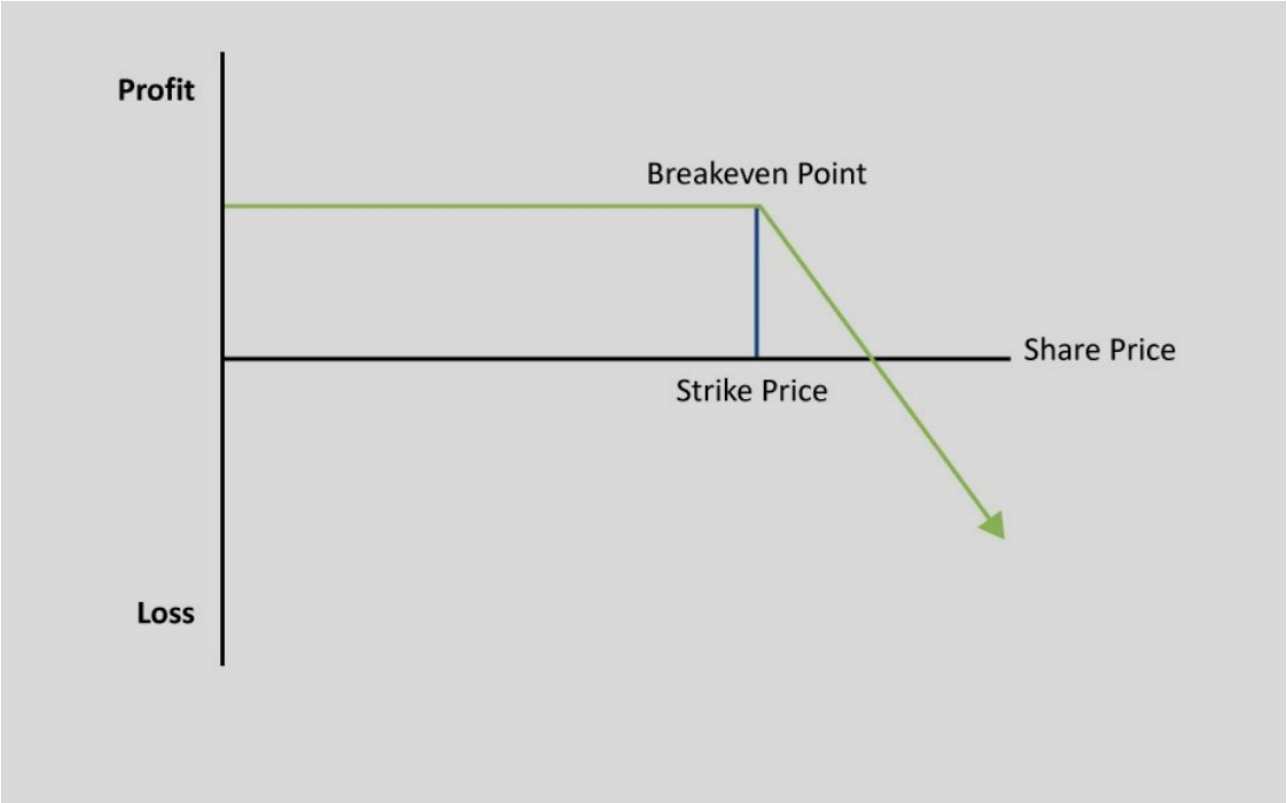
Optimal maturity



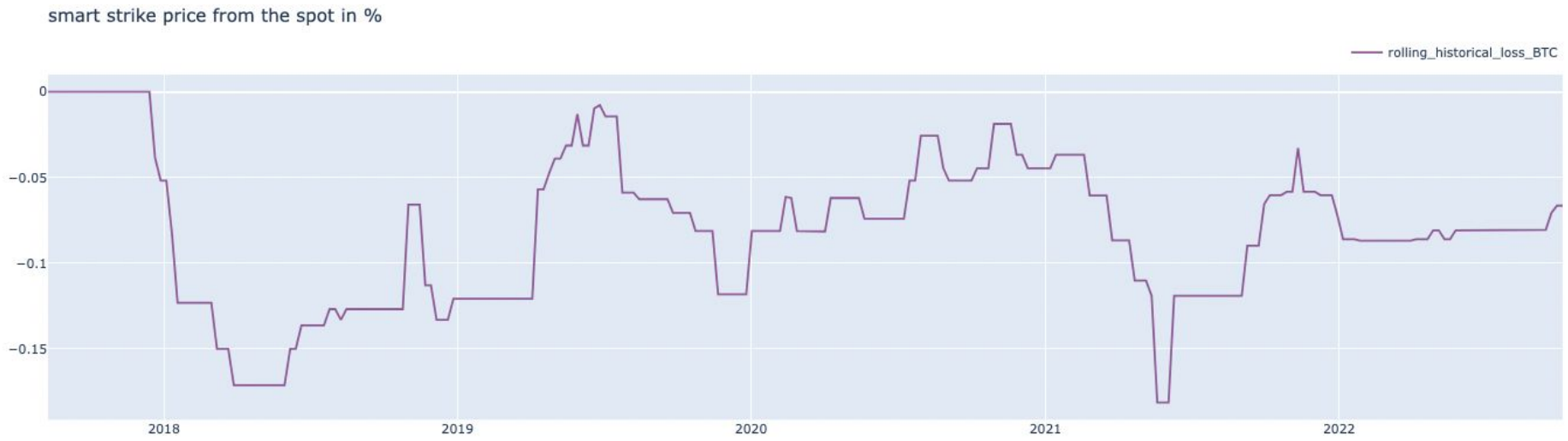
Strategy

- Same study must be done but with market call prices for a more accurate backtest

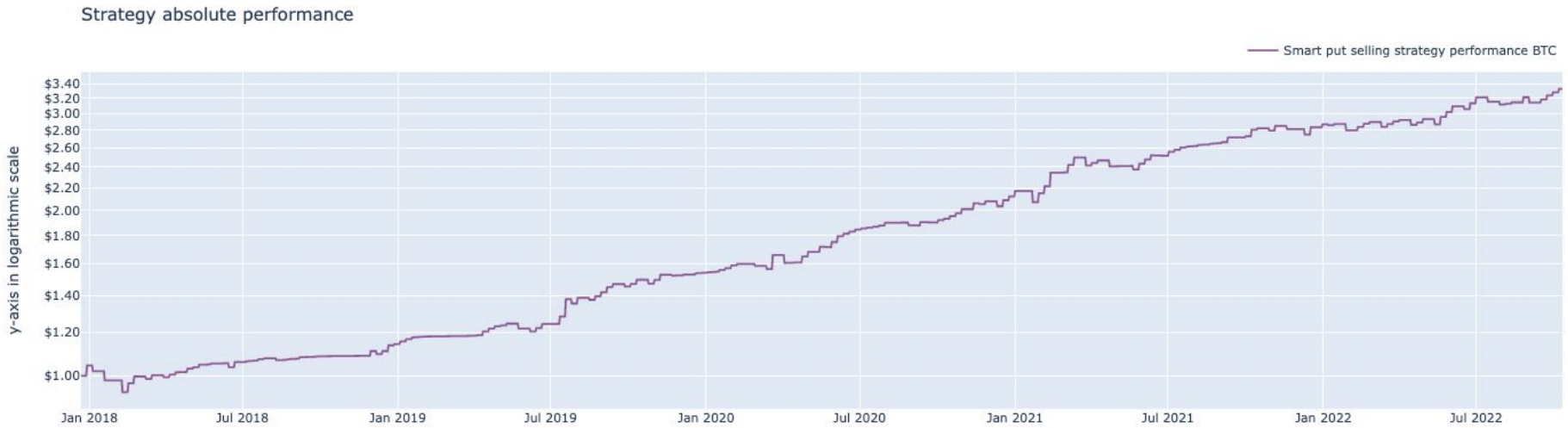
Put selling



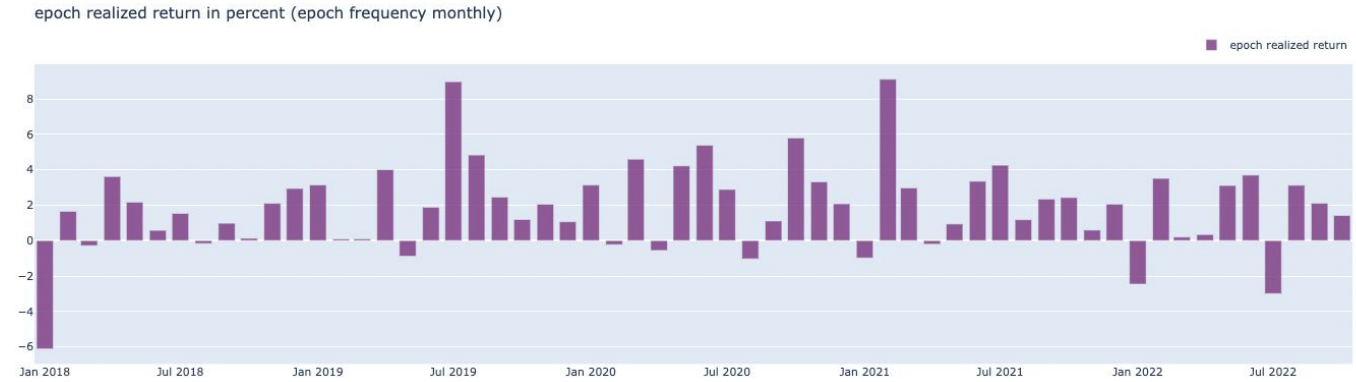
Weekly rolling smart put selling

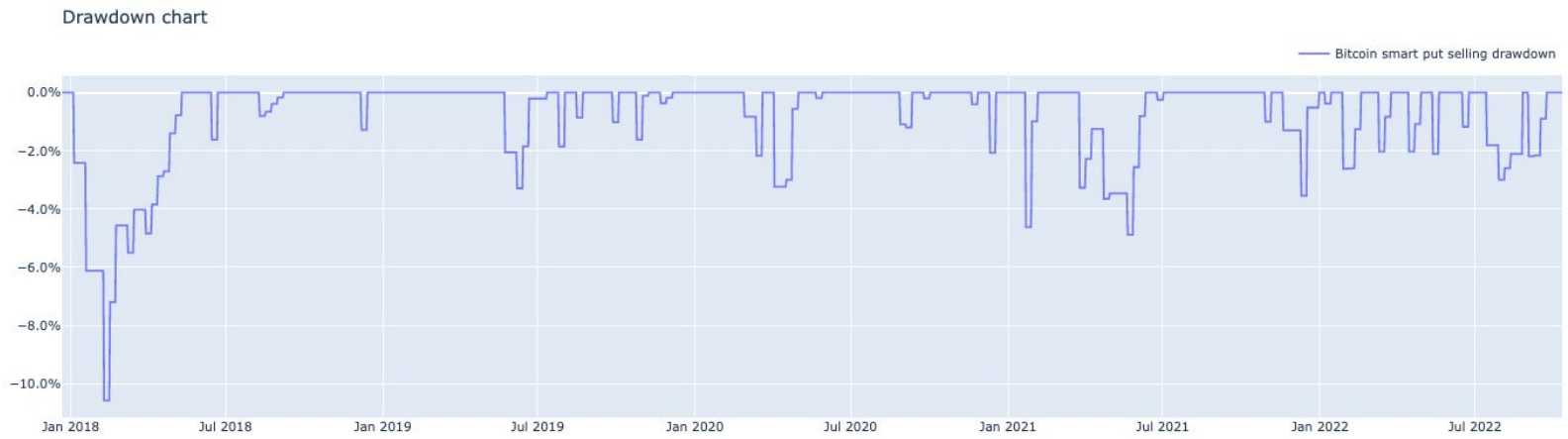


Weekly rolling smart put selling



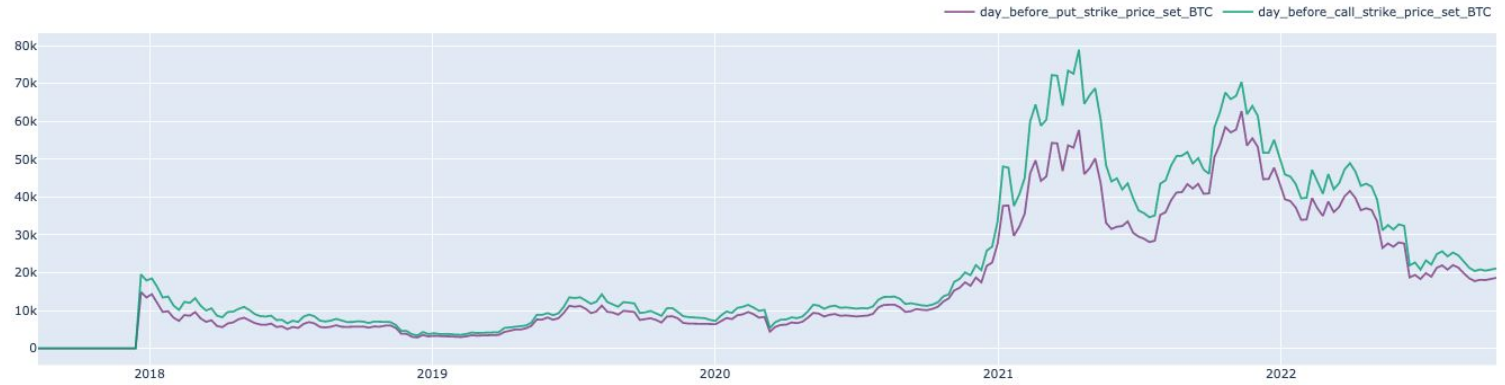
Weekly rolling smart put selling



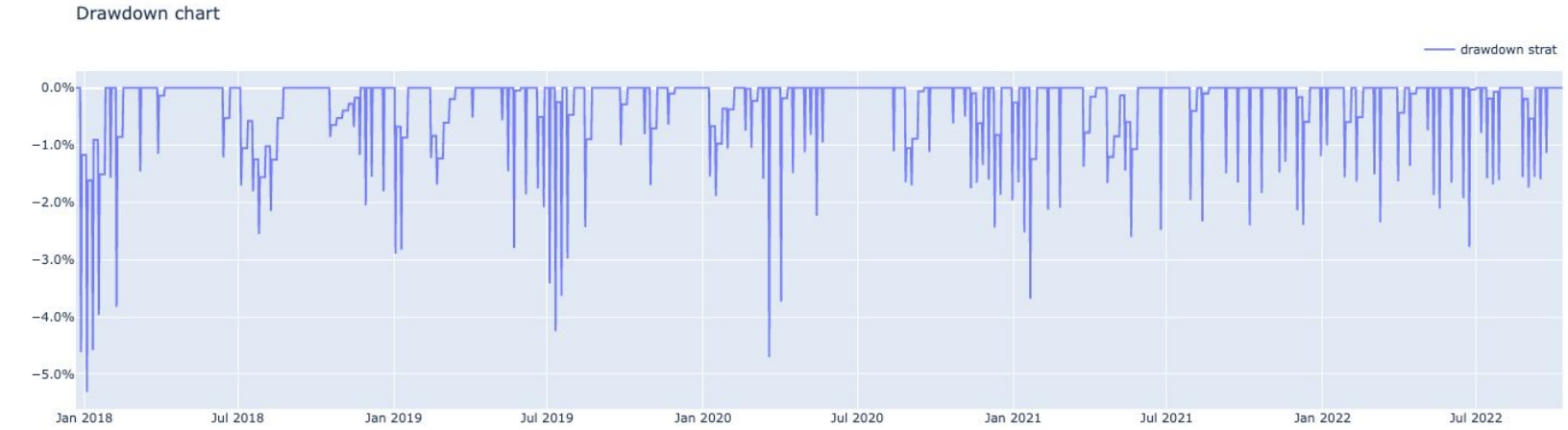


Mix covered call/put selling (strategy combo ½-½)

call/put strike price BTC

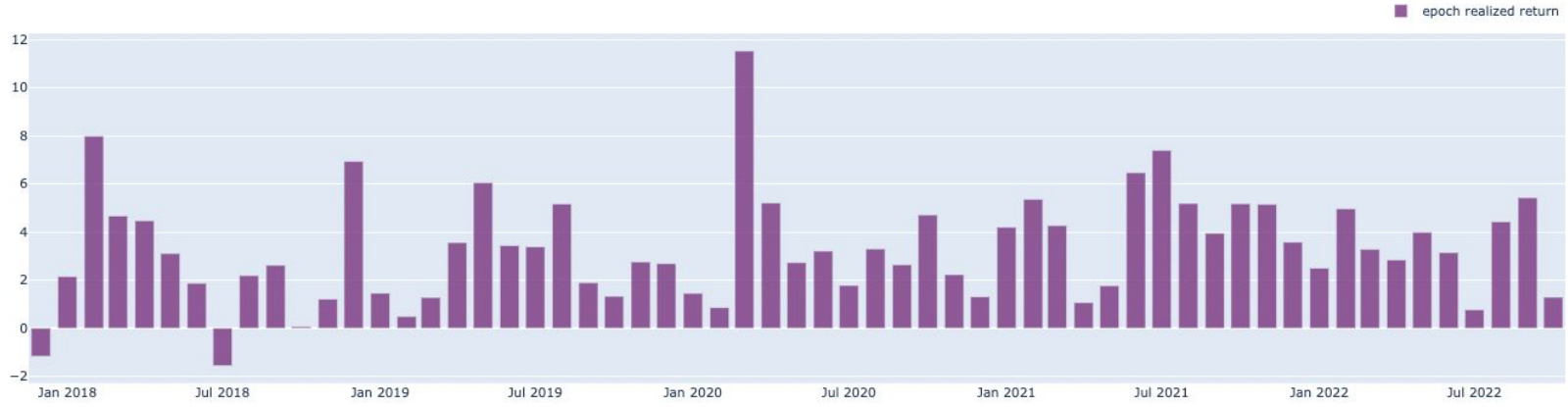


smart strike price from the spot in %

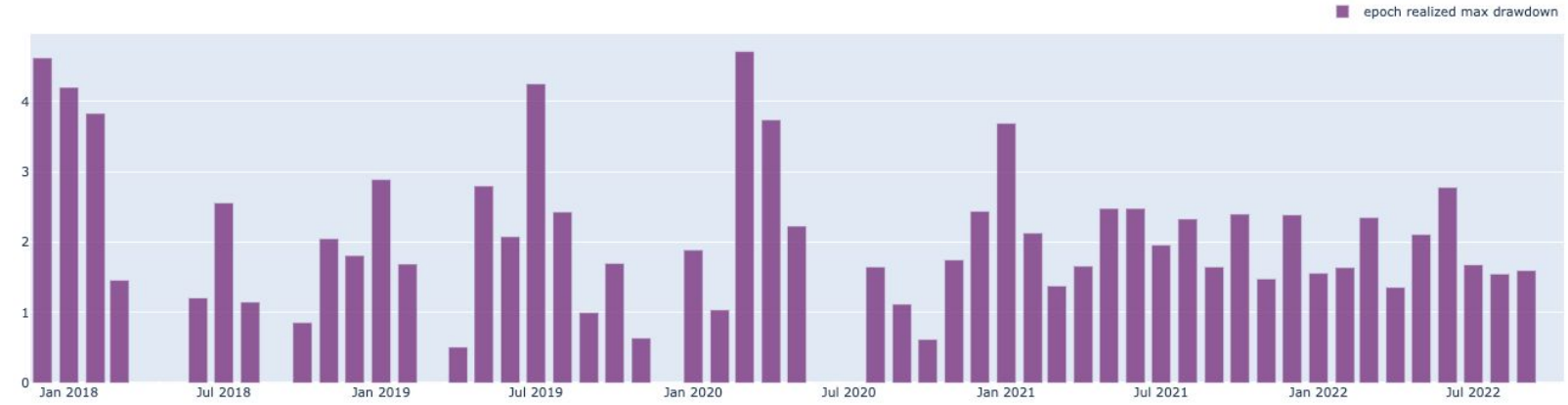

Drawdown chart
drawdown strat
0.0%
−1.0%
−2.0%
−3.0%
−4.0%
−5.0%
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022


Strategy CALL_PUT_RANGY)
Performance Strategy
y-axis in logarithmic scale
$9.00
$8.00
$7.00
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022

epoch realized return in percent



epoch realized max drawdown in percent



Sensitivity analysis

results_df

alpha	rolling_weeks_window	number_of_week_frequency	cutoff	annual_return	sharpe	calmar
0.15000	20	1	False	0.51943	3.13850	9.77029
0.15000	15	1	False	0.46315	2.88273	8.71170
0.15000	25	1	False	0.40033	2.84998	8.50148
0.00100	5	1	False	0.49103	2.65819	7.32592
0.01000	5	1	False	0.49103	2.65819	7.32592
0.15000	5	1	False	0.49103	2.65819	7.32592
0.10000	5	1	False	0.49103	2.65819	7.32592
0.05000	5	1	False	0.49103	2.65819	7.32592
0.03000	5	1	False	0.49103	2.65819	7.32592
0.02000	5	1	False	0.49103	2.65819	7.32592
0.04000	5	1	False	0.49103	2.65819	7.32592
0.10000	20	1	False	0.32376	2.48261	6.08977
0.10000	25	1	False	0.24109	2.23063	5.08008
0.10000	10	1	False	0.23398	1.84415	2.40569
0.15000	10	1	False	0.23398	1.84415	2.40569
0.04000	10	1	False	0.23398	1.84415	2.40569
0.03000	10	1	False	0.23398	1.84415	2.40569
0.02000	10	1	False	0.23398	1.84415	2.40569
0.01000	10	1	False	0.23398	1.84415	2.40569
0.00100	10	1	False	0.23398	1.84415	2.40569
0.05000	10	1	False	0.23398	1.84415	2.40569
0.15000	15	5	False	0.01241	1.74704	1241.41117
0.01000	25	9	False	0.00000	1.65720	0.00057
0.00100	25	9	False	0.00000	1.65720	0.00057
0.03000	25	9	False	0.00000	1.65720	0.00057
0.04000	25	9	False	0.00000	1.65720	0.00057
0.02000	25	9	False	0.00000	1.65720	0.00057
0.05000	25	9	False	0.00000	1.65720	0.00057
0.00100	15	1	False	0.14801	1.57643	1.87810
0.02000	15	1	False	0.14801	1.57643	1.87810
0.10000	15	1	False	0.14801	1.57643	1.87810
0.04000	15	1	False	0.14801	1.57643	1.87810
0.03000	15	1	False	0.14801	1.57643	1.87810
0.05000	15	1	False	0.14801	1.57643	1.87810
0.01000	15	1	False	0.14801	1.57643	1.87810