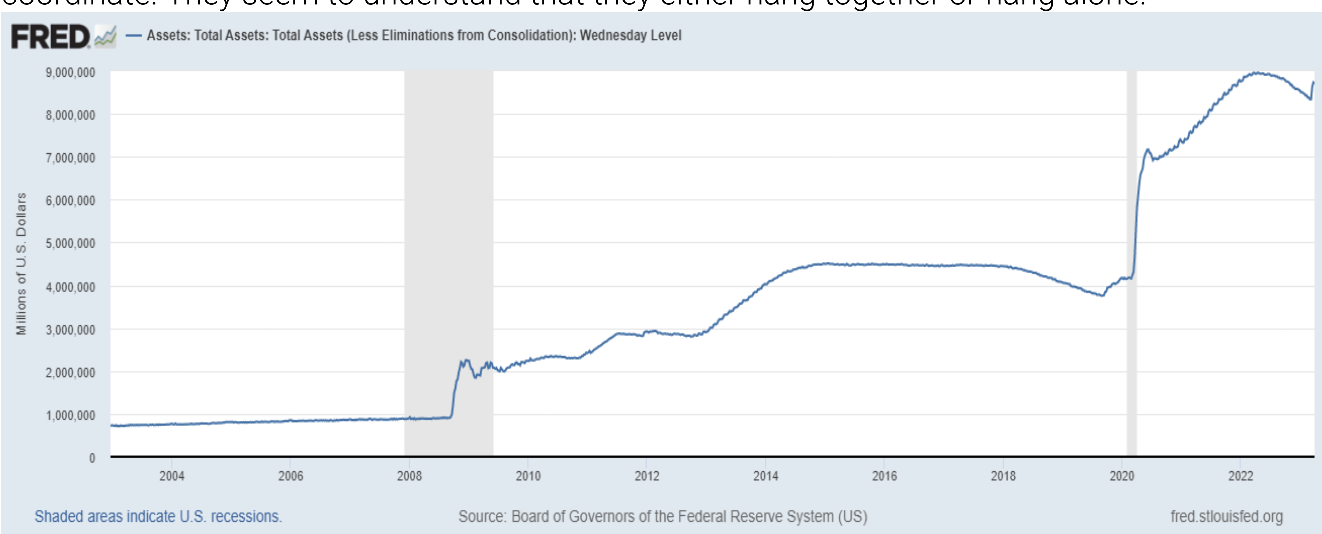
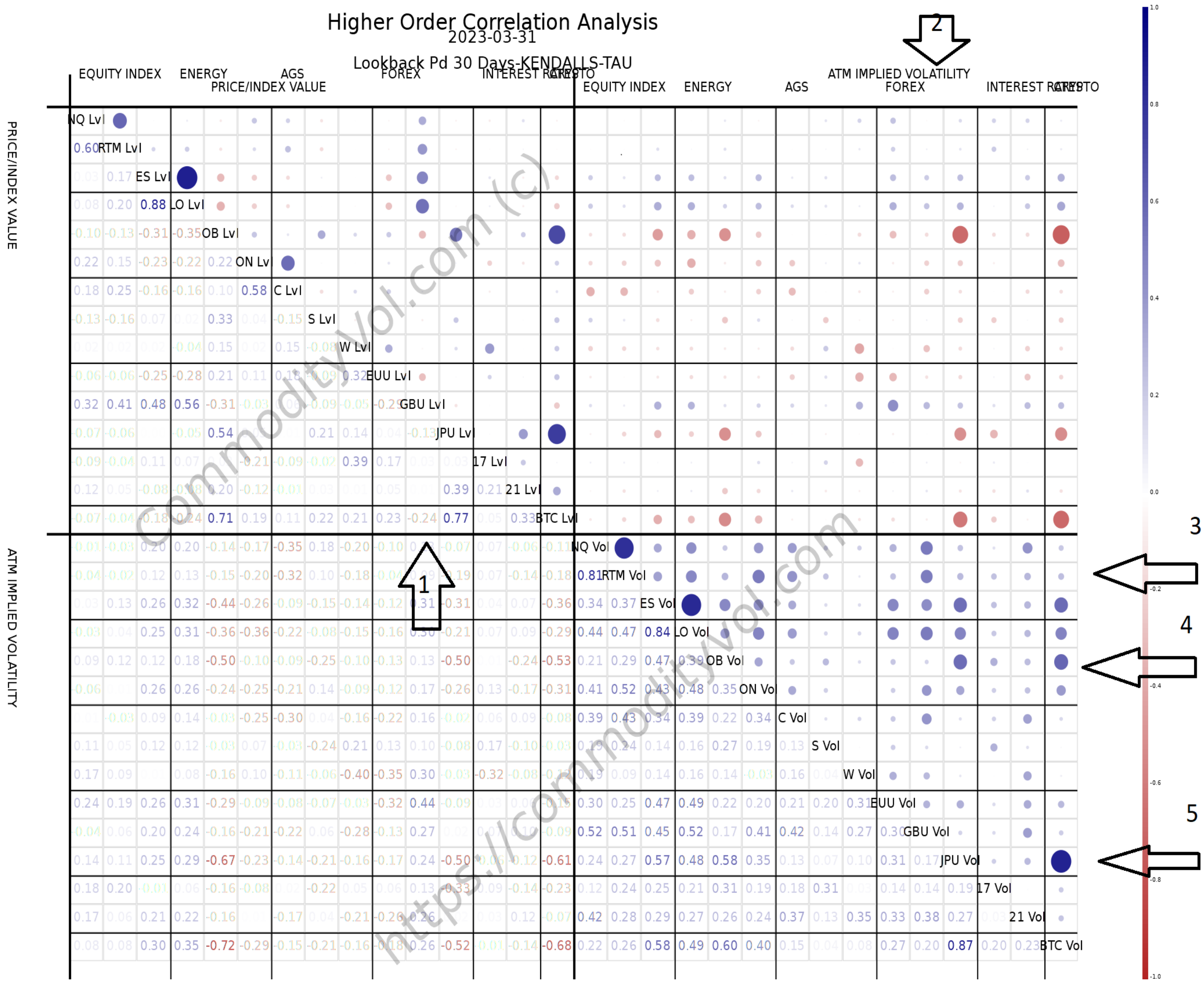
Welcome to our March 2023 Recap:

We are pleased to welcome you to our March 2023 Report.

What a month! In hockey there is the concept of the stick save. It is a desperate attempt to interfere with a goal, which, against all odds, succeeds. The FED has made an art of this. We, in these parts, are not friendly to the machinations of the central banker. However, the regularity that it is squashing the near Armageddon scenario is uncanny. How long this can go is uncertain. It has persisted longer than we would have thought possible. Still, the balance sheet cannot be ignored. Presumably, this cannot go on forever. At every attempt to limit the balance sheet, major markets have fallen out of bed. Although CPI is not white hot, it is also not back to its halcyon days performance. The other fascinating aspect of the modern world is the ability of the OECD central banks to coordinate. They seem to understand that they either hang together or hang alone.



As in prior months, we briefly look at cross asset correlations over the last 30 days. In this case, we look at a robust correlation measure called Kendall's Tau on the percent changes in front month prices and differences of implied vols. The correlations which we first saw last month seem to have gotten more pronounced. As in previous periods, the FX correlation to equity indexes and energy is quite explicit (see the column labeled 1). Looking the column labeled 2, we see that there is correlation between FX vol and the returns of many commodities. Finally, 3 and 4 show the correlations between the index and energy vol to the vol complexes of many other commodities. It is this author's recollection that the number of colors on the vol change/price return and vol change/vol change have never been so bold. Correlations are popping up where they have been seldom observed.



Energy

For all the turmoil in markets, energy was mostly calm. Crude prices were up small. Natural gas rallied, but against its highs the rally is anemic. Heating oil tumbled, with refined gasoline rallying. Implied volatility was down for the major commodity futures. The rally in natty gas brought its vol down 0.18 vol points (or 18.6%). Vol dribbled out of the other commodities in this sector as well.

Energy ATM
WTI Crude Detail
Brend Crude Detail
US Natty Gas Detail
Details Energy

Equity Index

You would not be surprised to see that most equity indexes were down. However, they were down in the 3-4% range. Consistent with our introduction, the central bank

coordination prevented the Silicon Valley Bank debacle and the generally horrible duration management at US banks from snowballing into a major crash. The VIX index was up 2.83 points, which translates into 15.8% change. This is broadly in line with the 2.7 point increase in SP500 vol. Again, the markets did not panic. The highs of vol were quickly sold off.
EquityIndex ATM
SP500 Detail
VIX Detail

Interest Rates
Interest rate futures were down. As usual, the magnitude of the price change is probably some function of duration. Eurodollar futures were down 0.108 while the ultra bond future was down 9.59 (or 6.6%). On the other hand, vol has increased across the board for the Treasury complex. The 5 Year note vol moved up 1.4 vol points, while the 30 Year implied vol was up 3.1 vol points. Uncertainty in the government market has picked up. This should be worrying to the market.
Interest Rates ATM
30 Year Bond Detail
10 Year Note Detail
Ultrabond

Foreign Exchange
The US Dollar was stronger against all major currencies except for the Peso. Vol spiked for the Peso and Brazilian Real, with the slide in Crypto vol continuing this month.
Foreign Exchange ATM
Yen Detail
Euro Detail
Bitcoin Detail
Ethereum Detail

Metals
With the Fed expanding its balance sheet, you might think that the precious metals would rally and vol would spike. In reality, the precious metals were all sold off. Copper was mildly up, approximately unchanged. Vol was up for the biggest losers (palladium and platinum), but down for the other commodities.
Metals ATM
Gold Detail
Silver Detail
Copper Detail

Agriculture
Ags were a massive mixed bag. Feeder cattle, live cattle and hogs were up strong. Hogs were the biggest gainer, rising 15% with its vol rallying. Corn, wheat and oats were all down in dramatic fashion. The declining commodities all experienced rising implied volatilities. Against a backdrop of droughts and uncertainty in Ukrainian exports, it is surprising that grains are not rallying.

[Ags ATM]
[Wheat Detail]
[Oats Detail]
[Corn Detail]
[Lean Hog]
[Live Cattle Detail]
[Ags Details]

CommodityVol.com is here to serve your needs around modeling, forecasting, and understanding the market. If you have needs for commodity skews, parameterized surfaces (including stochastic volatility models), and analytics, please do not hesitate to contact us! info@commodityvol.com

At The Money Roundup of Products

Ags

exch/prod	desc	futures chng [%]	vol chng [%]
CME/DK	Class IV Milk	-0.100 [-0.5%]	-0.058 [-63.9%]
CBT/C	Corn	+0.248 [+3.9%]	+0.005 [+2.9%]
CME/62	Feeder Cattle	+12.525 [+6.7%]	+0.018 [+19.7%]
CBT/KW	KC HRW Wheat	+0.615 [+7.5%]	-0.025 [-8.7%]
CME/LN	Lean Hog	-9.700 [-11.4%]	-0.067 [-28.6%]
CME/48	Live Cattle	+3.225 [+2.0%]	+0.008 [+8.1%]
CME/NF	Nonfat Dry Milk	-1.750 [-1.4%]	-0.040 [-57.2%]
CBT/O	Oats	+0.288 [+8.6%]	-0.130 [-23.3%]
CBT/14	Rough Rice	-0.105 [-0.6%]	+0.030 [+22.4%]
CBT/S	Soybean	+0.112 [+0.8%]	-0.002 [-1.4%]
CBT/06	Soybean Meal	-4.300 [-0.9%]	+0.029 [+14.5%]
CBT/07	Soybean Oil	-5.340 [-8.8%]	+0.016 [+6.0%]
CBT/W	Wheat	-0.177 [-2.5%]	-0.035 [-11.4%]

EquityIndex

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/YM	E-Mini Dow	+767.000 [+2.3%]	-0.023 [-13.3%]
CME/NQ	E-Mini Nasdaq	+1340.000 [+11.2%]	-0.038 [-14.5%]
CME/RTO	E-Mini Russell 2000	-86.300 [-4.5%]	-0.010 [-4.4%]
CME/RTM	E-Mini Russell EOM	-103.600 [-5.4%]	-0.020 [-8.5%]
CME/ES	E-Mini S&P 500	+181.250 [+4.6%]	-0.025 [-12.6%]
CBOE/VIX	VIX Volatility Index	-1.880 [-9.1%]	-0.145 [-18.5%]

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/26	2 YR US Treasury Note	+1.566 [+1.5%]	+0.007 [+22.9%]
CBT/25	5 YR US Treasury Note	+2.867 [+2.7%]	+0.006 [+9.0%]
CBT/21	10 YR US Treasury Note	+3.922 [+3.5%]	+0.001 [+1.3%]
CBT/17	30 YR US Treasury Bond	+7.031 [+5.7%]	-0.011 [-7.4%]
CME/ED	Eurodollar	-0.132 [-0.1%]	+0.009 [+185.1%]
CBT/UBE	Long Term US Treasury Bond	+6.719 [+5.0%]	-0.023 [-12.3%]

Forex

exch/prod	desc	futures chng [%]	vol chng [%]
CME/ADU	AUDUSD 2pmfix	-0.008 [-1.1%]	-0.021 [-16.9%]
CME/BTC	Bitcoin	+5210.000 [+22.1%]	+0.067 [+13.5%]
CME/CAU	CADUSD 2pmfix	+0.004 [+0.6%]	-0.013 [-18.4%]
CME/CHU	CHFUSD 2pmfix	+0.027 [+2.5%]	-0.008 [-9.7%]
CME/ETH	Ethereum Futures	+196.000 [+11.9%]	+0.043 [+7.8%]
CME/EUU	EURUSD 2pmfix	+0.018 [+1.7%]	-0.012 [-15.1%]
CME/GBU	GBPUSD 2pmfix	+0.031 [+2.6%]	-0.030 [-30.4%]
CME/JPU	JPYUSD 2pmfix	+0.000 [+2.2%]	-0.021 [-17.9%]
CME/MP	Mexican Peso	+0.001 [+1.2%]	-0.007 [-5.9%]
CME/NE	New Zealand	+0.000 [+0.0%]	-0.007 [-5.3%]

Energy

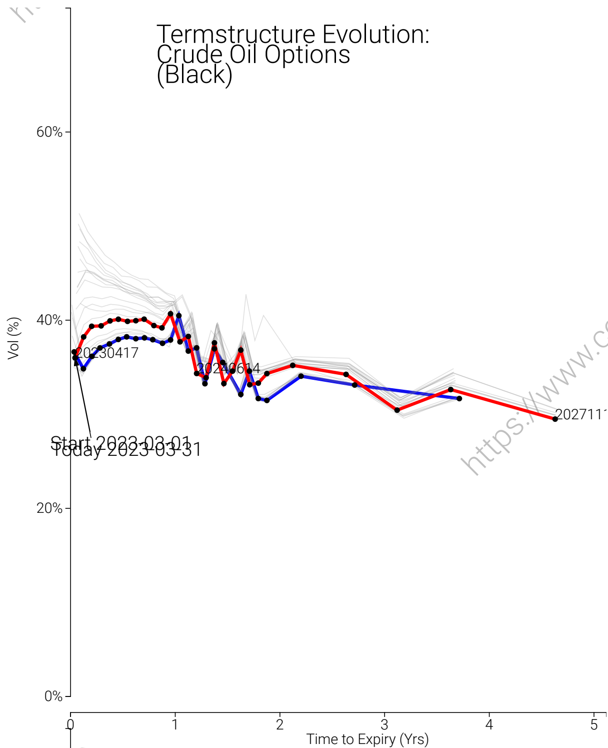
exch/prod	desc	futures chng [%]	vol chng [%]
NYMEX/BZO	Brent Crude Oil Margin	-4.420 [-5.2%]	+0.031 [+9.5%]
NYMEX/BE	Brent Euro Style	-3.800 [-4.5%]	+0.009 [+2.6%]
NYMEX/CVR	Chicago Ethanol(platts) Average Price	+0.288 [+13.5%]	+0.010 [+7.7%]
NYMEX/LO	Crude Oil	-2.020 [-2.6%]	-0.006 [-1.7%]
NYMEX/LN	European Natural Gas	-0.595 [-21.2%]	+0.129 [+16.6%]
NYMEX/E7	Henry Hub Financial Last Day	-0.595 [-21.2%]	+0.113 [+14.4%]
NYMEX/JKO	LNG Japan/korea Marker (platts) Average Price	-1.065 [-7.3%]	-0.037 [-2.1%]
NYMEX/ON	Natural Gas	-0.595 [-21.2%]	+0.124 [+15.9%]
NYMEX/OH	NY Harbor ULSD	-0.253 [-8.8%]	-0.073 [-18.5%]
NYMEX/OB	RBOB	+0.006 [+0.2%]	-0.040 [-10.9%]

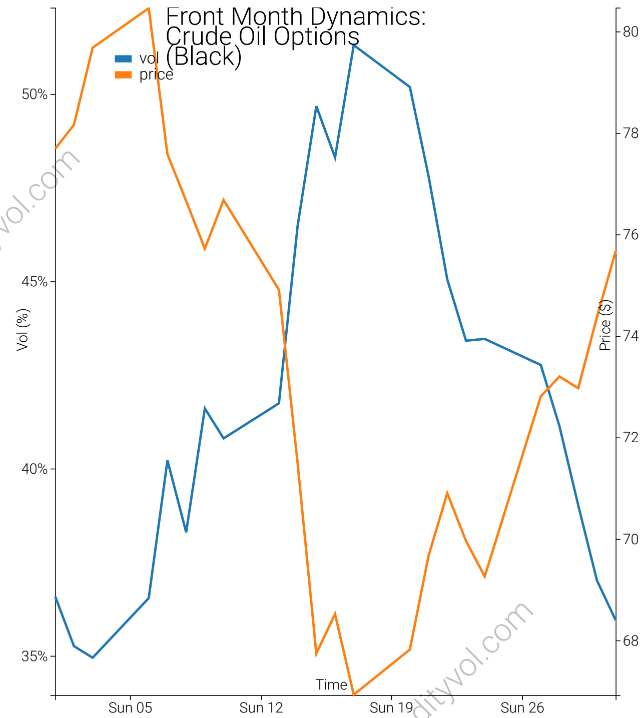
Metals

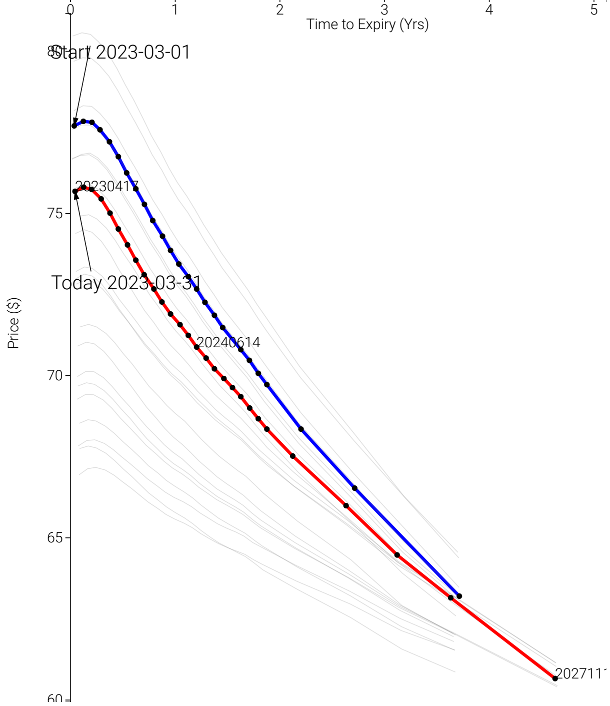
exch/prod	desc	futures chng [%]	vol chng [%]
COMEX/HX	Copper	-0.066 [-1.6%]	-0.046 [-17.7%]
COMEX/OG	Gold	+140.800 [+7.6%]	+0.015 [+11.0%]
NYMEX/PAO	Palladium	+30.400 [+2.1%]	-0.042 [-8.1%]
NYMEX/PO	Platinum	+41.300 [+4.3%]	-0.060 [-17.3%]
COMEX/SO	Silver	+3.061 [+14.5%]	+0.013 [+5.1%]

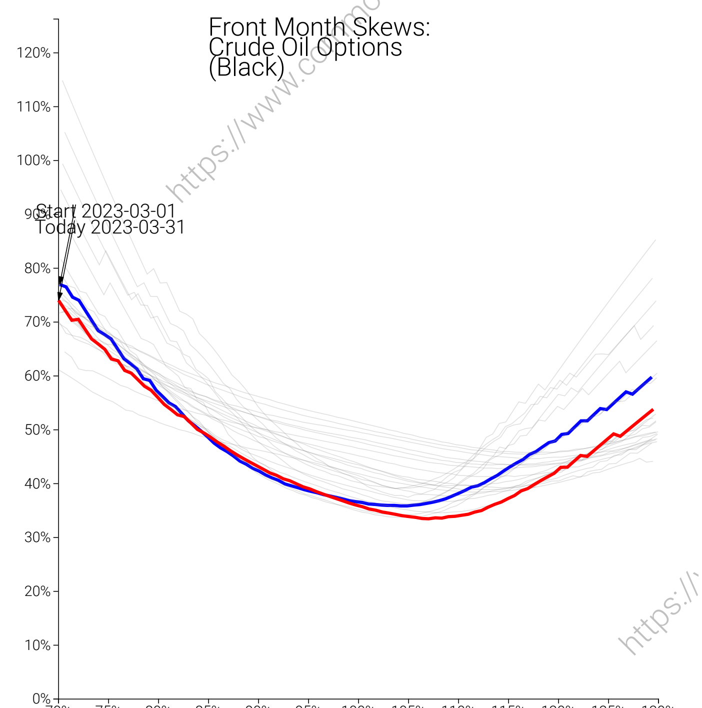
Skews, Termstructures and more

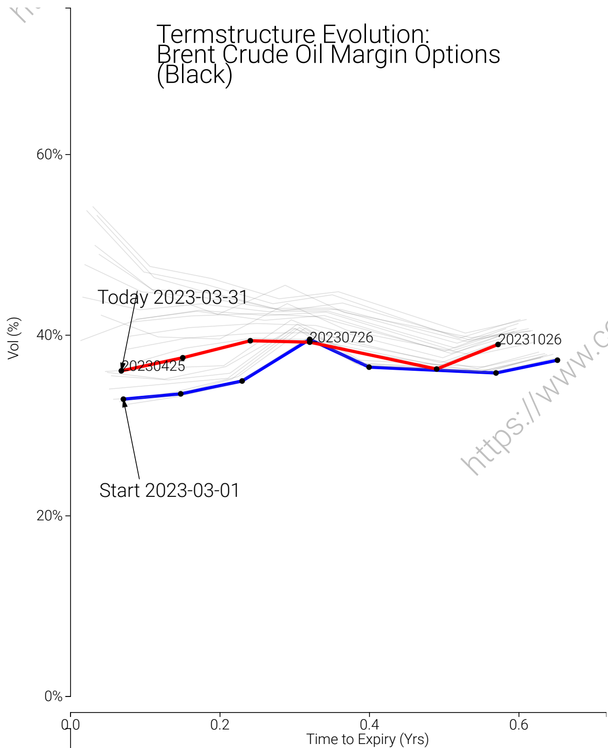
Energy: Crude and Derivatives

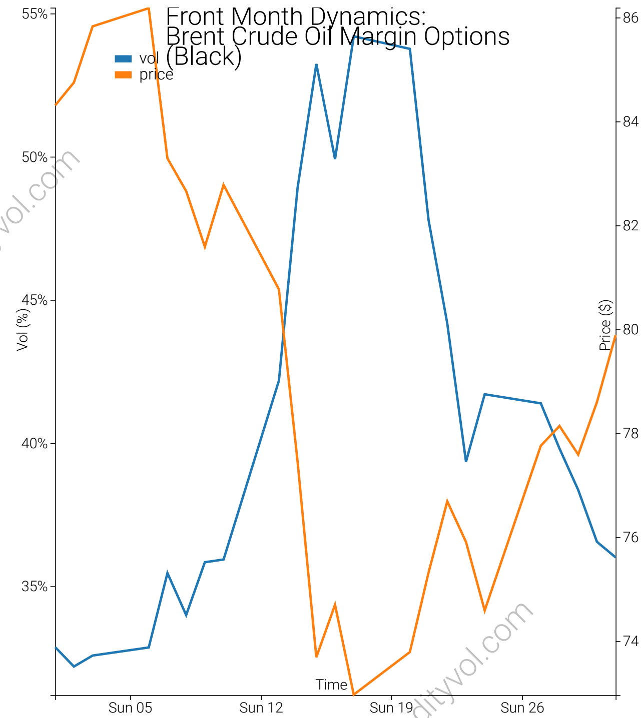

Termstructure Evolution:
Crude Oil Options
(Black)
Vol (%)
60%
40%
20%
0%
20230417
20240614
202711
Start 2023-03-01
Today 2023-03-31
Time to Expiry (Yrs)
0
1
2
3
4
5
https://www.commodityvol.com

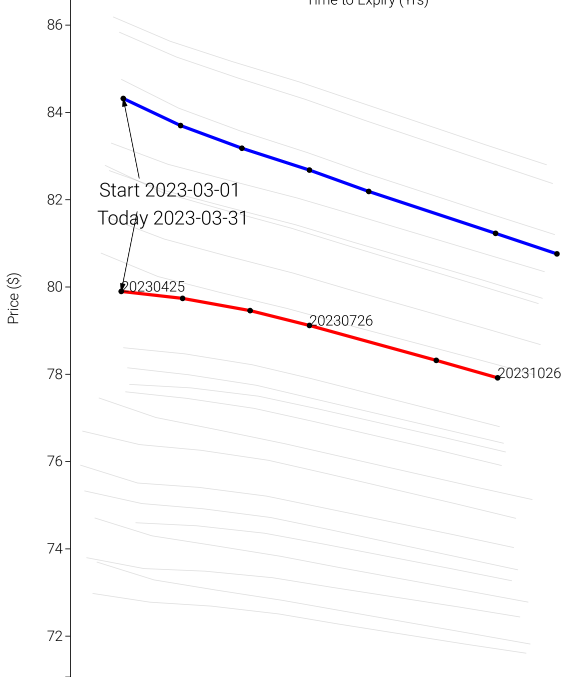

Front Month Dynamics:
Crude Oil Options
(Black)
vol
price
Vol (%)
50%
45%
40%
35%
Price ($)
80
78
76
74
72
70
68
Time
Sun 05
Sun 12
Sun 19
Sun 26
https://www.commodityvol.com

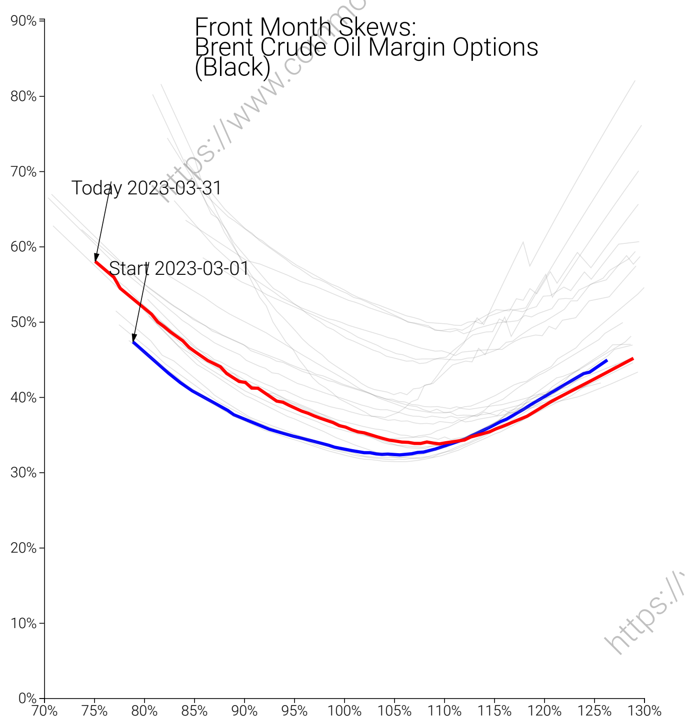

Start 2023-03-01
20230417
Today 2023-03-31
20240614
202711
Price ($)
75
70
65
60

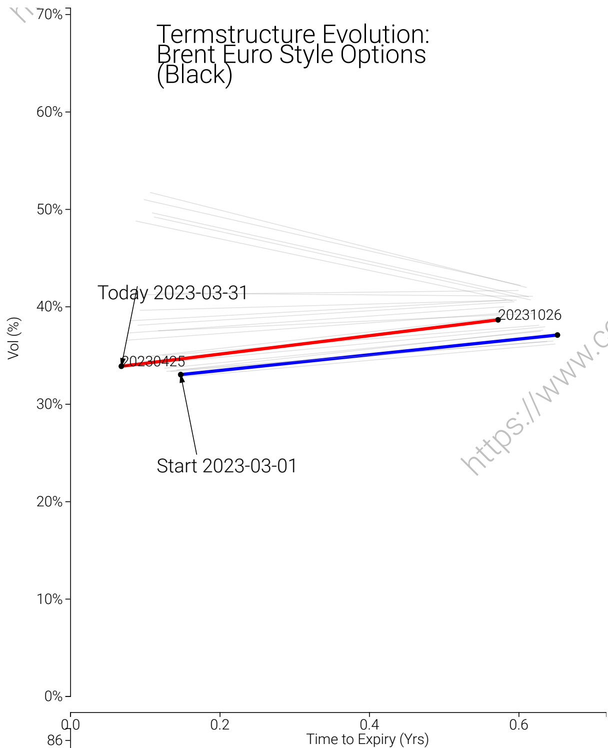

Front Month Skews:
Crude Oil Options
(Black)
Start 2023-03-01
Today 2023-03-31
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%
https://www.commodityvol.com

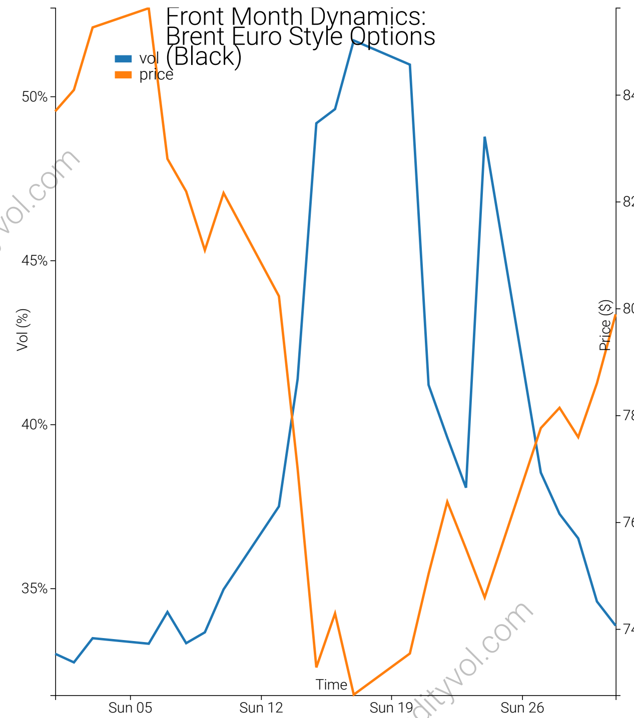

Termstructure Evolution:
Brent Crude Oil Margin Options
(Black)
Vol (%)
60%
40%
20%
0%
Today 2023-03-31
20230425
20230726
20231026
Start 2023-03-01
0.0
0.2
0.4
0.6
Time to Expiry (Yrs)

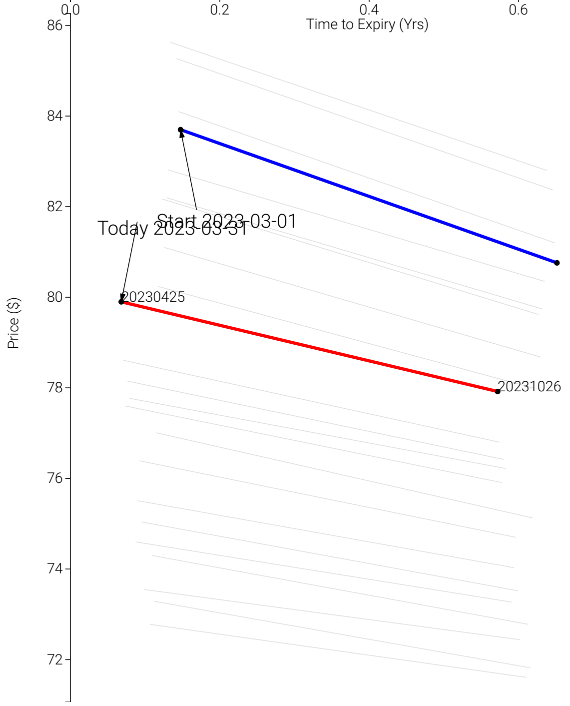

Front Month Dynamics:
Brent Crude Oil Margin Options
(Black)
vol
price
Vol (%)
Price ($)
55%
50%
45%
40%
35%
86
84
82
80
78
76
74
Time
Sun 05
Sun 12
Sun 19
Sun 26

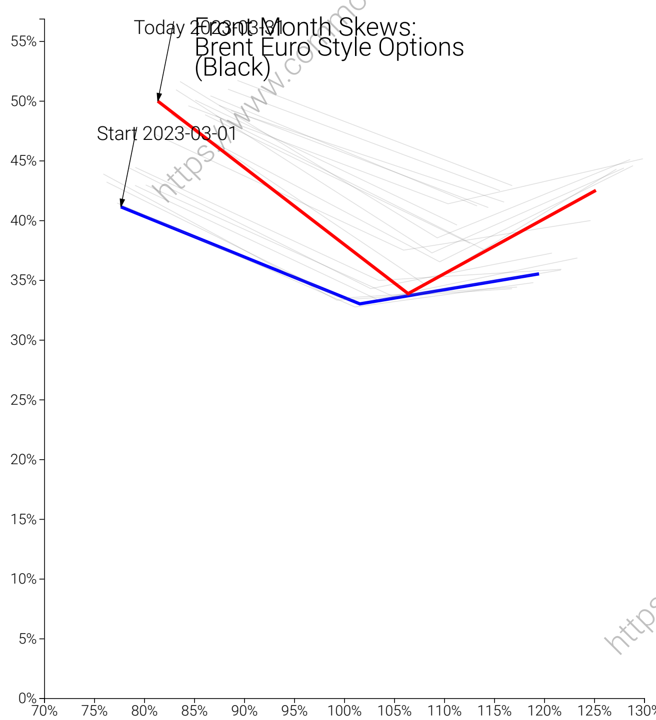

Price ($)
86
84
82
80
78
76
74
72
Start 2023-03-01
Today 2023-03-31
20230425
20230726
20231026

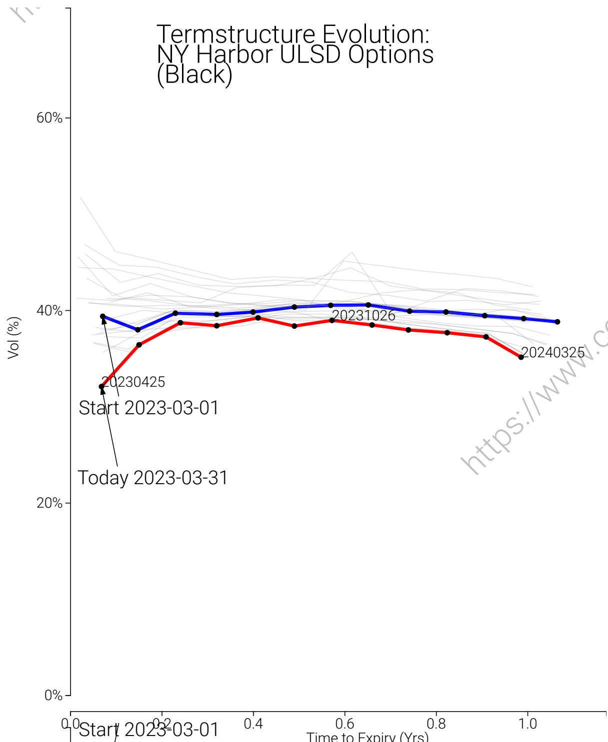

Front Month Skews:
Brent Crude Oil Margin Options
(Black)
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Today 2023-03-31
Start 2023-03-01
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

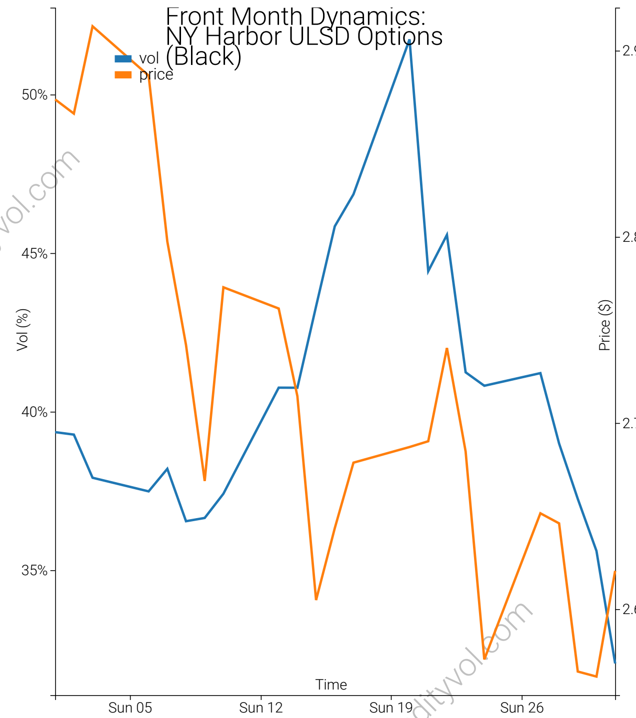

Termstructure Evolution:
Brent Euro Style Options
(Black)
Today 2023-03-31
20230425
20231026
Start 2023-03-01
Vol (%)
Time to Expiry (Yrs)
0%
10%
20%
30%
40%
50%
60%
70%
0.0
0.2
0.4
0.6

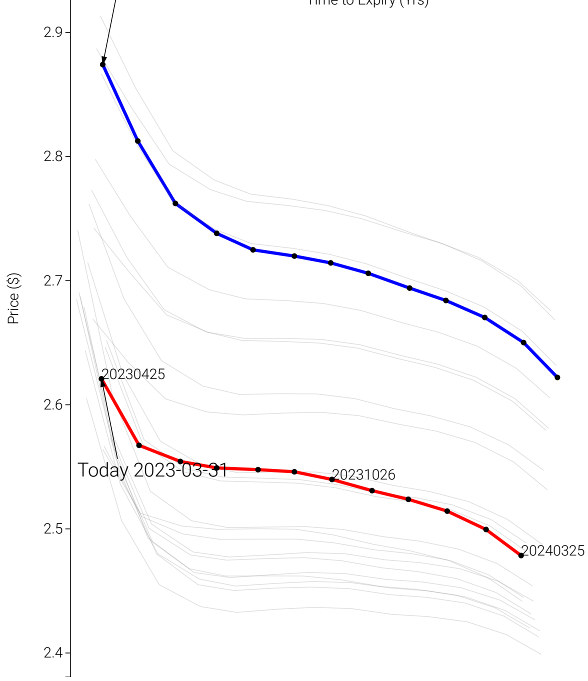

Front Month Dynamics:
Brent Euro Style Options
(Black)
vol
price
Vol (%)
Price ($)
Time
35%
40%
45%
50%
74
76
78
80
82
84
Sun 05
Sun 12
Sun 19
Sun 26

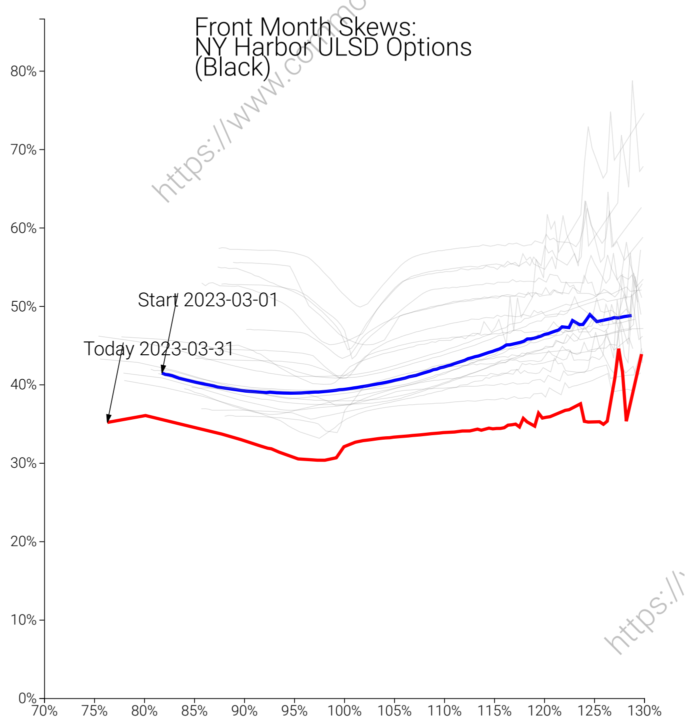

Today 2023-03-31
Start 2023-03-01
20230425
20231026
Price ($)
72
74
76
78
80
82
84
86

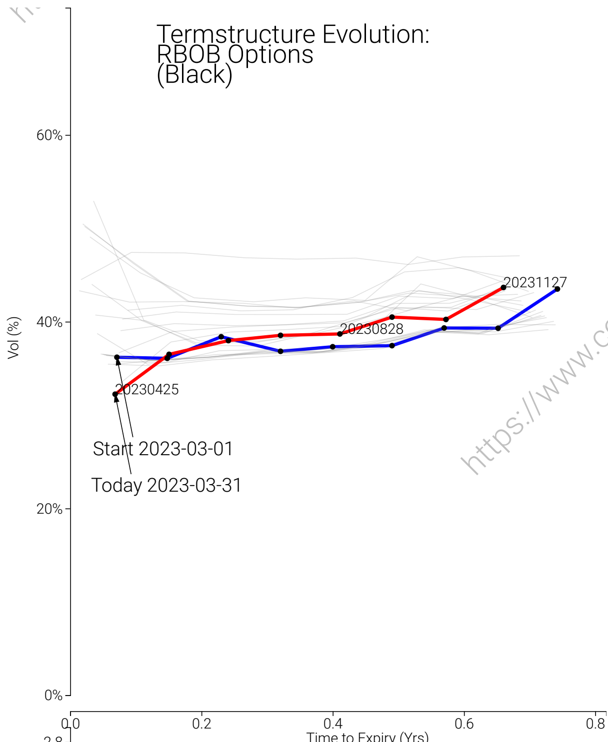

Front Month Skews:
Brent Euro Style Options
(Black)
Today 2023-03-31
Start 2023-03-01
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
55%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

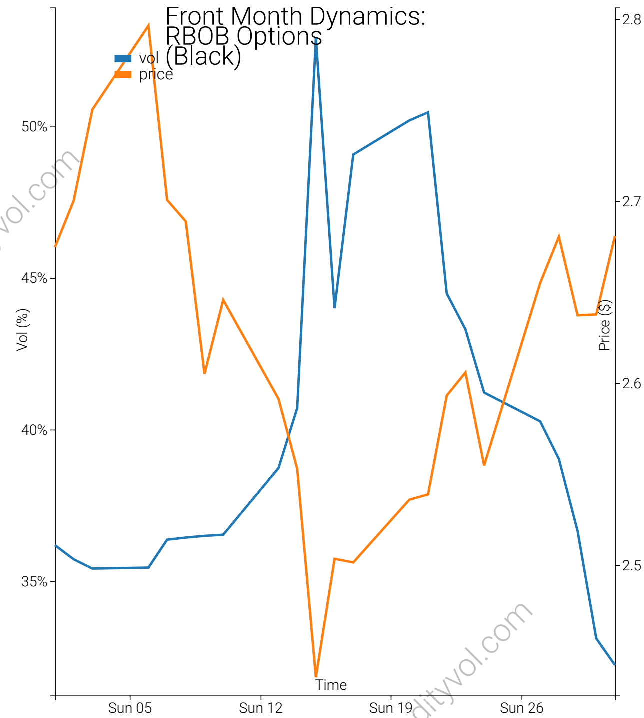

Termstructure Evolution:
NY Harbor ULSD Options
(Black)
Vol (%)
60%
40%
20%
0%
20231026
20240325
20230425
Start 2023-03-01
Today 2023-03-31
0.0
0.2
0.4
0.6
0.8
1.0
Time to Expiry (Yrs)

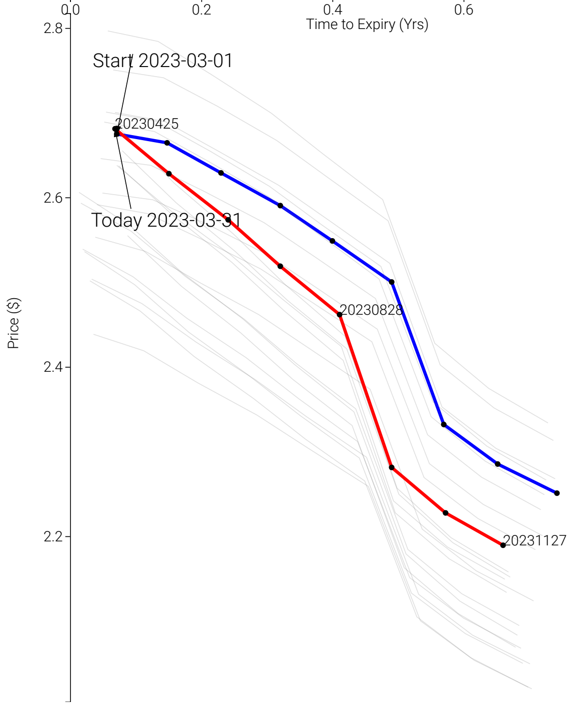

Front Month Dynamics:
NY Harbor ULSD Options
(Black)
vol
price
Vol (%)
Price ($)
50%
45%
40%
35%
2.9
2.8
2.7
2.6
Time
Sun 05
Sun 12
Sun 19
Sun 26

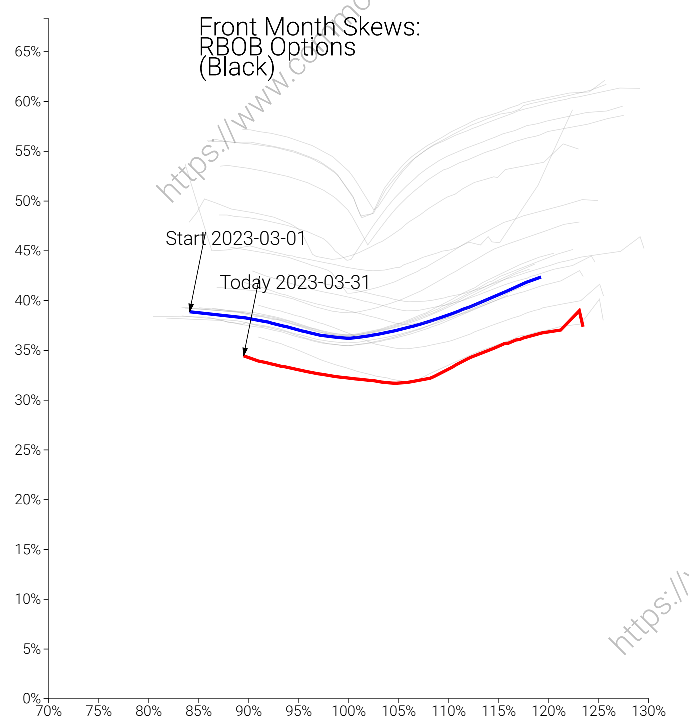

Start 2023-03-01
Price ($)
2.9
2.8
2.7
2.6
2.5
2.4
20230425
Today 2023-03-31
20231026
20240325

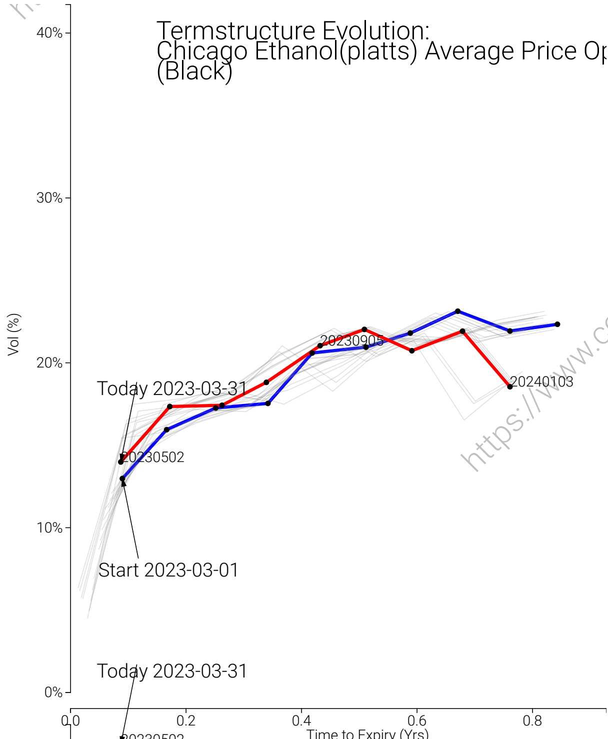

Front Month Skews:
NY Harbor ULSD Options
(Black)
80%
70%
60%
50%
40%
30%
20%
10%
0%
Start 2023-03-01
Today 2023-03-31
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

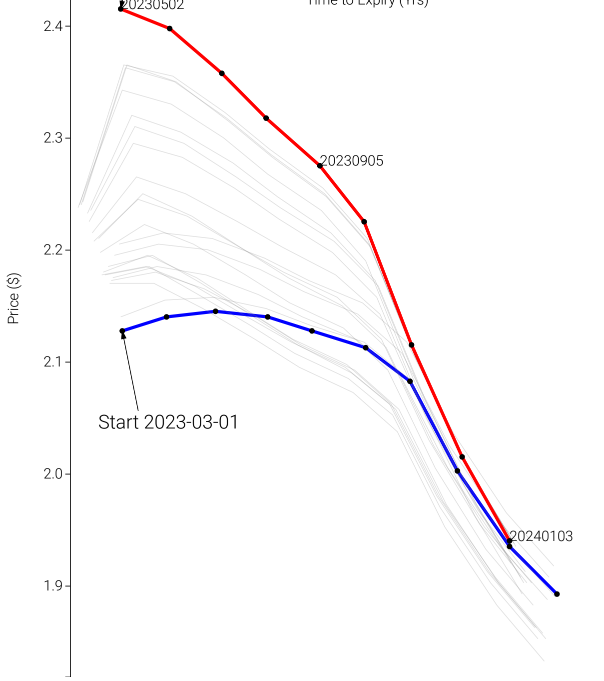

Termstructure Evolution:
RBOB Options
(Black)
Vol (%)
60%
40%
20%
0%
20231127
20230828
20230425
Start 2023-03-01
Today 2023-03-31
0.0
0.2
0.4
0.6
0.8
Time to Expiry (Yrs)
https://www.commodityvol.com

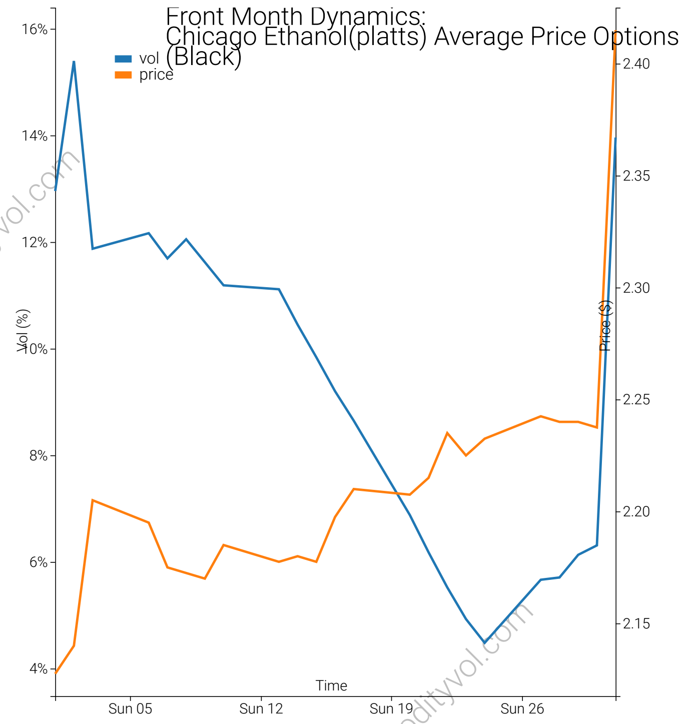

Front Month Dynamics:
RBOB Options
(Black)
vol
price
Vol (%)
50%
45%
40%
35%
Price ($)
2.8
2.7
2.6
2.5
Time
Sun 05
Sun 12
Sun 19
Sun 26
https://www.commodityvol.com

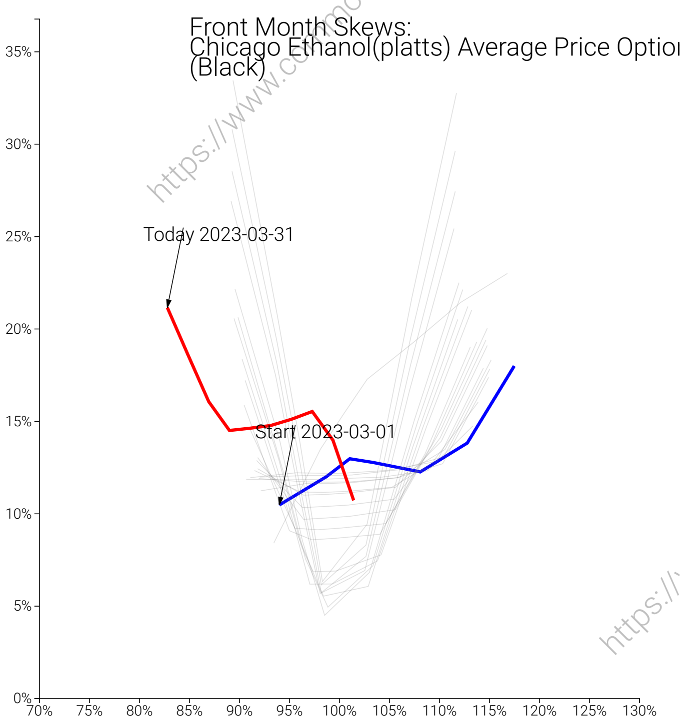

Price ($)
2.8
2.6
2.4
2.2
Start 2023-03-01
20230425
Today 2023-03-31
20230828
20231127


Front Month Skews:
RBOB Options
(Black)
65%
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Start 2023-03-01
Today 2023-03-31
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%
https://www.commodityvol.com

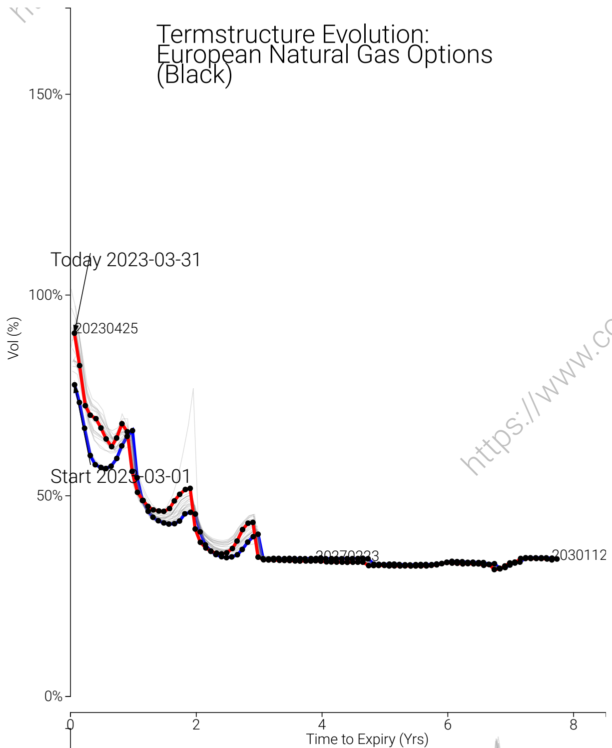

Termstructure Evolution:
Chicago Ethanol(platts) Average Price Op
(Black)
Vol (%)
40%
30%
20%
10%
0%
Today 2023-03-31
20230502
Start 2023-03-01
20230905
20240103
0.0
0.2
0.4
0.6
0.8
Time to Expiry (Yrs)

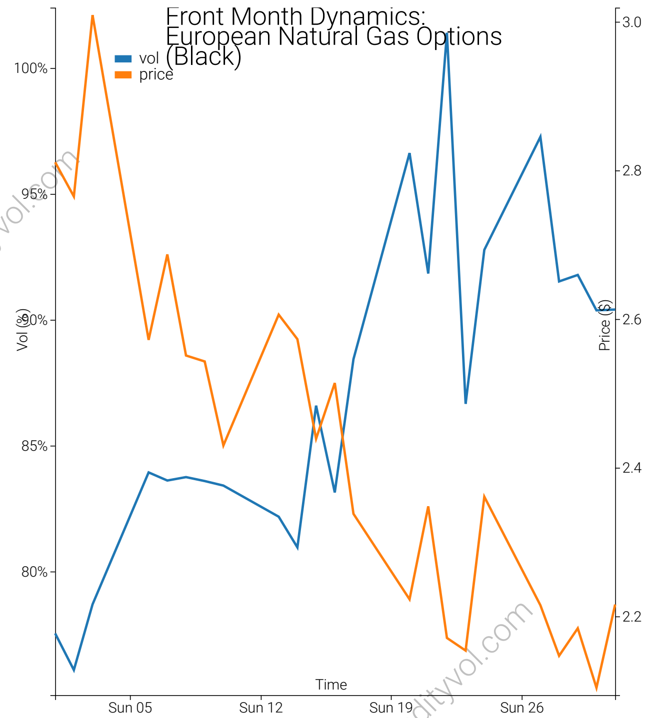

Today 2023-03-31
20230502
20230905
20240103
Start 2023-03-01
Price ($)
2.4
2.3
2.2
2.1
2.0
1.9

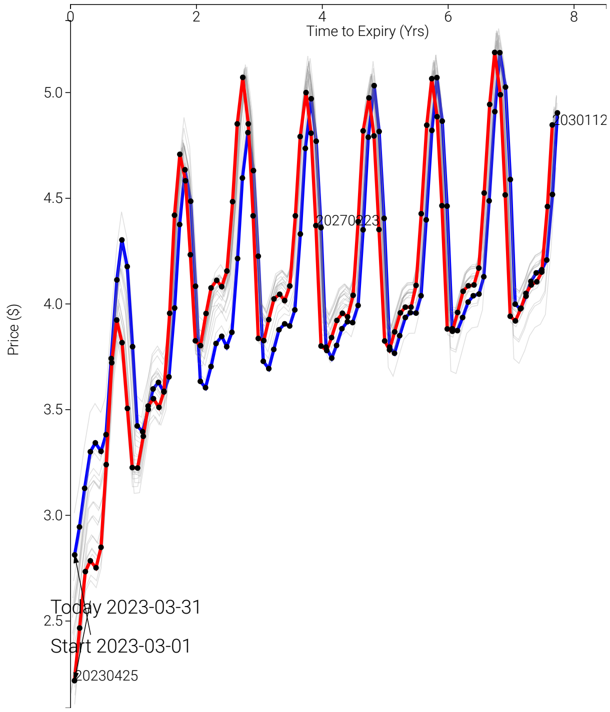

Front Month Dynamics:
Chicago Ethanol(platts) Average Price Options
(Black)
vol
price
Vol (%)
16%
14%
12%
10%
8%
6%
4%
Price ($)
2.40
2.35
2.30
2.25
2.20
2.15
Time
Sun 05
Sun 12
Sun 19
Sun 26

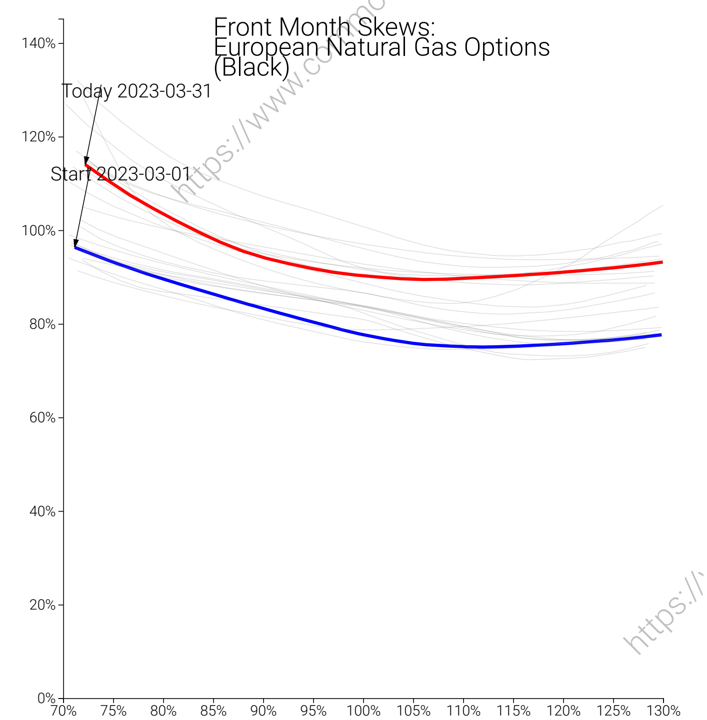

Front Month Skews:
Chicago Ethanol(platts) Average Price Optio
(Black)
Today 2023-03-31
Start 2023-03-01
35%
30%
25%
20%
15%
10%
5%
0%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

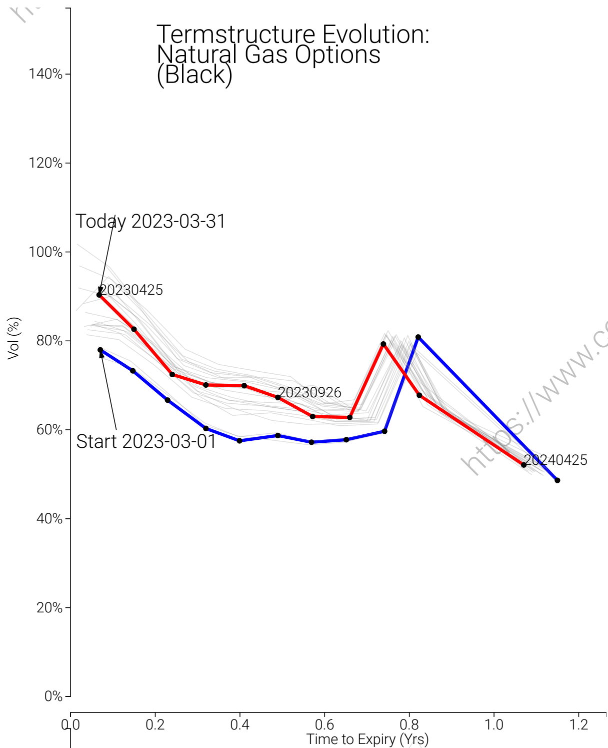
Energy: Natural Gas

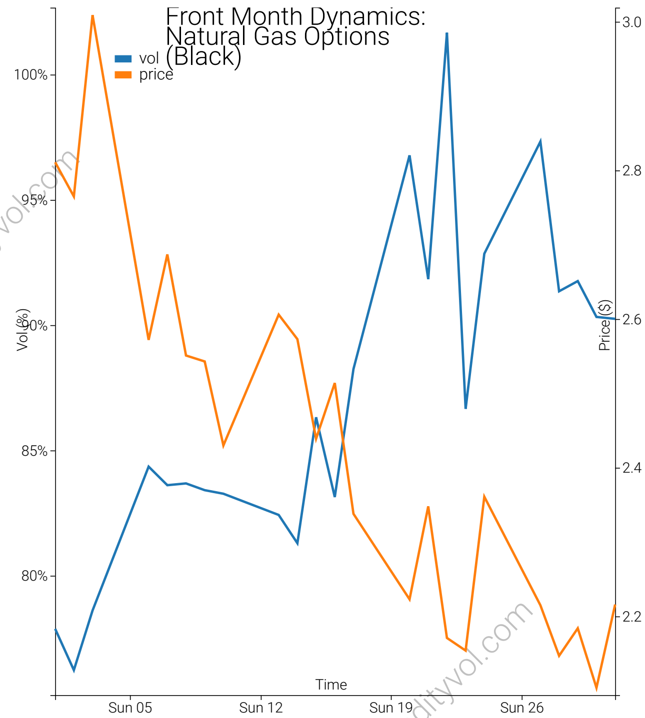

Termstructure Evolution:
European Natural Gas Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230425
20270223
2030112
Vol (%)
Time to Expiry (Yrs)
150%
100%
50%
0%
0
2
4
6
8

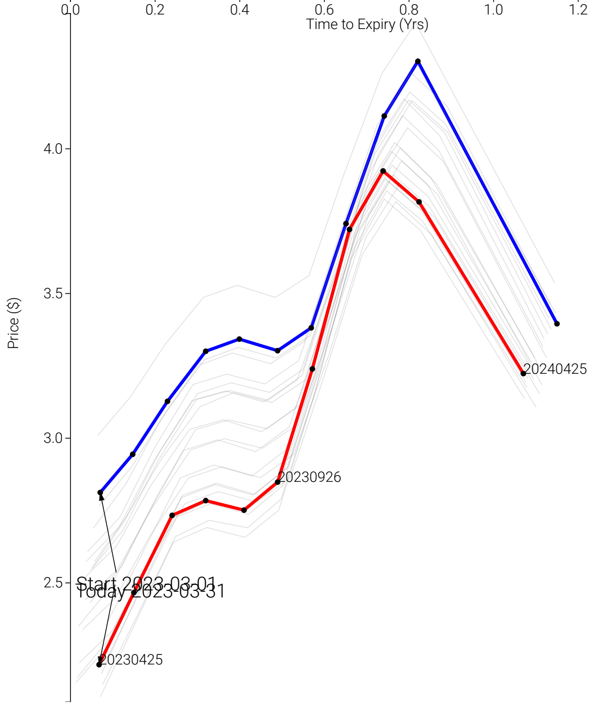

Front Month Dynamics:
European Natural Gas Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26
100%
95%
90%
85%
80%
3.0
2.8
2.6
2.4
2.2

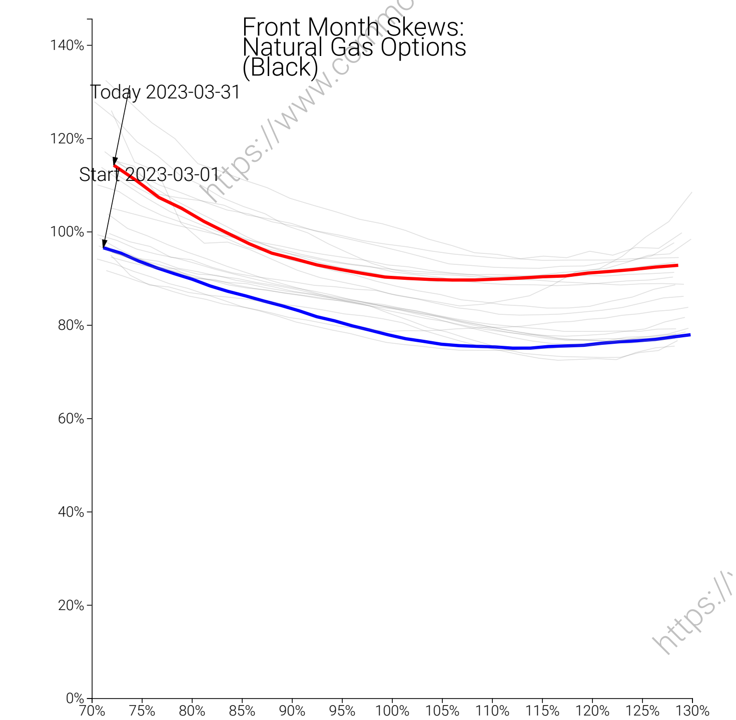

Price ($)
Today 2023-03-31
Start 2023-03-01
20230425
20270223
2030112
5.0
4.5
4.0
3.5
3.0
2.5

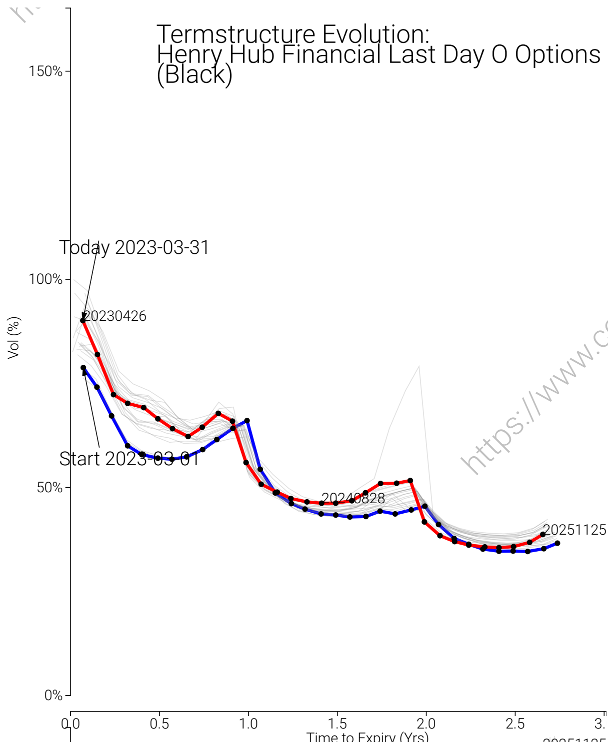

Front Month Skews:
European Natural Gas Options
(Black)
Today 2023-03-31
Start 2023-03-01
140%
120%
100%
80%
60%
40%
20%
0%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

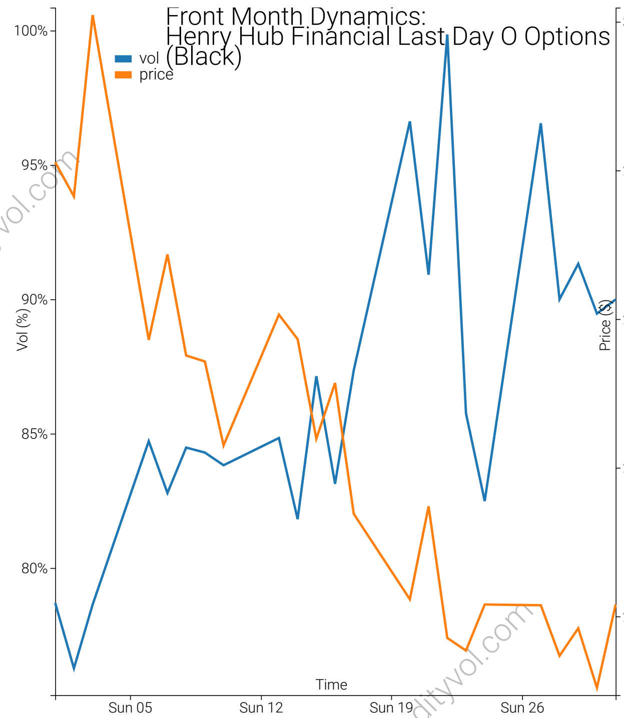

Termstructure Evolution:
Natural Gas Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230425
20230926
20240425
Vol (%)
Time to Expiry (Yrs)

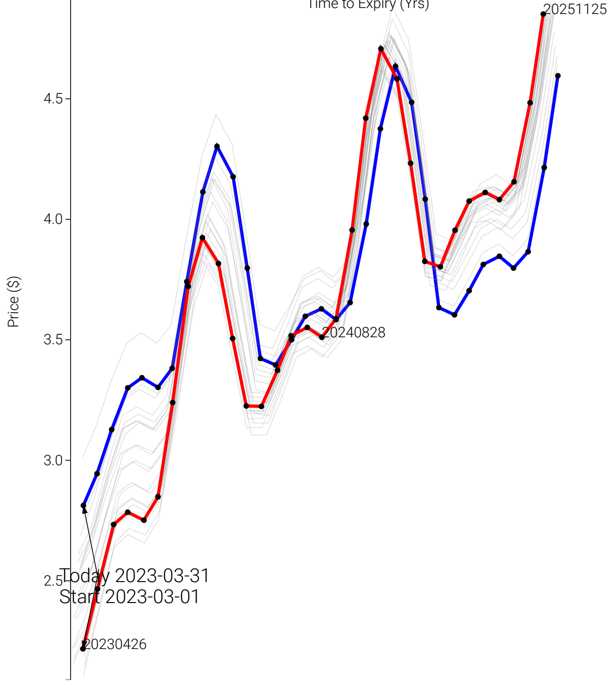

Front Month Dynamics:
Natural Gas Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

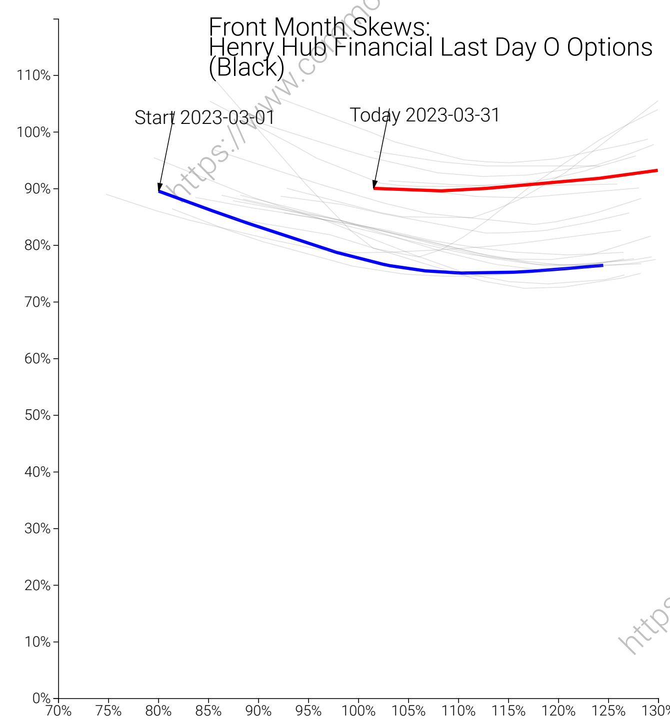

Start 2023-03-01
Today 2023-03-31
20230425
20230926
20240425
Price ($)

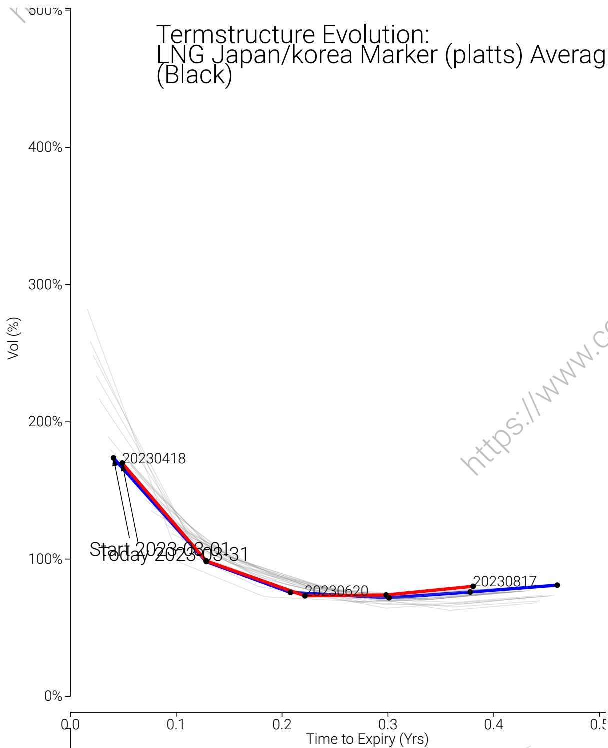

Front Month Skews:
Natural Gas Options
(Black)
Today 2023-03-31
Start 2023-03-01


Termstructure Evolution:
Henry Hub Financial Last Day O Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230426
20240828
20251125
Vol (%)
Time to Expiry (Yrs)

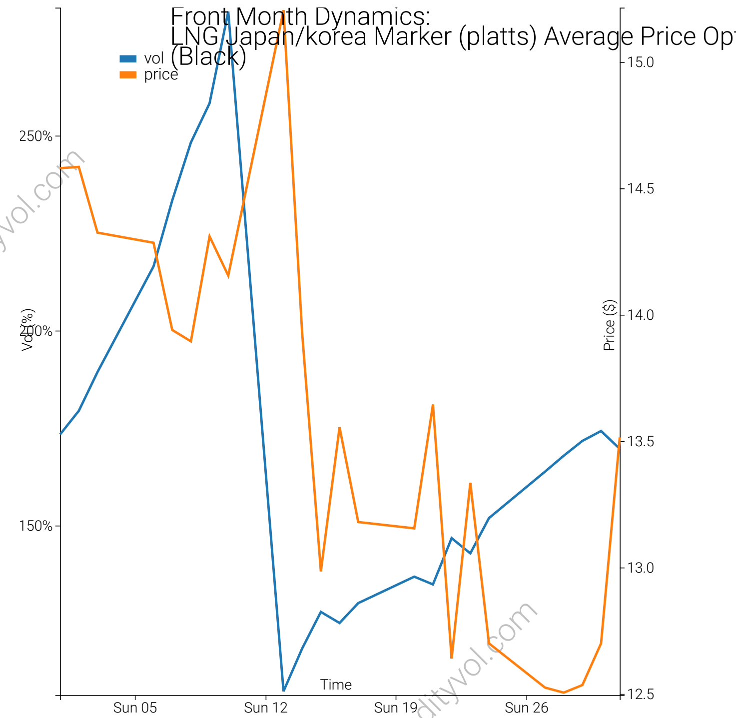

Front Month Dynamics:
Henry Hub Financial Last Day O Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26


20251125
20240828
Today 2023-03-31
Start 2023-03-01
20230426
Price ($)

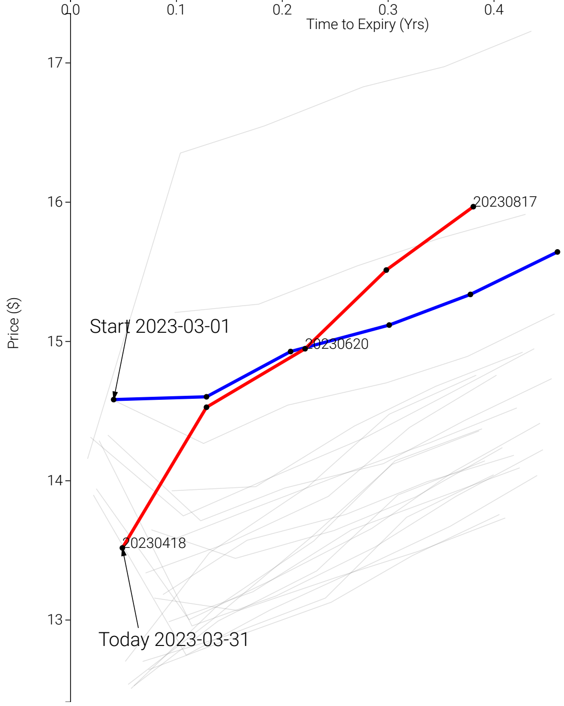

Front Month Skews:
Henry Hub Financial Last Day O Options
(Black)
Start 2023-03-01
Today 2023-03-31



Termstructure Evolution:
LNG Japan/korea Marker (platts) Averag
(Black)
Vol (%)
Time to Expiry (Yrs)
20230418
20230620
20230817
Start 2023-03-01
Today 2023-03-31



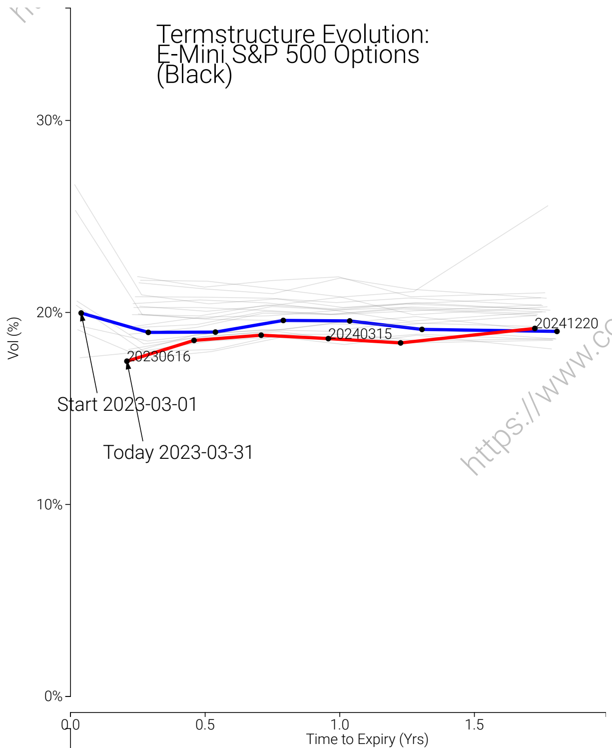
Front Month Dynamics:
LNG Japan/korea Marker (platts) Average Price Opt
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

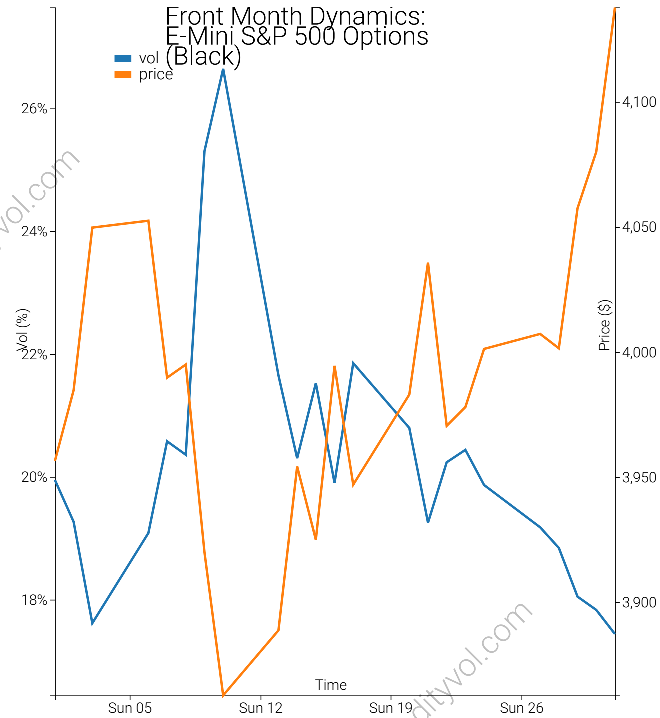


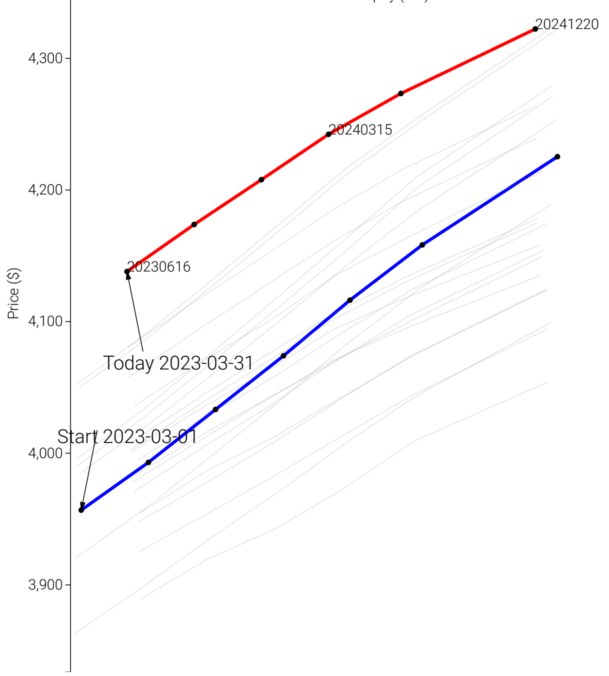
Price ($)
Start 2023-03-01
Today 2023-03-31
20230418
20230620
20230817

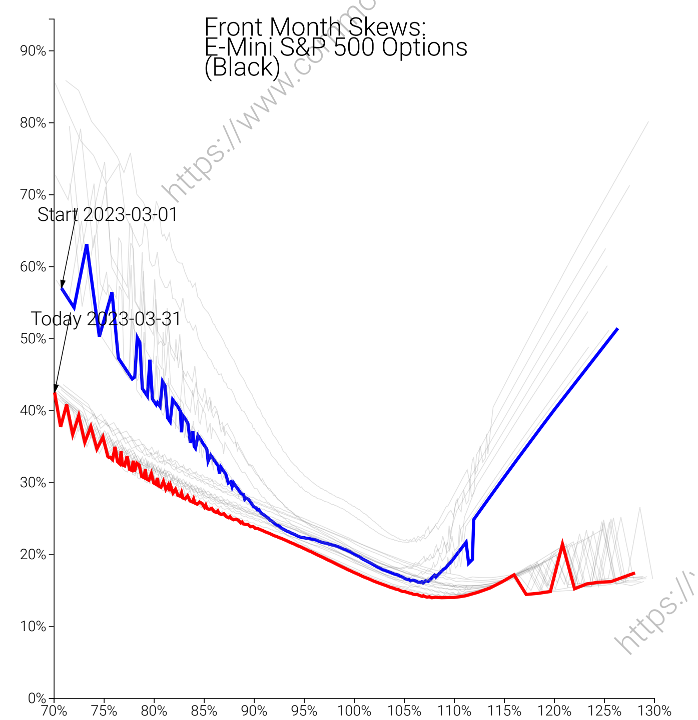
Front Month Skews:
LNG Japan/korea Marker (platts) Average Pr
(Black)

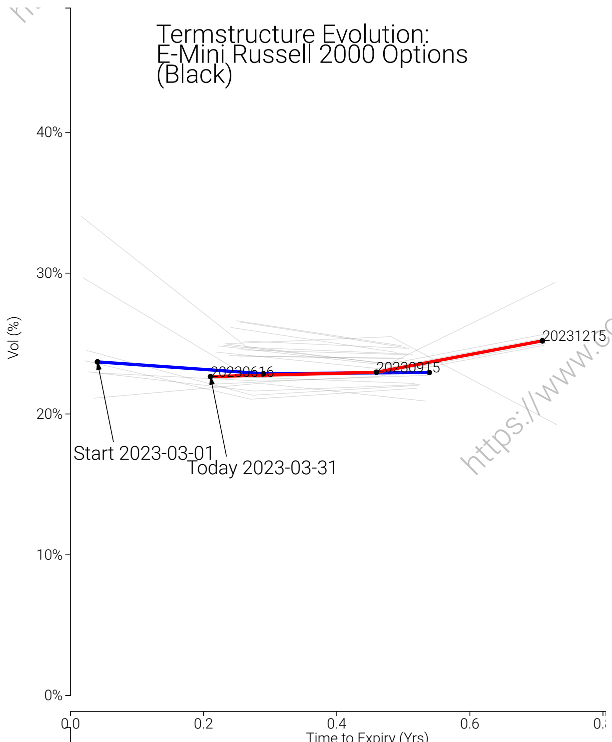
EquityIndex

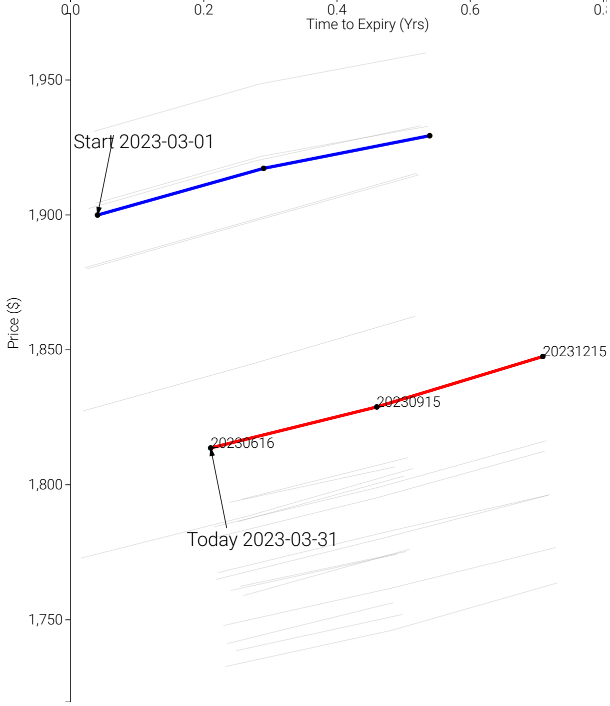

Termstructure Evolution:
E-Mini S&P 500 Options
(Black)
Vol (%)
30%
20%
10%
0%
20230616
20240315
20241220
Start 2023-03-01
Today 2023-03-31
0.0
0.5
1.0
1.5
Time to Expiry (Yrs)

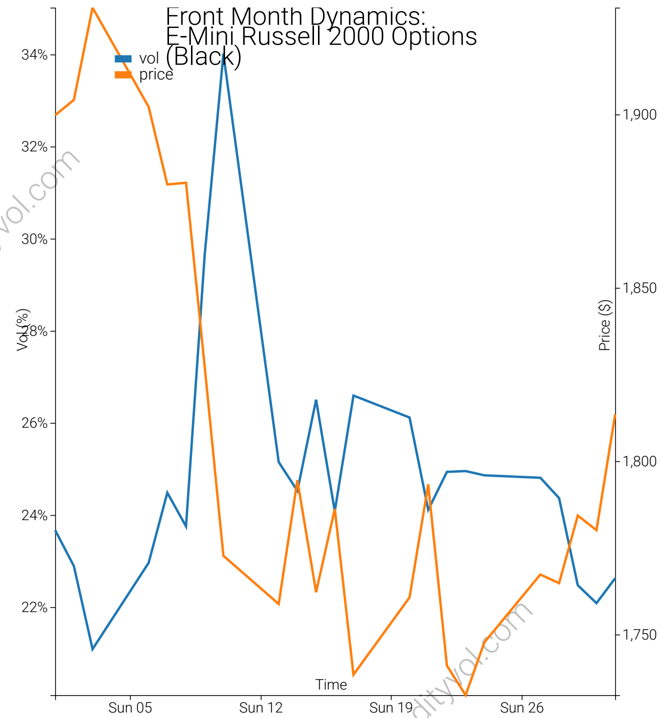

Front Month Dynamics:
E-Mini S&P 500 Options
(Black)
vol
price
Vol (%)
Price ($)
26%
24%
22%
20%
18%
4,100
4,050
4,000
3,950
3,900
Time
Sun 05
Sun 12
Sun 19
Sun 26

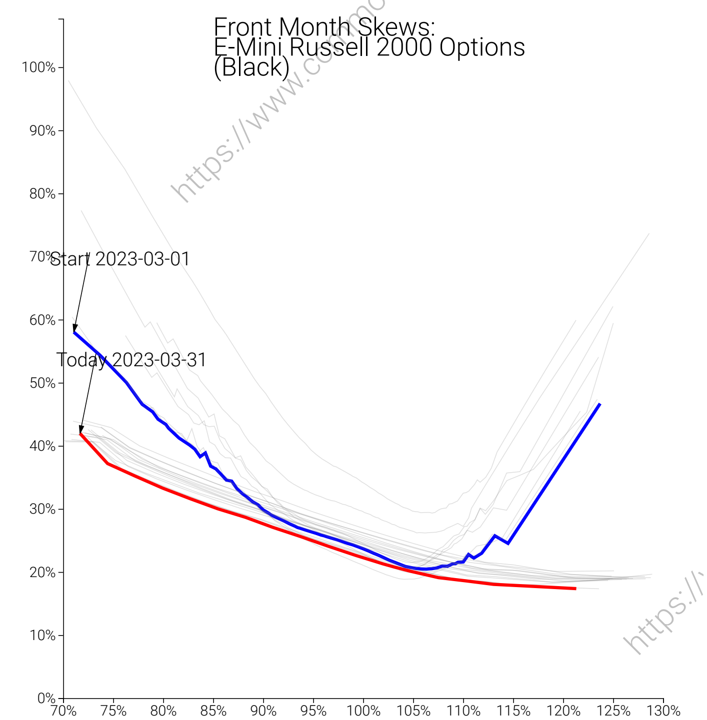

Price ($)
4,300
4,200
4,100
4,000
3,900
20241220
20240315
20230616
Today 2023-03-31
Start 2023-03-01

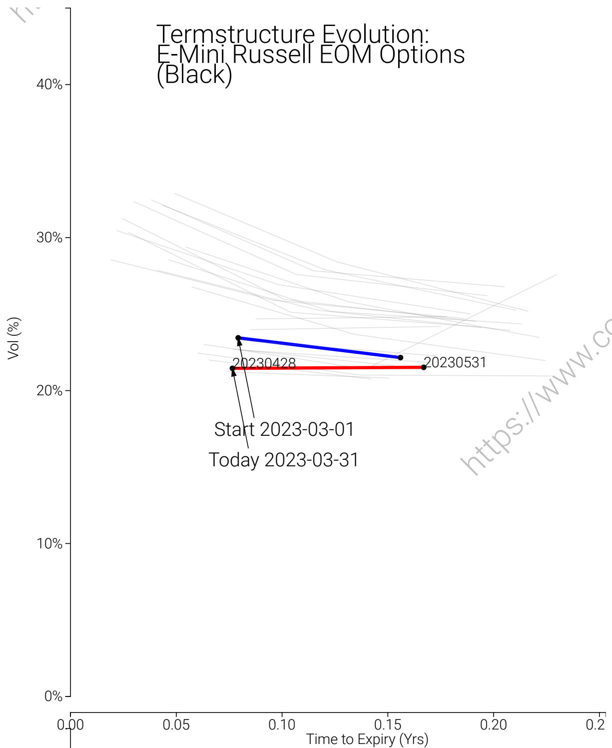

Front Month Skews:
E-Mini S&P 500 Options
(Black)
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Start 2023-03-01
Today 2023-03-31
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

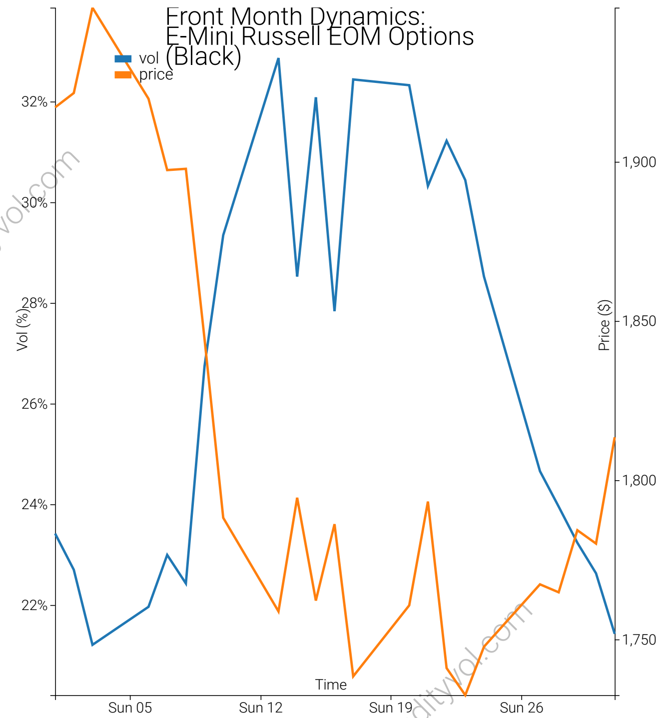

Termstructure Evolution:
E-Mini Russell 2000 Options
(Black)
Vol (%)
Time to Expiry (Yrs)
20230616
20230915
20231215
Start 2023-03-01
Today 2023-03-31

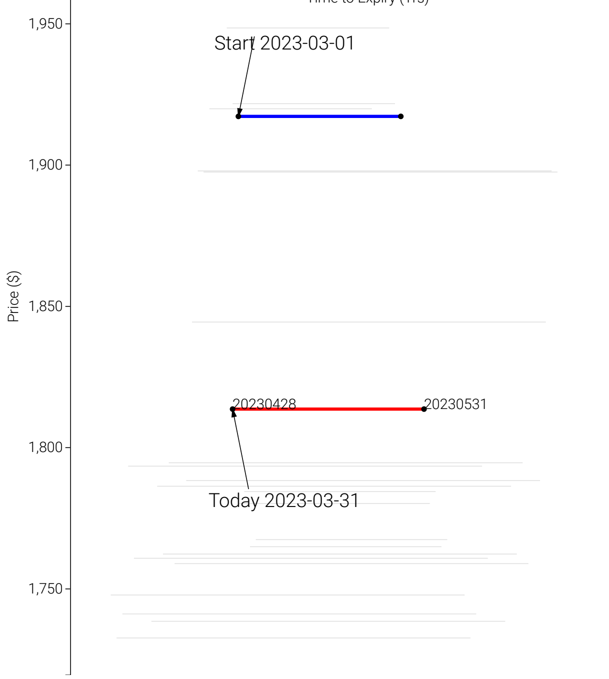

Price ($)
Start 2023-03-01
20230616
20230915
20231215
Today 2023-03-31

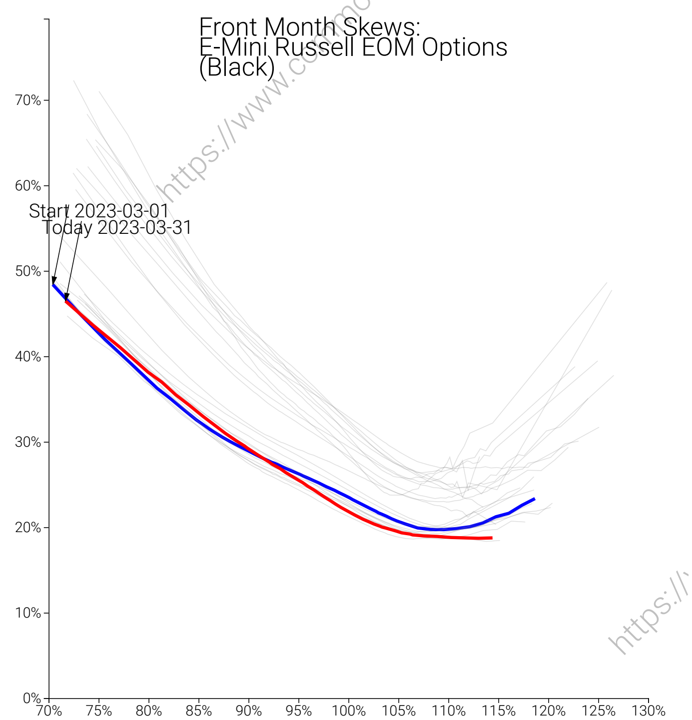

Front Month Dynamics:
E-Mini Russell 2000 Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

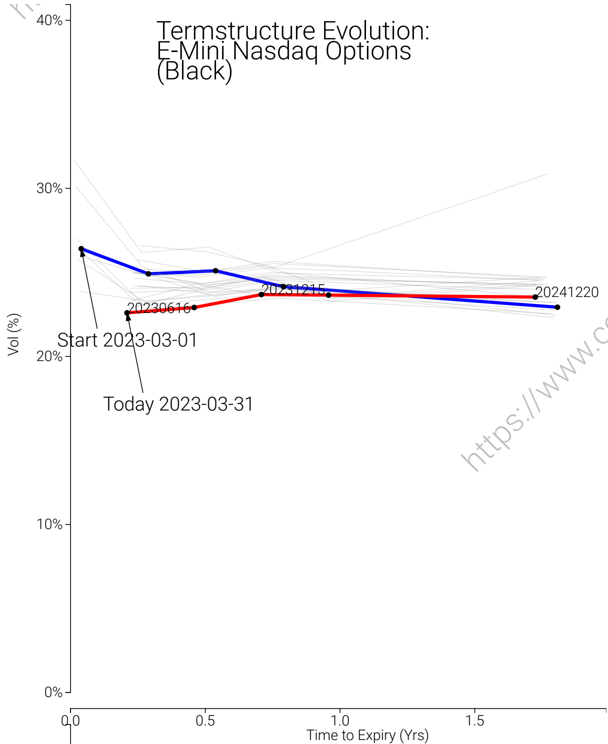

Front Month Skews:
E-Mini Russell 2000 Options
(Black)
Start 2023-03-01
Today 2023-03-31

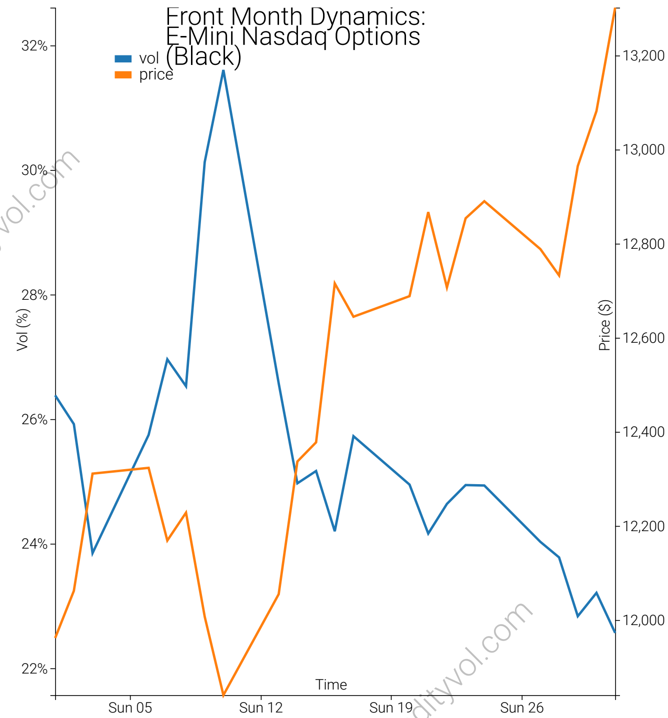

Termstructure Evolution:
E-Mini Russell EOM Options
(Black)
Vol (%)
40%
30%
20%
10%
0%
20230428
20230531
Start 2023-03-01
Today 2023-03-31
0.00
0.05
0.10
0.15
0.20
Time to Expiry (Yrs)

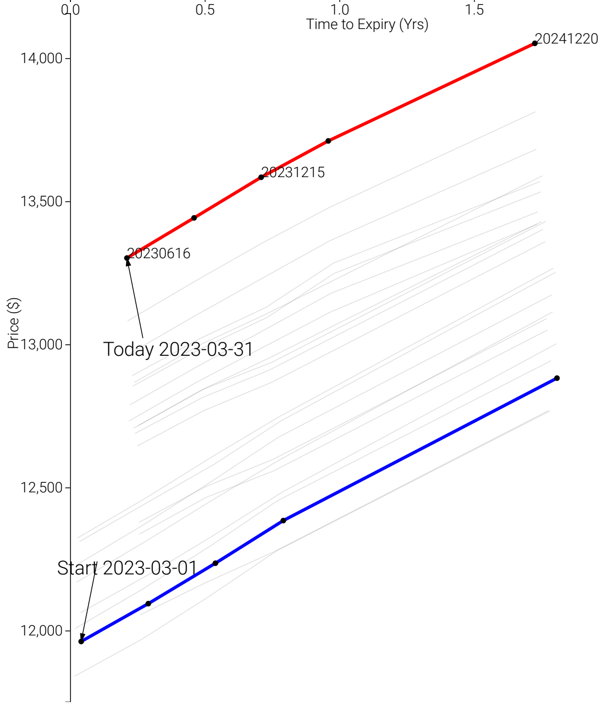

Front Month Dynamics:
E-Mini Russell EOM Options
(Black)
vol
price
Vol (%)
32%
30%
28%
26%
24%
22%
Price ($)
1,900
1,850
1,800
1,750
Time
Sun 05
Sun 12
Sun 19
Sun 26

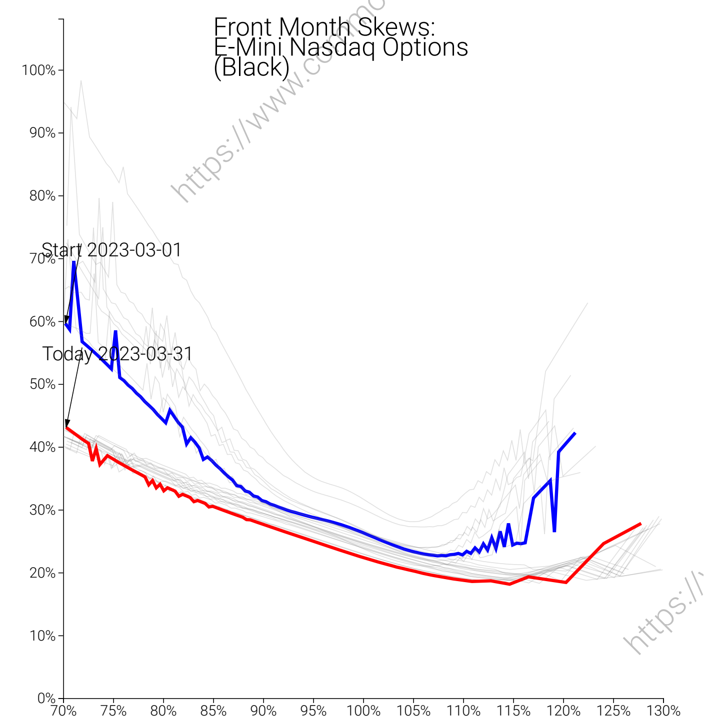

Price ($)
1,950
1,900
1,850
1,800
1,750
Start 2023-03-01
20230428
20230531
Today 2023-03-31

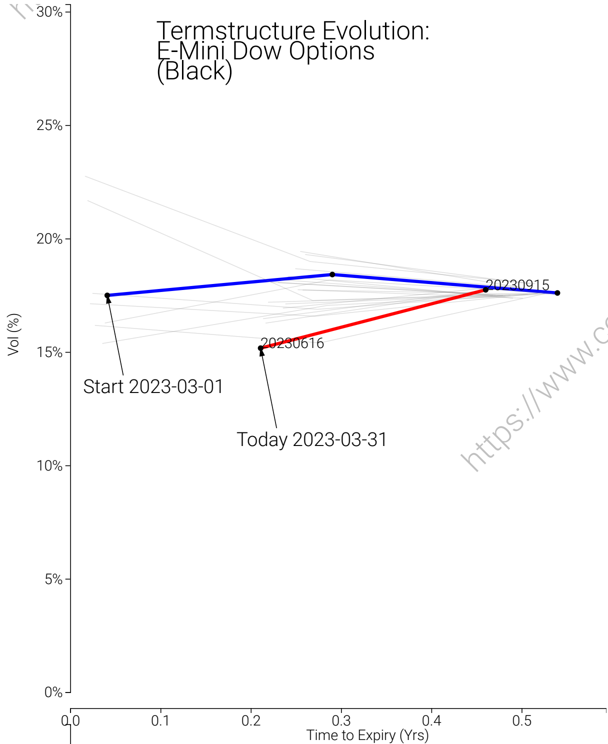

Front Month Skews:
E-Mini Russell EOM Options
(Black)
70%
60%
50%
40%
30%
20%
10%
0%
Start 2023-03-01
Today 2023-03-31
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

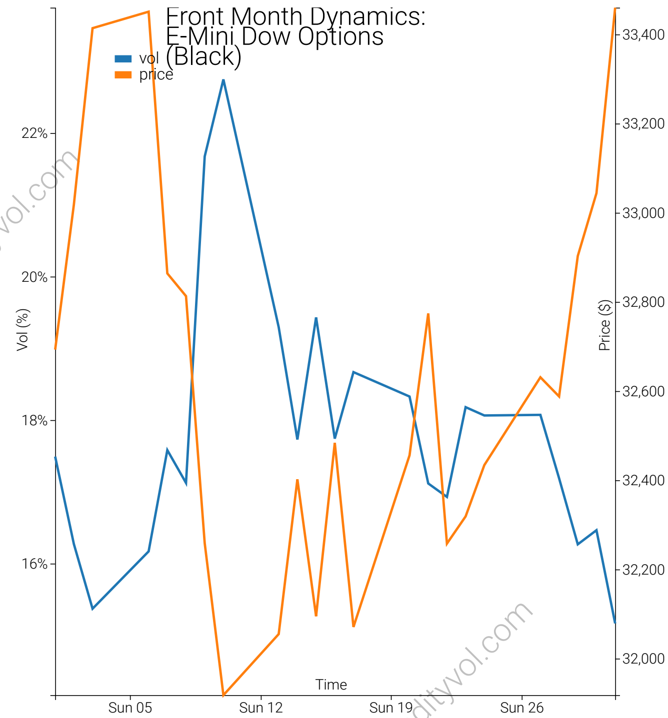

Termstructure Evolution:
E-Mini Nasdaq Options
(Black)
40%
30%
20%
10%
0%
Vol (%)
20230616
20231215
20241220
Start 2023-03-01
Today 2023-03-31
0.0
0.5
1.0
1.5
Time to Expiry (Yrs)

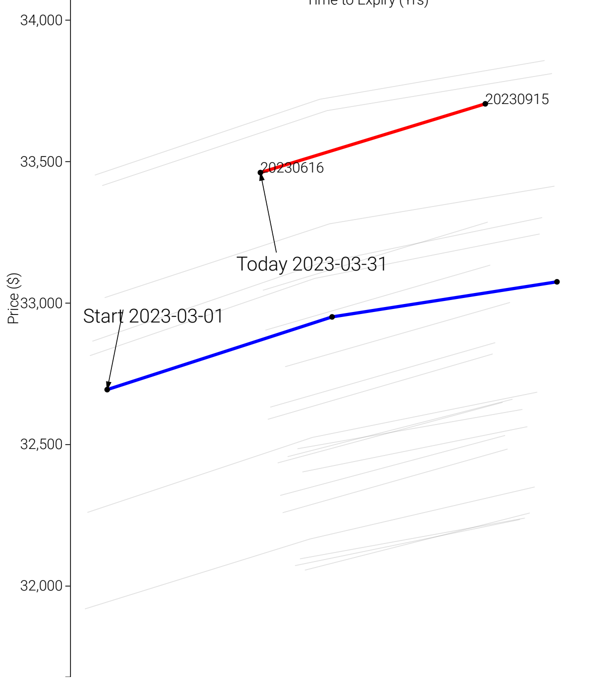

Front Month Dynamics:
E-Mini Nasdaq Options
(Black)
vol
price
32%
30%
28%
26%
24%
22%
Vol (%)
13,200
13,000
12,800
12,600
12,400
12,200
12,000
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

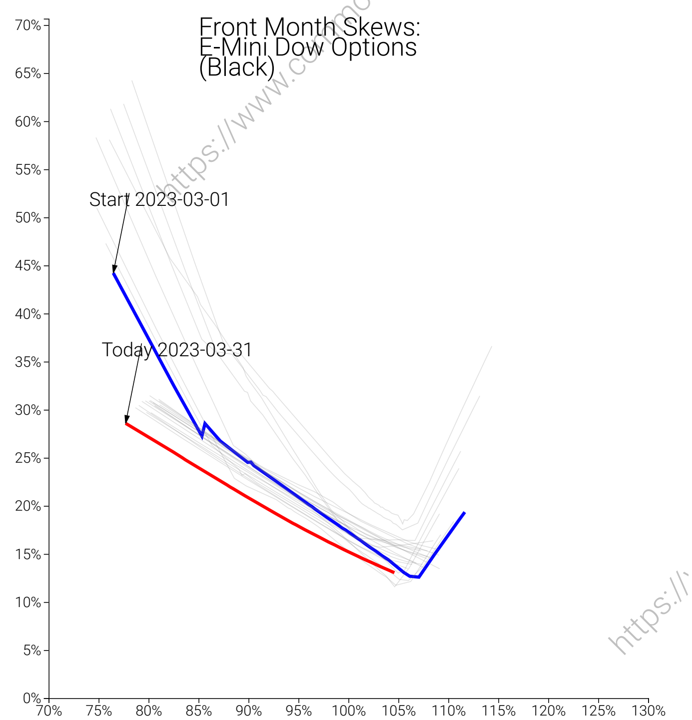

14,000
13,500
13,000
12,500
12,000
Price ($)
20241220
20231215
20230616
Today 2023-03-31
Start 2023-03-01

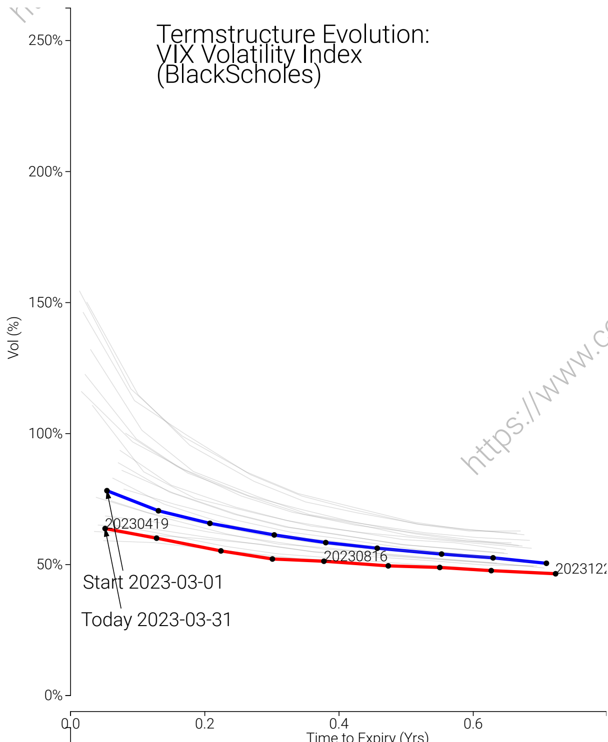

Front Month Skews:
E-Mini Nasdaq Options
(Black)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Start 2023-03-01
Today 2023-03-31
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

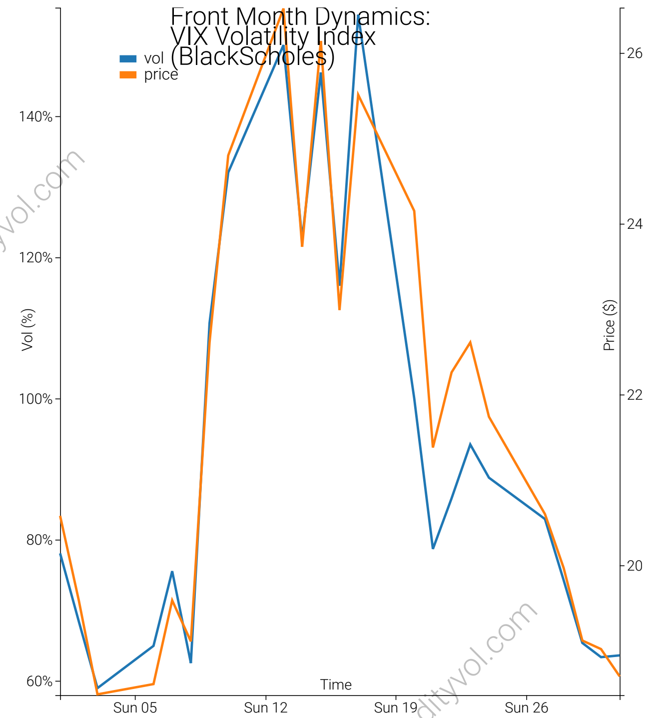

Termstructure Evolution:
E-Mini Dow Options
(Black)
30%
25%
20%
15%
10%
5%
0%
Vol (%)
20230915
20230616
Start 2023-03-01
Today 2023-03-31
0.0
0.1
0.2
0.3
0.4
0.5
Time to Expiry (Yrs)

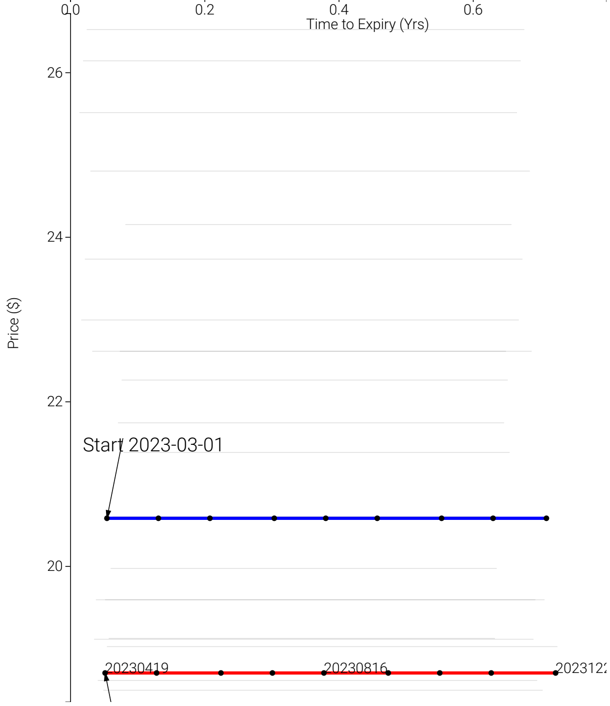

Front Month Dynamics:
E-Mini Dow Options
(Black)
vol
price
22%
20%
18%
16%
Vol (%)
33,400
33,200
33,000
32,800
32,600
32,400
32,200
32,000
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

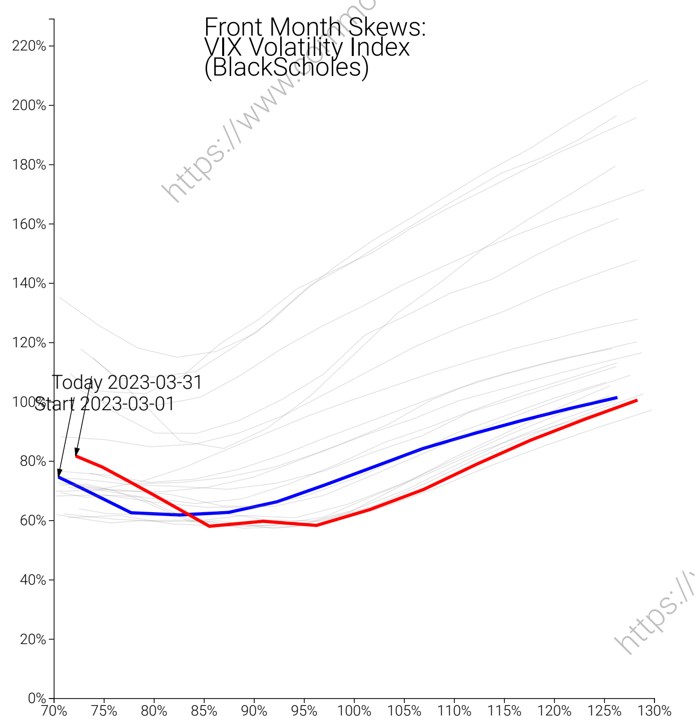

34,000
33,500
33,000
32,500
32,000
Price ($)
20230915
20230616
Today 2023-03-31
Start 2023-03-01


Front Month Skews:
E-Mini Dow Options
(Black)
70%
65%
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Start 2023-03-01
Today 2023-03-31
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

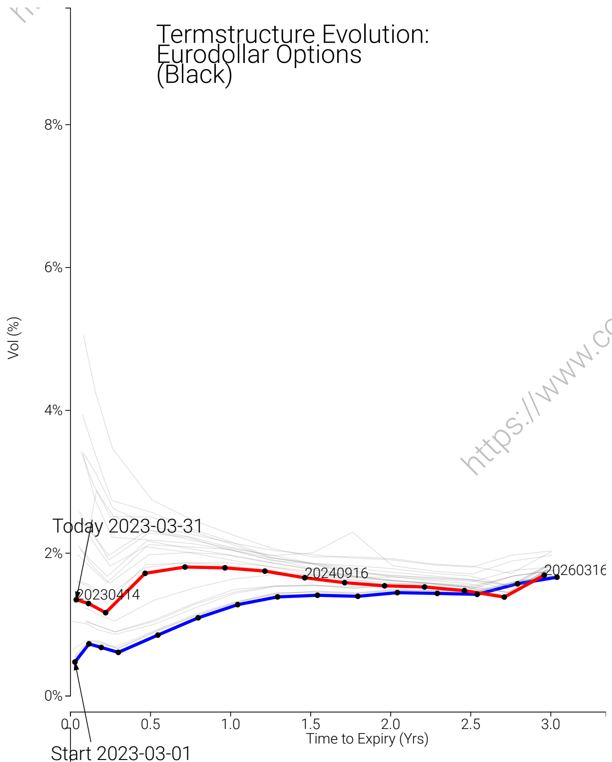

Termstructure Evolution:
VIX Volatility Index
(BlackScholes)
Vol (%)
250%
200%
150%
100%
50%
0%
20230419
20230816
202312
Start 2023-03-01
Today 2023-03-31
0.0
0.2
0.4
0.6
Time to Expiry (Yrs)
https://www.commodityvol.com

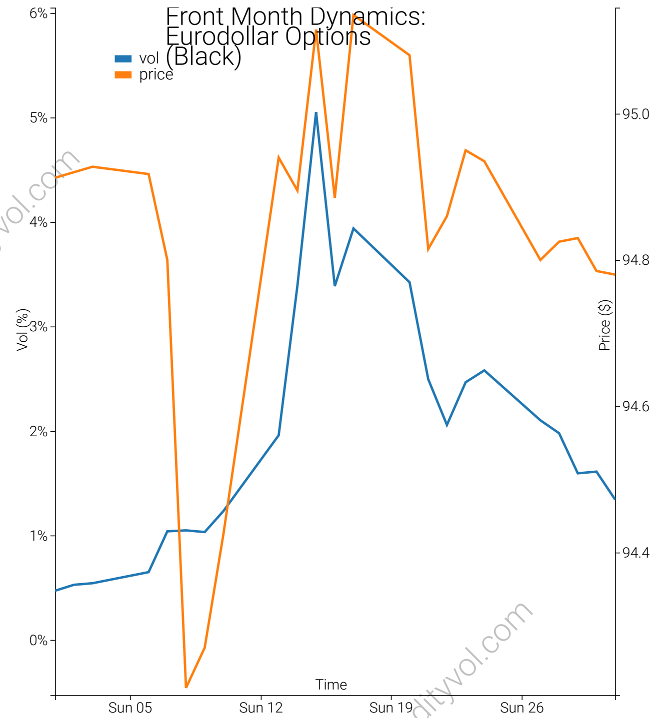

Front Month Dynamics:
VIX Volatility Index
(BlackScholes)
vol
price
Vol (%)
140%
120%
100%
80%
60%
Price ($)
26
24
22
20
Time
Sun 05
Sun 12
Sun 19
Sun 26
https://www.commodityvol.com

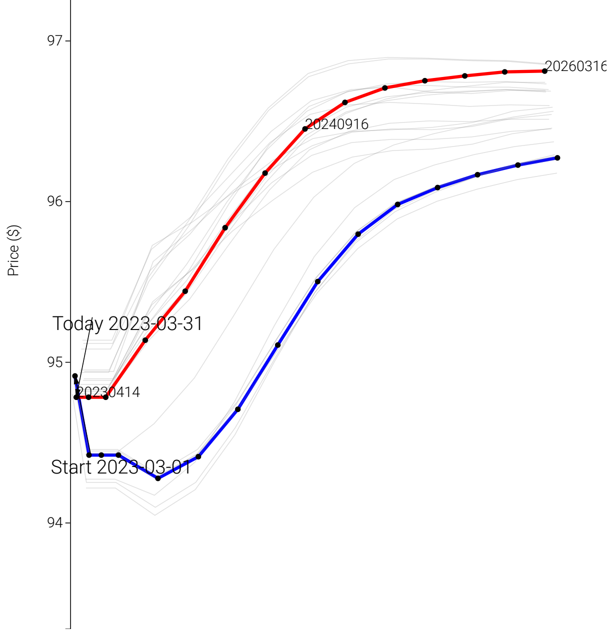

Price ($)
26
24
22
20
Start 2023-03-01
20230419
20230816
202312

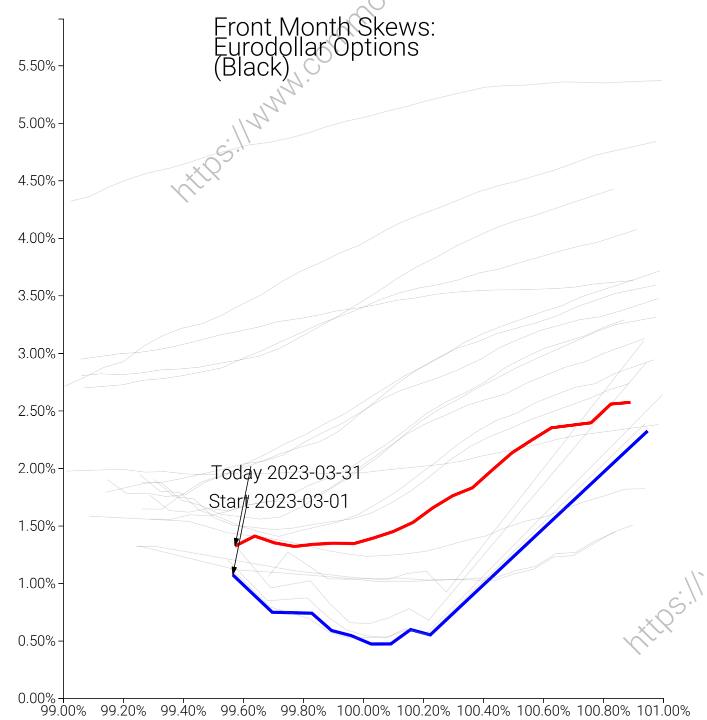

Front Month Skews:
VIX Volatility Index
(BlackScholes)
220%
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
Today 2023-03-31
Start 2023-03-01
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

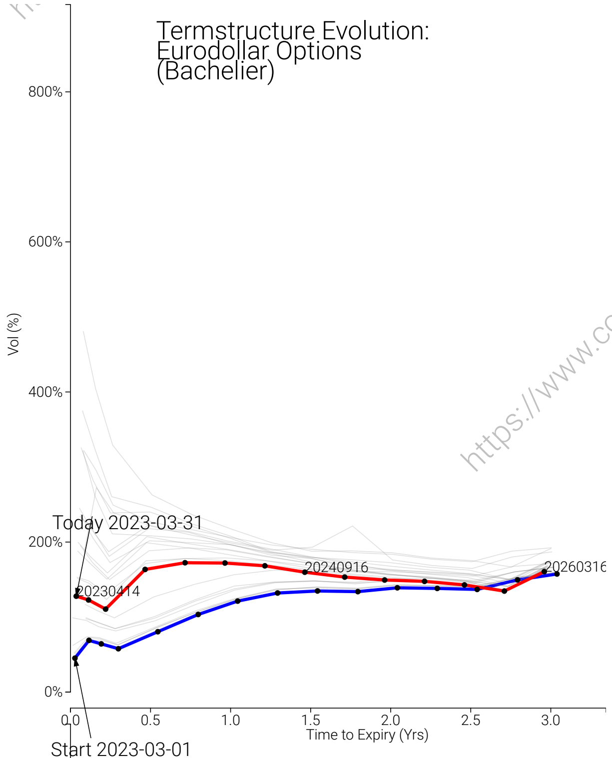
InterestRates: Fixed Income and STIRS

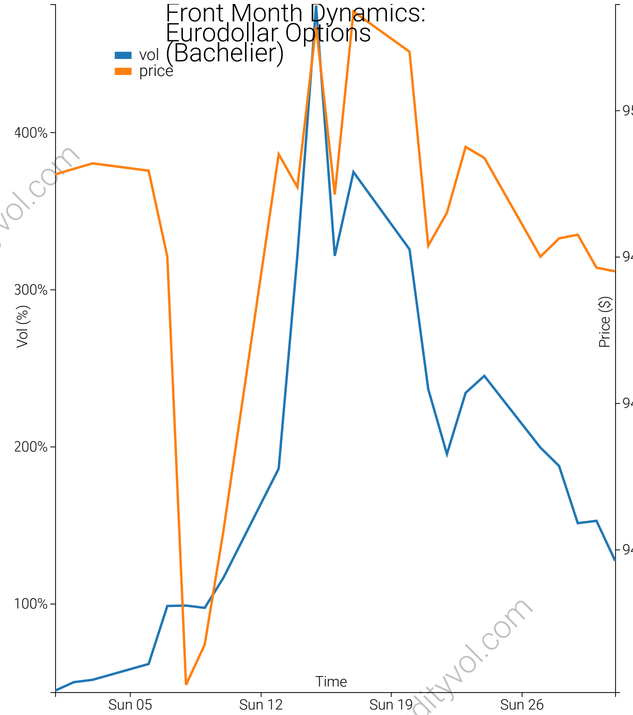

Termstructure Evolution:
Eurodollar Options
(Black)
Vol (%)
8%
6%
4%
2%
0%
Today 2023-03-31
20230414
20240916
20260316
Start 2023-03-01
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Time to Expiry (Yrs)
https://www.commodityvol.com

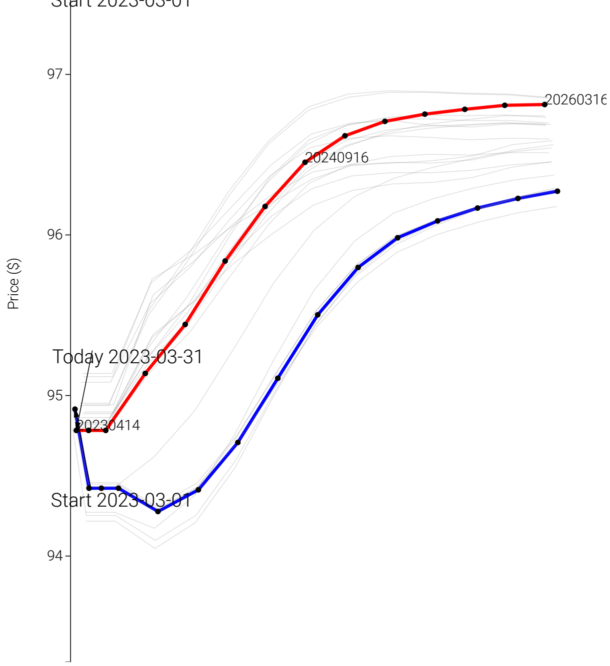

Front Month Dynamics:
Eurodollar Options
(Black)
vol
price
6%
5%
4%
3%
2%
1%
0%
Vol (%)
95.0
94.8
94.6
94.4
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

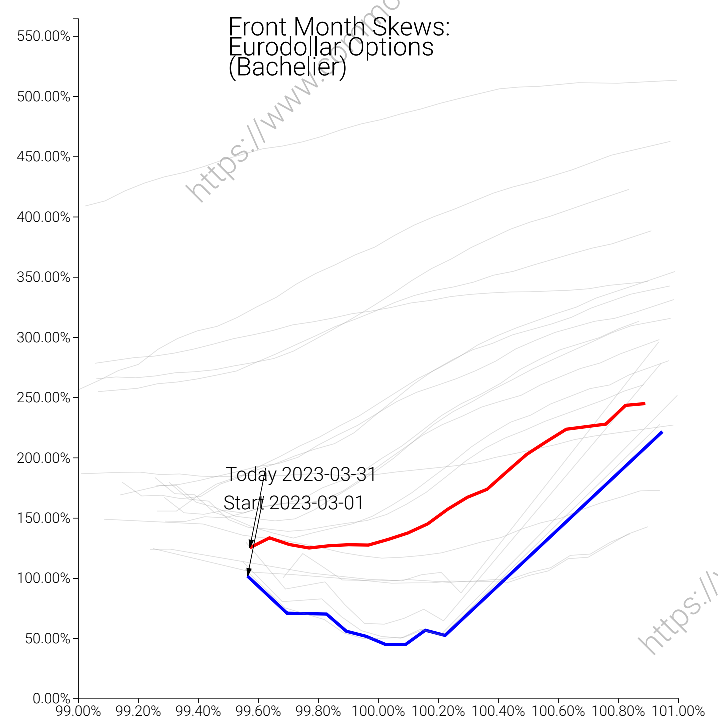

97
96
95
94
Price ($)
20260316
20240916
Today 2023-03-31
20230414
Start 2023-03-01

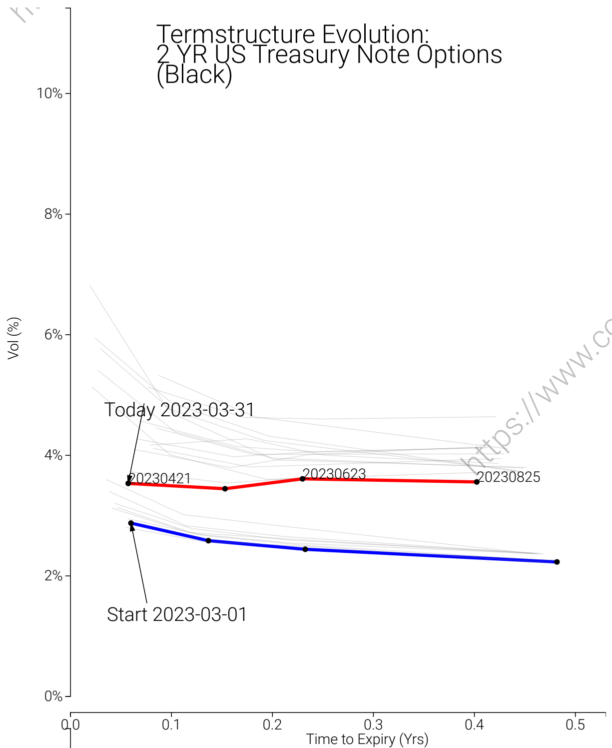

Front Month Skews:
Eurodollar Options
(Black)
5.50%
5.00%
4.50%
4.00%
3.50%
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
Today 2023-03-31
Start 2023-03-01
99.00%
99.20%
99.40%
99.60%
99.80%
100.00%
100.20%
100.40%
100.60%
100.80%
101.00%
https://www.commodityvol.com

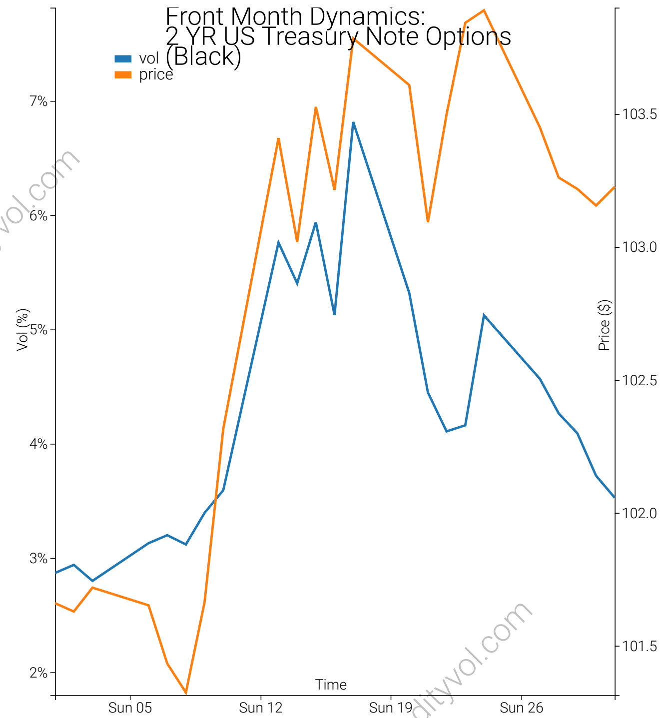

Termstructure Evolution:
Eurodollar Options
(Bachelier)
Vol (%)
800%
600%
400%
200%
0%
Today 2023-03-31
20230414
20240916
20260316
Start 2023-03-01
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Time to Expiry (Yrs)

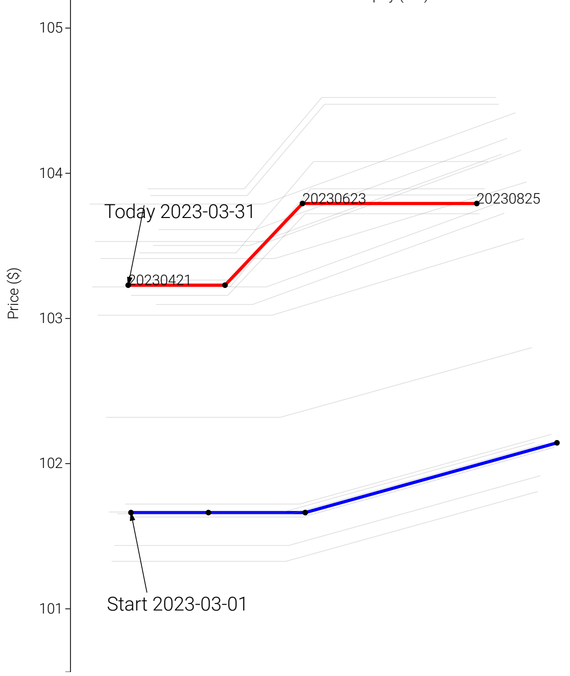

Front Month Dynamics:
Eurodollar Options
(Bachelier)
vol
price
Vol (%)
400%
300%
200%
100%
Price ($)
95.0
94.8
94.6
94.4
Time
Sun 05
Sun 12
Sun 19
Sun 26

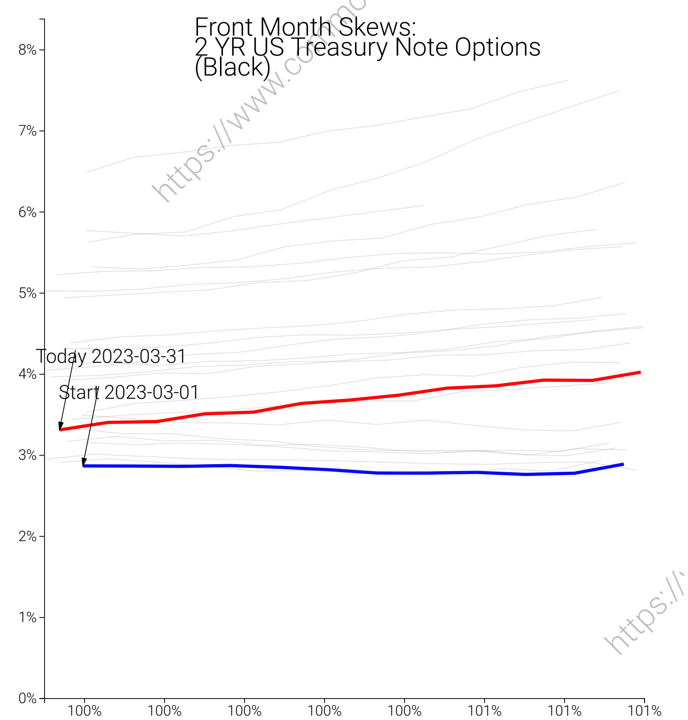

Price ($)
97
96
95
94
20260316
20240916
Today 2023-03-31
20230414
Start 2023-03-01

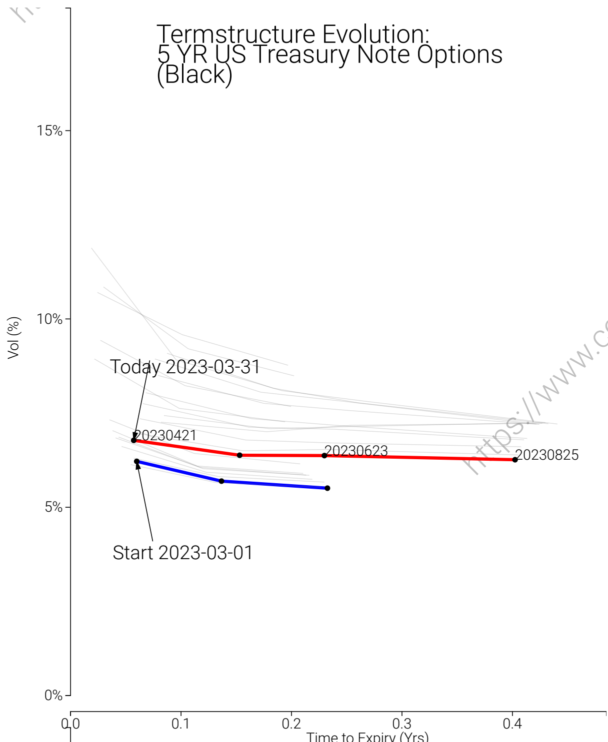

Front Month Skews:
Eurodollar Options
(Bachelier)
550.00%
500.00%
450.00%
400.00%
350.00%
300.00%
250.00%
200.00%
150.00%
100.00%
50.00%
0.00%
Today 2023-03-31
Start 2023-03-01
99.00%
99.20%
99.40%
99.60%
99.80%
100.00%
100.20%
100.40%
100.60%
100.80%
101.00%

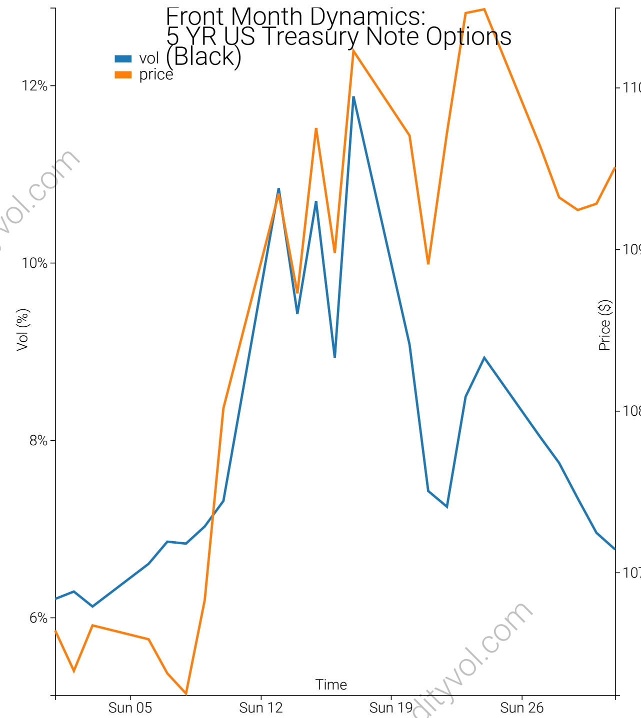

Termstructure Evolution:
2 YR US Treasury Note Options
(Black)
Vol (%)
Today 2023-03-31
Start 2023-03-01
20230421
20230623
20230825
Time to Expiry (Yrs)

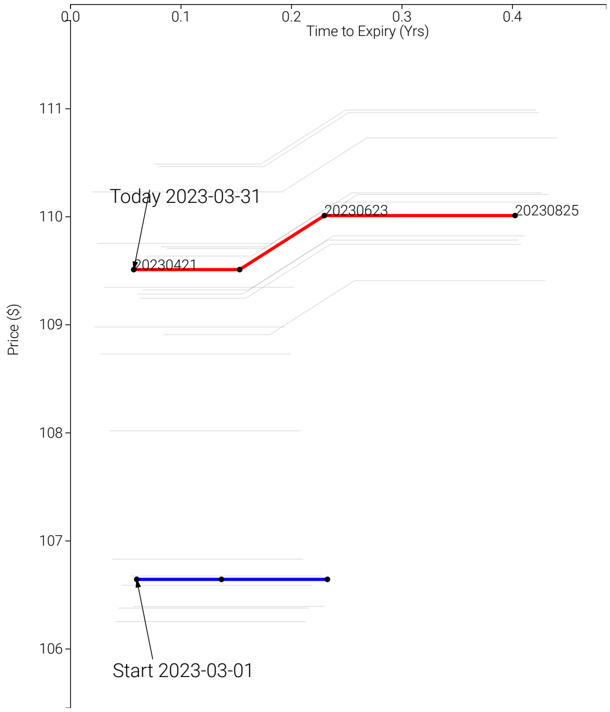

Front Month Dynamics:
2 YR US Treasury Note Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

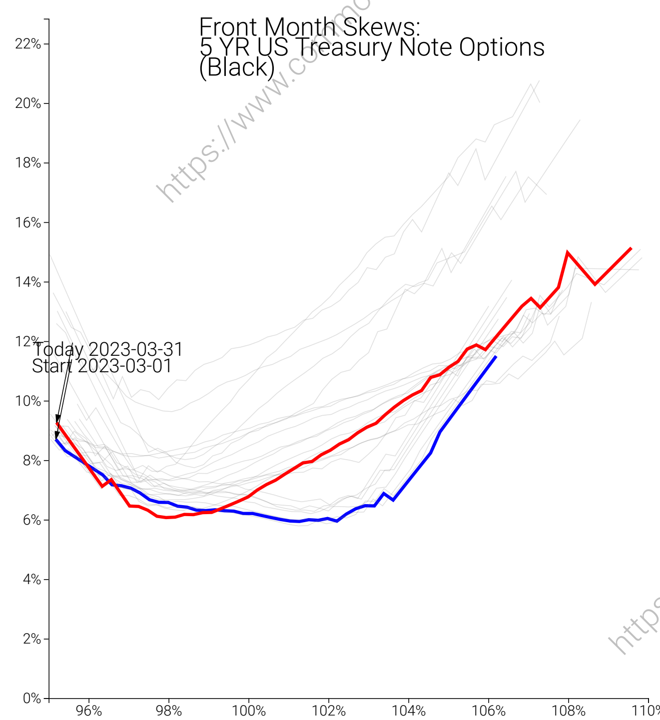

Price ($)
Today 2023-03-31
Start 2023-03-01
20230421
20230623
20230825

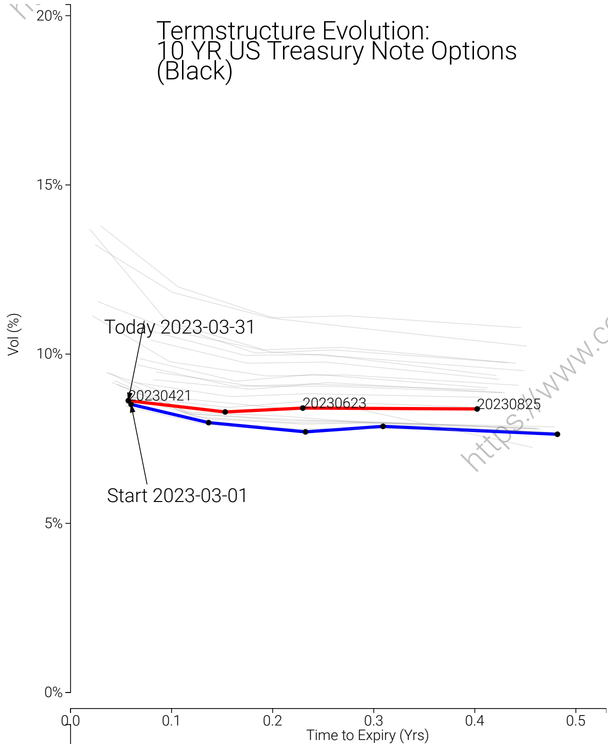

Front Month Skews:
2 YR US Treasury Note Options
(Black)
Today 2023-03-31
Start 2023-03-01

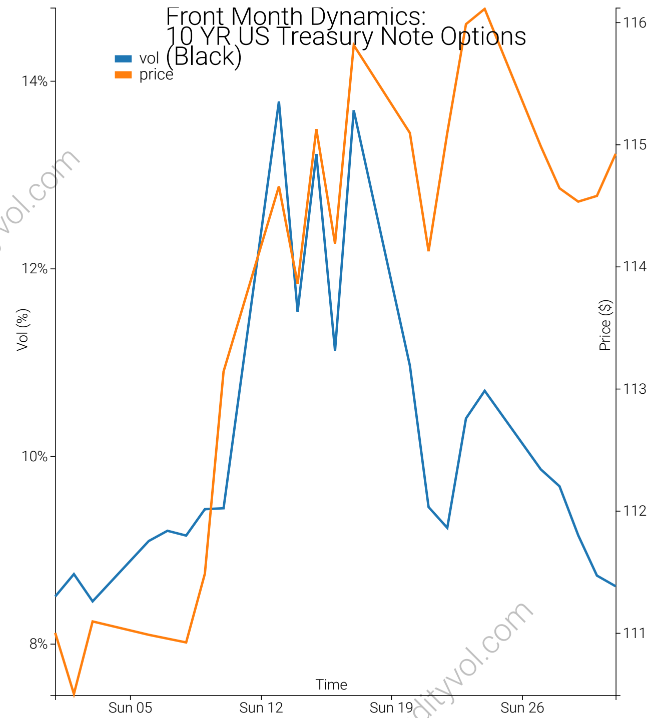

Termstructure Evolution:
5 YR US Treasury Note Options
(Black)
Vol (%)
15%
10%
5%
0%
Today 2023-03-31
20230421
20230623
20230825
Start 2023-03-01
0.0
0.1
0.2
0.3
0.4
Time to Expiry (Yrs)

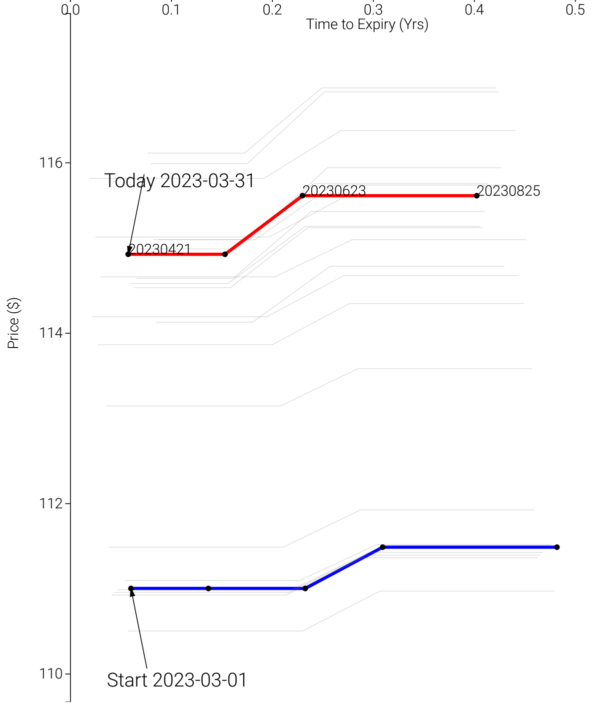

Front Month Dynamics:
5 YR US Treasury Note Options
(Black)
vol
price
Vol (%)
12%
10%
8%
6%
Price ($)
110
109
108
107
Time
Sun 05
Sun 12
Sun 19
Sun 26

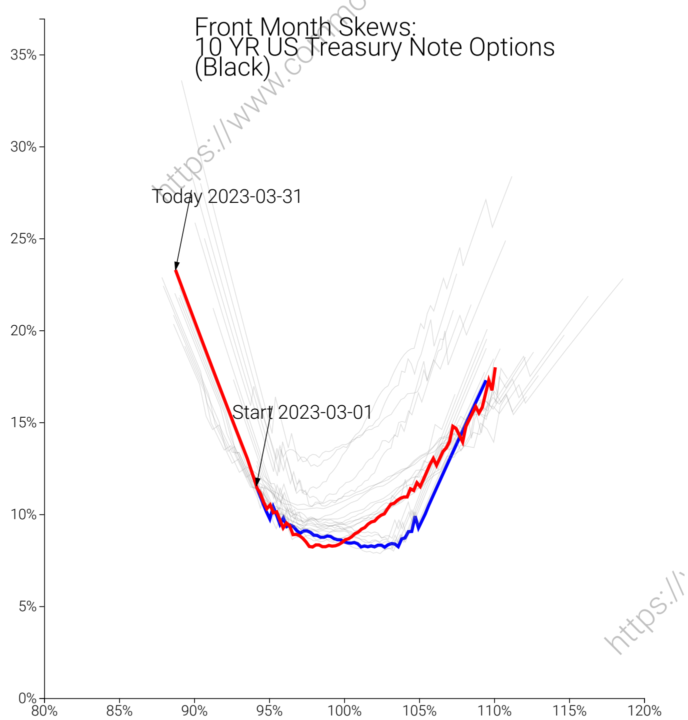

Price ($)
111
110
109
108
107
106
Today 2023-03-31
20230421
20230623
20230825
Start 2023-03-01

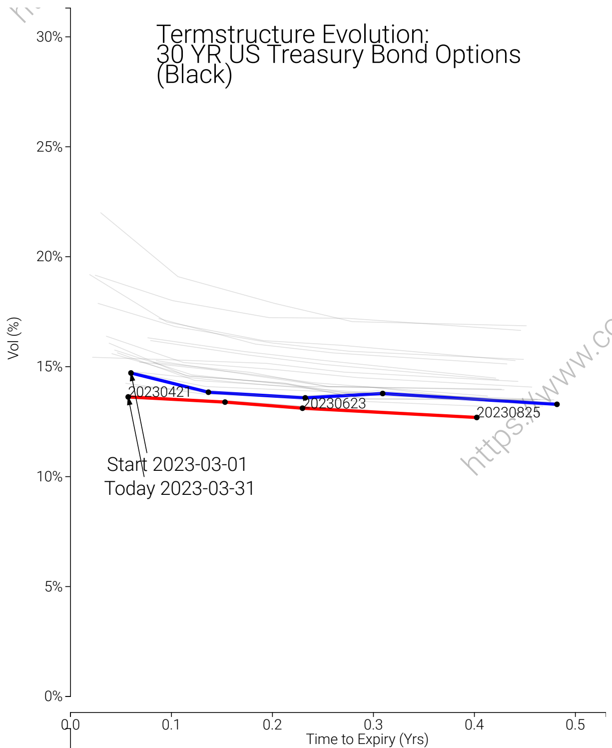

Front Month Skews:
5 YR US Treasury Note Options
(Black)
22%
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
Today 2023-03-31
Start 2023-03-01
96%
98%
100%
102%
104%
106%
108%
110%

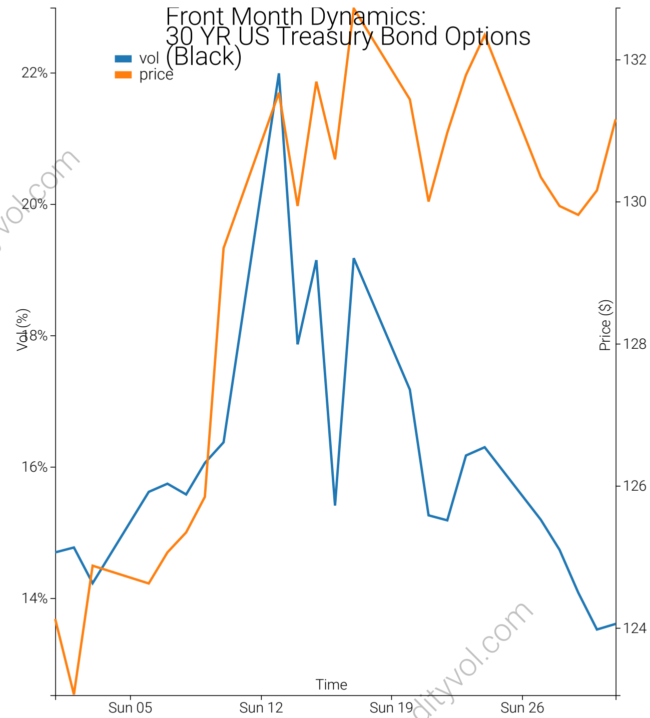

Termstructure Evolution:
10 YR US Treasury Note Options
(Black)
Vol (%)
Time to Expiry (Yrs)
Today 2023-03-31
Start 2023-03-01
20230421
20230623
20230825
0%
5%
10%
15%
20%
0.0
0.1
0.2
0.3
0.4
0.5

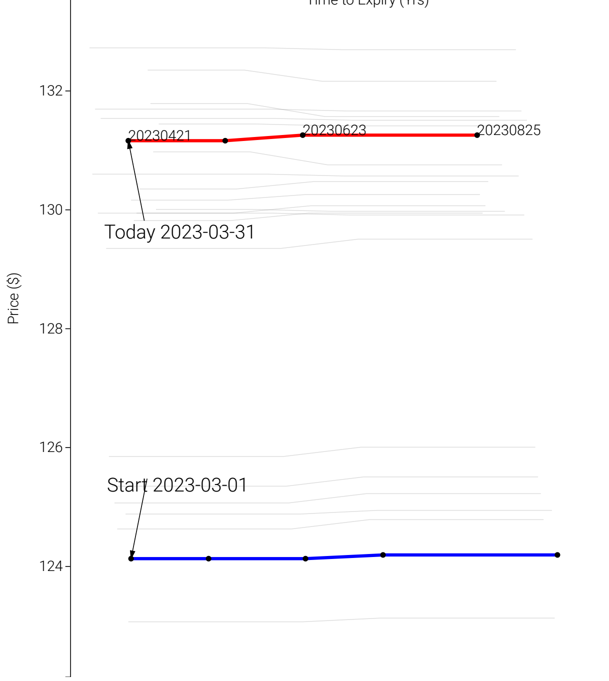

Front Month Dynamics:
10 YR US Treasury Note Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26
8%
10%
12%
14%
111
112
113
114
115
116

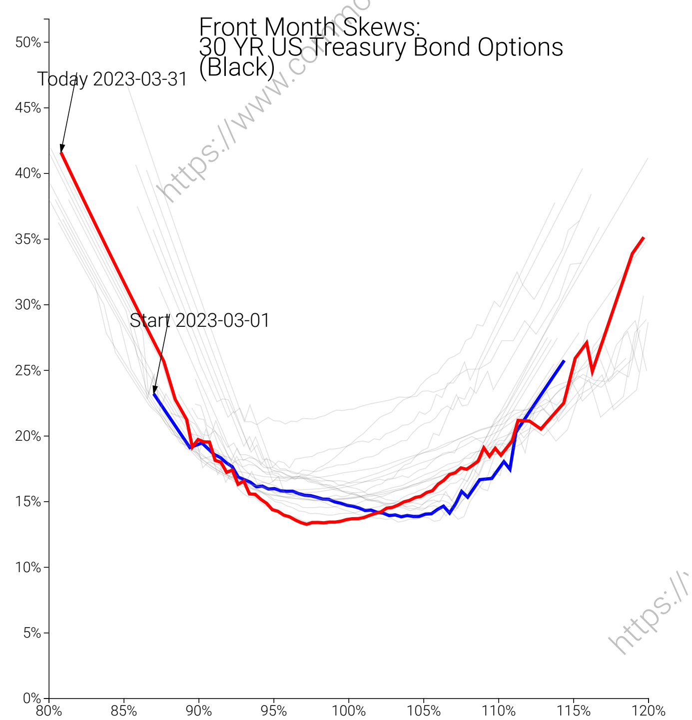

Price ($)
Today 2023-03-31
Start 2023-03-01
20230421
20230623
20230825
110
112
114
116

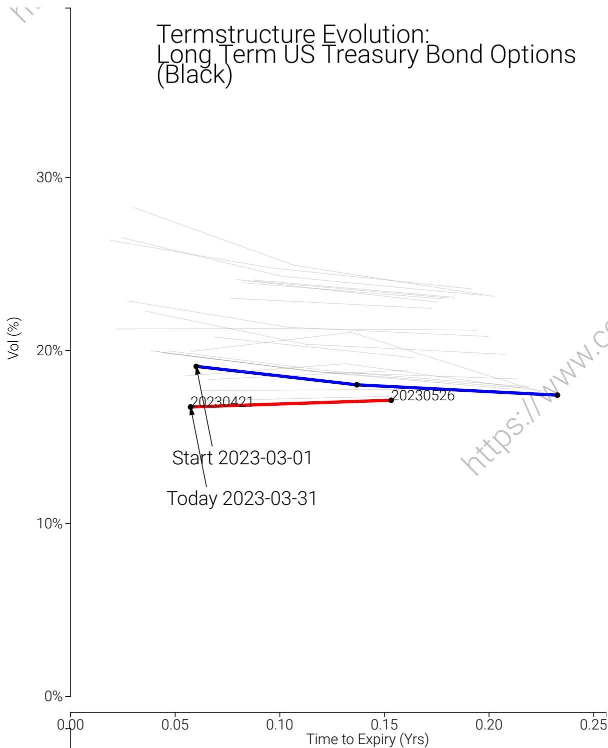

Front Month Skews:
10 YR US Treasury Note Options
(Black)
Today 2023-03-31
Start 2023-03-01
0%
5%
10%
15%
20%
25%
30%
35%
80%
85%
90%
95%
100%
105%
110%
115%
120%

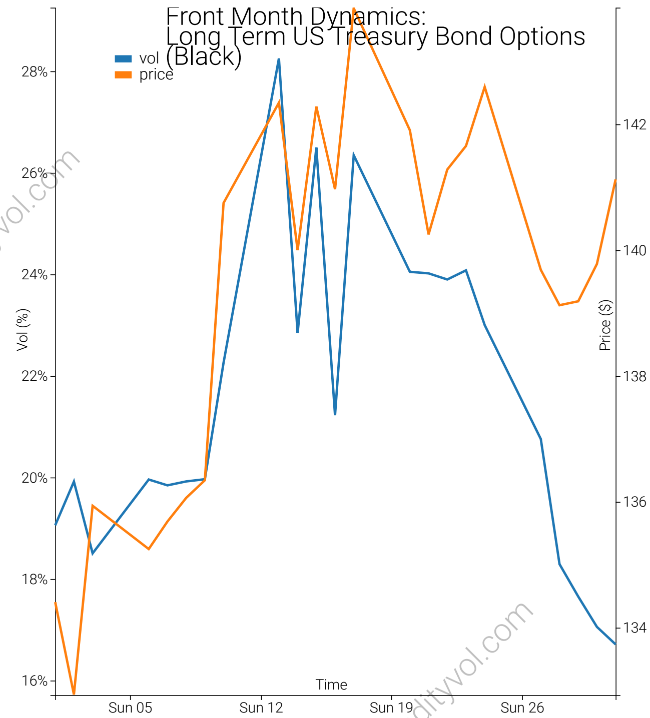

Termstructure Evolution:
30 YR US Treasury Bond Options
(Black)
Vol (%)
30%
25%
20%
15%
10%
5%
0%
20230421
20230623
20230825
Start 2023-03-01
Today 2023-03-31
0.0
0.1
0.2
0.3
0.4
0.5
Time to Expiry (Yrs)

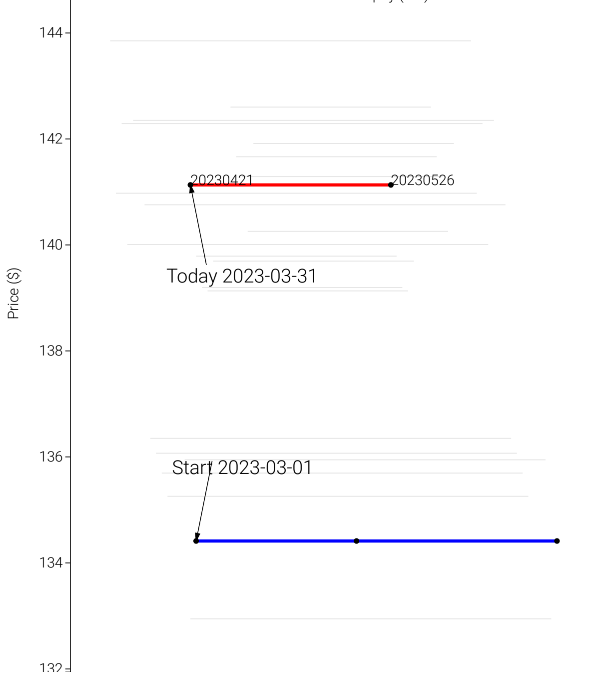

Front Month Dynamics:
30 YR US Treasury Bond Options
(Black)
vol
price
Vol (%)
22%
20%
18%
16%
14%
Price ($)
132
130
128
126
124
Time
Sun 05
Sun 12
Sun 19
Sun 26

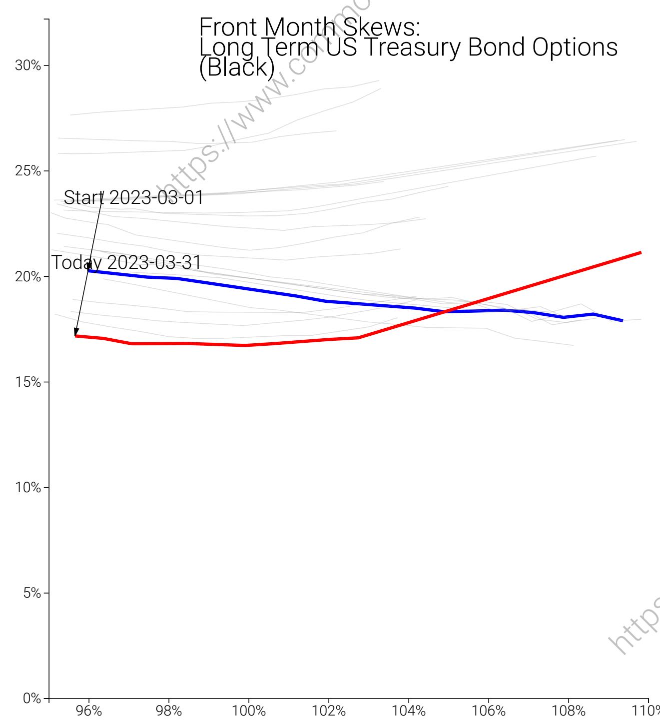

Price ($)
132
130
128
126
124
20230421
20230623
20230825
Today 2023-03-31
Start 2023-03-01


Front Month Skews:
30 YR US Treasury Bond Options
(Black)
Today 2023-03-31
Start 2023-03-01
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
80%
85%
90%
95%
100%
105%
110%
115%
120%

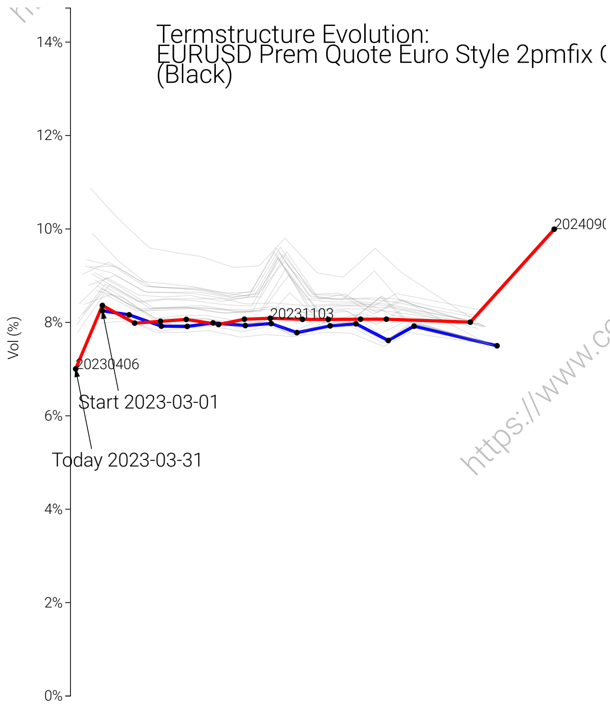

Termstructure Evolution:
Long Term US Treasury Bond Options
(Black)
Vol (%)
30%
20%
10%
0%
20230421
20230526
Start 2023-03-01
Today 2023-03-31
0.00
0.05
0.10
0.15
0.20
0.25
Time to Expiry (Yrs)

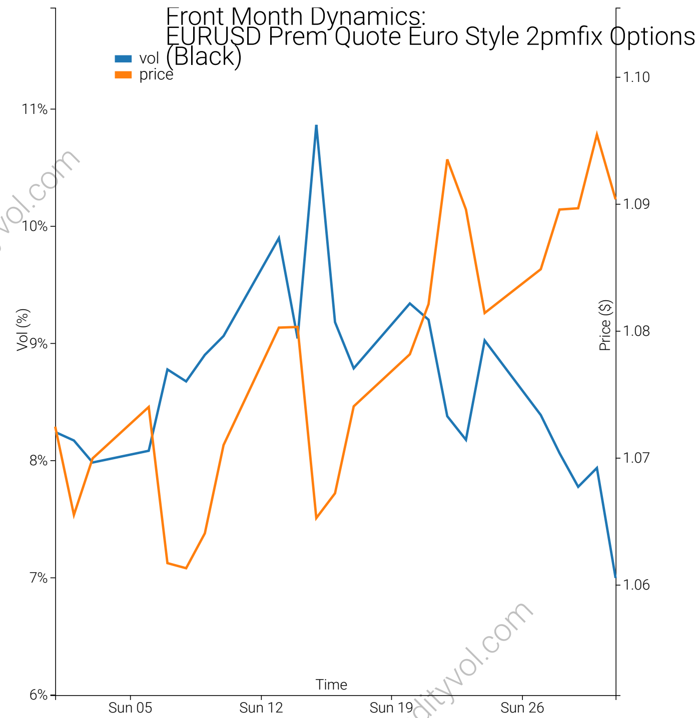

Front Month Dynamics:
Long Term US Treasury Bond Options
(Black)
vol
price
Vol (%)
28%
26%
24%
22%
20%
18%
16%
Price ($)
142
140
138
136
134
Time
Sun 05
Sun 12
Sun 19
Sun 26

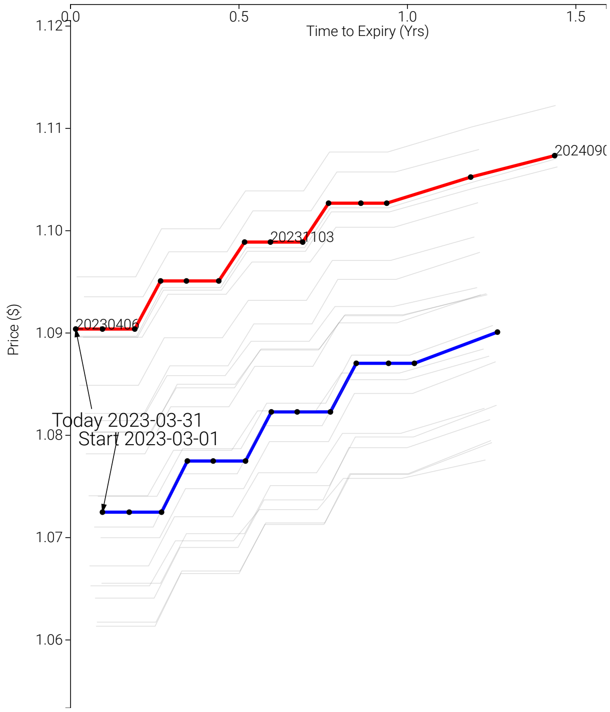

Price ($)
144
142
140
138
136
134
132
20230421
20230526
Today 2023-03-31
Start 2023-03-01

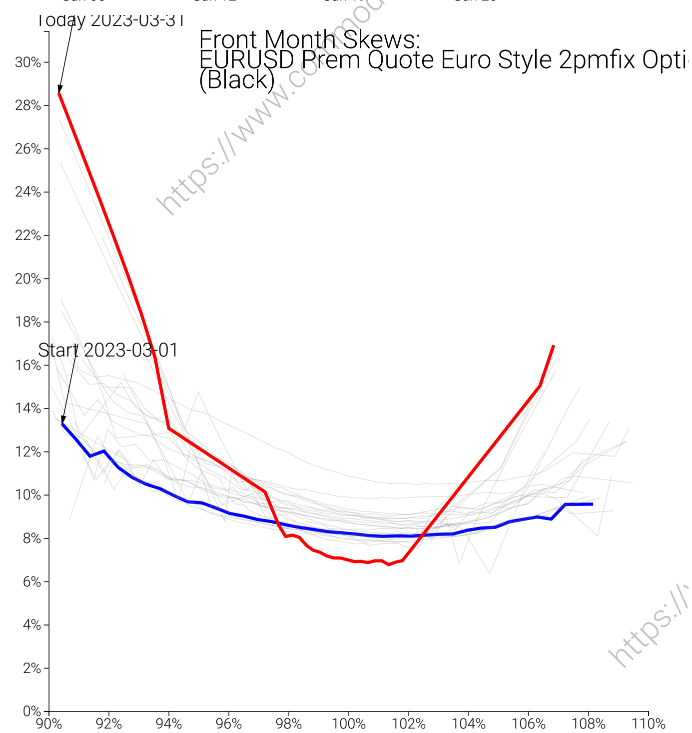

Front Month Skews:
Long Term US Treasury Bond Options
(Black)
30%
25%
20%
15%
10%
5%
0%
Start 2023-03-01
Today 2023-03-31
96%
98%
100%
102%
104%
106%
108%
110%

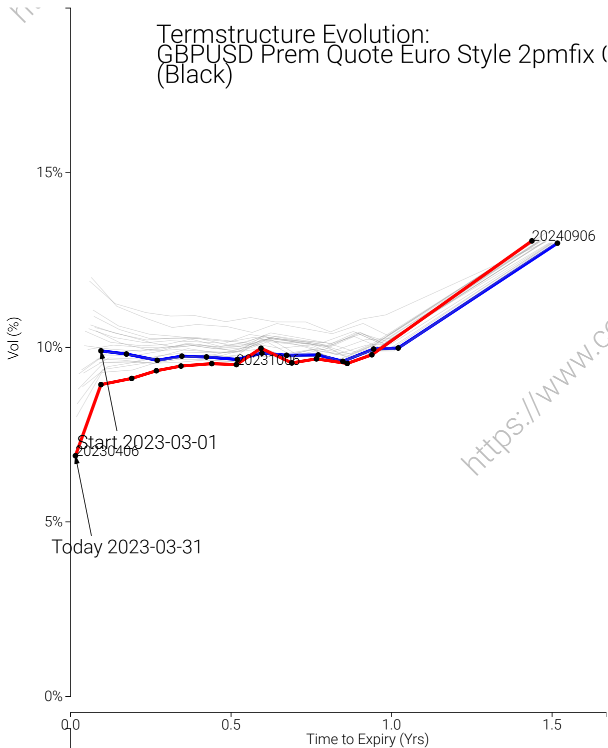
Forex

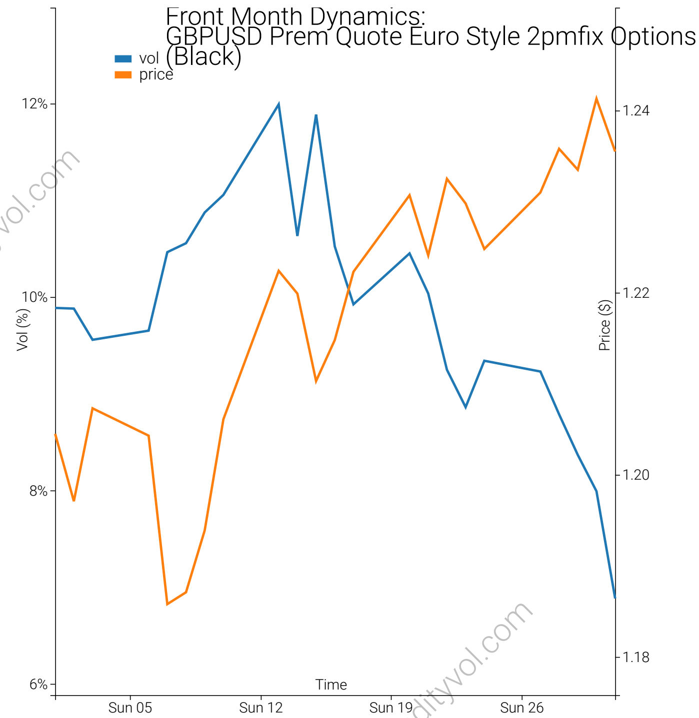

Termstructure Evolution:
EURUSD Prem Quote Euro Style 2pmfix (
(Black)
Vol (%)
14%
12%
10%
8%
6%
4%
2%
0%
20230406
20231103
Start 2023-03-01
Today 2023-03-31
0.0
0.5
1.0
1.5
Time to Expiry (Yrs)

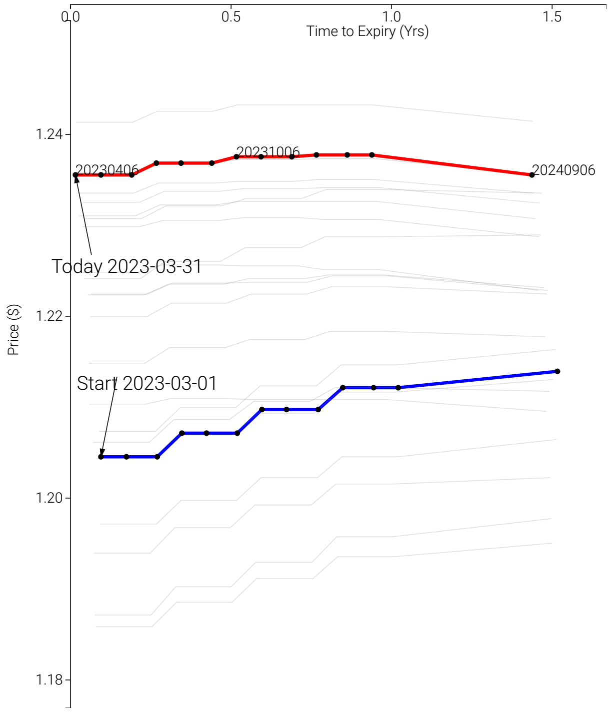

Front Month Dynamics:
EURUSD Prem Quote Euro Style 2pmfix Options
(Black)
vol
price
Vol (%)
Price ($)
11%
10%
9%
8%
7%
6%
1.10
1.09
1.08
1.07
1.06
Time
Sun 05
Sun 12
Sun 19
Sun 26

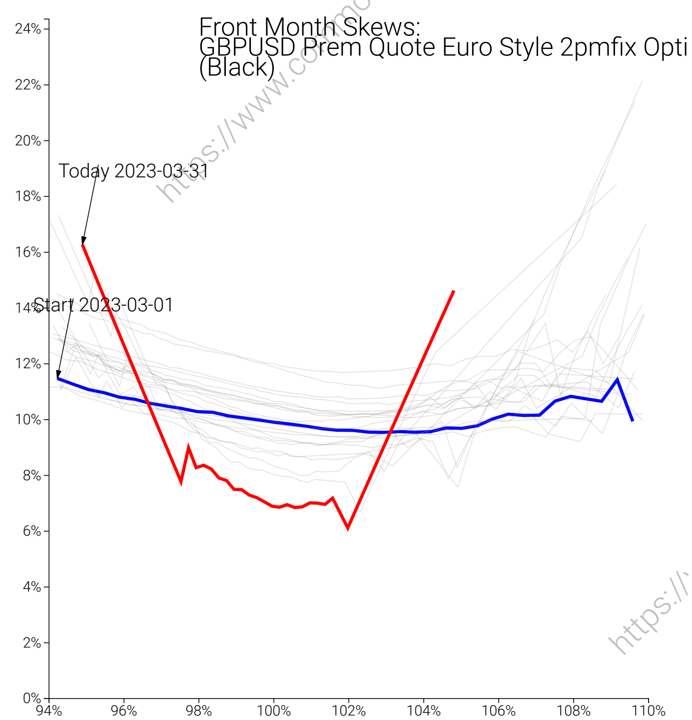

Price ($)
1.12
1.11
1.10
1.09
1.08
1.07
1.06
20231103
20230406
Today 2023-03-31
Start 2023-03-01

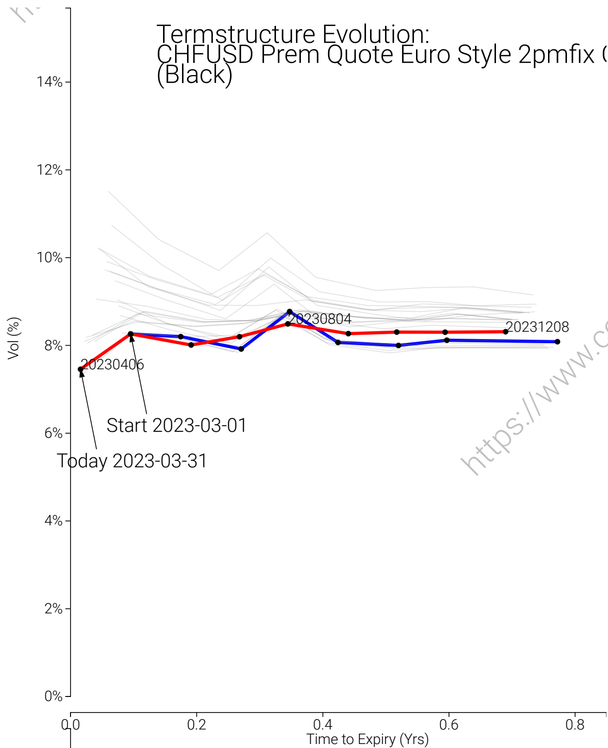

Today 2023-03-31
Front Month Skews:
EURUSD Prem Quote Euro Style 2pmfix Opti
(Black)
Start 2023-03-01
30%
28%
26%
24%
22%
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
90%
92%
94%
96%
98%
100%
102%
104%
106%
108%
110%

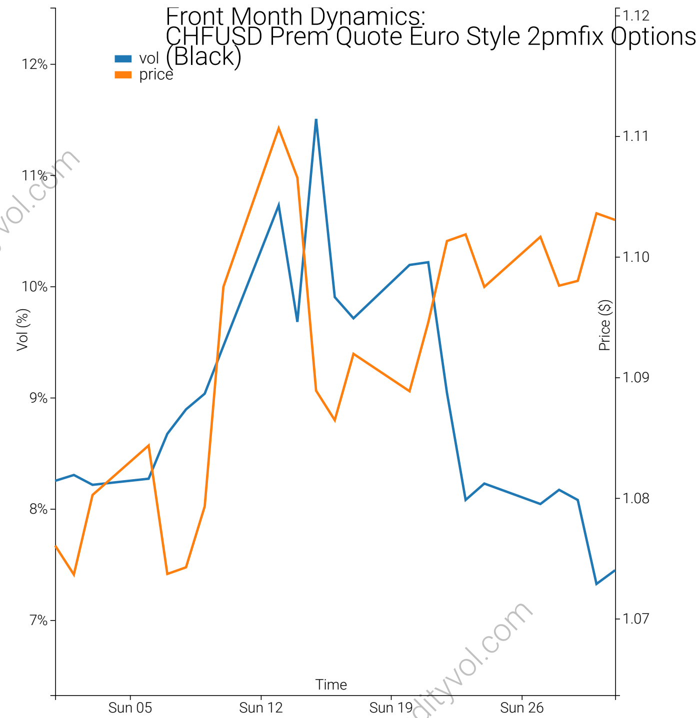

Termstructure Evolution:
GBPUSD Prem Quote Euro Style 2pmfix (
(Black)
Vol (%)
15%
10%
5%
0%
20240906
20231006
20230406
Start 2023-03-01
Today 2023-03-31
0.0
0.5
1.0
1.5
Time to Expiry (Yrs)

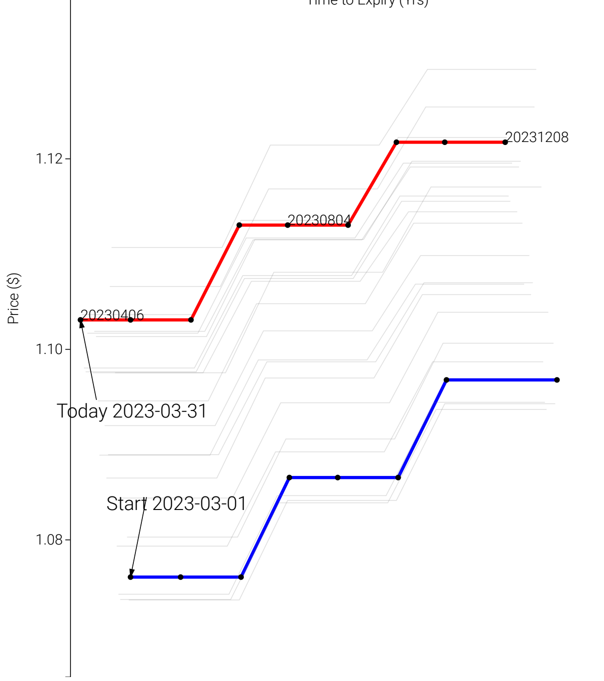

Front Month Dynamics:
GBPUSD Prem Quote Euro Style 2pmfix Options
(Black)
vol
price
Vol (%)
Price ($)
12%
10%
8%
6%
1.24
1.22
1.20
1.18
Time
Sun 05
Sun 12
Sun 19
Sun 26

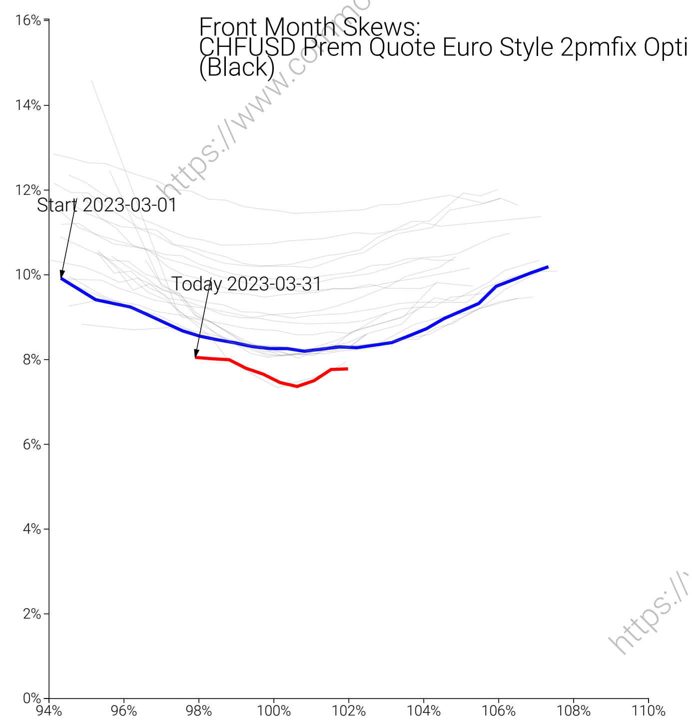

Price ($)
1.24
1.22
1.20
1.18
20230406
20231006
20240906
Today 2023-03-31
Start 2023-03-01

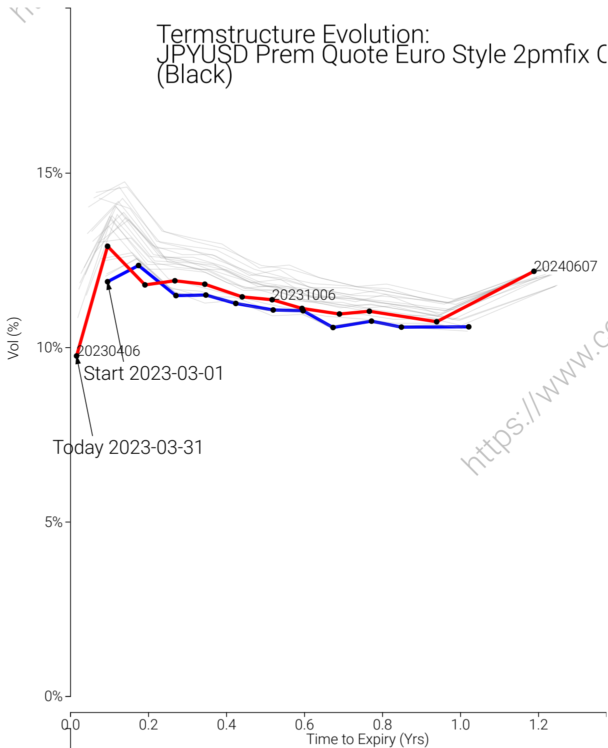

Front Month Skews:
GBPUSD Prem Quote Euro Style 2pmfix Opti
(Black)
24%
22%
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
Today 2023-03-31
Start 2023-03-01
94%
96%
98%
100%
102%
104%
106%
108%
110%

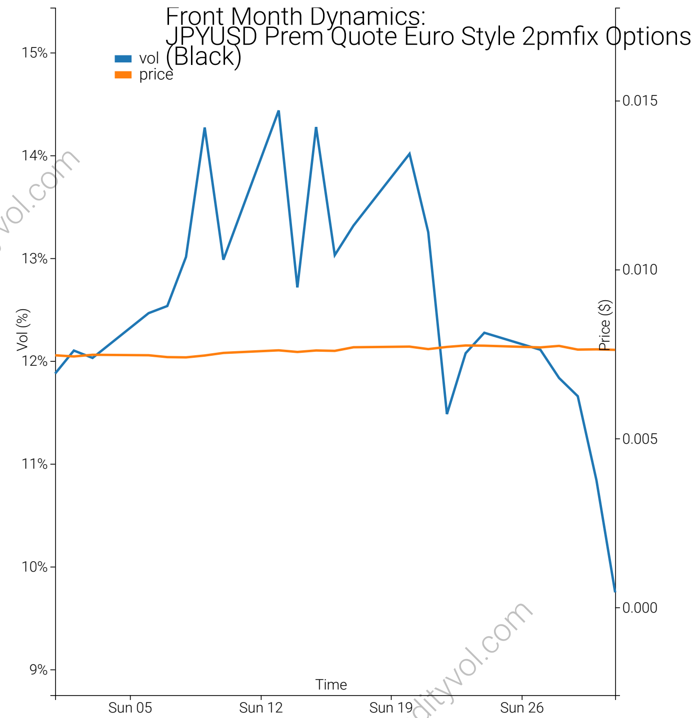

Termstructure Evolution:
CHFUSD Prem Quote Euro Style 2pmfix (
(Black)
Vol (%)
Time to Expiry (Yrs)
20230406
20230804
20231208
Start 2023-03-01
Today 2023-03-31

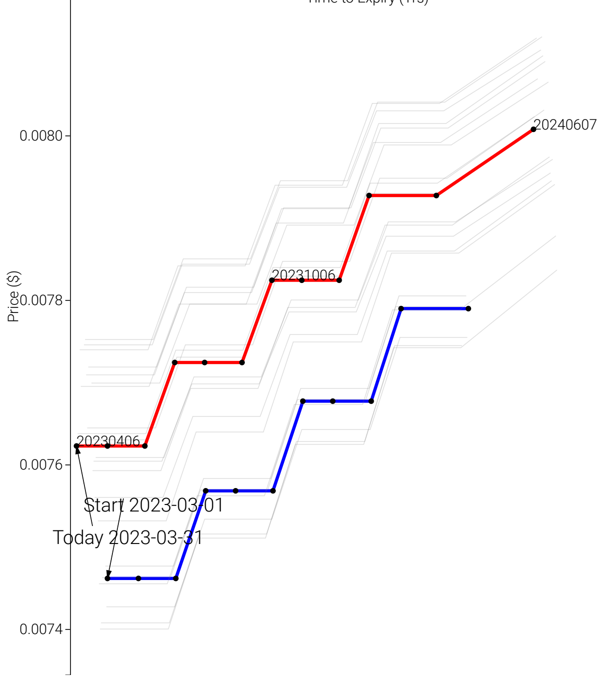

Front Month Dynamics:
CHFUSD Prem Quote Euro Style 2pmfix Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

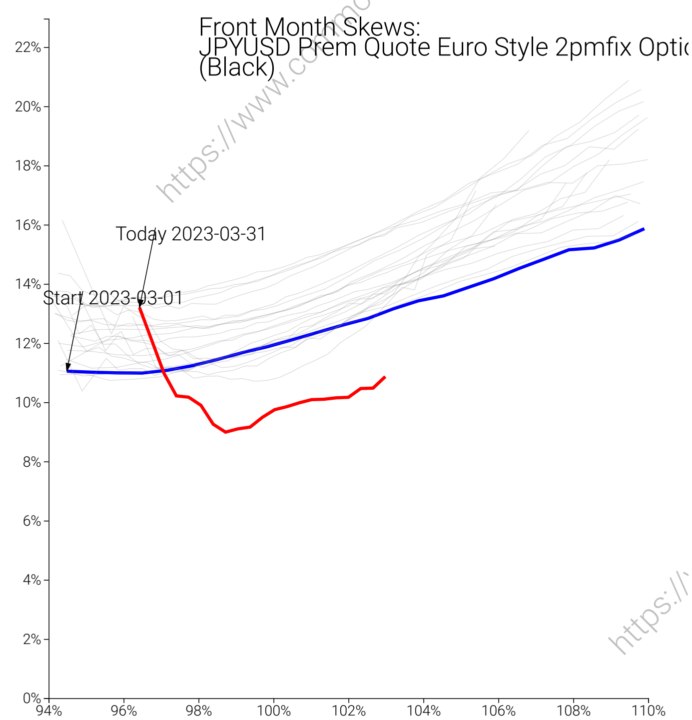

Price ($)
20230406
20230804
20231208
Today 2023-03-31
Start 2023-03-01

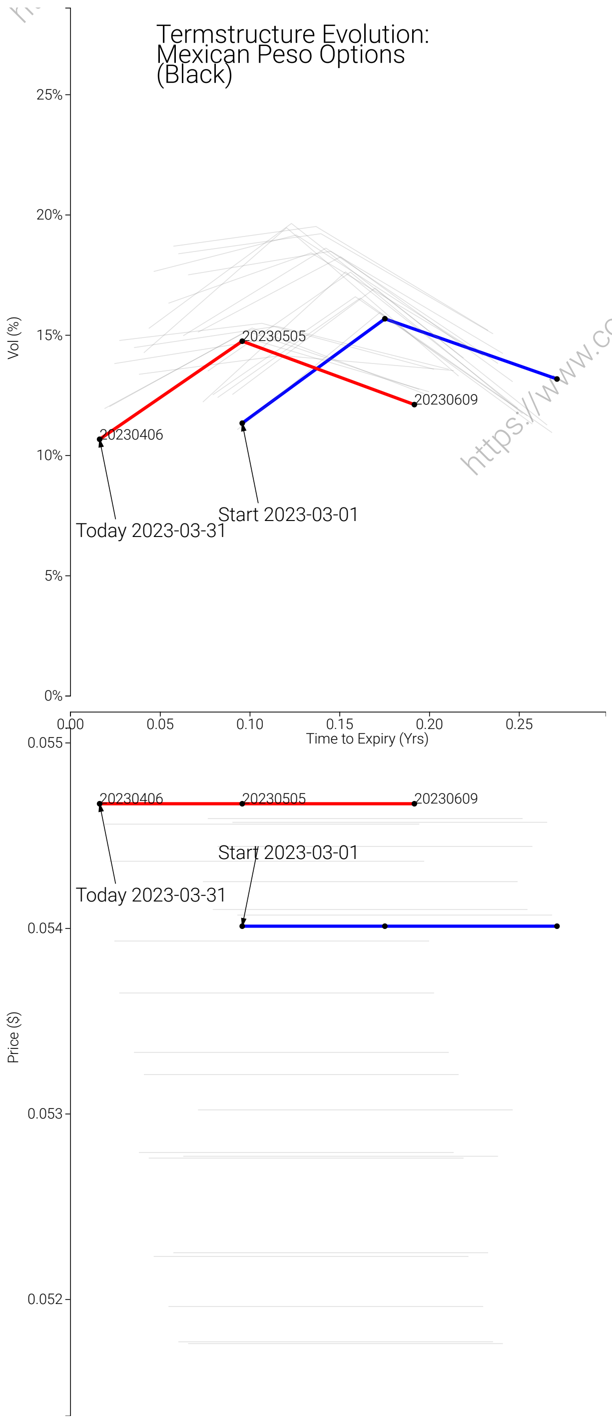

Front Month Skews:
CHFUSD Prem Quote Euro Style 2pmfix Opti
(Black)
Start 2023-03-01
Today 2023-03-31

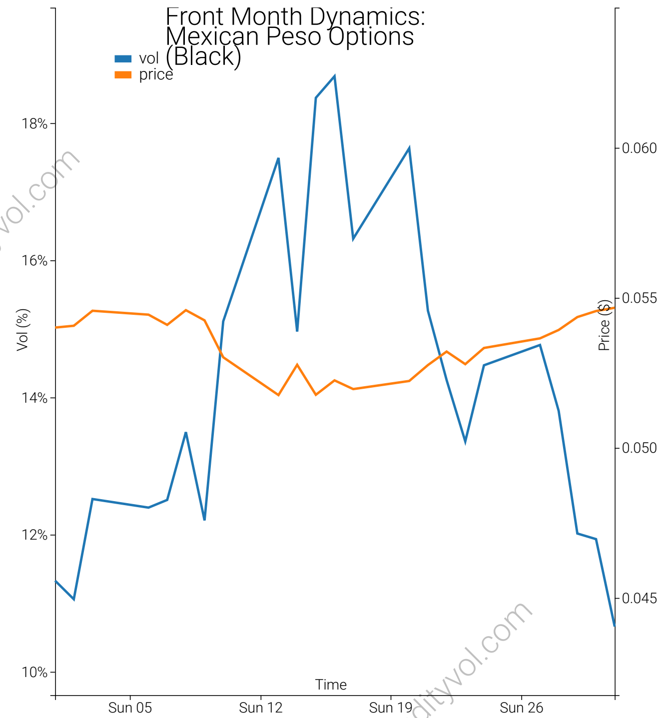

Termstructure Evolution:
JPYUSD Prem Quote Euro Style 2pmfix C
(Black)
Vol (%)
15%
10%
5%
0%
20240607
20231006
20230406
Start 2023-03-01
Today 2023-03-31
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Time to Expiry (Yrs)
https://www.commodityvol.com

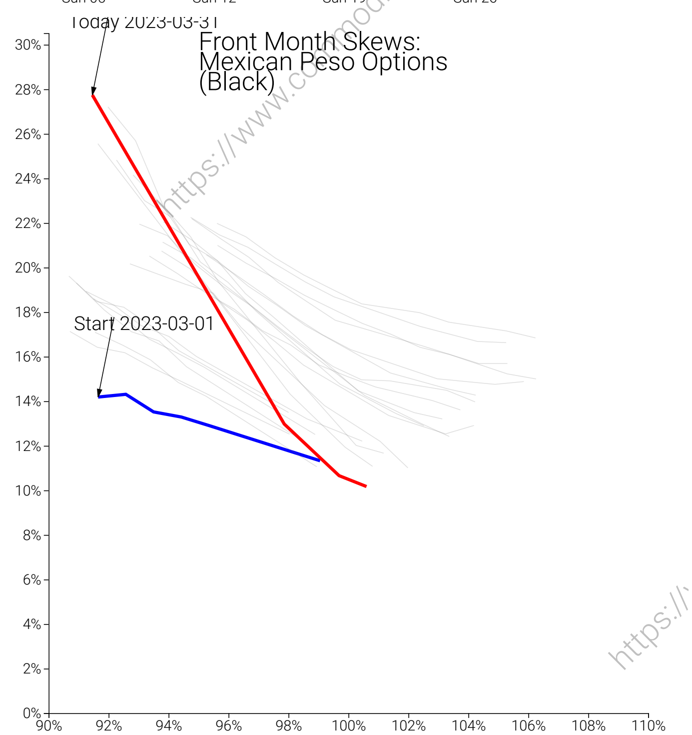

Front Month Dynamics:
JPYUSD Prem Quote Euro Style 2pmfix Options
(Black)
vol
price
Vol (%)
15%
14%
13%
12%
11%
10%
9%
Price ($)
0.015
0.010
0.005
0.000
Time
Sun 05
Sun 12
Sun 19
Sun 26

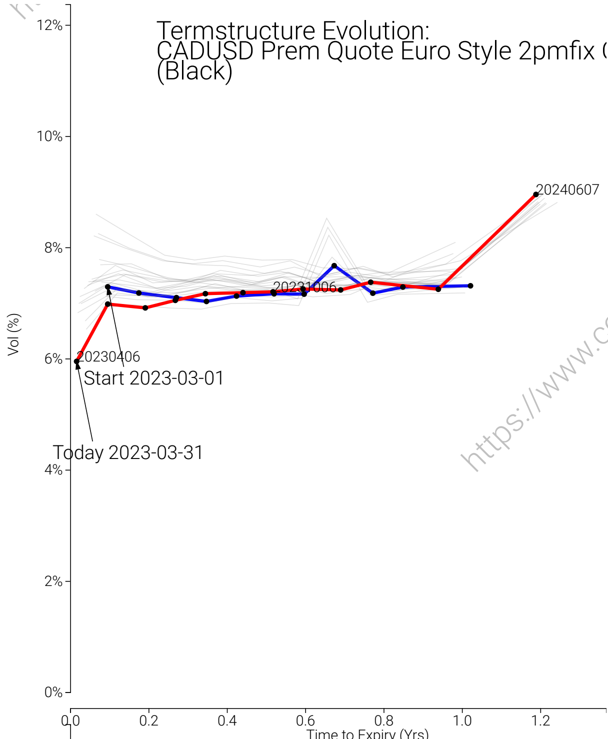

Price ($)
0.0080
0.0078
0.0076
0.0074
20240607
20231006
20230406
Start 2023-03-01
Today 2023-03-31

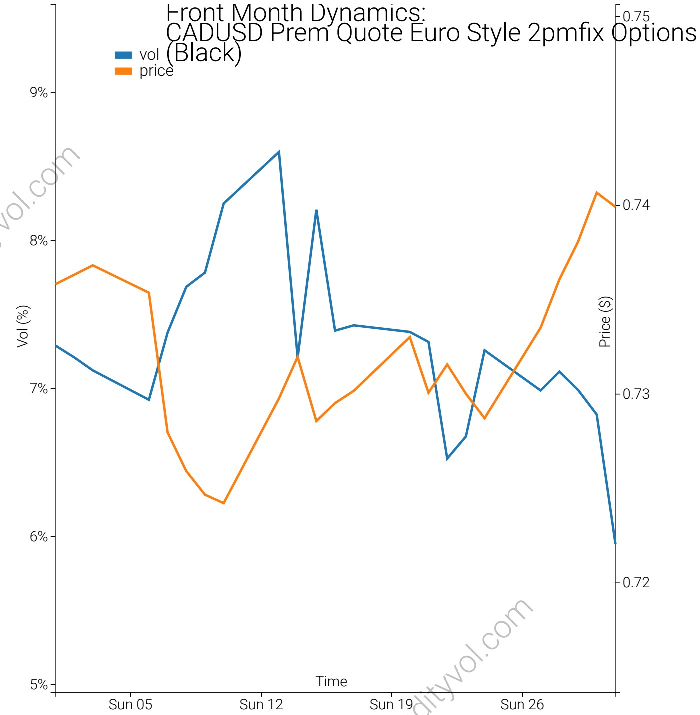

Front Month Skews:
JPYUSD Prem Quote Euro Style 2pmfix Optio
(Black)
22%
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
Today 2023-03-31
Start 2023-03-01
94%
96%
98%
100%
102%
104%
106%
108%
110%
https://www.commodityvol.com

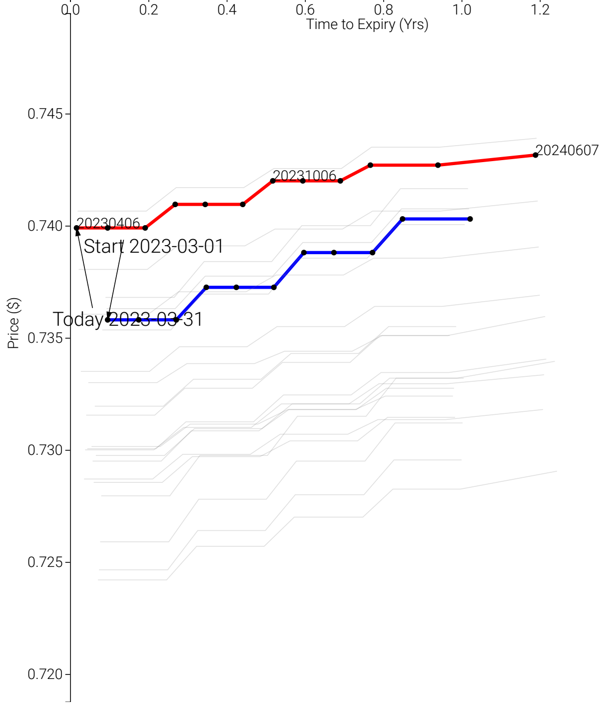

Termstructure Evolution:
Mexican Peso Options
(Black)
Vol (%)
Time to Expiry (Yrs)
20230406
20230505
20230609
Today 2023-03-31
Start 2023-03-01
Price ($)

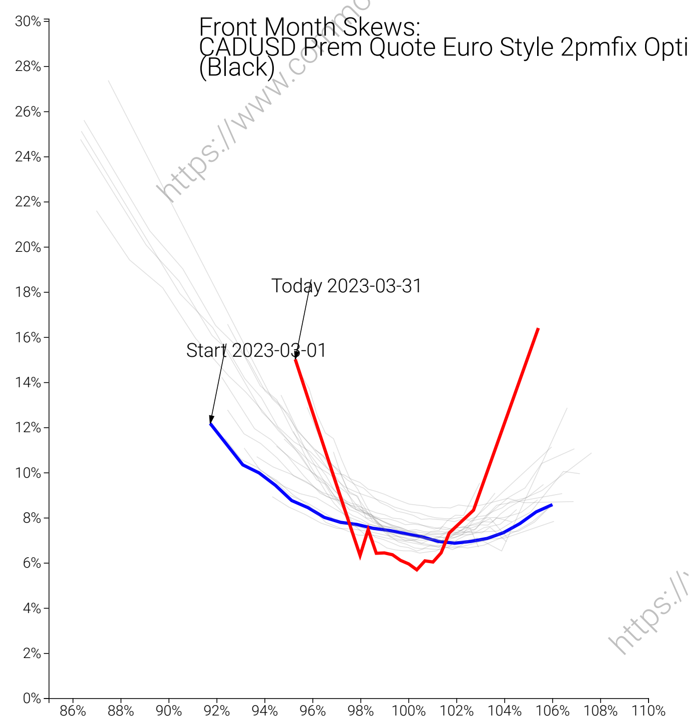

Front Month Dynamics:
Mexican Peso Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

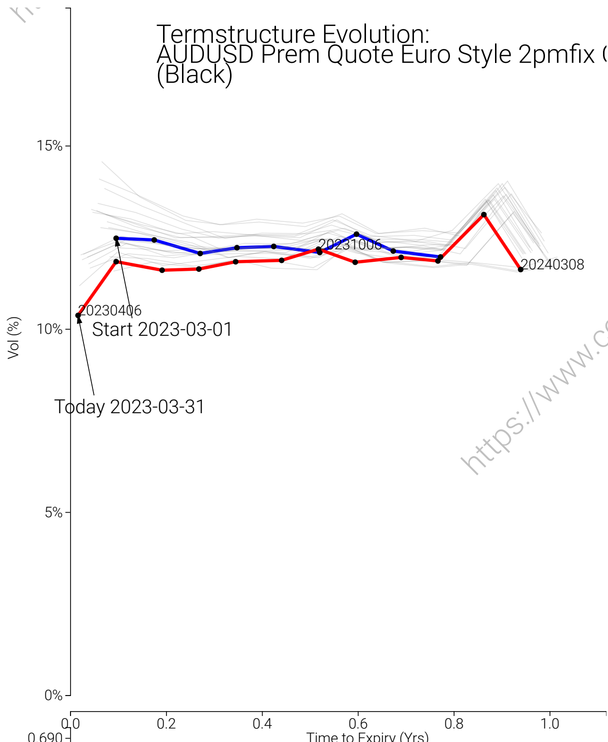

Front Month Skews:
Mexican Peso Options
(Black)
Today 2023-03-31
Start 2023-03-01

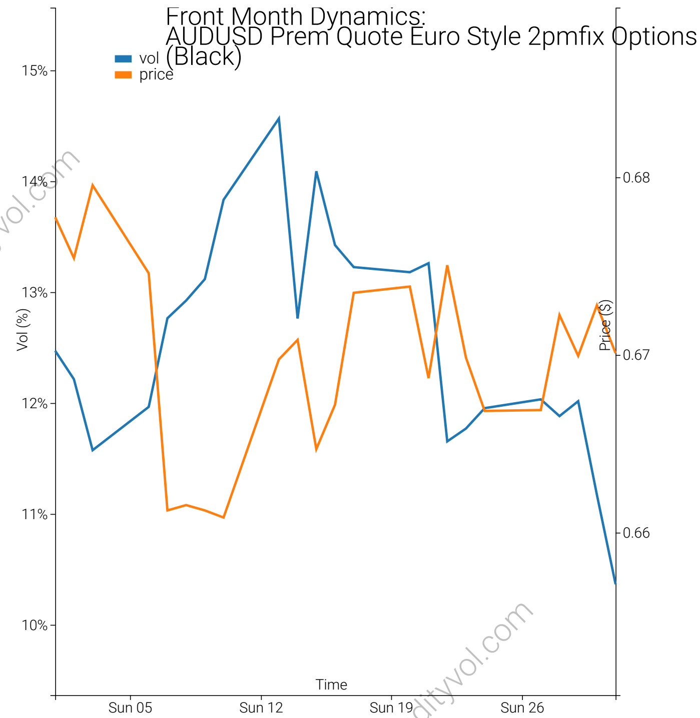

Termstructure Evolution:
CADUSD Prem Quote Euro Style 2pmfix (
(Black)
Vol (%)
12%
10%
8%
6%
4%
2%
0%
20240607
20231006
20230406
Start 2023-03-01
Today 2023-03-31
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Time to Expiry (Yrs)

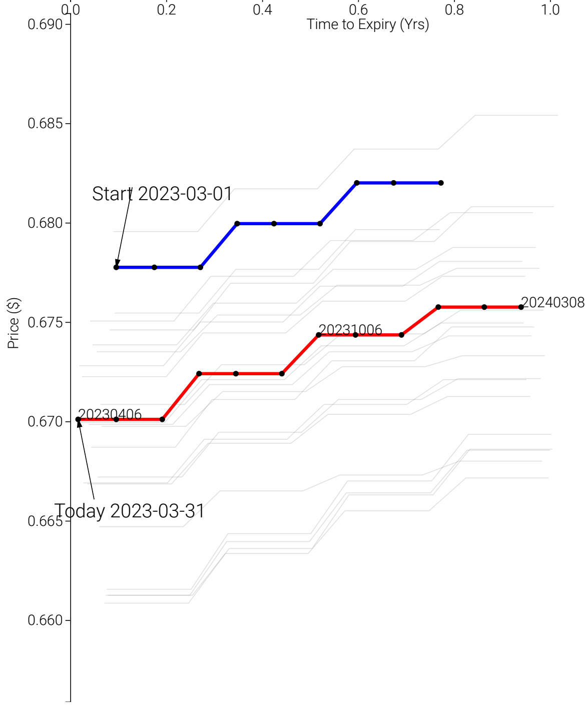

Front Month Dynamics:
CADUSD Prem Quote Euro Style 2pmfix Options
(Black)
vol
price
Vol (%)
Price ($)
9%
8%
7%
6%
5%
0.75
0.74
0.73
0.72
Time
Sun 05
Sun 12
Sun 19
Sun 26

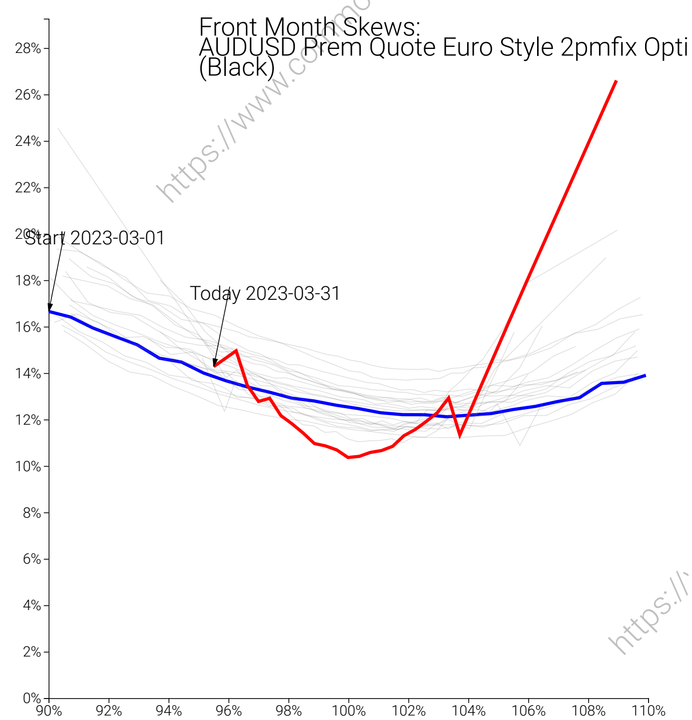

Price ($)
0.745
0.740
0.735
0.730
0.725
0.720
20240607
20231006
20230406
Start 2023-03-01
Today 2023-03-31

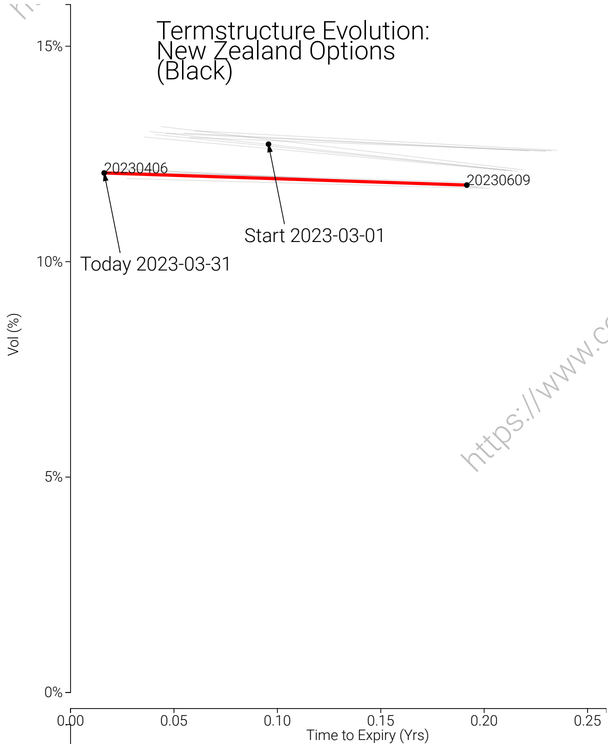

Front Month Skews:
CADUSD Prem Quote Euro Style 2pmfix Opti
(Black)
30%
28%
26%
24%
22%
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
Today 2023-03-31
Start 2023-03-01
86%
88%
90%
92%
94%
96%
98%
100%
102%
104%
106%
108%
110%

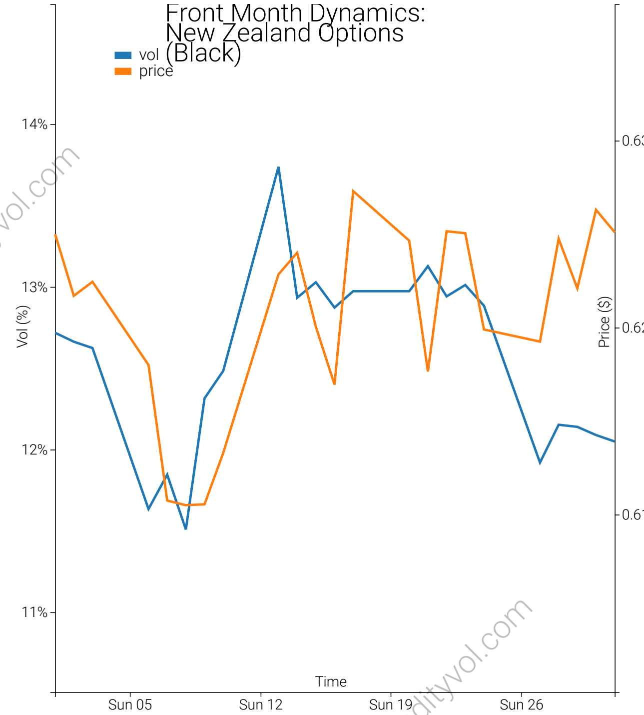

Termstructure Evolution:
AUDUSD Prem Quote Euro Style 2pmfix (
(Black)
15%
10%
5%
0%
Vol (%)
20230406
Start 2023-03-01
Today 2023-03-31
20231006
20240308
0.0
0.2
0.4
0.6
0.8
1.0
Time to Expiry (Yrs)

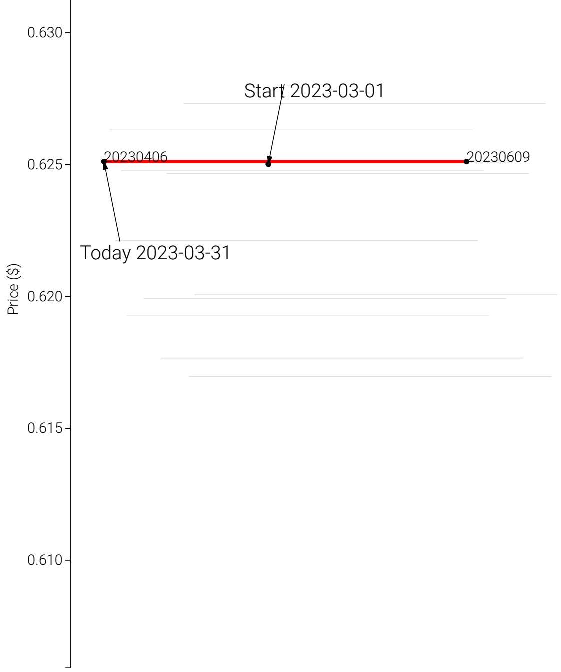

Front Month Dynamics:
AUDUSD Prem Quote Euro Style 2pmfix Options
(Black)
vol
price
15%
14%
13%
12%
11%
10%
Vol (%)
0.68
0.67
0.66
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

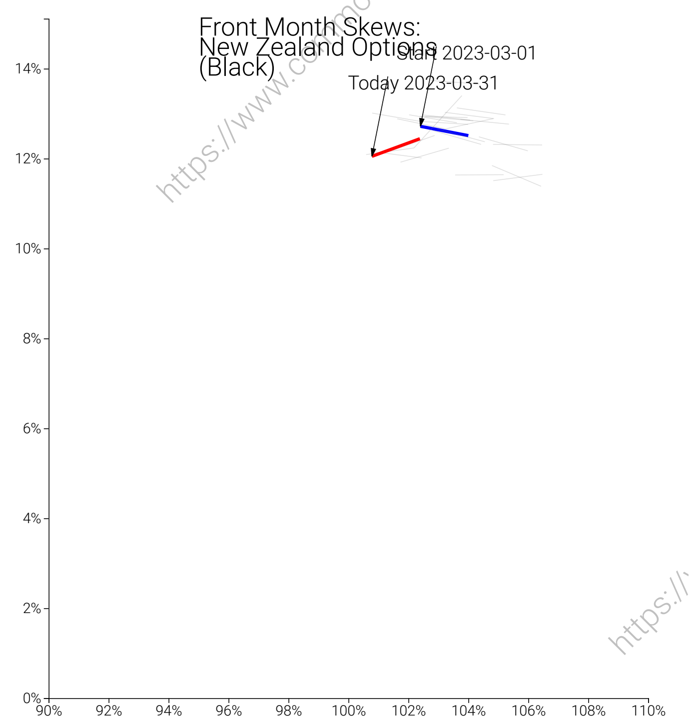

0.690
0.685
0.680
0.675
0.670
0.665
0.660
Price ($)
Start 2023-03-01
20240308
20231006
20230406
Today 2023-03-31

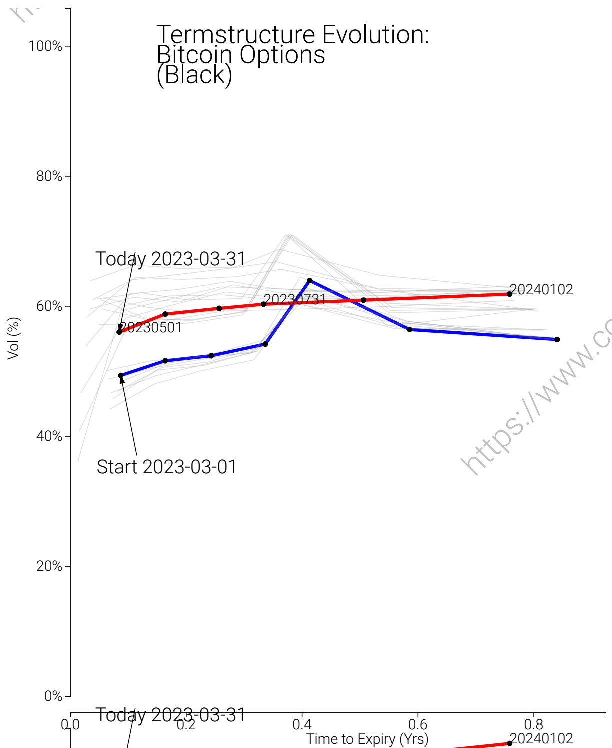

Front Month Skews:
AUDUSD Prem Quote Euro Style 2pmfix Opti
(Black)
28%
26%
24%
22%
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
Start 2023-03-01
Today 2023-03-31
90%
92%
94%
96%
98%
100%
102%
104%
106%
108%
110%

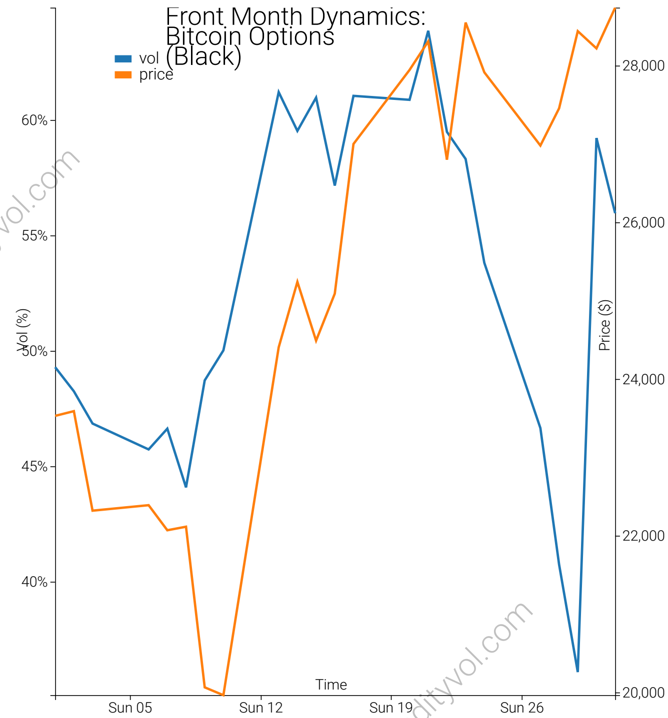

Termstructure Evolution:
New Zealand Options
(Black)
20230406
20230609
Start 2023-03-01
Today 2023-03-31
Vol (%)
15%
10%
5%
0%
0.00
0.05
0.10
0.15
0.20
0.25
Time to Expiry (Yrs)

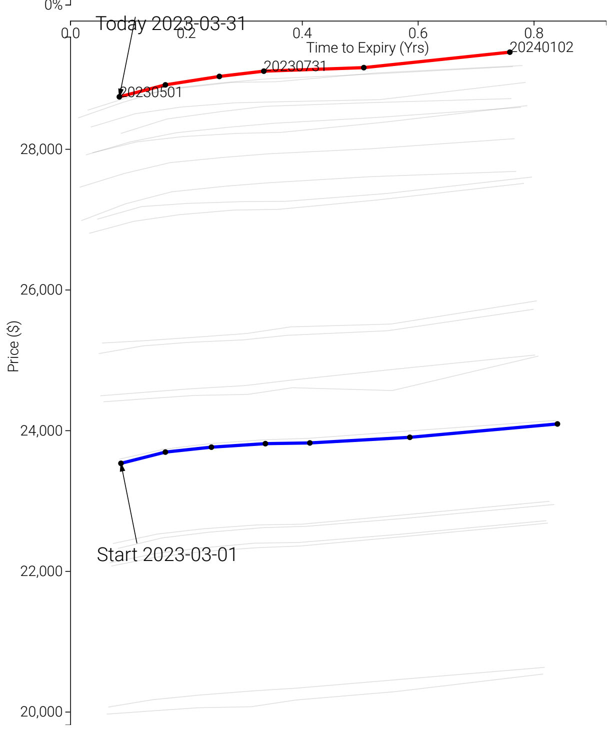

Front Month Dynamics:
New Zealand Options
(Black)
vol
price
Vol (%)
Price ($)
14%
13%
12%
11%
0.63
0.62
0.61
Time
Sun 05
Sun 12
Sun 19
Sun 26

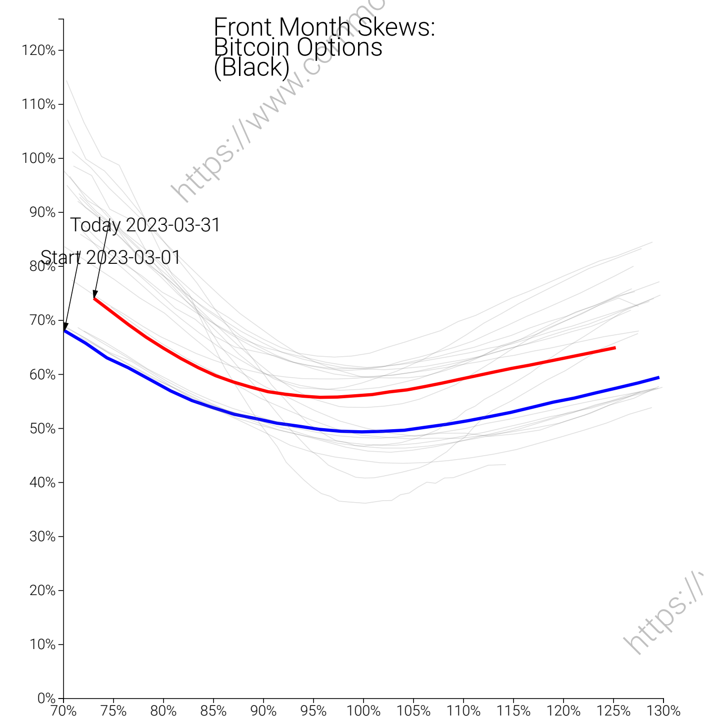

Start 2023-03-01
20230406
20230609
Today 2023-03-31
Price ($)
0.630
0.625
0.620
0.615
0.610

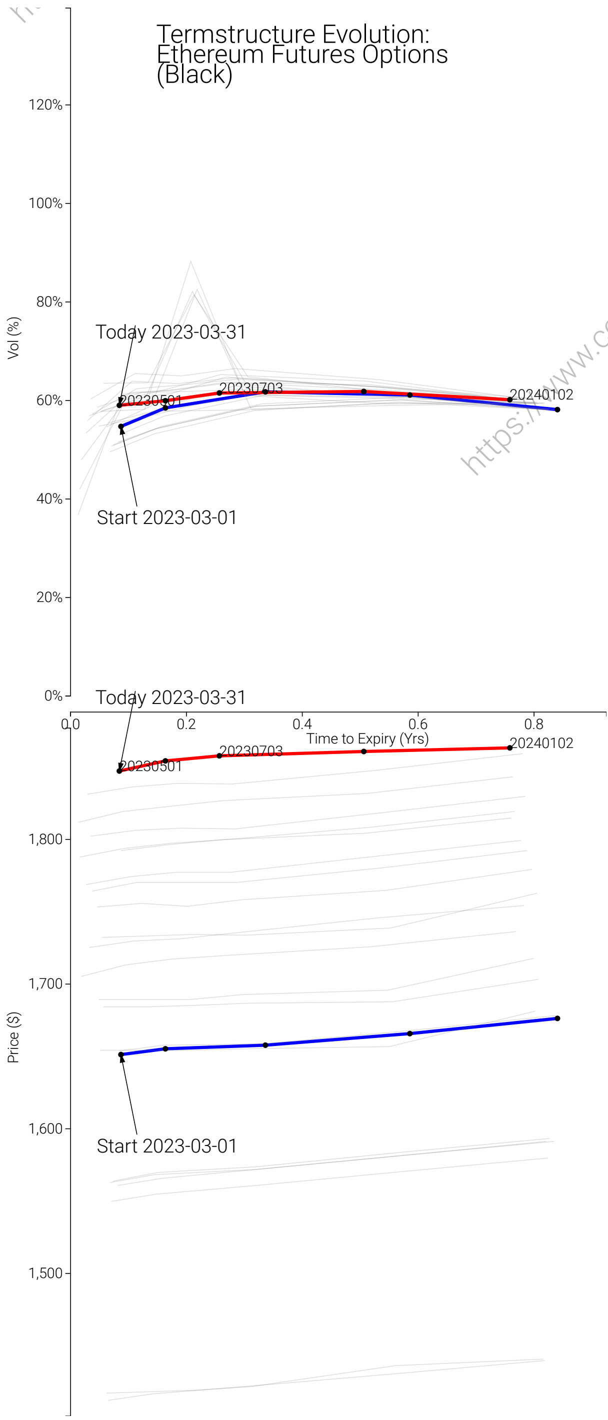

Front Month Skews:
New Zealand Options
(Black)
Start 2023-03-01
Today 2023-03-31
14%
12%
10%
8%
6%
4%
2%
0%
90%
92%
94%
96%
98%
100%
102%
104%
106%
108%
110%

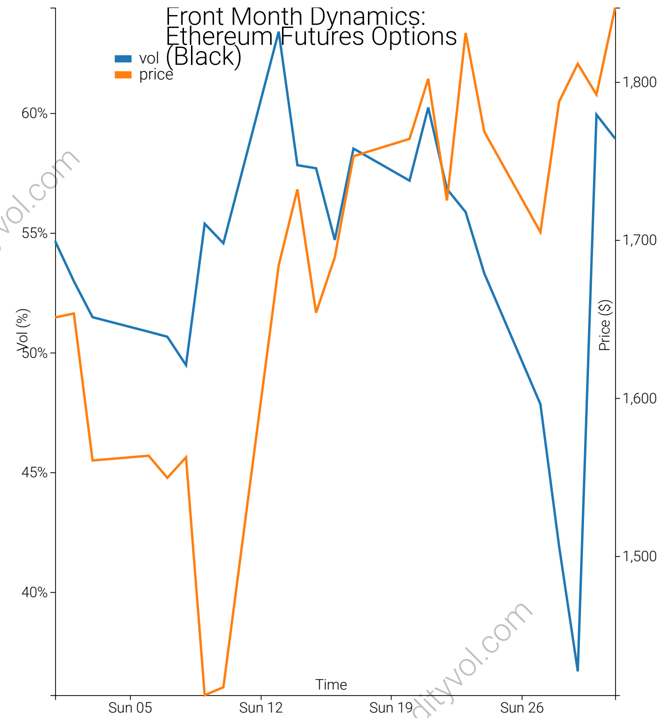

Termstructure Evolution:
Bitcoin Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230501
20230731
20240102
Vol (%)
Time to Expiry (Yrs)
0%
20%
40%
60%
80%
100%
0.0
0.2
0.4
0.6
0.8

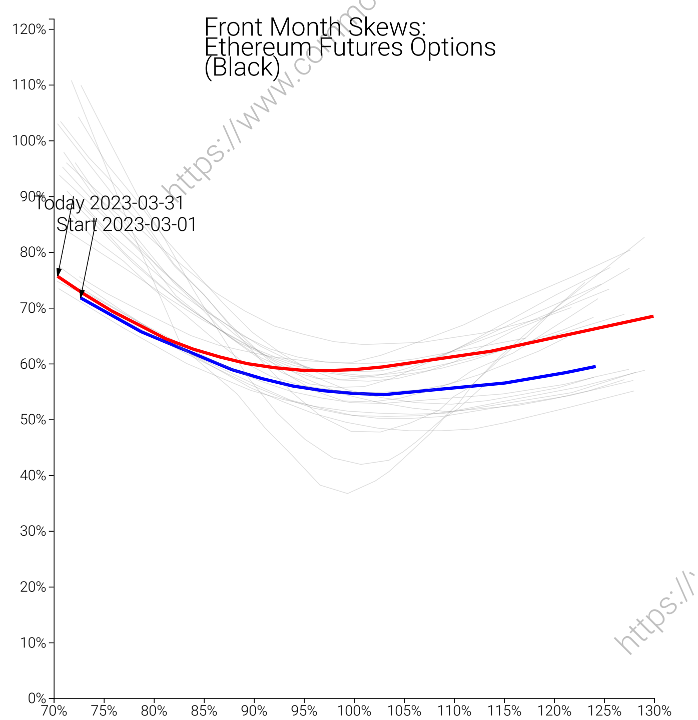

Front Month Dynamics:
Bitcoin Options
(Black)
vol
price
Vol (%)
Price ($)
Time
40%
45%
50%
55%
60%
20,000
22,000
24,000
26,000
28,000
Sun 05
Sun 12
Sun 19
Sun 26


Today 2023-03-31
Start 2023-03-01
20230501
20230731
20240102
Price ($)
20,000
22,000
24,000
26,000
28,000

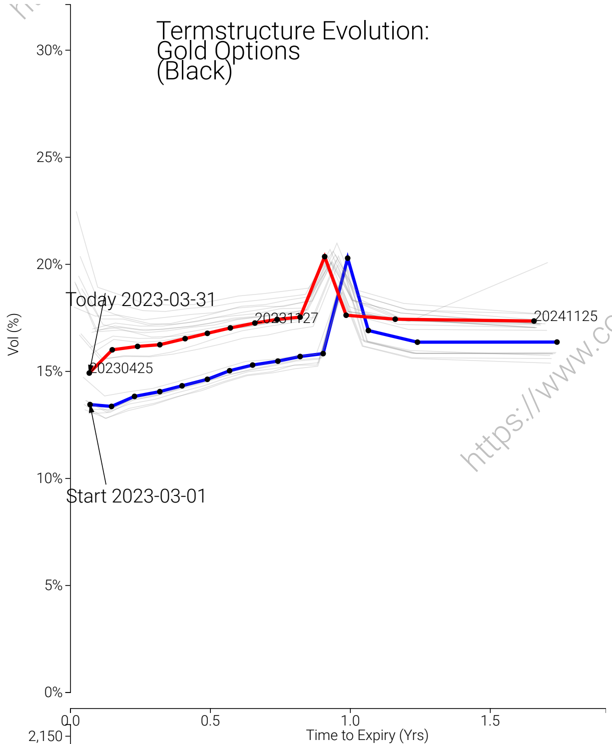

Front Month Skews:
Bitcoin Options
(Black)
Today 2023-03-31
Start 2023-03-01
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
110%
120%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

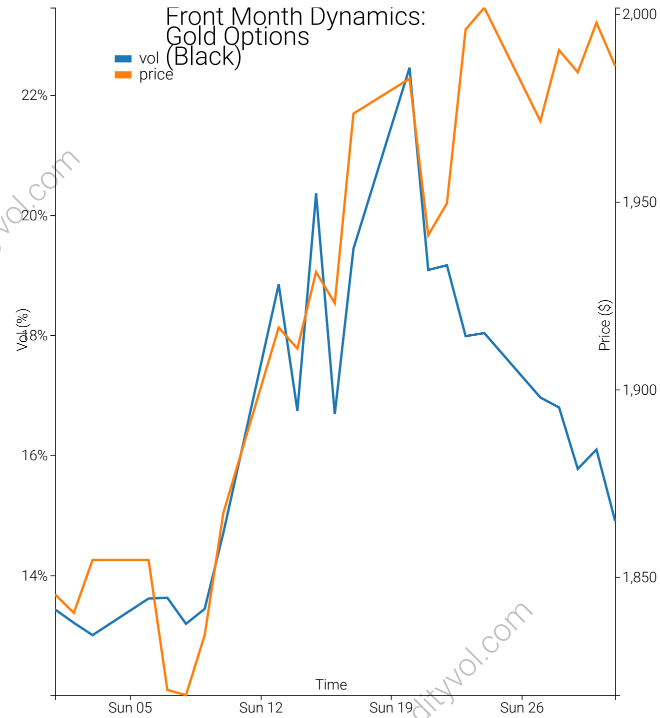

Termstructure Evolution:
Ethereum Futures Options
(Black)
Vol (%)
Today 2023-03-31
Start 2023-03-01
20230501
20230703
20240102
Time to Expiry (Yrs)
Price ($)
Today 2023-03-31
Start 2023-03-01
20230501
20230703
20240102

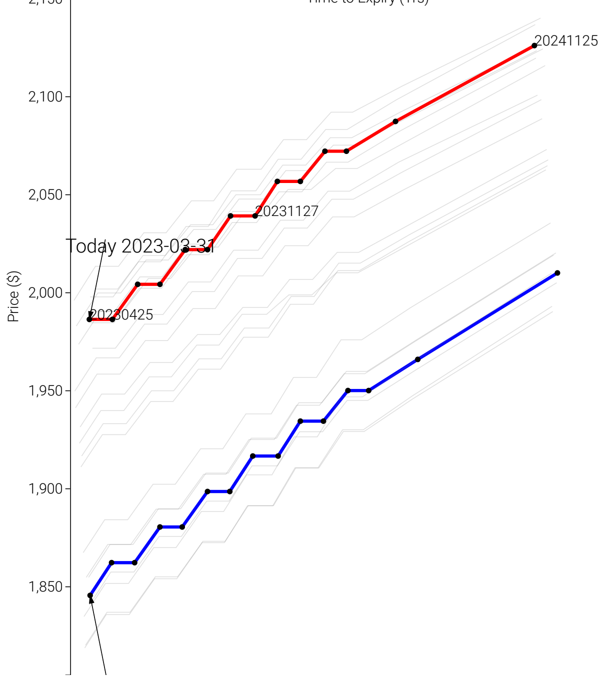

Front Month Dynamics:
Ethereum Futures Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

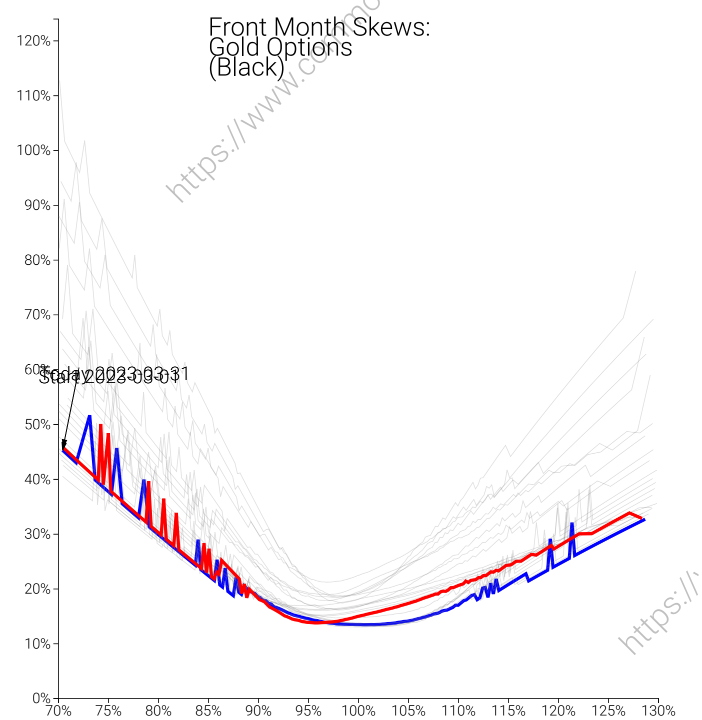

Front Month Skews:
Ethereum Futures Options
(Black)
Today 2023-03-31
Start 2023-03-01

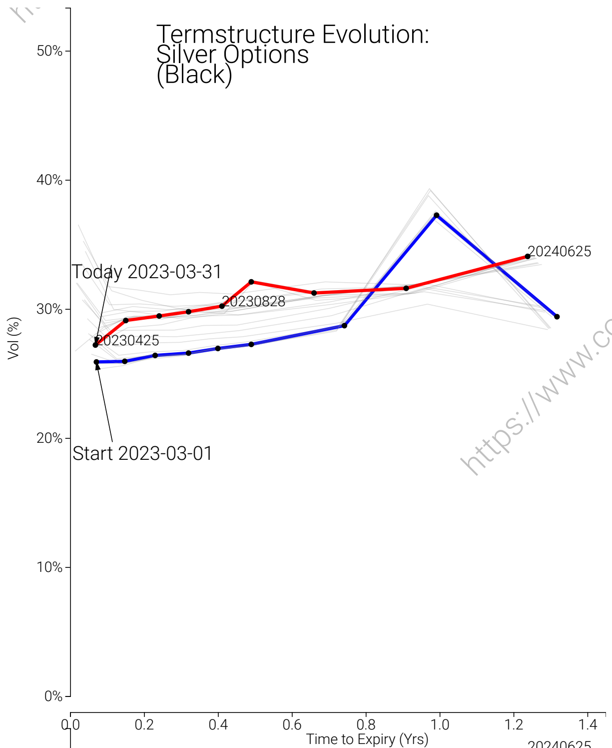
Metals


Termstructure Evolution:
Gold Options
(Black)
Vol (%)
Today 2023-03-31
20230425
20231127
20241125
Start 2023-03-01
0.0
0.5
1.0
1.5
Time to Expiry (Yrs)

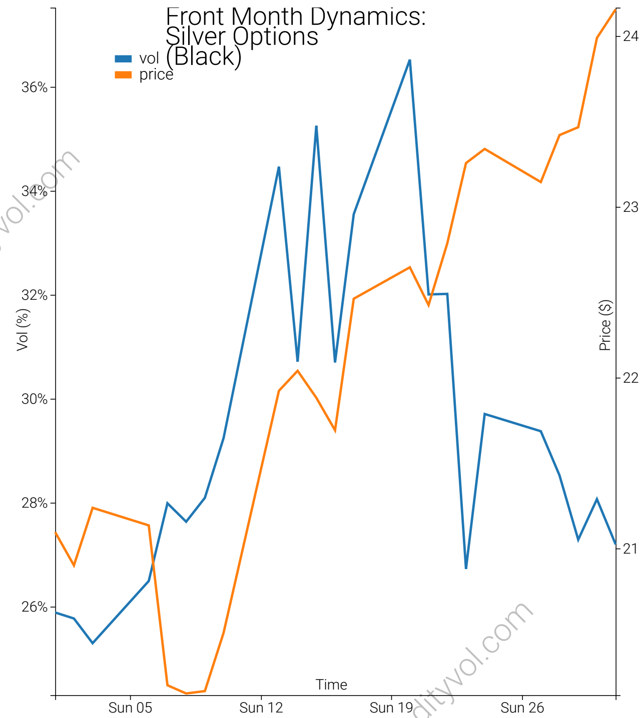

Front Month Dynamics:
Gold Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26


Price ($)
20241125
20231127
Today 2023-03-31
20230425

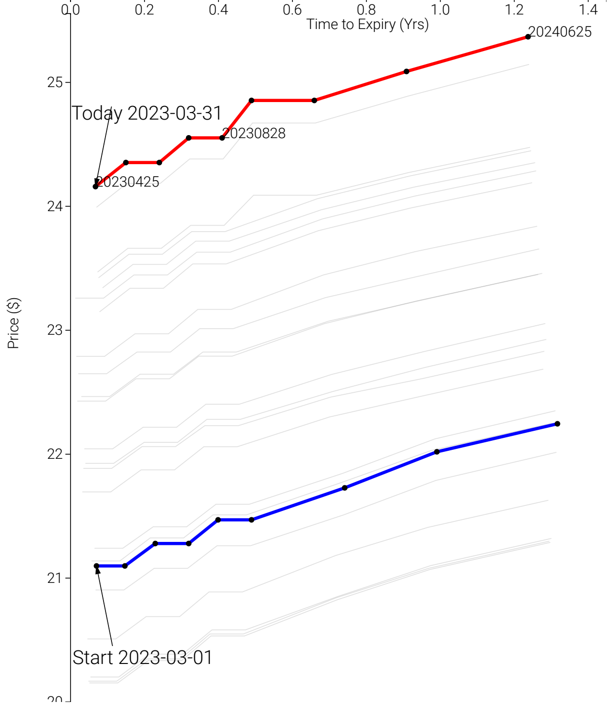

Front Month Skews:
Gold Options
(Black)
Today 2023-03-31
Start 2023-03-01



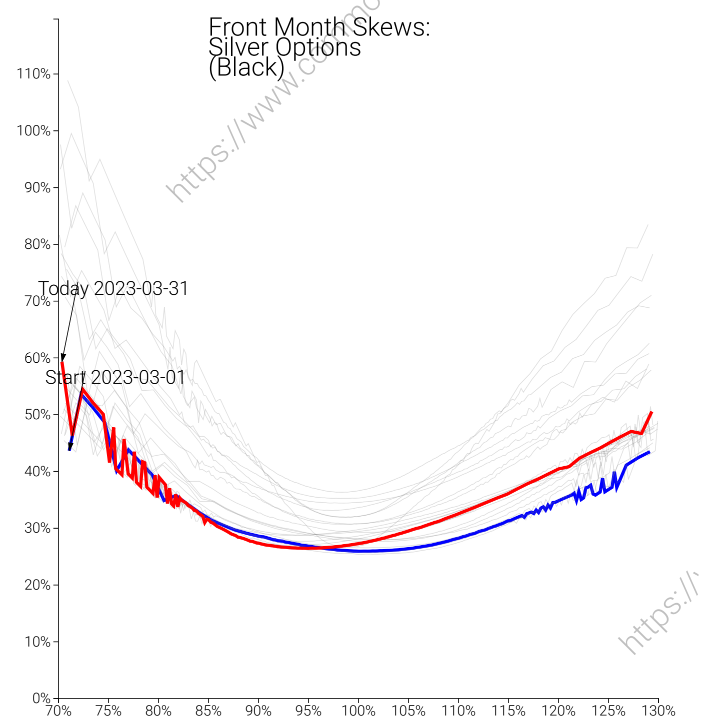
Termstructure Evolution:
Silver Options
(Black)
Vol (%)
Time to Expiry (Yrs)
Today 2023-03-31
Start 2023-03-01
20230425
20230828
20240625



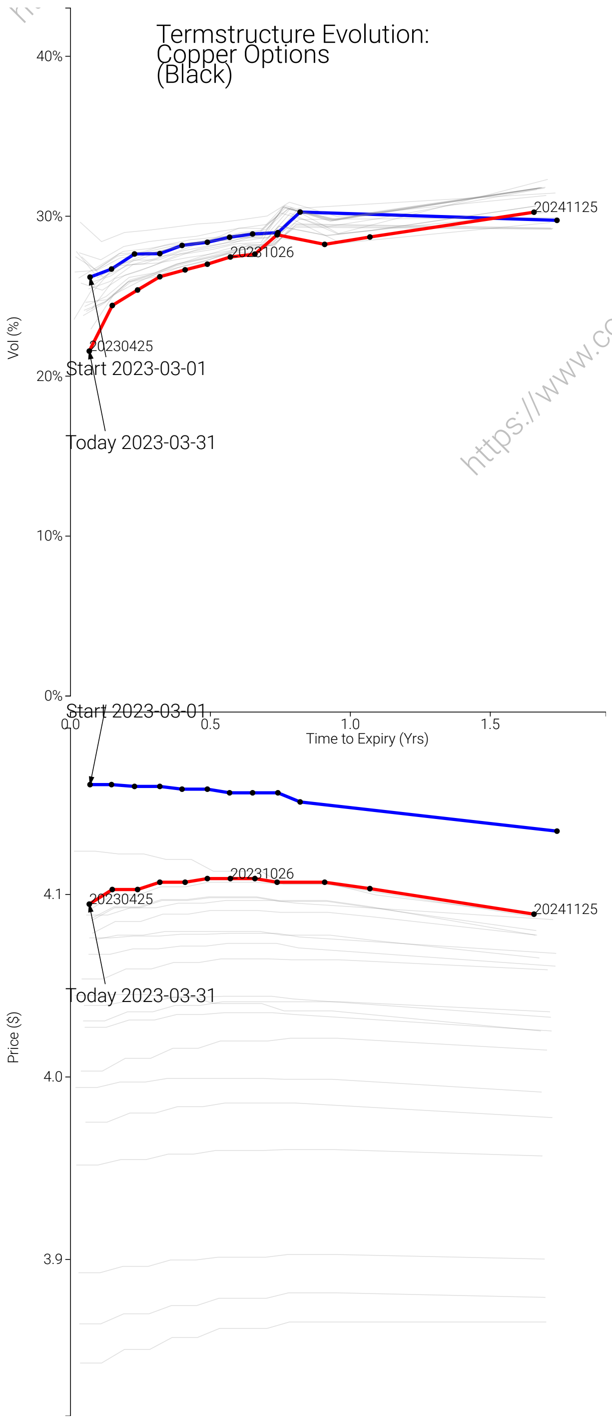
Front Month Dynamics:
Silver Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

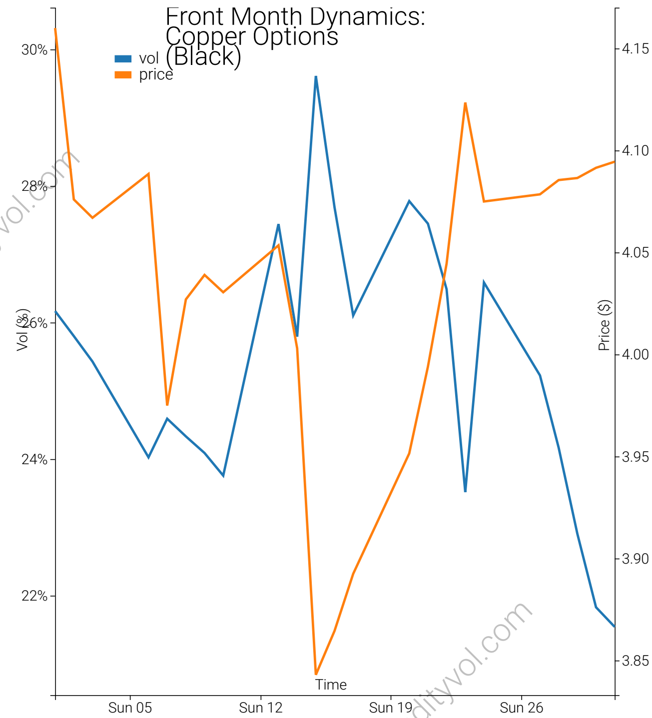


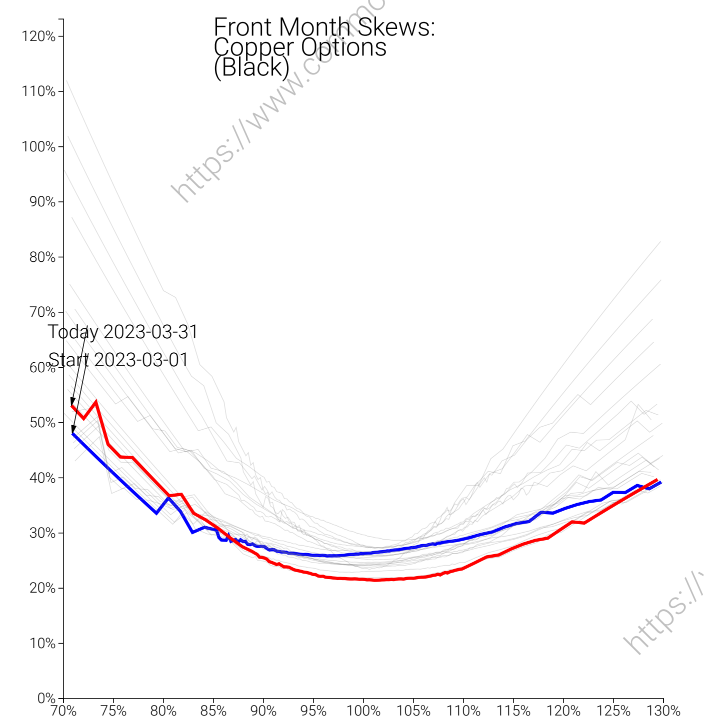
Price ($)
Today 2023-03-31
Start 2023-03-01
20230425
20230828
20240625

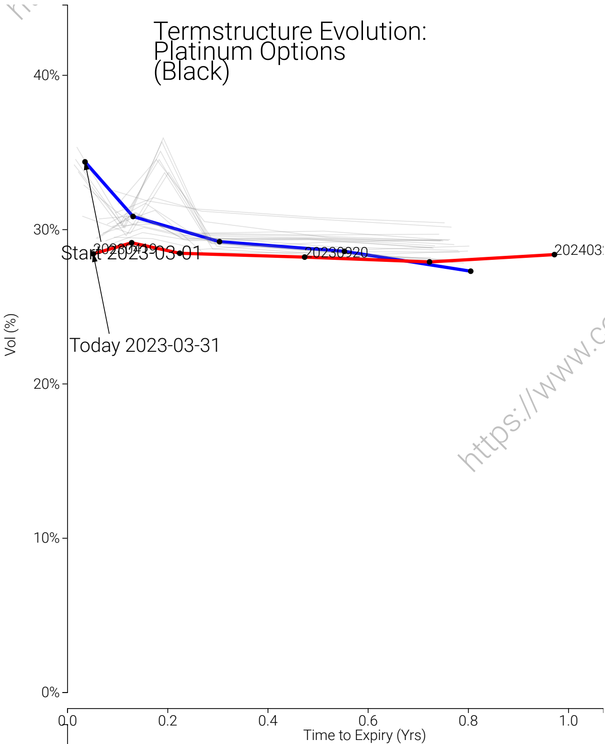


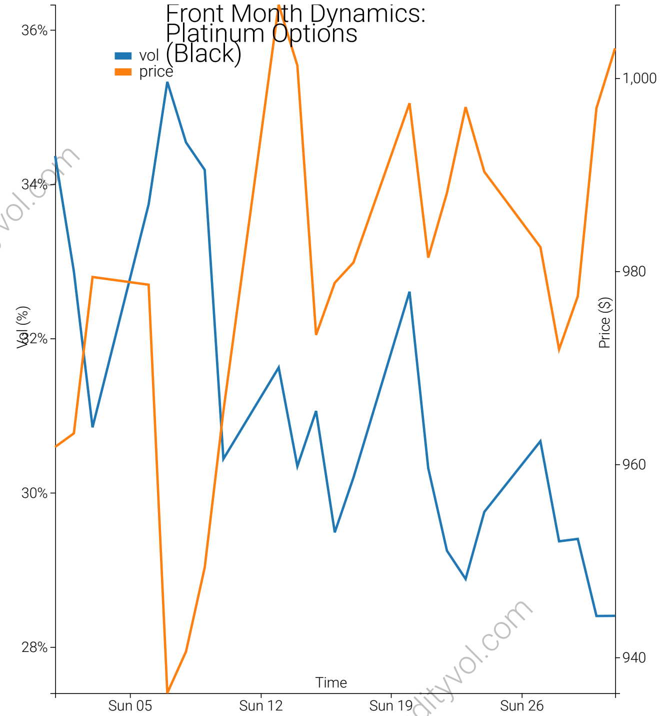
Front Month Skews:
Silver Options
(Black)
Today 2023-03-31
Start 2023-03-01

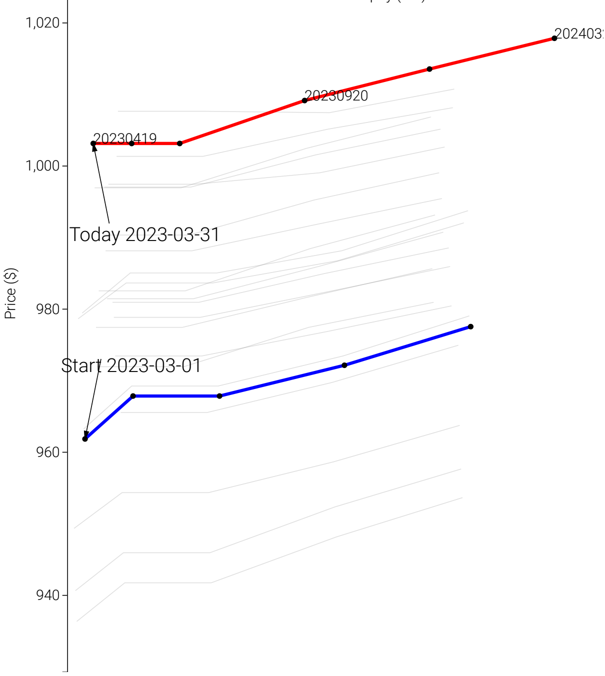

Termstructure Evolution:
Copper Options
(Black)
40%
30%
20%
10%
0%
Vol (%)
20241125
20231026
20230425
Start 2023-03-01
Today 2023-03-31
0.0
0.5
1.0
1.5
Time to Expiry (Yrs)
Start 2023-03-01
20231026
20230425
20241125
Today 2023-03-31
4.1
4.0
3.9
Price ($)

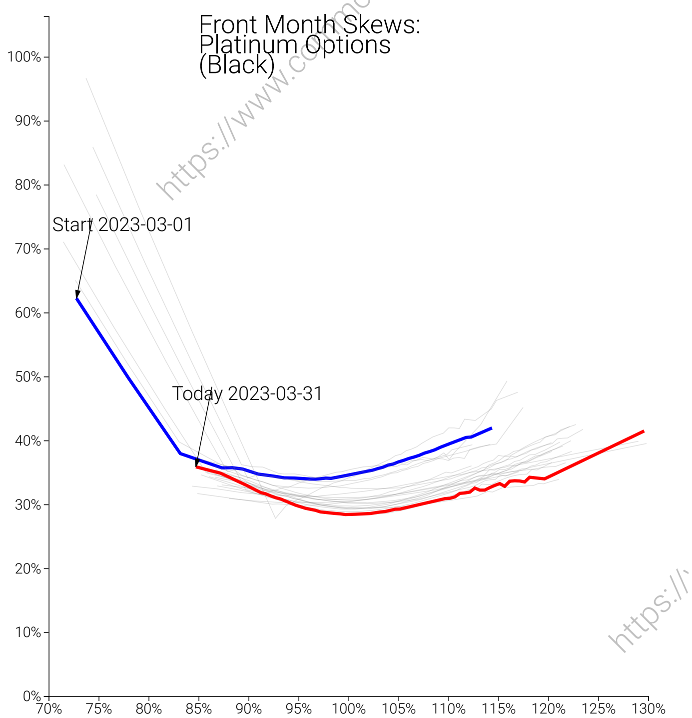

Front Month Dynamics:
Copper Options
(Black)
vol
price
30%
28%
26%
24%
22%
Vol (%)
4.15
4.10
4.05
4.00
3.95
3.90
3.85
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

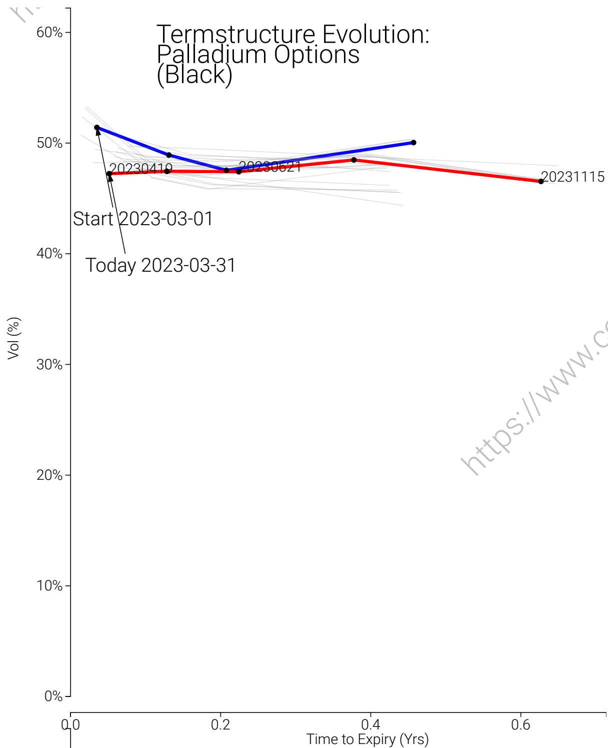

Front Month Skews:
Copper Options
(Black)
120%
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Today 2023-03-31
Start 2023-03-01
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

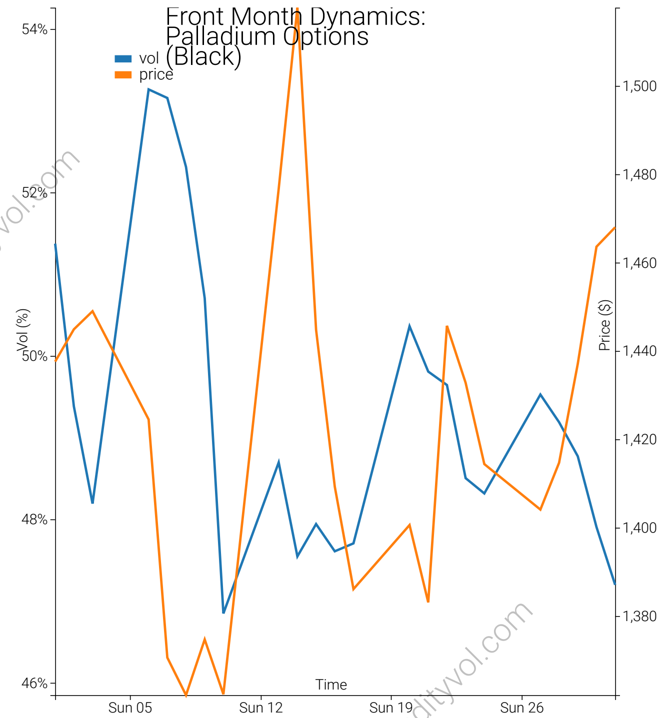

Termstructure Evolution:
Platinum Options
(Black)
Vol (%)
Time to Expiry (Yrs)
Start 2023-03-01
Today 2023-03-31
20230419
20230920
202403
0%
10%
20%
30%
40%
0.0
0.2
0.4
0.6
0.8
1.0

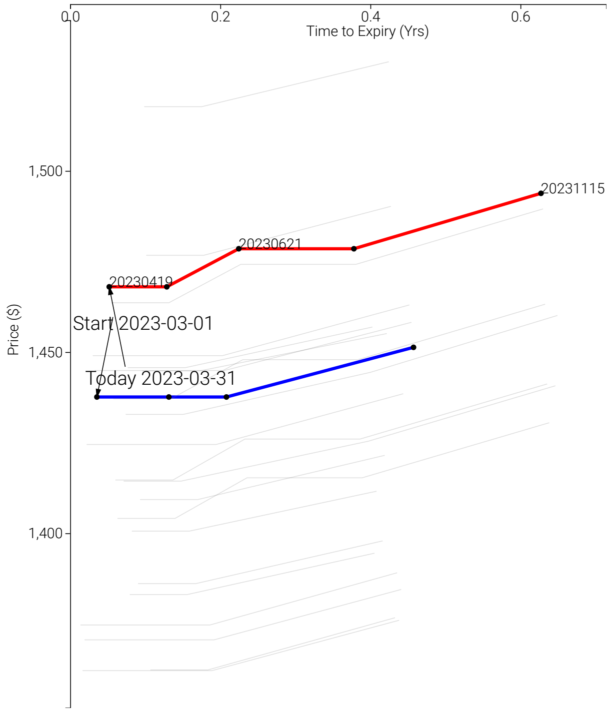

Front Month Dynamics:
Platinum Options
(Black)
vol
price
Vol (%)
Price ($)
Time
28%
30%
32%
34%
36%
940
960
980
1,000
Sun 05
Sun 12
Sun 19
Sun 26

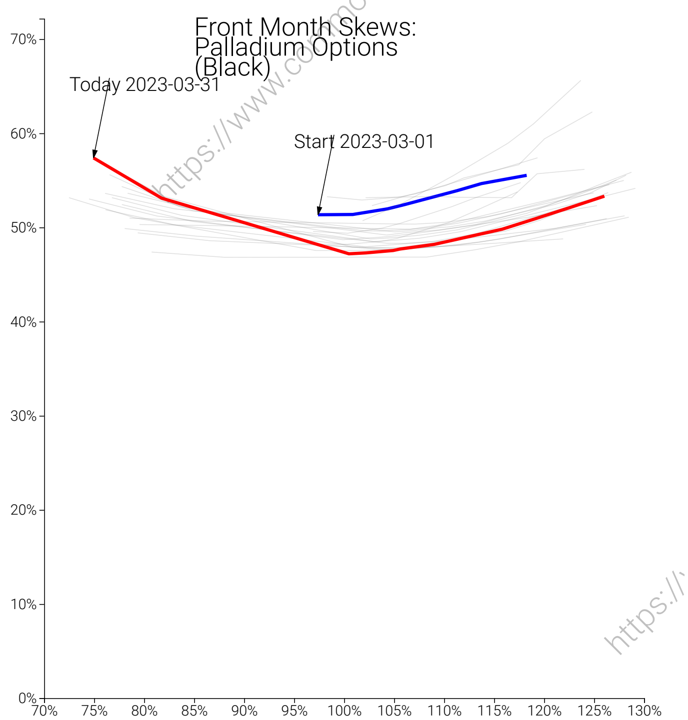

Price ($)
Start 2023-03-01
Today 2023-03-31
20230419
20230920
202403
940
960
980
1,000
1,020


Front Month Skews:
Platinum Options
(Black)
Start 2023-03-01
Today 2023-03-31
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

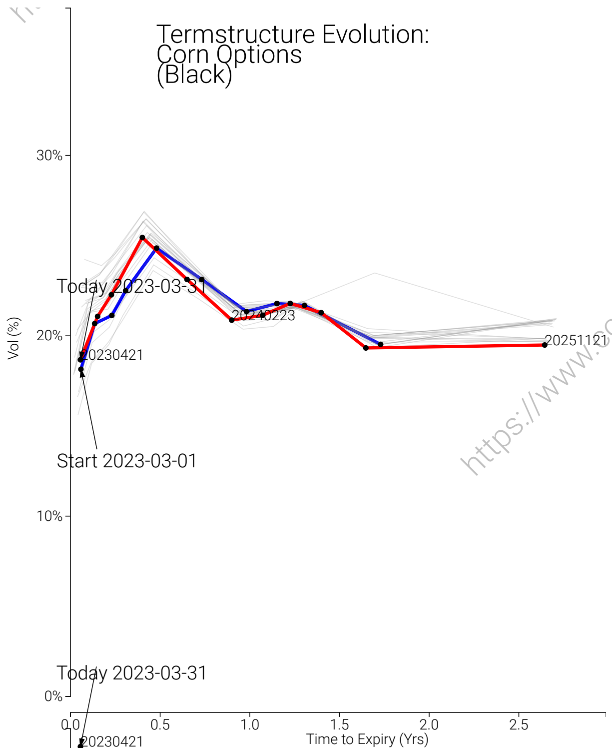

Termstructure Evolution:
Palladium Options
(Black)
Vol (%)
60%
50%
40%
30%
20%
10%
0%
20230419
20230621
20231115
Start 2023-03-01
Today 2023-03-31
0.0
0.2
0.4
0.6
Time to Expiry (Yrs)


Front Month Dynamics:
Palladium Options
(Black)
vol
price
Vol (%)
54%
52%
50%
48%
46%
Price ($)
1,500
1,480
1,460
1,440
1,420
1,400
1,380
Time
Sun 05
Sun 12
Sun 19
Sun 26

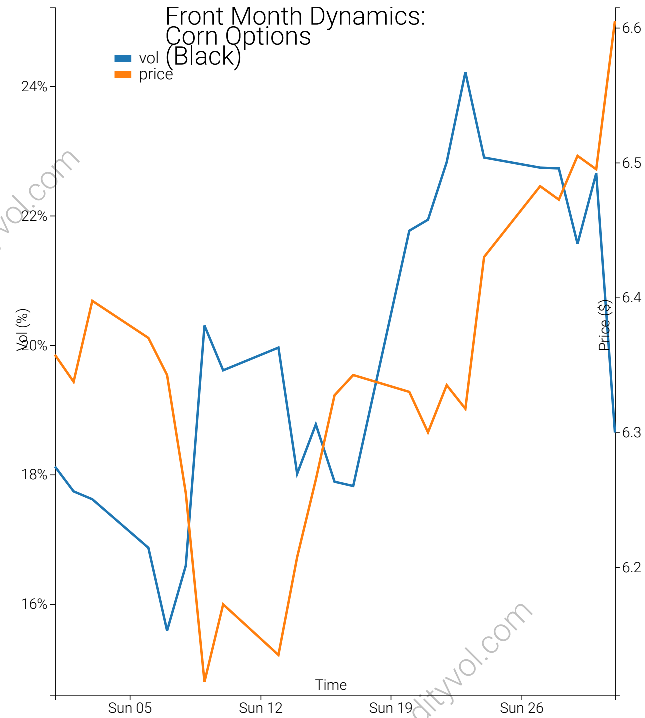

Price ($)
1,500
1,450
1,400
20231115
20230621
20230419
Start 2023-03-01
Today 2023-03-31


Front Month Skews:
Palladium Options
(Black)
Today 2023-03-31
Start 2023-03-01
70%
60%
50%
40%
30%
20%
10%
0%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

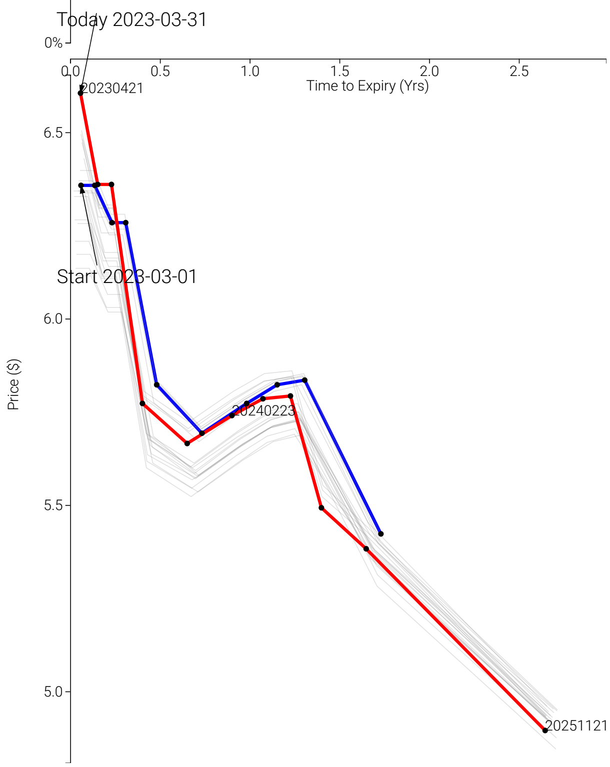
Ags: Grains, Oilseeds, and so forth



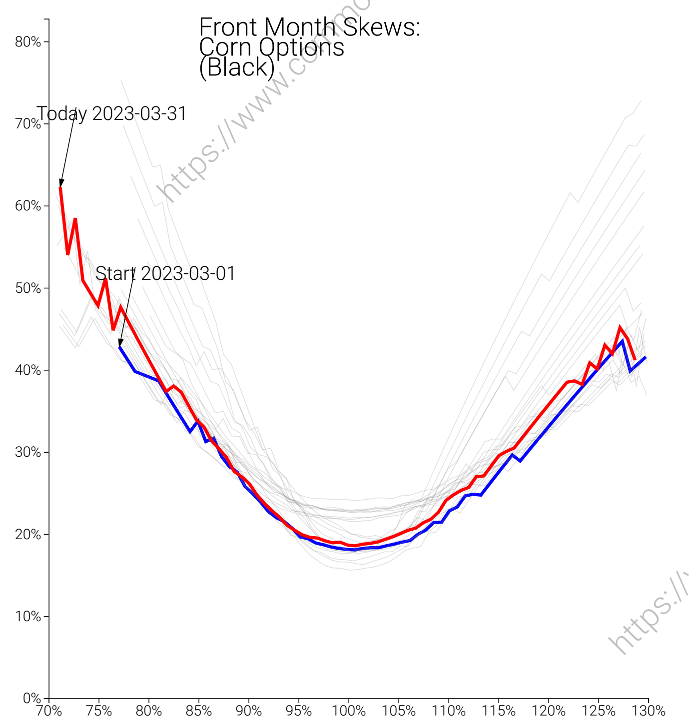
Termstructure Evolution:
Corn Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230421
20240223
20251121
Vol (%)
Time to Expiry (Yrs)



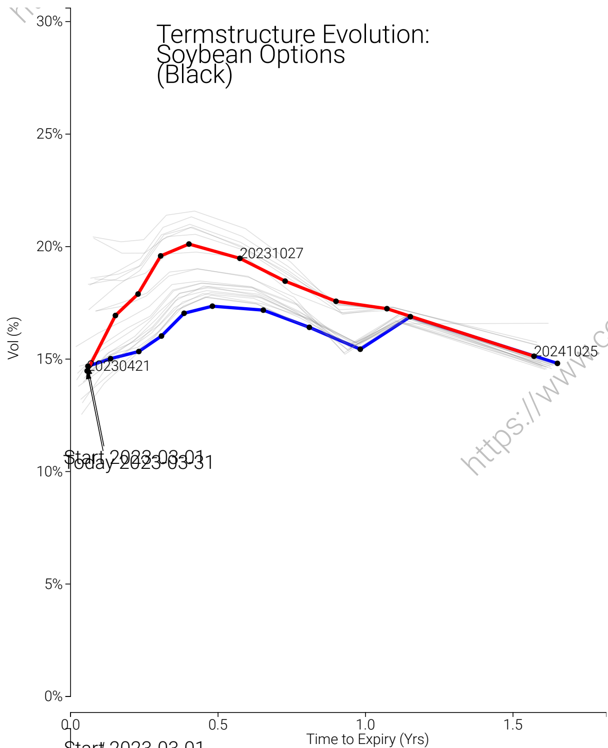
Front Month Dynamics:
Corn Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

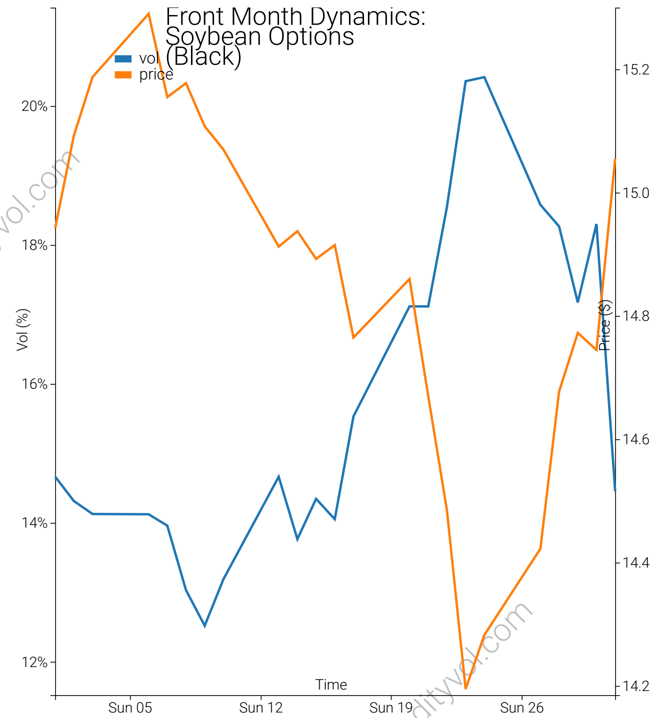


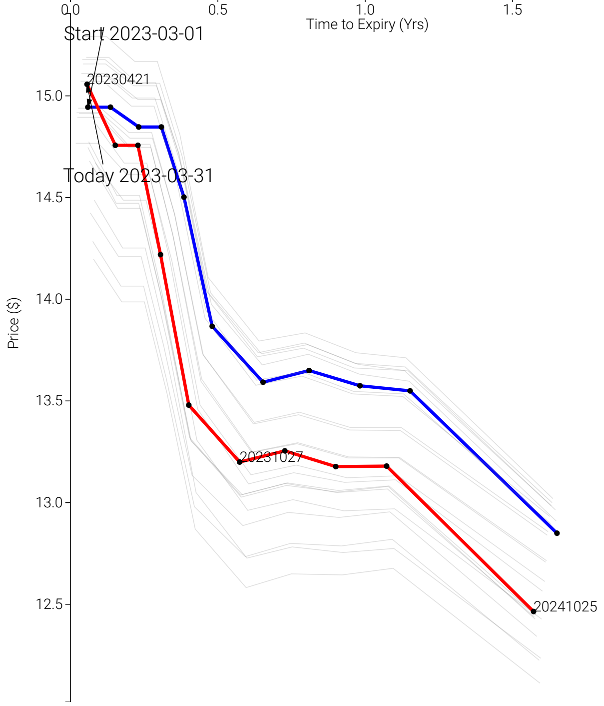
Today 2023-03-31
Start 2023-03-01
20230421
20240223
20251121
Price ($)

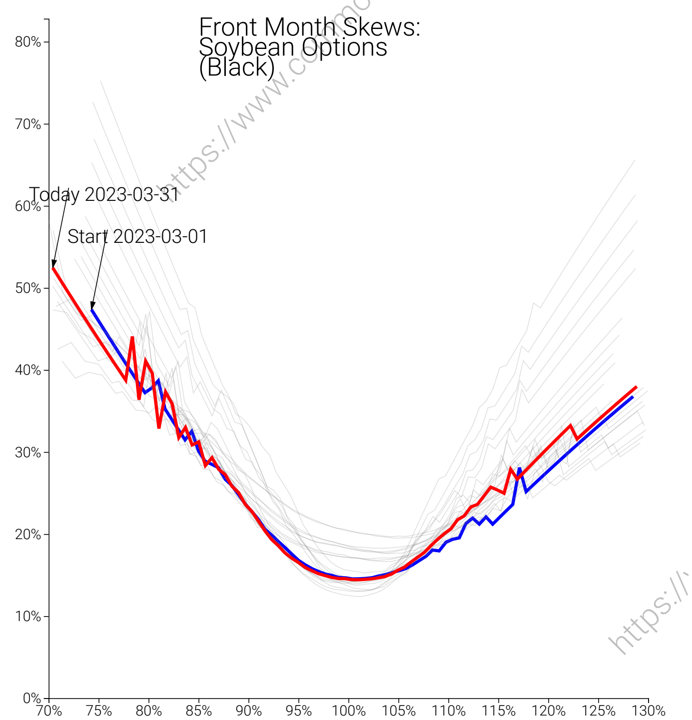


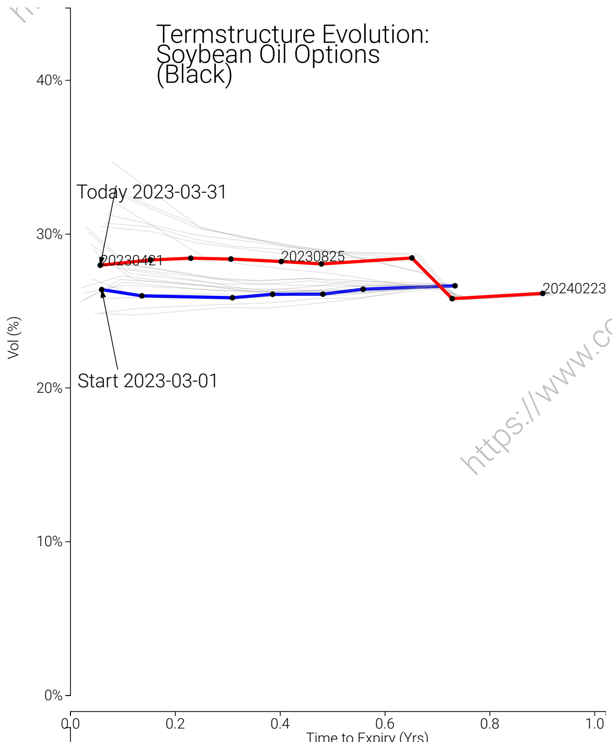
Front Month Skews:
Corn Options
(Black)
Today 2023-03-31
Start 2023-03-01


Termstructure Evolution:
Soybean Options
(Black)
Vol (%)
Time to Expiry (Yrs)
20231027
20241025
20230421
Start 2023-03-01
Today 2023-03-31

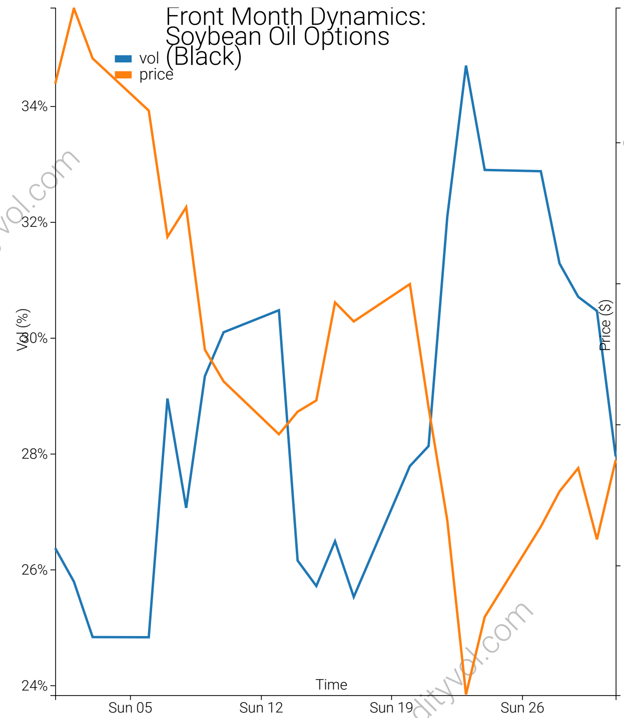

Front Month Dynamics:
Soybean Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26


Start 2023-03-01
20230421
Today 2023-03-31
Price ($)
20231027
20241025

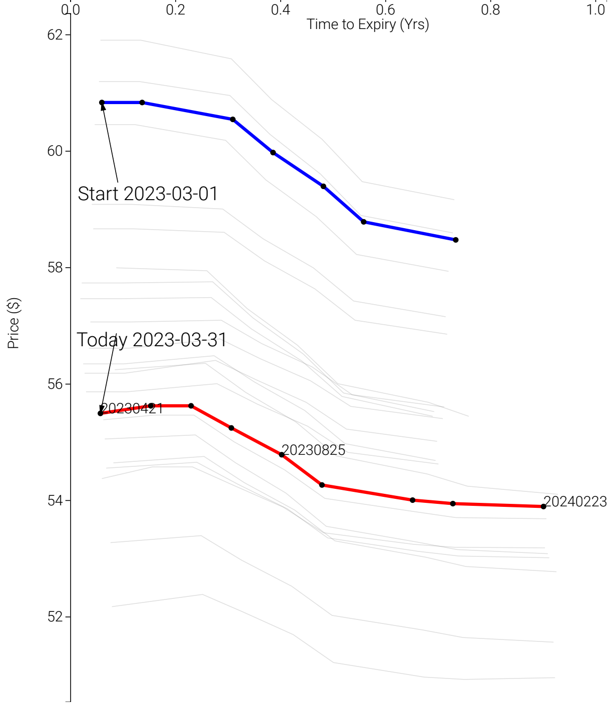

Front Month Skews:
Soybean Options
(Black)
Today 2023-03-31
Start 2023-03-01



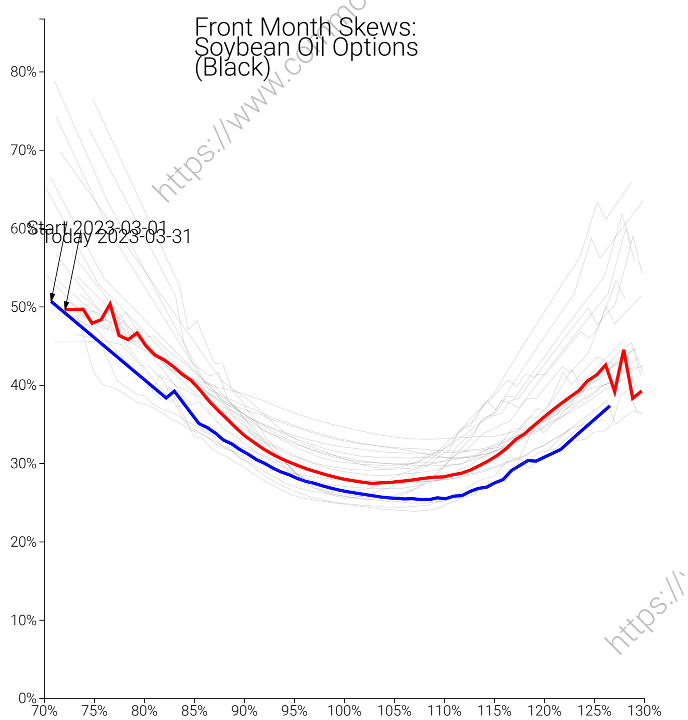
Termstructure Evolution:
Soybean Oil Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230421
20230825
20240223
Vol (%)
Time to Expiry (Yrs)



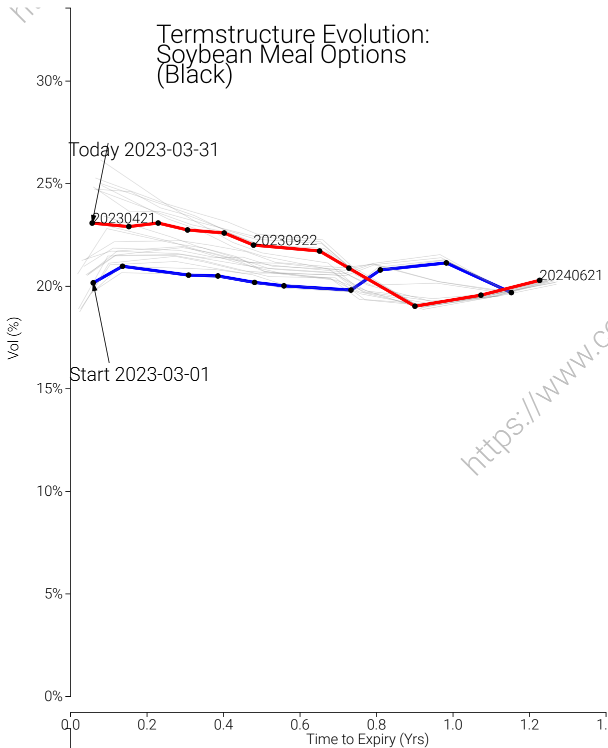
Front Month Dynamics:
Soybean Oil Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

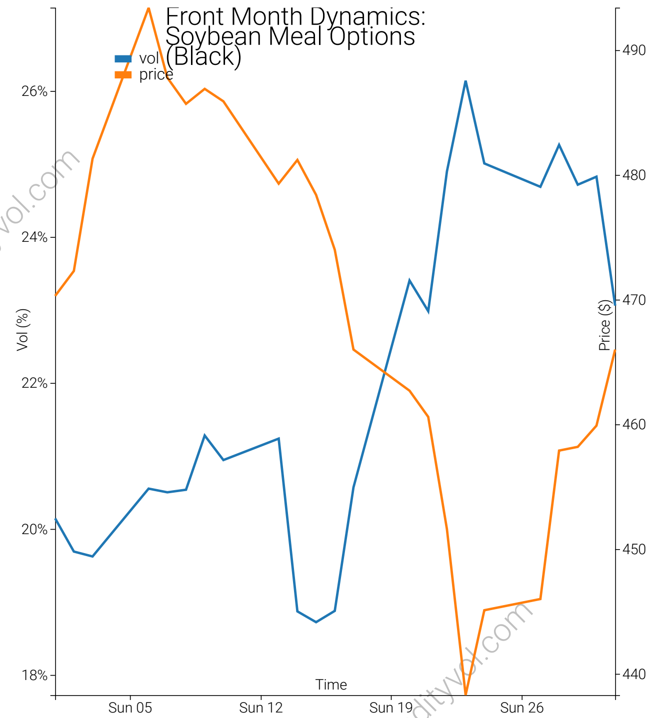


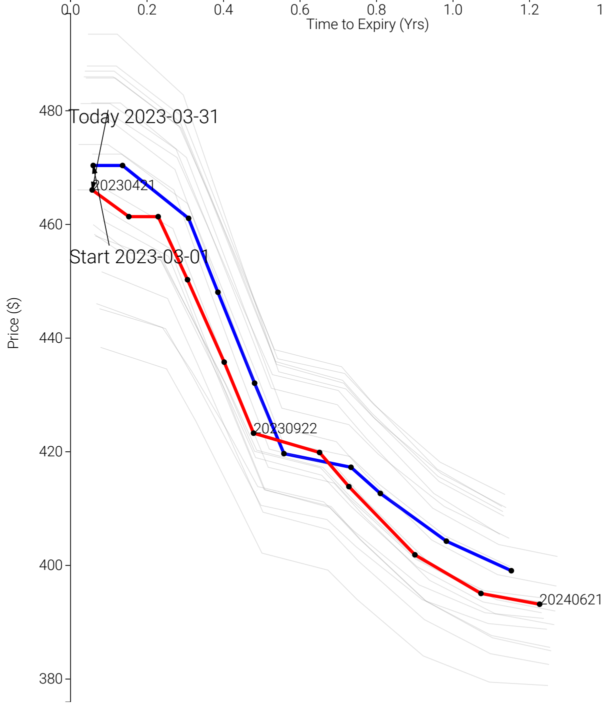
Start 2023-03-01
Today 2023-03-31
20230421
20230825
20240223
Price ($)

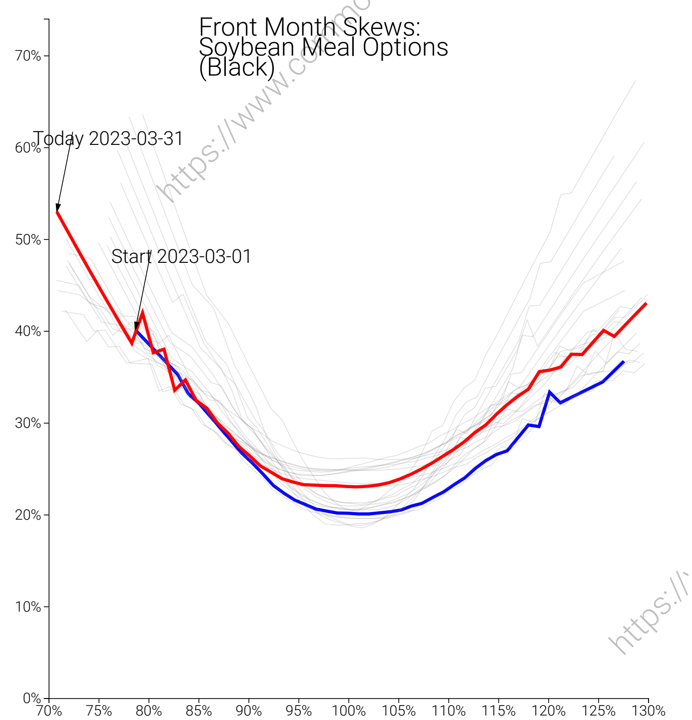


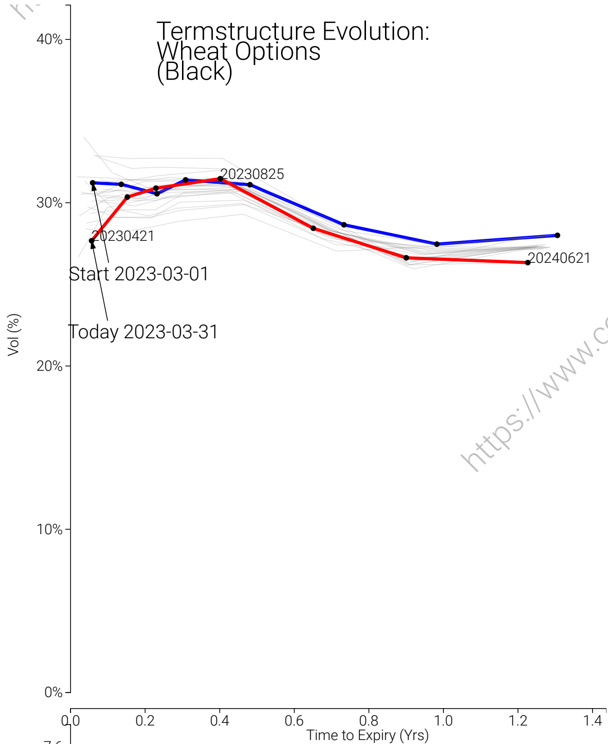
Front Month Skews:
Soybean Oil Options
(Black)
Start 2023-03-01
Today 2023-03-31

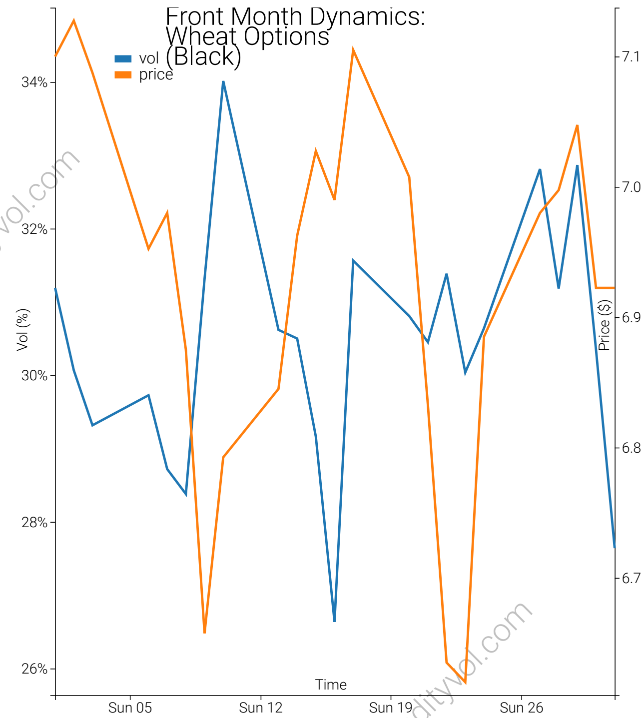

Termstructure Evolution:
Soybean Meal Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230421
20230922
20240621
Vol (%)
Time to Expiry (Yrs)

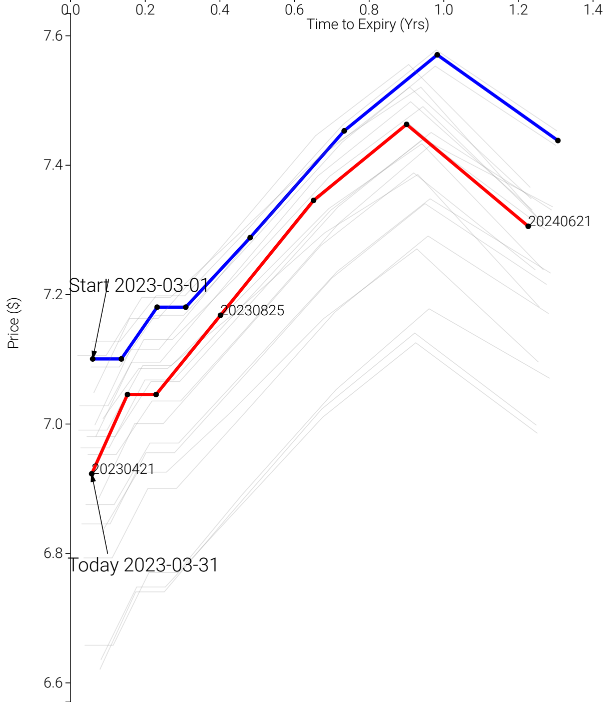

Front Month Dynamics:
Soybean Meal Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

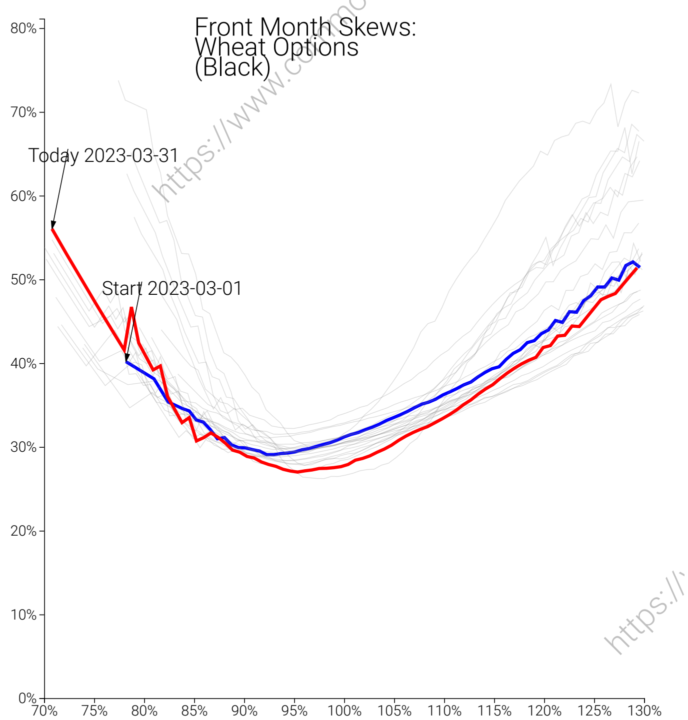

Today 2023-03-31
Start 2023-03-01
20230421
20230922
20240621
Price ($)

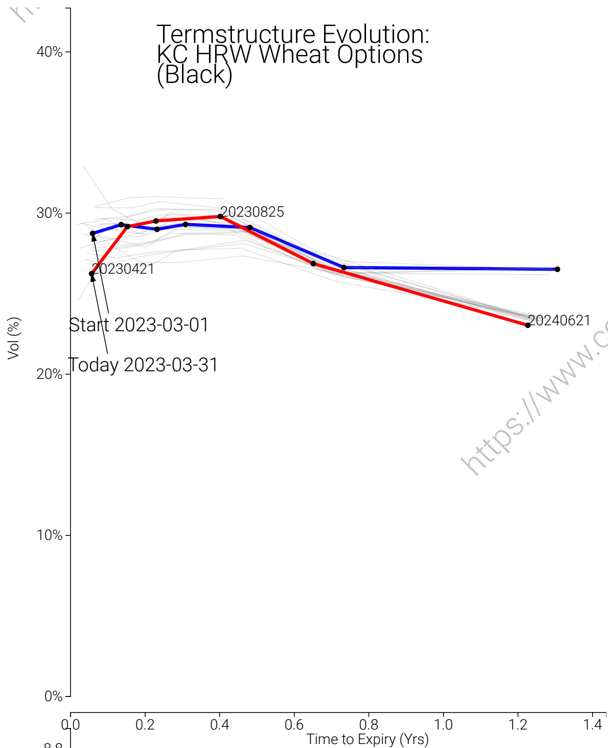

Front Month Skews:
Soybean Meal Options
(Black)
Today 2023-03-31
Start 2023-03-01

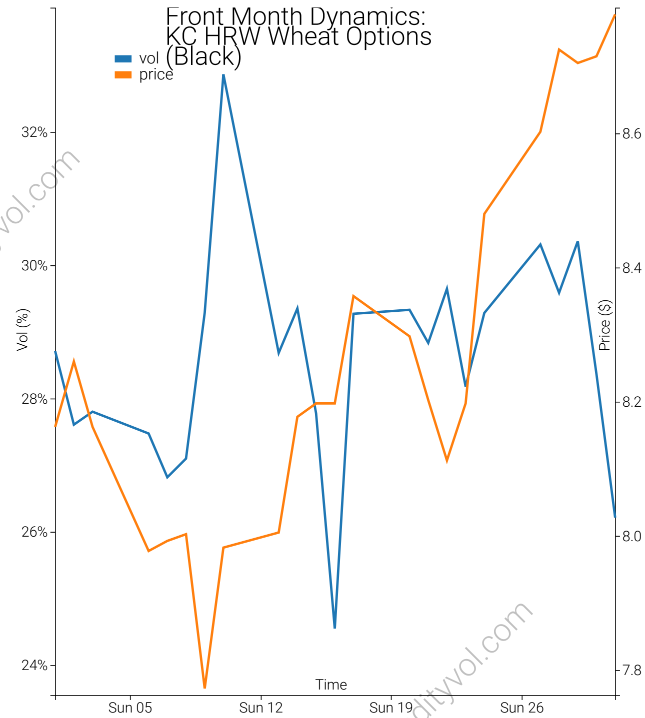

Termstructure Evolution:
Wheat Options
(Black)
40%
30%
20%
10%
0%
Vol (%)
20230825
20230421
20240621
Start 2023-03-01
Today 2023-03-31
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Time to Expiry (Yrs)

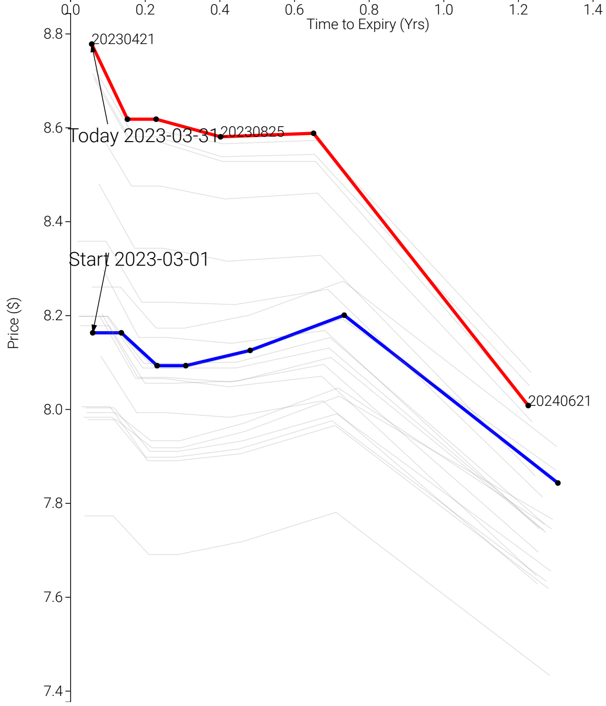

Front Month Dynamics:
Wheat Options
(Black)
vol
price
34%
32%
30%
28%
26%
Vol (%)
7.1
7.0
6.9
6.8
6.7
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

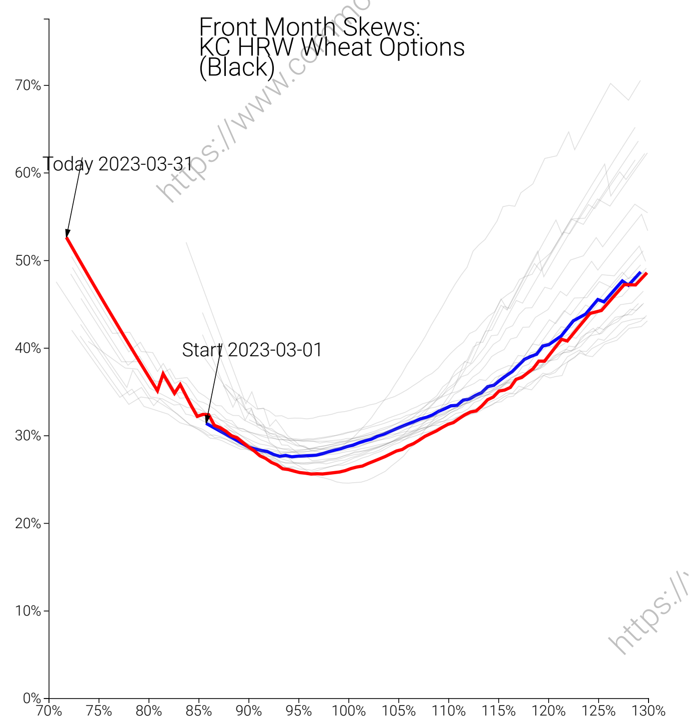

7.6
7.4
7.2
7.0
6.8
6.6
Price ($)
20240621
Start 2023-03-01
20230825
20230421
Today 2023-03-31

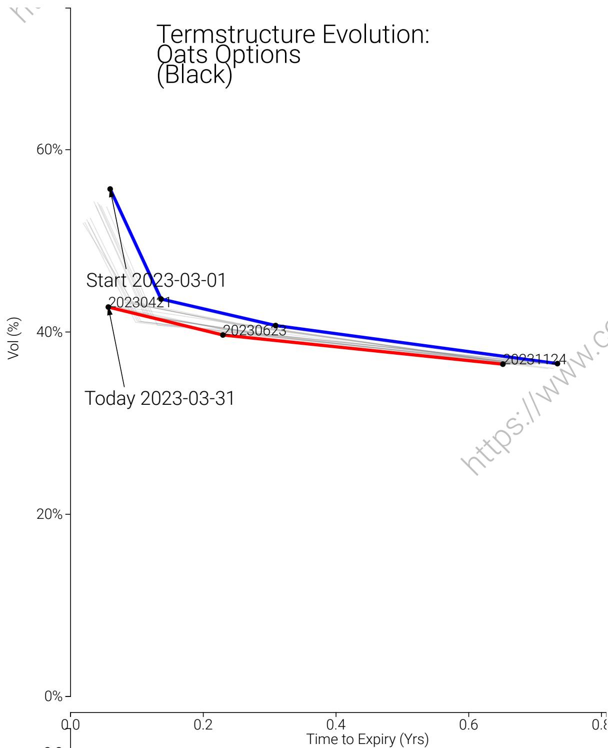

Front Month Skews:
Wheat Options
(Black)
80%
70%
60%
50%
40%
30%
20%
10%
0%
Today 2023-03-31
Start 2023-03-01
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

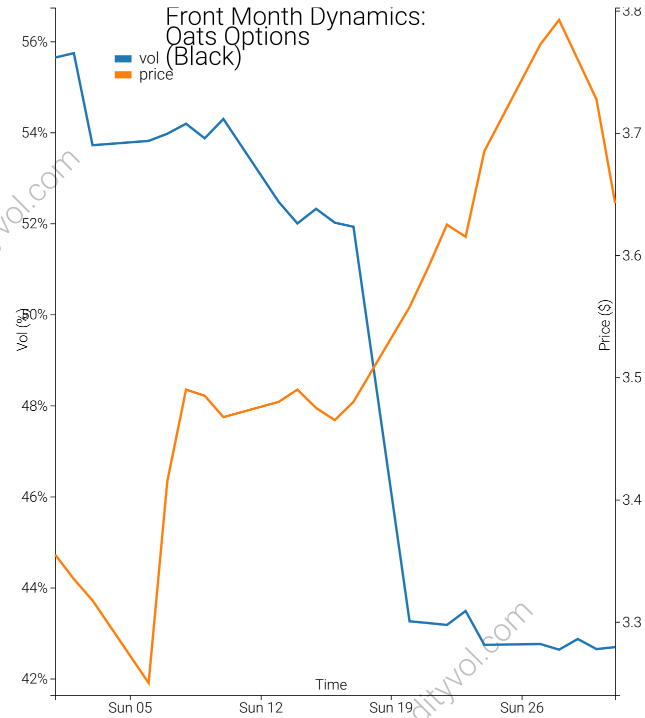

Termstructure Evolution:
KC HRW Wheat Options
(Black)
Vol (%)
Time to Expiry (Yrs)
20230421
20230825
20240621
Start 2023-03-01
Today 2023-03-31

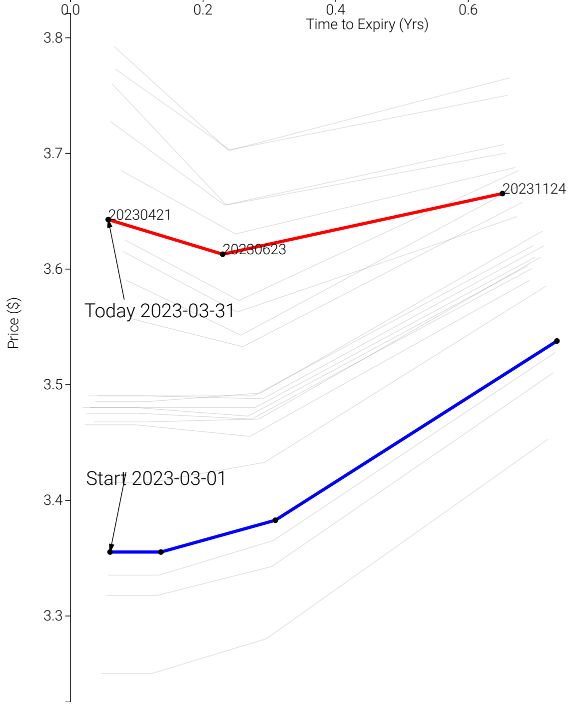

Front Month Dynamics:
KC HRW Wheat Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

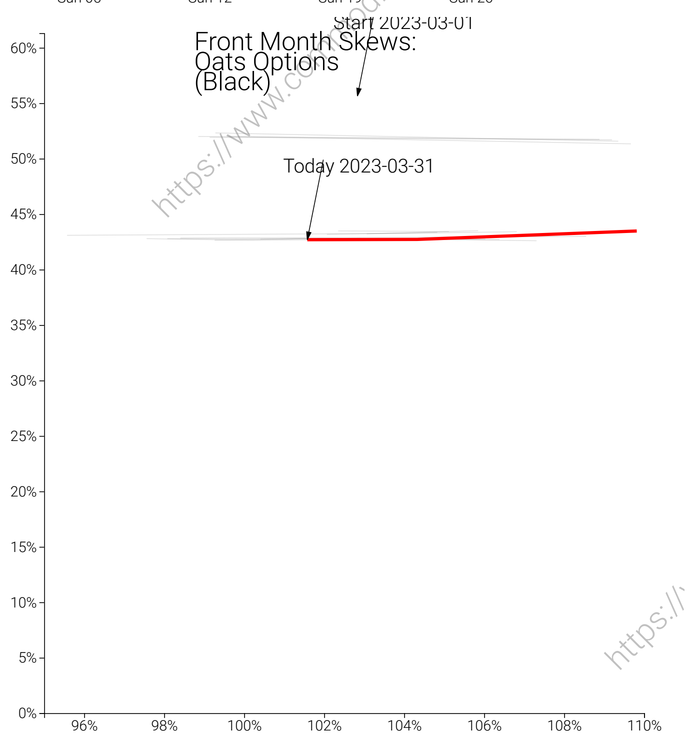

Price ($)
20230421
Today 2023-03-31
20230825
Start 2023-03-01
20240621

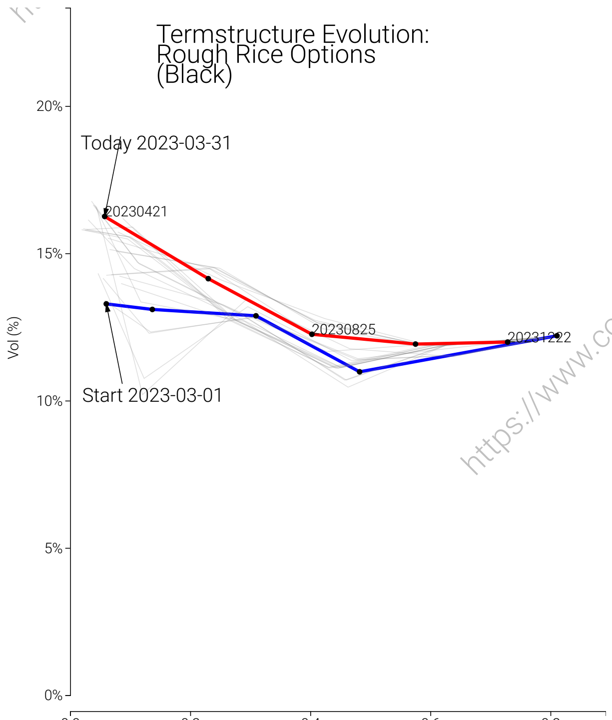

Front Month Skews:
KC HRW Wheat Options
(Black)
Today 2023-03-31
Start 2023-03-01

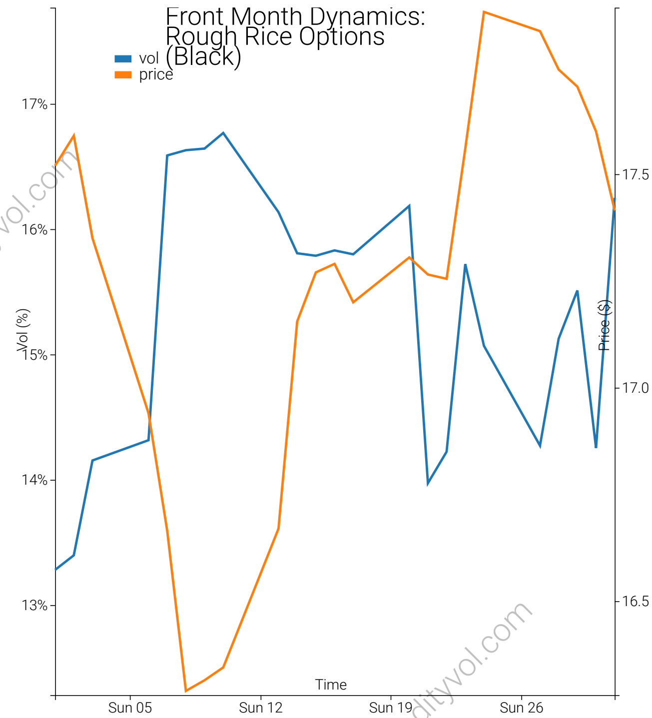

Termstructure Evolution:
Oats Options
(Black)
Start 2023-03-01
20230421
20230623
20231124
Today 2023-03-31
Vol (%)
0%
20%
40%
60%
0.0
0.2
0.4
0.6
Time to Expiry (Yrs)

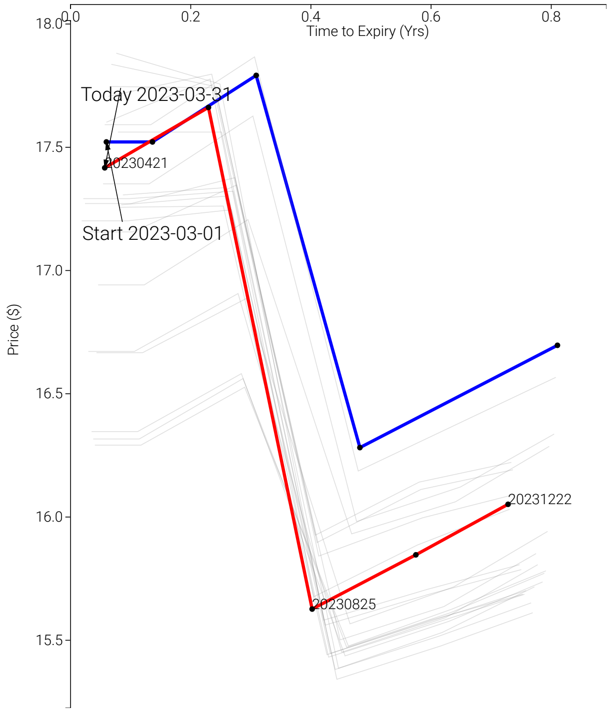

Front Month Dynamics:
Oats Options
(Black)
vol
price
Vol (%)
Price ($)
42%
44%
46%
48%
50%
52%
54%
56%
3.3
3.4
3.5
3.6
3.7
3.8
Sun 05
Sun 12
Sun 19
Sun 26
Time

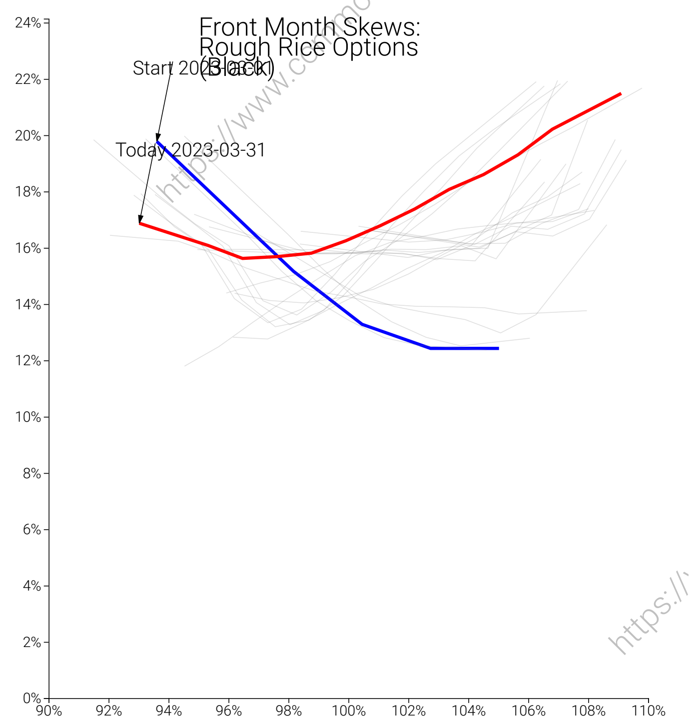

20230421
20230623
20231124
Today 2023-03-31
Start 2023-03-01
Price ($)
3.3
3.4
3.5
3.6
3.7
3.8

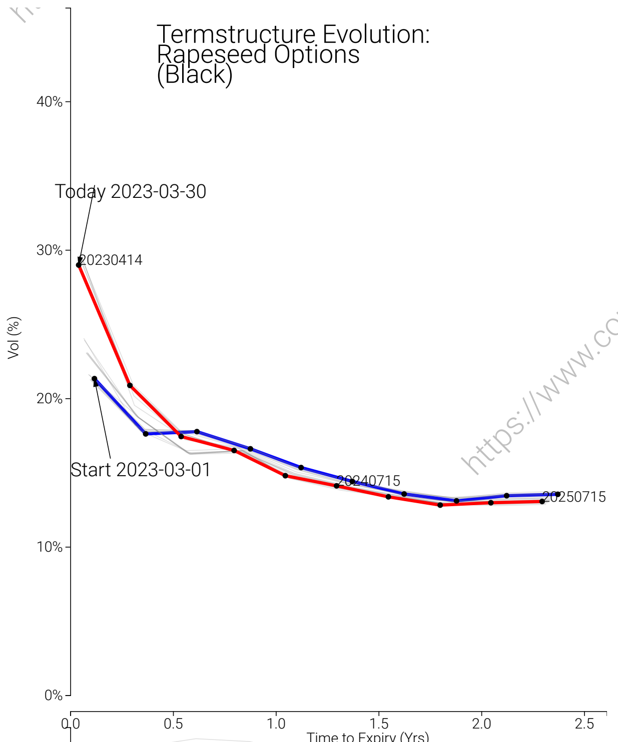

Front Month Skews:
Oats Options
(Black)
Start 2023-03-01
Today 2023-03-31
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
55%
60%
96%
98%
100%
102%
104%
106%
108%
110%

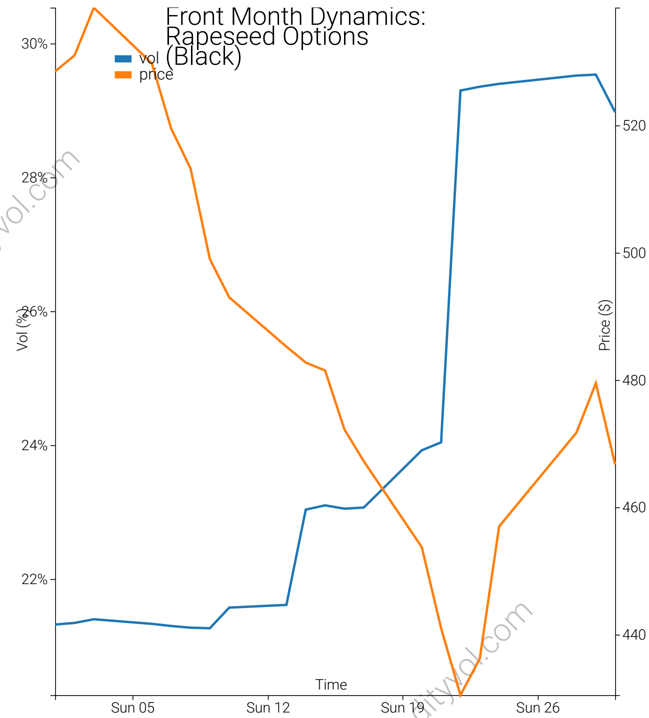

Termstructure Evolution:
Rough Rice Options
(Black)
Today 2023-03-31
20230421
20230825
20231222
Start 2023-03-01
Vol (%)
Time to Expiry (Yrs)
0%
5%
10%
15%
20%
0.0
0.2
0.4
0.6
0.8

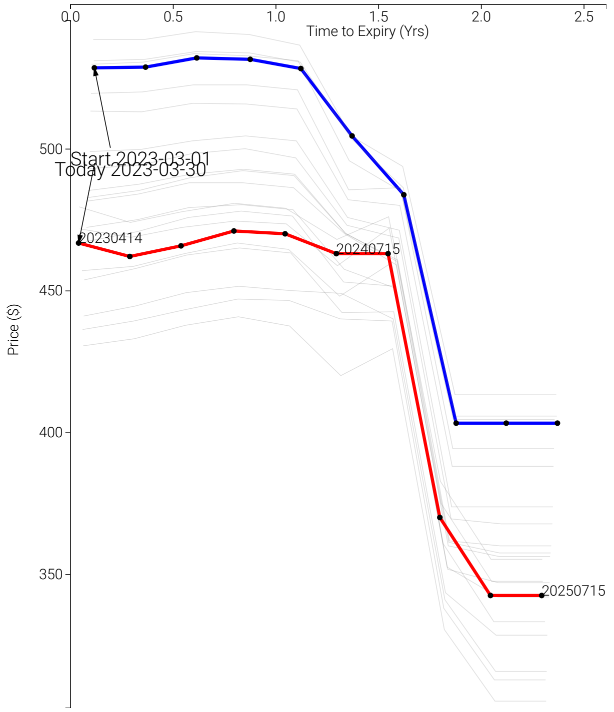

Front Month Dynamics:
Rough Rice Options
(Black)
vol
price
Vol (%)
Price ($)
Time
13%
14%
15%
16%
17%
16.5
17.0
17.5
Sun 05
Sun 12
Sun 19
Sun 26

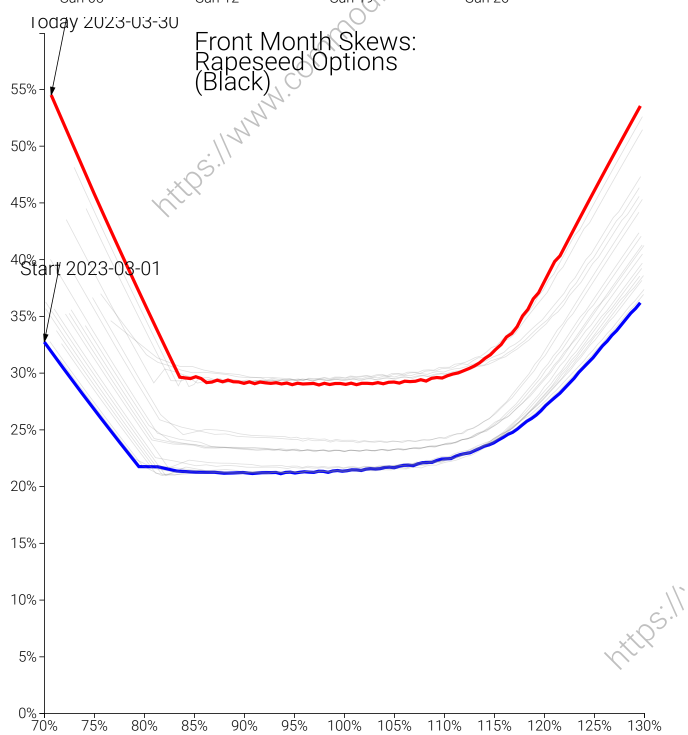

Today 2023-03-31
20230421
Start 2023-03-01
20230825
20231222
Price ($)
15.5
16.0
16.5
17.0
17.5
18.0


Front Month Skews:
Rough Rice Options
(Black)
Start 2023-03-01
Today 2023-03-31
0%
2%
4%
6%
8%
10%
12%
14%
16%
18%
20%
22%
24%
90%
92%
94%
96%
98%
100%
102%
104%
106%
108%
110%

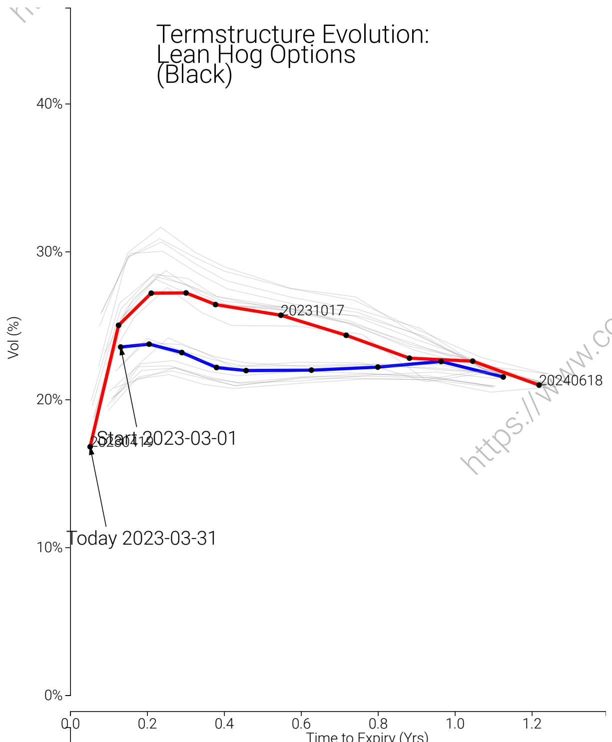

Termstructure Evolution:
Rapeseed Options
(Black)
Today 2023-03-30
20230414
Start 2023-03-01
20240715
20250715
Vol (%)
Time to Expiry (Yrs)

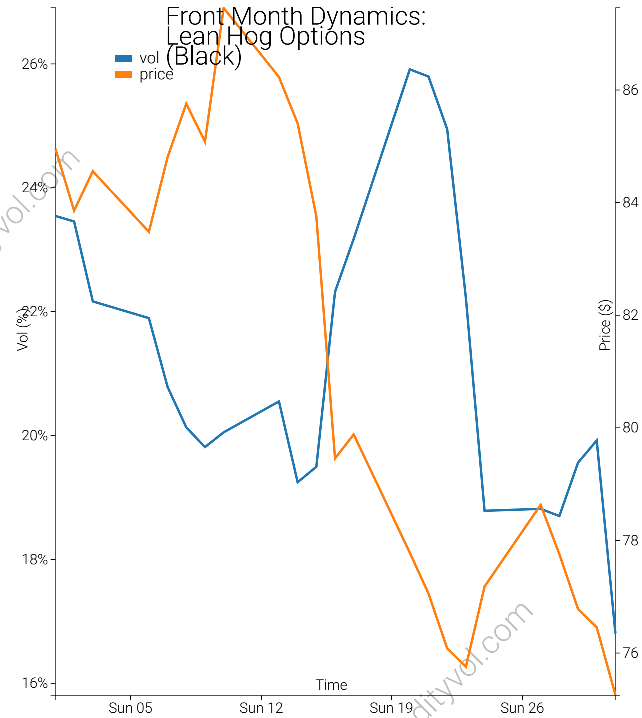

Front Month Dynamics:
Rapeseed Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

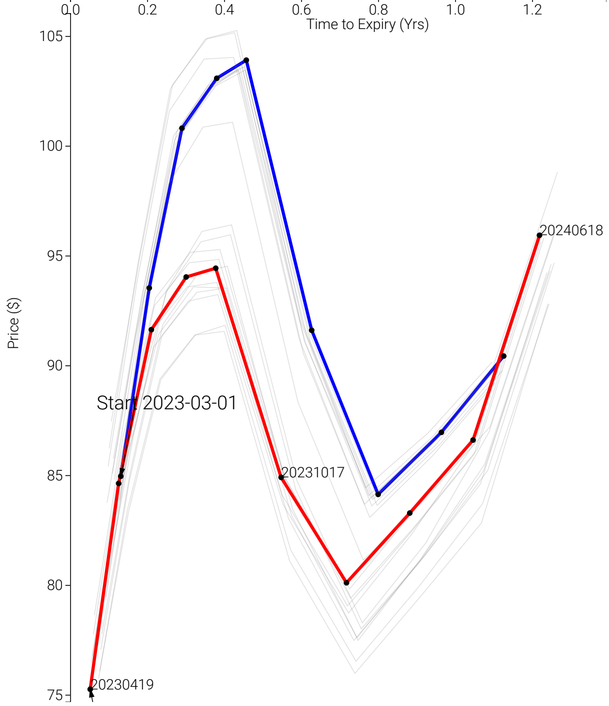

Start 2023-03-01
Today 2023-03-30
20230414
20240715
20250715
Price ($)

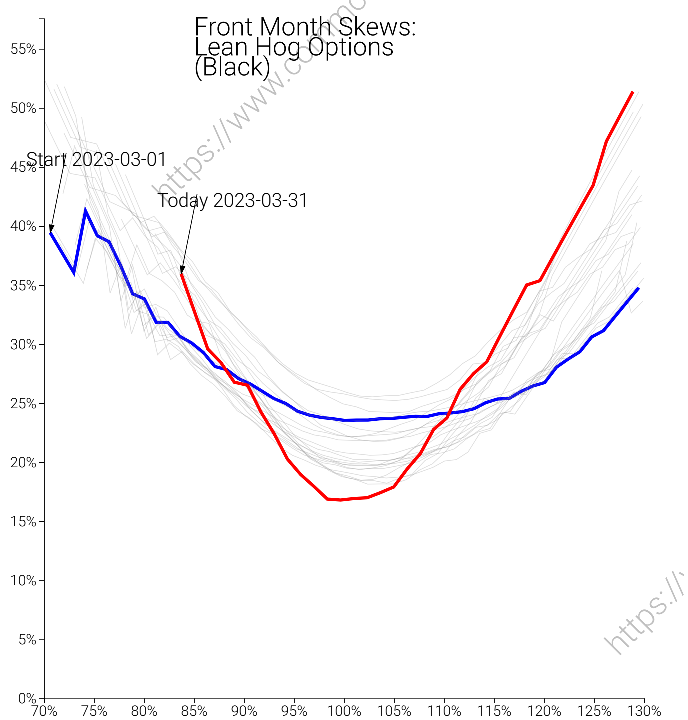

Today 2023-03-30
Front Month Skews:
Rapeseed Options
(Black)
Start 2023-03-01

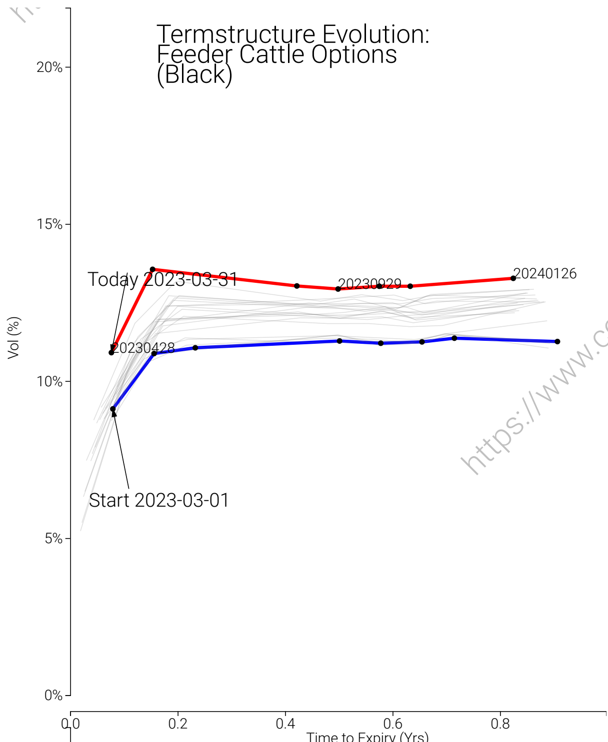
Ags: Proteins, Meats and so forth

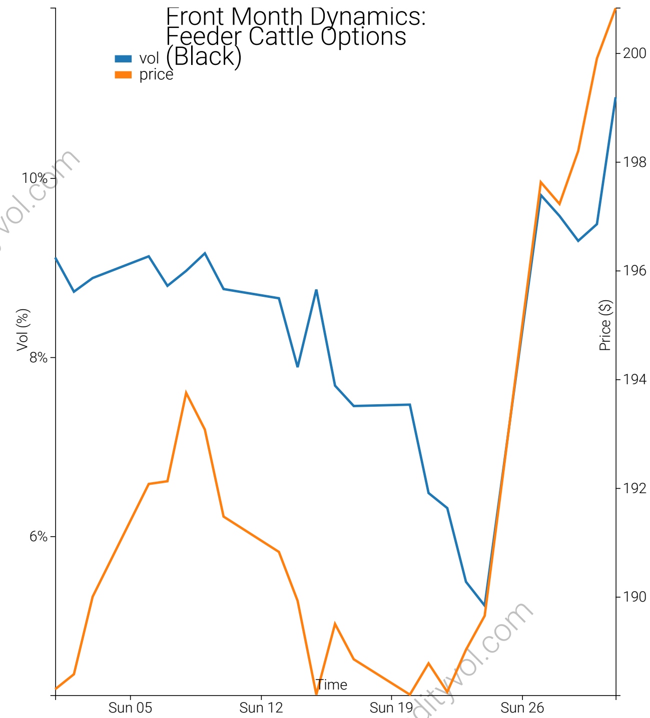

Termstructure Evolution:
Lean Hog Options
(Black)
Vol (%)
Time to Expiry (Yrs)
20231017
20240618
20230419
Start 2023-03-01
Today 2023-03-31

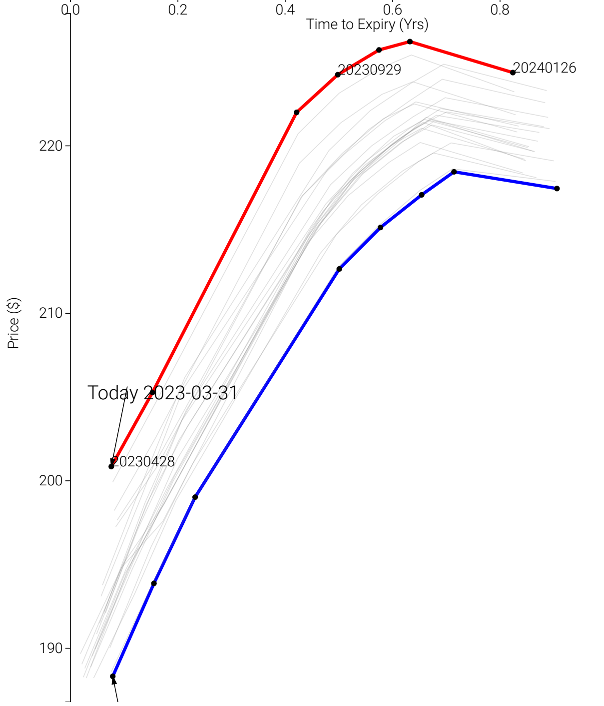

Front Month Dynamics:
Lean Hog Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

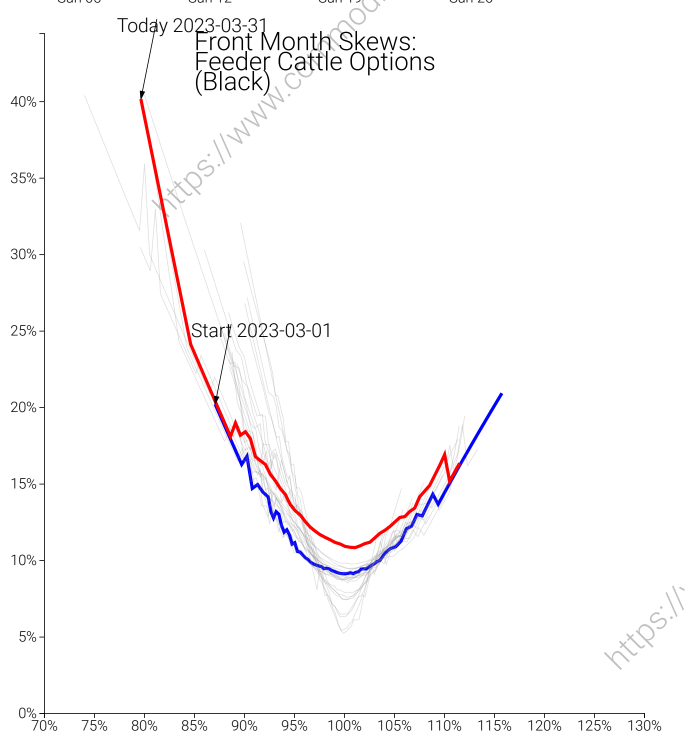

Price ($)
Start 2023-03-01
20231017
20240618
20230419

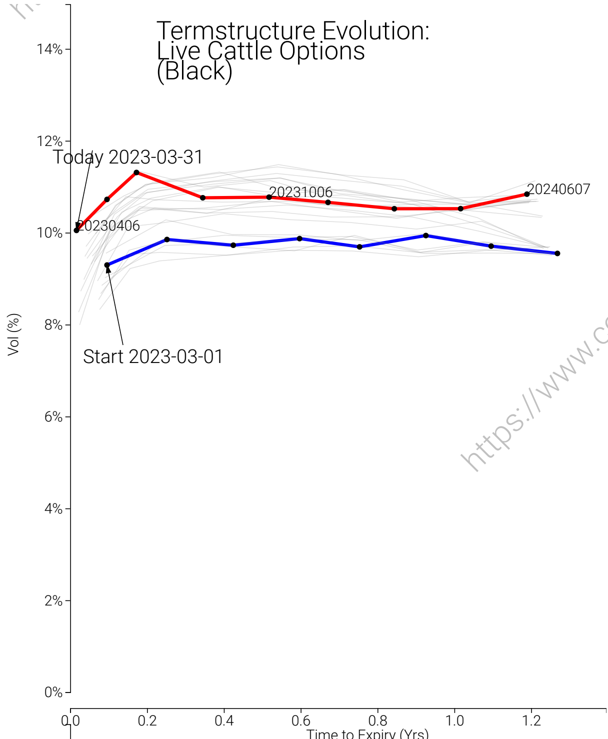

Front Month Skews:
Lean Hog Options
(Black)
Start 2023-03-01
Today 2023-03-31

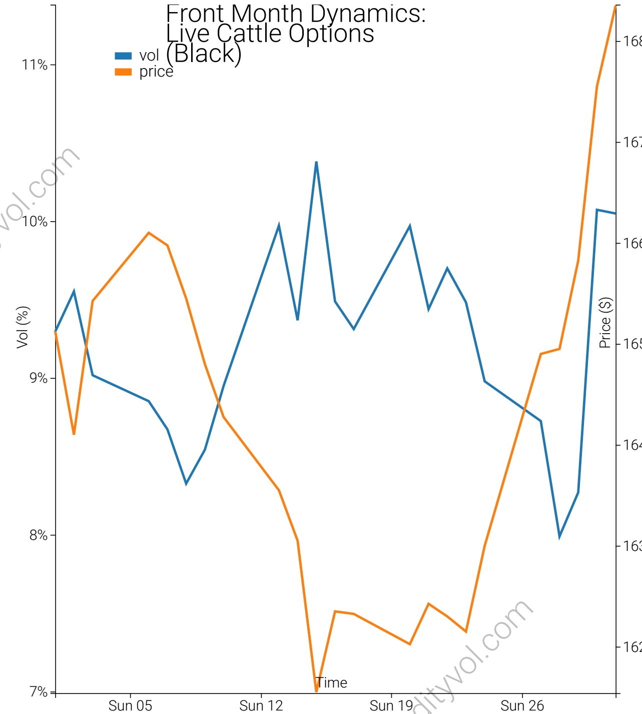

Termstructure Evolution:
Feeder Cattle Options
(Black)
Today 2023-03-31
20230929
20240126
20230428
Start 2023-03-01
Vol (%)
20%
15%
10%
5%
0%
0.0
0.2
0.4
0.6
0.8
Time to Expiry (Yrs)

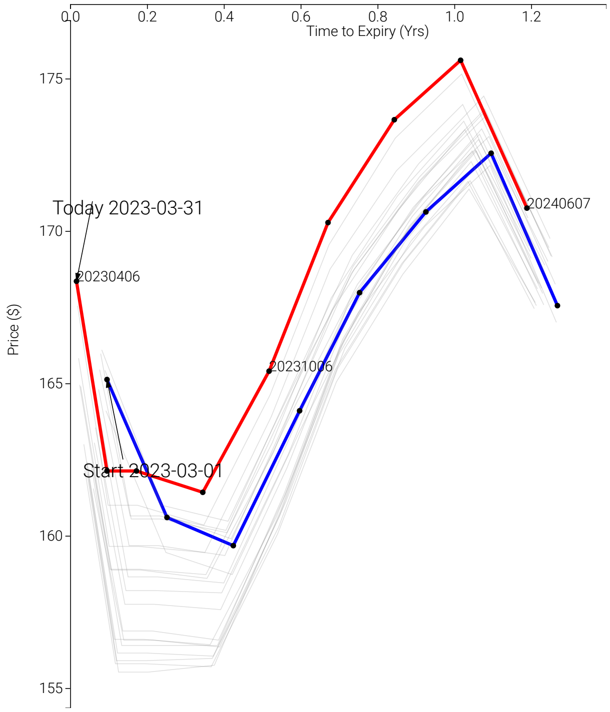

Front Month Dynamics:
Feeder Cattle Options
(Black)
vol
price
Vol (%)
10%
8%
6%
Price ($)
200
198
196
194
192
190
Time
Sun 05
Sun 12
Sun 19
Sun 26

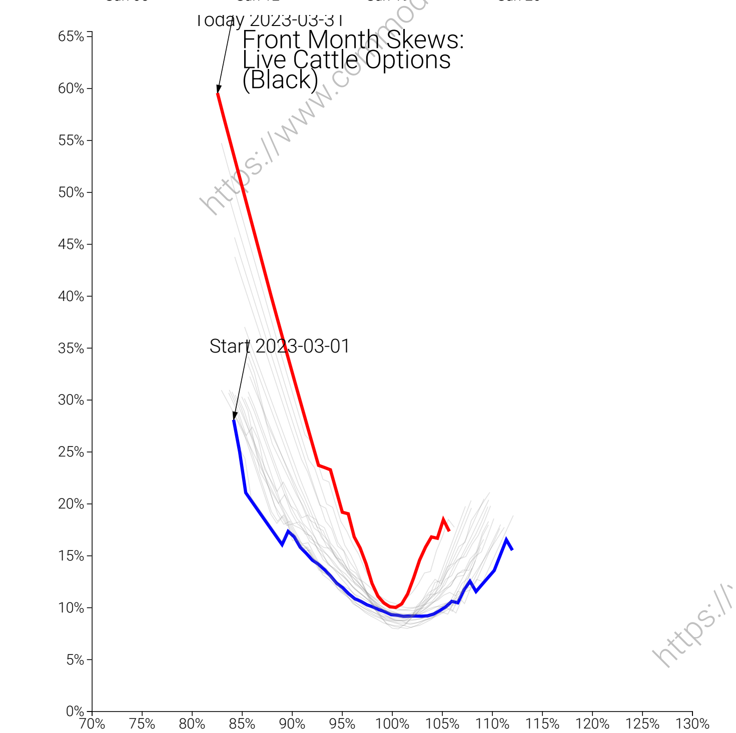

20230929
20240126
Today 2023-03-31
20230428
Price ($)
220
210
200
190

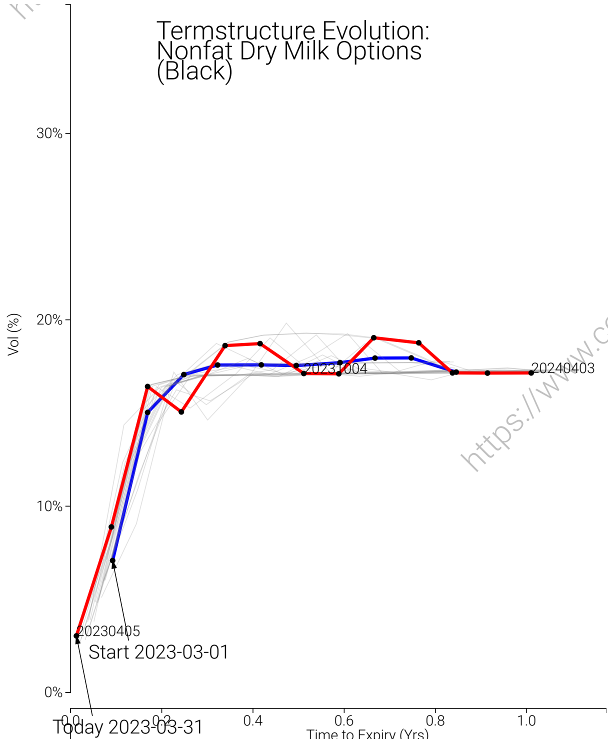

Today 2023-03-31
Front Month Skews:
Feeder Cattle Options
(Black)
Start 2023-03-01
40%
35%
30%
25%
20%
15%
10%
5%
0%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

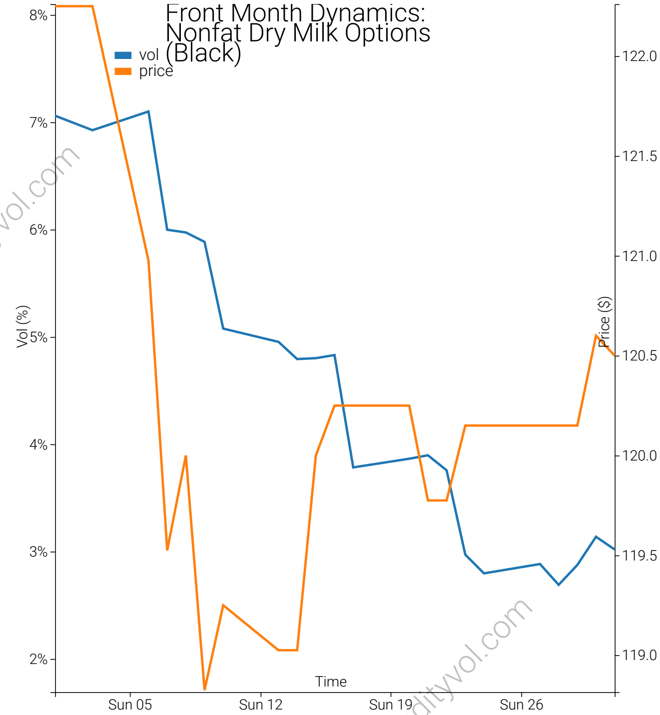

Termstructure Evolution:
Live Cattle Options
(Black)
Today 2023-03-31
Start 2023-03-01
20230406
20231006
20240607
Vol (%)
Time to Expiry (Yrs)
0%
2%
4%
6%
8%
10%
12%
14%
0.0
0.2
0.4
0.6
0.8
1.0
1.2

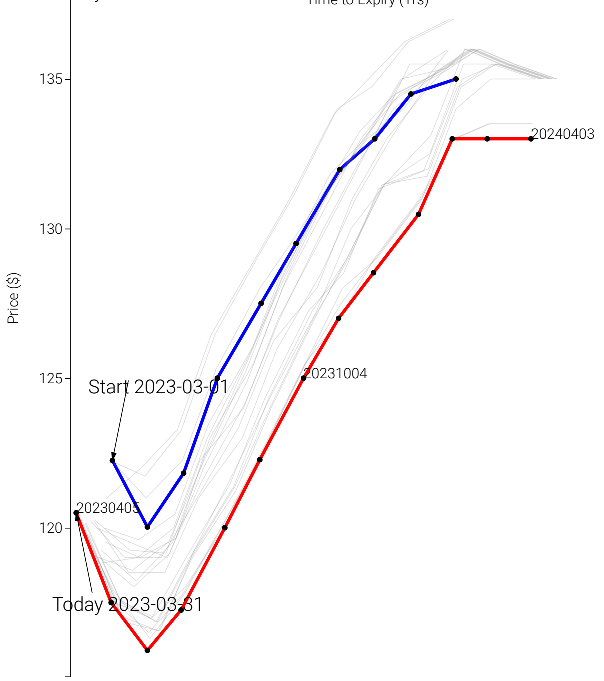

Front Month Dynamics:
Live Cattle Options
(Black)
vol
price
Vol (%)
Price ($)
Time
7%
8%
9%
10%
11%
162
163
164
165
166
167
168
Sun 05
Sun 12
Sun 19
Sun 26

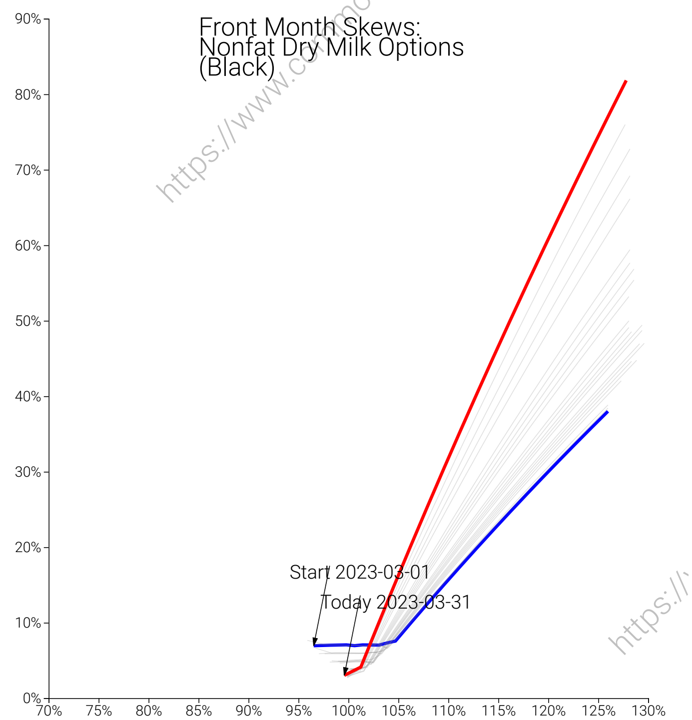

Today 2023-03-31
Start 2023-03-01
20230406
20231006
20240607
Price ($)
155
160
165
170
175

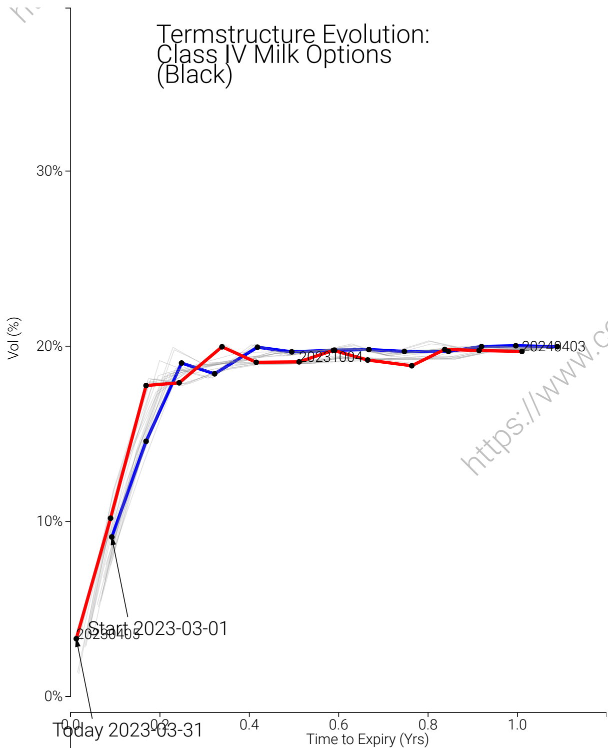

Front Month Skews:
Live Cattle Options
(Black)
Today 2023-03-31
Start 2023-03-01
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%
50%
55%
60%
65%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

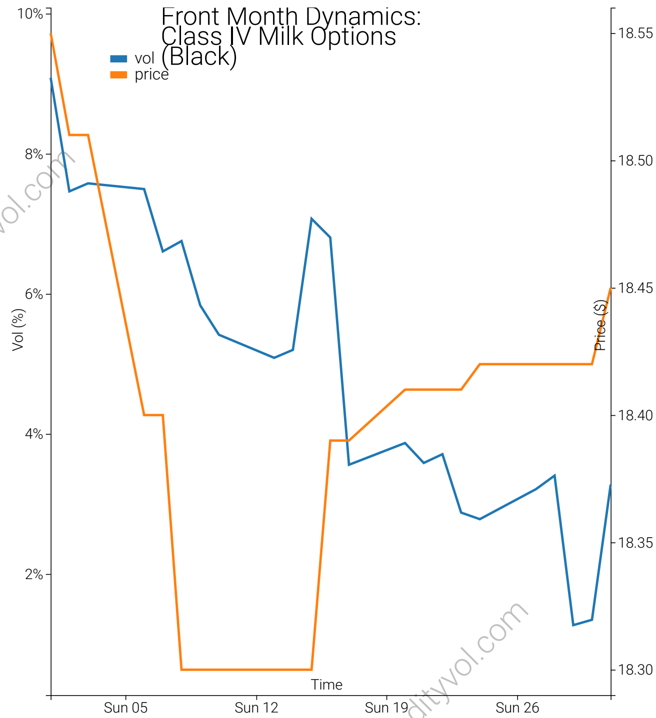

Termstructure Evolution:
Nonfat Dry Milk Options
(Black)
Vol (%)
Time to Expiry (Yrs)
20230405
20231004
20240403
Start 2023-03-01
Today 2023-03-31

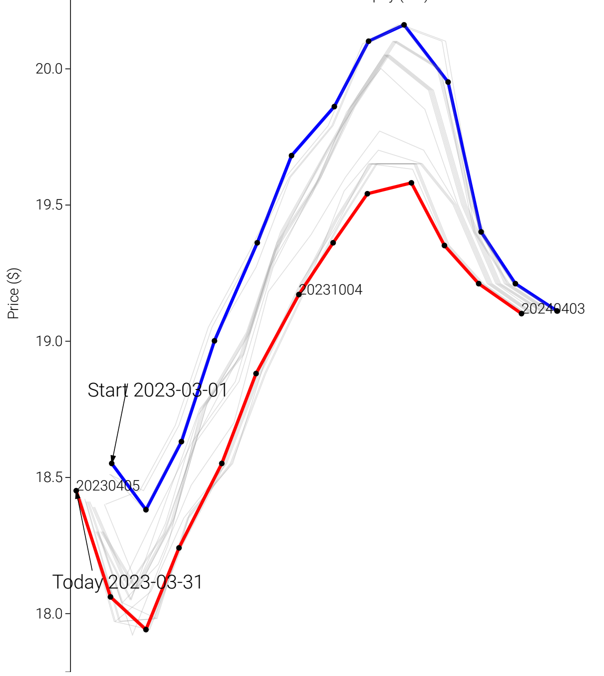

Front Month Dynamics:
Nonfat Dry Milk Options
(Black)
vol
price
Vol (%)
Price ($)
Time
Sun 05
Sun 12
Sun 19
Sun 26

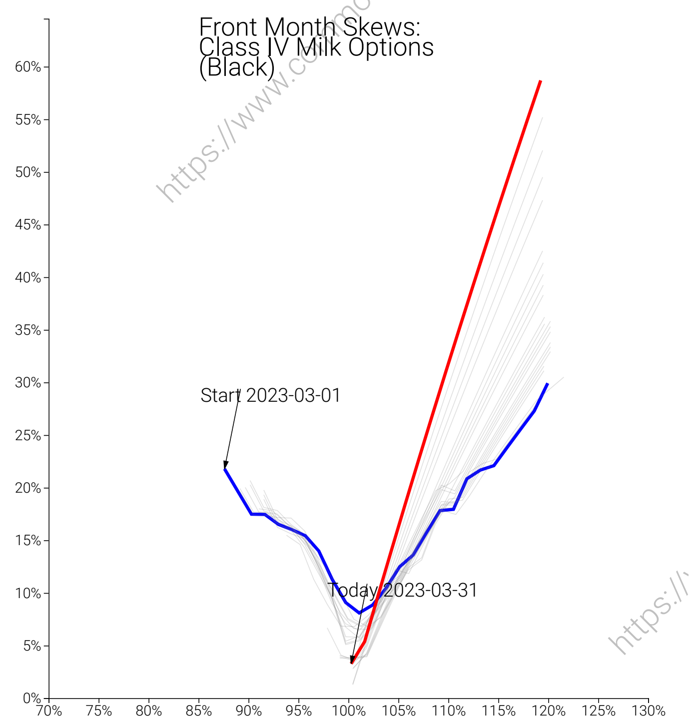

Price ($)
20230405
20231004
20240403
Start 2023-03-01
Today 2023-03-31


Front Month Skews:
Nonfat Dry Milk Options
(Black)
Start 2023-03-01
Today 2023-03-31


Termstructure Evolution:
Class IV Milk Options
(Black)
Vol (%)
30%
20%
10%
0%
Start 2023-03-01
20230405
20231004
20240403
Today 2023-03-31
0.0
0.2
0.4
0.6
0.8
1.0
Time to Expiry (Yrs)


Front Month Dynamics:
Class IV Milk Options
(Black)
vol
price
Vol (%)
Price ($)
10%
8%
6%
4%
2%
18.55
18.50
18.45
18.40
18.35
18.30
Time
Sun 05
Sun 12
Sun 19
Sun 26


Price ($)
20.0
19.5
19.0
18.5
18.0
Start 2023-03-01
20230405
20231004
20240403
Today 2023-03-31

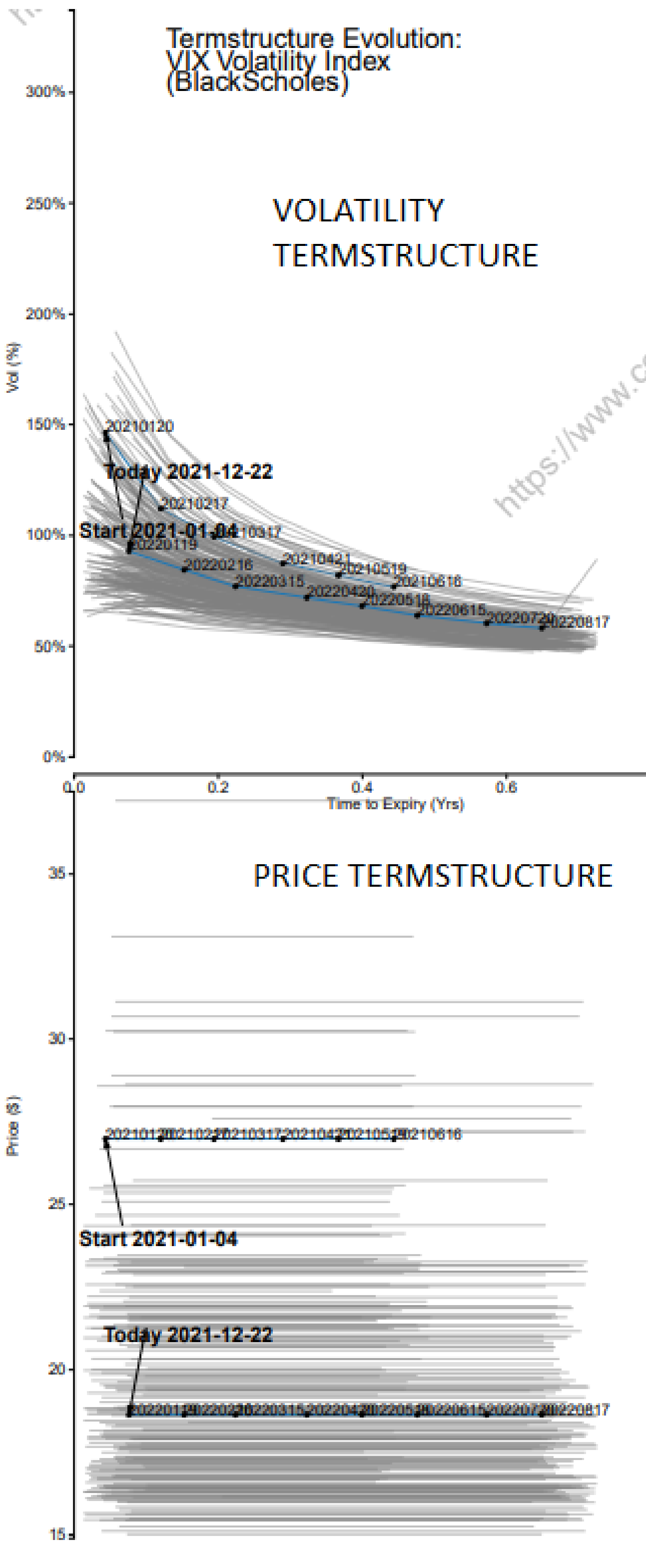

Front Month Skews:
Class IV Milk Options
(Black)
60%
55%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Start 2023-03-01
Today 2023-03-31
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
125%
130%

Explanation:

The document is composed of two parts. There is a tabular portion which summarizes the changes in front month futures prices and the changes in the at the money front month implied volatility. The results are presented as raw differences and percentage changes. The plots in this document try to give a feel for the evolution of the futures and options for each product type. The skew/termstructure/xyplots are broken out by major asset classes: Indexes, Fixed Income and so on.

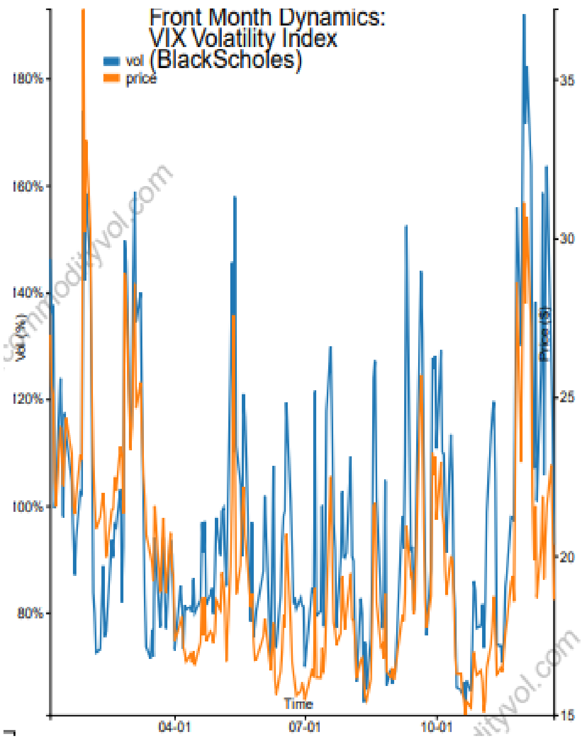
At the Money Volatilty and Price Term Structures:

Stacked on top of the other on the left hand side, see the termstructures of vol and the (underlying) futures contract price.



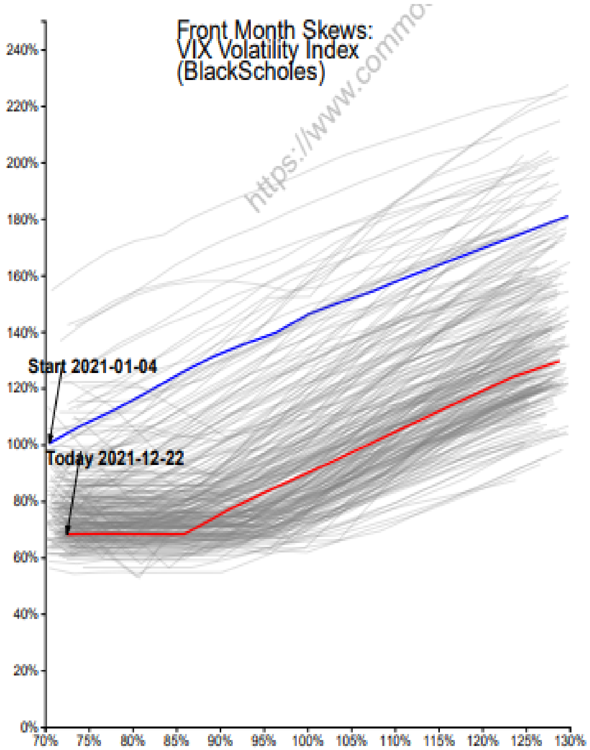
The starting curve is the termstructure at the beginning of the period. This curve is labelled start and is typically colored blue. The ending curve is typically colored red and denoted by the text: Today. The greyed out lines are the termstructures for each day of the period. The hope is that the range of movements becomes apparent.

Front Month At the Money Volatilty and Front Month Price Over the Year:
On the right hand panel we have the price and implied volatility of the front month contract.



At the money implied volatility is shown in blue and the axis on the left should be used to read off the values. The front month futures price is in orange and the right hand axis is where its value can be read.

Front Month Skew:
On the right hand in the bottom panel we have the starting front month skew and the ending front month skew.



The front month skew is shown for the starting date. The starting curve is labelled as 'Start' and captioned with the date. The starting curve is blue. Conversely, the ending curve is shown in red and labeled Today. The y-axis shows the implied volatility and the x-axis shows the moneyness. The moneyness is a way to normalize the skew so that it is comparable across time.

About CommodityVol.com:

CommodityVol.com (c) is an analytics and research firm which studies the relationships between indexes, equities, futures and options. We are pleased to offer some of our analytics to the public for free at https://www.commodityvol.com. Of course, we also offer a number of subscription products around end of day marks and histories of implied volatility surfaces. Additionally, we would be delighted to offer our expertise (on a consulting basis) to anyone who has risk management or trading analytics needs. We encourage you to reach out via email: info@commodityvol.com, twitter: @CommodityImpVol, or our contact forms at https://www.commodityvol.com.

General Disclaimer:

