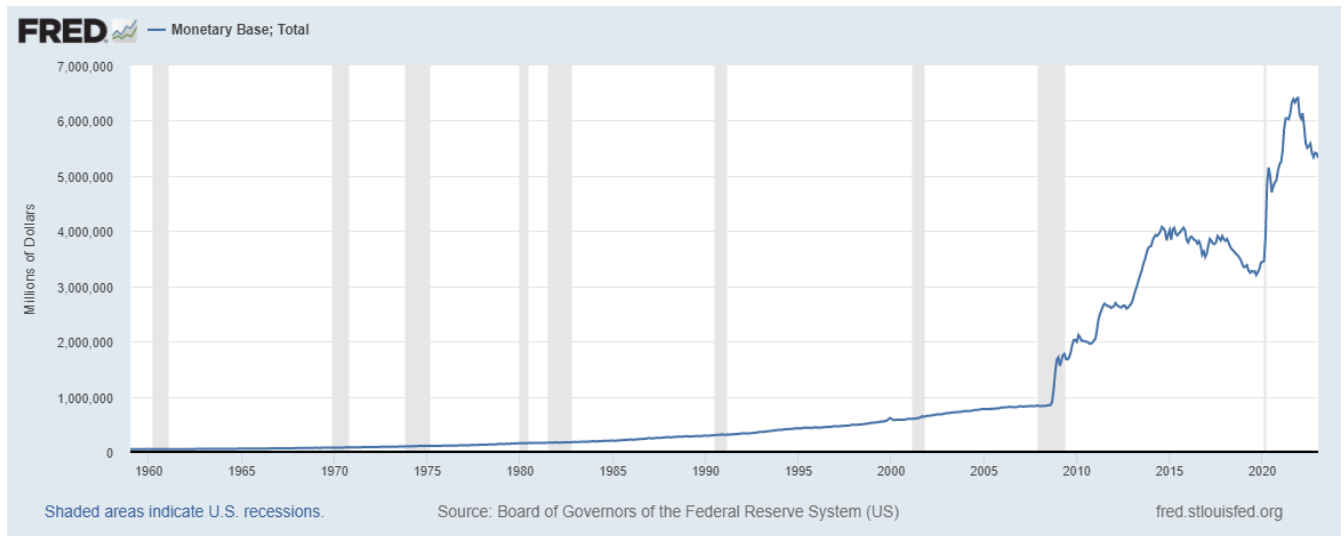




Welcome to our February 2023 Recap:

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

February was a mixed bag of sorts, with some degree of middling. The US Dollar showed remarkable strength-up between 2-4% against other major currencies. FX vol for these other currencies was up modestly. Crypto vol sold off in dramatic fashion-suggesting a reduction in speculative currents. Both the Ethereum and Bitcoin contract showed weakness in vol. The positive Dollar performance is being fueled expectations of further tightening. The attention over the past month has been on the Fed (not unusual). The non-voting members of the FOMC are talking loudly about higher rates. Is this real? Is this a feint in order to jawbone inflation back into control? The commodity underpinnings of inflation seem to have stabilized, but expectations are probably still adjusting among the people. There are reports that the money velocity is dipping. In other words, people are turning over Dollars less. If you believe in the identity relationship $\text{Price Level} \times \text{Output} = \text{Money base} \times \text{Velocity}$, then it would suggest that, ceteris paribus, the price level may dip. All other factors are not constant. The Fed has been shrinking the base since the end of 2021. The only question is what reacts more, price or output. Taking the credit punch bowl away may hurt in the short run, but saves from the ravages of inflation. Mortgage rates are beginning to cause signs of concern in the real estate market. The performance in the fixed income product bears witness to this. All of the futures are down, obviously weighted by their duration. Vol is up in the whole STIR sector. The weakness in housing hasn't affected copper greatly. China is the suspect here.



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 changes in front month prices and implied vols. Perhaps some of these are spurious, but there are a lot of bold dots on the matrix. This suggests all sorts of correlations are beginning to manifest themselves. There are correlations between the Yen and major US Equity indexes. The pattern is especially true in the vol to vol correlation. The correlation between crude and the SP 500 is still there. The correlations between crypto and refined gas are also quite strong. This pattern suggests a coiling up of systematic risk in the market.

2023-02-28



Energy was weak in both price and vol terms. Natural gas managed to slow down its plunge. It was up a small amount month over month, but down dramatically from its highs. Vol got crushed. There was enormous speculative interest probably engendered by the prospects of shipping natural gas to Europe and the forecast cold winter. Similarly, the Japan Korea benchmark plunged dramatically while its vol exploded. Crude was mostly unchanged with vol meandering downwards.

WTI Crude Detail

US Natty Gas Detail

The equity index rebound was short lived. It was a rebuilding month, right? The prime mover seems to be relative interest rate policies in the US, EU and Japan. The

correlations tell a tale of indexes and FX being linked. The biggest winner was the VIX index. The indexes were down

[EquityIndex ATM](#)

[SP500 Detail](#)

[VIX Detail](#)

Interest Rates

Again, the rally in rates was short lived. The major futures products fell in price, while their vols zoomed. The time paths of vol and price are almost mirror images. Vol curves were uniformly bid up over the month. The market is seeing something big happening.

The direction isn't clear.

[Interest Rates ATM](#)

[30 Year Bond Detail](#)

[10 Year Note Detail](#)

[Ultrabond](#)

Foreign Exchange

The Mexican Peso and Brazilian Real vol rocketed up this month. Overall, everything, except the Mexican Peso was down against the dollar. Vols were down dramatically for Crypto. Again, perhaps the speculative excess that characterized these markets is gone for now and they've settled into some equilibrium.

[Foreign Exchange ATM](#)

[Yen Detail](#)

[Euro Detail](#)

[Bitcoin Detail](#)

[Ethereum Detail](#)

Metals

The metals were down, with copper being the most mildly down. Palladium, Platinum and Silver all took a beating. Silver vol tarnished, but platinum and palladium vol increased. Silver had been exposed to a good bit of speculative buying. The rumor of dwindling COMEX stocks appeared on the social networks a couple of months ago. Perhaps the rumors have worn themselves out. It is very hard to precisely understand what is going on. From the point of view of a tight money policy, the metals are reacting to the hawkish statements and the risk of the economic slowdown. Gold was also down significantly. The increase in volatility for platinum or palladium could be fears of supply problems from Russia and South Africa (related to power problems).

[Metals ATM](#)

[Gold Detail](#)

[Copper Detail](#)

Agriculture

Ags continued to slump. This is good for the besieged consumer and should allay consumer inflation. However, it is puzzling. Export commodities like wheat, beans and corn declined. The war in the Ukraine continues, which puts pressure on wheat and oil seeds. The drought in South America also persists. The end product of the grains and

seeds, protein, all rallied. Lean hogs and feeder cattle were up strongly, live cattle was up as well. Oat and lean hog vols were up dramatically. Meal vol was down hard.

[Ags ATM](#)

[Wheat 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

Forex

exch/prod	desc	futures chng [%]	vol chng [%]
CME/ADU	AUDUSD 2pmfix	-0.037 [-5.2%]	+0.003 [+2.5%]
CME/BTC	Bitcoin	-345.000 [-1.5%]	-0.039 [-7.7%]
CME/BR	BRLUSD Monthly	-0.004 [-1.8%]	+0.014 [+8.3%]
CME/CAU	CADUSD 2pmfix	-0.017 [-2.3%]	-0.000 [-0.6%]
CME/CHU	CHFUSD 2pmfix	-0.028 [-2.6%]	+0.003 [+3.0%]
CME/ETH	Ethereum Futures	-6.000 [-0.4%]	-0.078 [-13.2%]
CME/EUU	EURUSD 2pmfix	-0.035 [-3.2%]	-0.001 [-0.9%]
CME/GBU	GBPUSD 2pmfix	-0.030 [-2.4%]	+0.000 [+0.2%]
CME/JPU	JPYUSD 2pmfix	-0.000 [-4.4%]	-0.003 [-2.3%]
CME/MP	Mexican Peso	+0.000 [+0.5%]	+0.011 [+10.9%]
CME/NE	New Zealand	-0.030 [-4.6%]	-0.003 [-2.6%]

Energy

exch/prod	desc	futures chng [%]	vol chng [%]
NYMEX/BZO	Brent Crude Oil Margin	+0.610 [+0.7%]	-0.042 [-11.0%]
NYMEX/BE	Brent Euro Style	-0.010 [-0.0%]	-0.117 [-26.0%]
NYMEX/CVR	Chicago Ethanol(platts) Average Price	-0.035 [-1.6%]	+0.109 [+565.3%]
NYMEX/LO	Crude Oil	+0.640 [+0.8%]	-0.028 [-6.9%]
NYMEX/LN	European Natural Gas	+0.279 [+11.3%]	-0.176 [-18.6%]
NYMEX/E7	Henry Hub Financial Last Day	+0.279 [+11.3%]	-0.177 [-18.7%]
NYMEX/JKO	LNG Japan/korea Marker (platts) Average Price	-4.610 [-24.3%]	+1.033 [+154.3%]
NYMEX/ON	Natural Gas	+0.279 [+11.3%]	-0.176 [-18.6%]
NYMEX/OH	NY Harbor ULSD	-0.145 [-4.9%]	-0.018 [-4.3%]
NYMEX/OB	RBOB	+0.188 [+7.7%]	-0.029 [-7.2%]

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/YM	E-Mini Dow	-1466.000 [-4.3%]	-0.008 [-5.6%]
CME/NQ	E-Mini Nasdaq	-342.000 [-2.8%]	+0.031 [+13.4%]
CME/RTO	E-Mini Russell 2000	-69.300 [-3.5%]	+0.027 [+13.4%]
CME/RTM	E-Mini Russell EOM	-51.900 [-2.6%]	+0.035 [+17.7%]
CME/ES	E-Mini S&P 500	-156.750 [-3.8%]	+0.027 [+16.2%]
CBOE/VIX	VIX Volatility Index	+2.830 [+15.8%]	+0.024 [+3.2%]

Metals

exch/prod	desc	futures chng [%]	vol chng [%]
COMEX/HX	Copper	-0.021 [-0.5%]	-0.016 [-5.7%]
COMEX/OG	Gold	-106.100 [-5.5%]	-0.008 [-5.6%]
NYMEX/PAO	Palladium	-211.700 [-13.0%]	+0.062 [+13.6%]
NYMEX/PO	Platinum	-46.200 [-4.6%]	+0.051 [+18.5%]
COMEX/SO	Silver	-2.538 [-10.8%]	-0.027 [-9.5%]

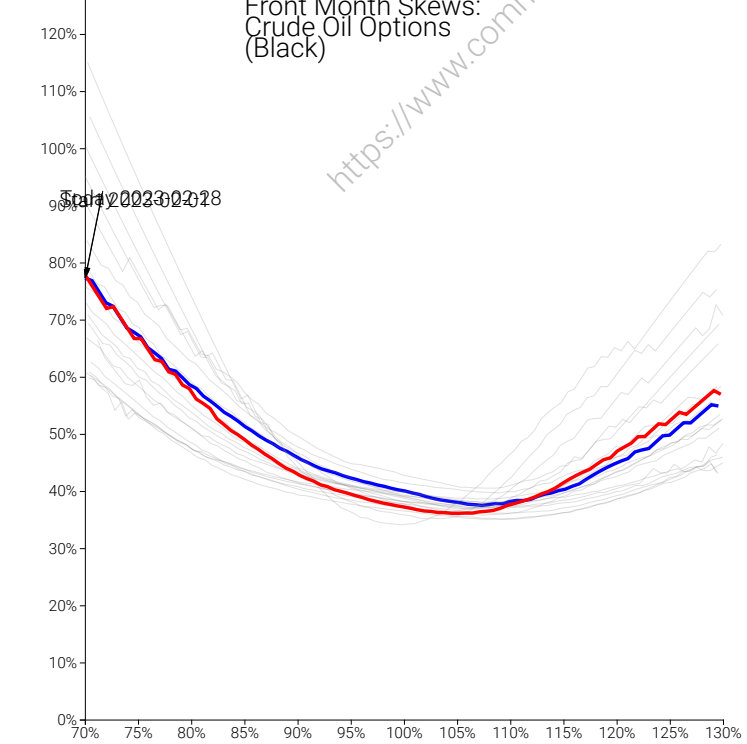
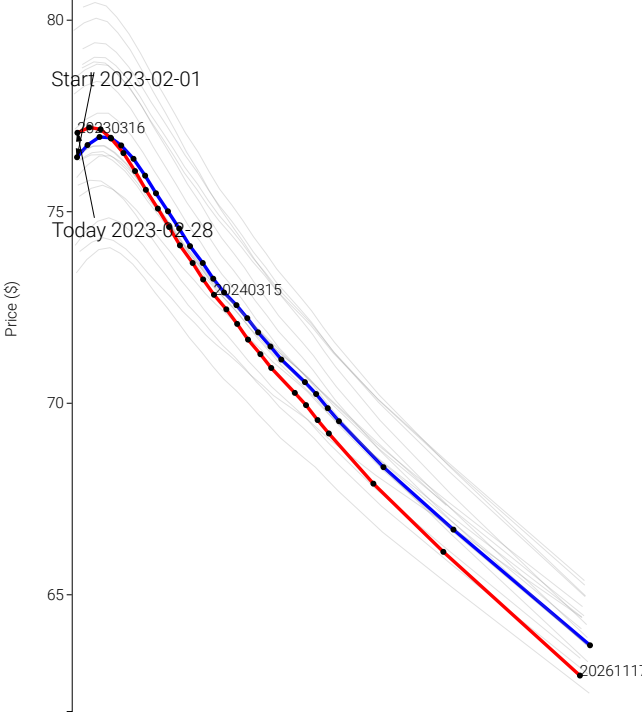
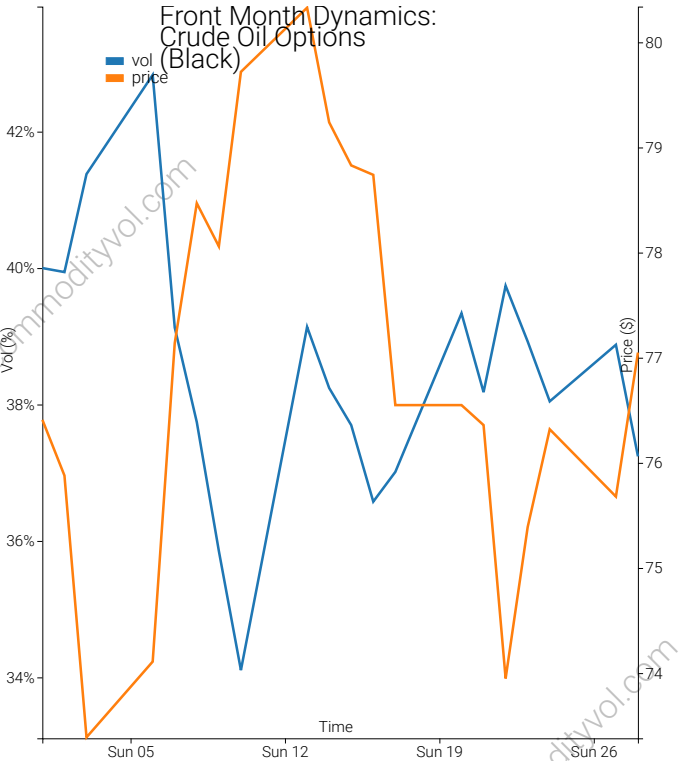
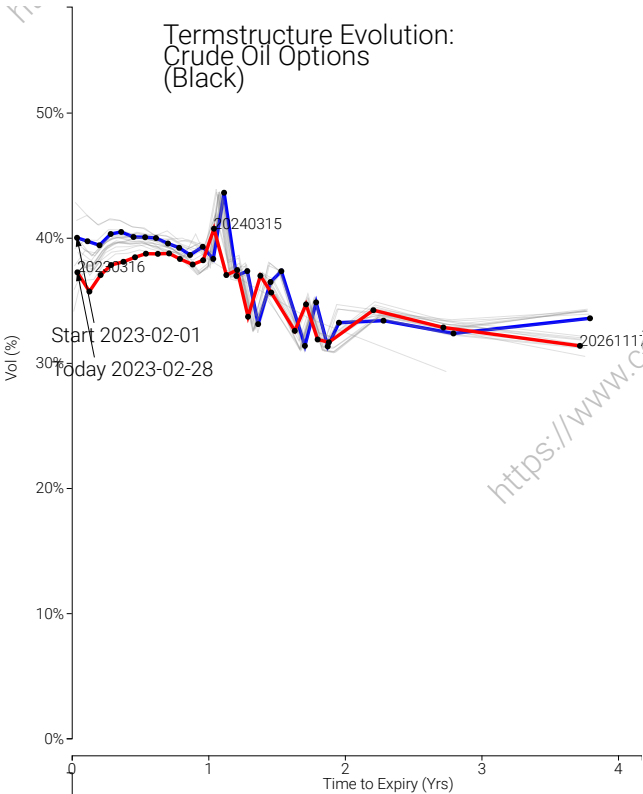
exch/prod	desc	futures chng [%]	vol chng [%]
CME/DK	Class IV Milk	-0.110 [-0.6%]	-0.023 [-22.4%]
CBT/C	Corn	-0.507 [-7.5%]	+0.014 [+8.1%]
CME/62	Feeder Cattle	+6.550 [+3.6%]	-0.019 [-17.5%]
CBT/KW	KC HRW Wheat	-0.715 [-8.1%]	-0.001 [-0.3%]
CME/LN	Lean Hog	+11.200 [+15.1%]	+0.110 [+86.2%]
CME/48	Live Cattle	+3.250 [+2.0%]	-0.008 [-8.3%]
CME/NF	Nonfat Dry Milk	-5.650 [-4.4%]	-0.009 [-10.2%]
CBT/O	Oats	-0.580 [-14.8%]	+0.082 [+17.2%]
CBT/14	Rough Rice	-0.495 [-2.8%]	+0.006 [+3.8%]
CBT/S	Soybean	-0.413 [-2.7%]	-0.003 [-1.8%]
CBT/06	Soybean Meal	-17.600 [-3.6%]	-0.051 [-19.9%]
CBT/07	Soybean Oil	-0.750 [-1.2%]	+0.014 [+5.7%]
CBT/W	Wheat	-0.543 [-7.1%]	+0.001 [+0.3%]

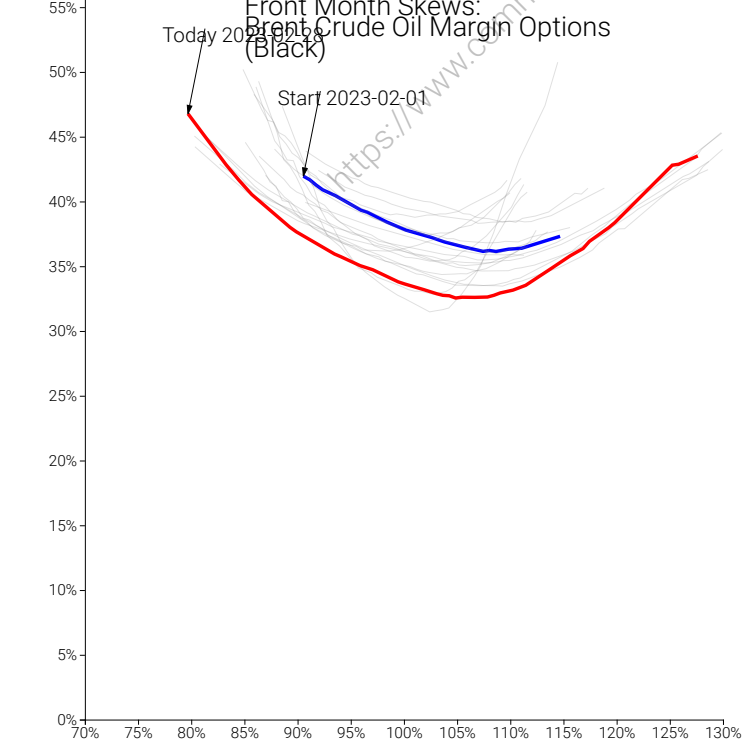
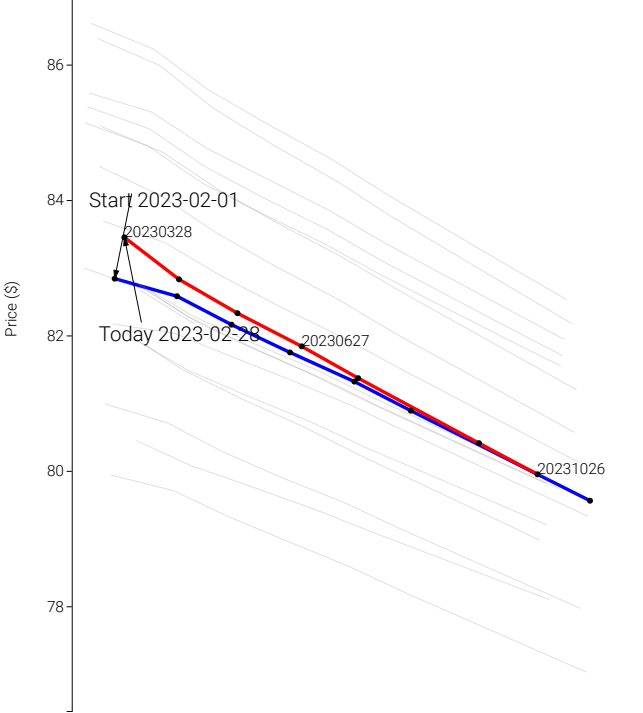
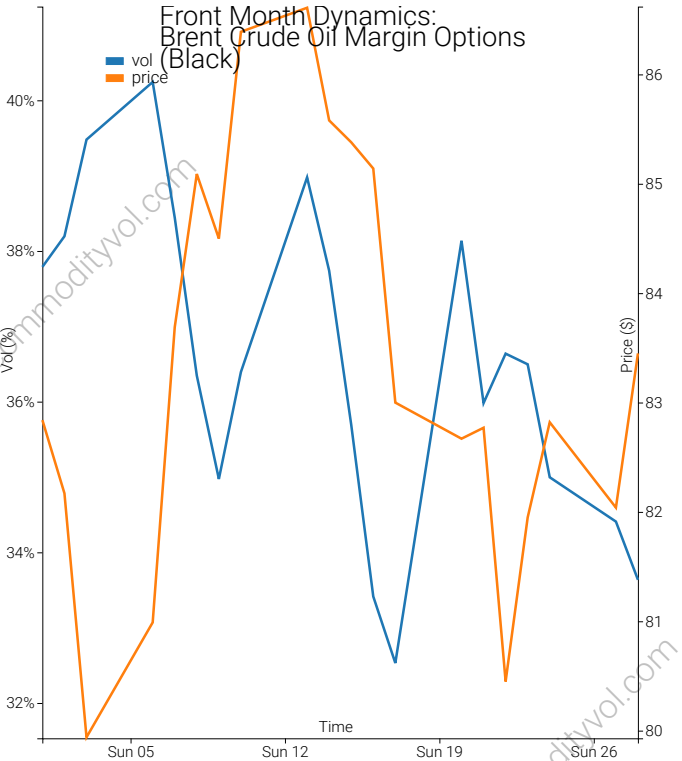
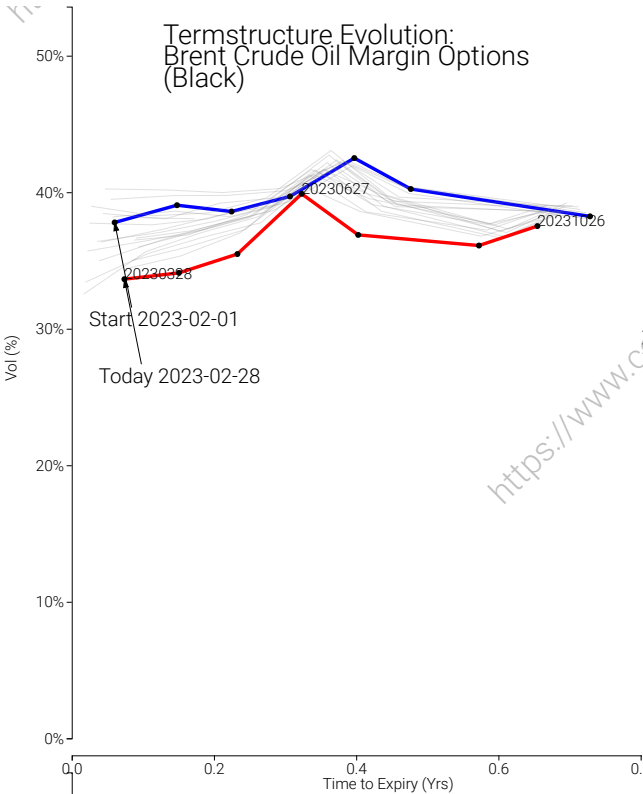
InterestRates

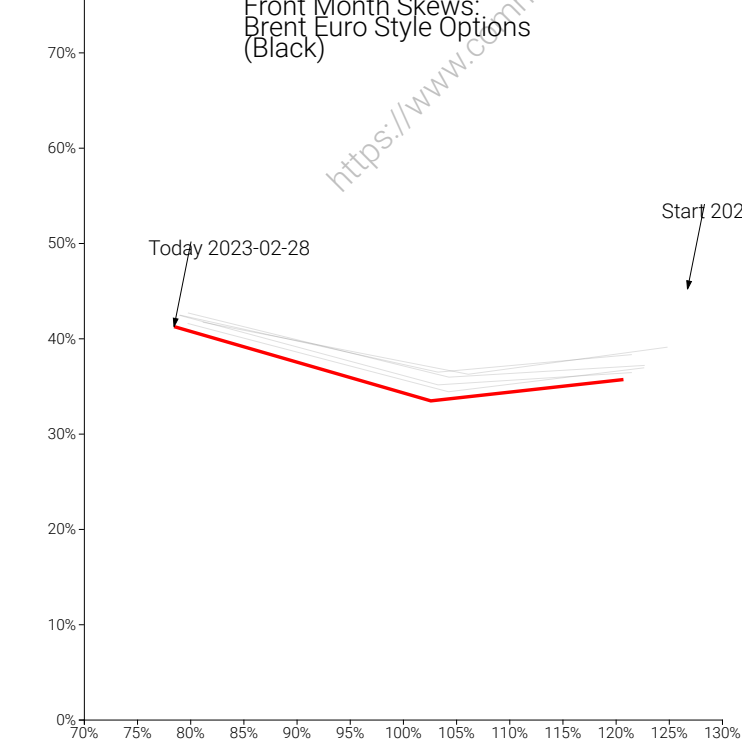
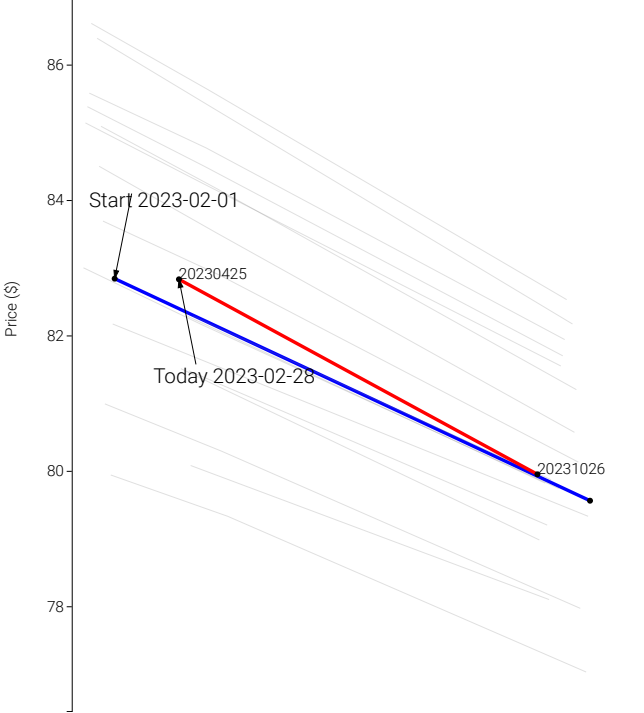
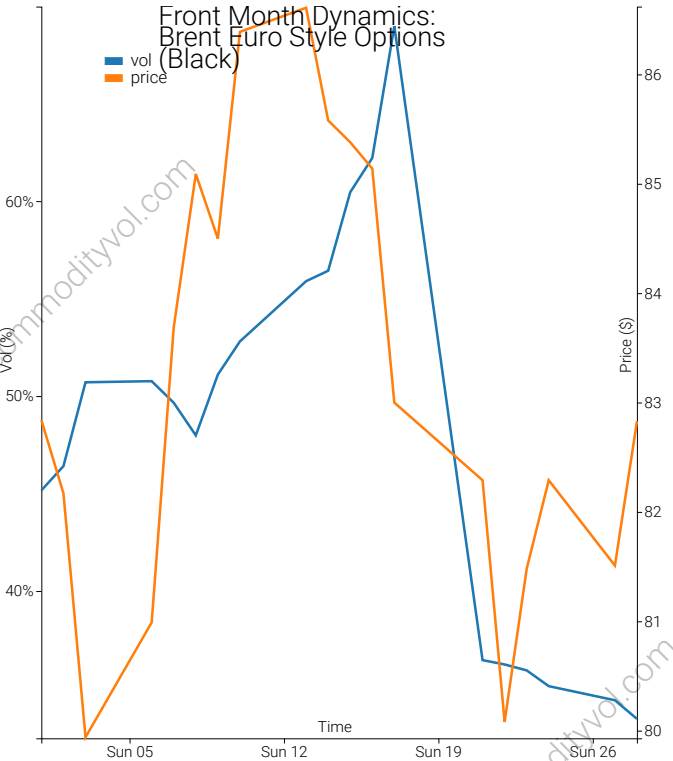
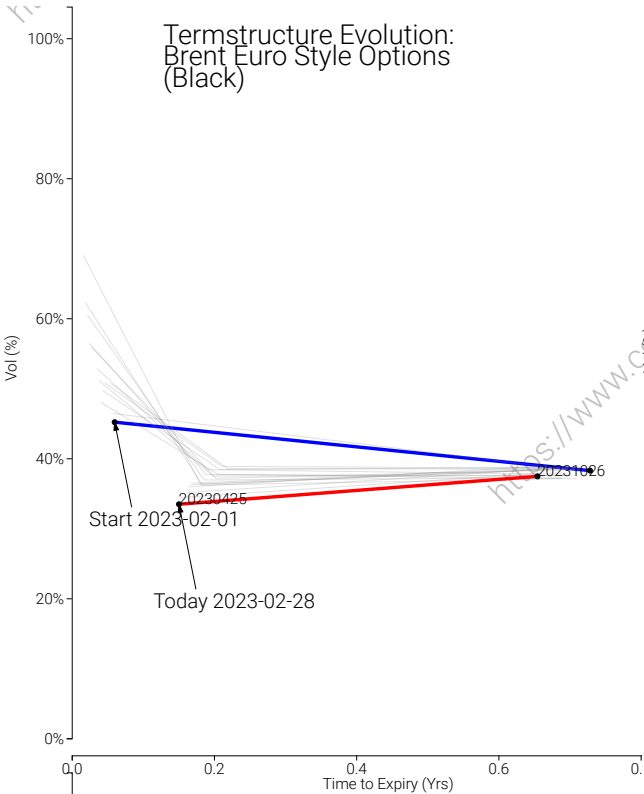
exch/prod	desc	futures chng [%]	vol chng [%]
CBT/26	2 YR US Treasury Note	-1.148 [-1.1%]	+0.008 [+42.0%]
CBT/25	5 YR US Treasury Note	-2.820 [-2.6%]	+0.014 [+30.8%]
CBT/21	10 YR US Treasury Note	-3.828 [-3.3%]	+0.020 [+30.5%]
CBT/17	30 YR US Treasury Bond	-6.438 [-4.9%]	+0.031 [+27.0%]
CME/ED	Eurodollar	-0.108 [-0.1%]	-0.001 [-11.7%]
CBT/UBE	Long Term US Treasury Bond	-9.594 [-6.6%]	+0.016 [+10.1%]

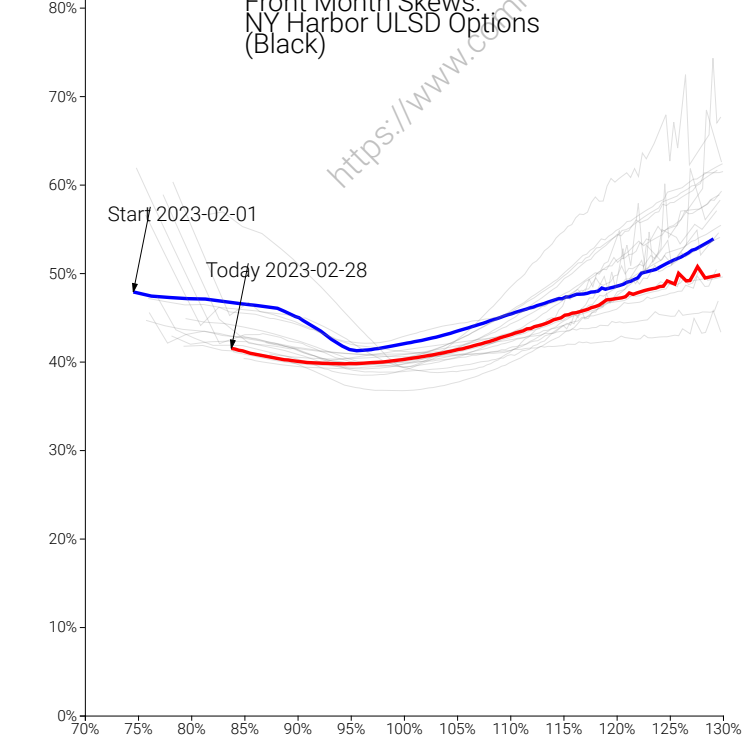
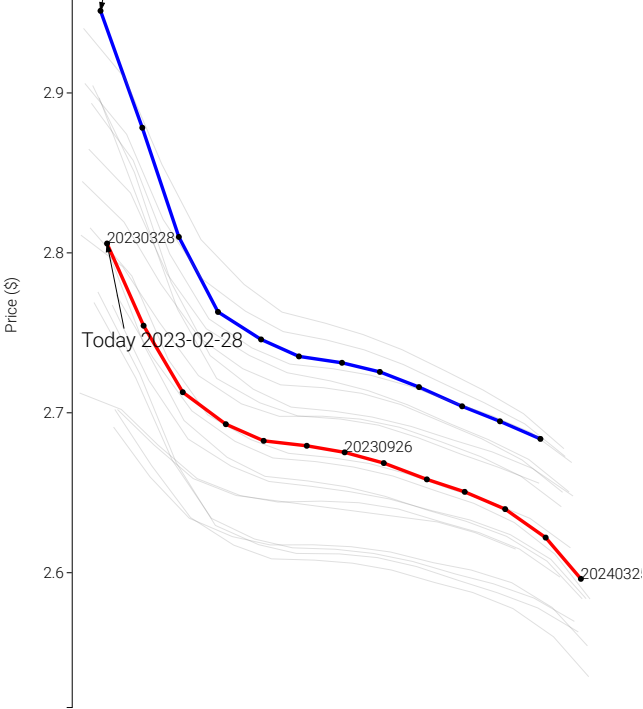
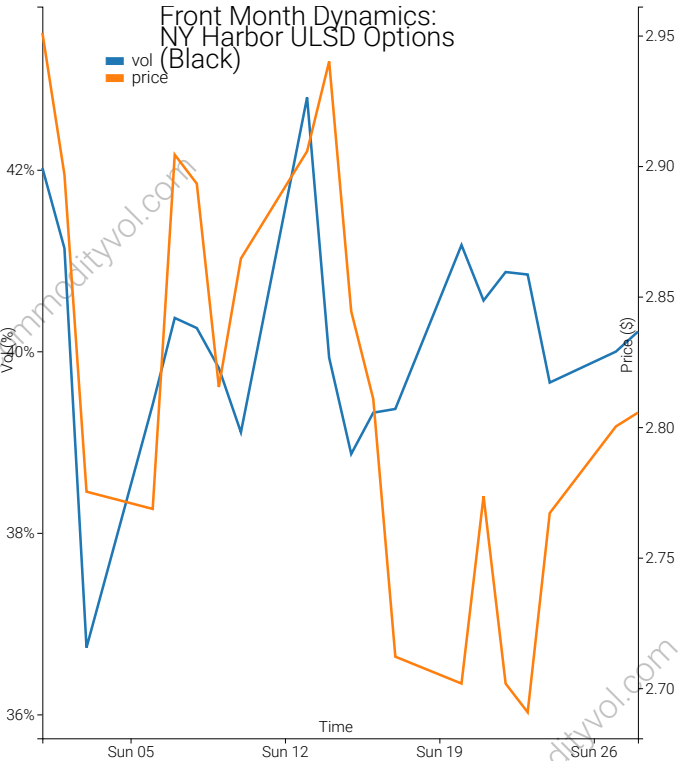
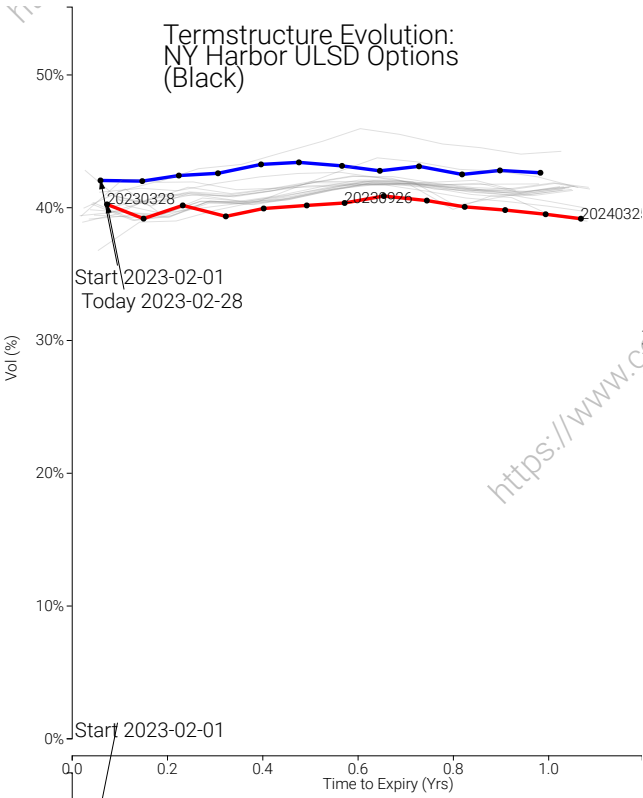
Skews, Termstructures and more

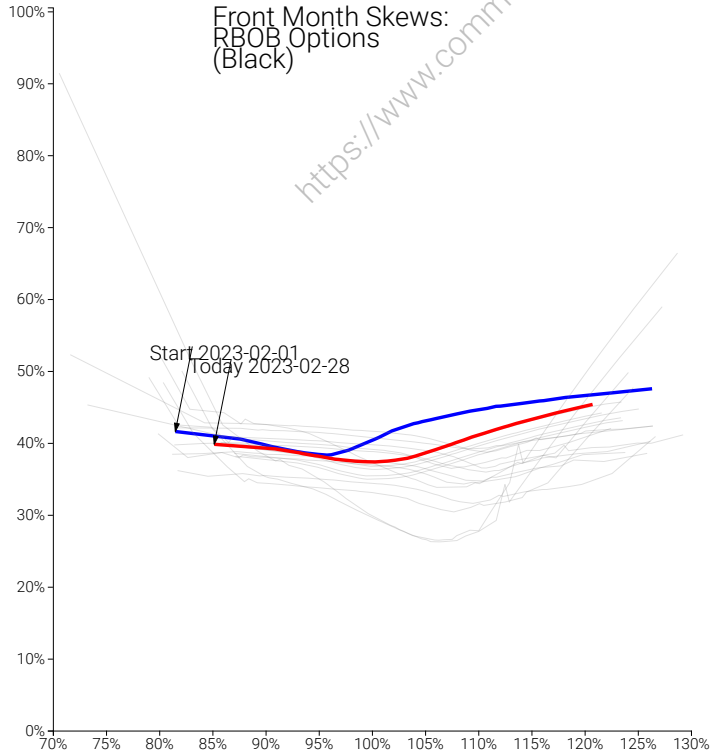
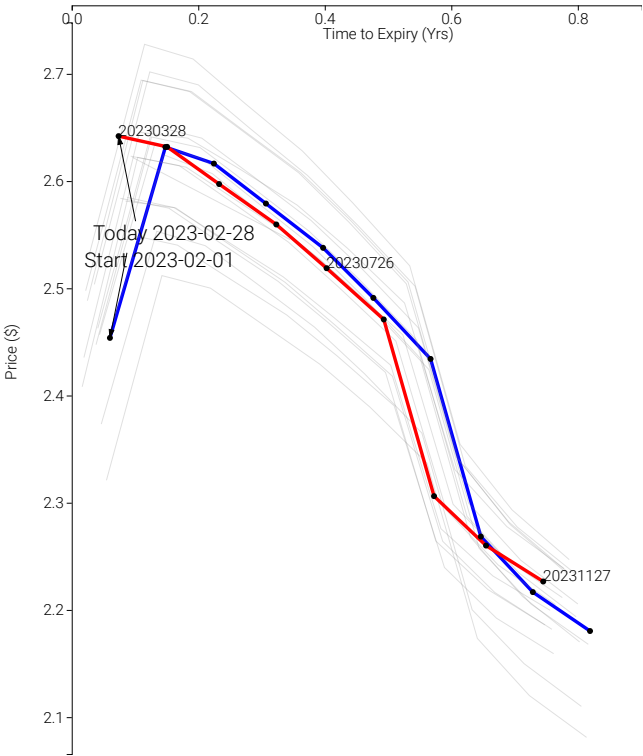
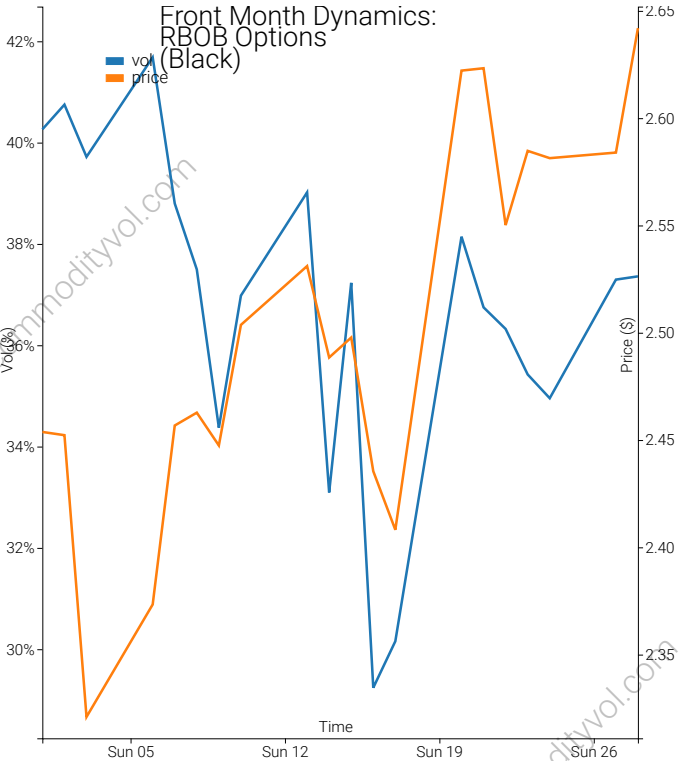
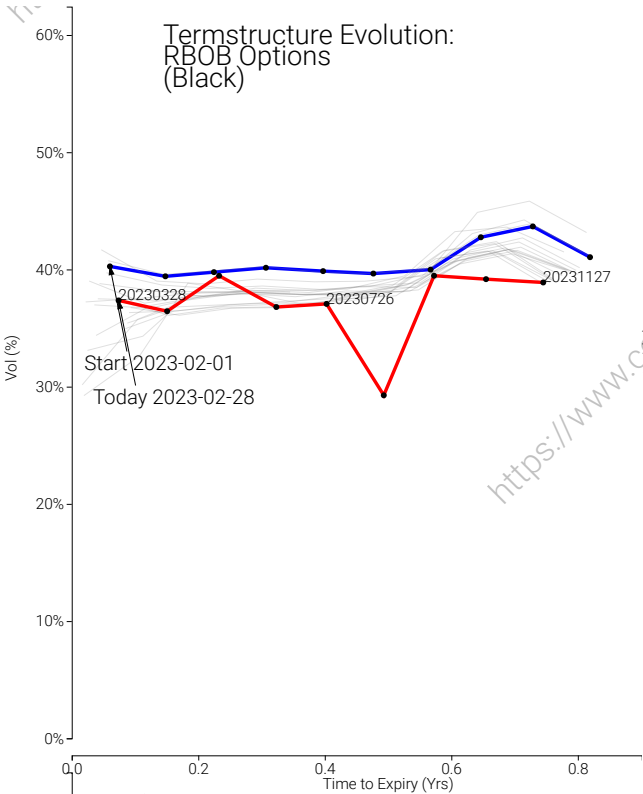
Energy: Crude and Derivatives

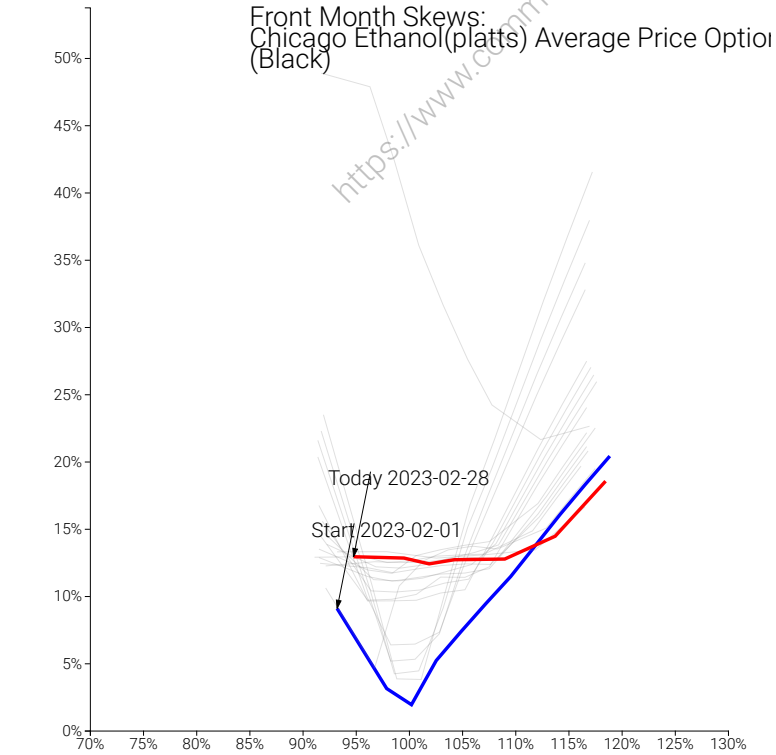
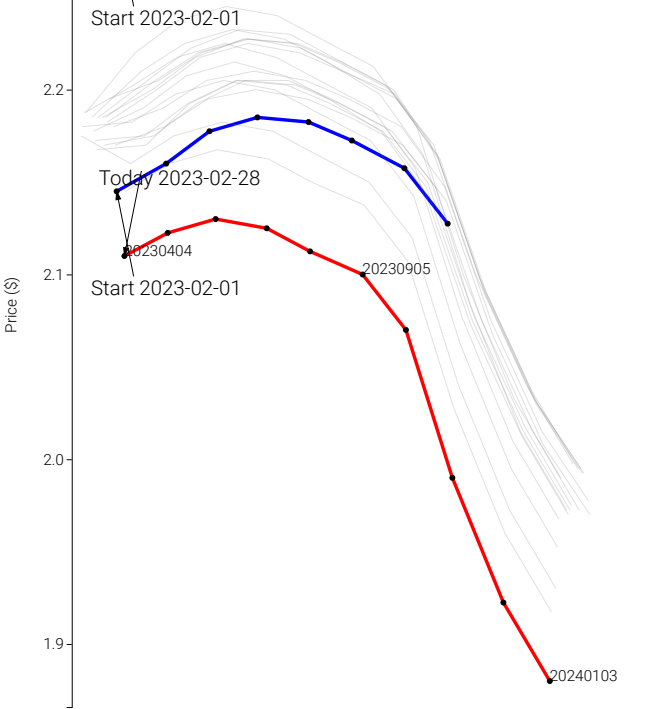
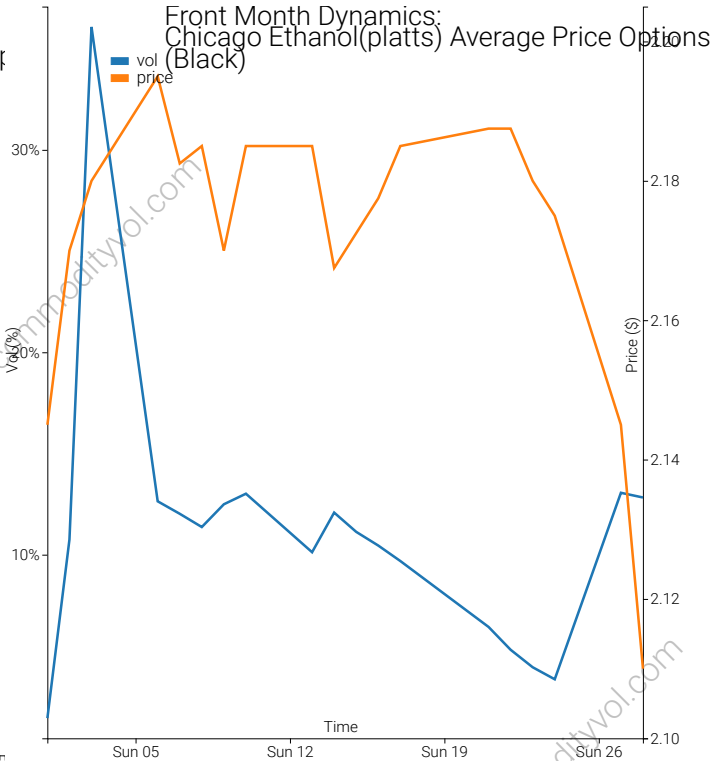
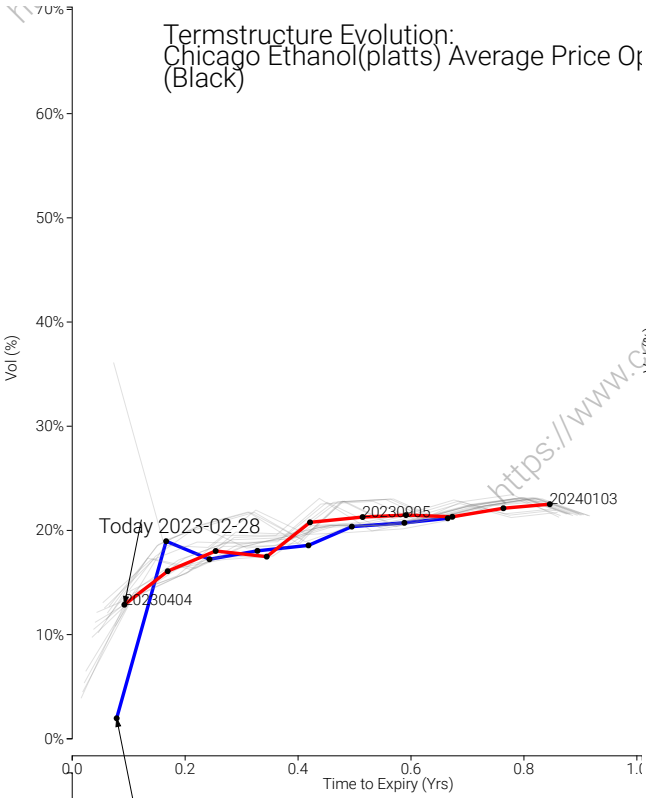




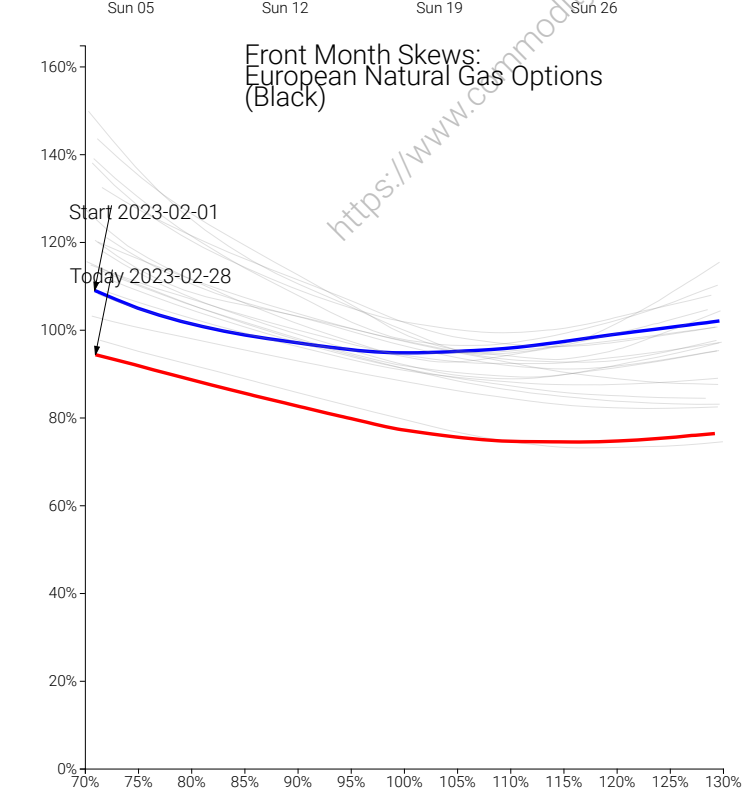
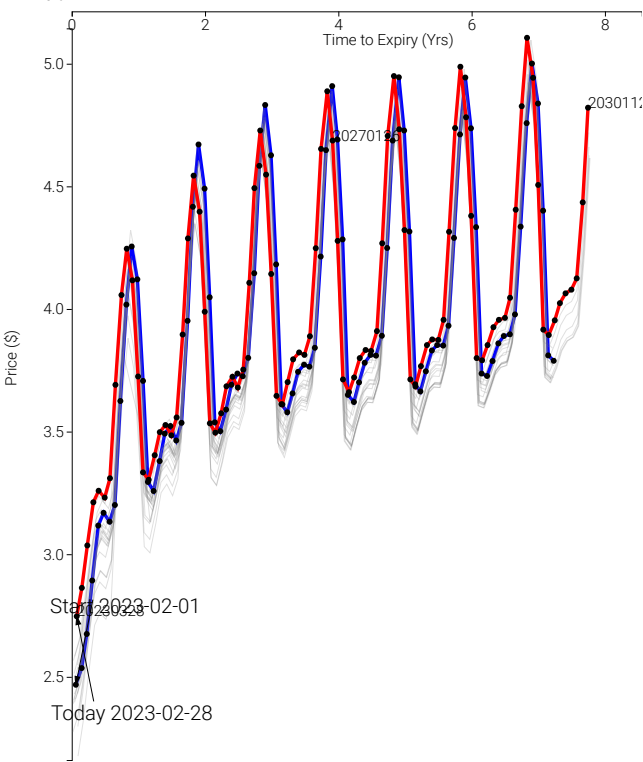
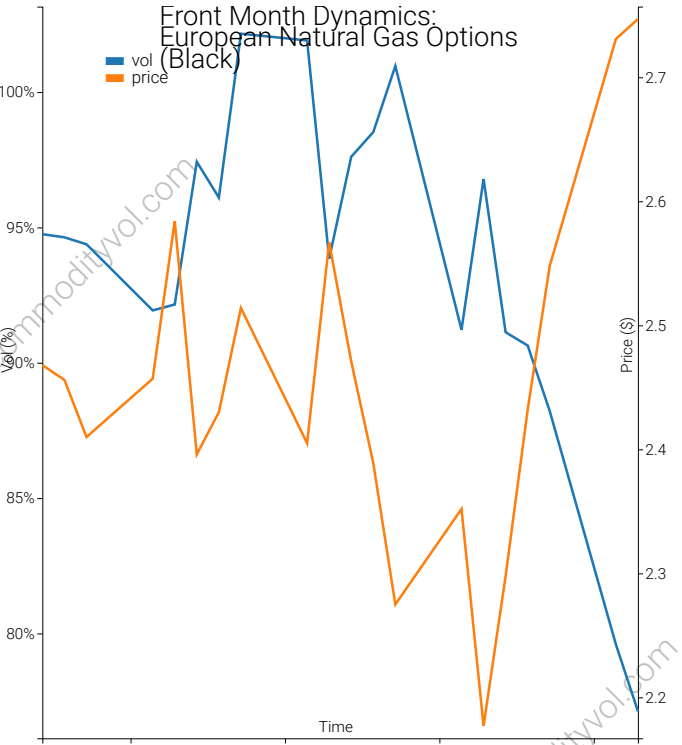
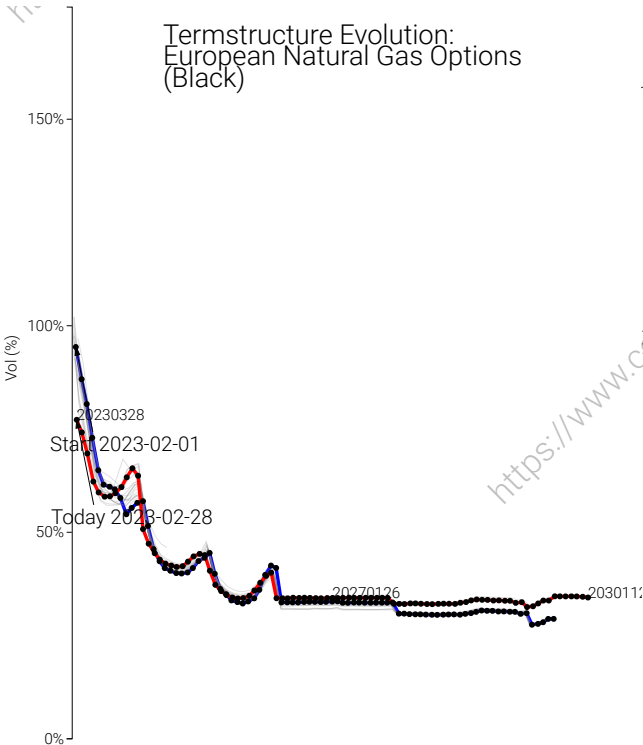


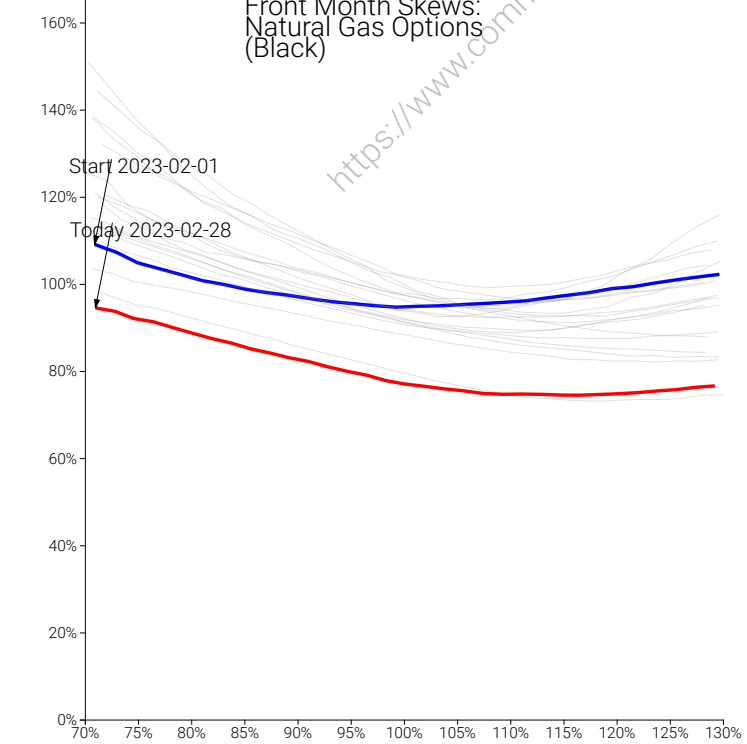
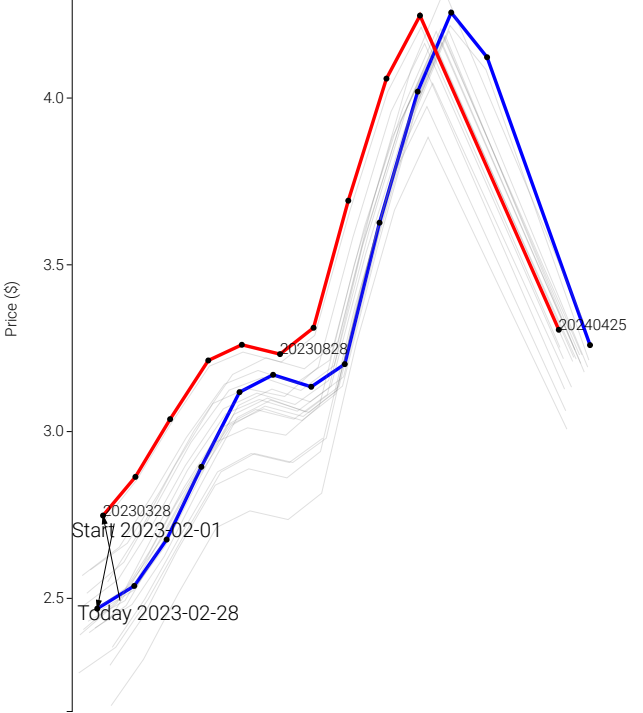
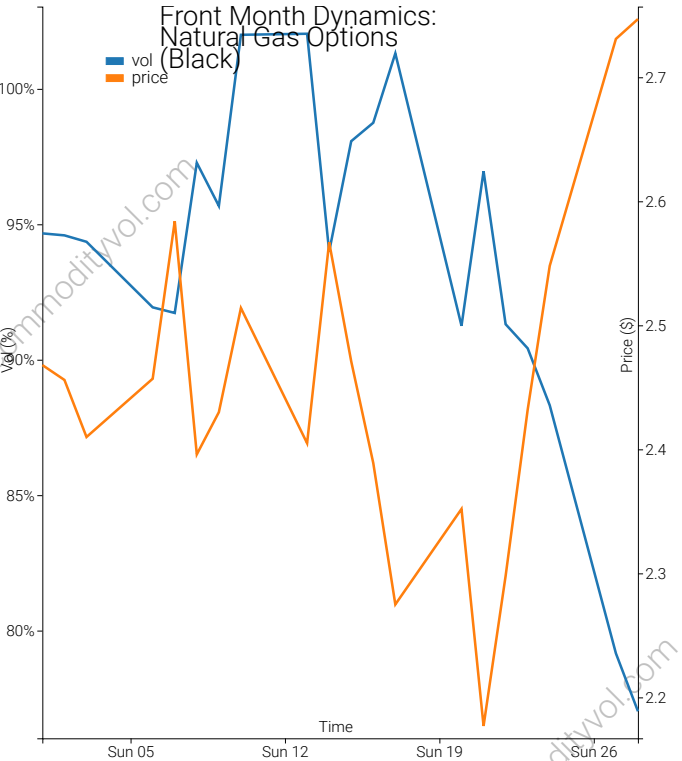
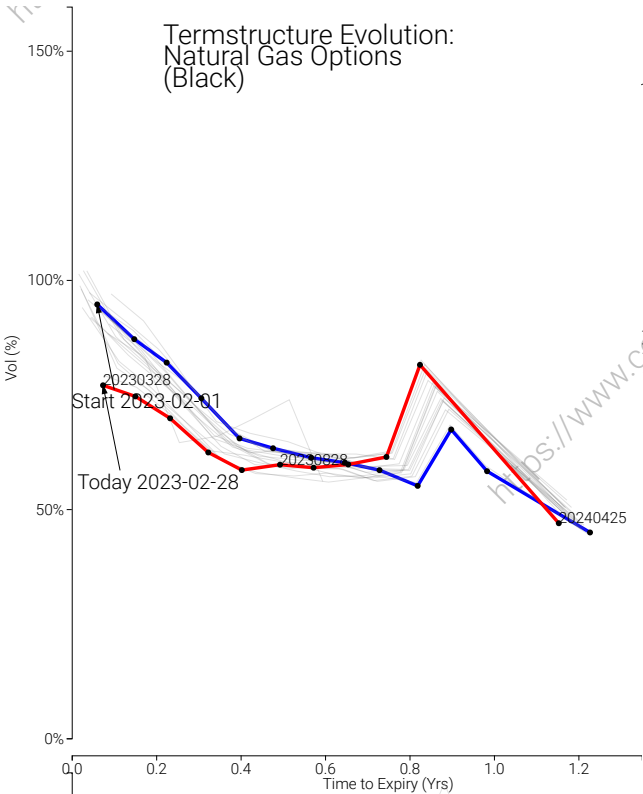


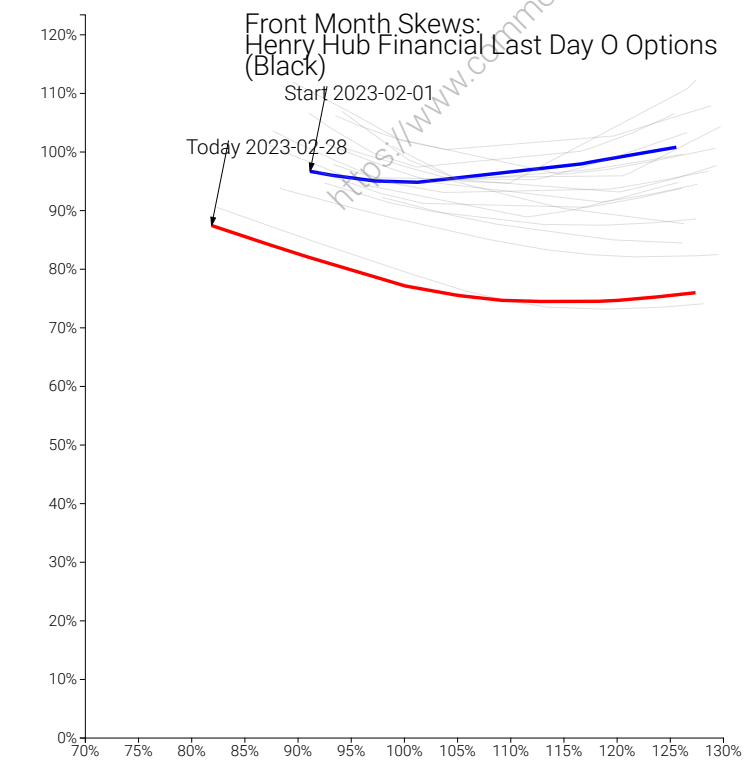
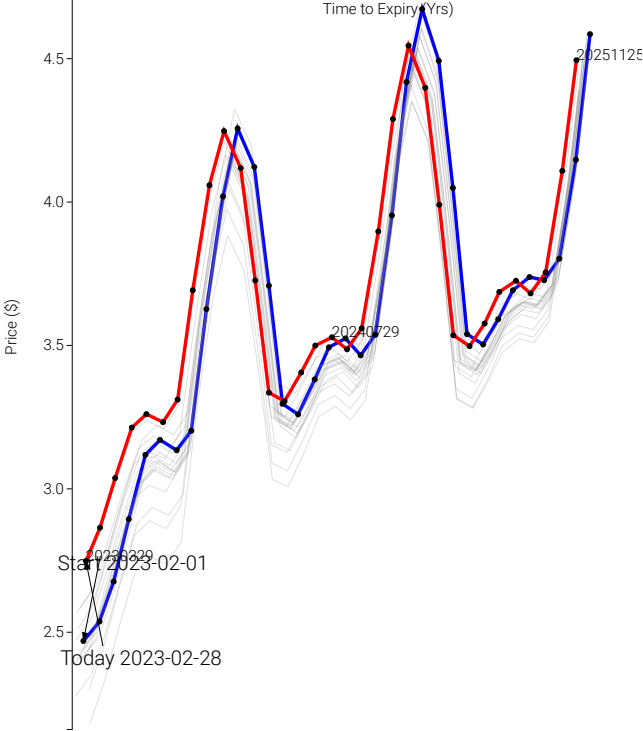
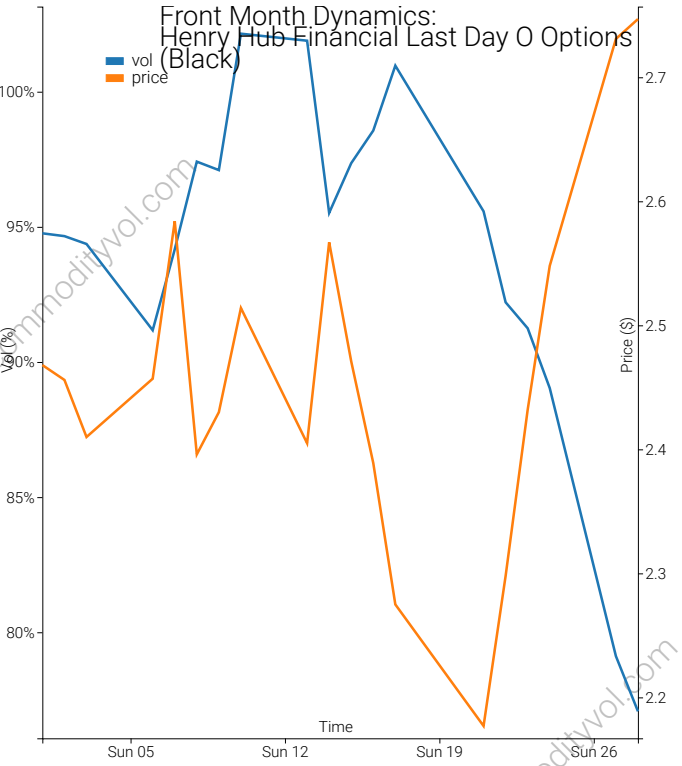
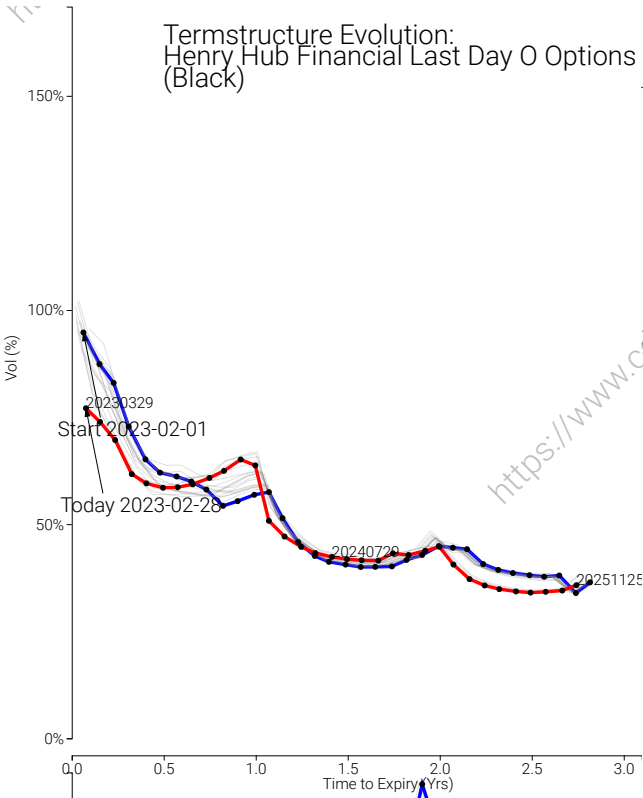


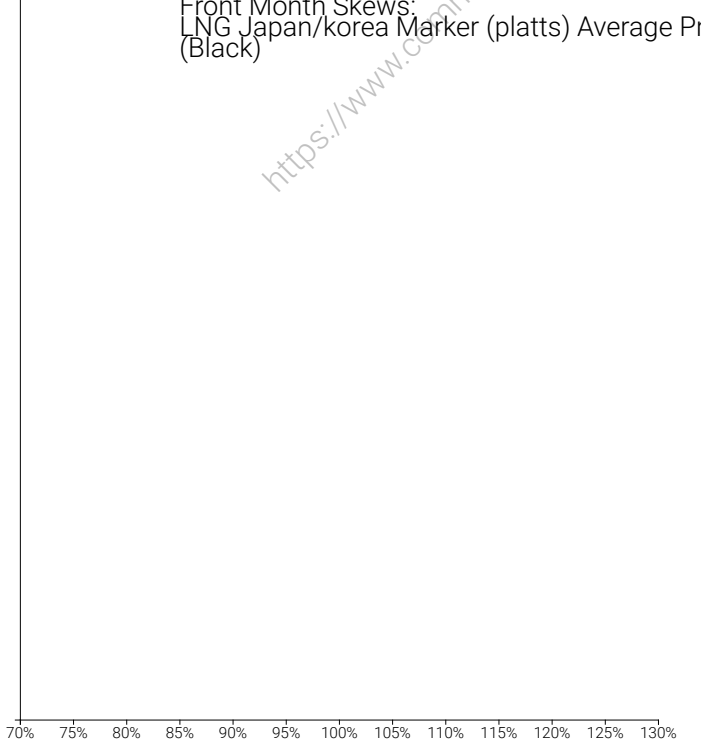
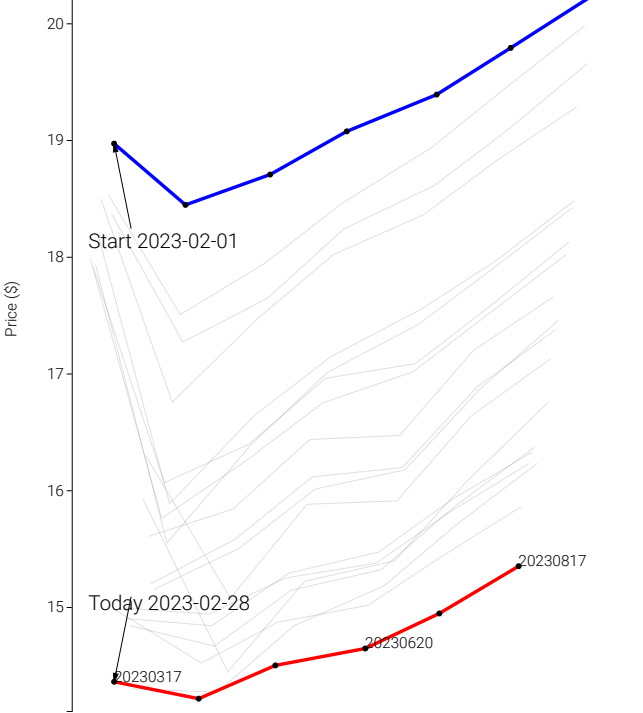
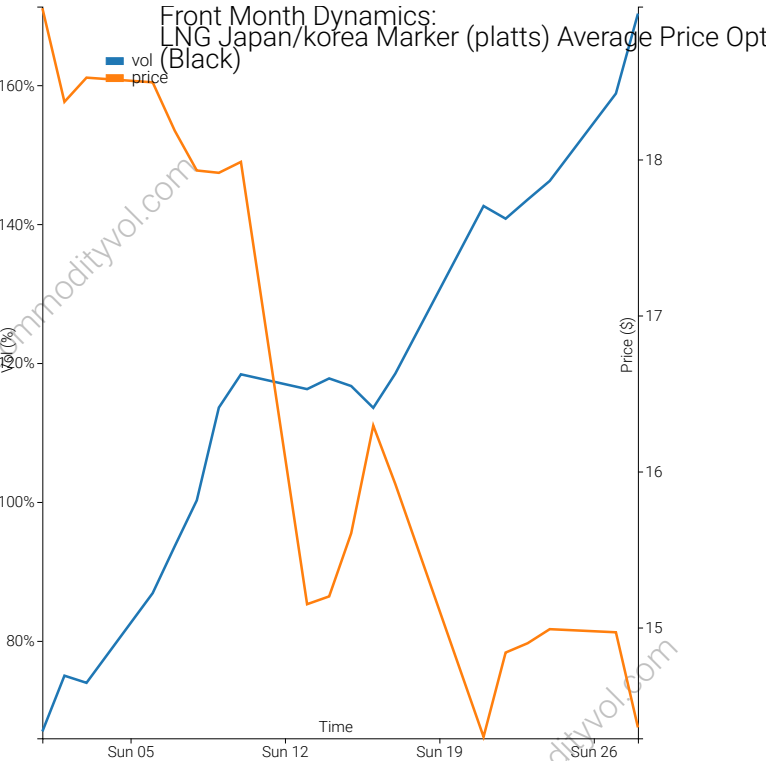
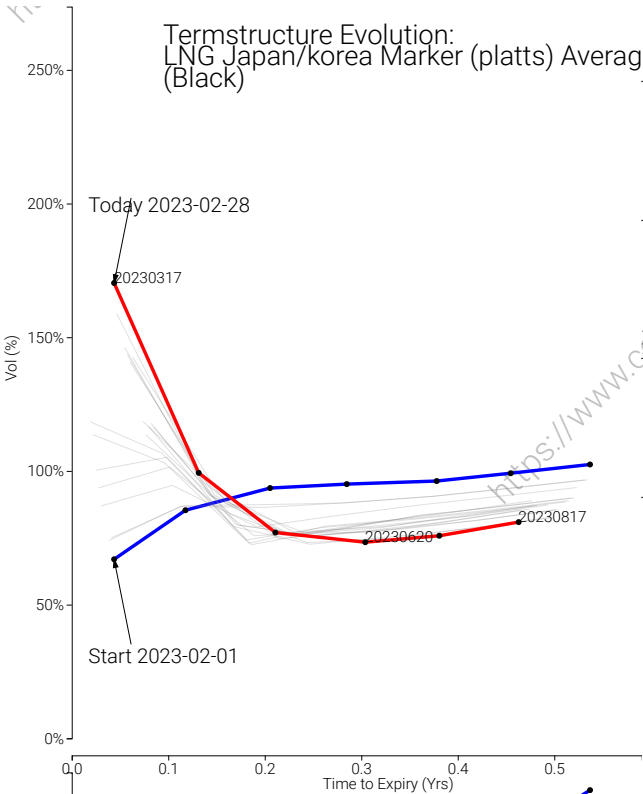


Energy: Natural Gas

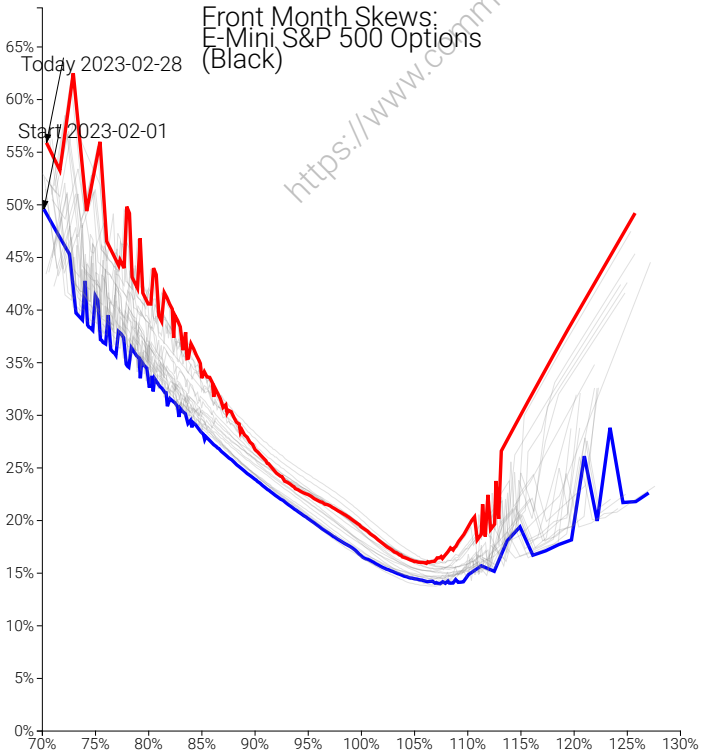
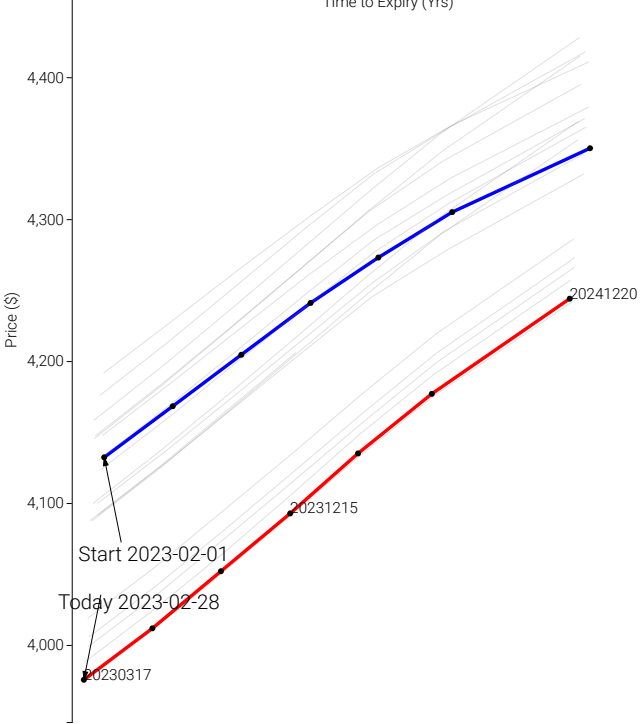
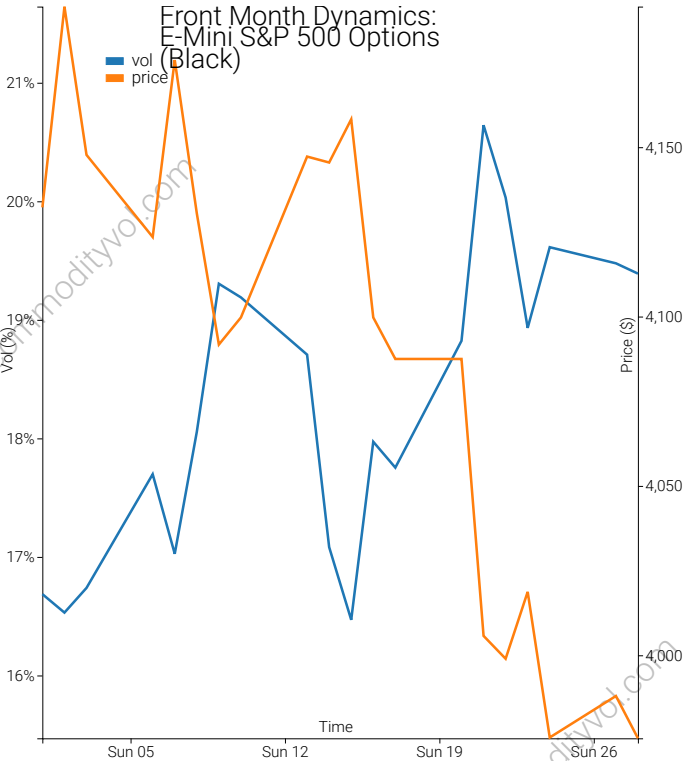
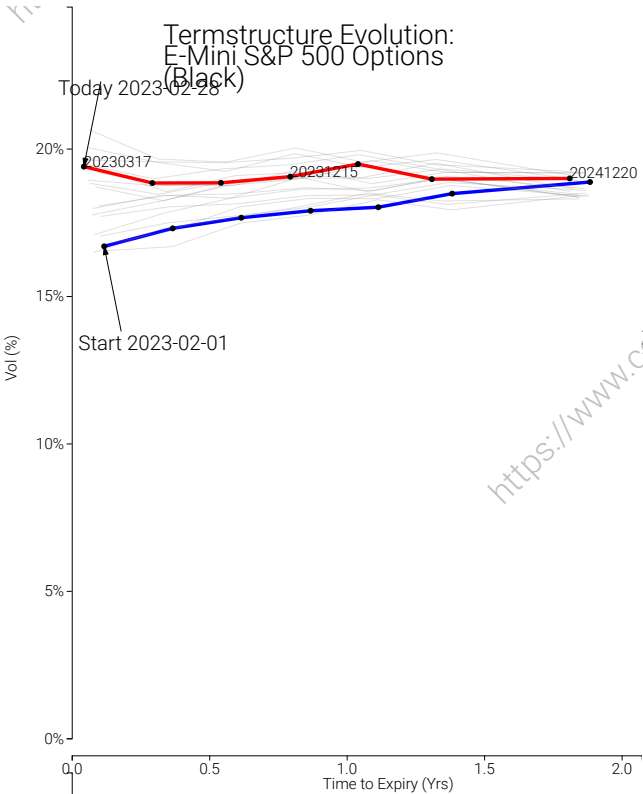


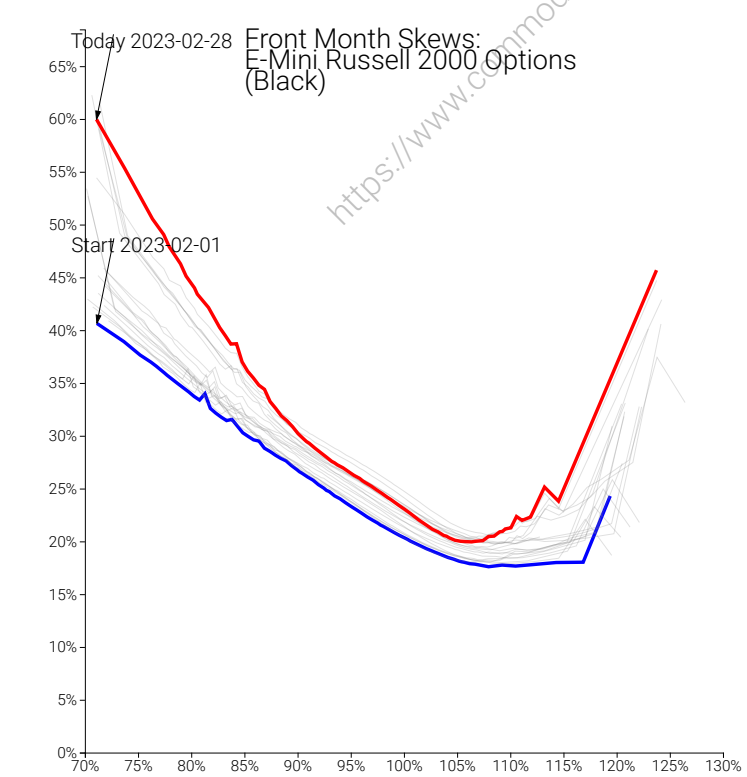
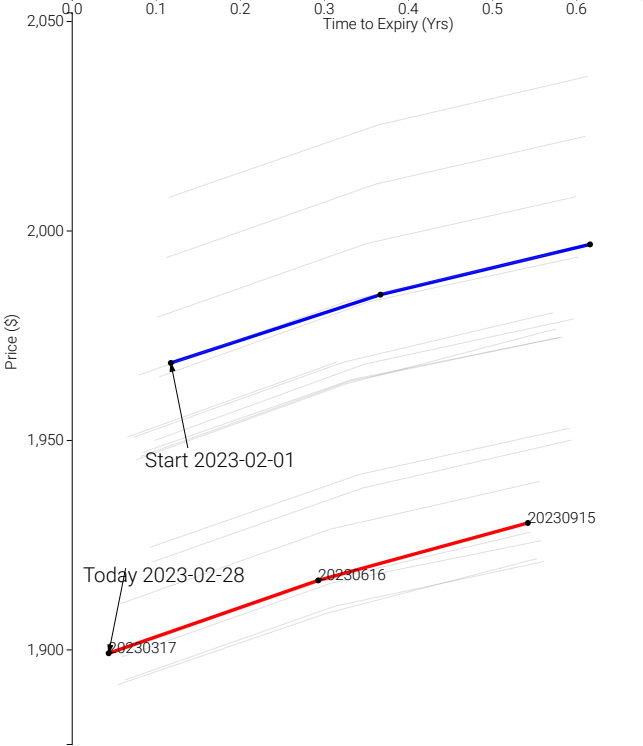
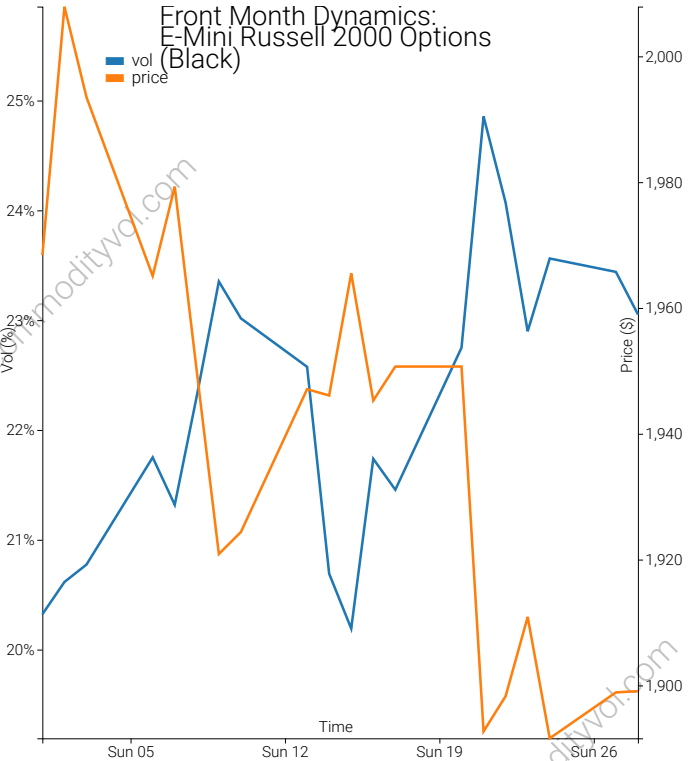
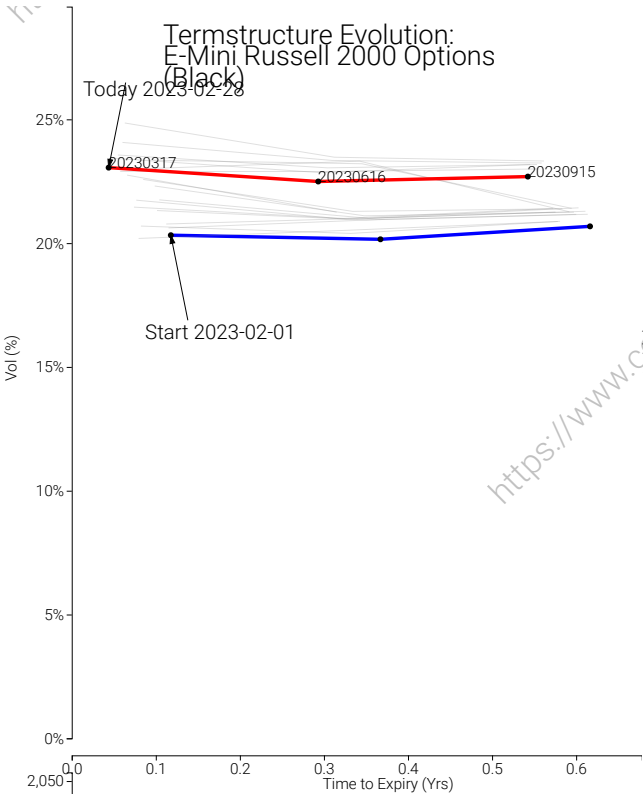


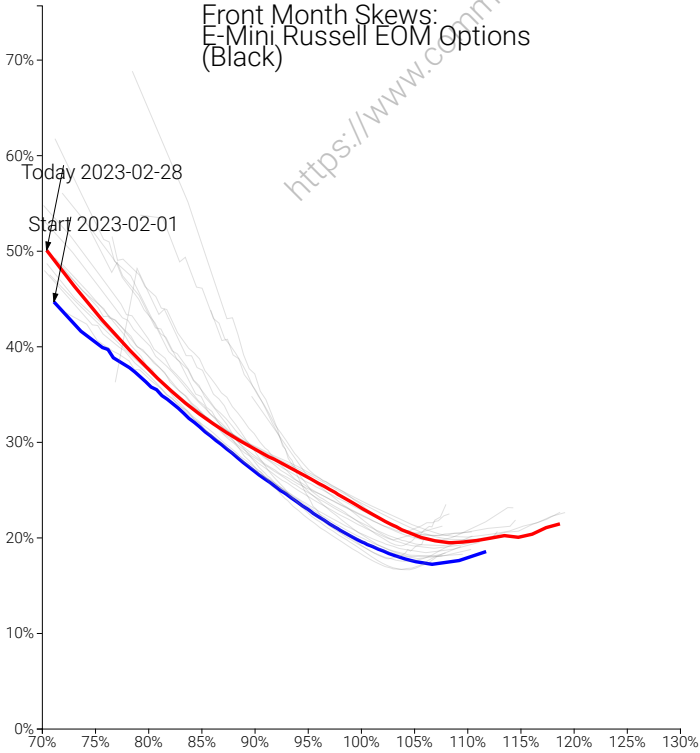
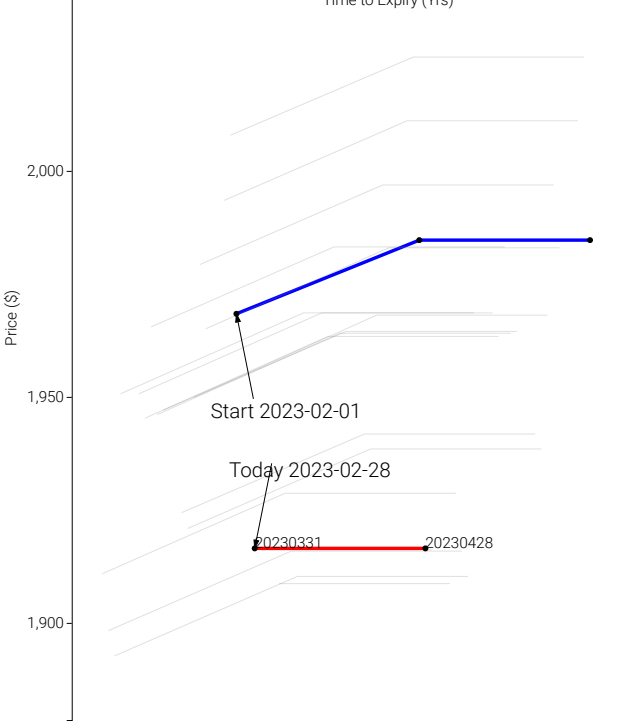
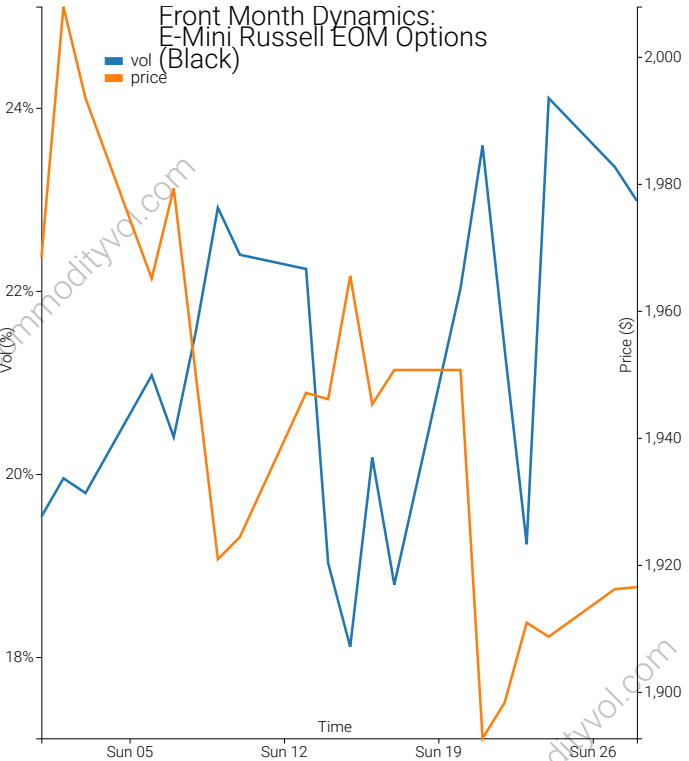
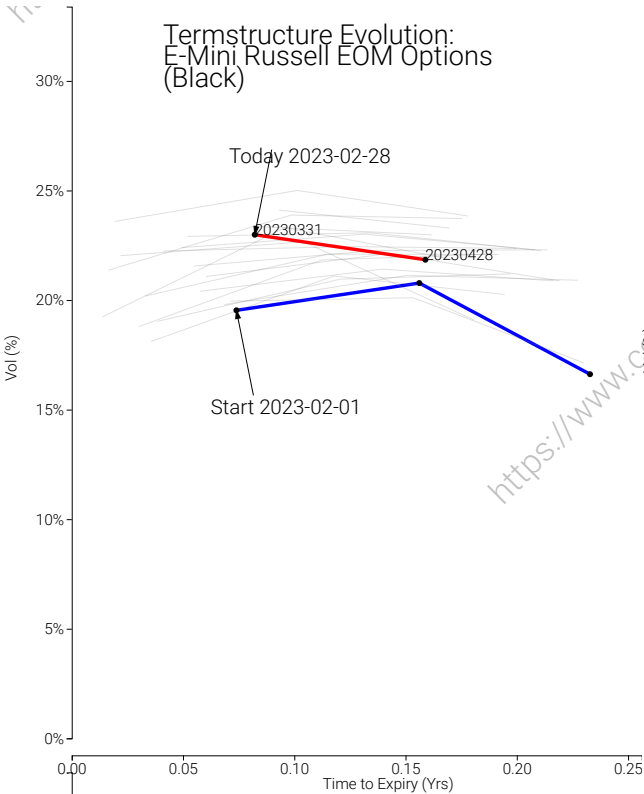


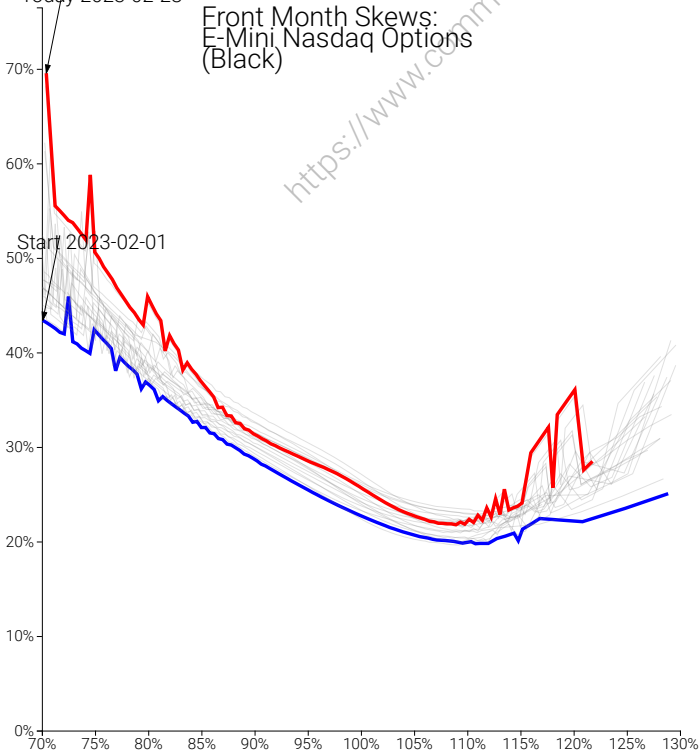
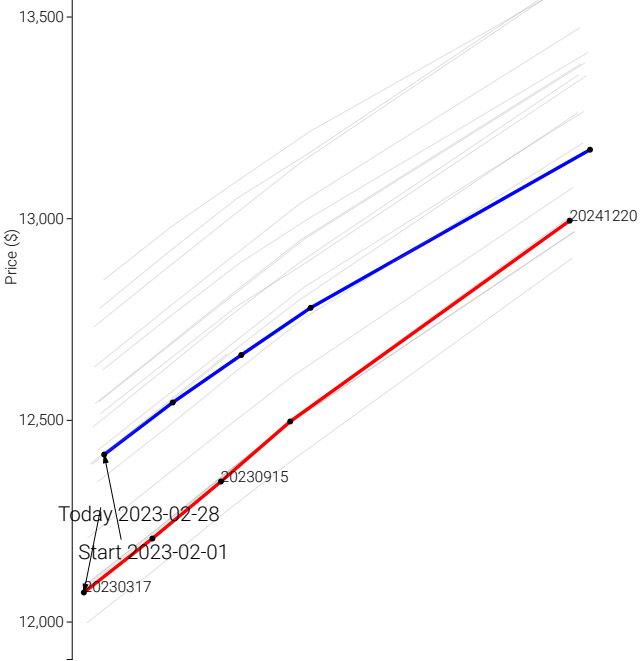
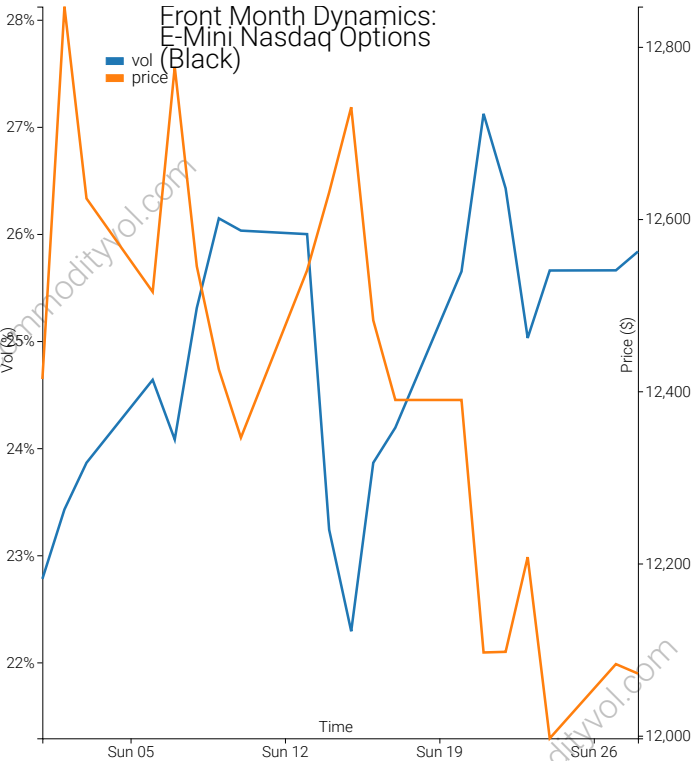
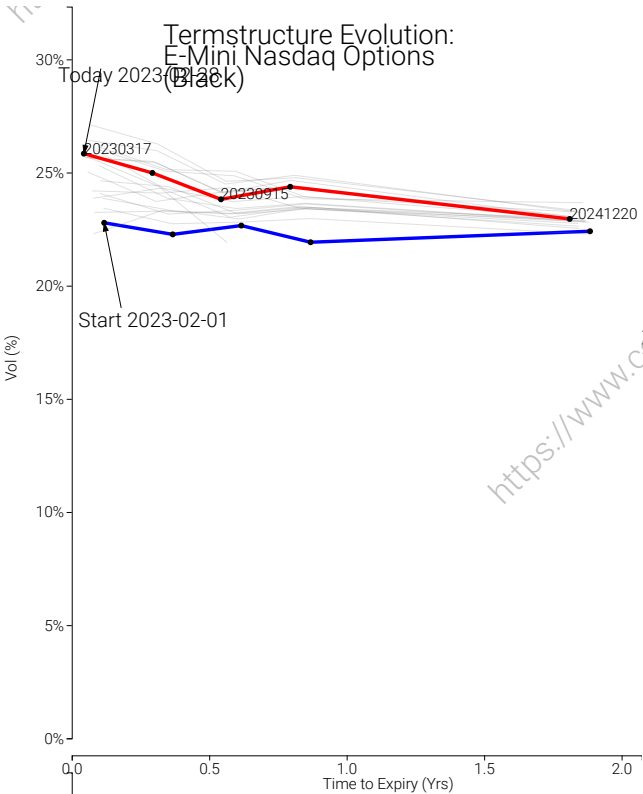


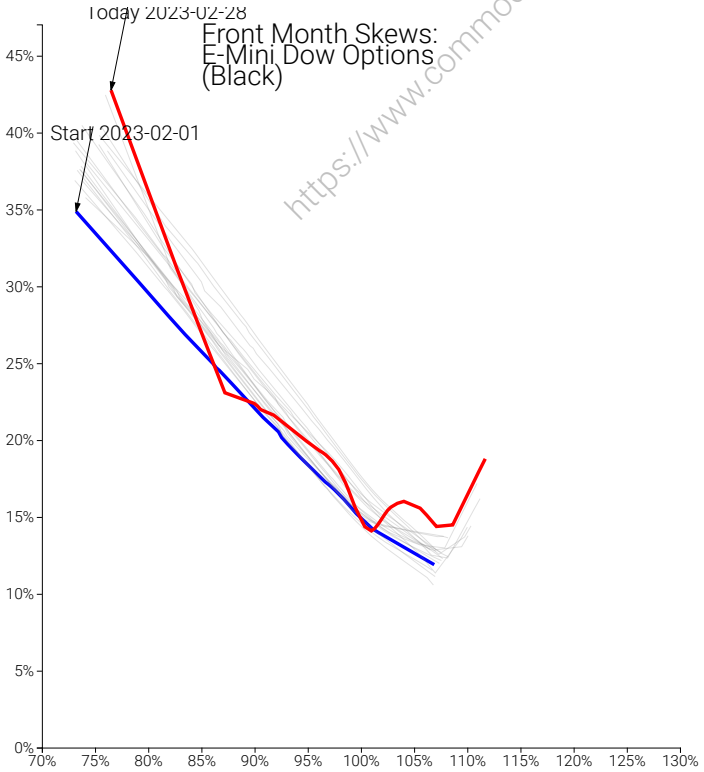
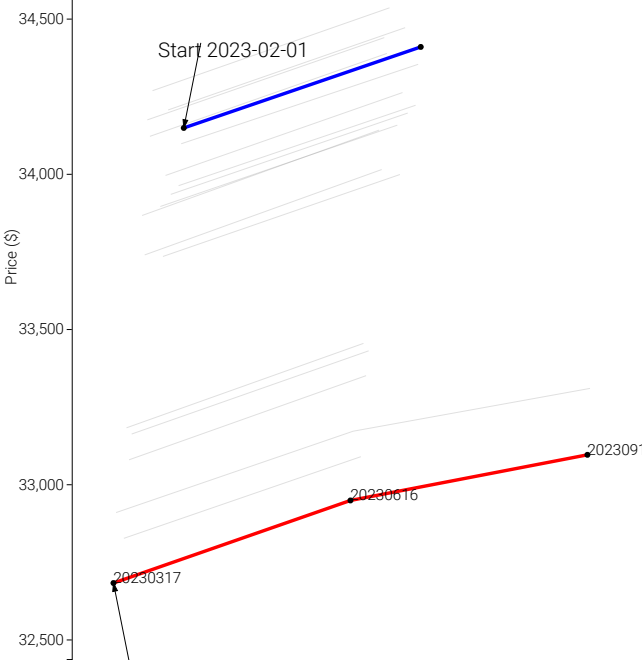
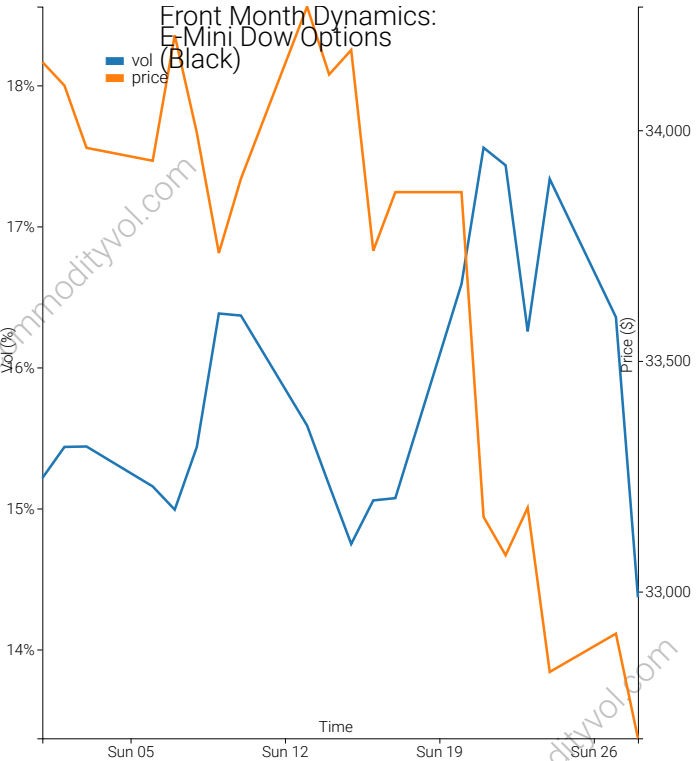
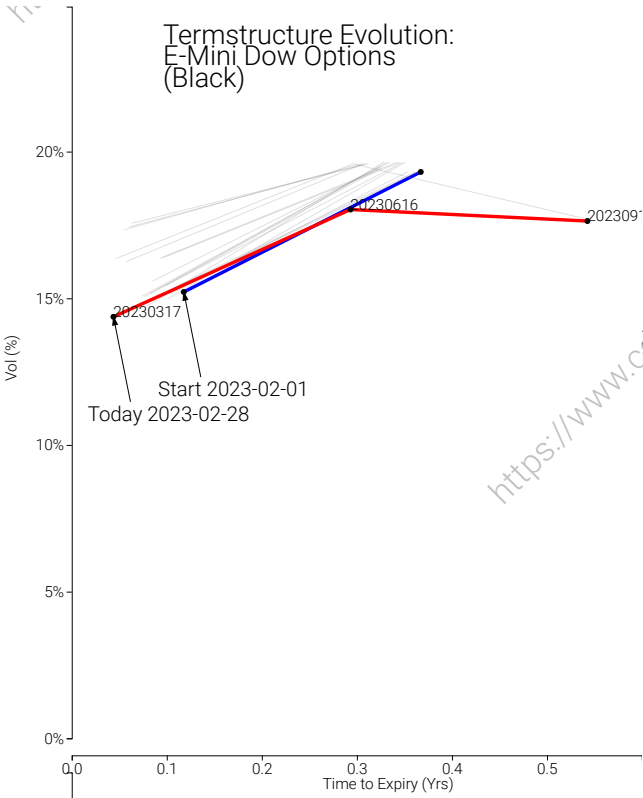
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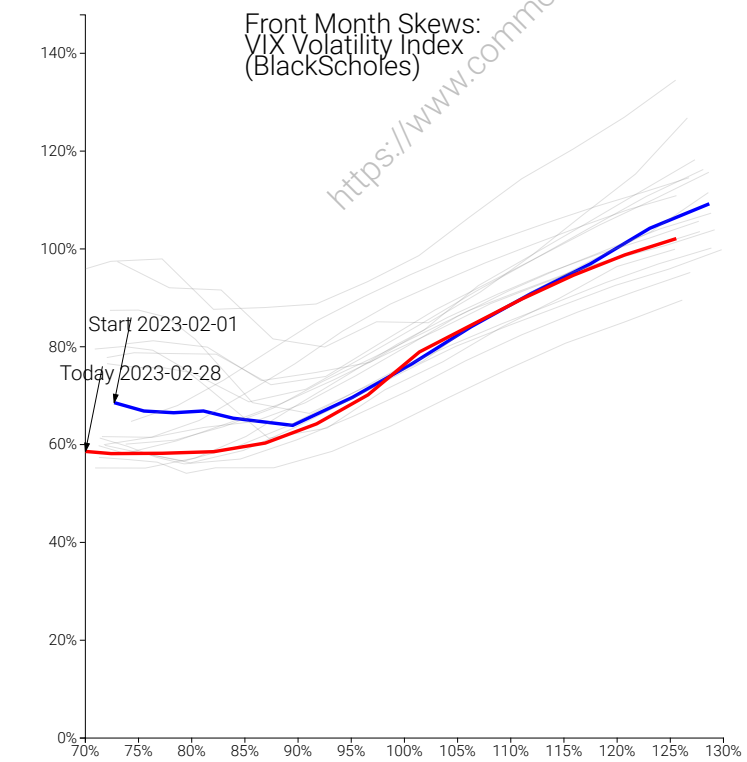
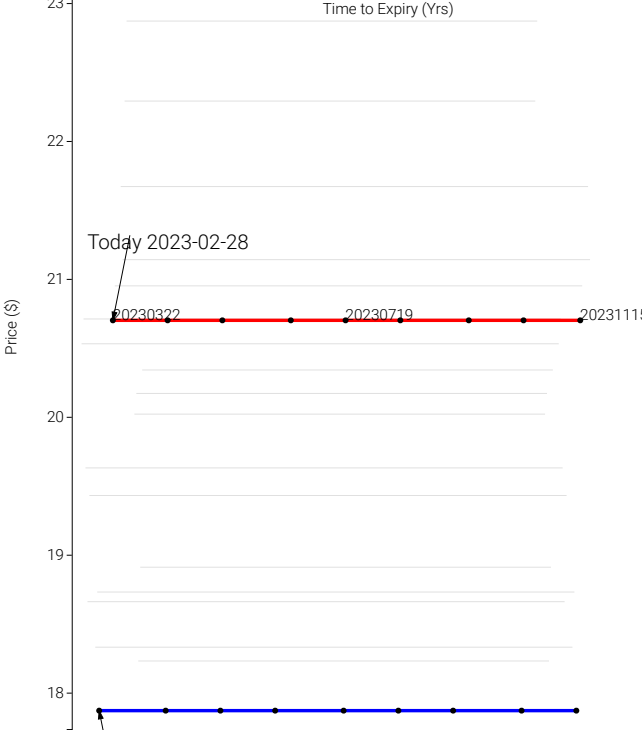
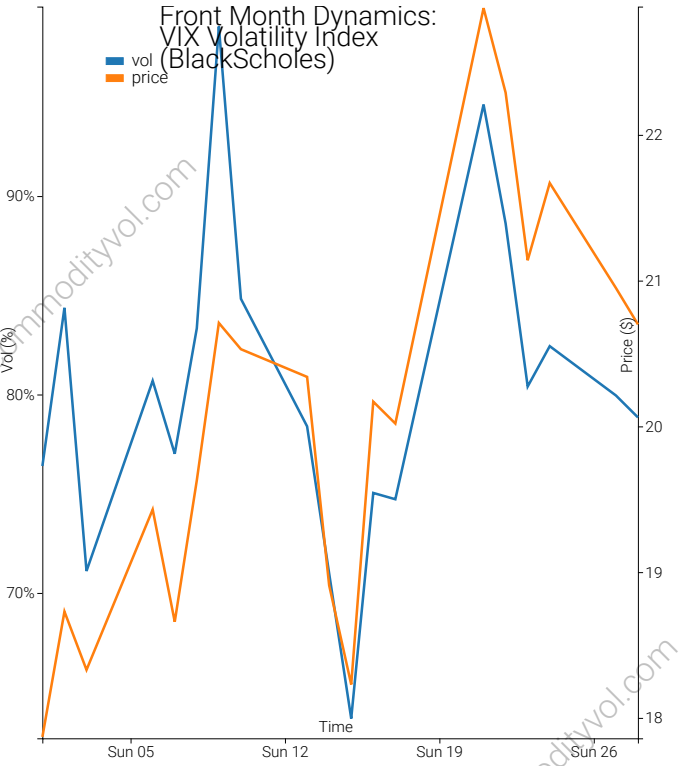
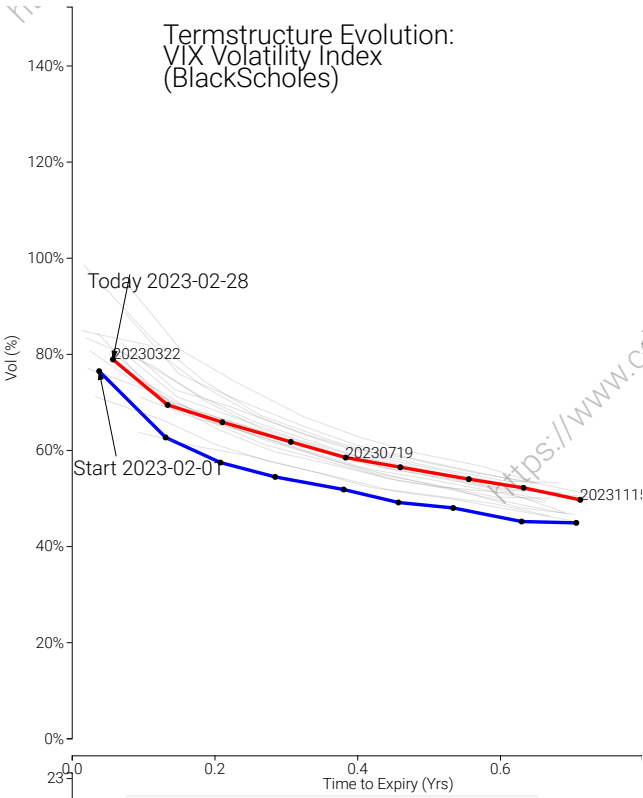




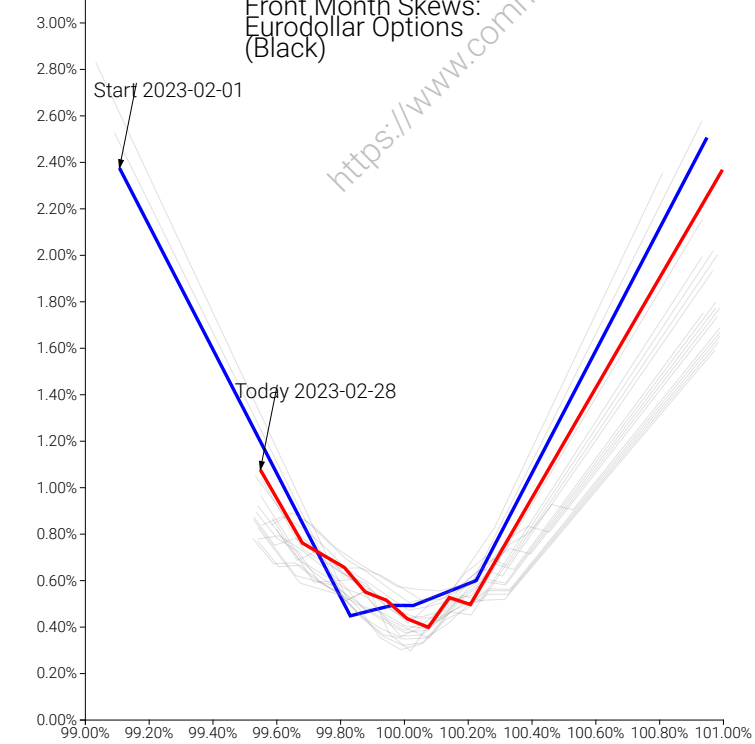
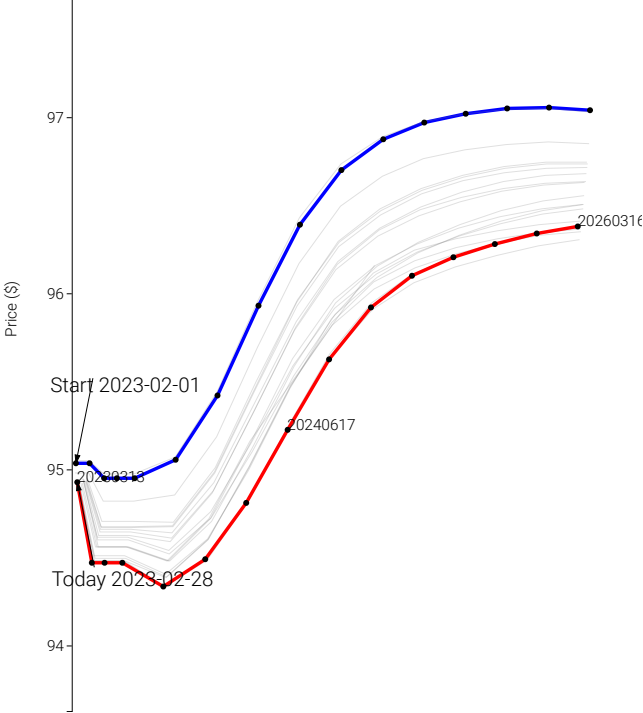
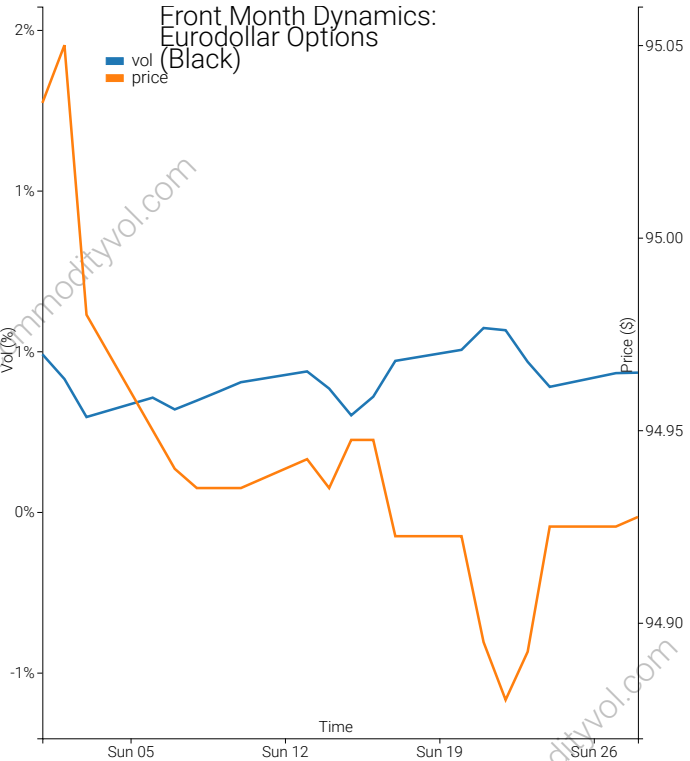
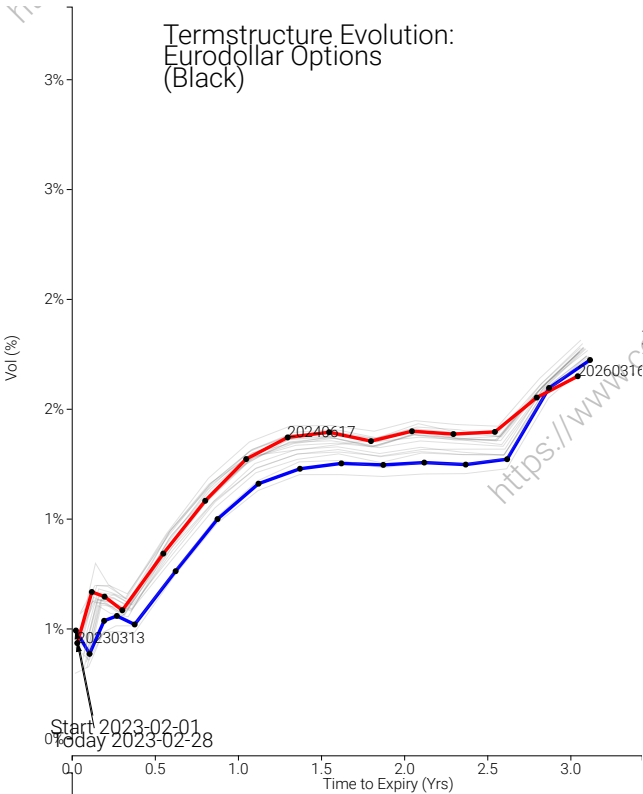


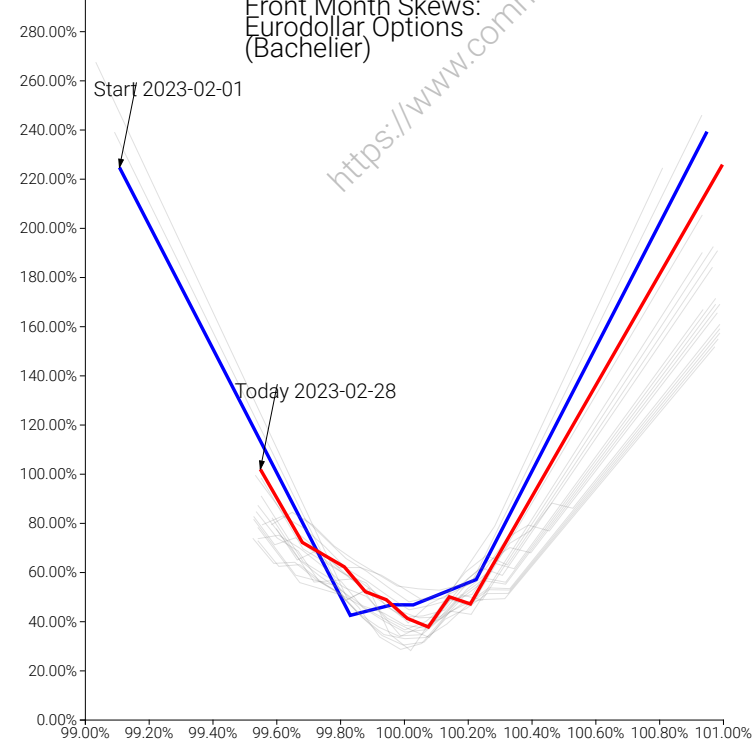
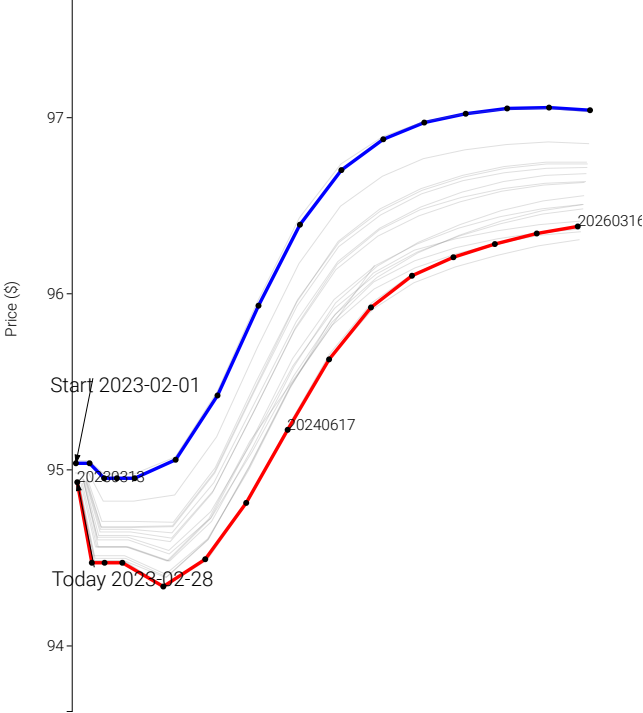
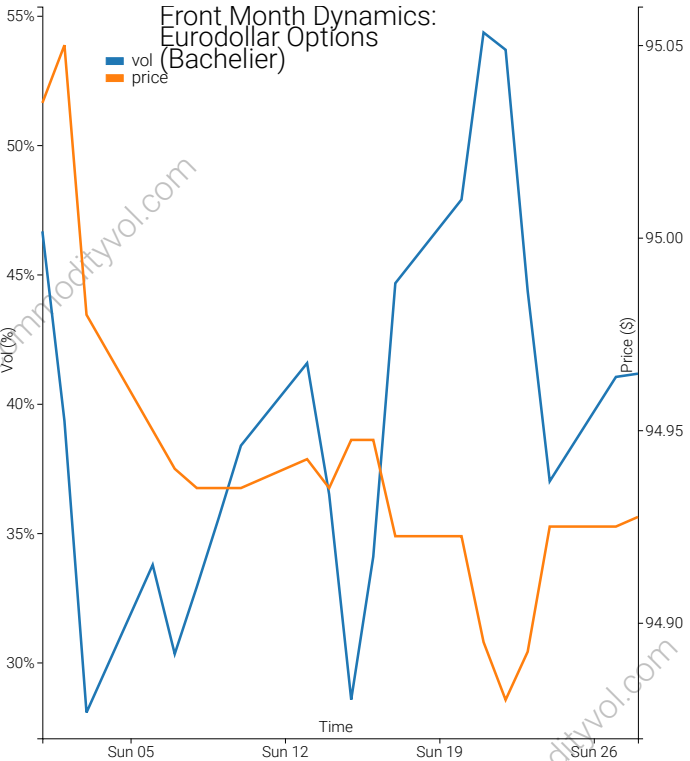
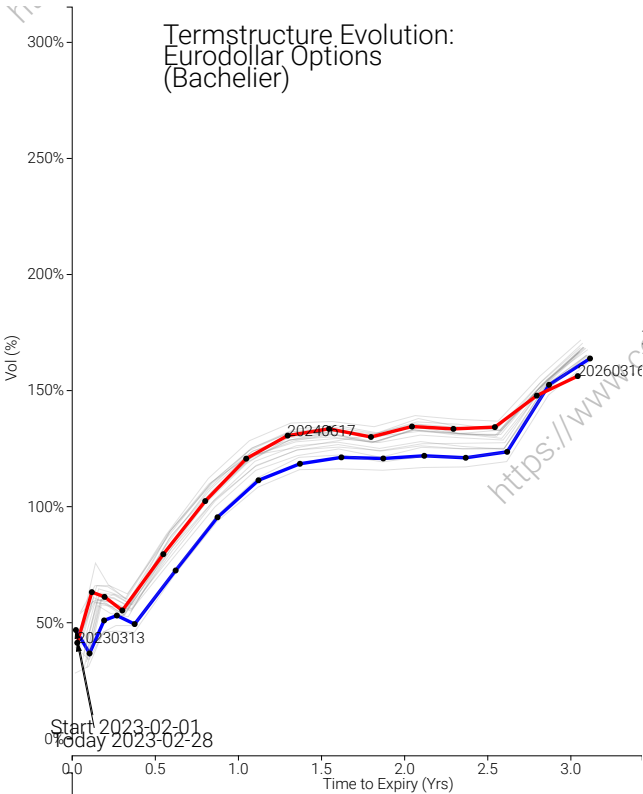


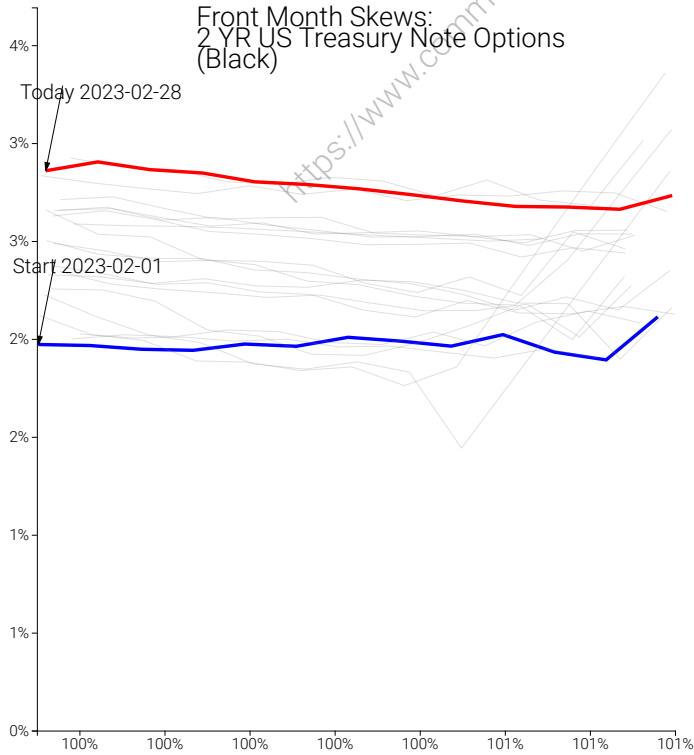
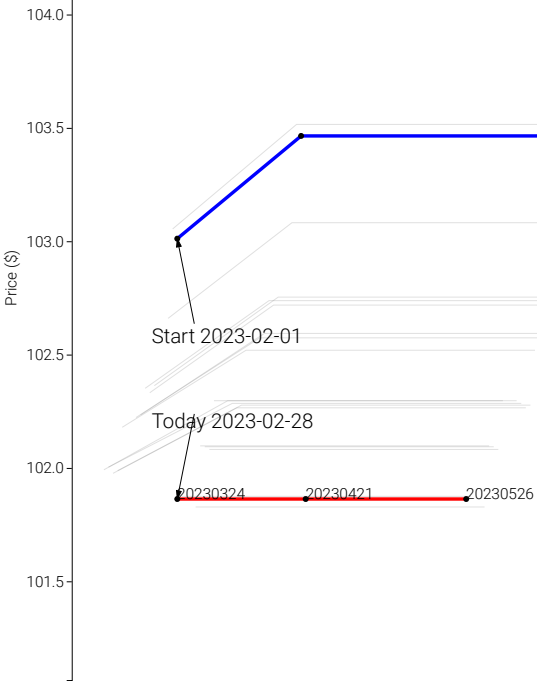
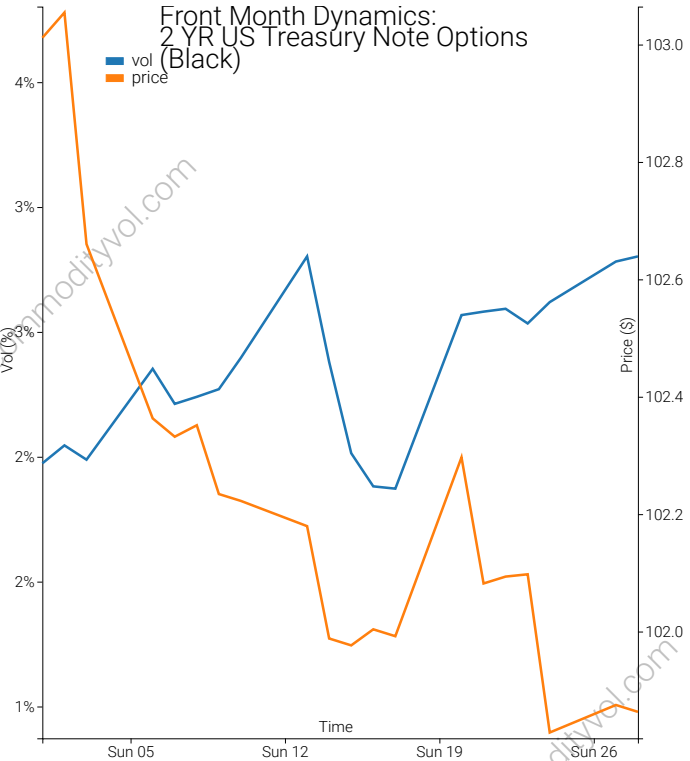
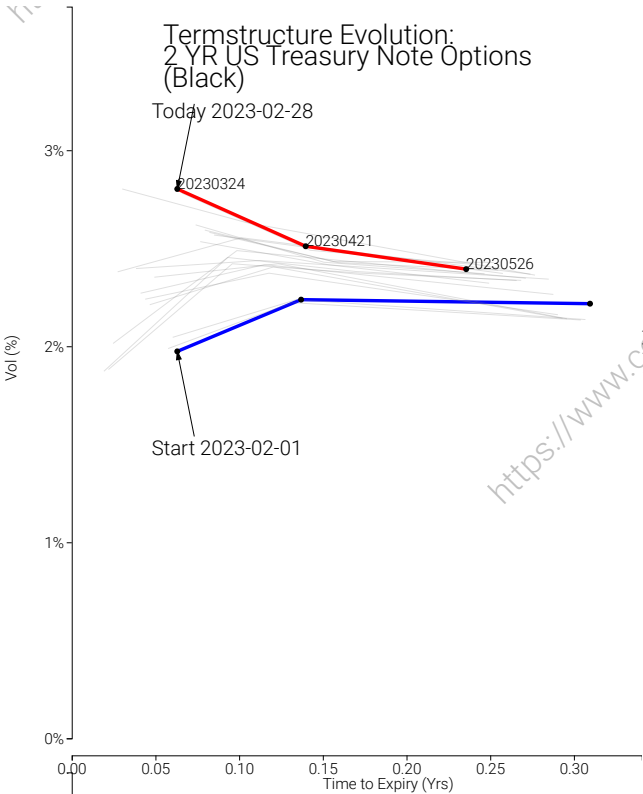


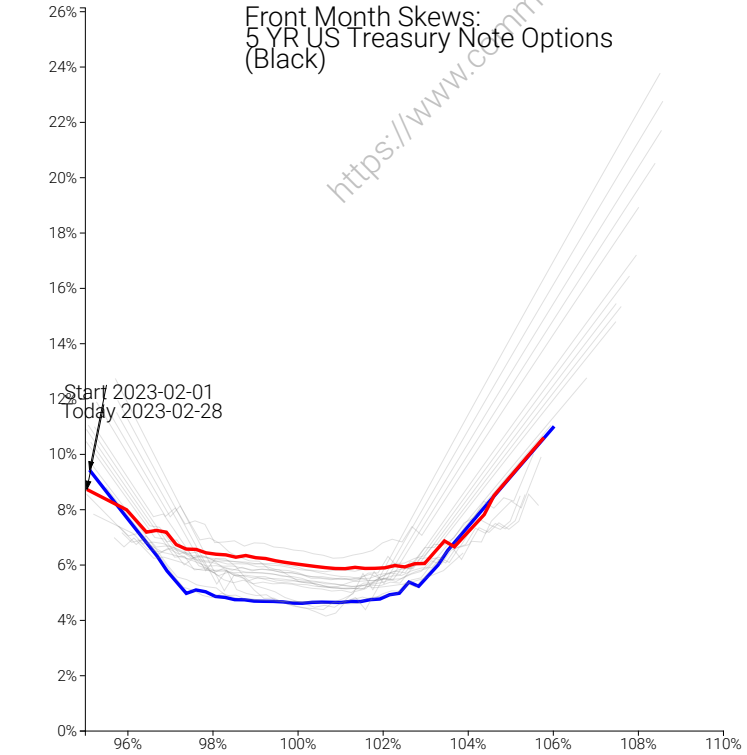
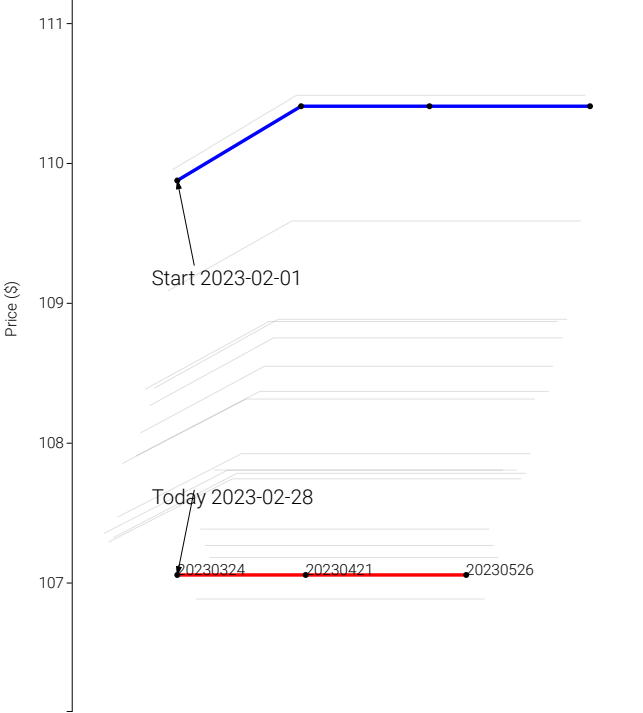
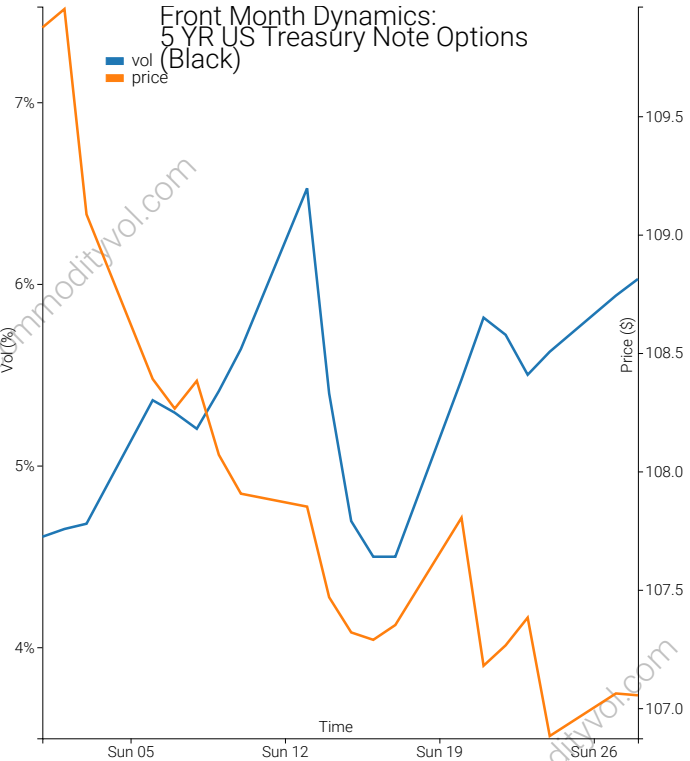
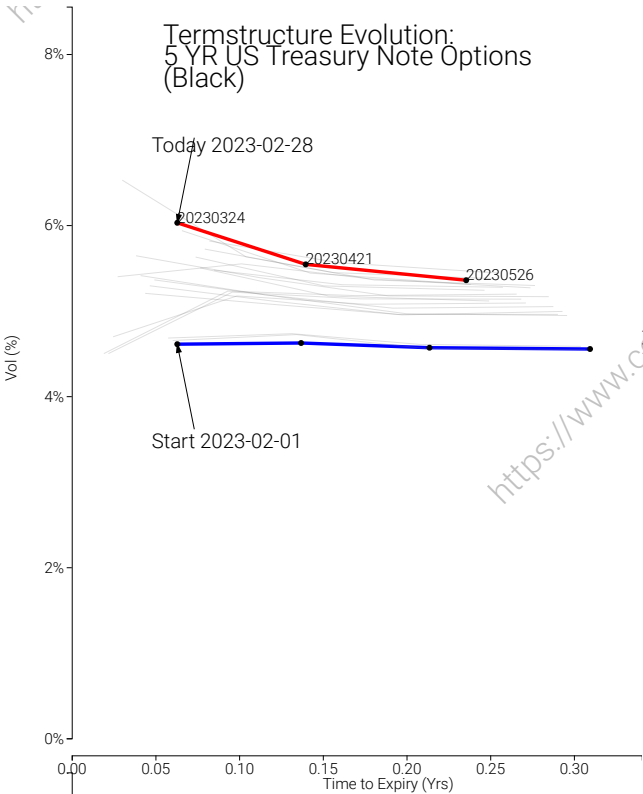


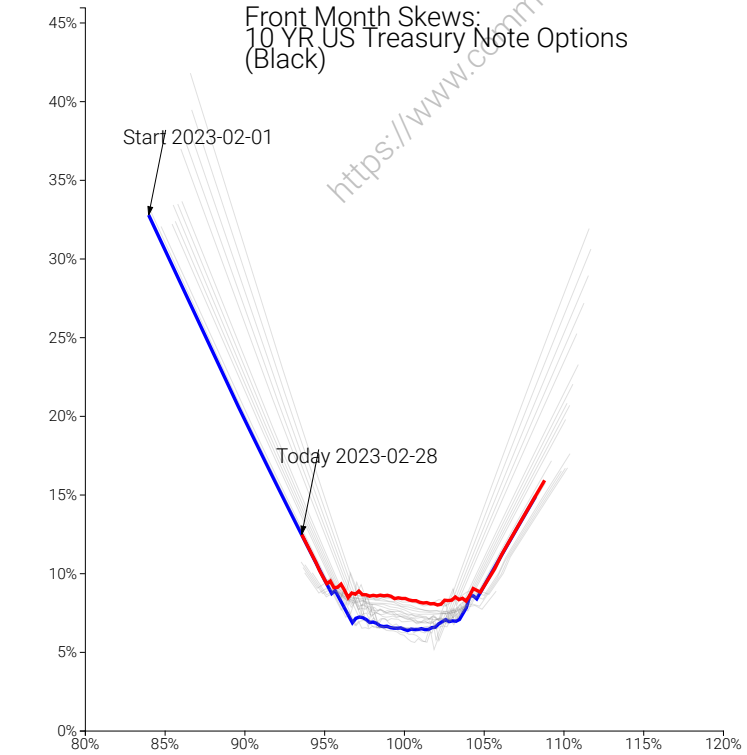
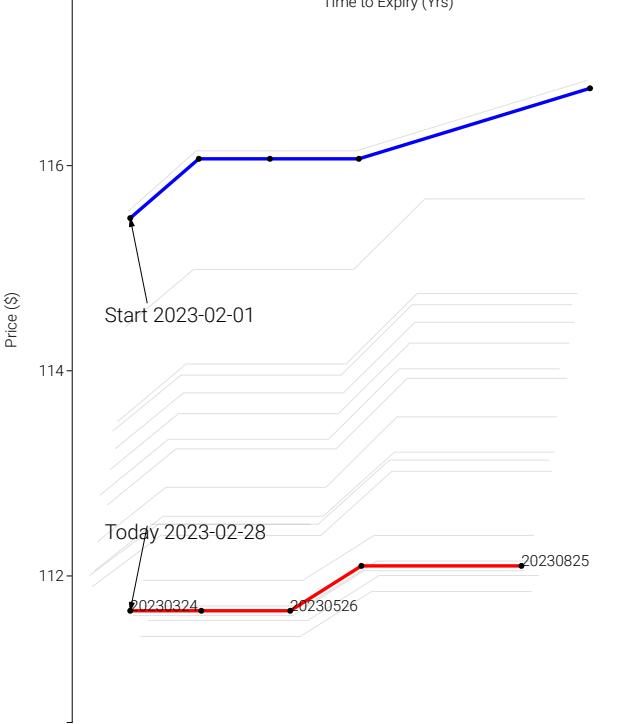
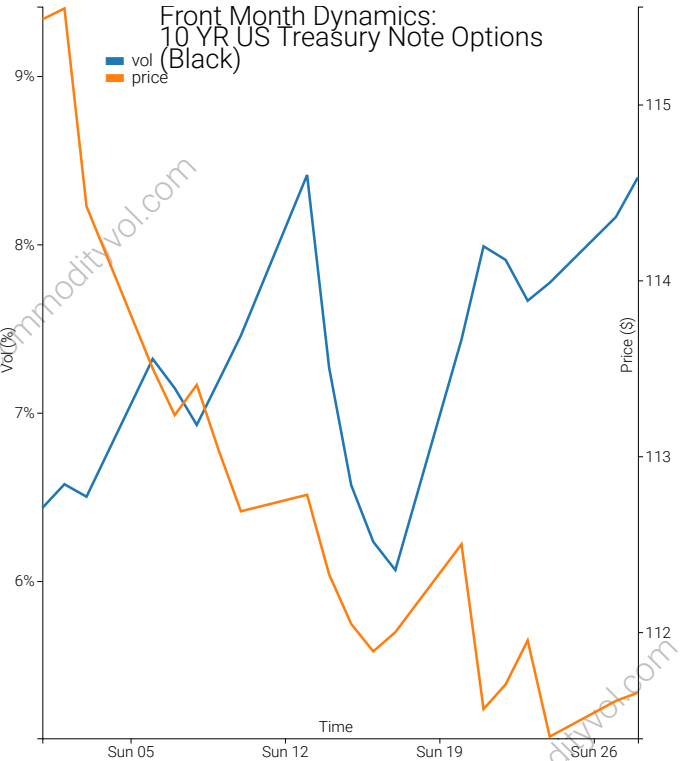
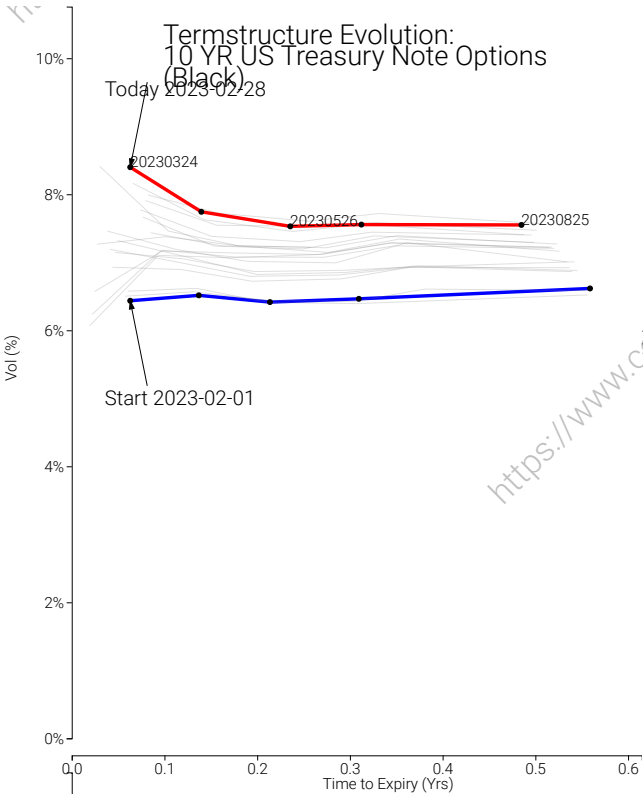
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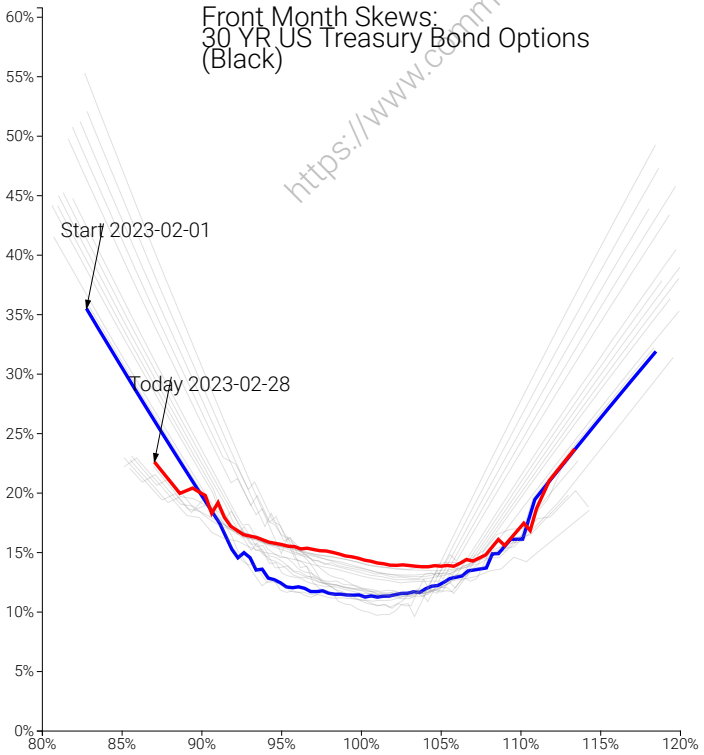
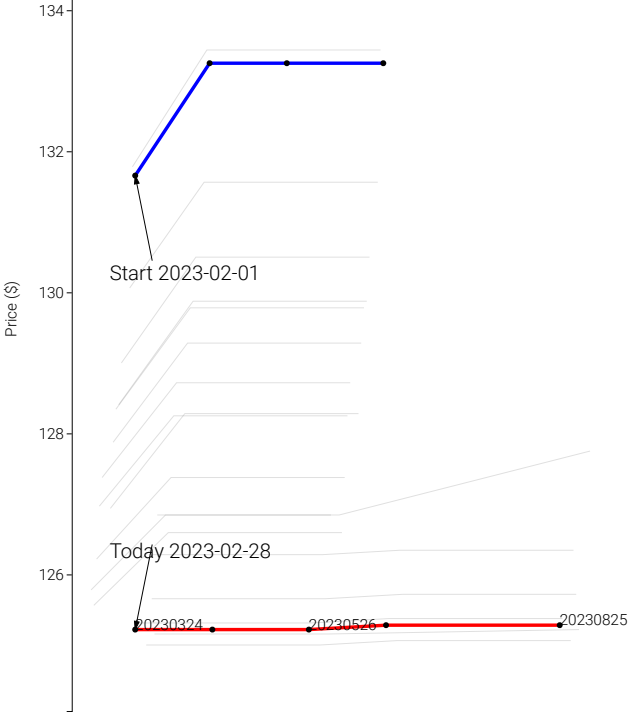
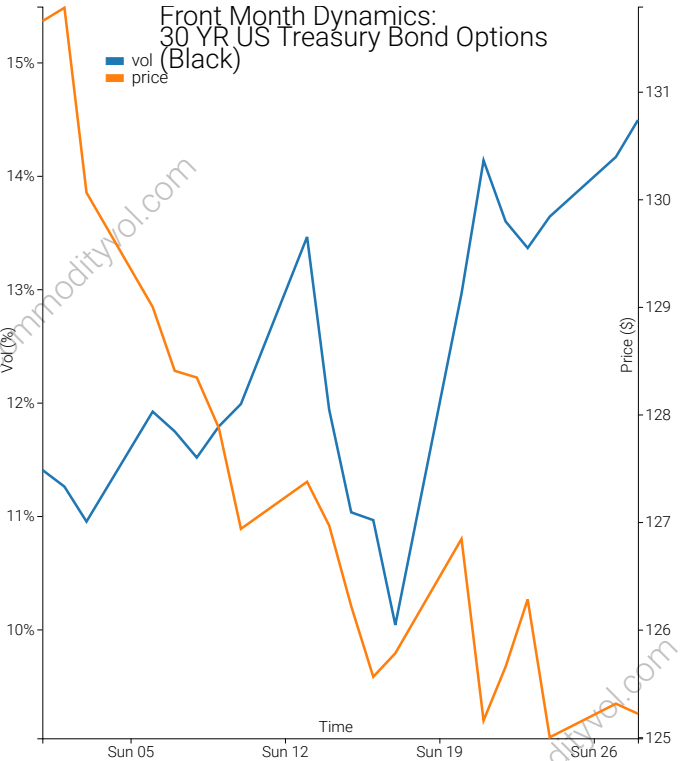
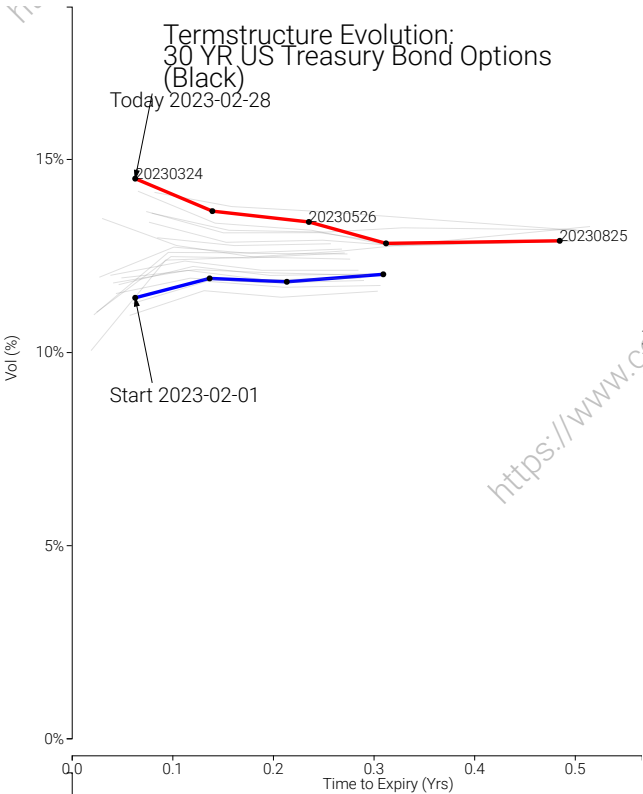


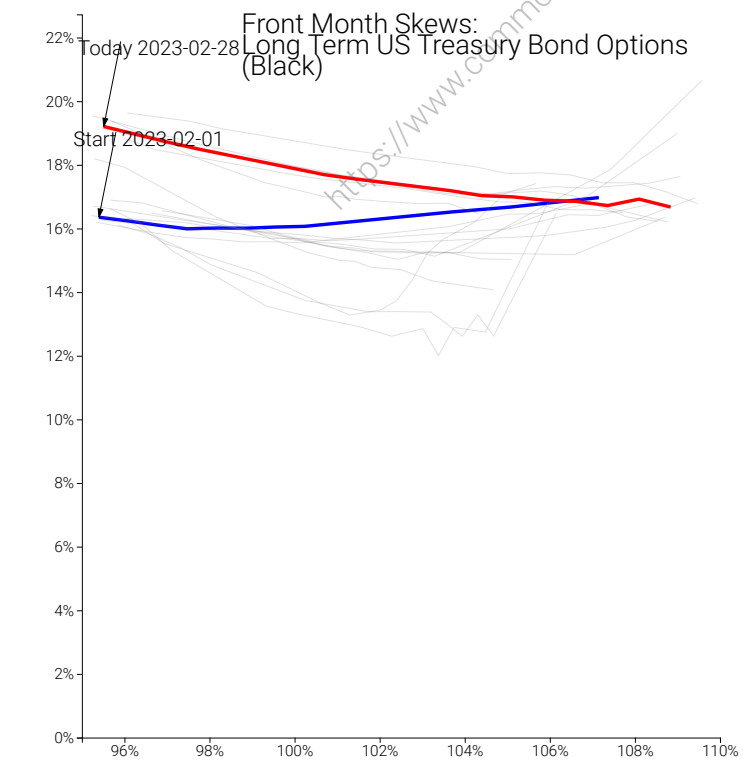
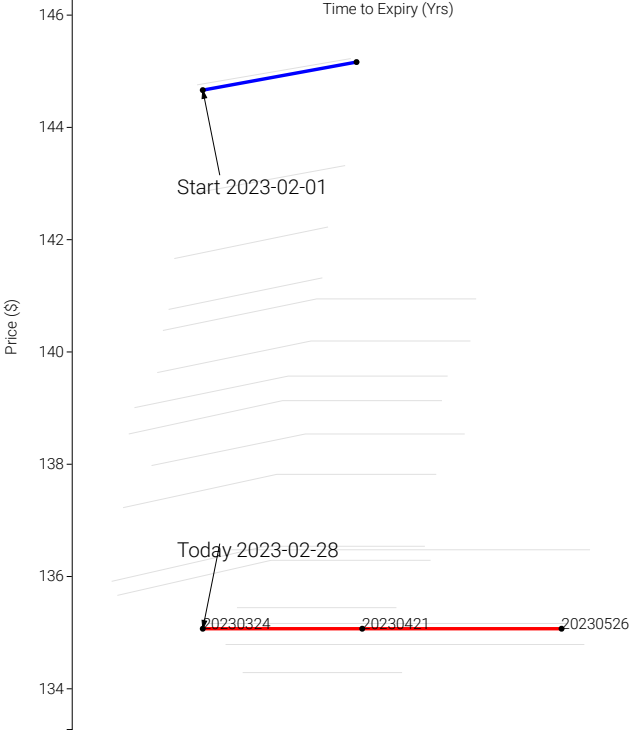
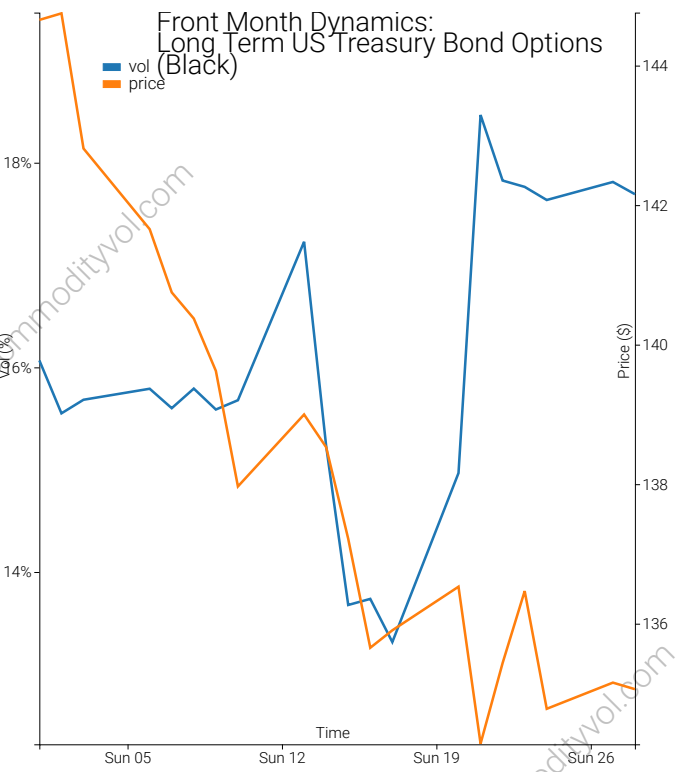
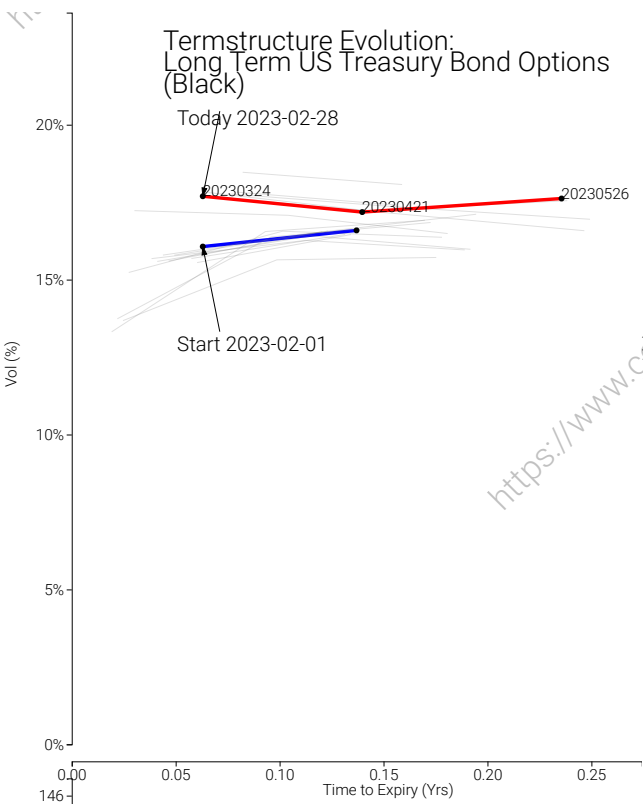




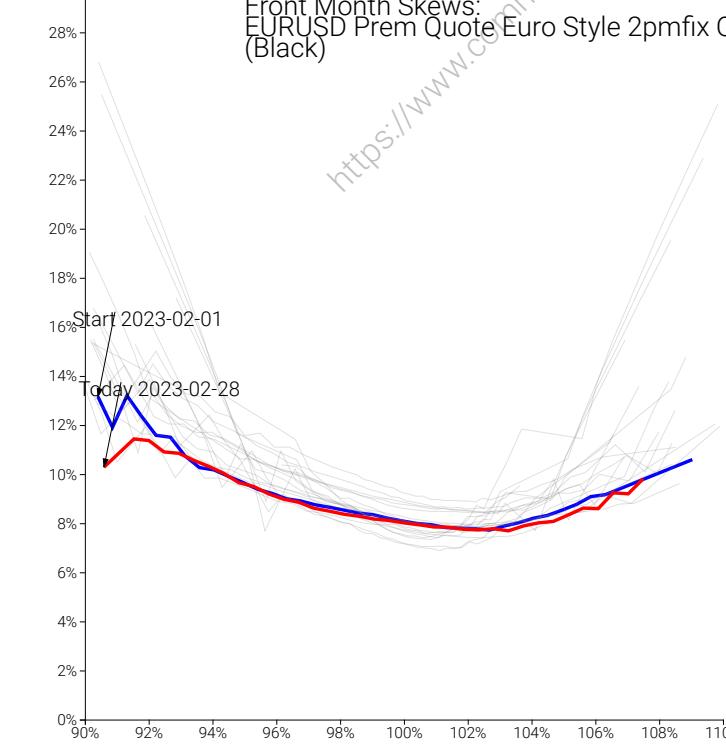
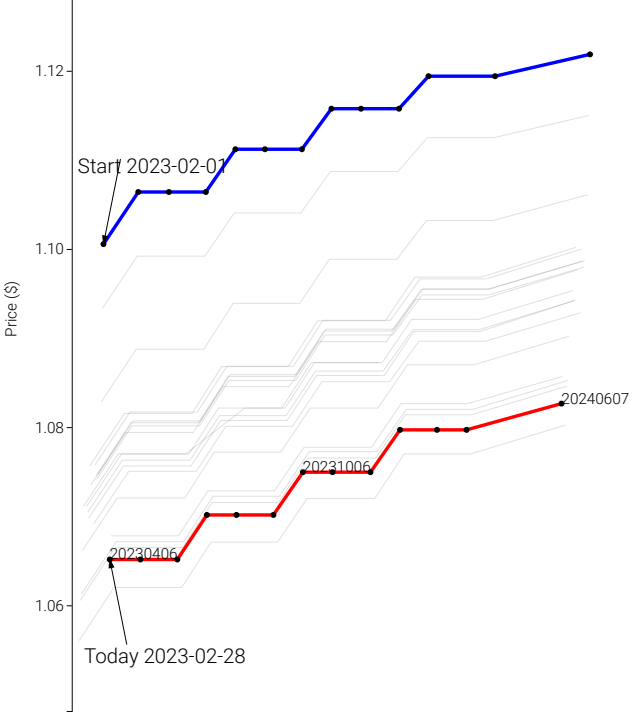
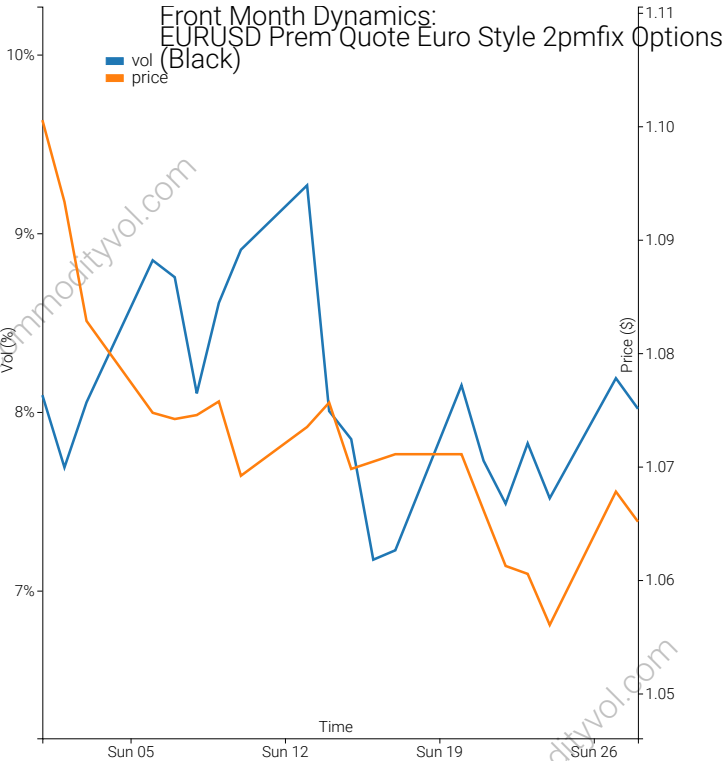
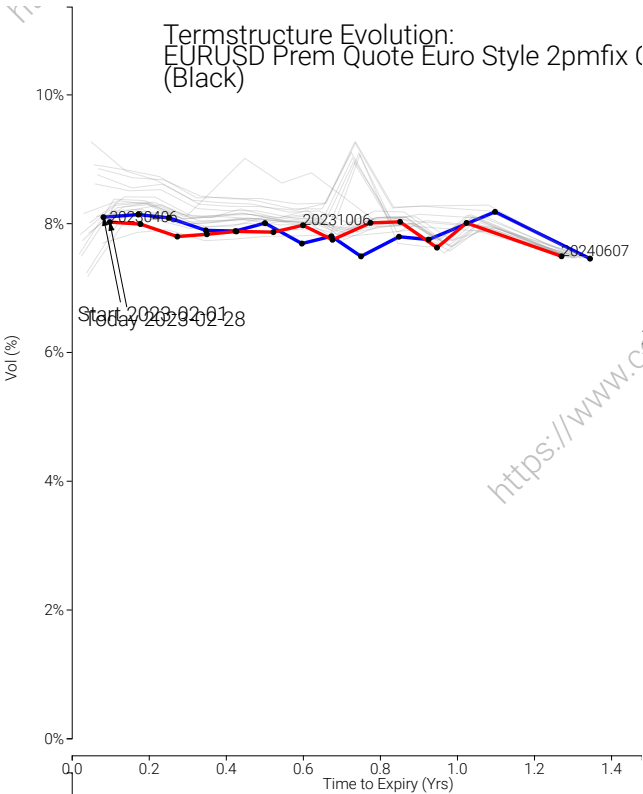


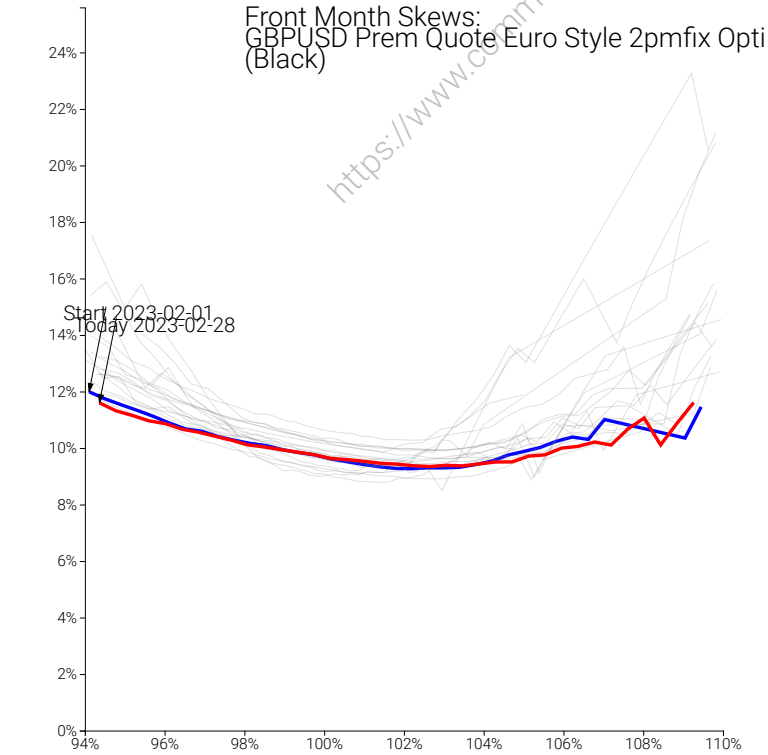
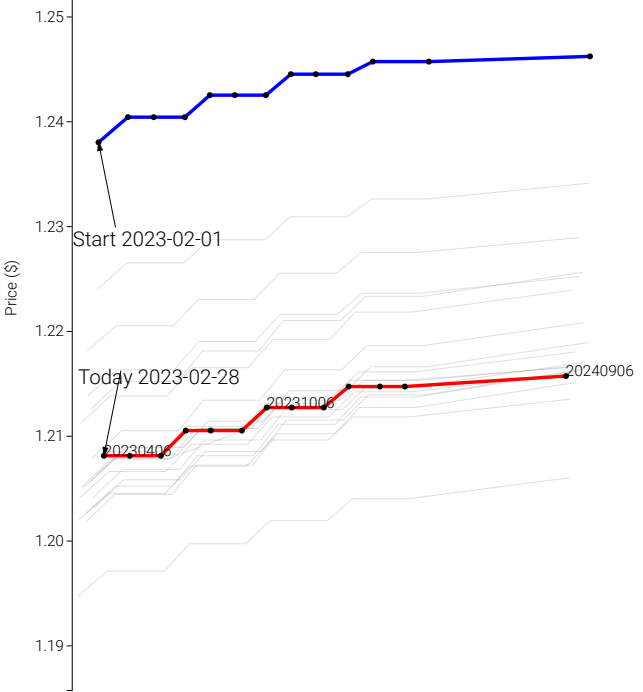
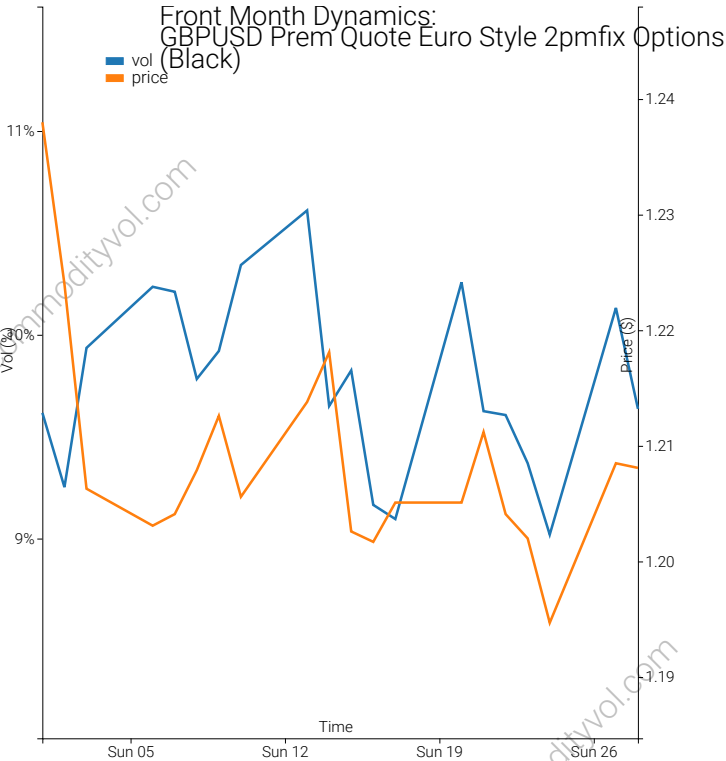
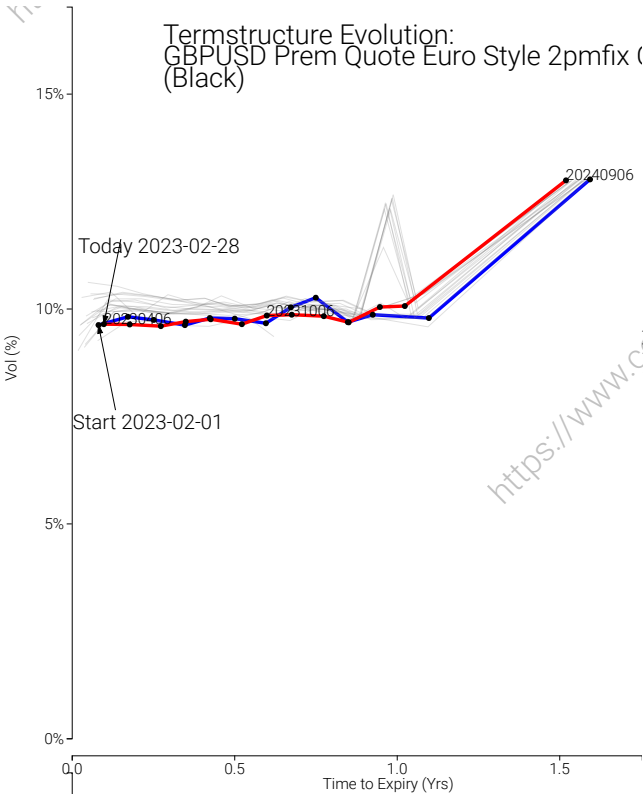


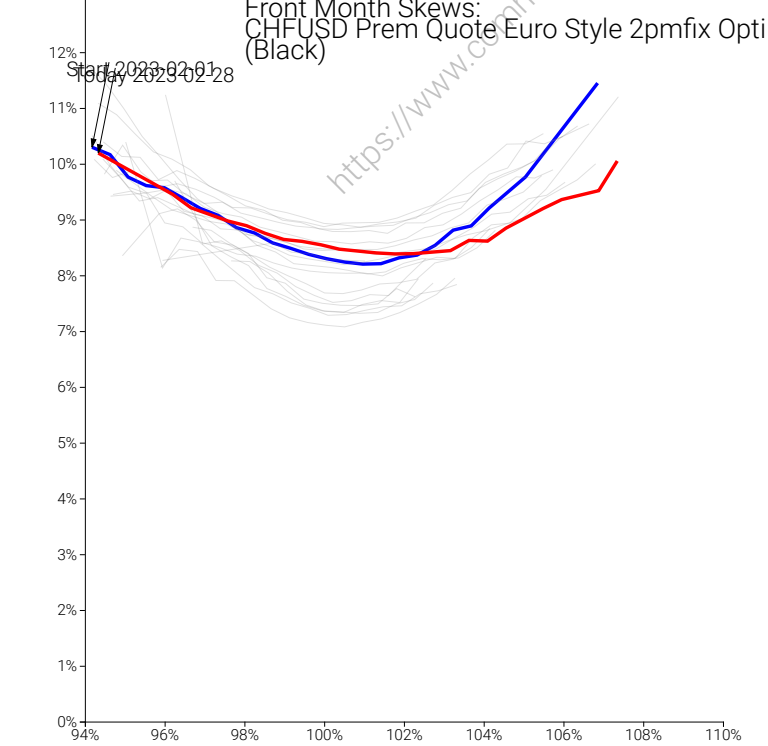
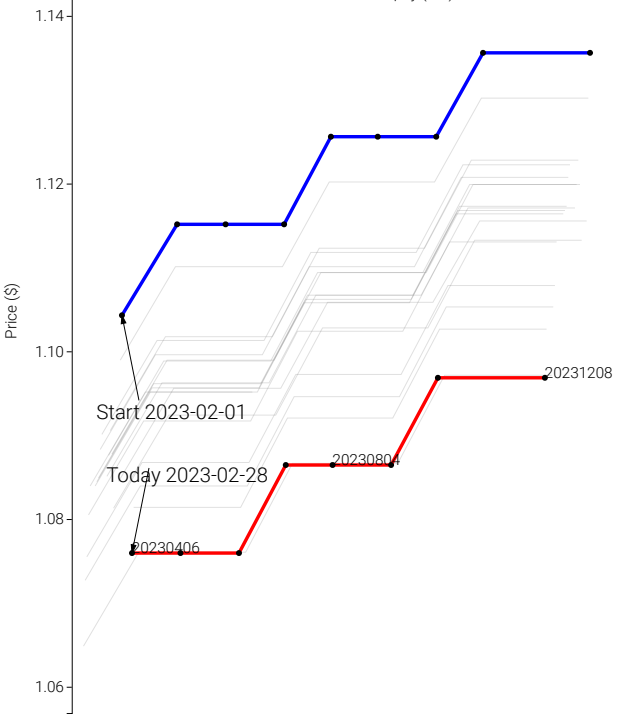
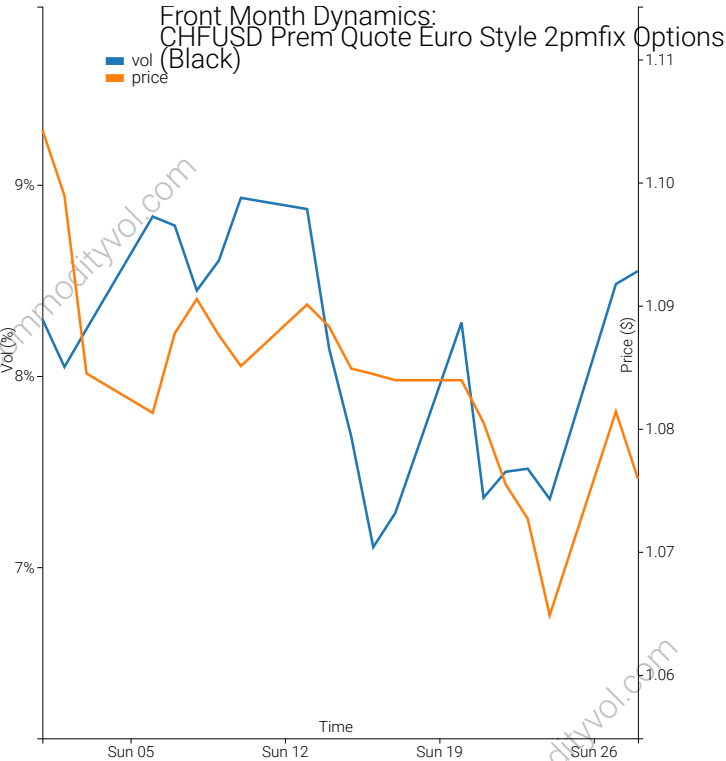
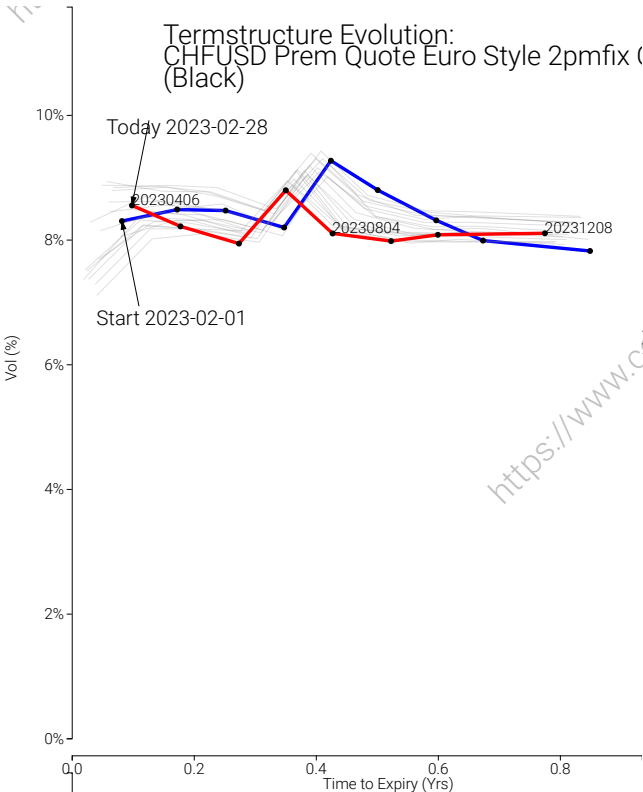


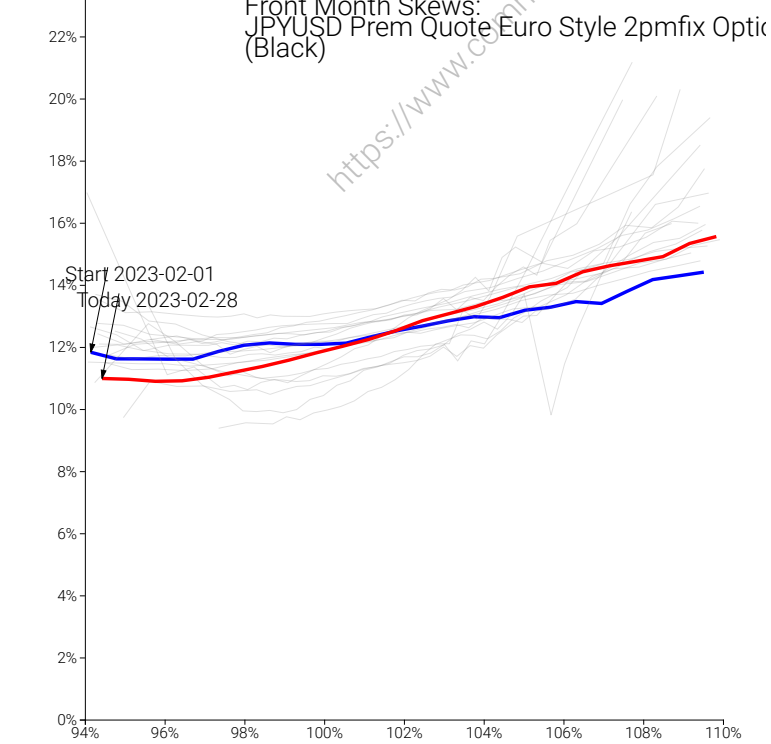
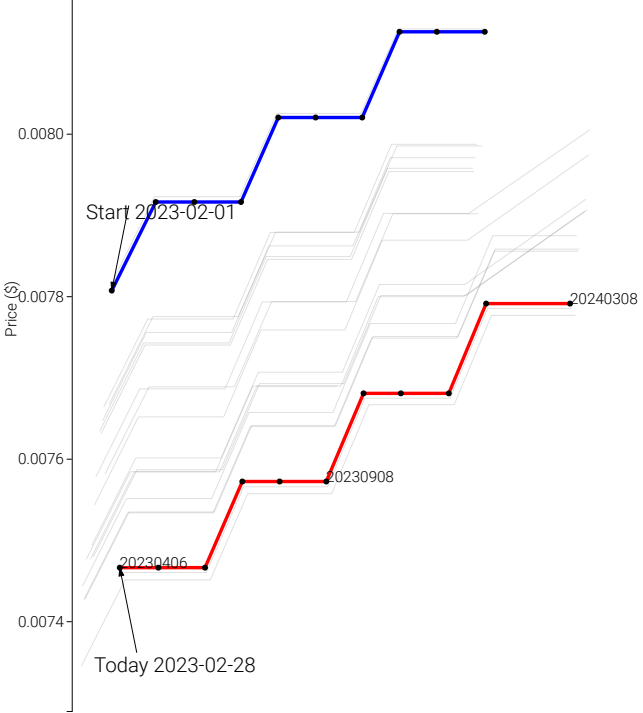
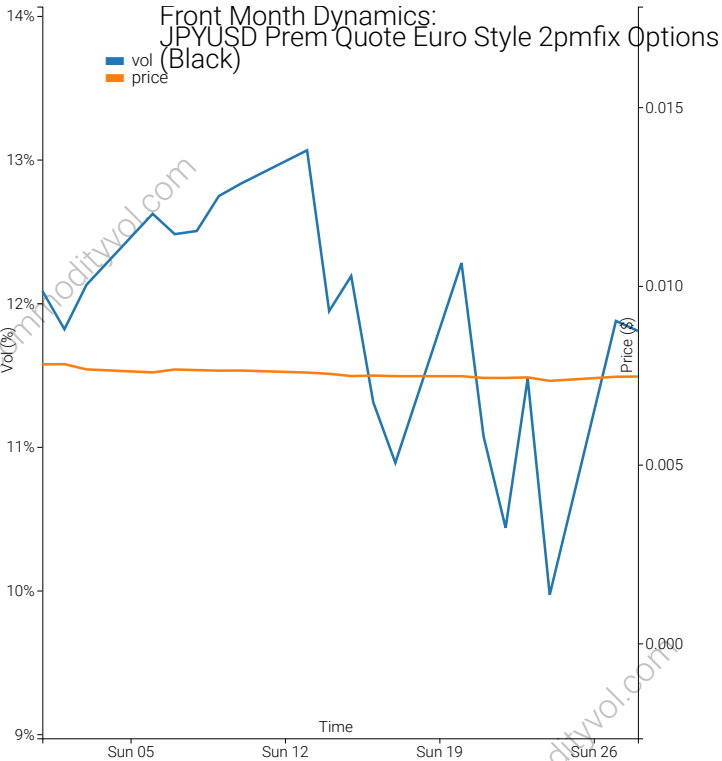
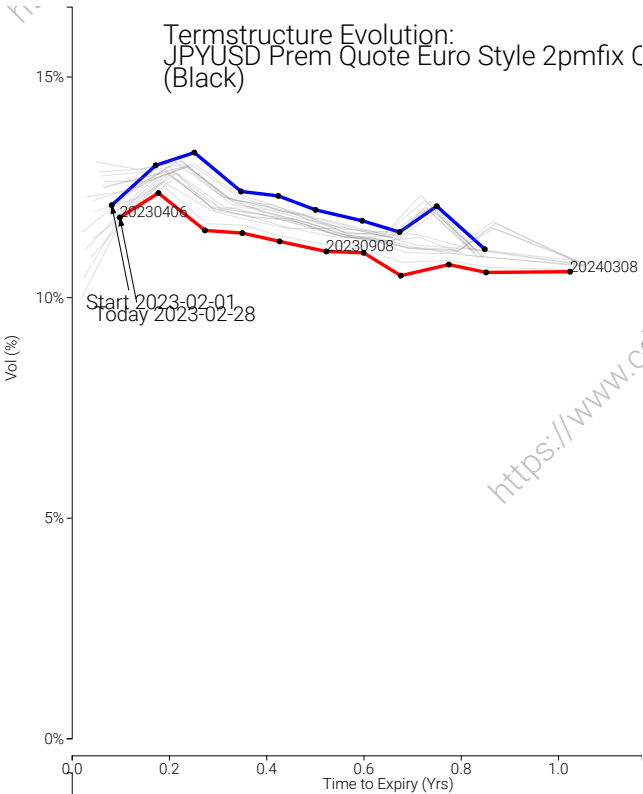


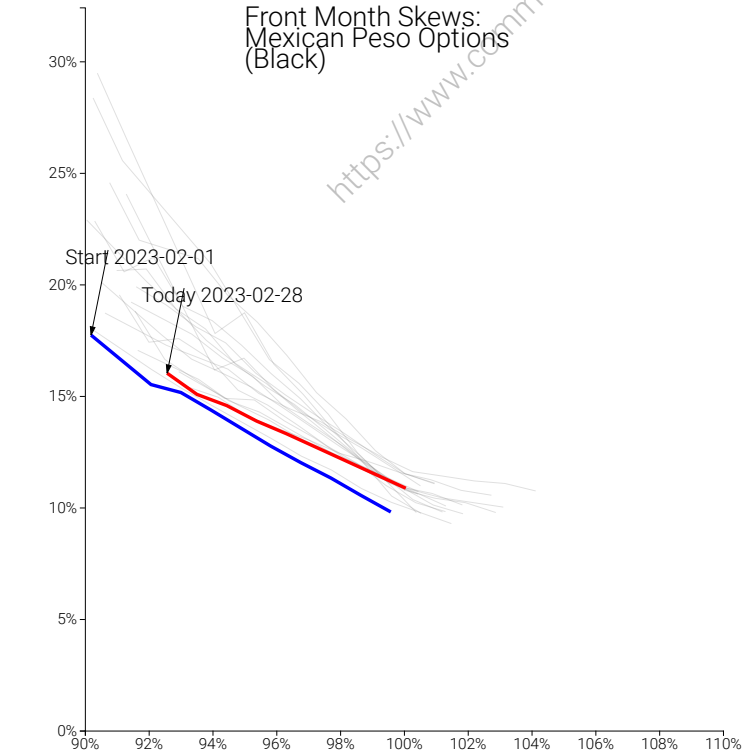
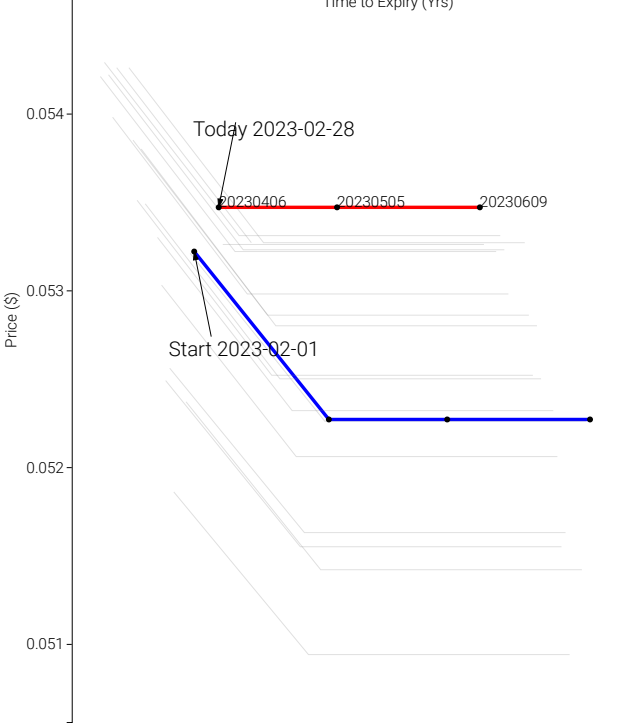
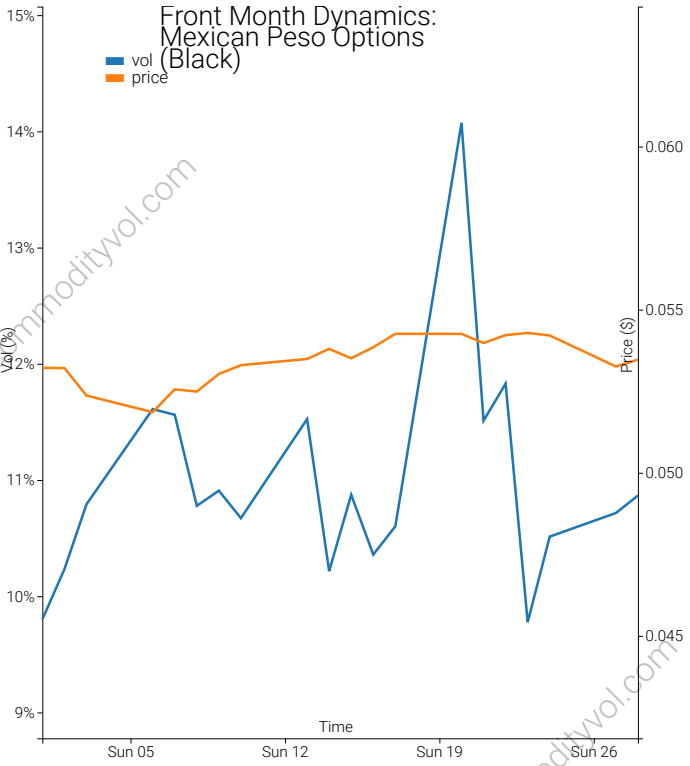
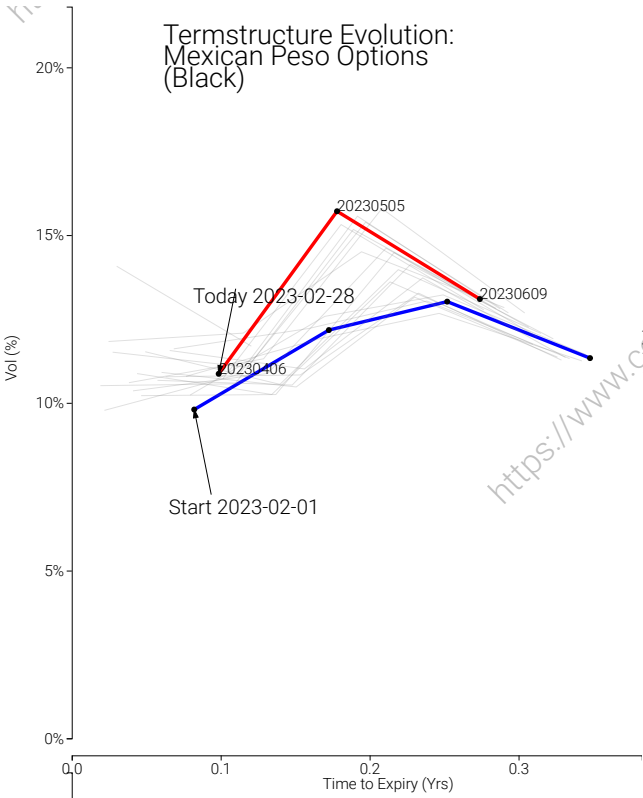
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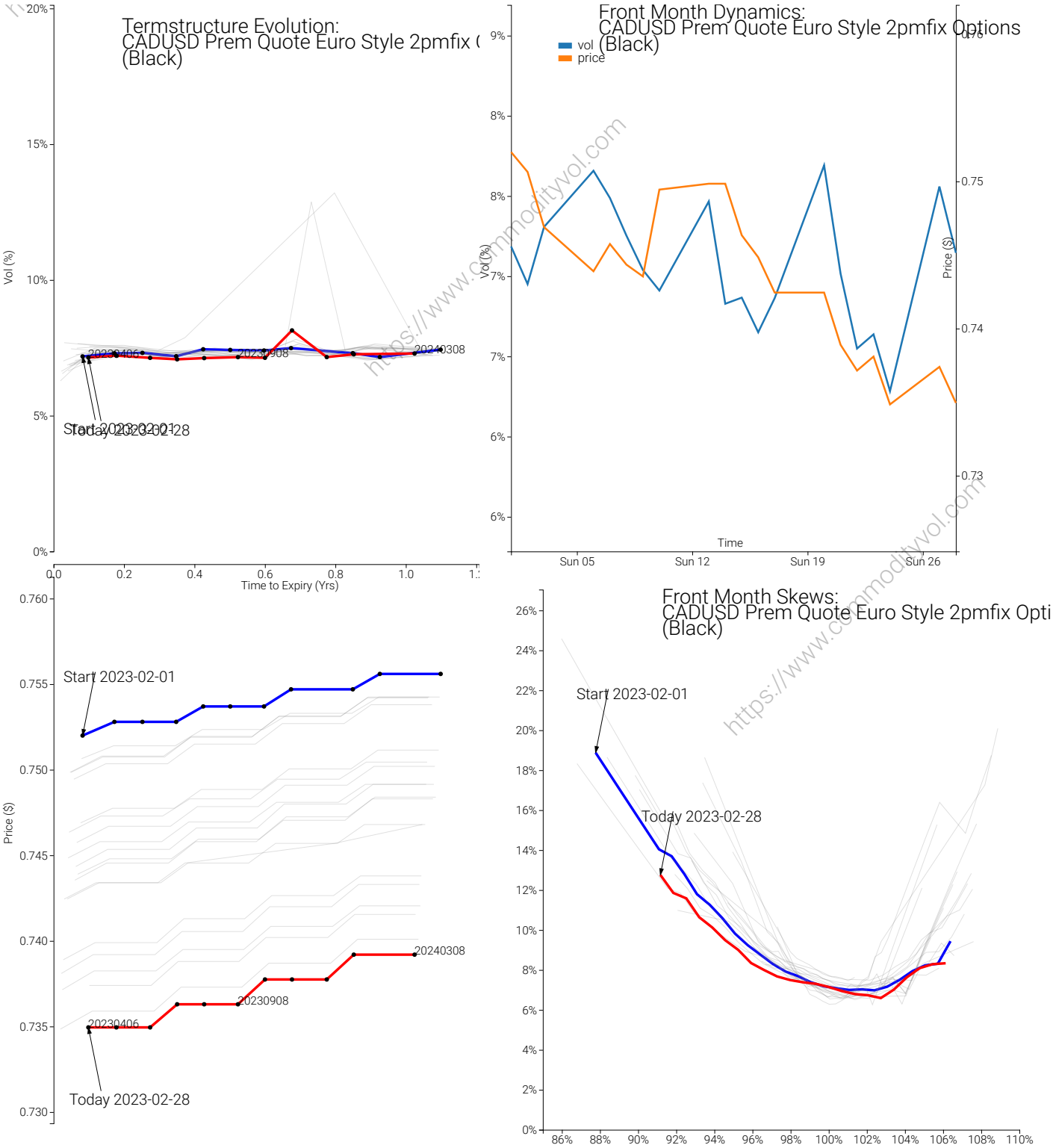


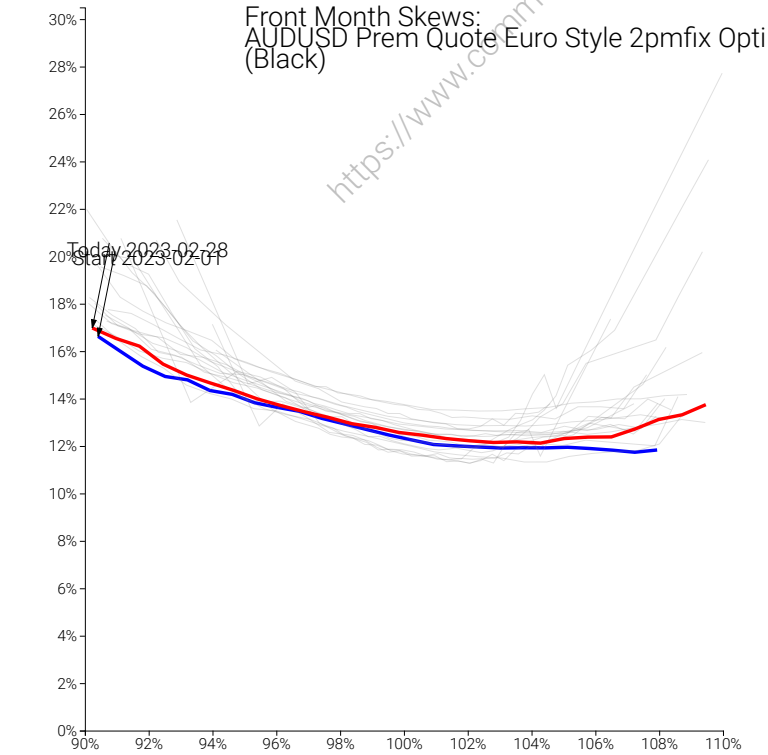
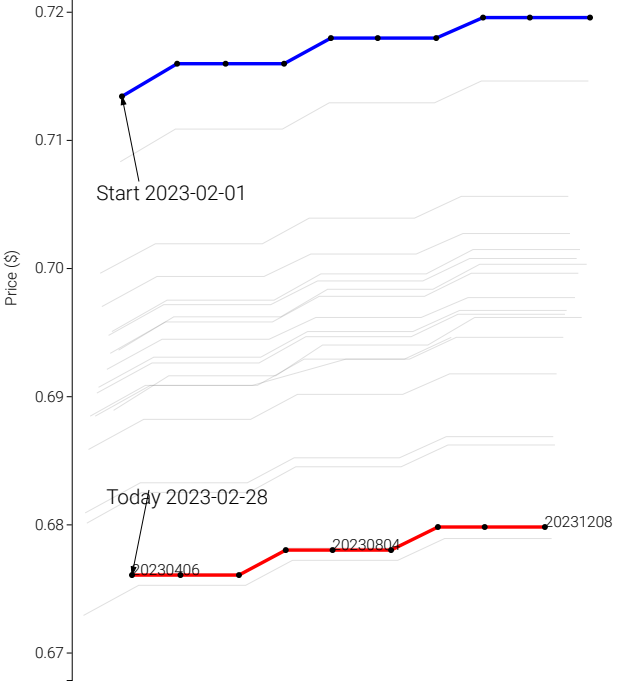
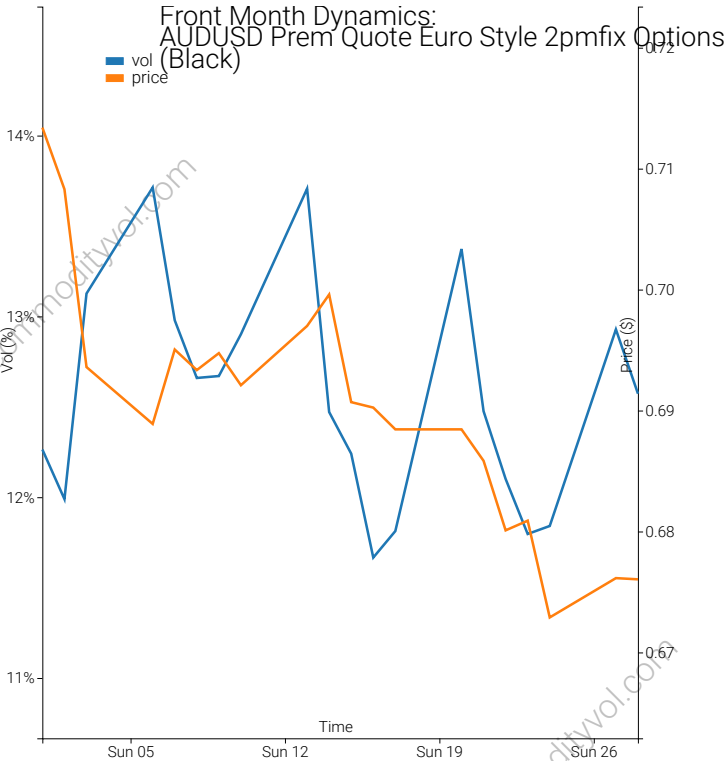
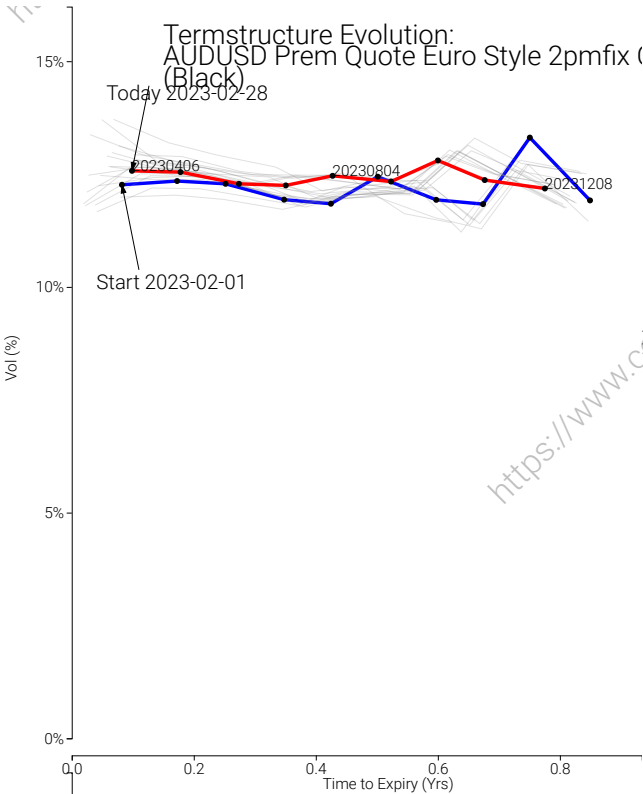


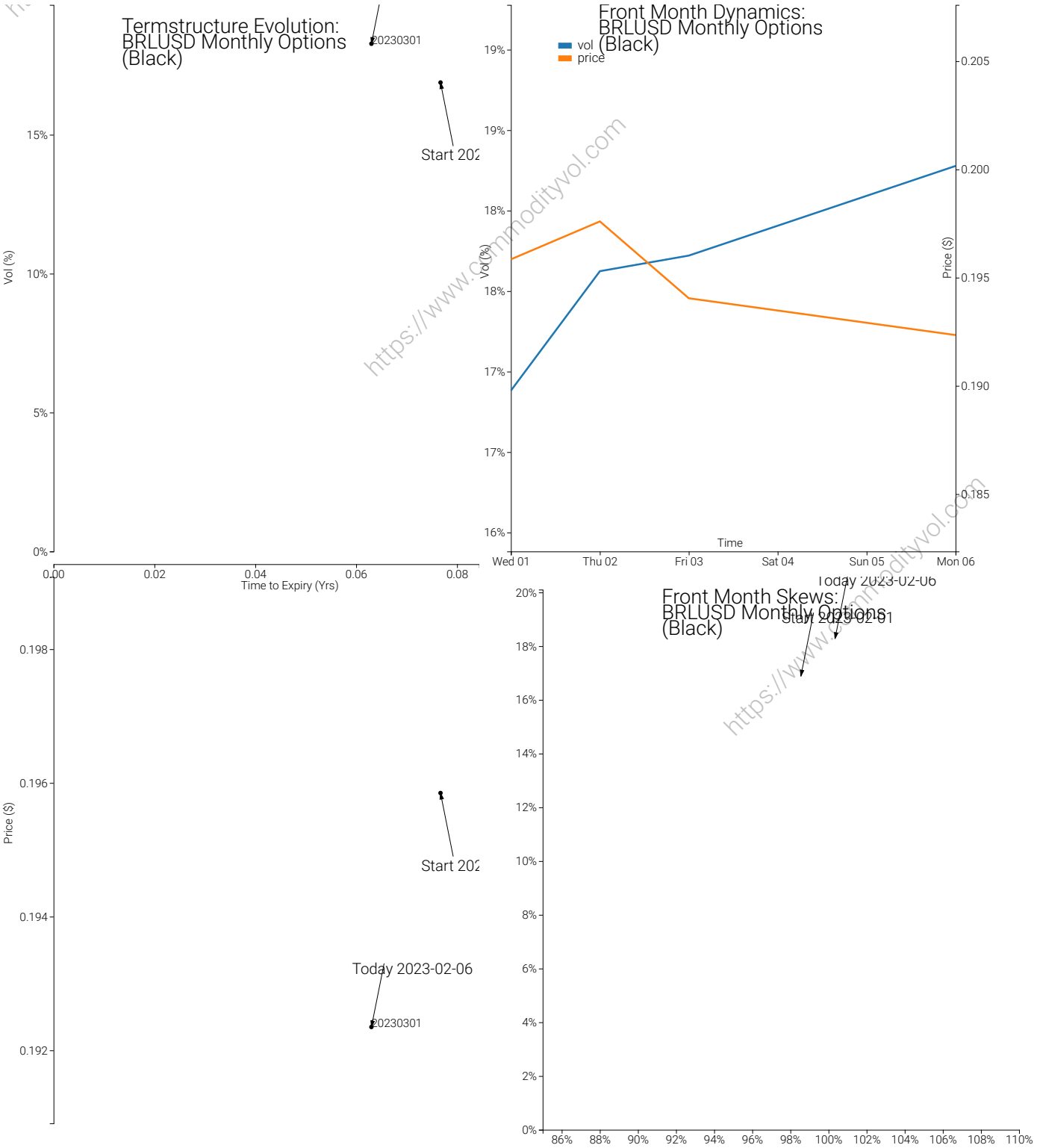


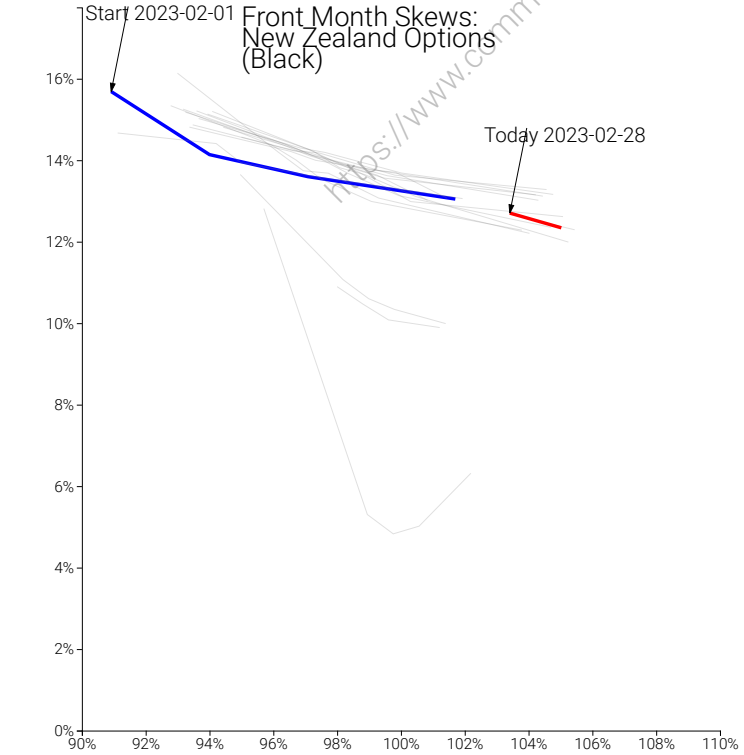
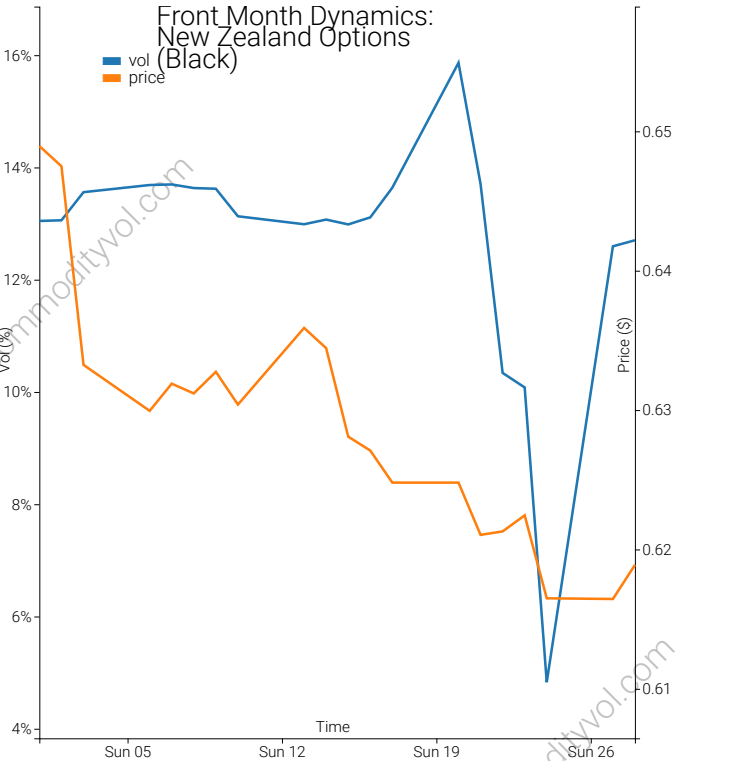
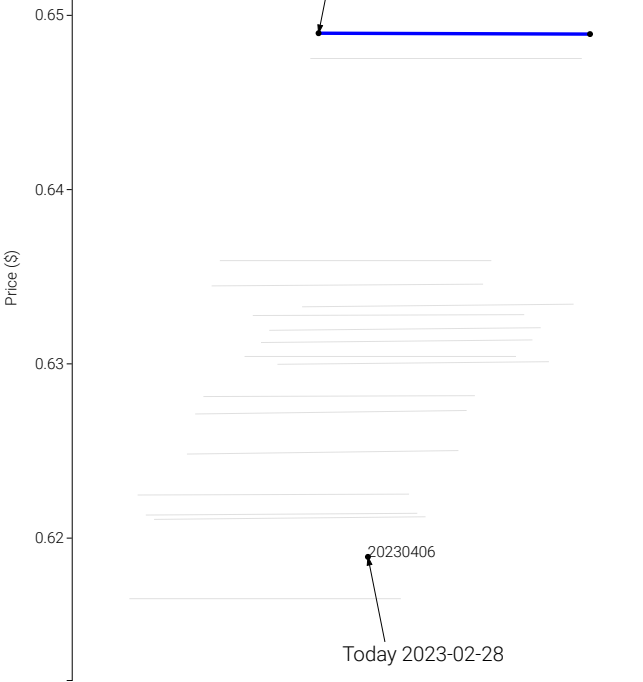
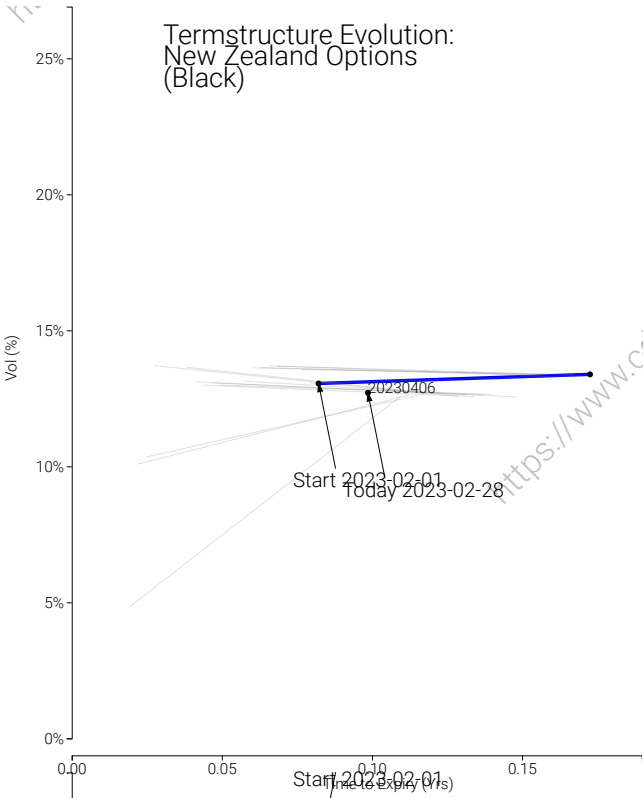


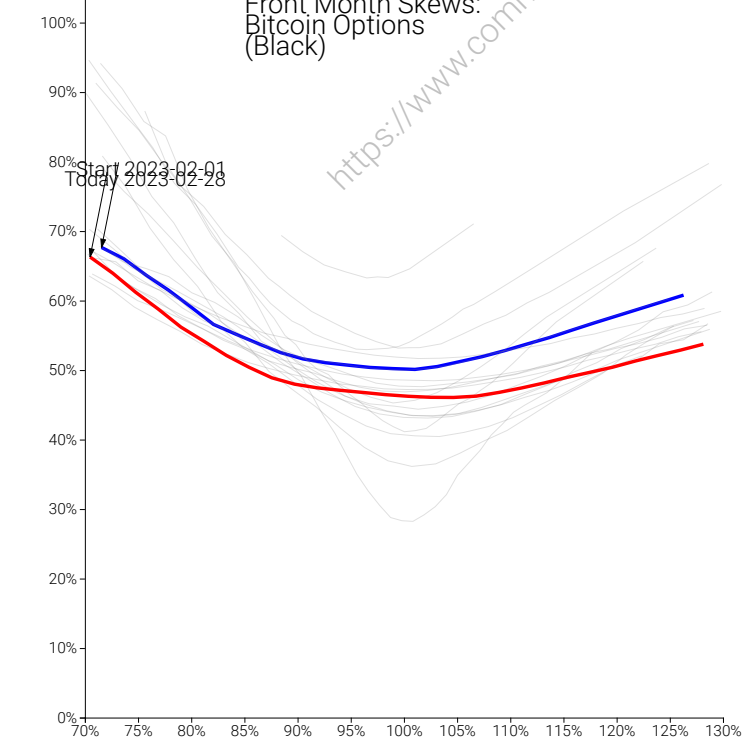
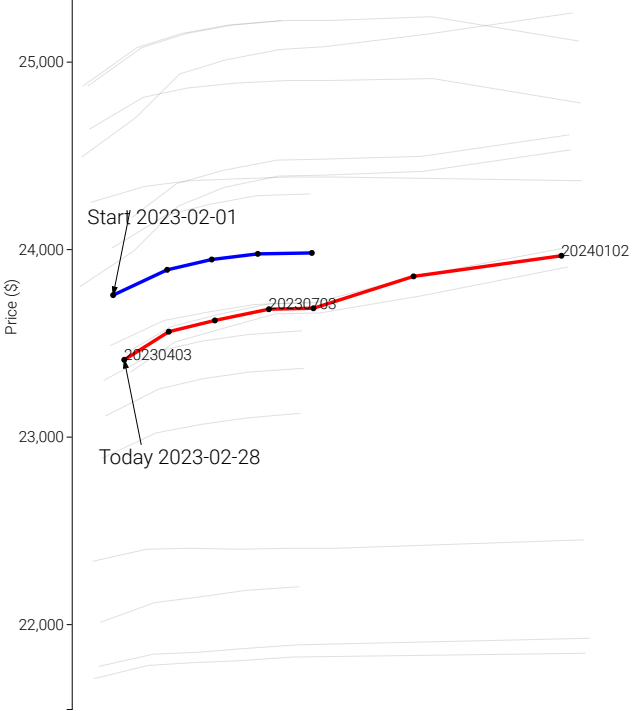
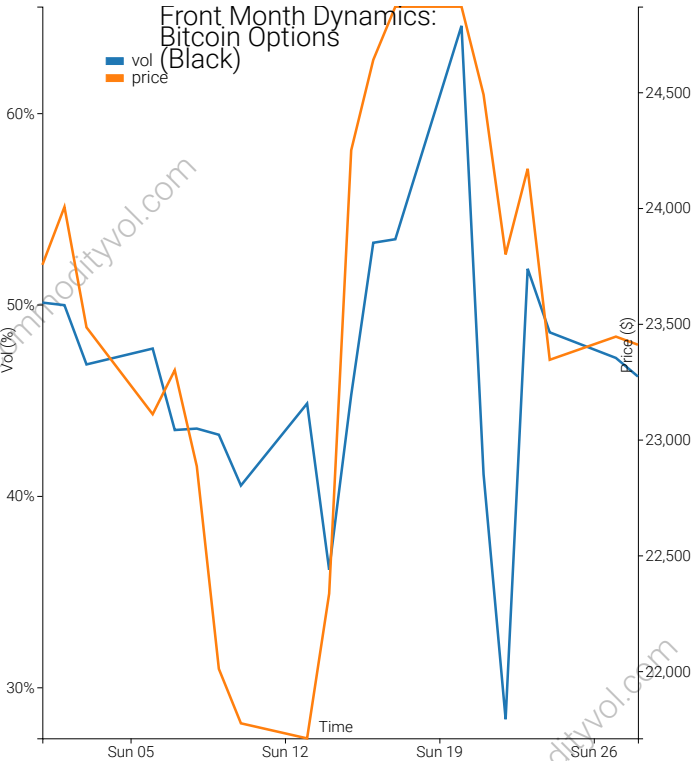
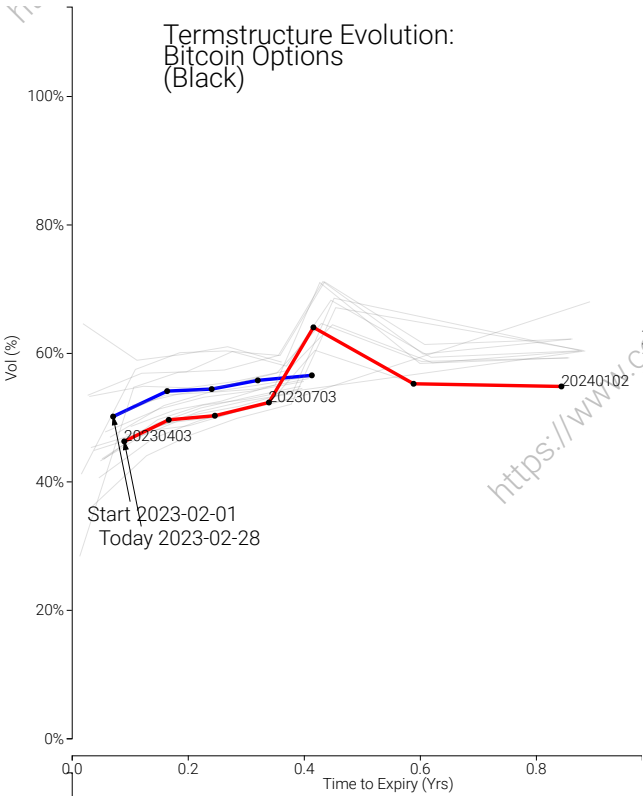


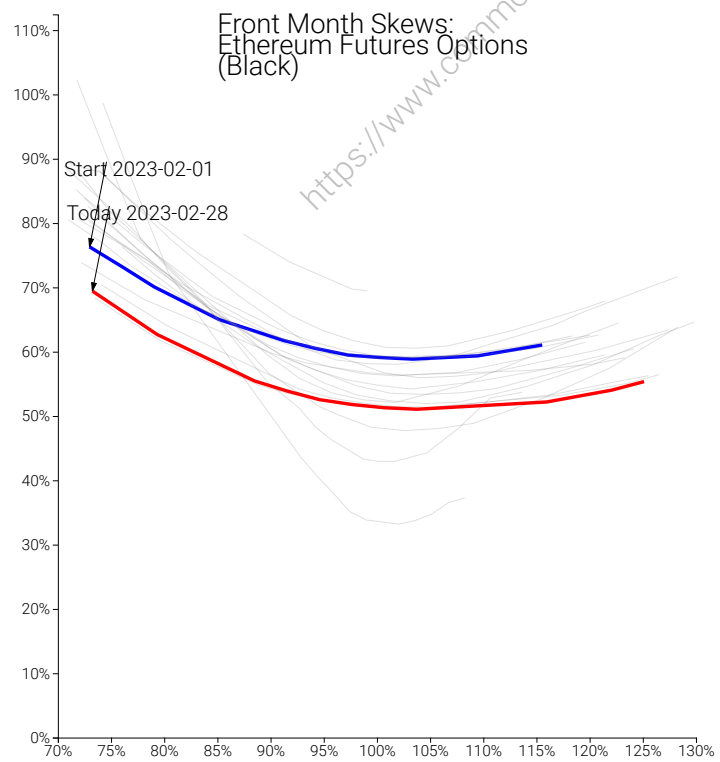
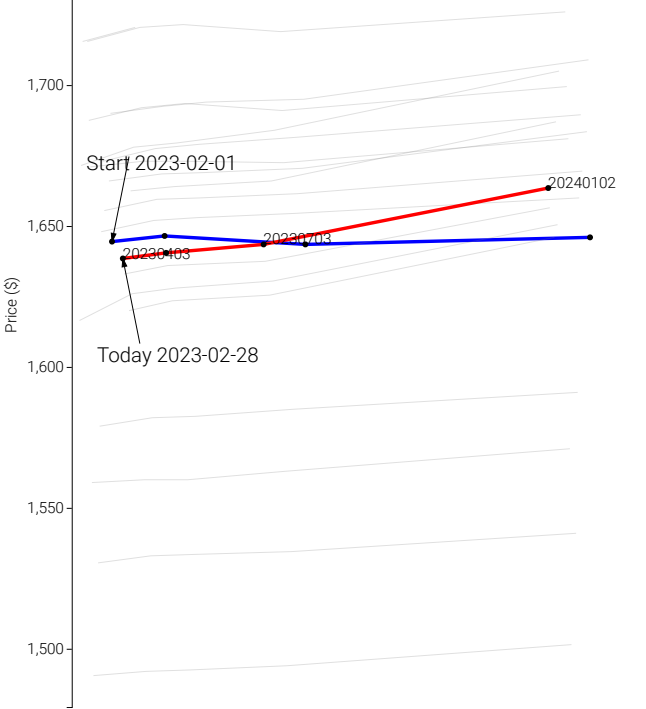
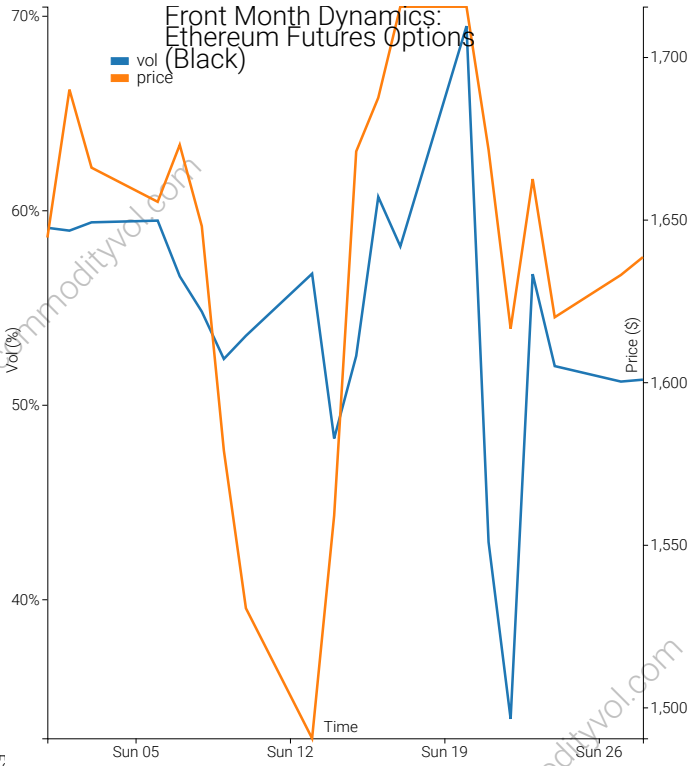
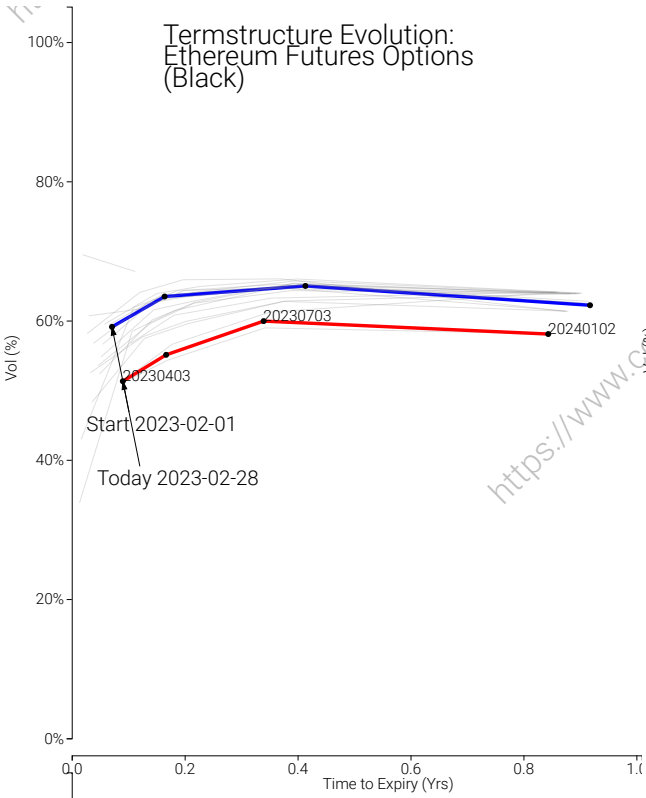




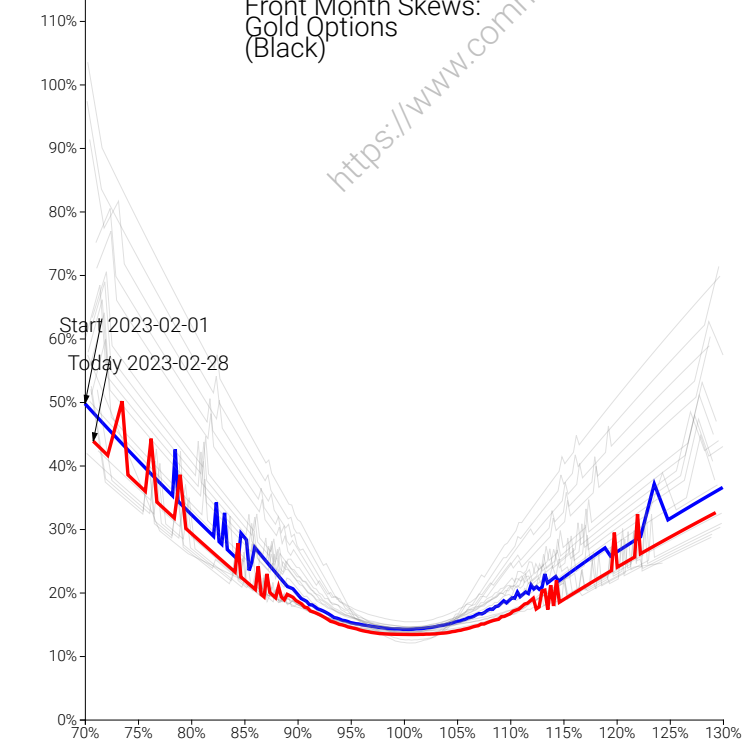
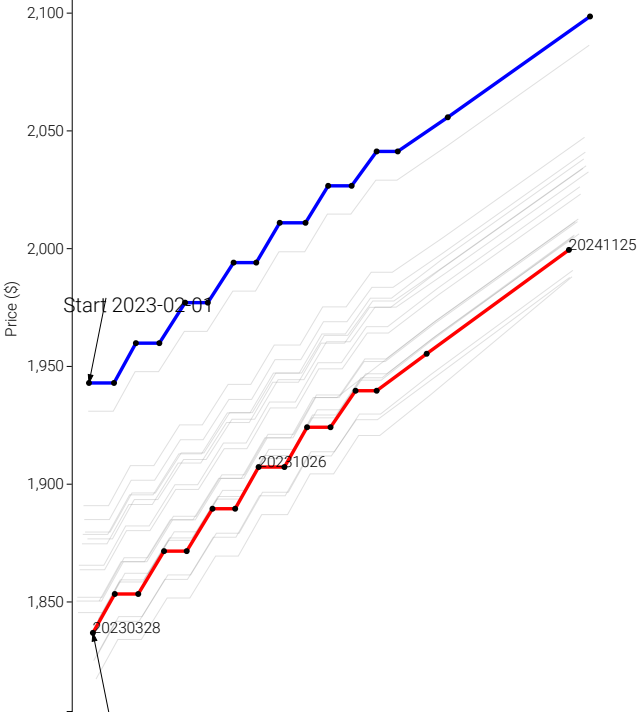
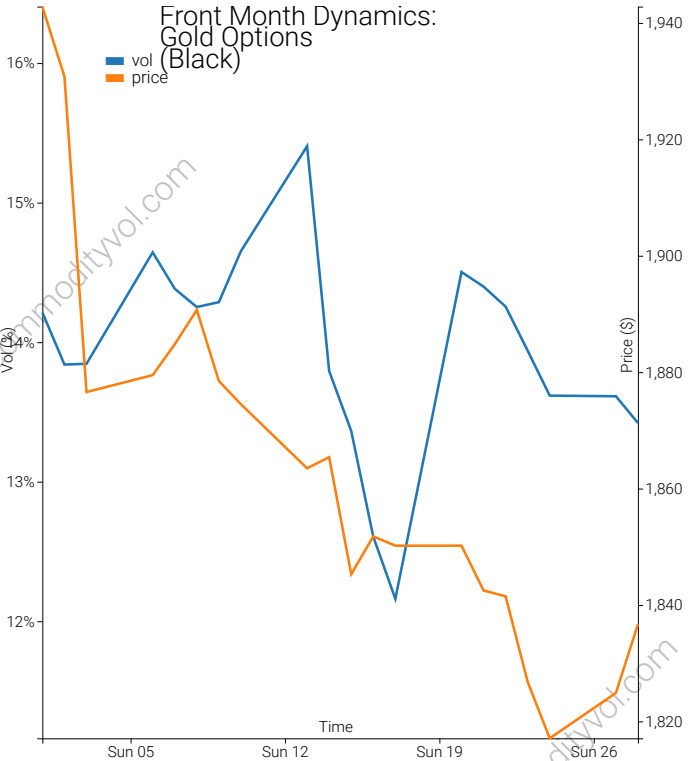
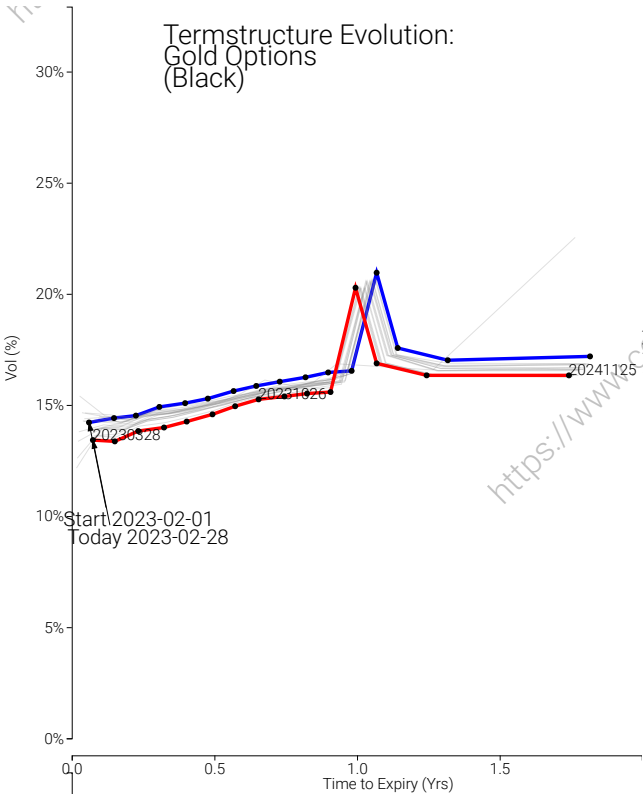


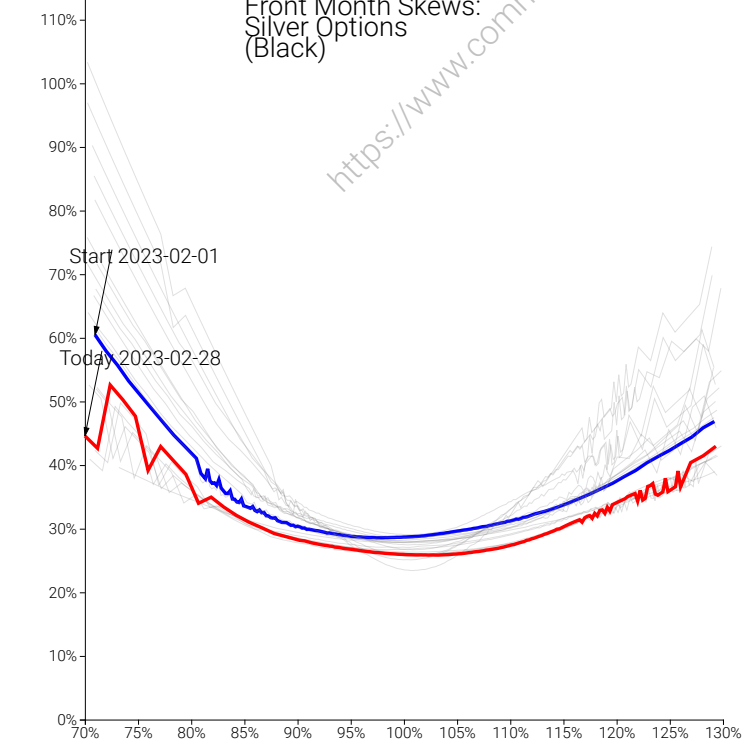
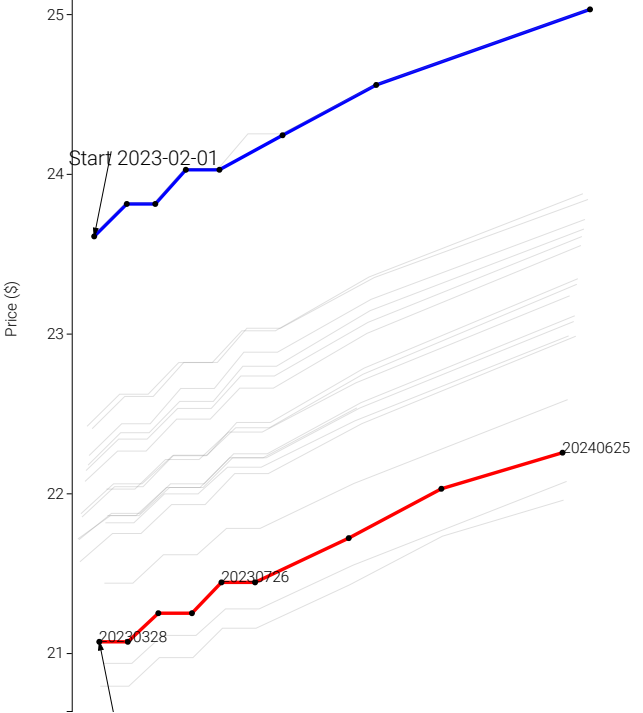
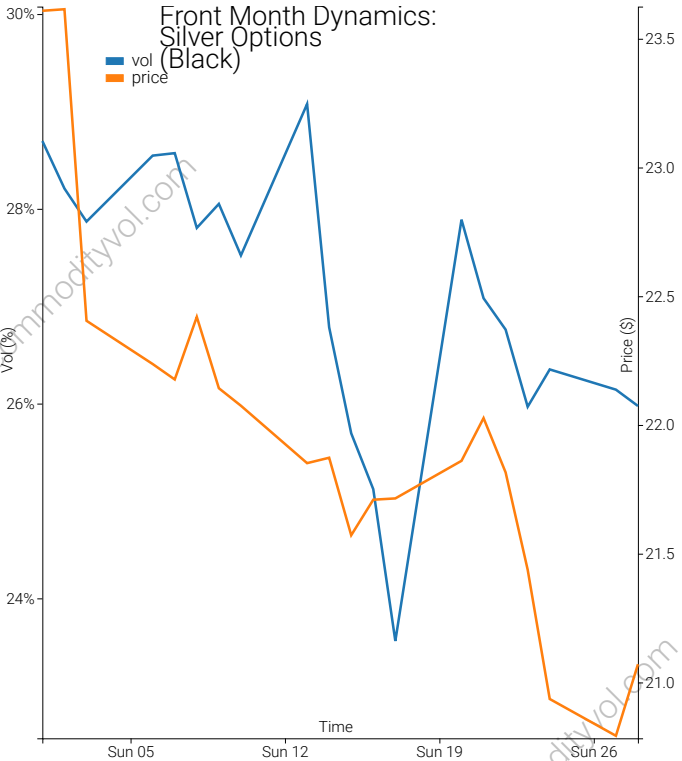
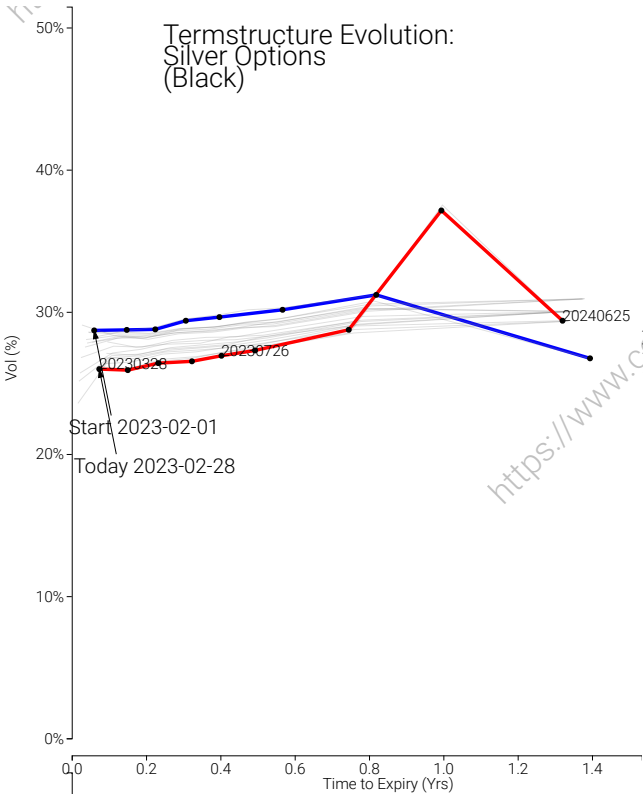


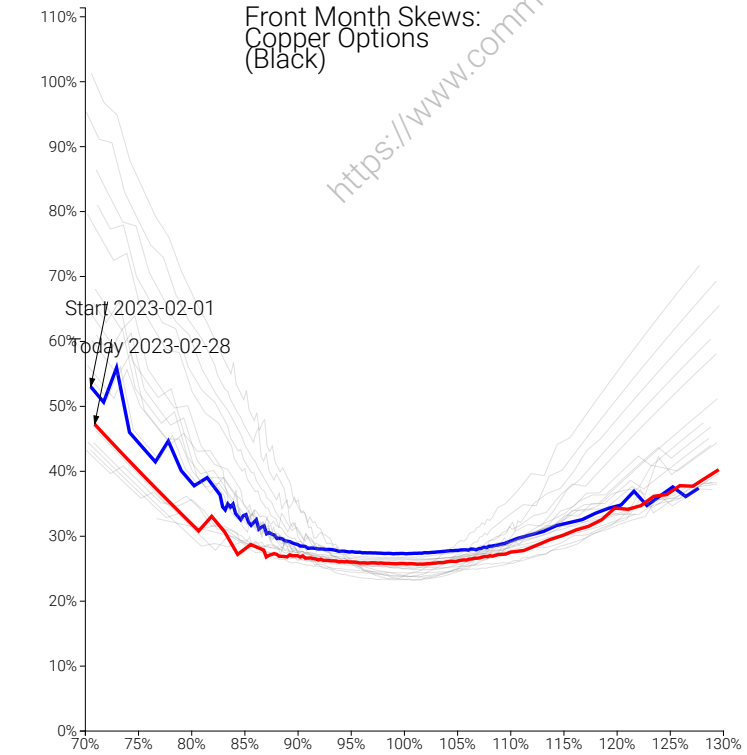
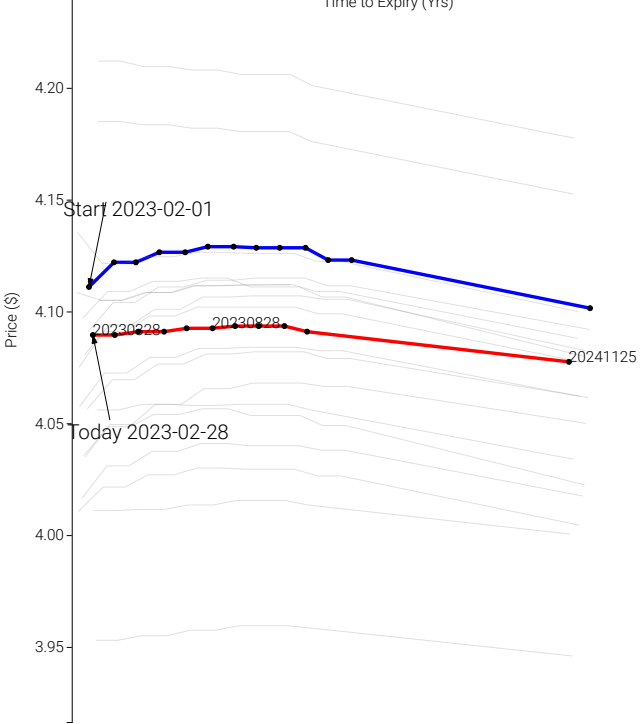
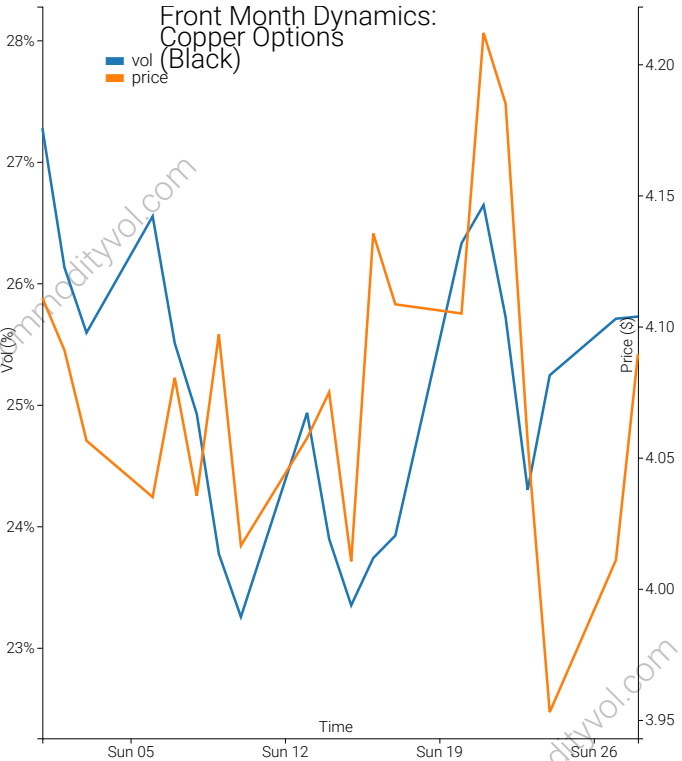
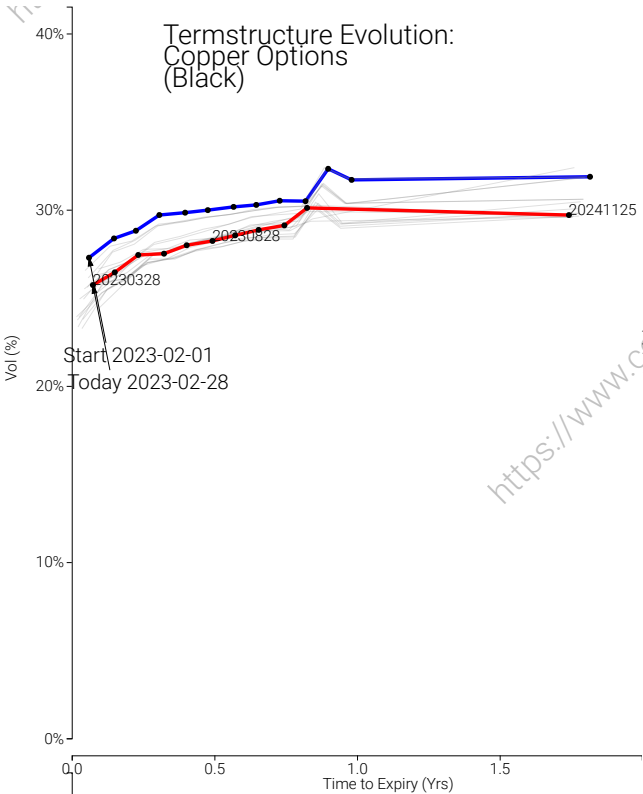


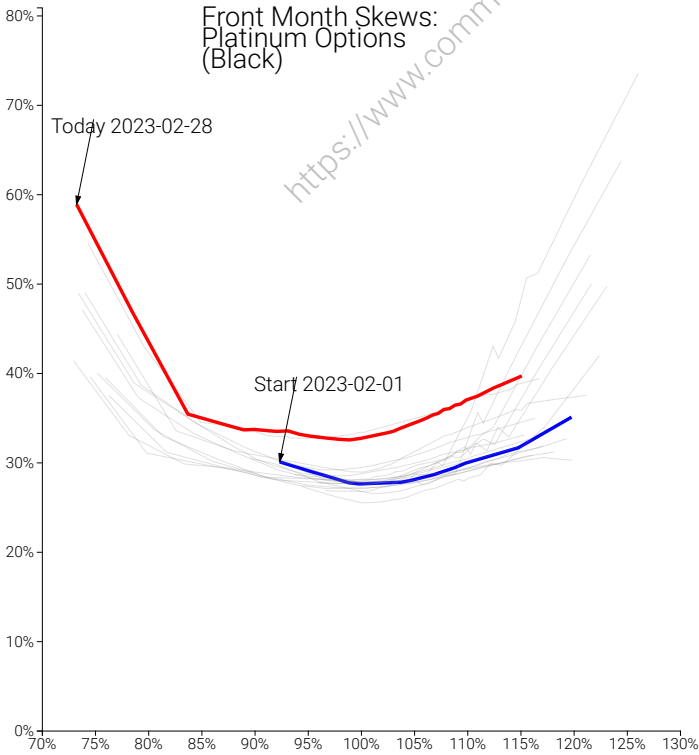
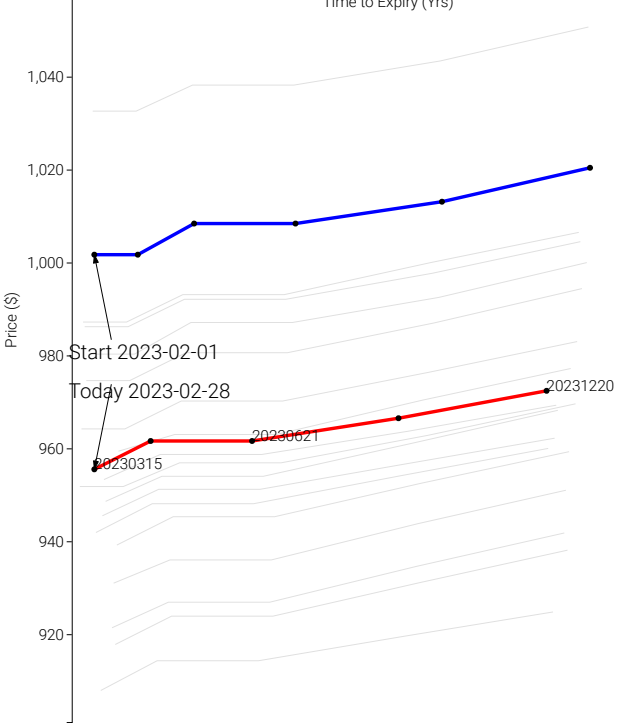
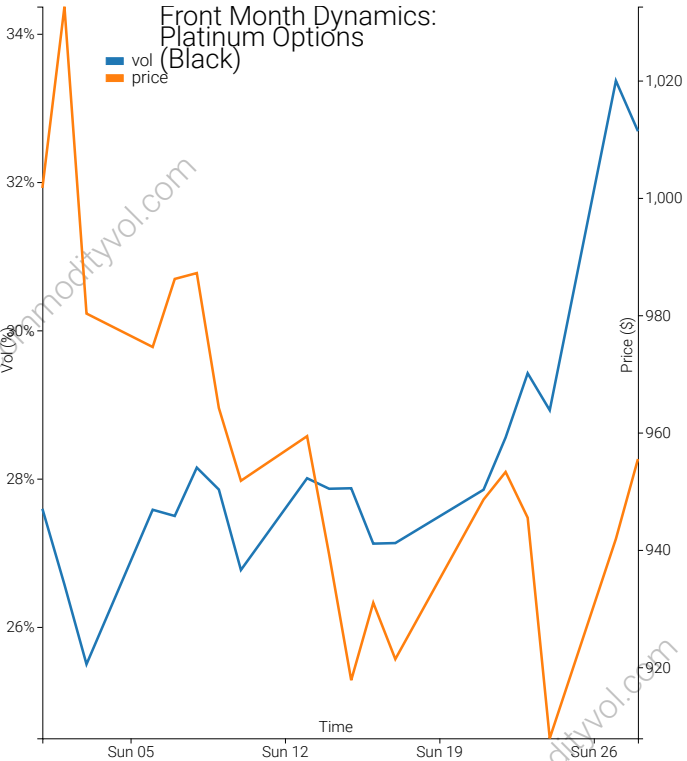
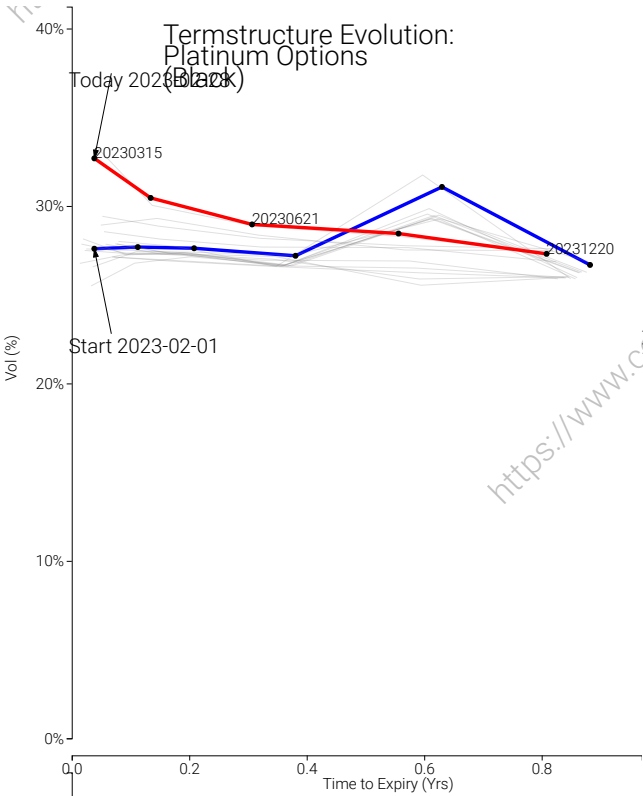


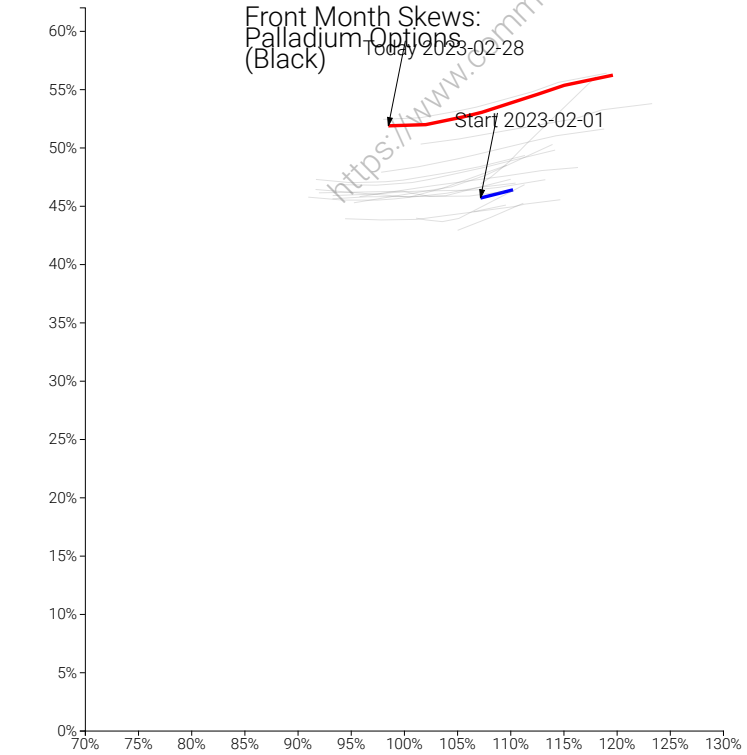
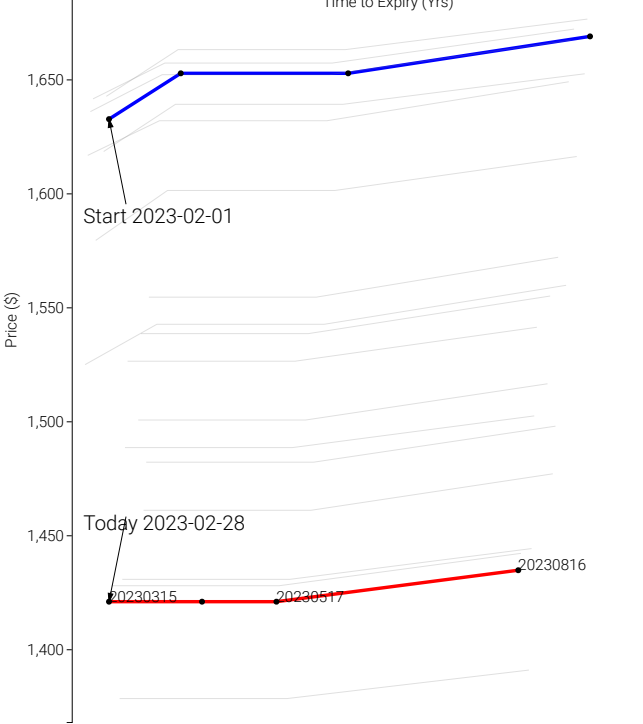
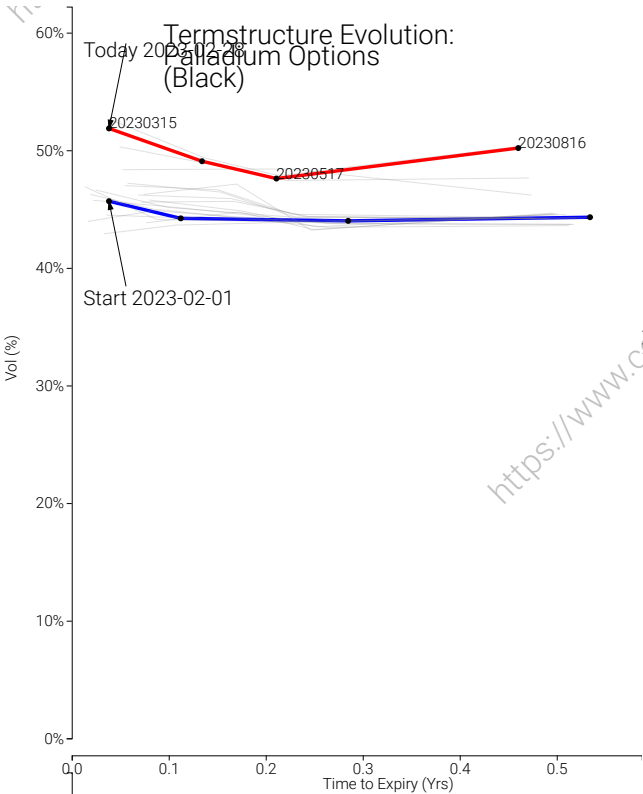
Metals



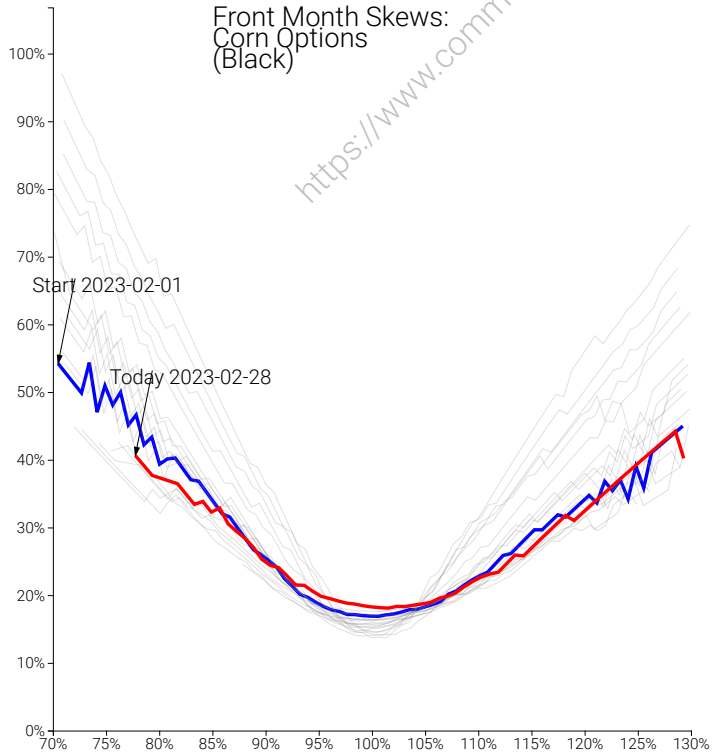
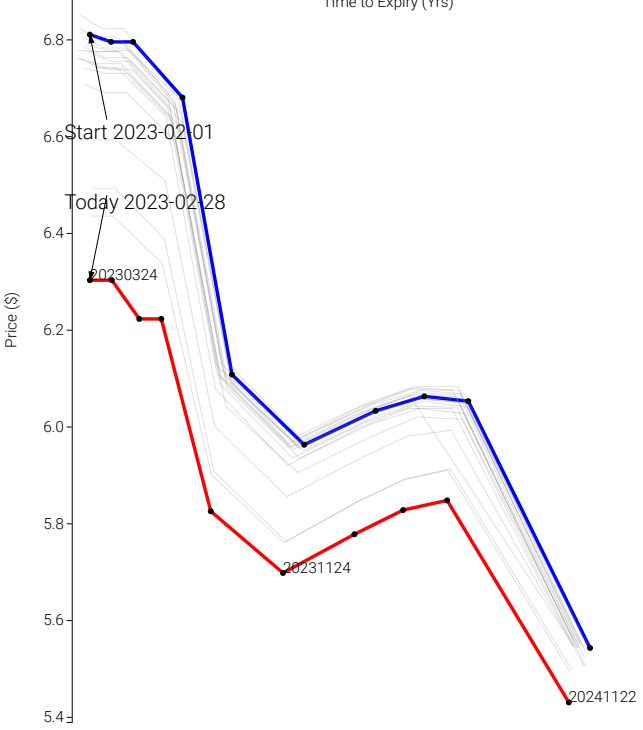
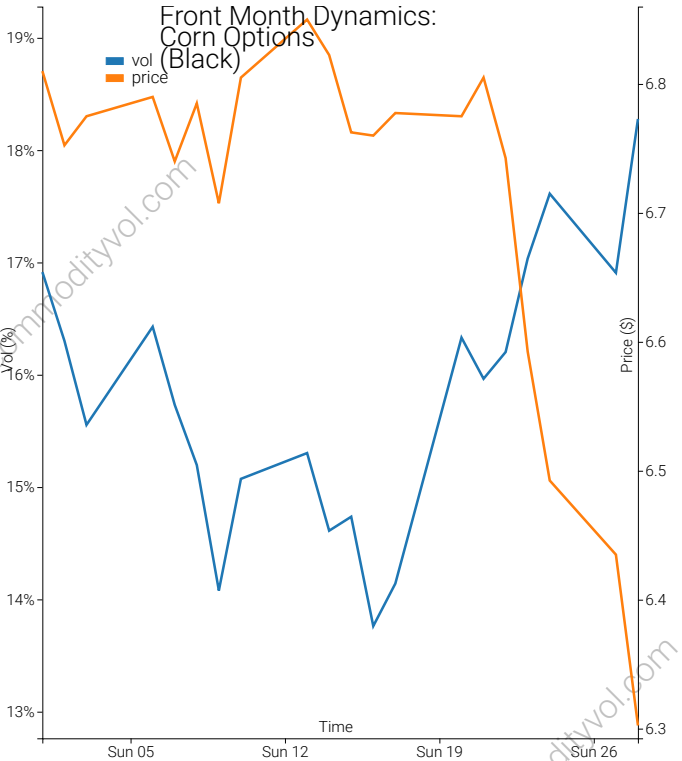
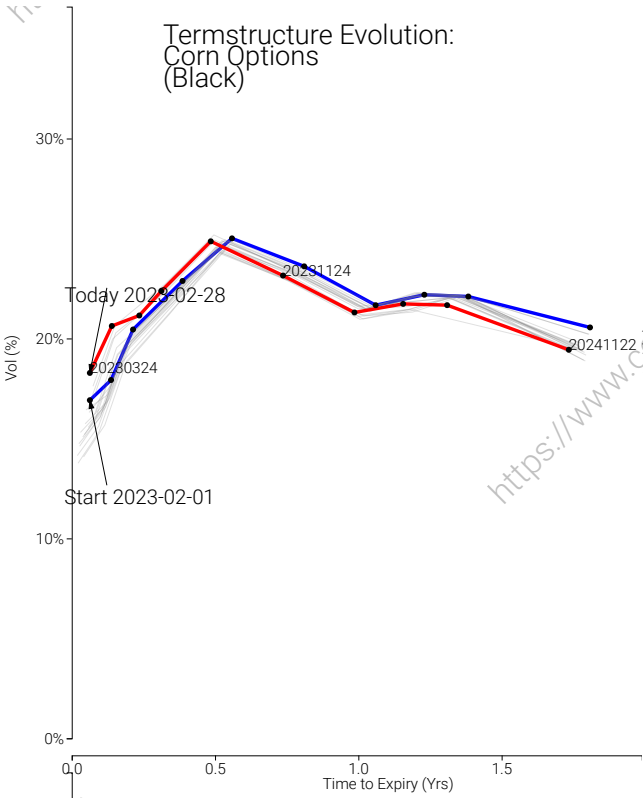


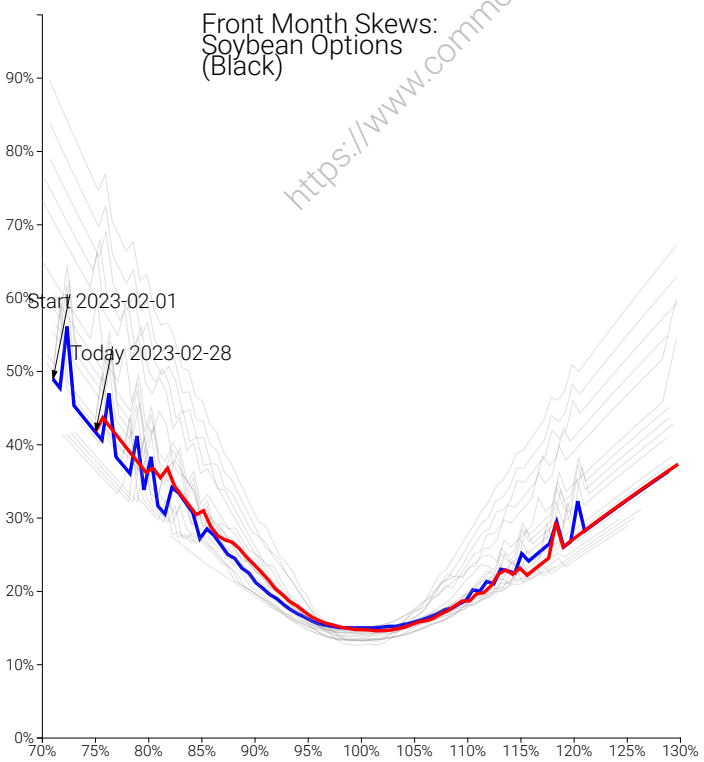
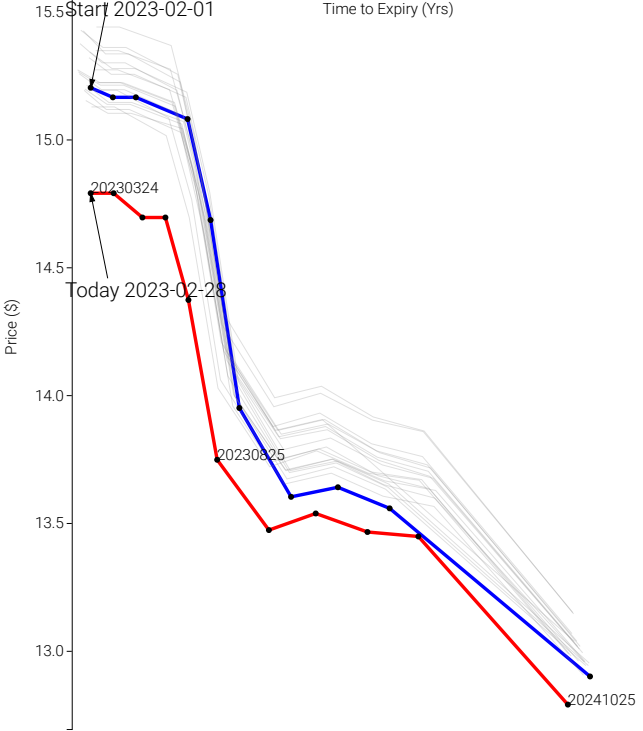
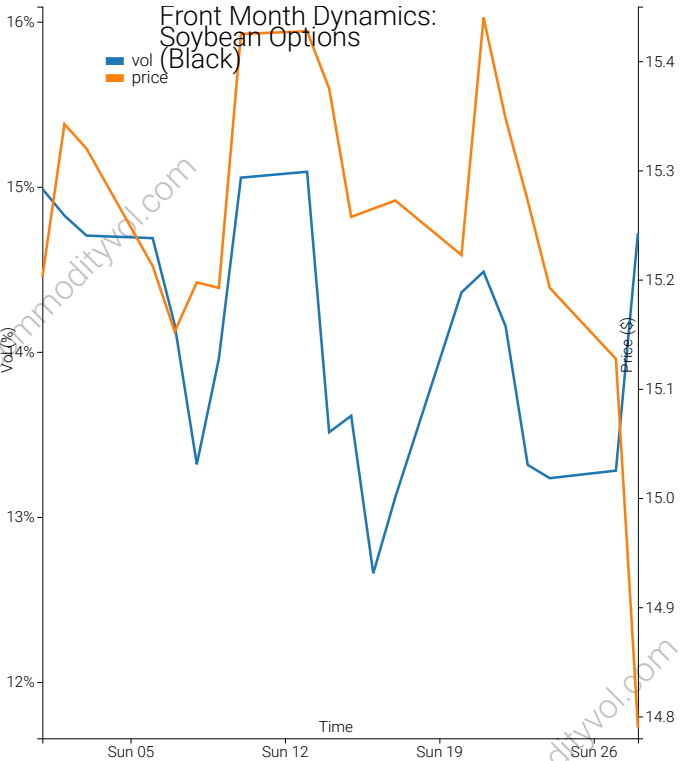
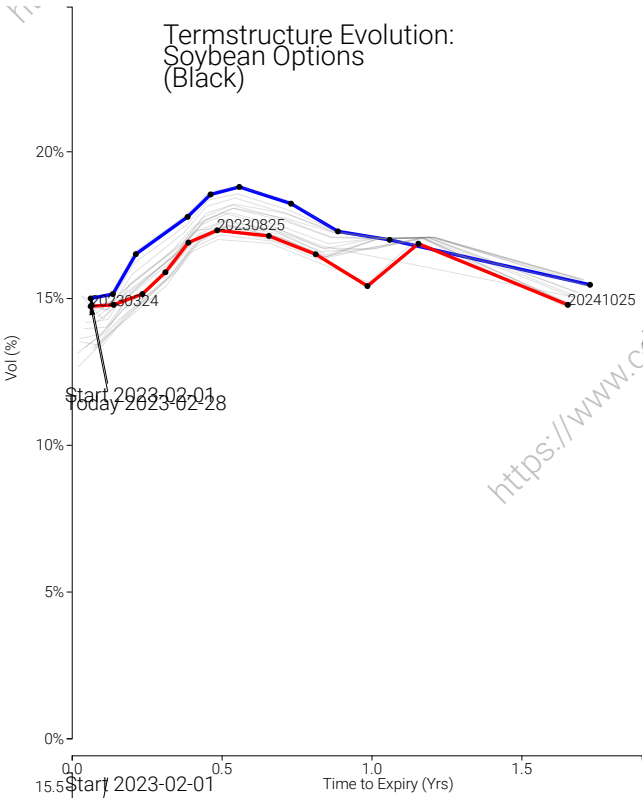


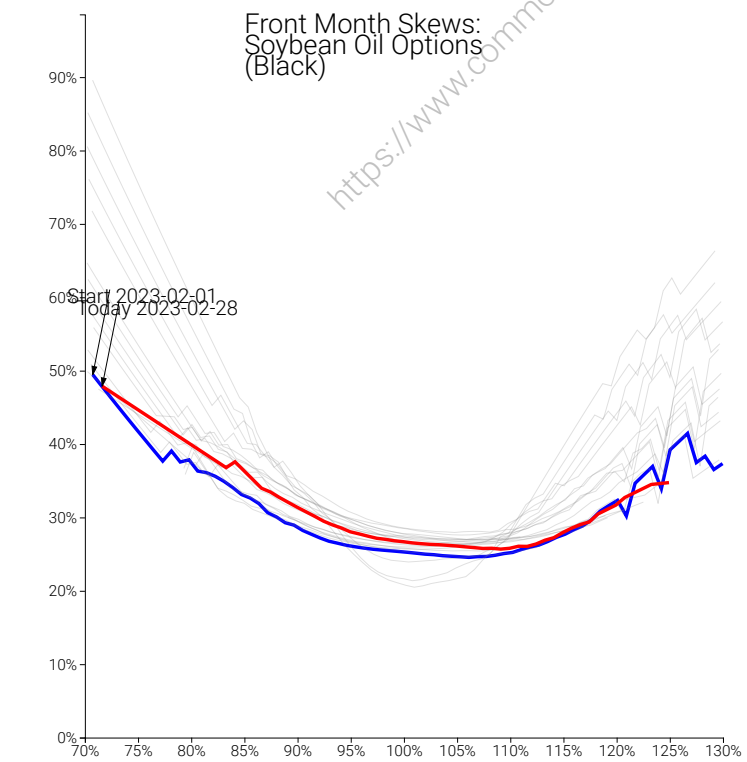
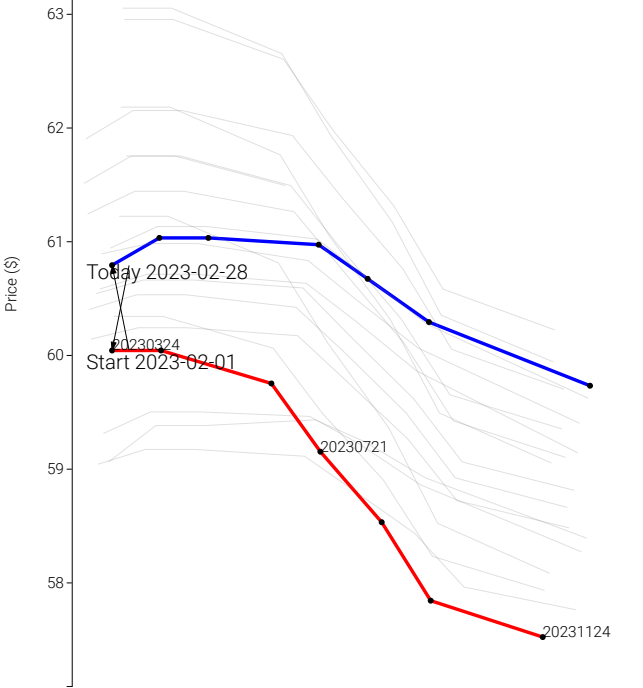
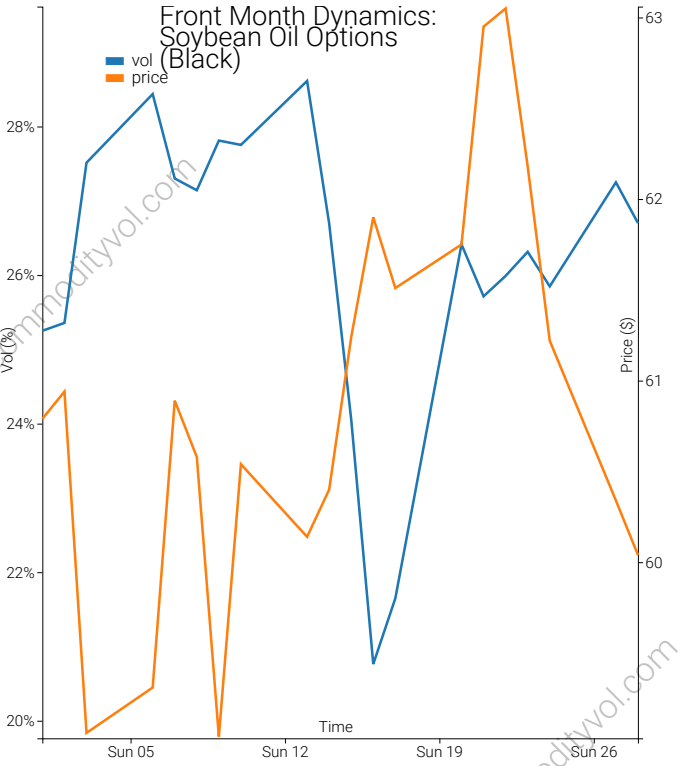
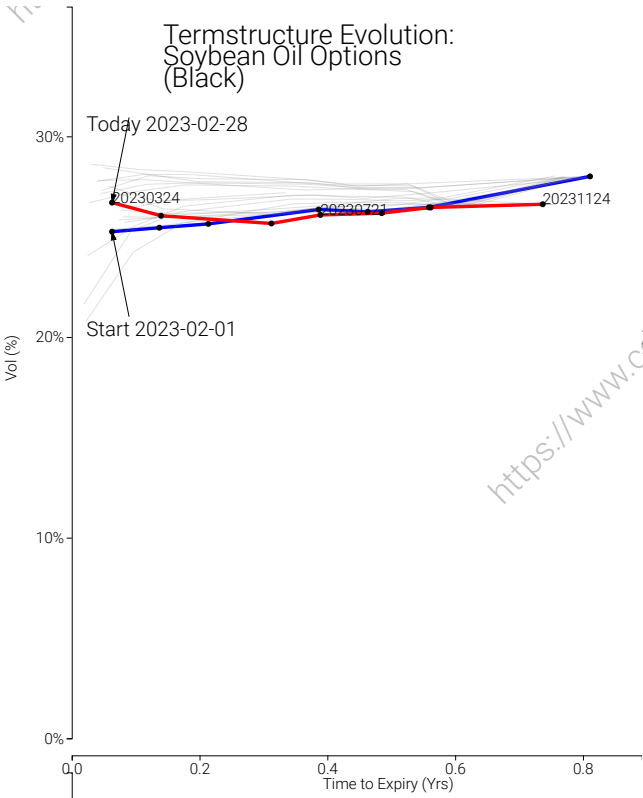


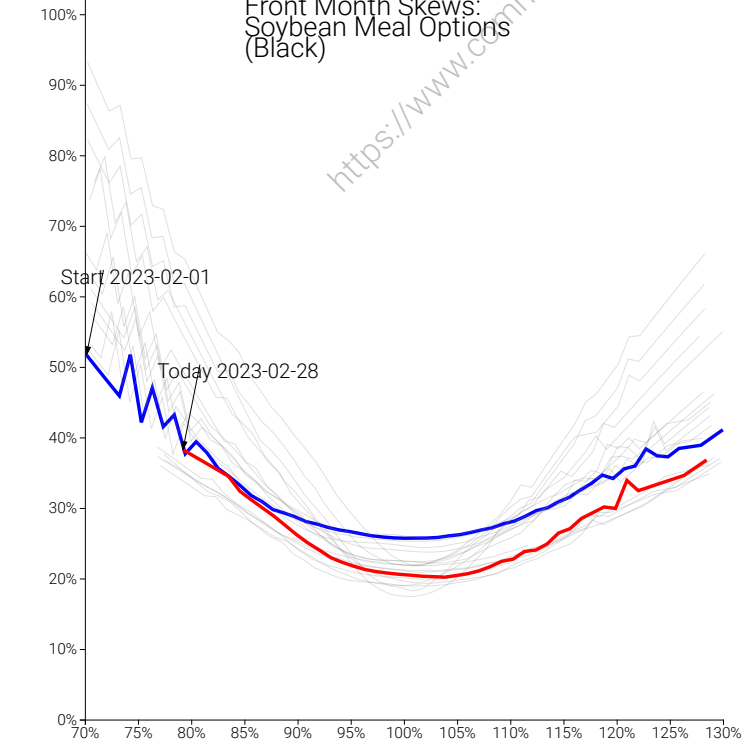
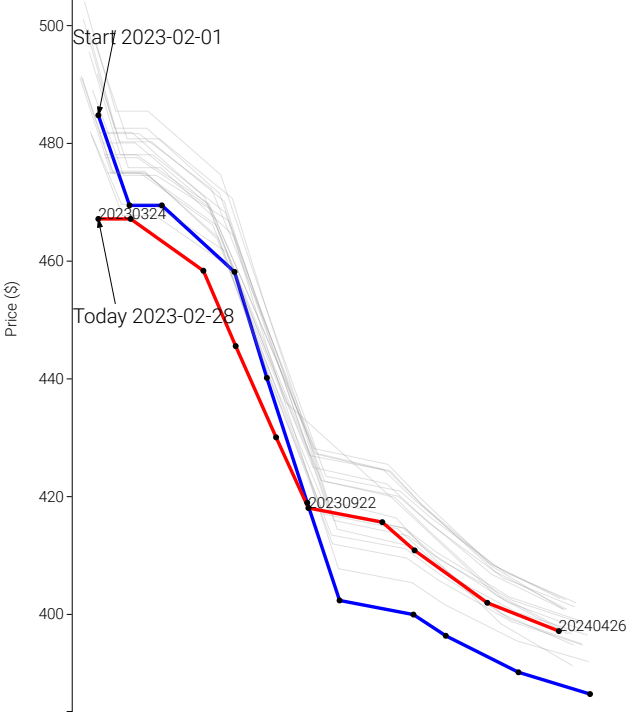
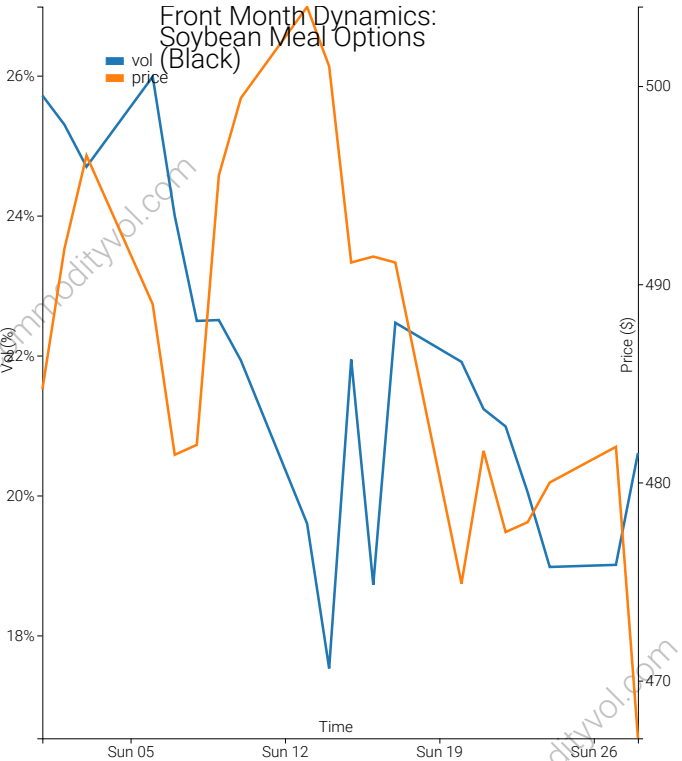
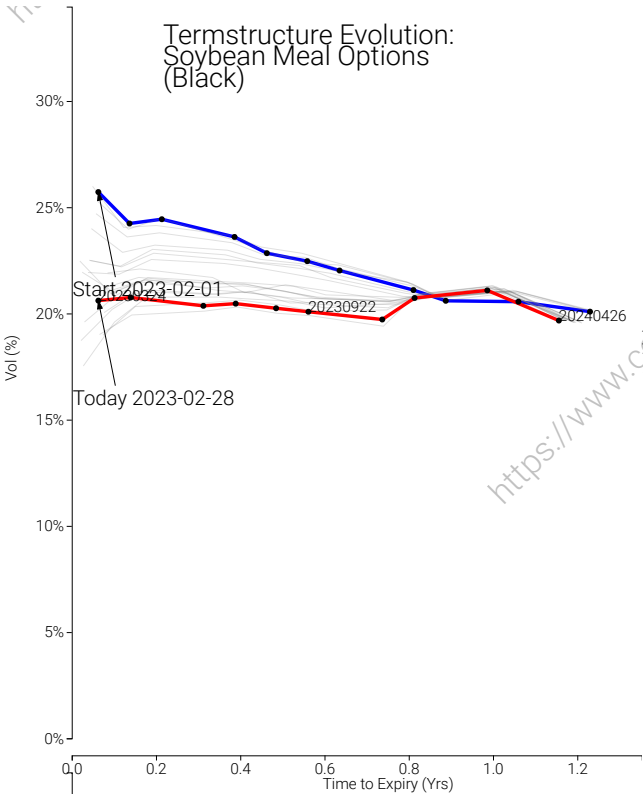


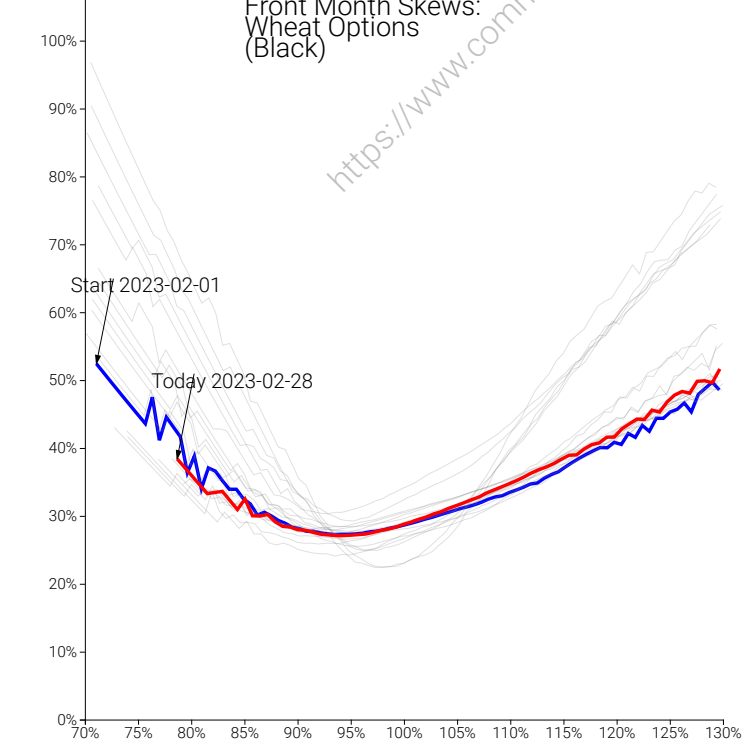
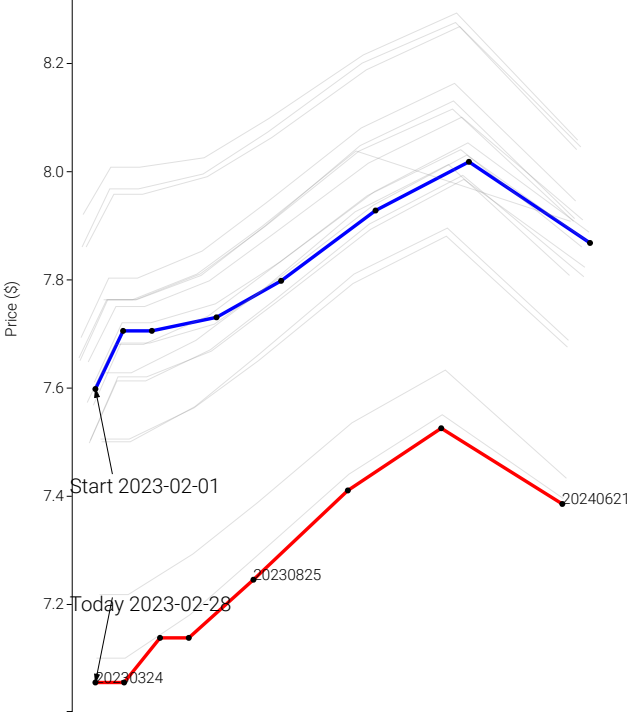
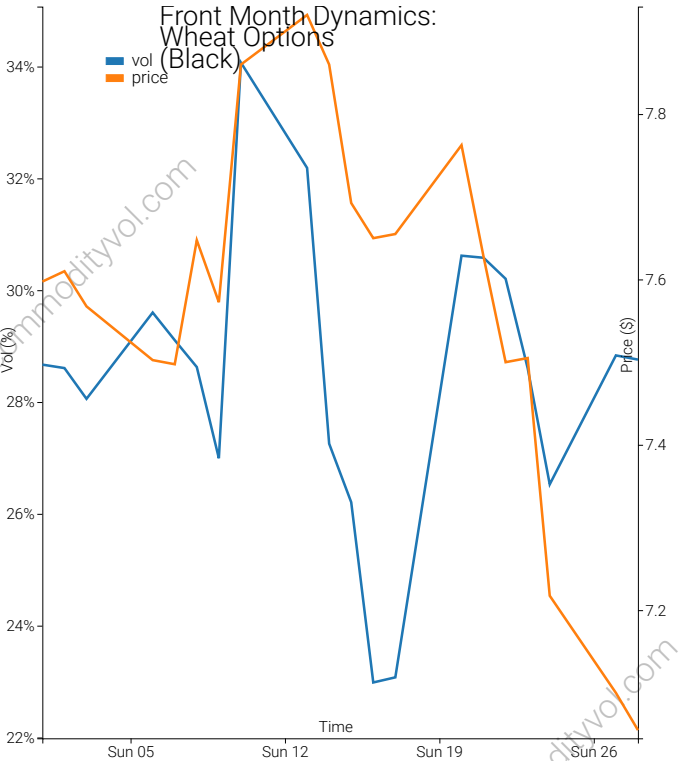
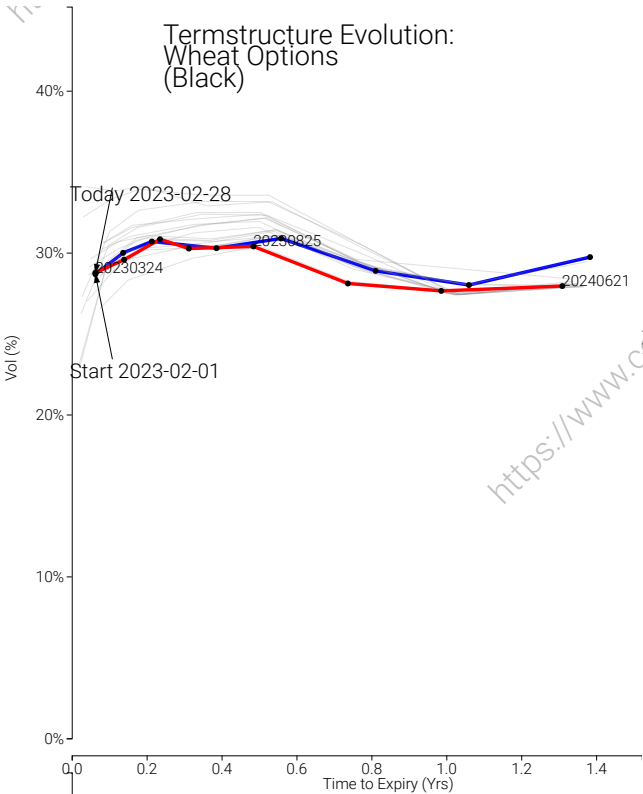
Ags: Grains, Oilseeds, and so forth

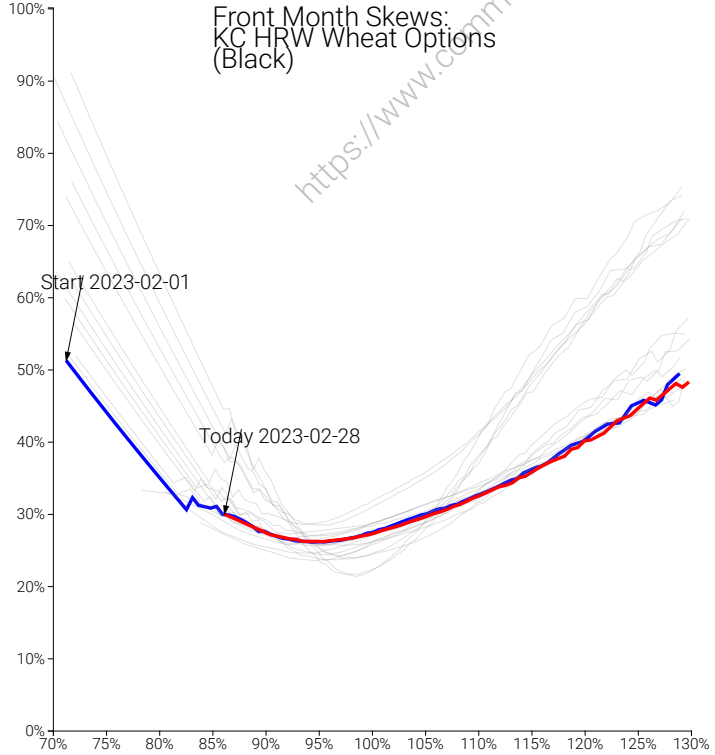
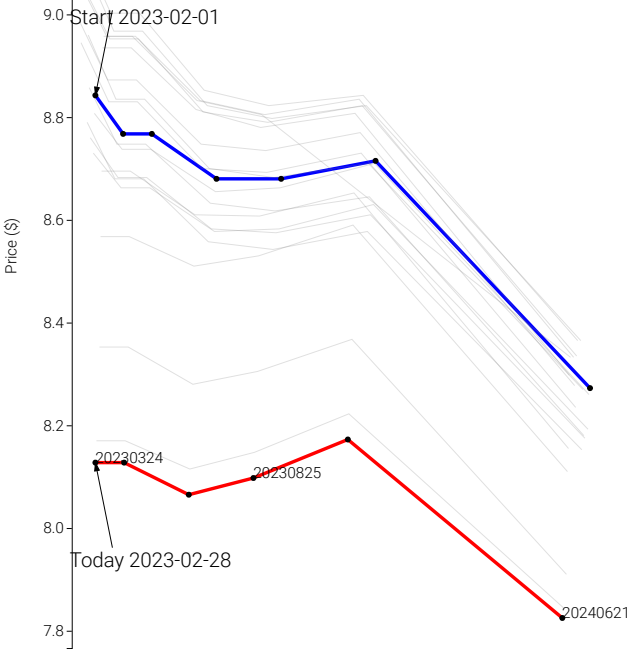
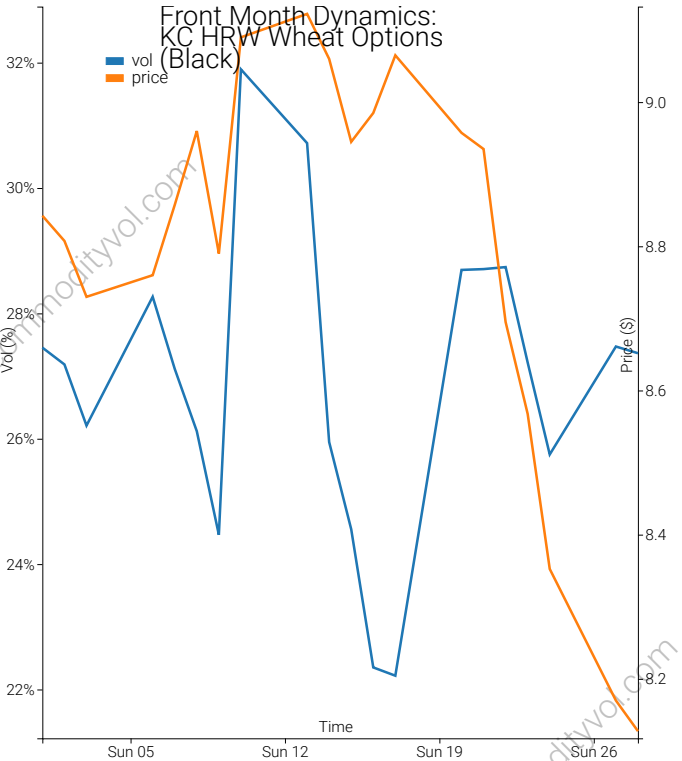
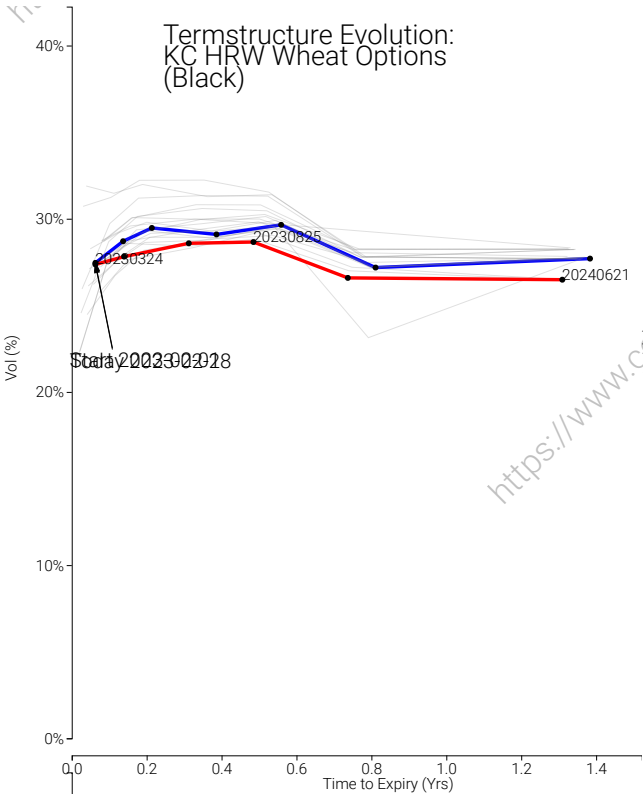


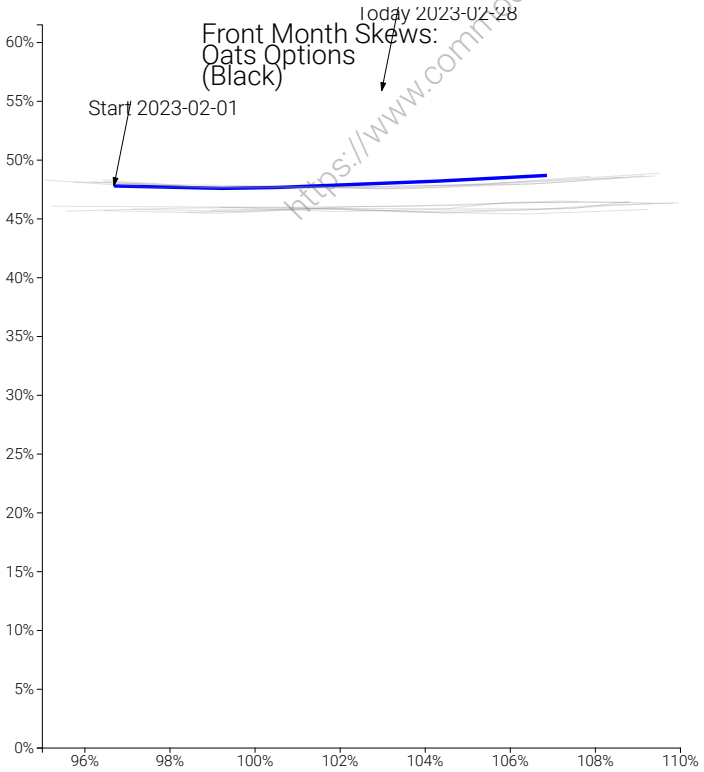
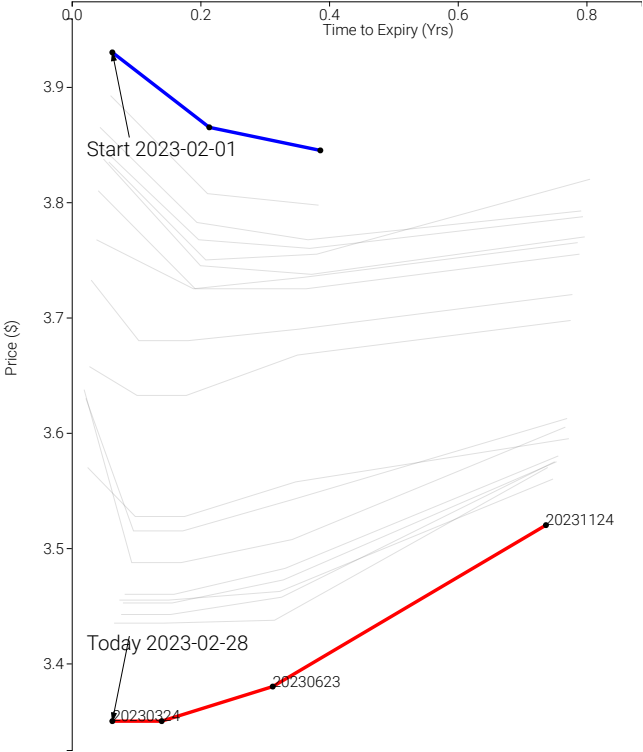
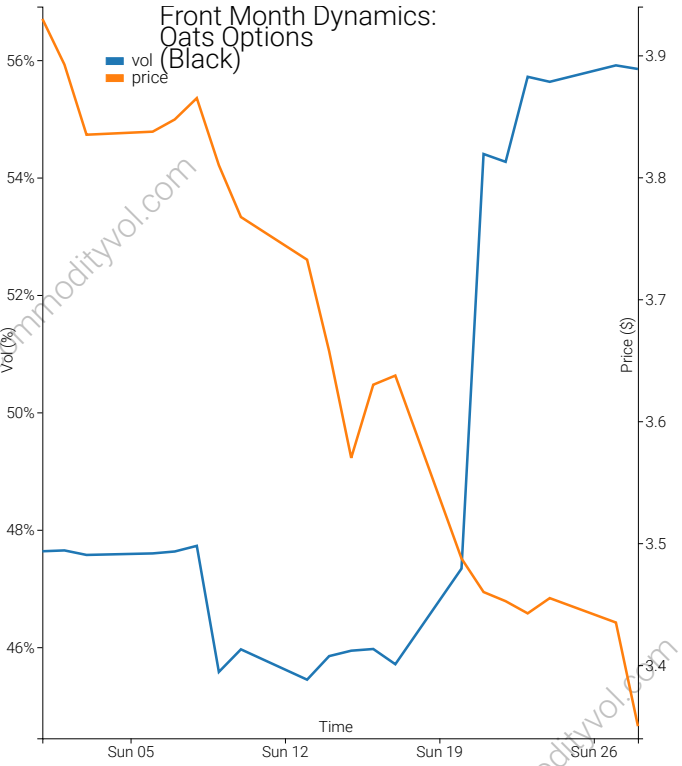
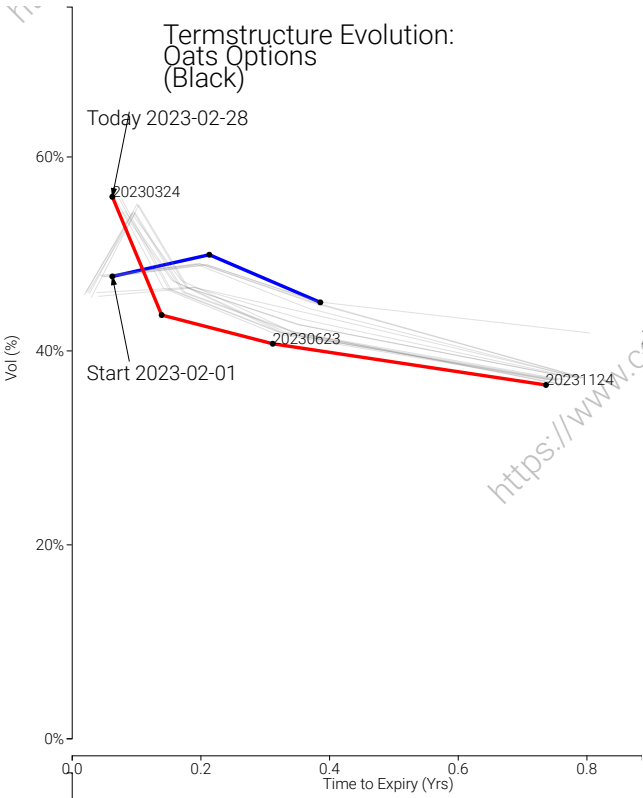


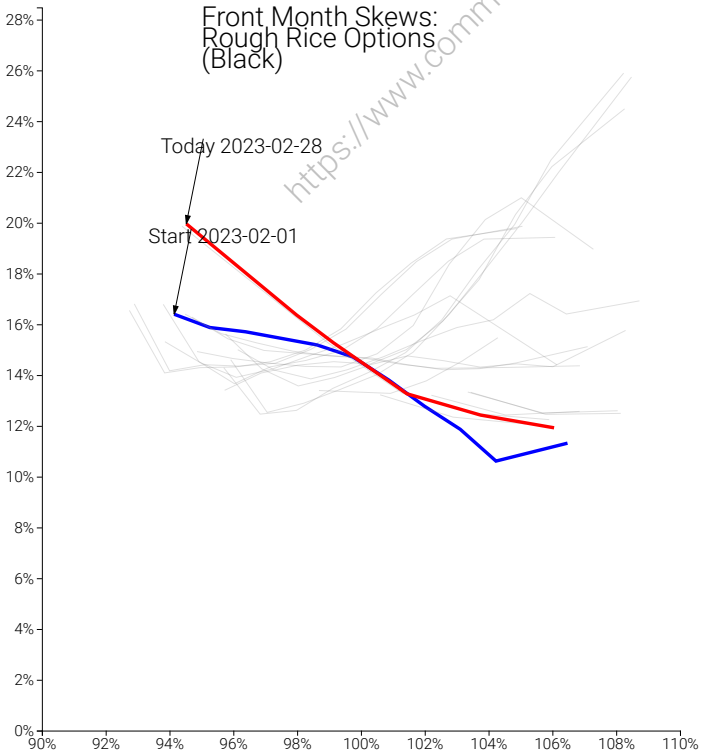
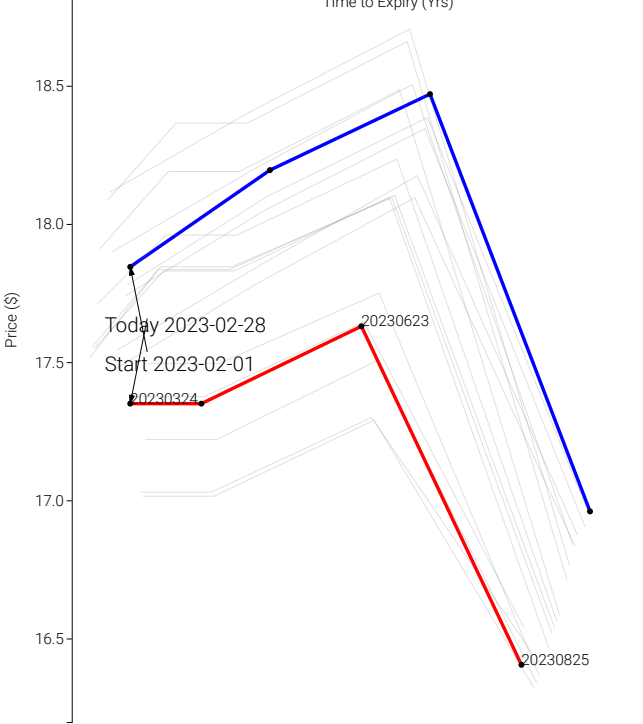
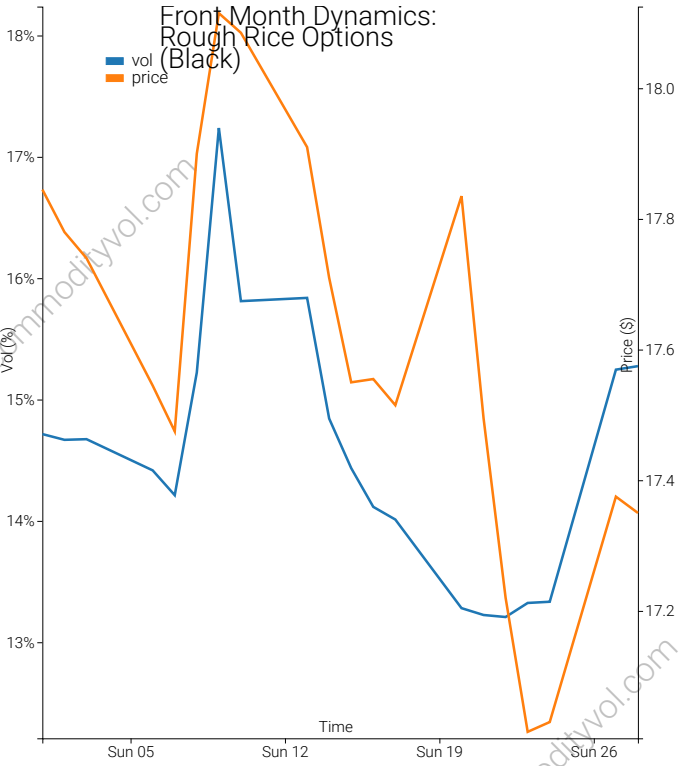
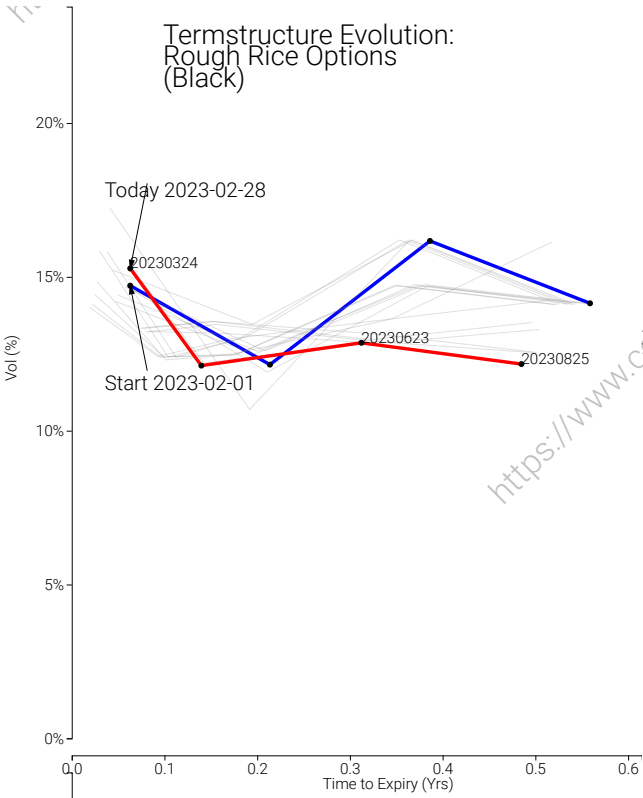


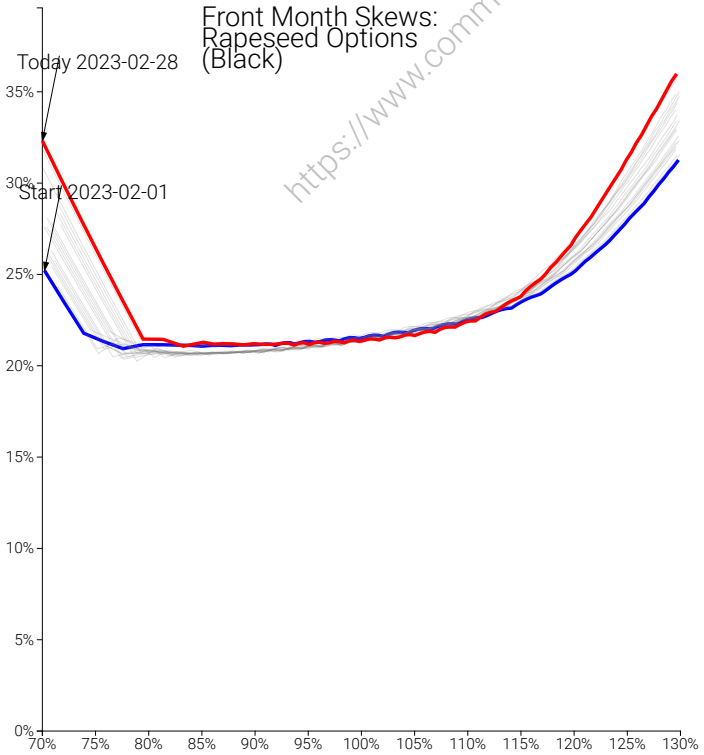
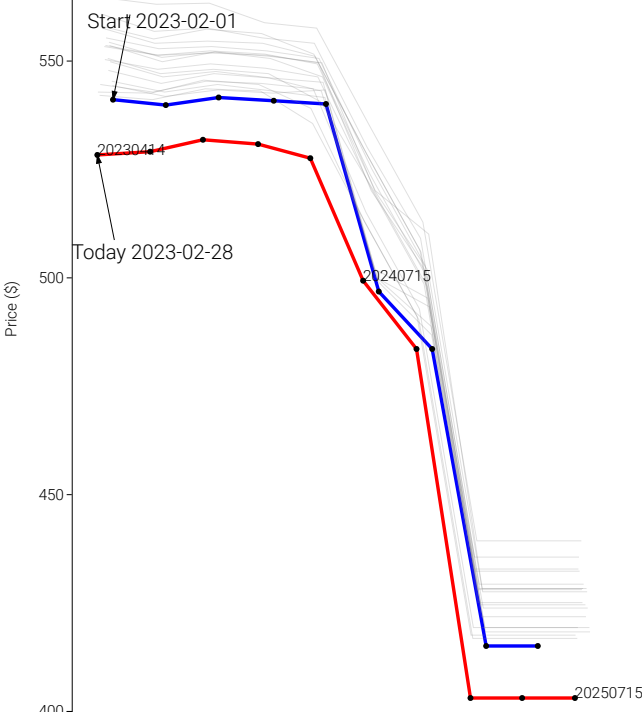
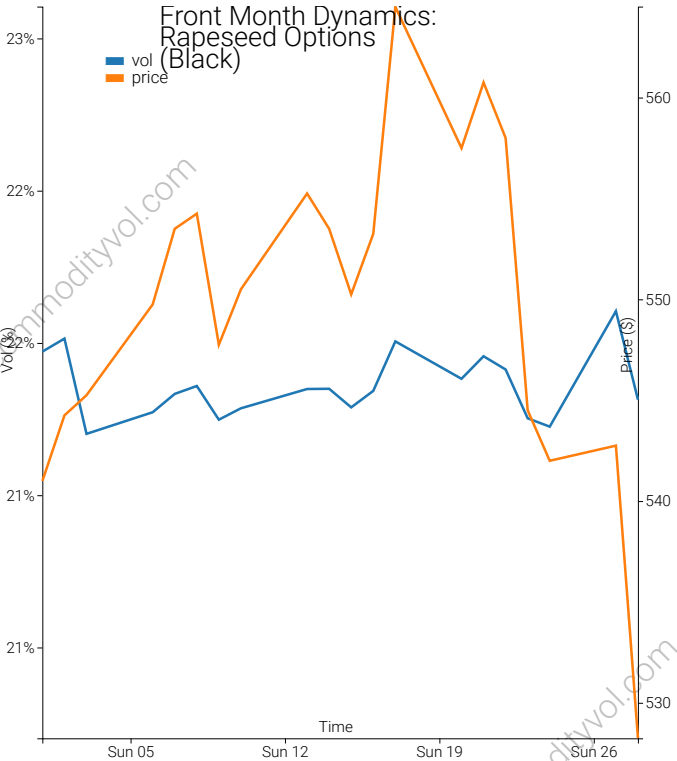
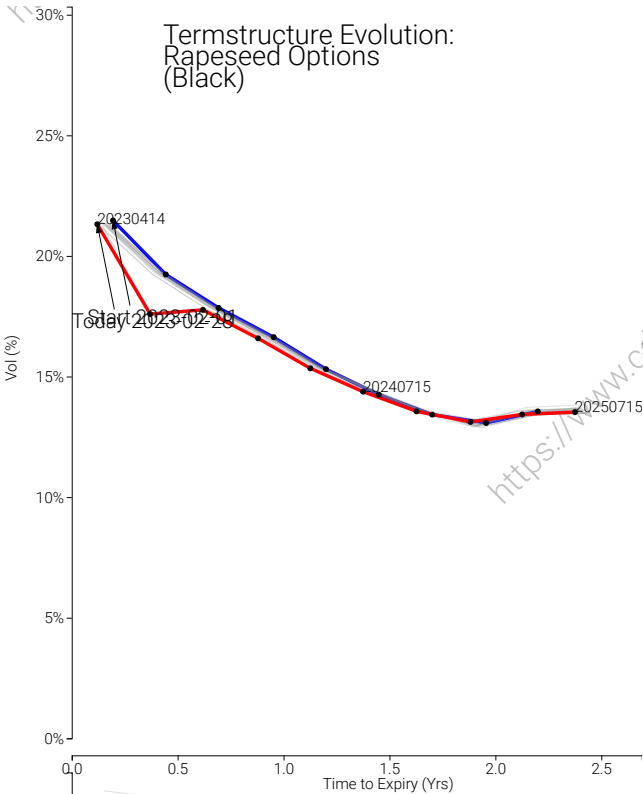




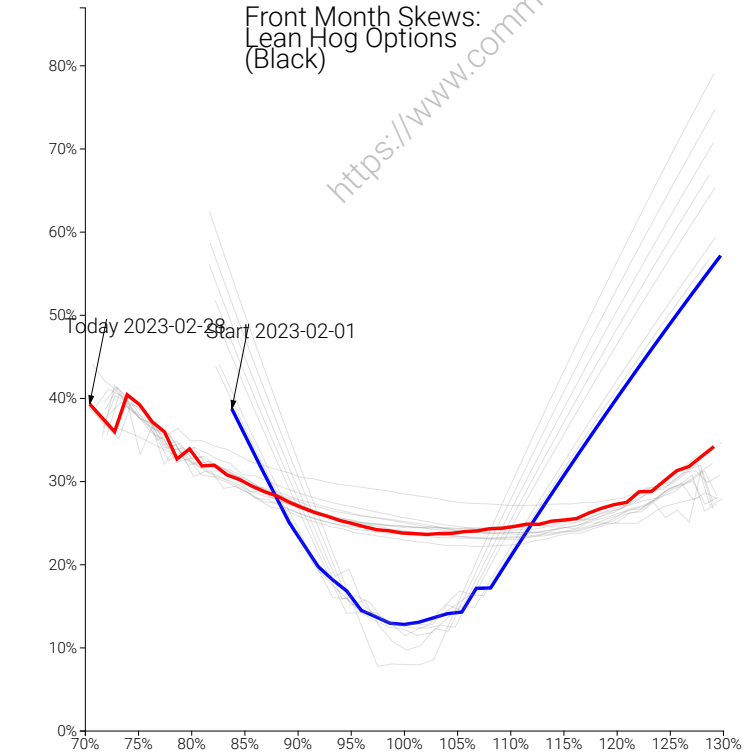
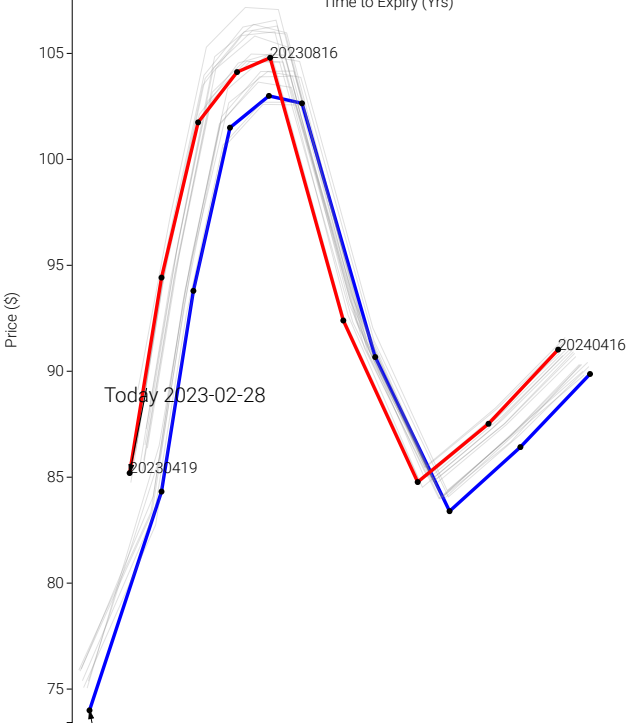
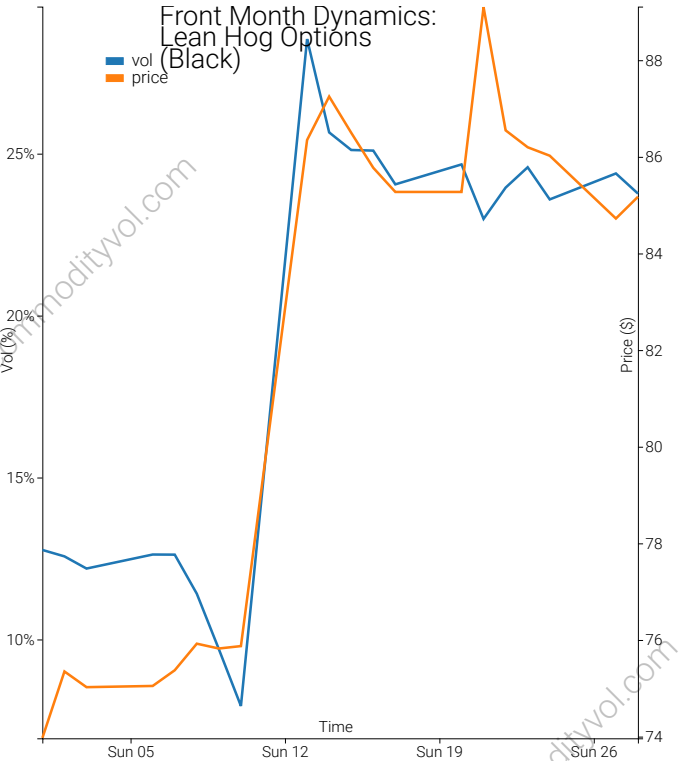
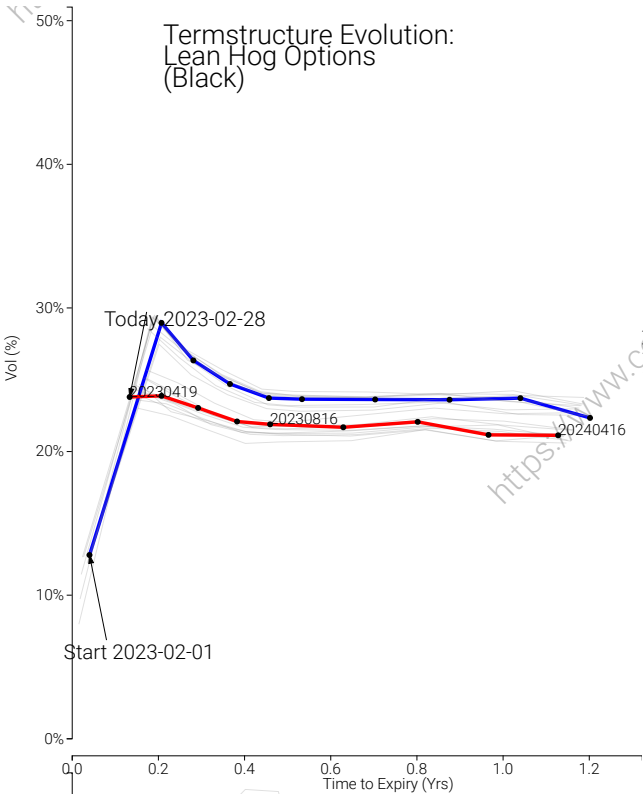


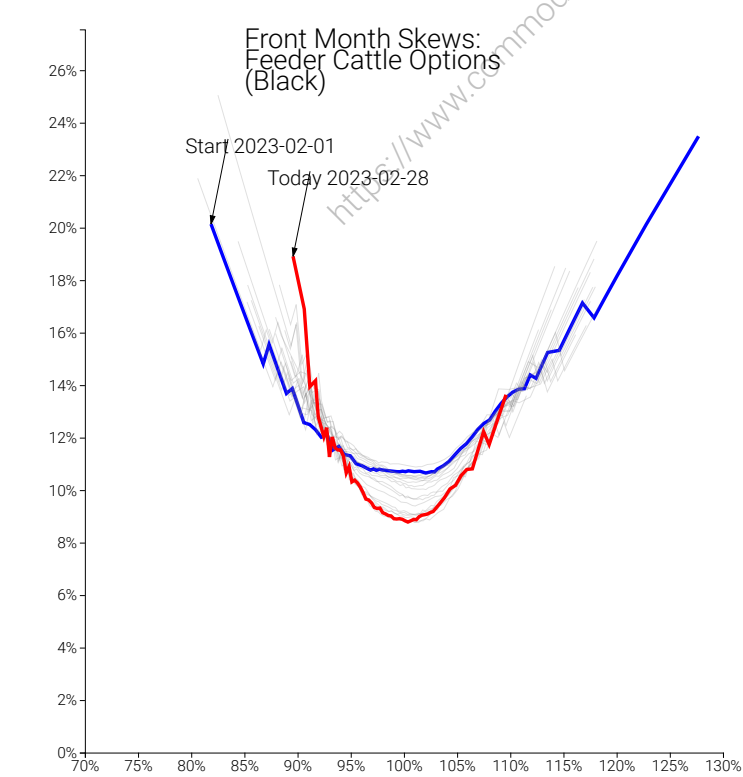
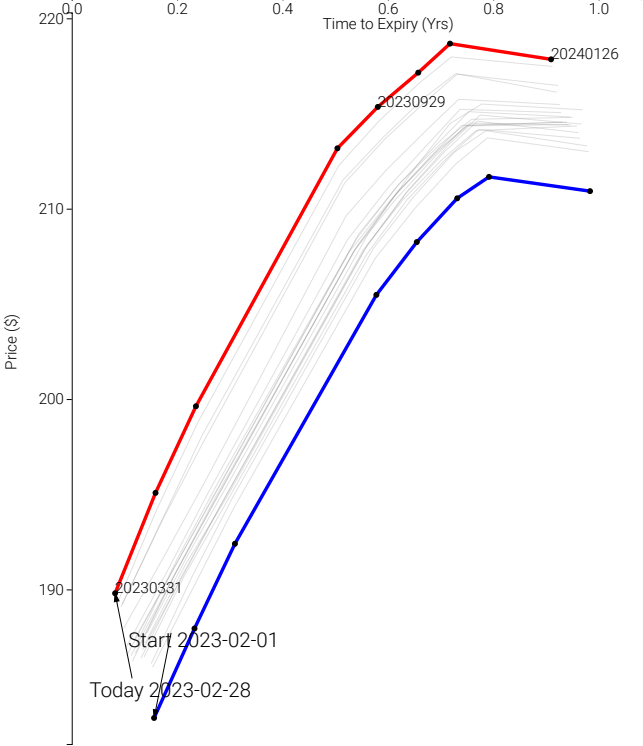
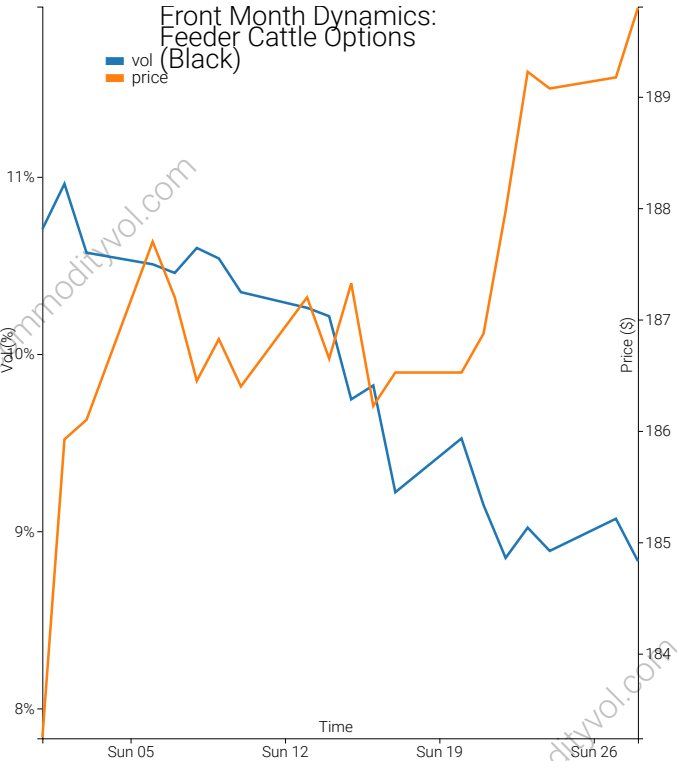
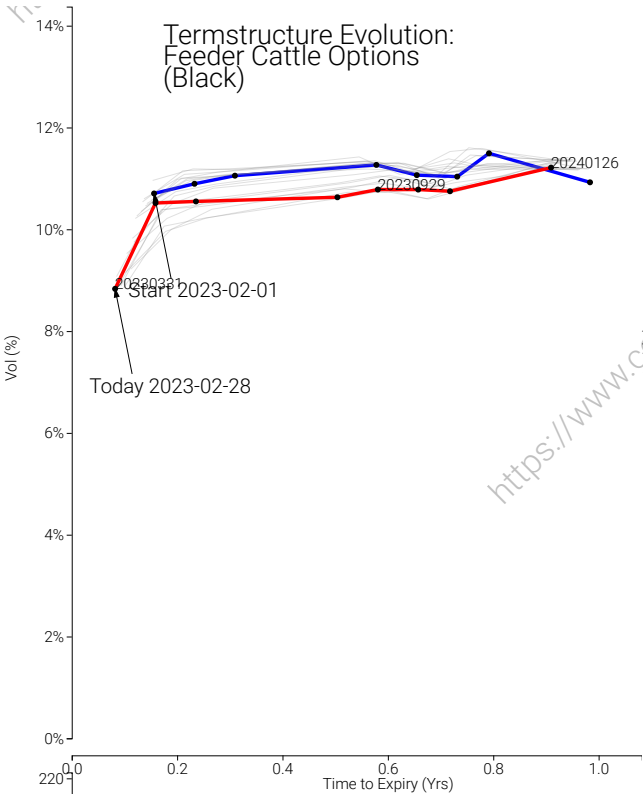


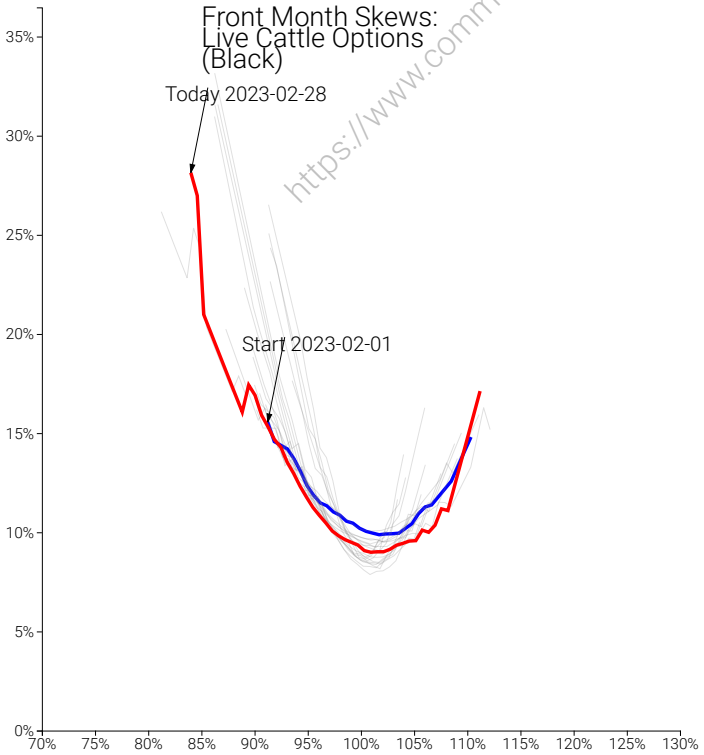
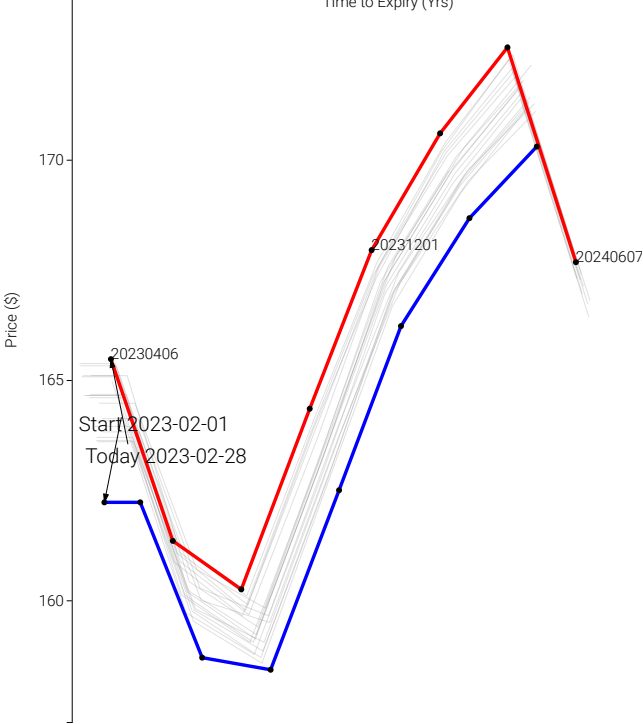
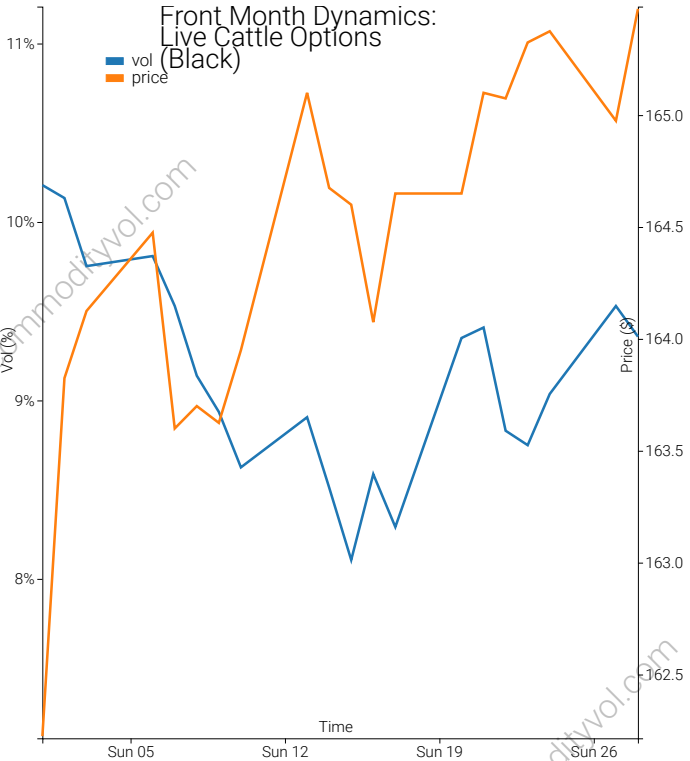
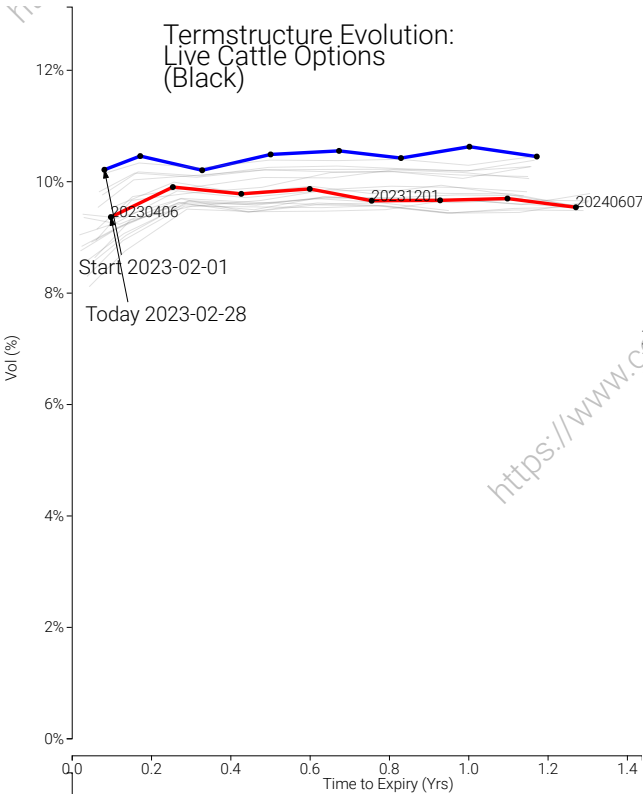


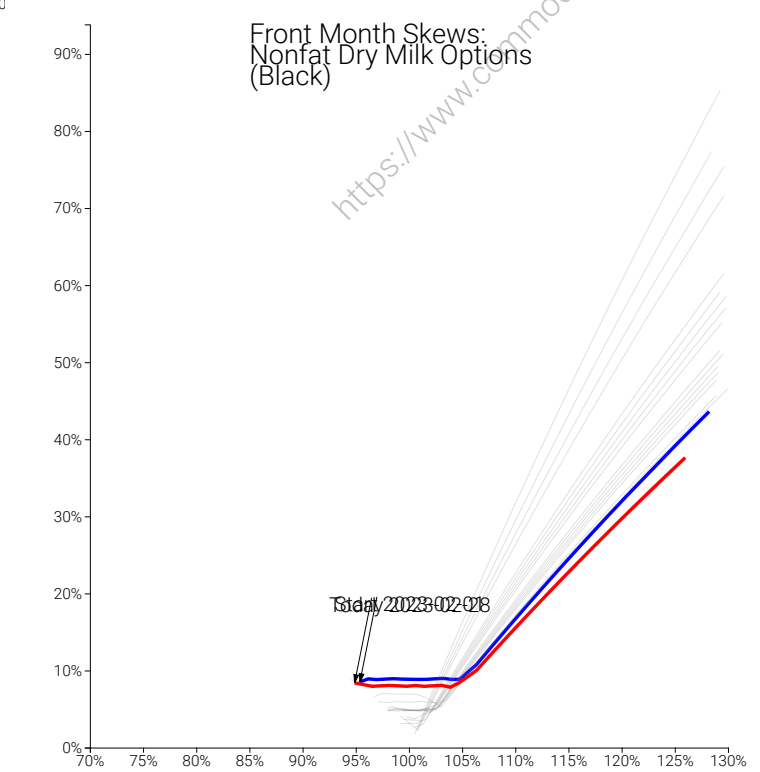
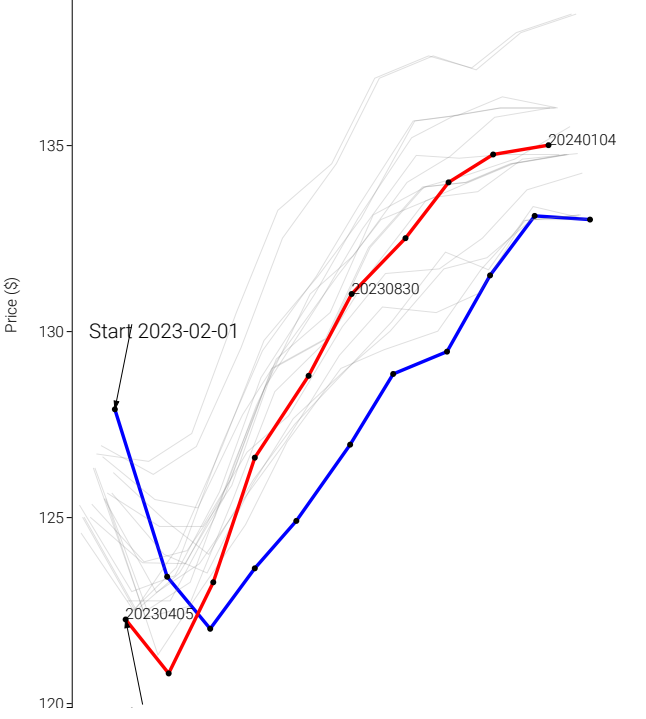
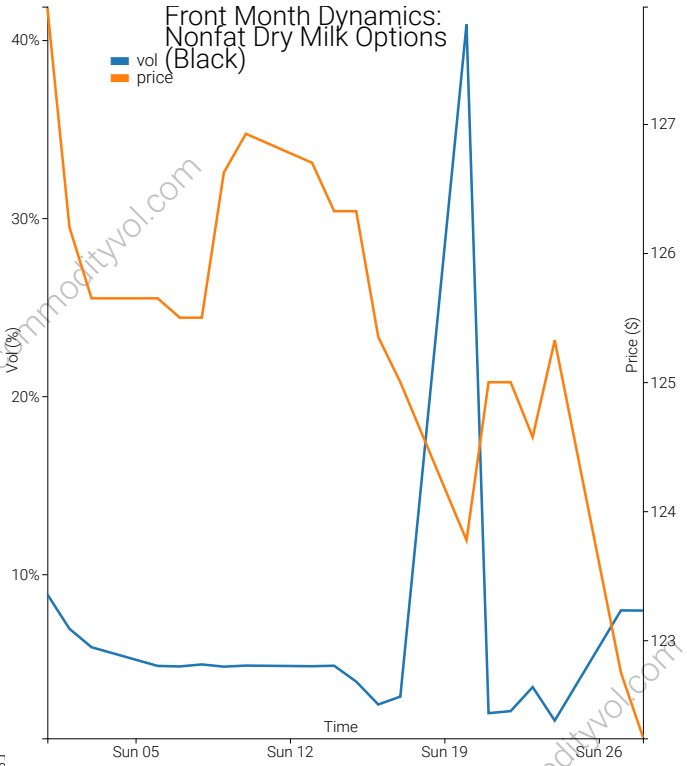
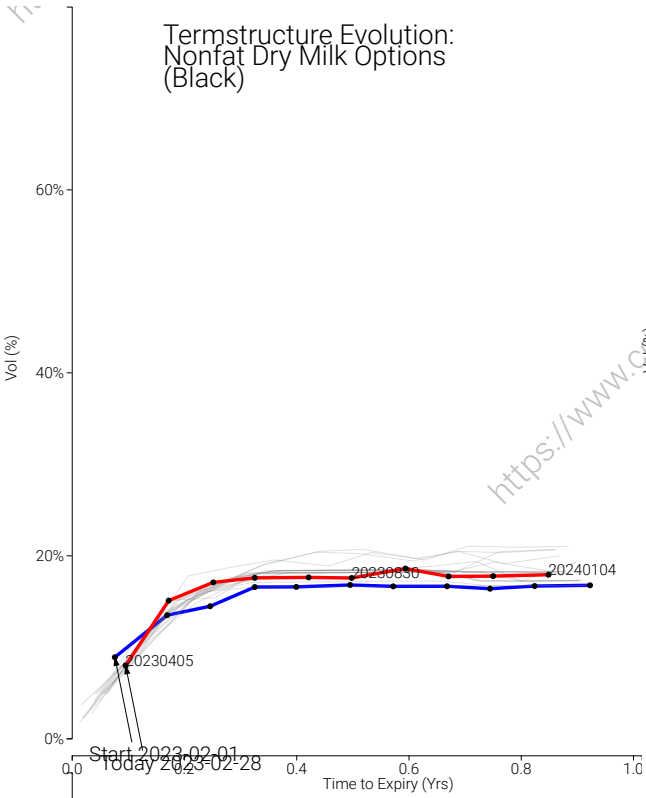


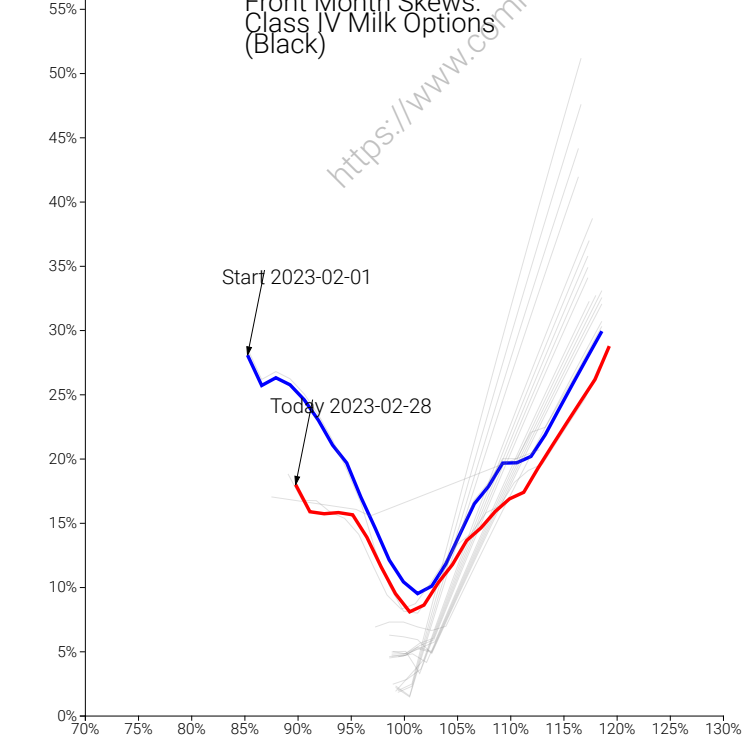
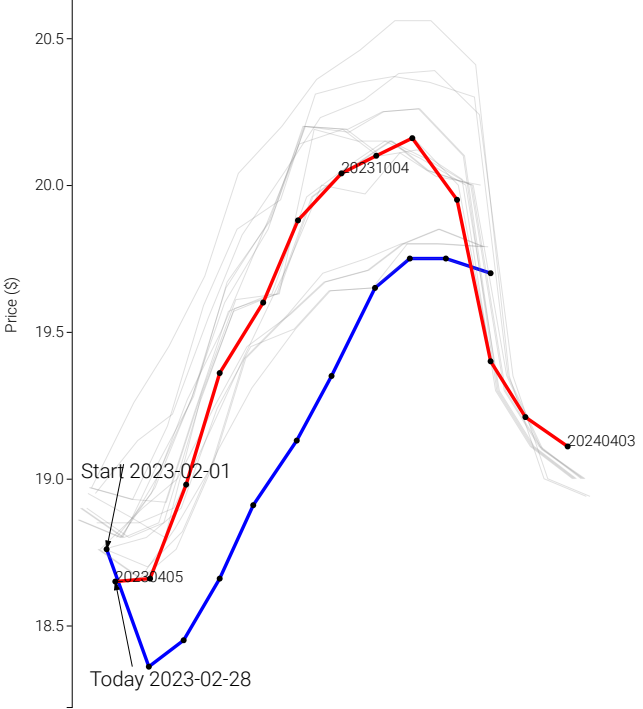
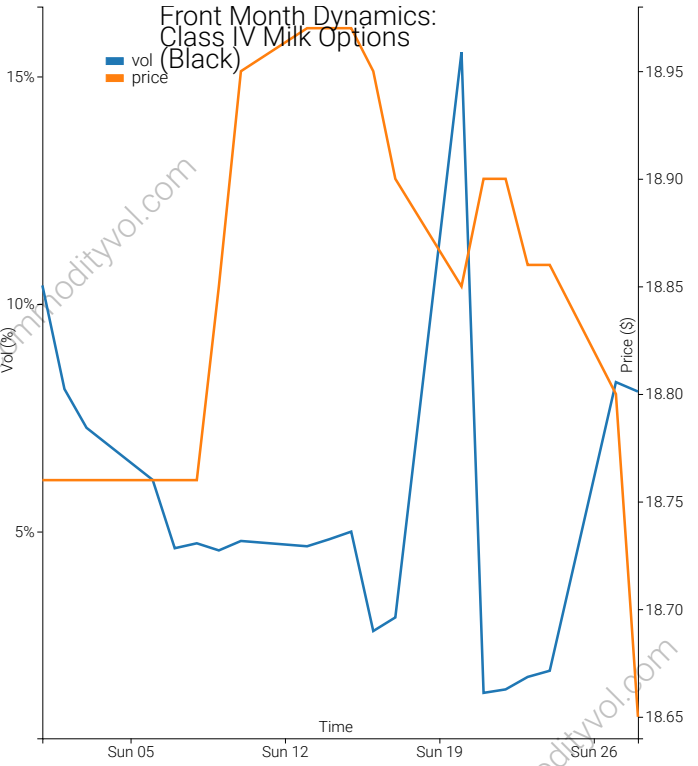
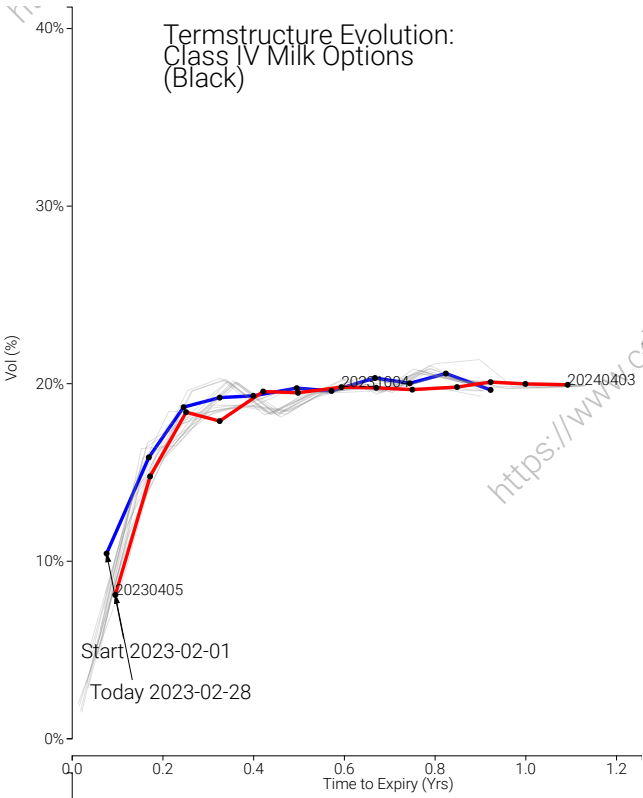
Ags: Proteins, Meats and so forth









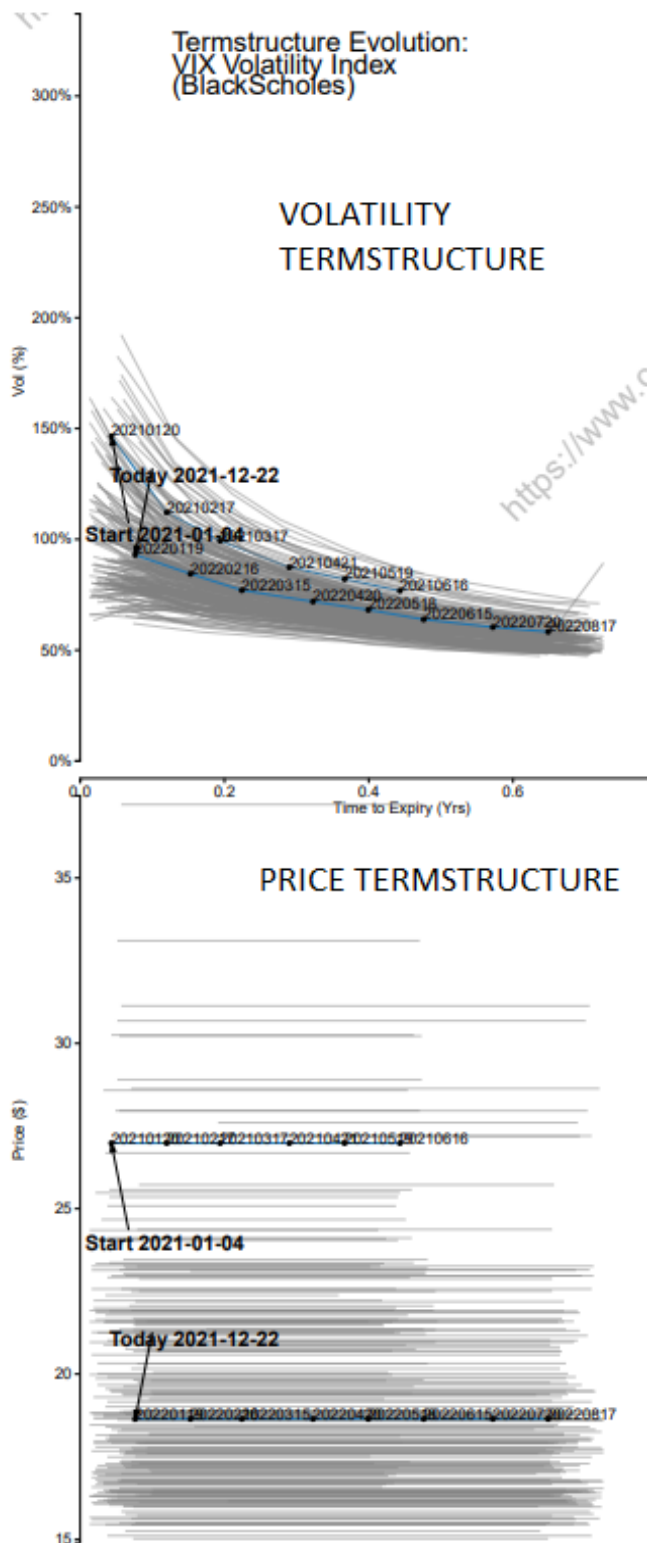


Explanation:

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 Volatility and Price Term Structures:

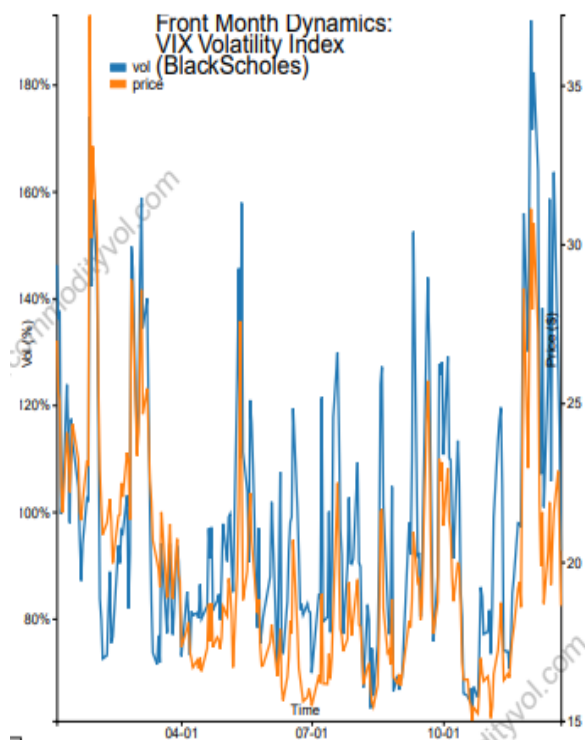
Stacked on top of the other on the left hand side, see the termstructures of vol and the (underlying) futures contract price.



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 Volatility and Front Month Price Over the Year:

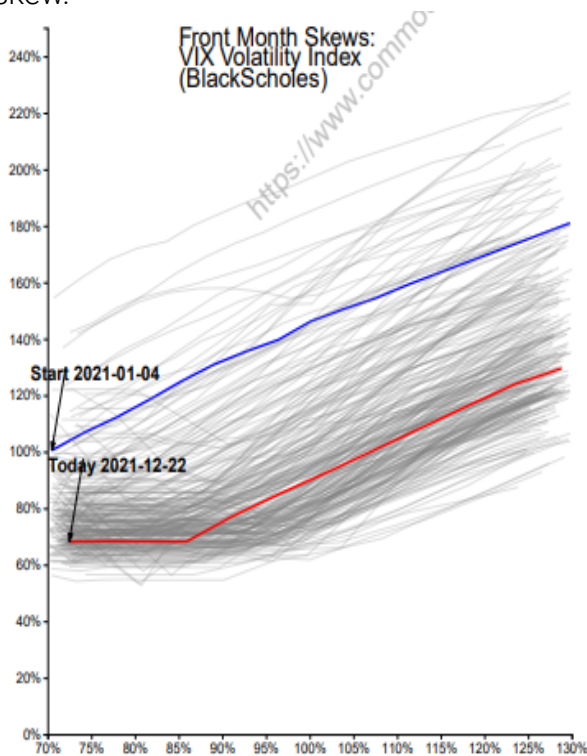
On the right hand panel we have the price and implied volatility of the front month contract.



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.

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