

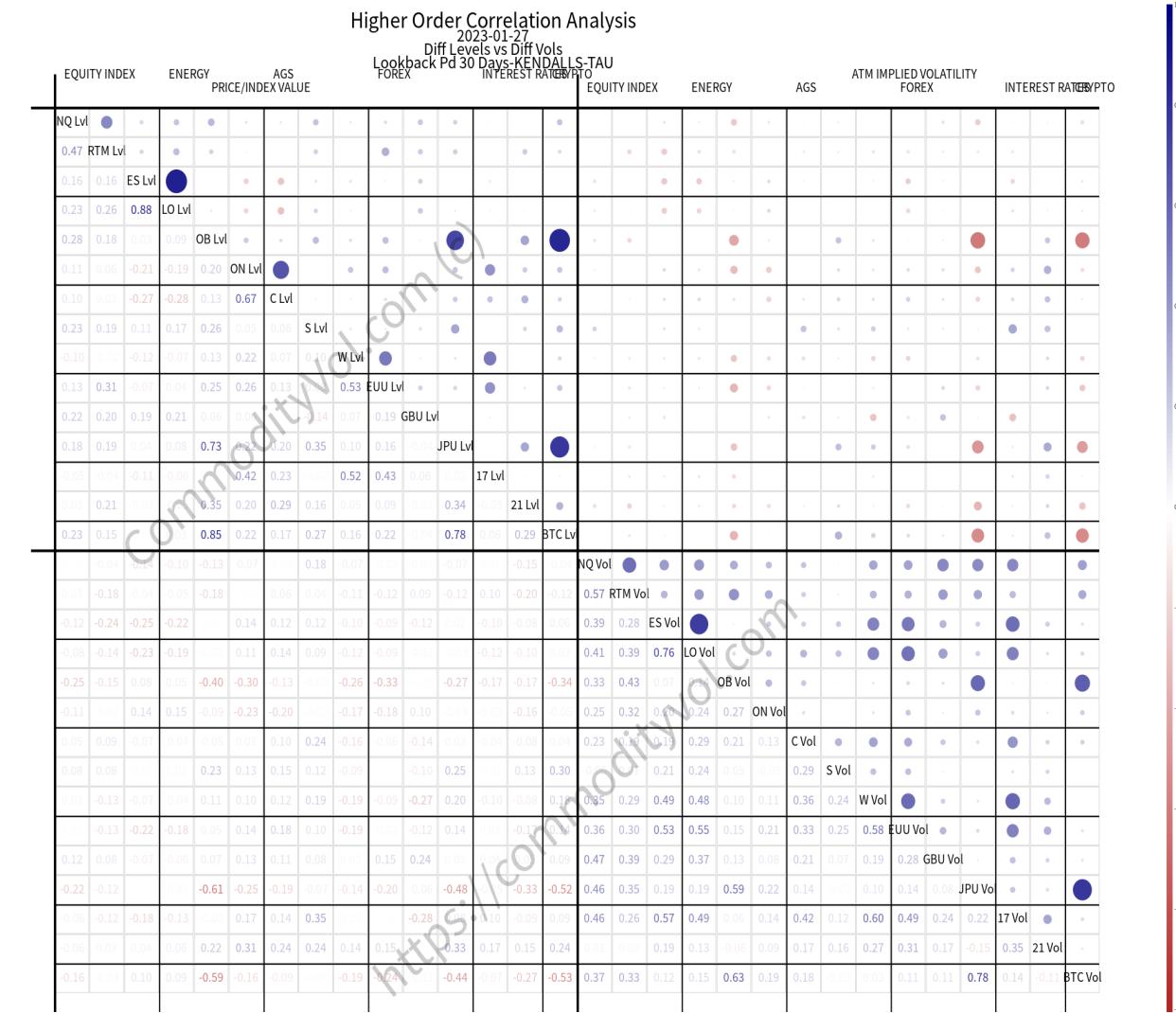


Welcome to our January 2023 Recap:

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

2022 was a year of wild swings. Against that backdrop, January has displayed large movements in price, but, by and large, implied volatility has been offered. The reopening of China is a major factor in the stabilizing economic picture. The X factor in the discussions is the Fed policy. It is definitely the case that Chinese activity is a backstop on oil prices. The rebound in air traffic also keeps a floor under hydrocarbons.

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. Overall, there is not much correlation. However, looking at price changes in FX futures, we see an unusual correlation between Natural Gas and Corn, SP500 and Crude Oil and a trifecta between the Yen, Crypto and Heating Oil. If we look at the correlations in changes in vol, we see something similar. Index and Energy vols seem to be linked to other vols. Moreover, there are all sorts of cross correlations between futures in one market and vols in another.



Energy

Vol was down across the board. In the case of Crude and Distillates, the reduction in vol is probably fueled by the belief that China's reopening will be tempered by weakness in Western economies. Brent futures were up slightly while WTI was down small. Natural gas was an incredible loser. Prices fell about 1.6 dollars this month. The mild weather in the US and Freeport export problems all conspired to push prices lower. In the natural gas market, vol typically follows price since the stock out risk is high for gas. The mild weather also put a damper on heating oil.

Energy ATM

[WTI Crude Detail](#)

[Brent Crude Detail](#)

[US Natty Gas Detail](#)

[Details Energy](#)

Equity Index

Equity markets rebounded this month quite smartly. The Nasdaq100 futures were up

10% and the SP500 futures were up 5.9%. The usual negative correlation between the futures and vols in this market was acutely displayed. The VIX index was down 15%, while the at the money implied vol levels were down between 15 and 21%. Vol's anemic performance in indexes, even in the dismal situation last year, continues so far.

[EquityIndex ATM](#)

[SP500 Detail](#)

[VIX Detail](#)

Interest Rates

Interest rate futures broke last year's trend and rallied strongly this month. Whether it is the soft landing, or moderation in the Fed policy, the market seems to be hopeful that the tightening cycle is ending. Time will tell. Vol, as one might surmise, was down across the board. There was no discernible preference of puts to calls. The shifts in the term structures and skews were parallel. Risk seems to be deflating.

[Interest Rates ATM](#)

[30 Year Bond Detail](#)

[10 Year Note Detail](#)

[Ultrabond](#)

Foreign Exchange

The US Dollar had been incredibly strong for most of 2022. This month the trend reversed. We surmise that this is related to the easier than expected winter in Europe and the softening interest rate policy. King Dollar lost to all other major pairs as well as to Crypto. Aside from double-digit returns to Crypto, the Aussie Dollar and Brazilian Real had extraordinary returns this month. With the exception of Crypto, vol (atm) was shot. All the major currencies exhibited rapidly declining vol. Behind the at the money numbers, there was a sharp increase in the call skew in the Pound, with put skews bid in AUD, EUR, CHF and CAD.

[Foreign Exchange ATM](#)

[Yen Detail](#)

[Euro Detail](#)

[Bitcoin Detail](#)

[Ethereum Detail](#)

Metals

Gold and copper rallied sharply this past month, while the 'silver' metals fell. Implied vol was down across the board. The re-ignition of the Chinese economy is probably a driver in the performance of gold and copper.

[Metals ATM](#)

[Gold Detail](#)

[Copper Detail](#)

Agriculture

With the exception of Oats, the Agricultural sector was down across the board. In almost every case, skews shifted down parallel and closed on the lows.

[Ags ATM](#)

[Wheat Detail](#)

[Kansas City Wheat Detail](#)

[Live Cattle Detail](#)

[Ags Details](#)

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At The Money Roundup of Products

EquityIndex

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/YM	E-Mini Dow	+871.000 [+2.6%]	-0.039 [-19.6%]
CME/NQ	E-Mini Nasdaq	+1129.750 [+10.2%]	-0.042 [-14.9%]
CME/RTO	E-Mini Russell 2000	+168.500 [+9.5%]	-0.049 [-18.6%]
CME/RTM	E-Mini Russell EOM	+168.500 [+9.5%]	-0.037 [-15.2%]
CME/ES	E-Mini S&P 500	+229.000 [+5.9%]	-0.049 [-21.8%]
CBOE/VIX	VIX Volatility Index	-3.500 [-15.3%]	+0.087 [+11.7%]

Ags

exch/prod	desc	futures chng [%]	vol chng [%]
CME/DK	Class IV Milk	-3.440 [-15.5%]	+0.066 [+161.6%]
CBT/C	Corn	+0.013 [+0.2%]	-0.023 [-12.2%]
CME/62	Feeder Cattle	+2.450 [+1.3%]	+0.013 [+14.0%]
CBT/KW	KC HRW Wheat	-0.093 [-1.0%]	-0.024 [-8.0%]
CME/LN	Lean Hog	-12.825 [-14.6%]	-0.101 [-43.0%]
CME/48	Live Cattle	+5.125 [+3.2%]	-0.023 [-19.3%]
CME/NF	Nonfat Dry Milk	-16.875 [-11.7%]	+0.066 [+154.3%]
CBT/O	Oats	+0.268 [+7.3%]	+0.011 [+2.5%]
CBT/14	Rough Rice	-0.565 [-3.1%]	-0.020 [-12.2%]
CBT/S	Soybean	+0.140 [+0.9%]	-0.047 [-23.3%]
CBT/06	Soybean Meal	+13.200 [+2.8%]	-0.037 [-12.6%]
CBT/07	Soybean Oil	-1.740 [-2.7%]	-0.061 [-19.8%]
CBT/W	Wheat	-0.308 [-3.9%]	-0.044 [-13.5%]

InterestRates

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/26	2 YR US Treasury Note	+0.285 [+0.3%]	-0.004 [-14.7%]
CBT/25	5 YR US Treasury Note	+1.313 [+1.2%]	-0.009 [-15.1%]
CBT/21	10 YR US Treasury Note	+2.219 [+2.0%]	-0.015 [-18.1%]
CBT/17	30 YR US Treasury Bond	+4.531 [+3.6%]	-0.032 [-21.7%]
CME/ED	Eurodollar	+0.090 [+0.1%]	-0.005 [-51.2%]
CBT/UBE	Long Term US Treasury Bond	+7.438 [+5.5%]	-0.059 [-27.0%]

Metals

exch/prod	desc	futures chng [%]	vol chng [%]
COMEX/HX	Copper	+0.415 [+10.9%]	-0.028 [-9.3%]
COMEX/OG	Gold	+119.100 [+6.5%]	-0.006 [-4.3%]
NYMEX/PAO	Palladium	-149.700 [-8.3%]	-0.120 [-21.0%]
NYMEX/PO	Platinum	-61.800 [-5.7%]	-0.059 [-17.2%]
COMEX/SO	Silver	-0.204 [-0.8%]	-0.031 [-9.8%]

Energy

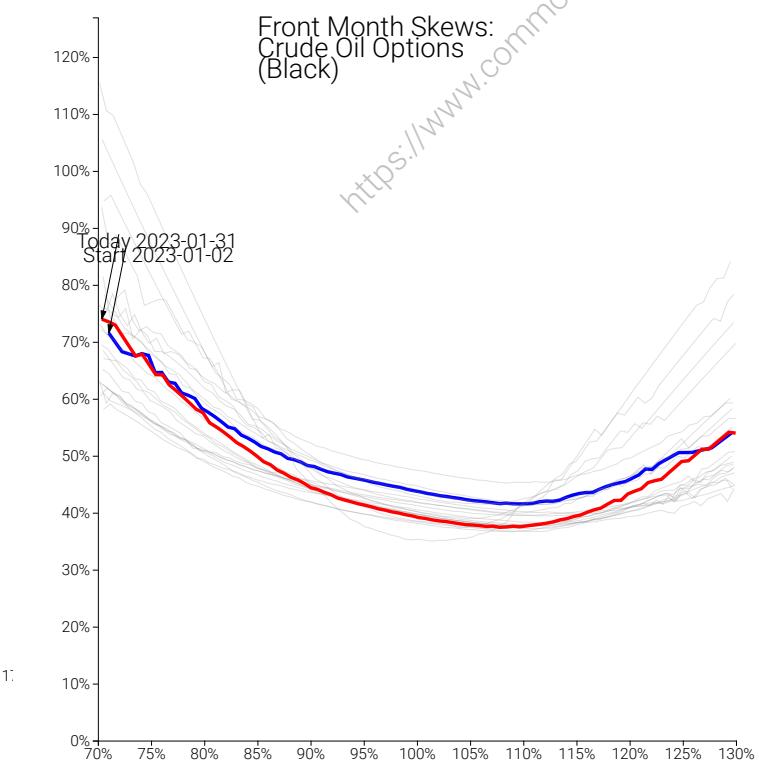
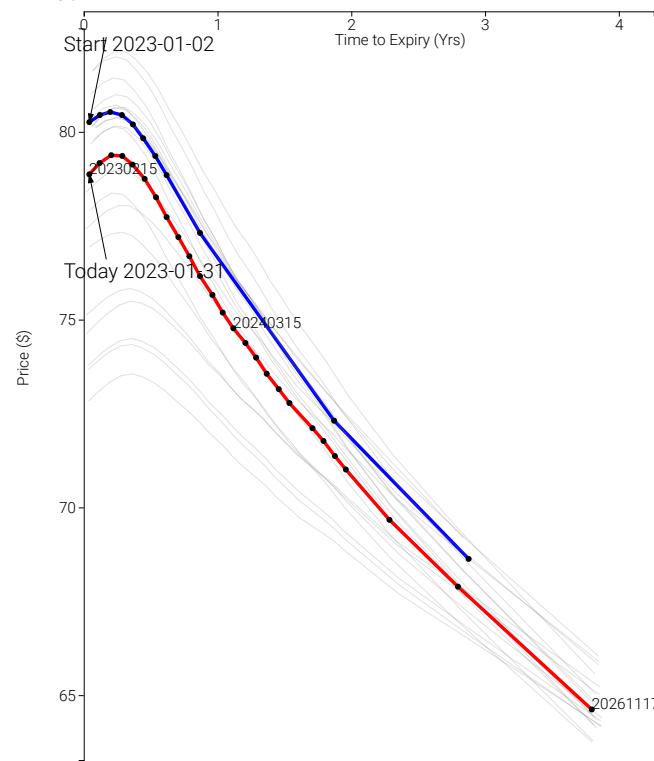
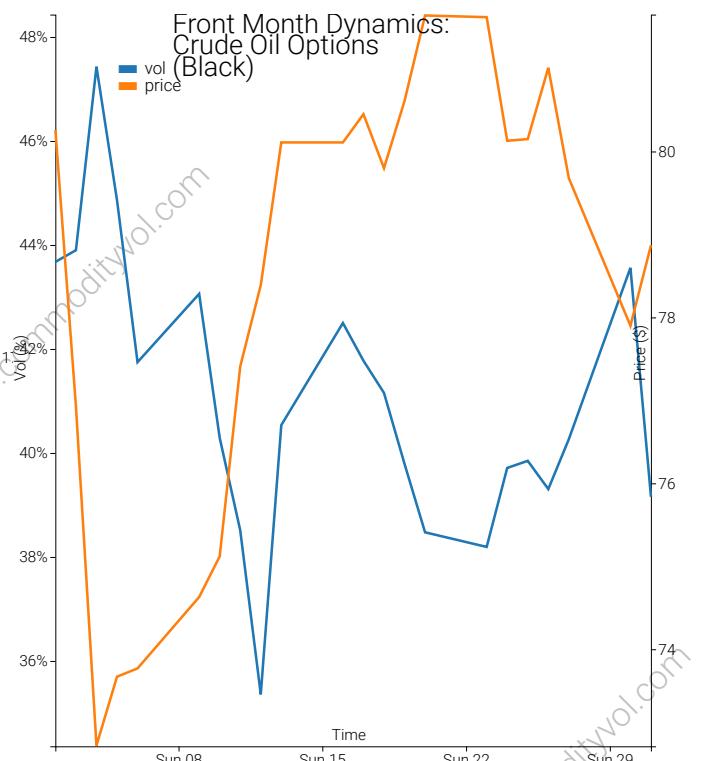
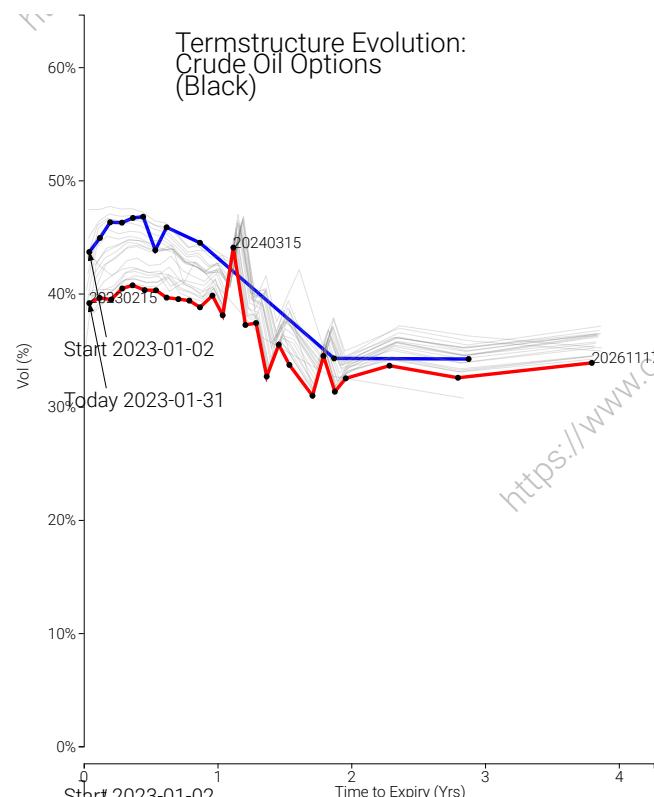
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NYMEX/BZO	Brent Crude Oil Margin	-0.450 [-0.5%]	-0.070 [-15.7%]
NYMEX/BE	Brent Euro Style	+3.360 [+4.1%]	-0.010 [-2.5%]
NYMEX/CVR	Chicago Ethanol(platts) Average Price	-0.188 [-8.0%]	-0.057 [-29.8%]
NYMEX/LO	Crude Oil	-1.390 [-1.7%]	-0.045 [-10.3%]
NYMEX/LN	European Natural Gas	-1.791 [-40.0%]	-0.052 [-5.6%]
NYMEX/E7	Henry Hub Financial Last Day	-1.304 [-32.7%]	-0.034 [-3.7%]
NYMEX/JKO	LNG Japan/korea Marker (platts) Average Price	-10.320 [-35.2%]	-0.111 [-14.4%]
NYMEX/ON	Natural Gas	-1.791 [-40.0%]	-0.054 [-5.9%]
NYMEX/OH	NY Harbor ULSD	-0.150 [-4.6%]	-0.116 [-20.7%]
NYMEX/OB	RBOB	+0.089 [+3.6%]	-0.061 [-13.1%]

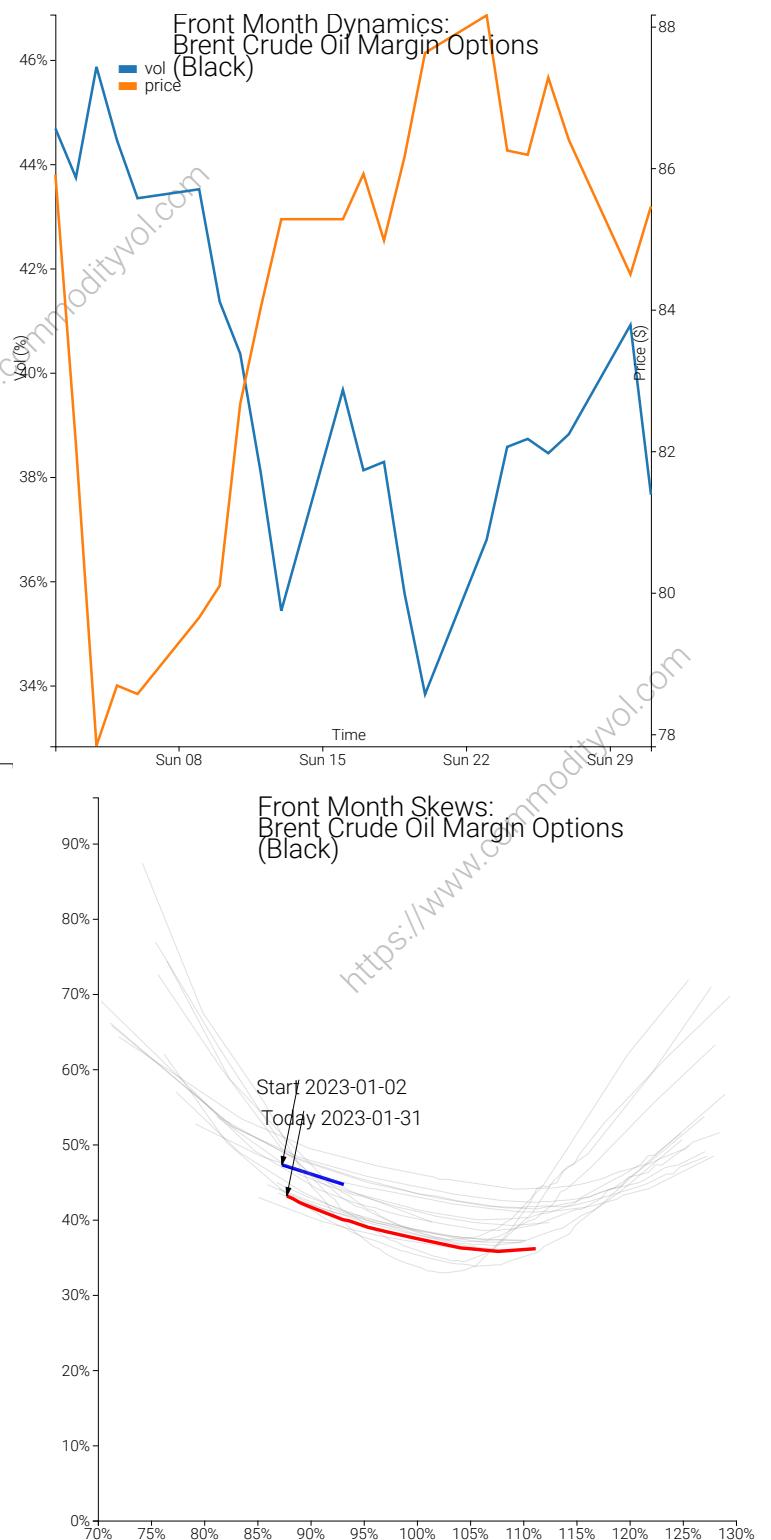
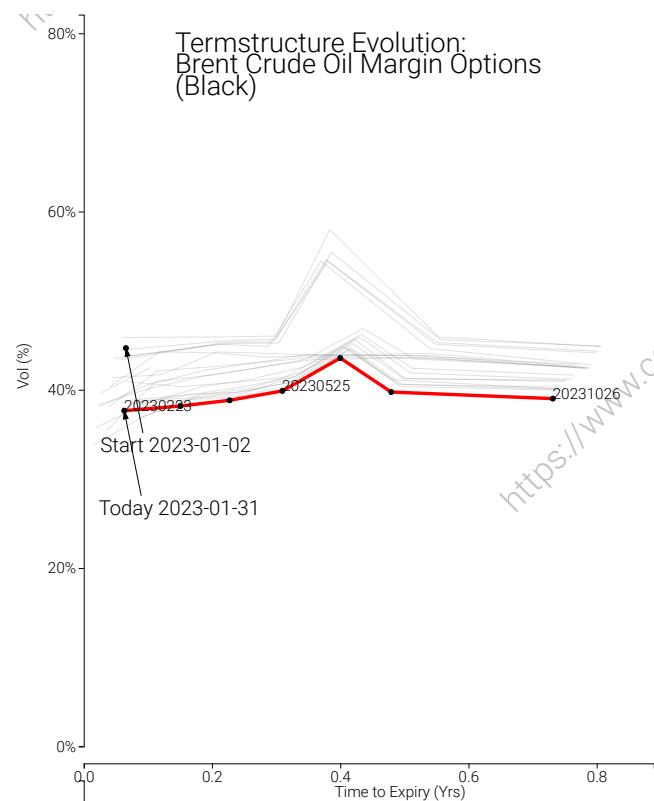
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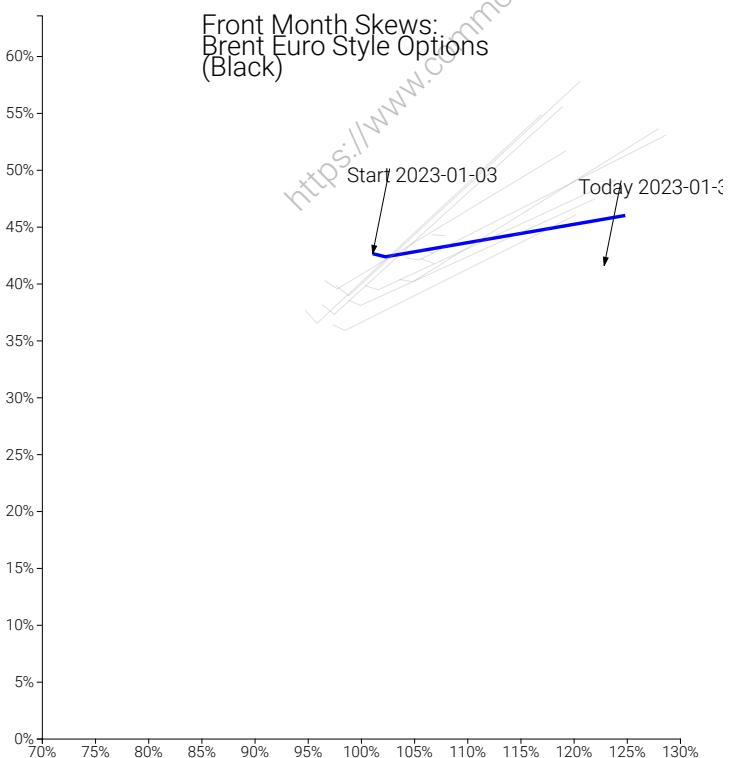
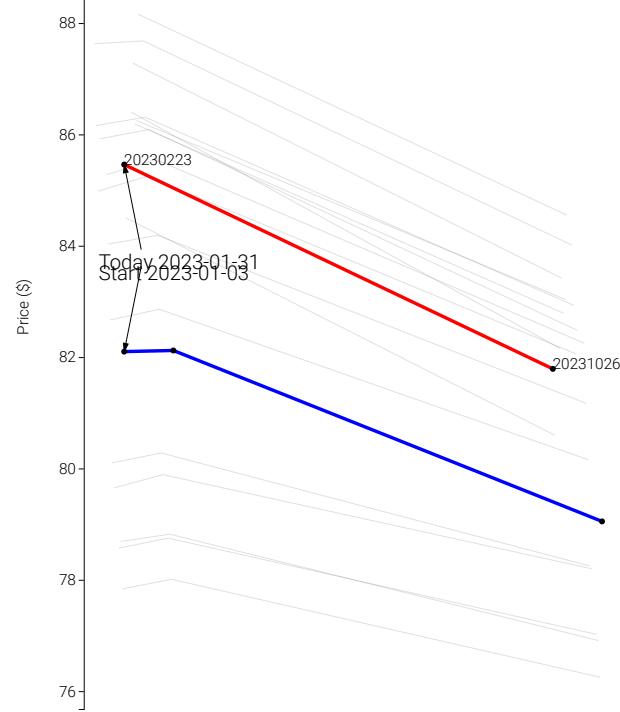
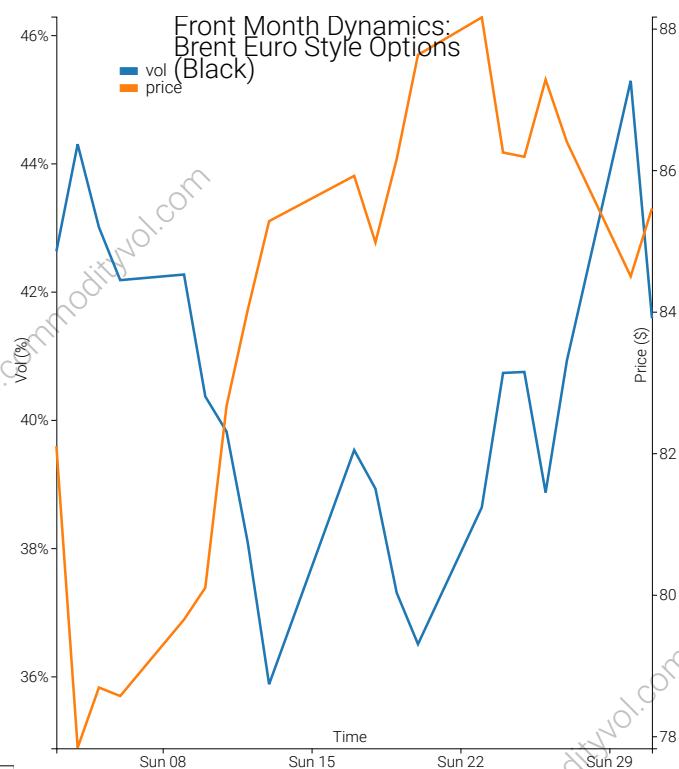
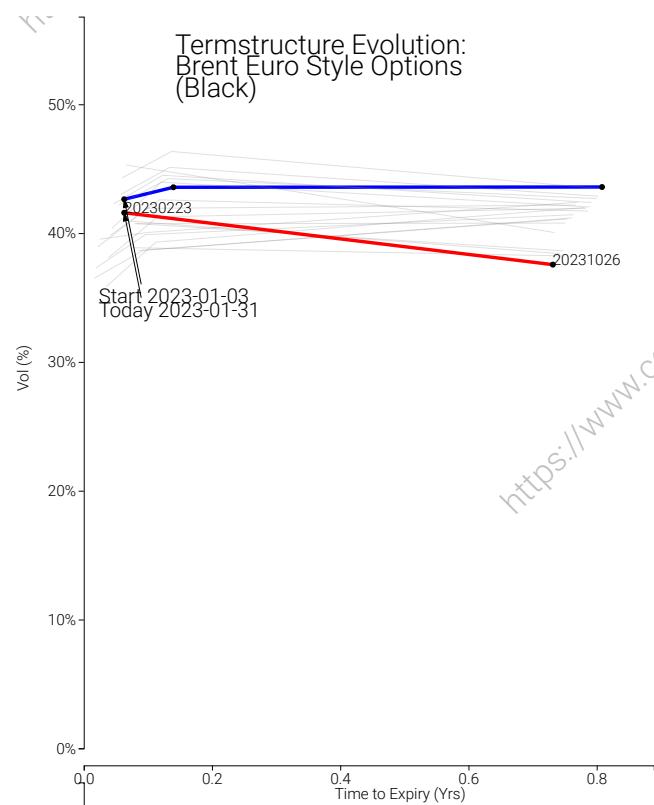
exch/prod	desc	futures chng [%]	vol chng [%]
CME/ADU	AUDUSD 2pmfix	+0.024 [+3.5%]	-0.031 [-19.1%]
CME/BTC	Bitcoin	+6715.000 [+40.6%]	+0.046 [+9.6%]
CME/BR	BRLUSD Monthly	+0.010 [+5.1%]	-0.025 [-12.8%]
CME/CAU	CADUSD 2pmfix	+0.013 [+1.7%]	-0.022 [-22.5%]
CME/CHU	CHFUSD 2pmfix	+0.007 [+0.6%]	-0.016 [-15.0%]
CME/ETH	Ethereum Futures	+407.500 [+34.3%]	+0.010 [+1.8%]
CME/EUU	EURUSD 2pmfix	+0.014 [+1.3%]	-0.029 [-25.4%]
CME/GBU	GBPUSD 2pmfix	+0.025 [+2.1%]	-0.033 [-24.4%]
CME/JPU	JPYUSD 2pmfix	+0.000 [+0.2%]	-0.059 [-31.4%]
CME/MP	Mexican Peso	+0.002 [+4.1%]	-0.021 [-17.3%]
CME/NE	New Zealand	+0.012 [+1.9%]	-0.046 [-25.7%]

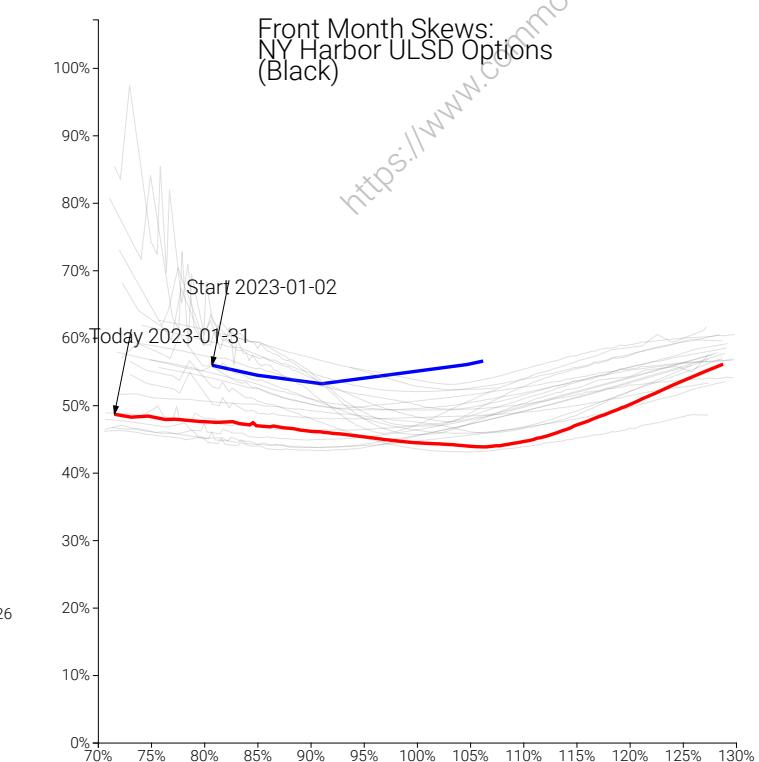
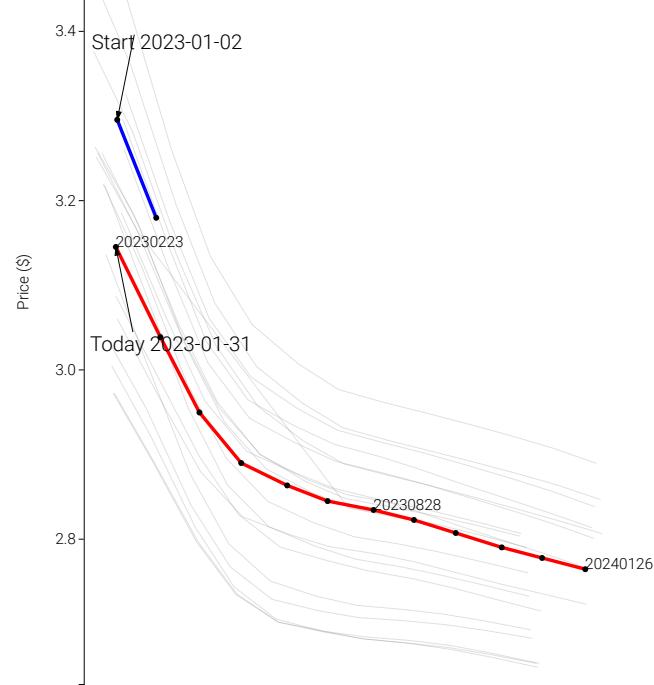
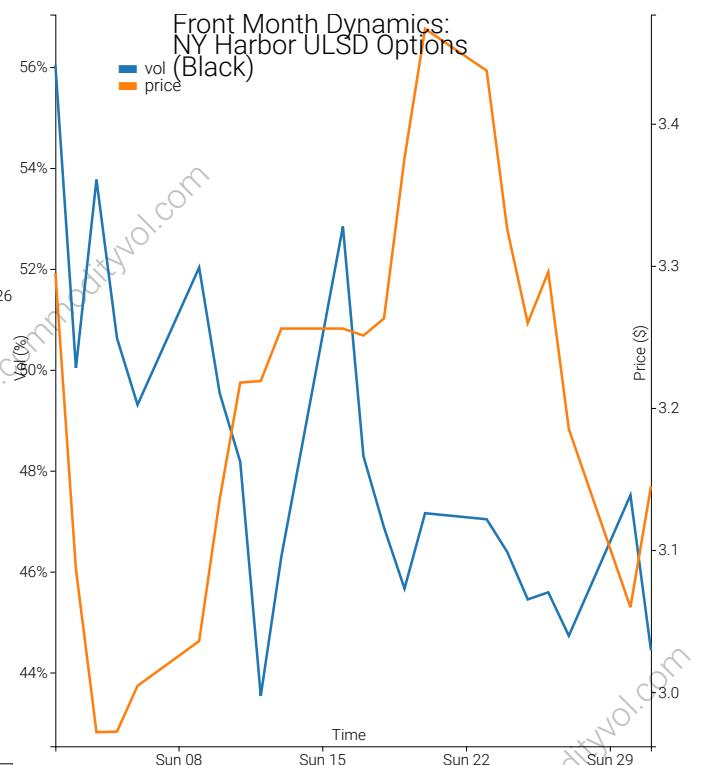
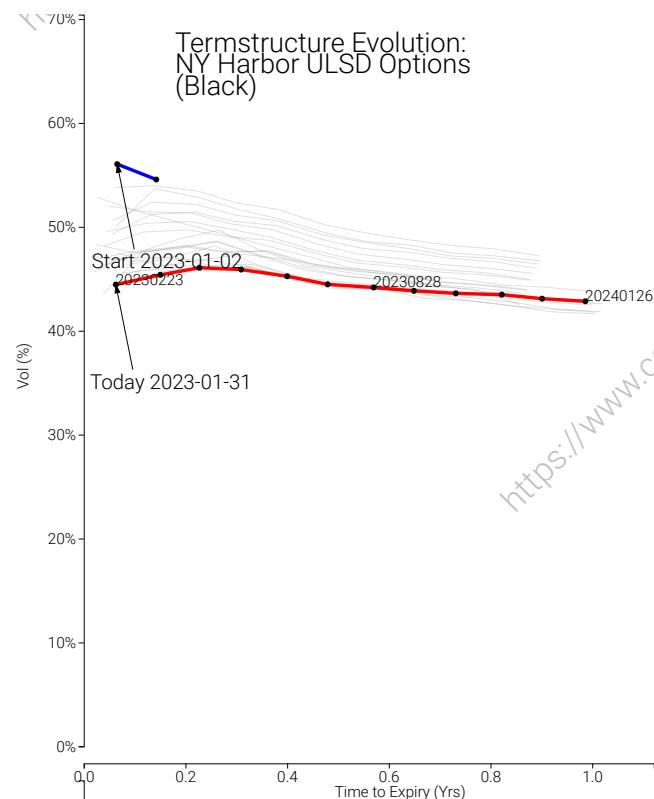
Skews, Termstructures and more

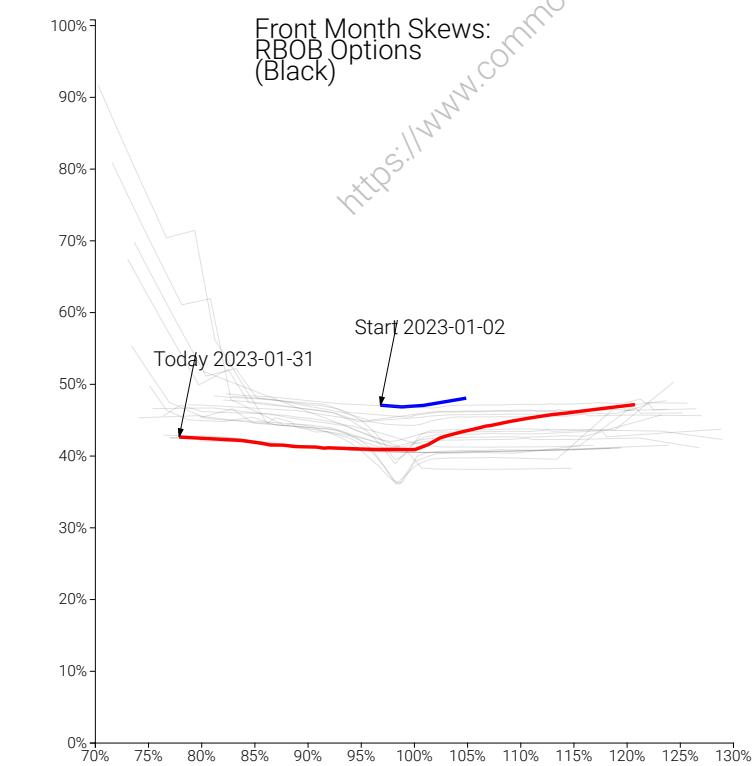
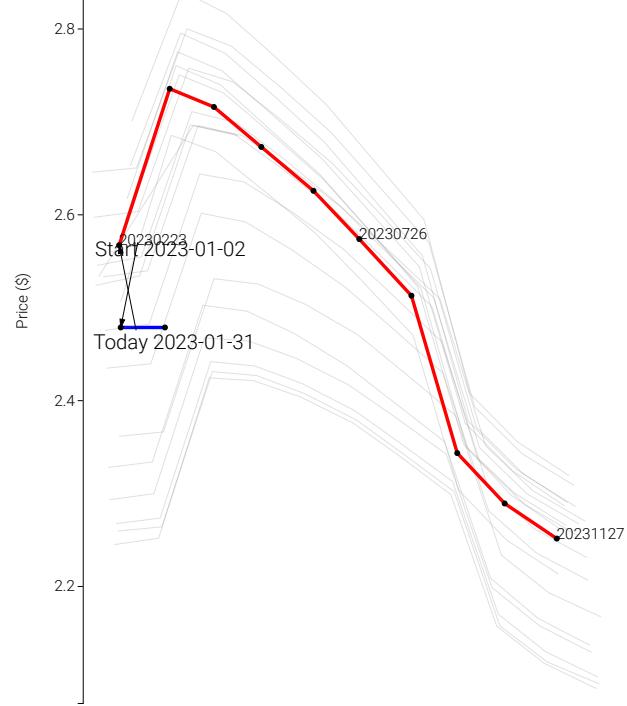
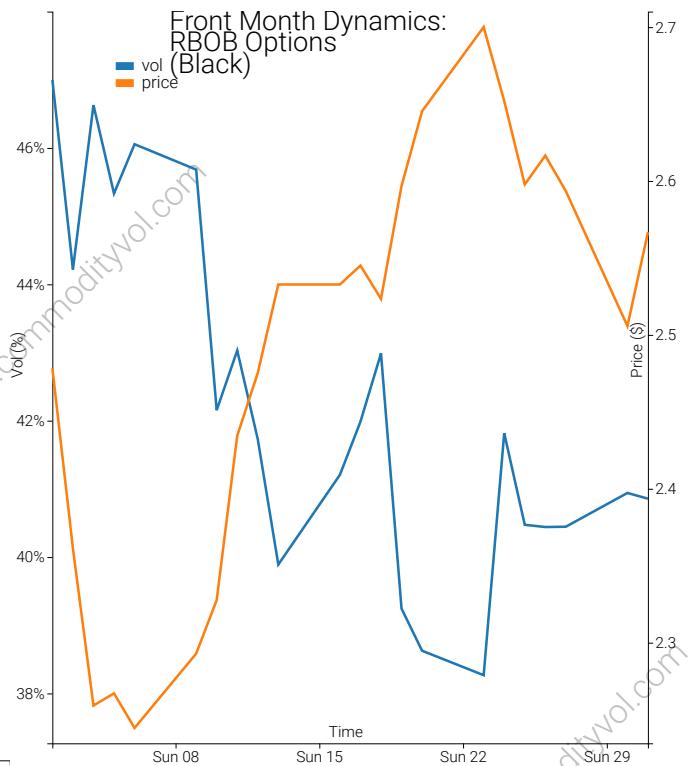
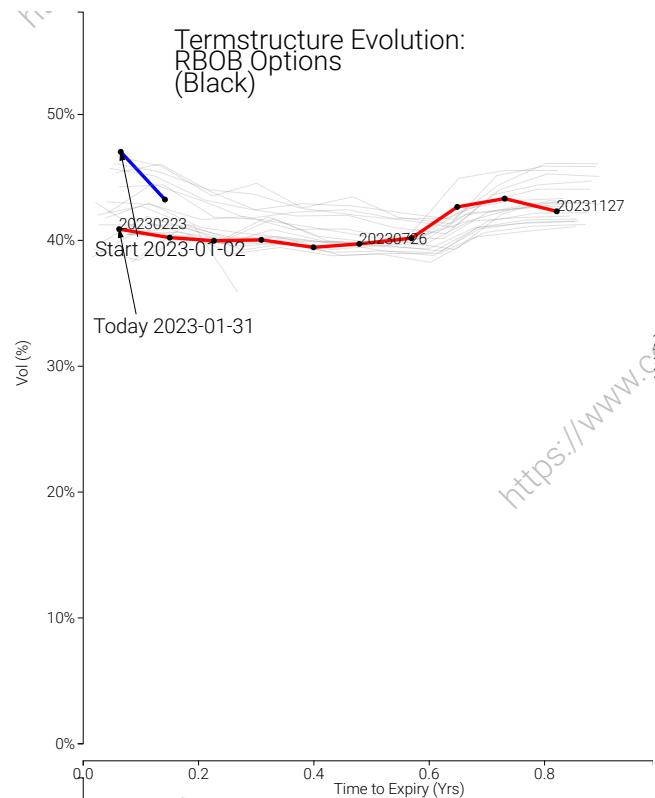
Energy: Crude and Derivatives

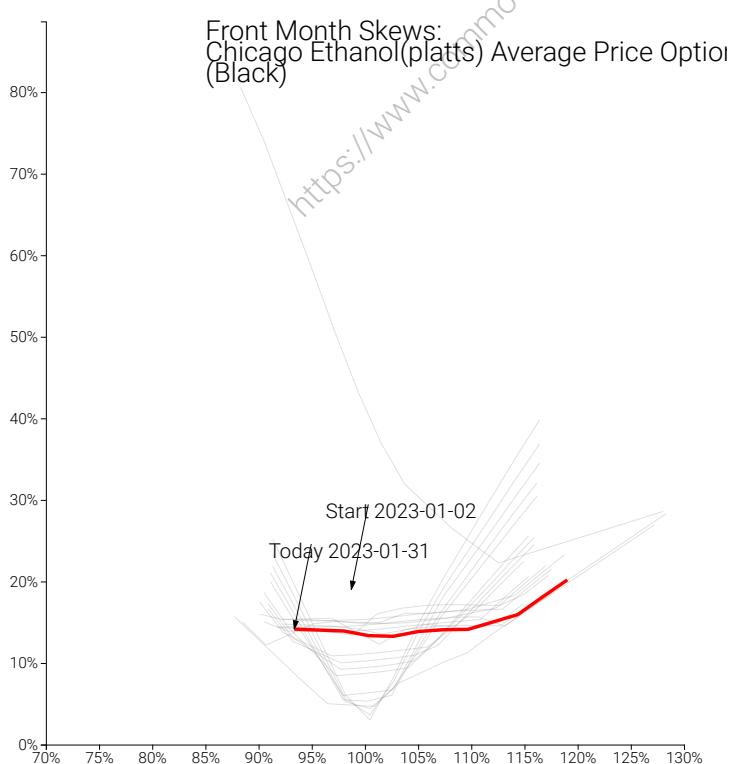
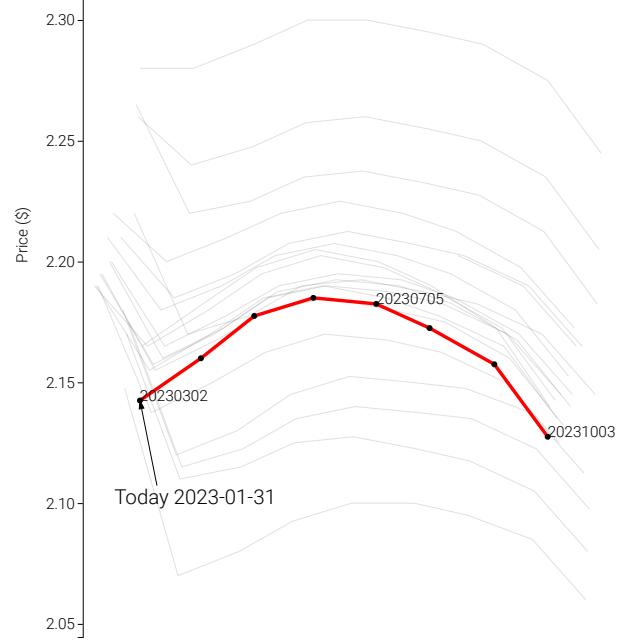
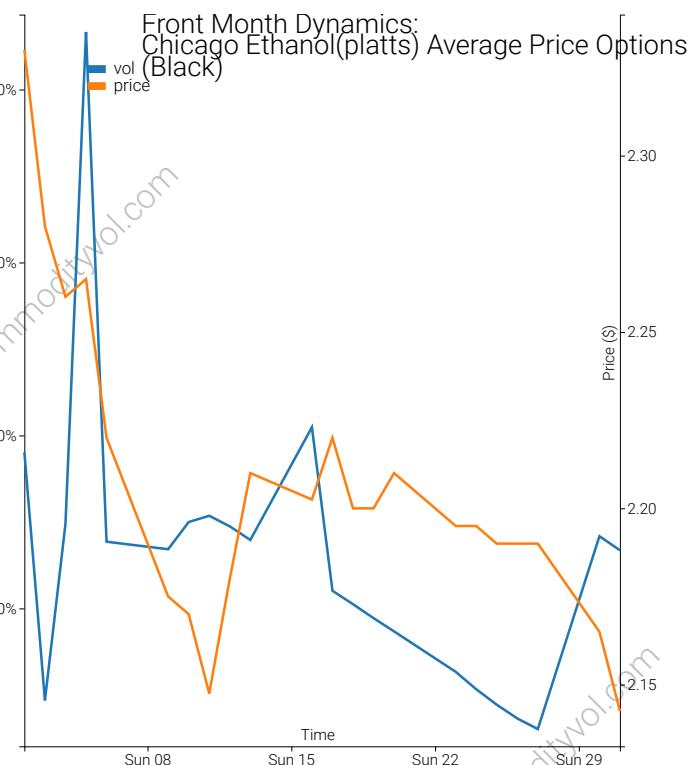
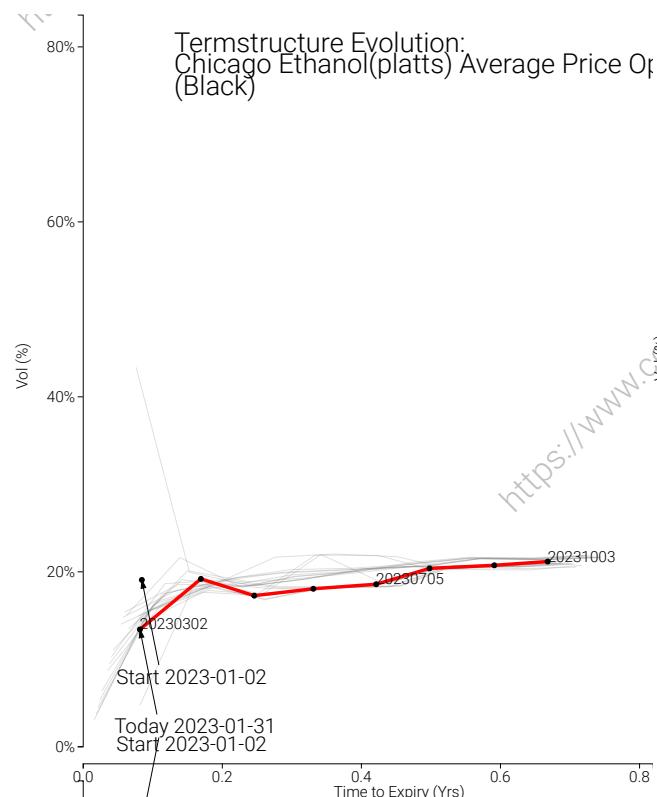




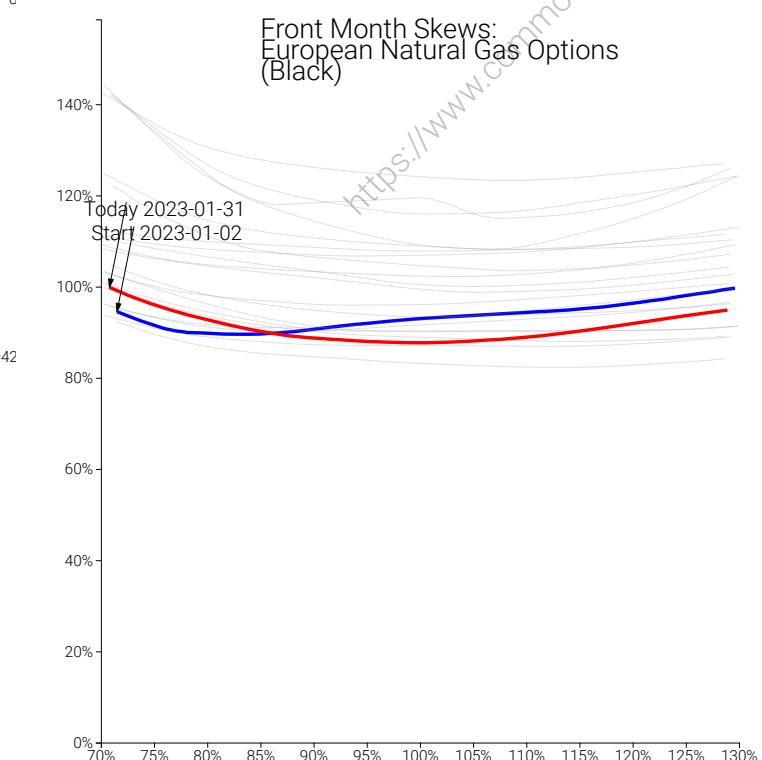
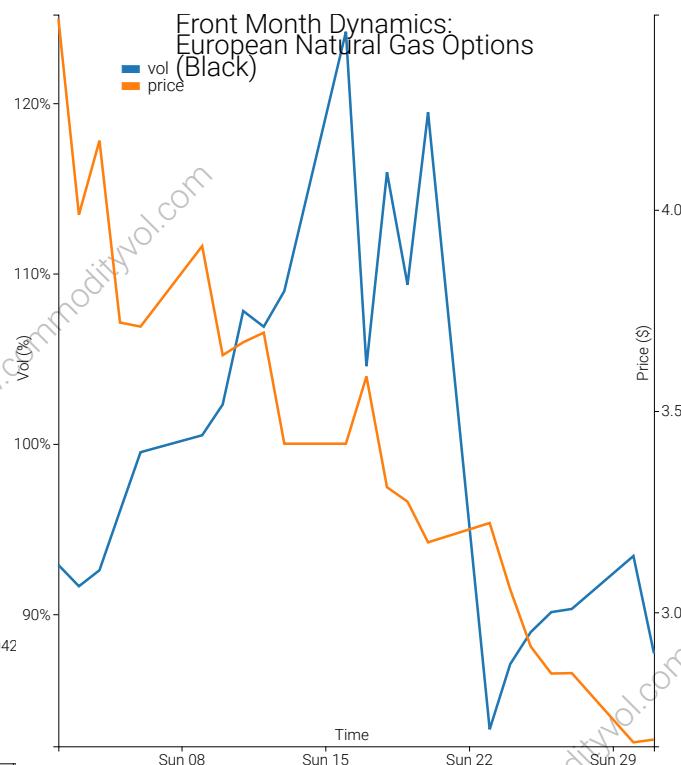
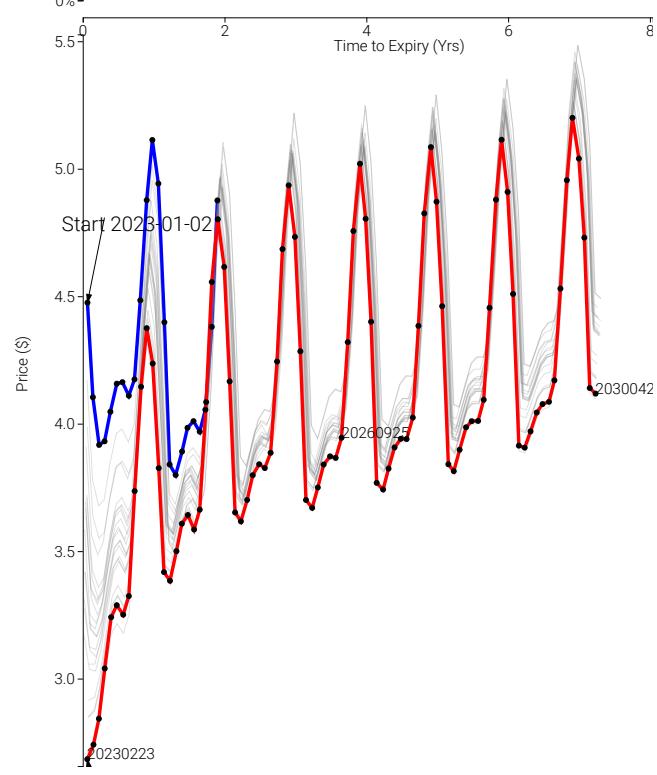
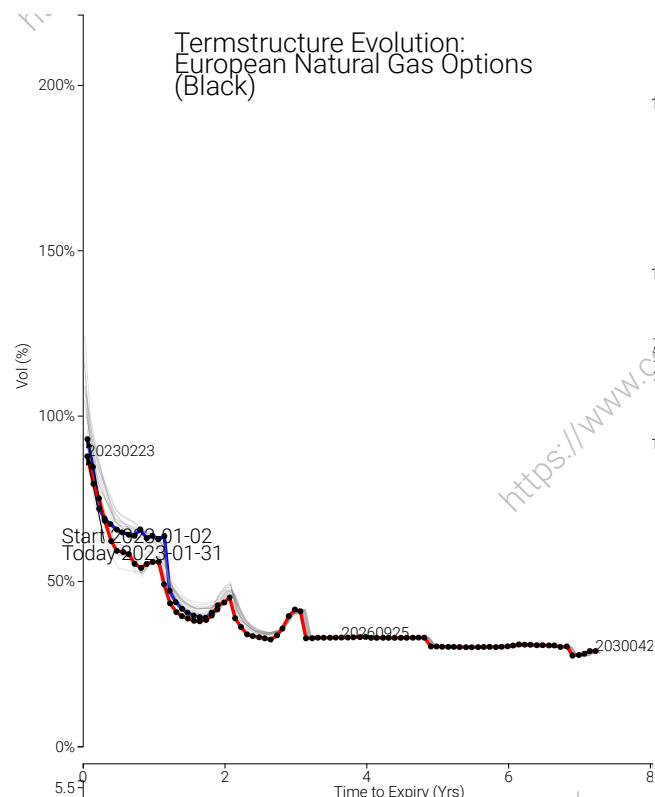


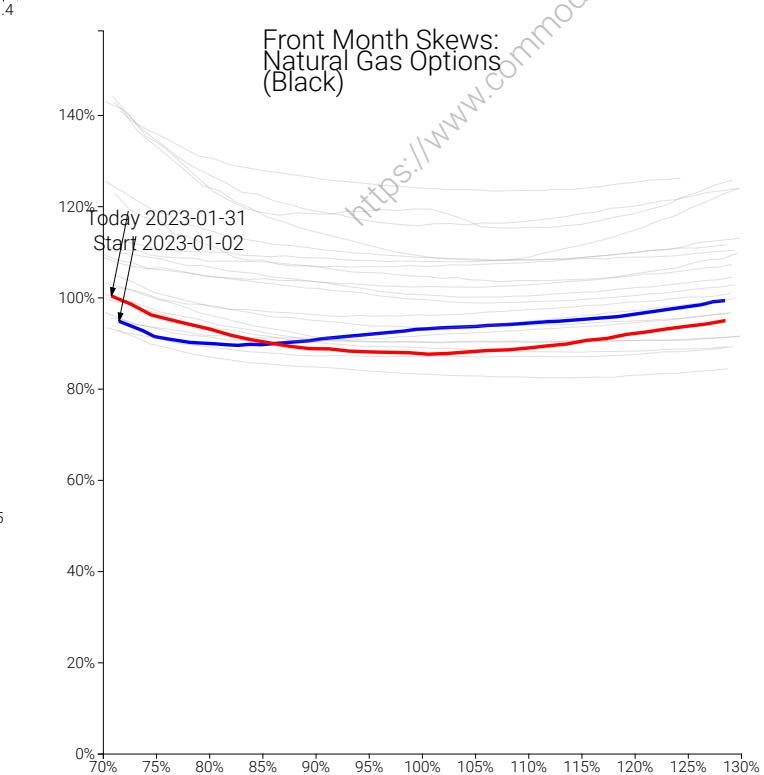
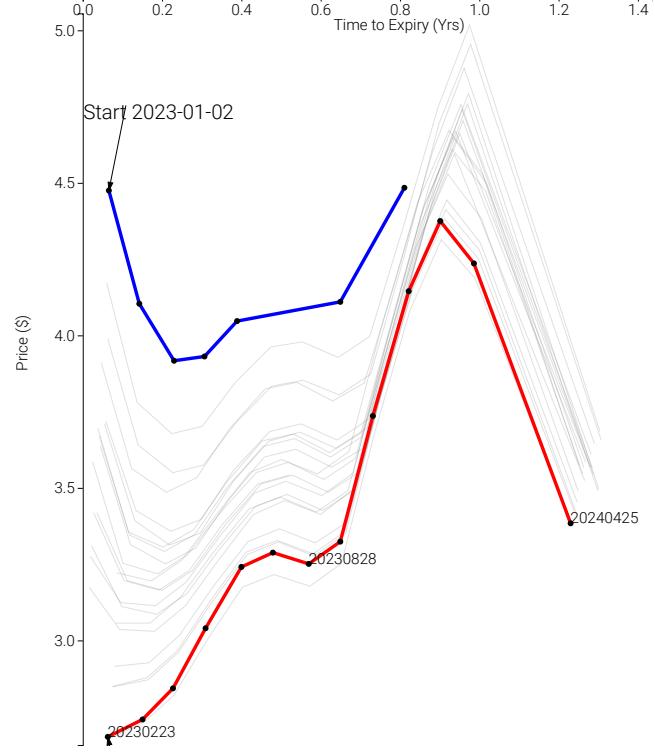
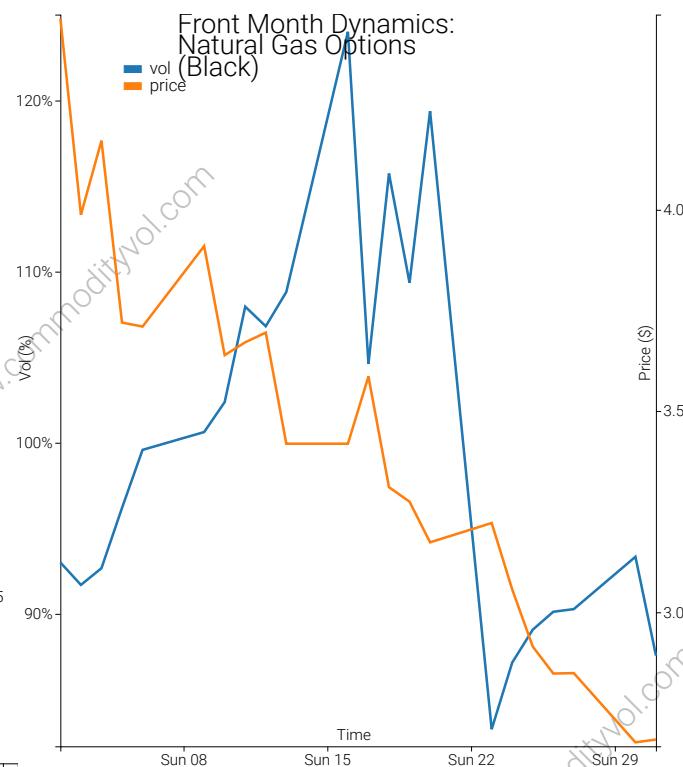
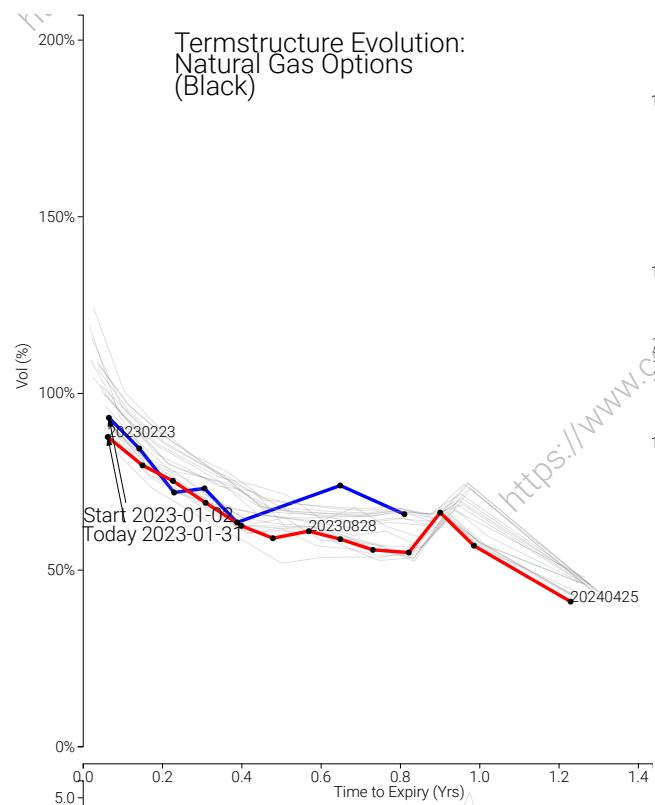


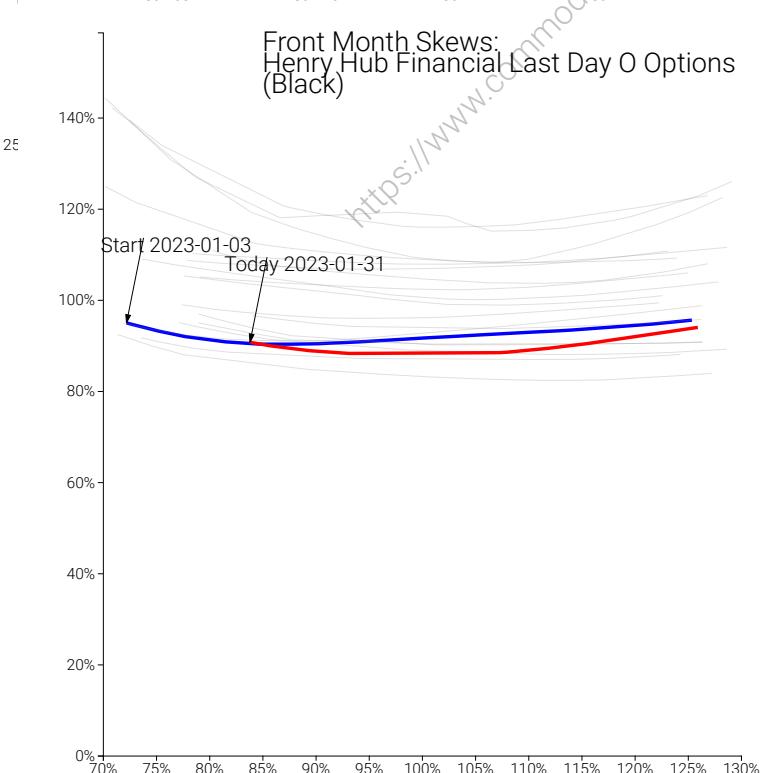
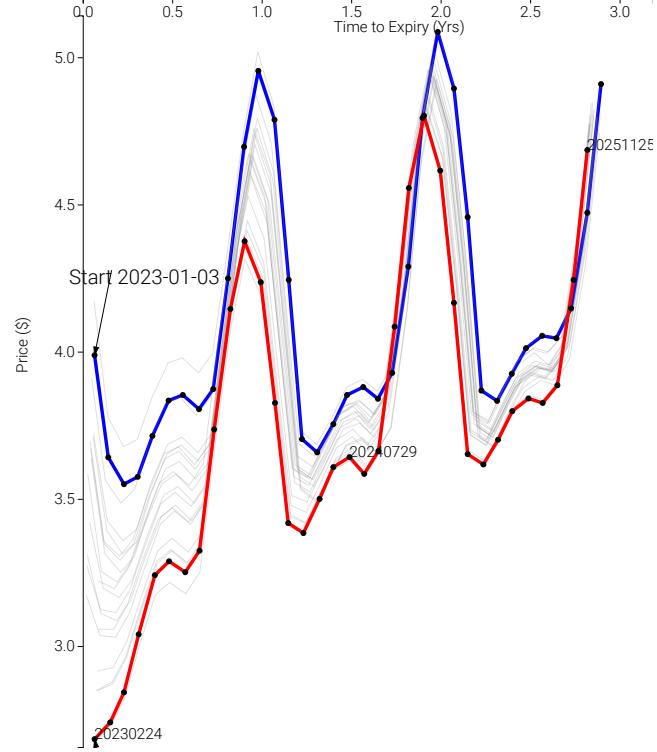
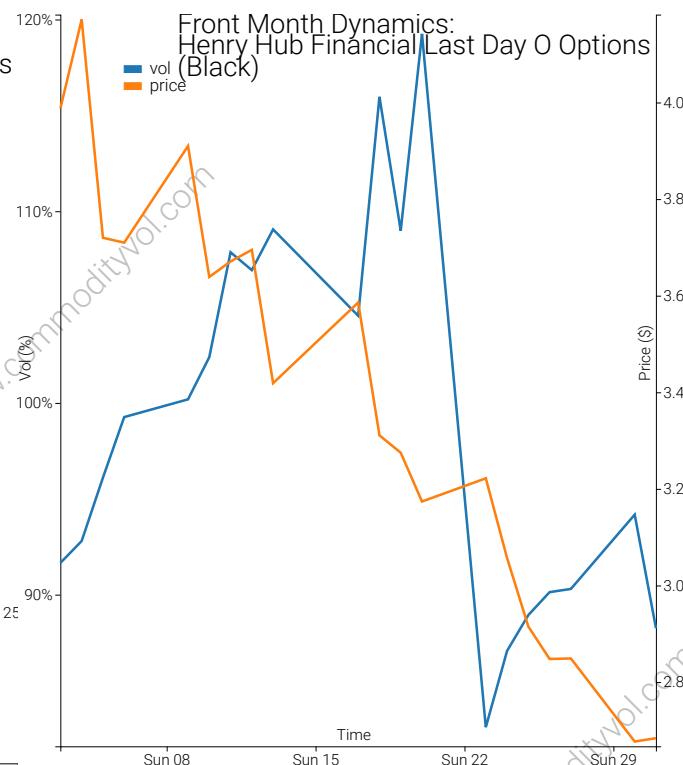
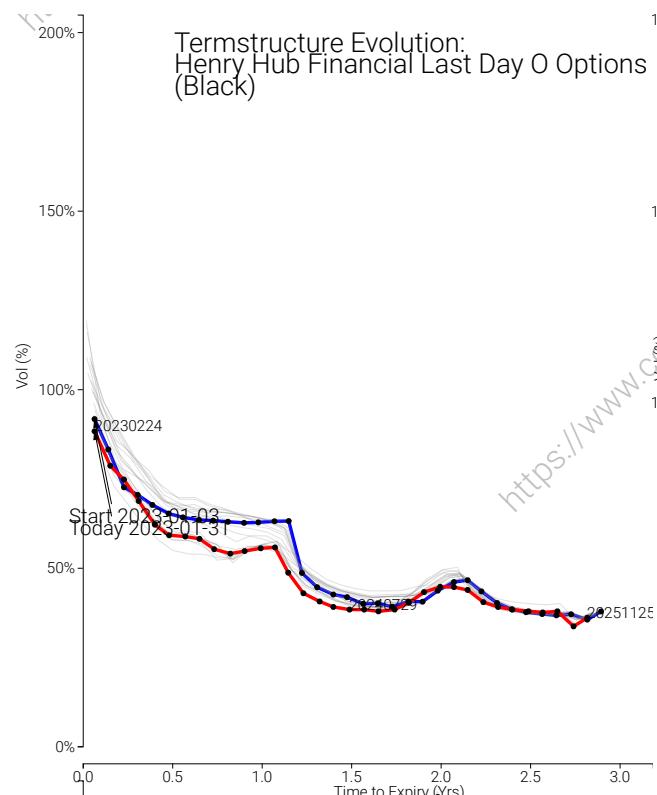


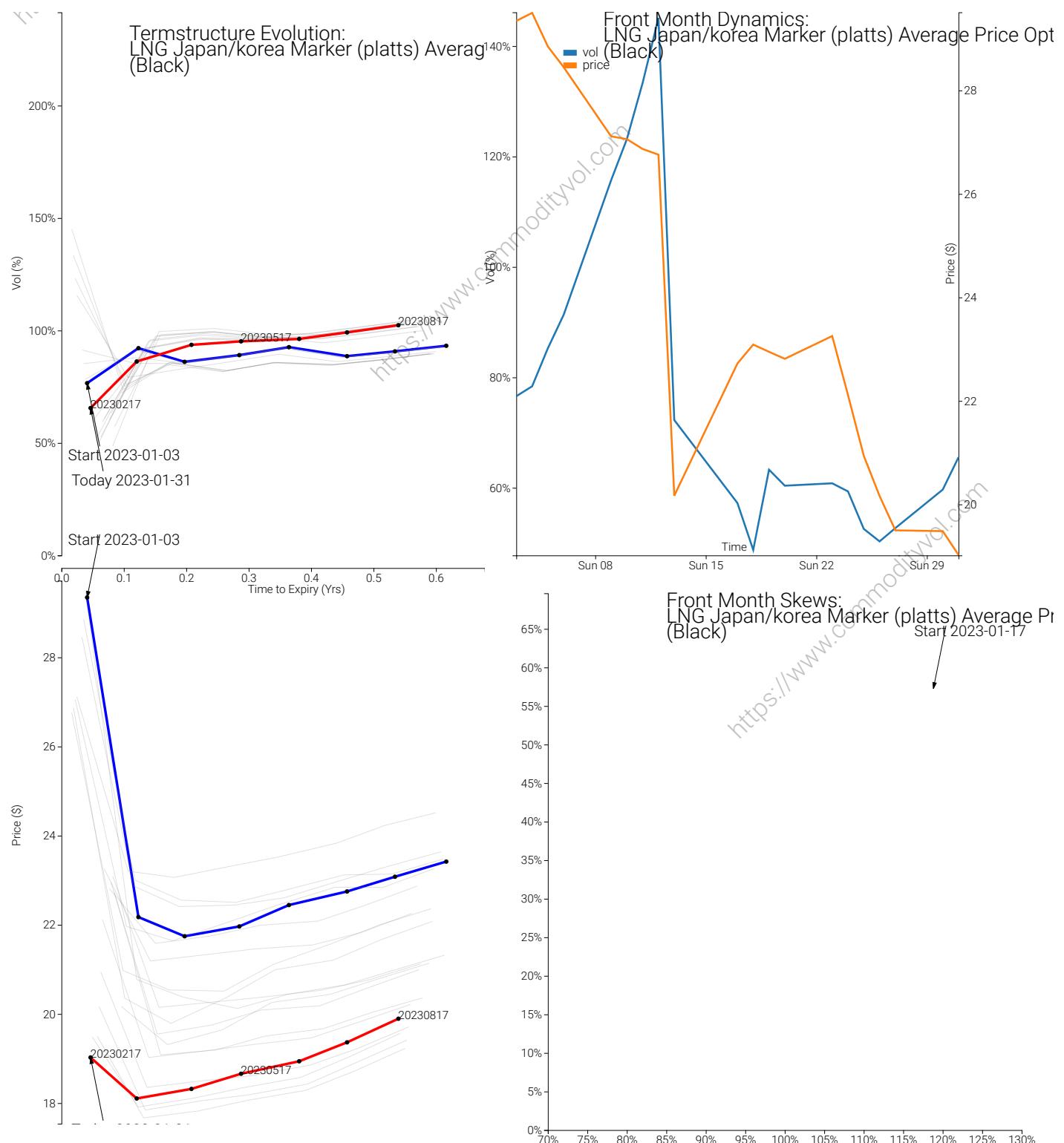


Energy: Natural Gas

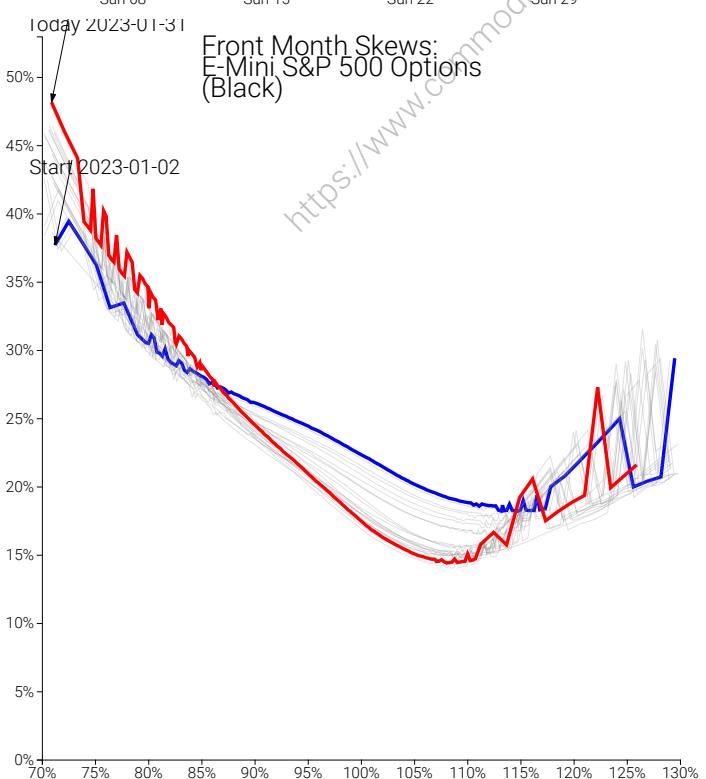
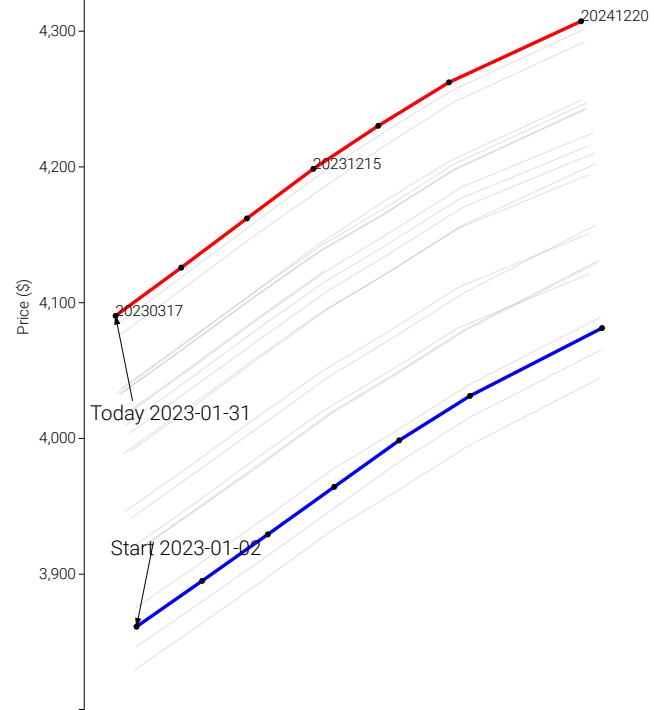
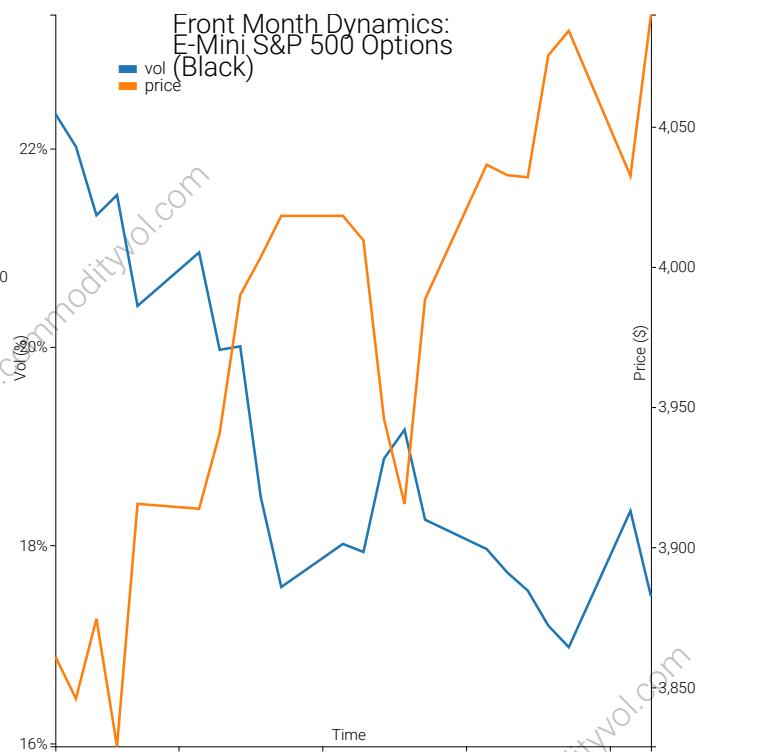
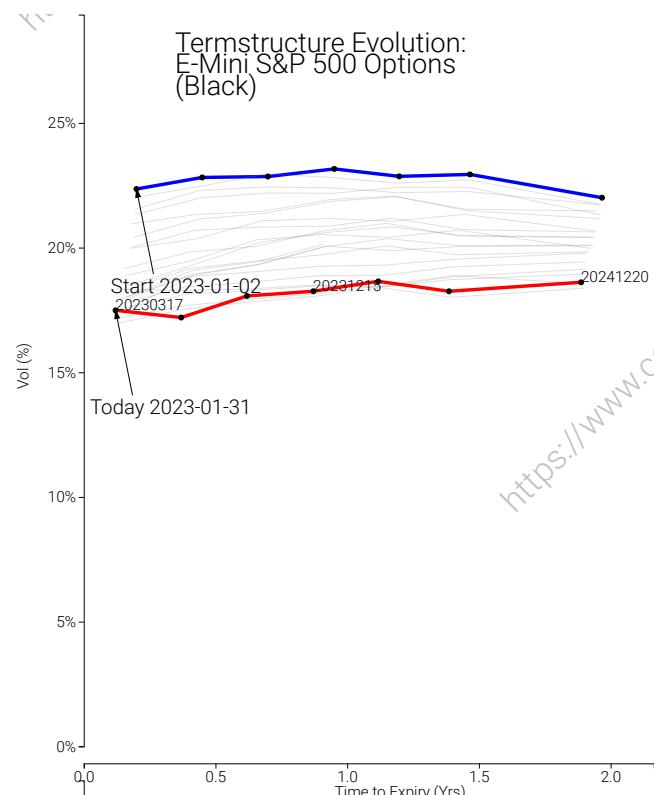


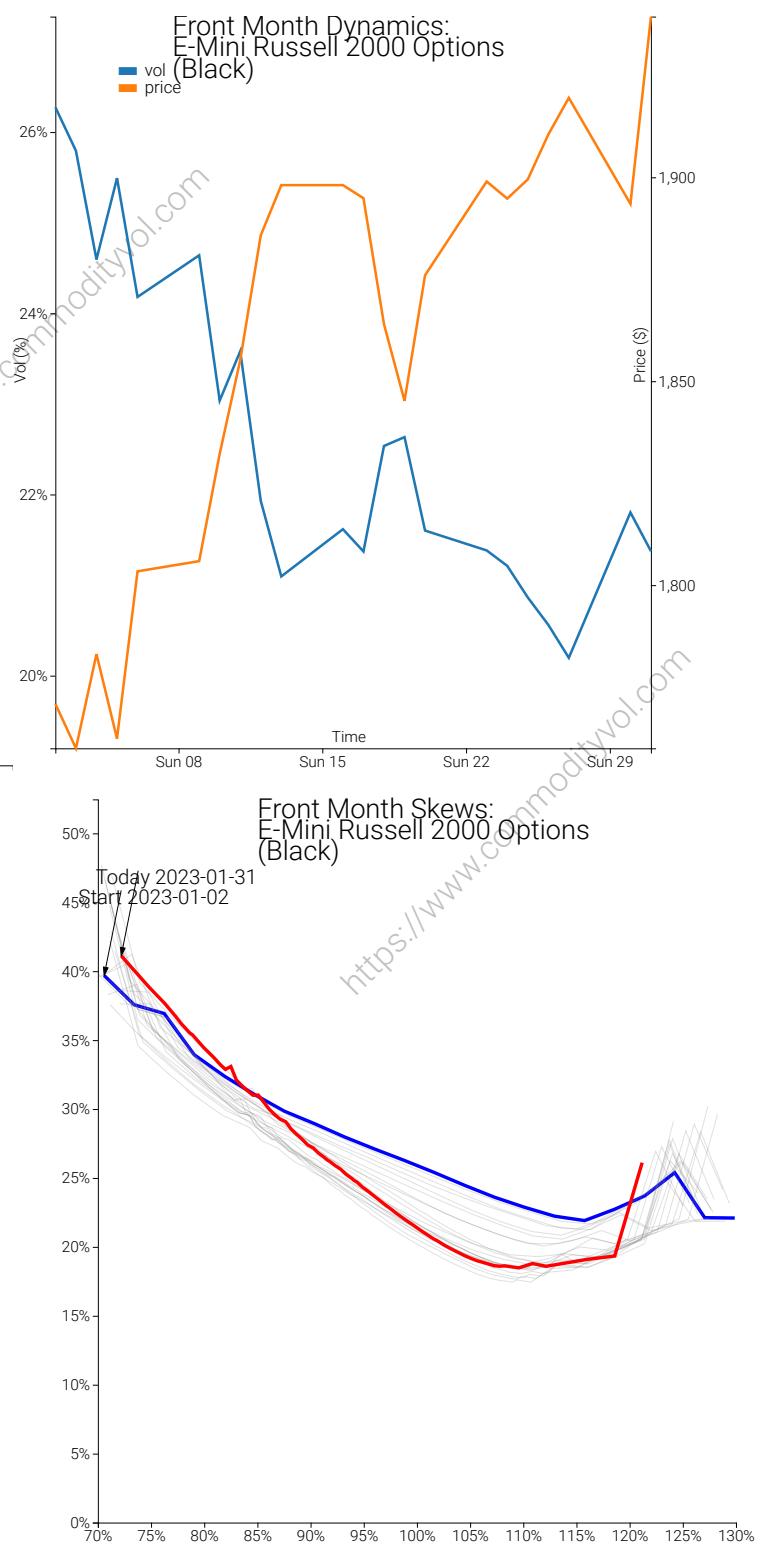
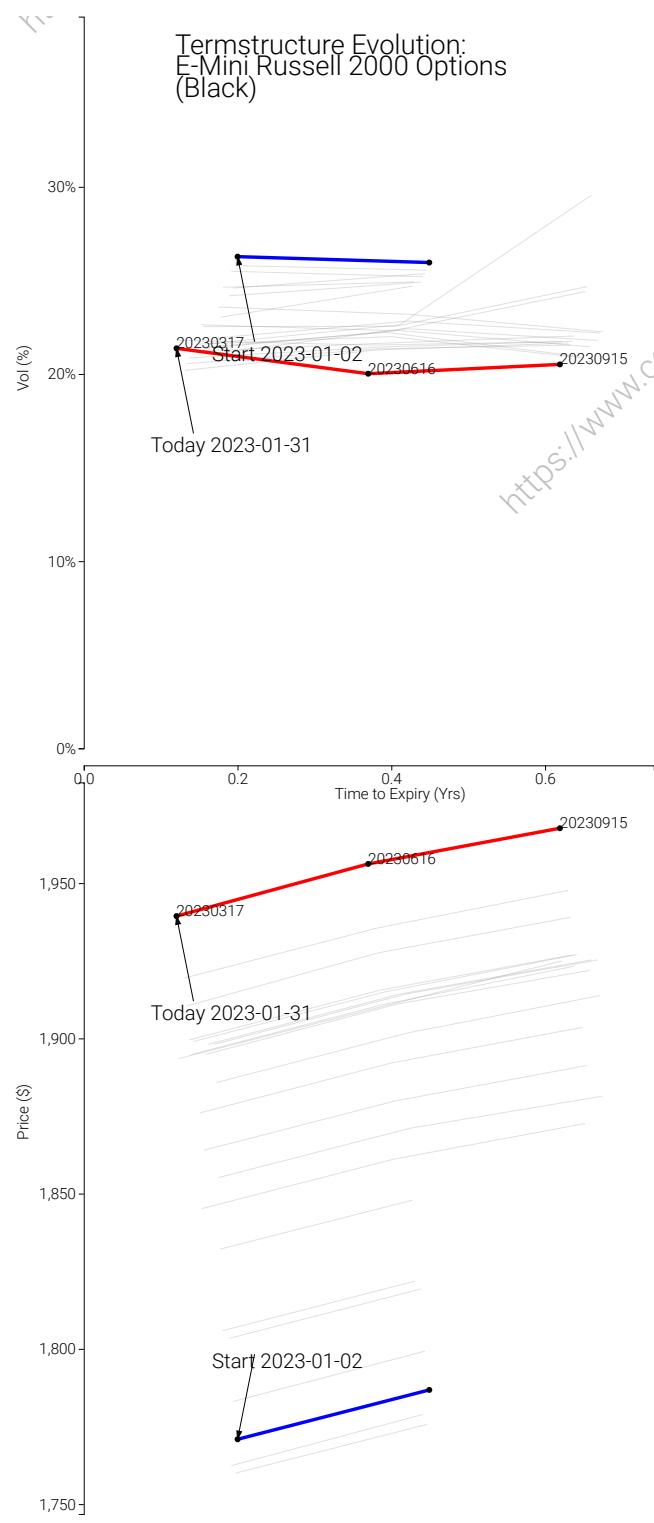


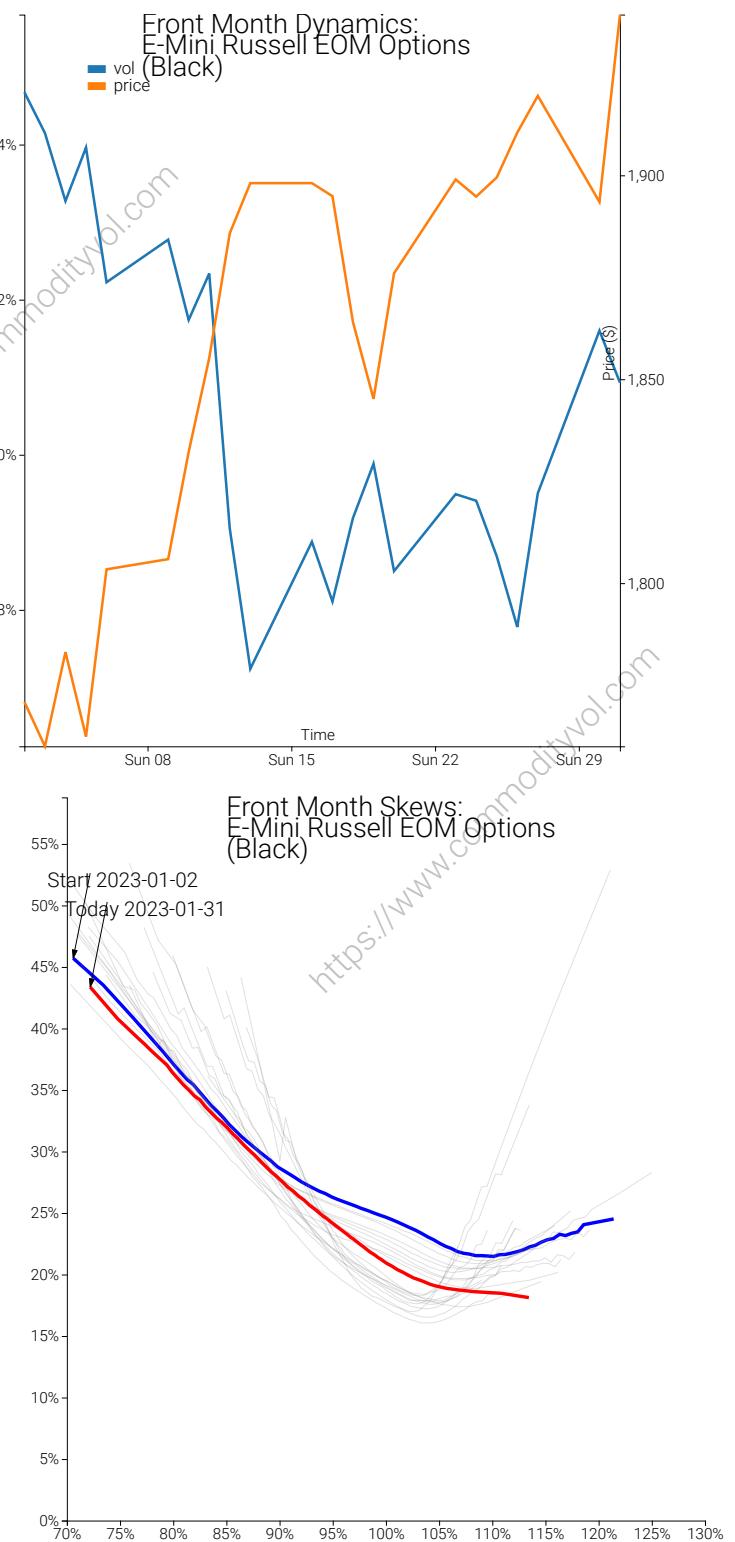
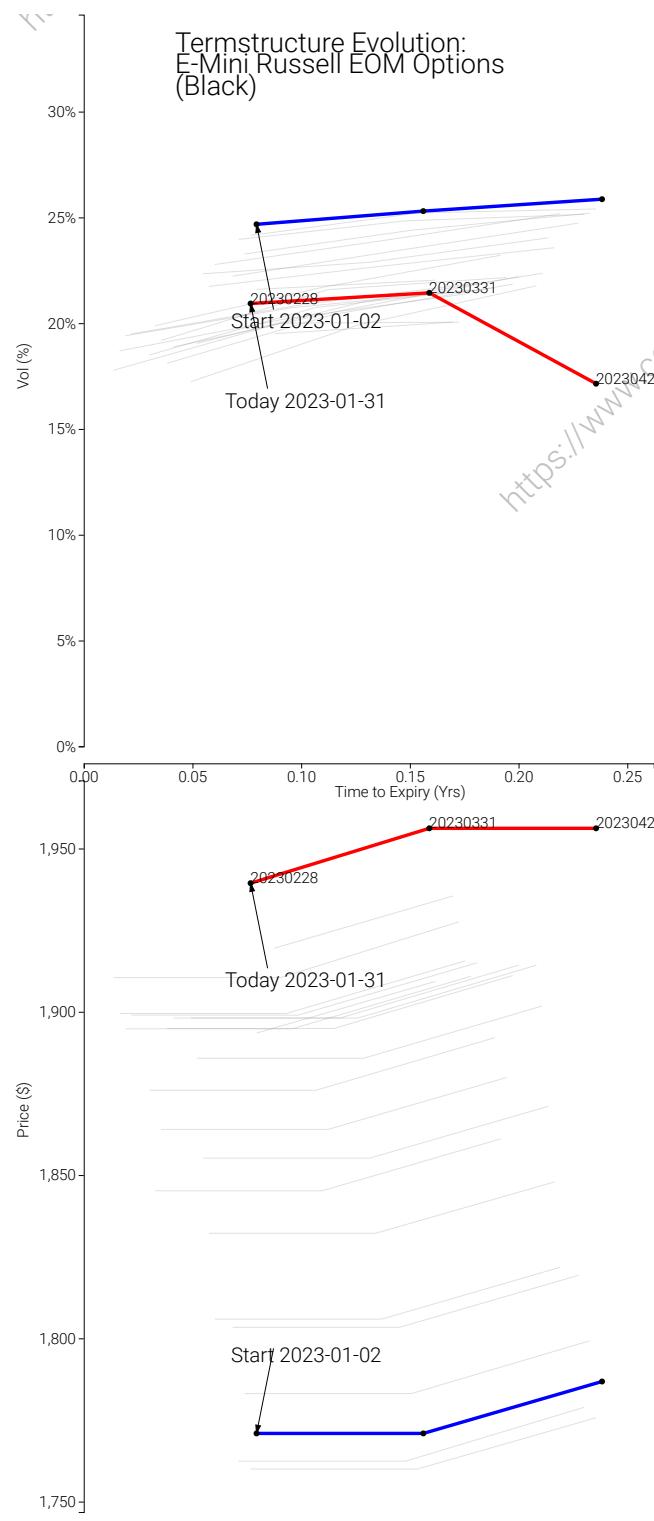


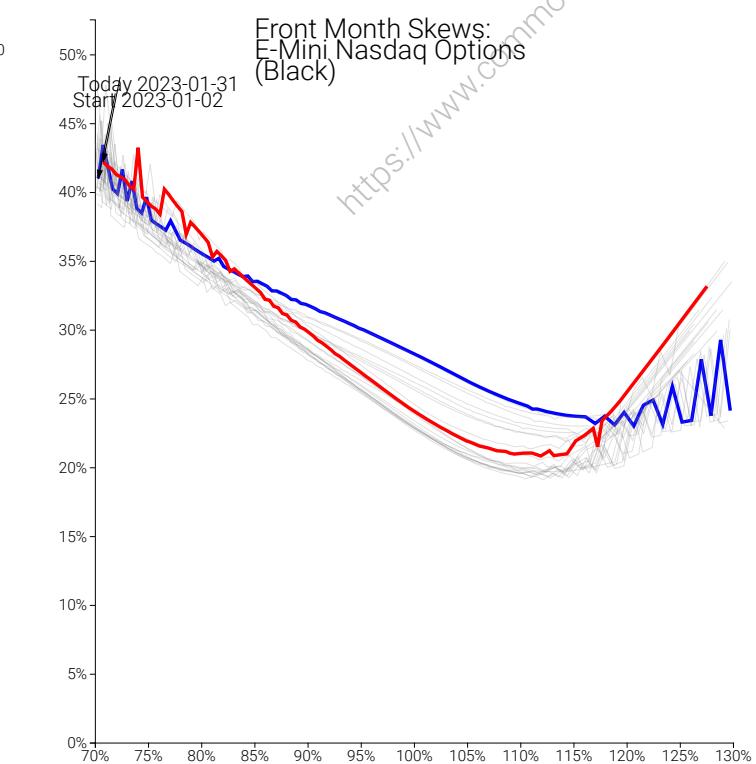
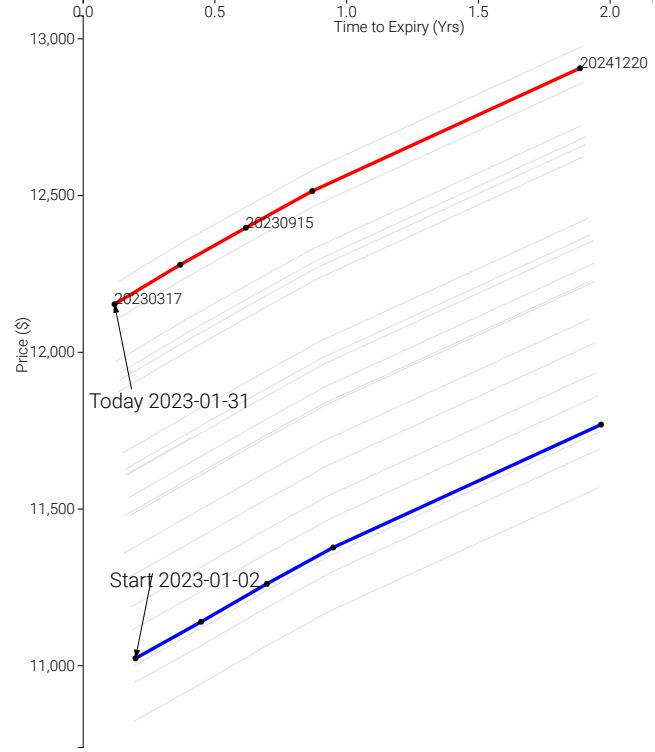
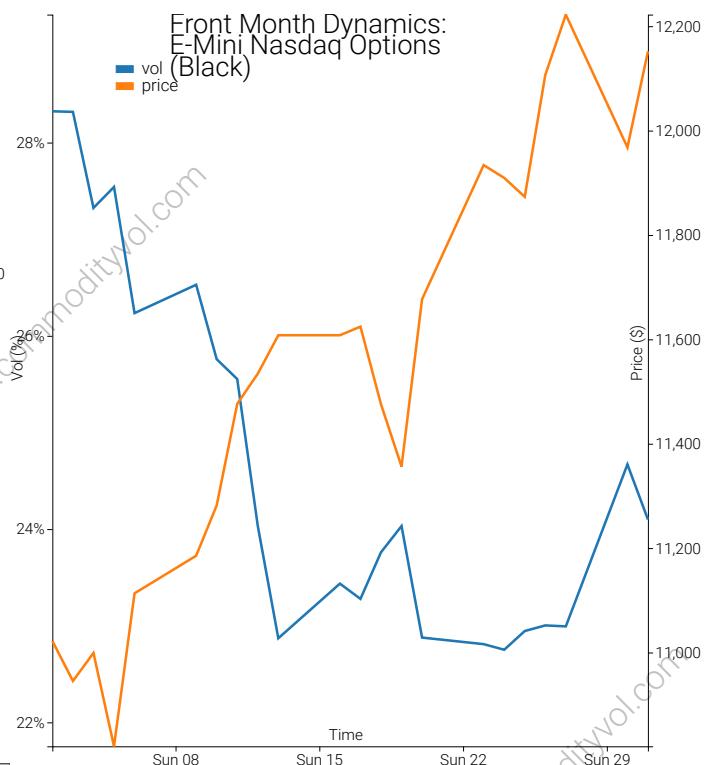
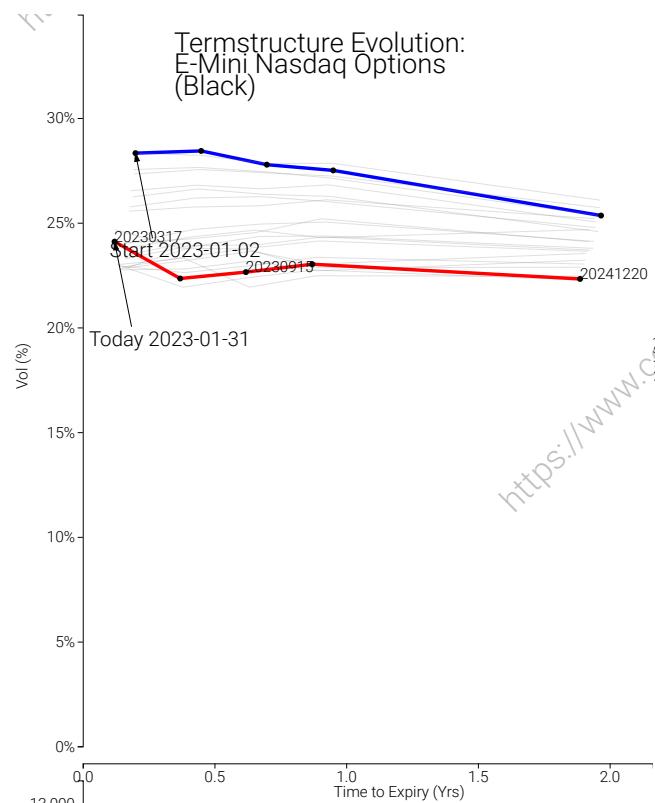


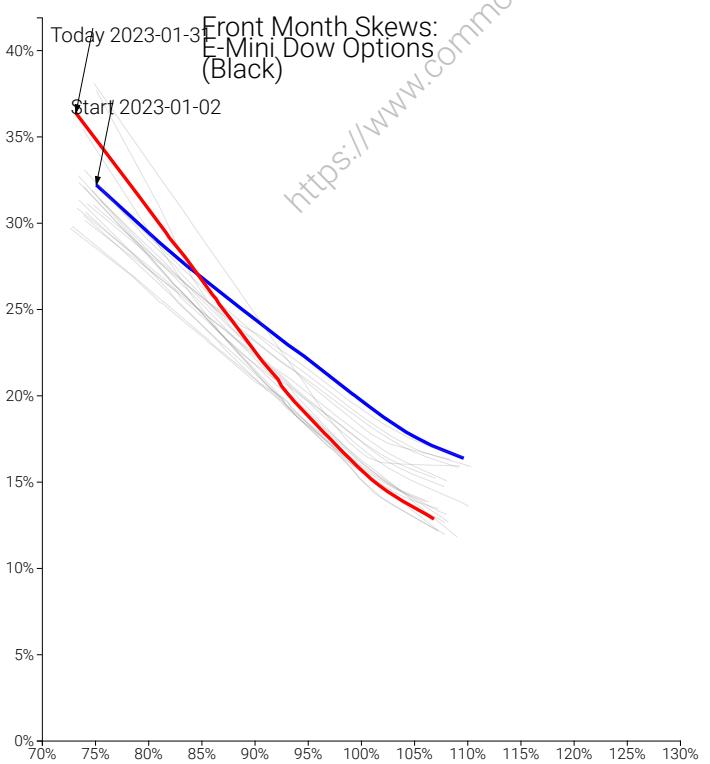
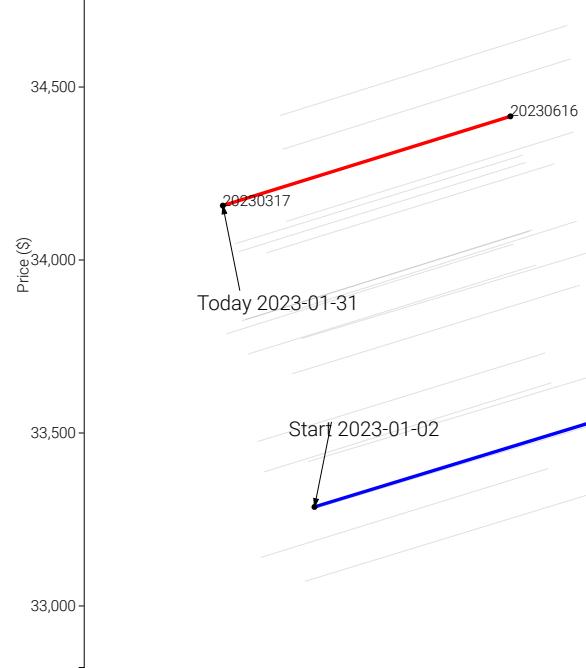
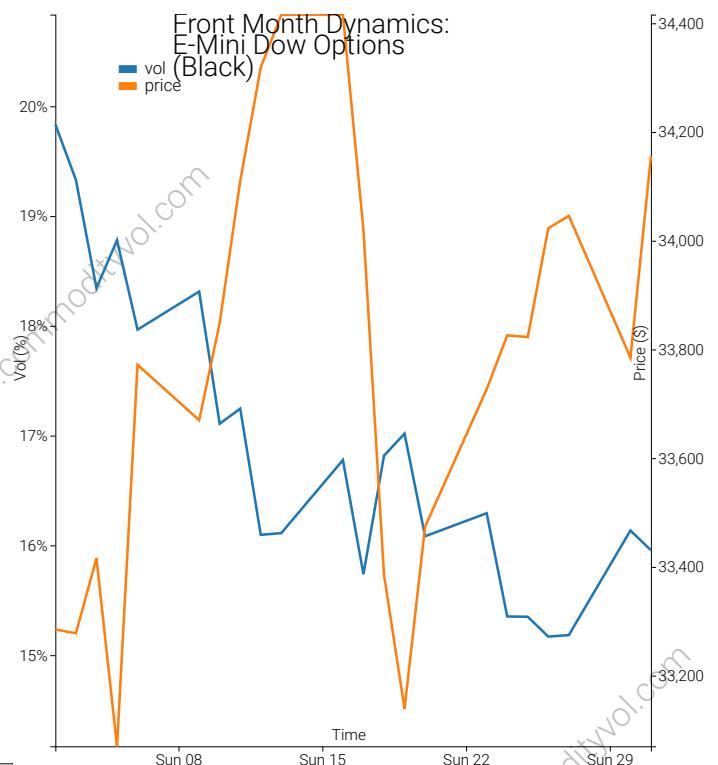
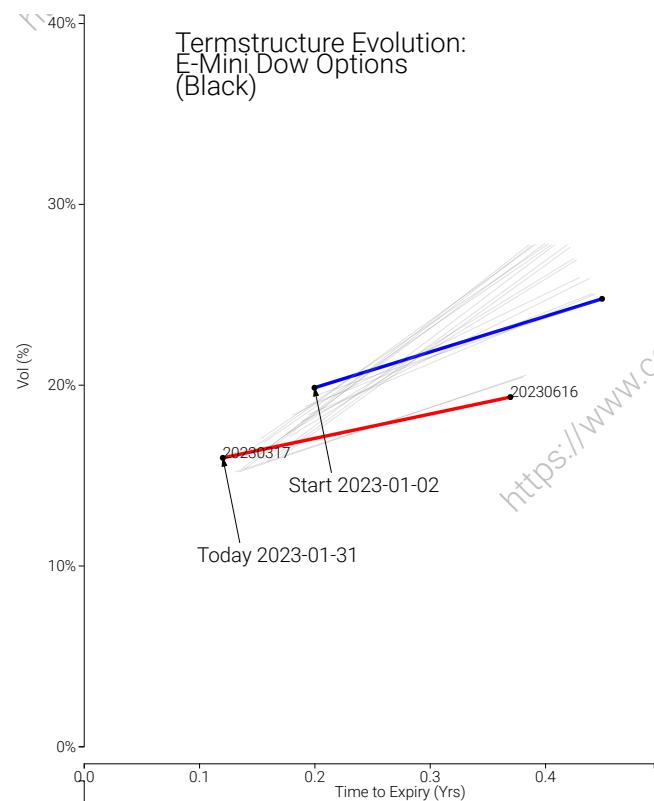
EquityIndex

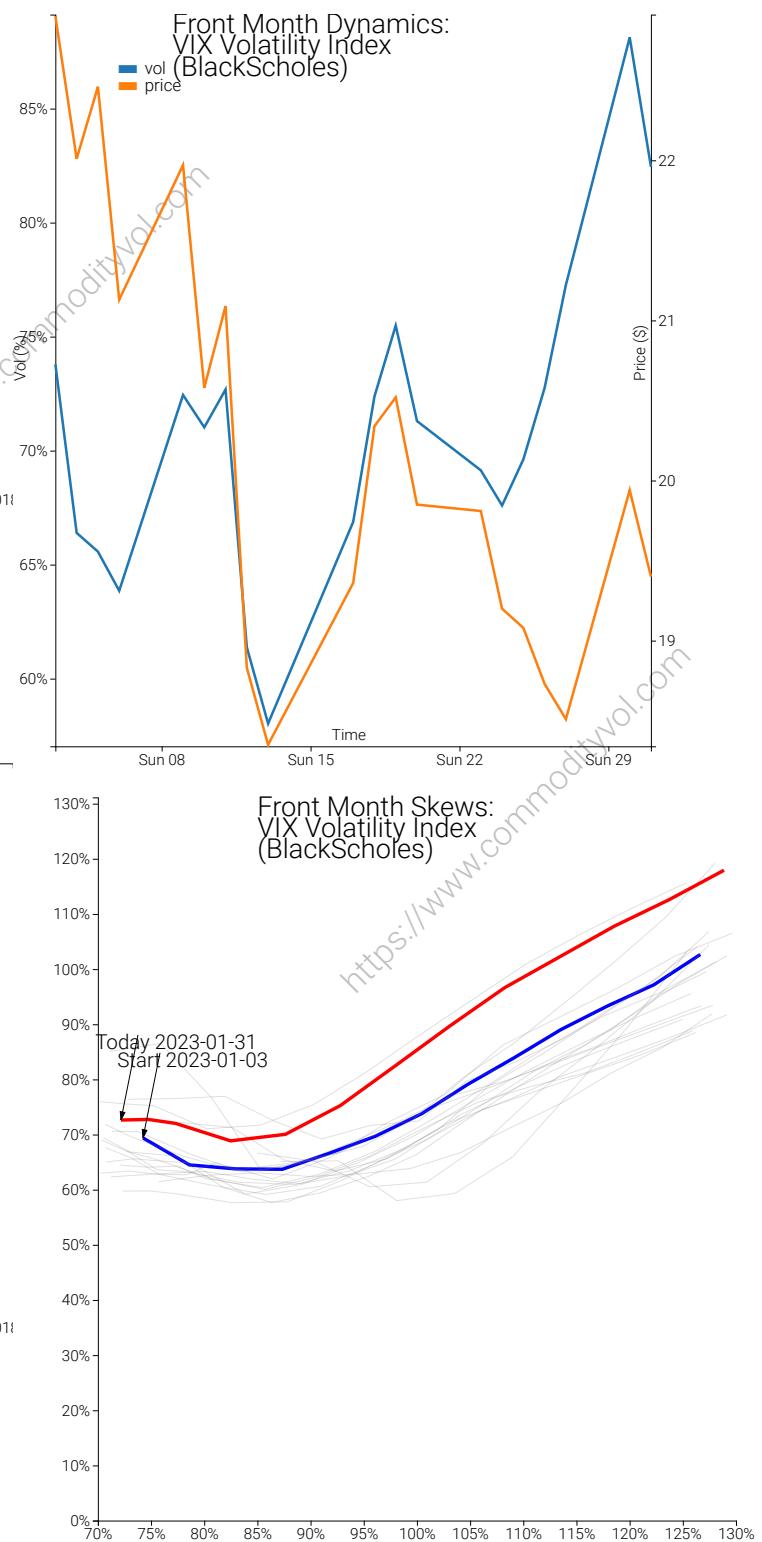
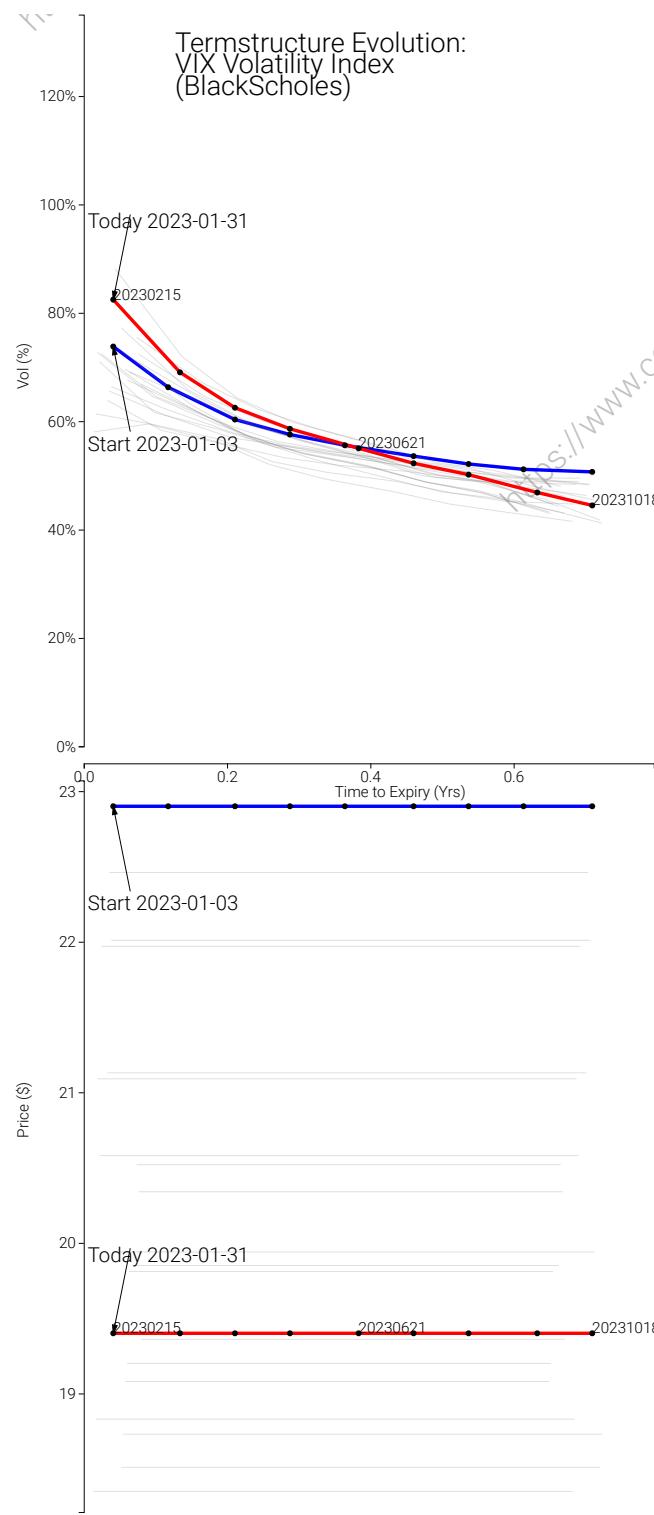




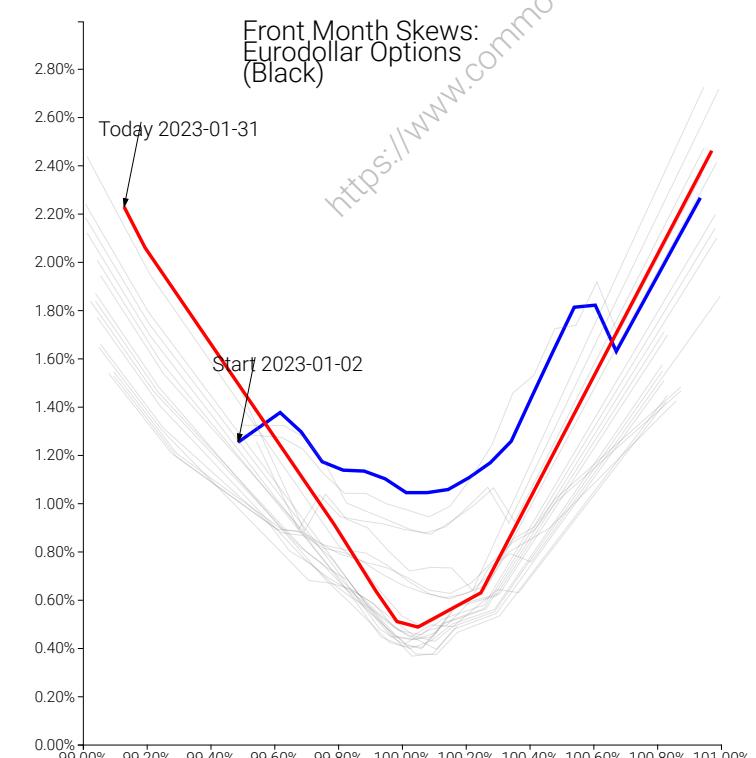
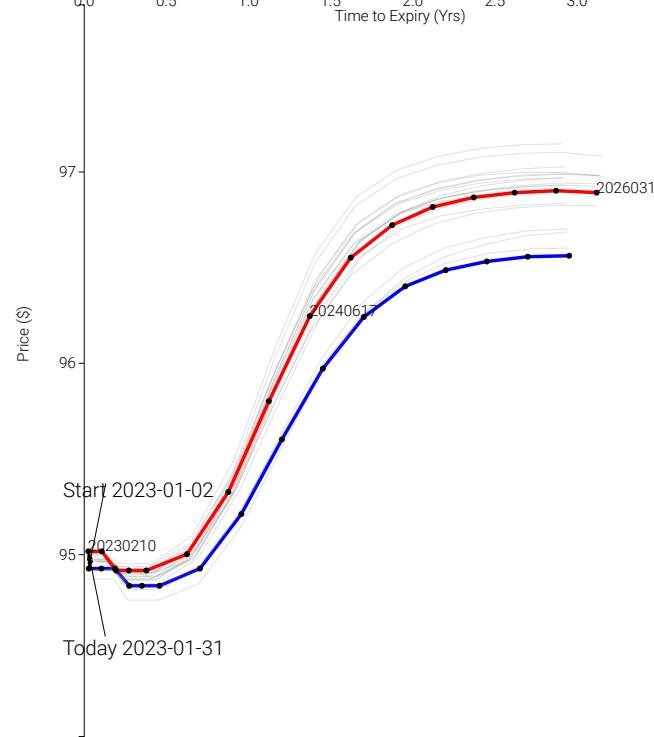
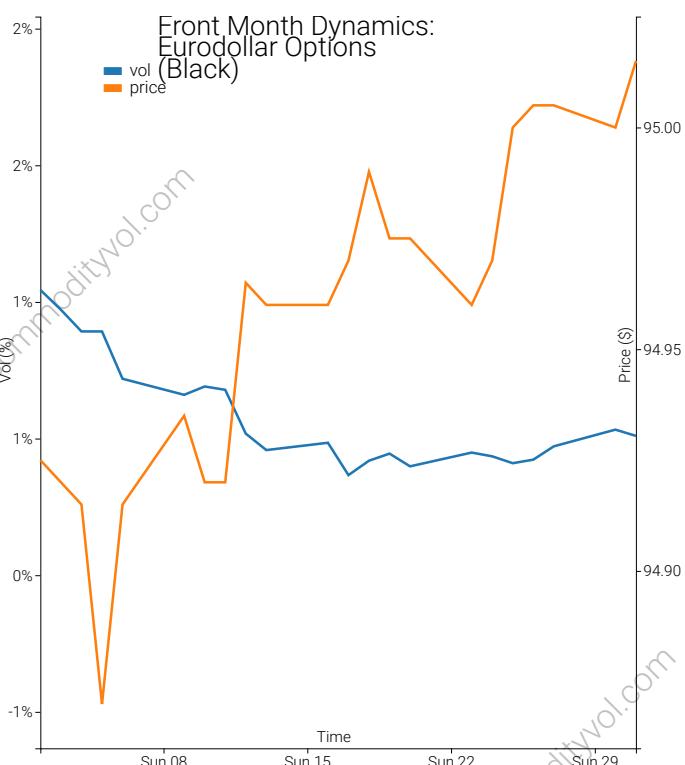
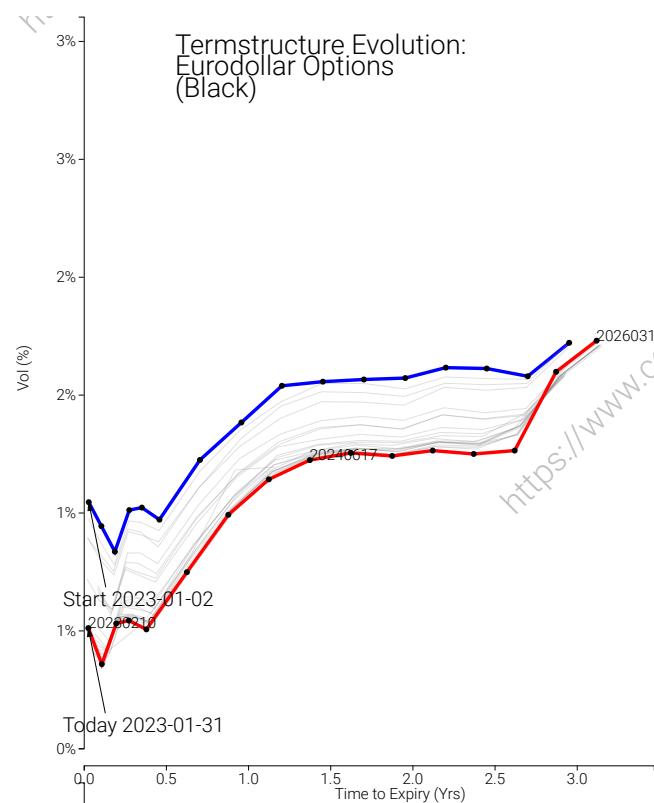


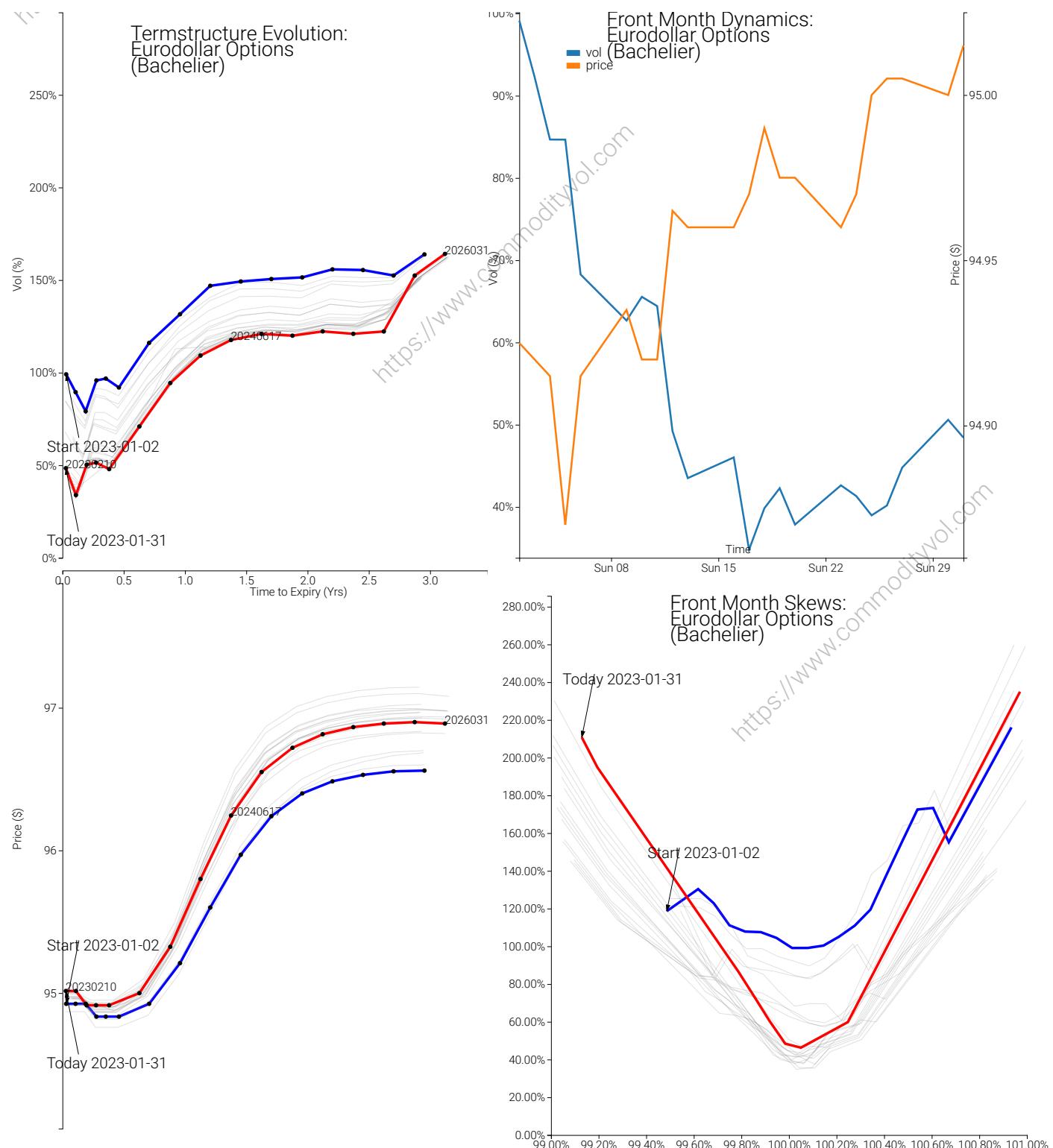


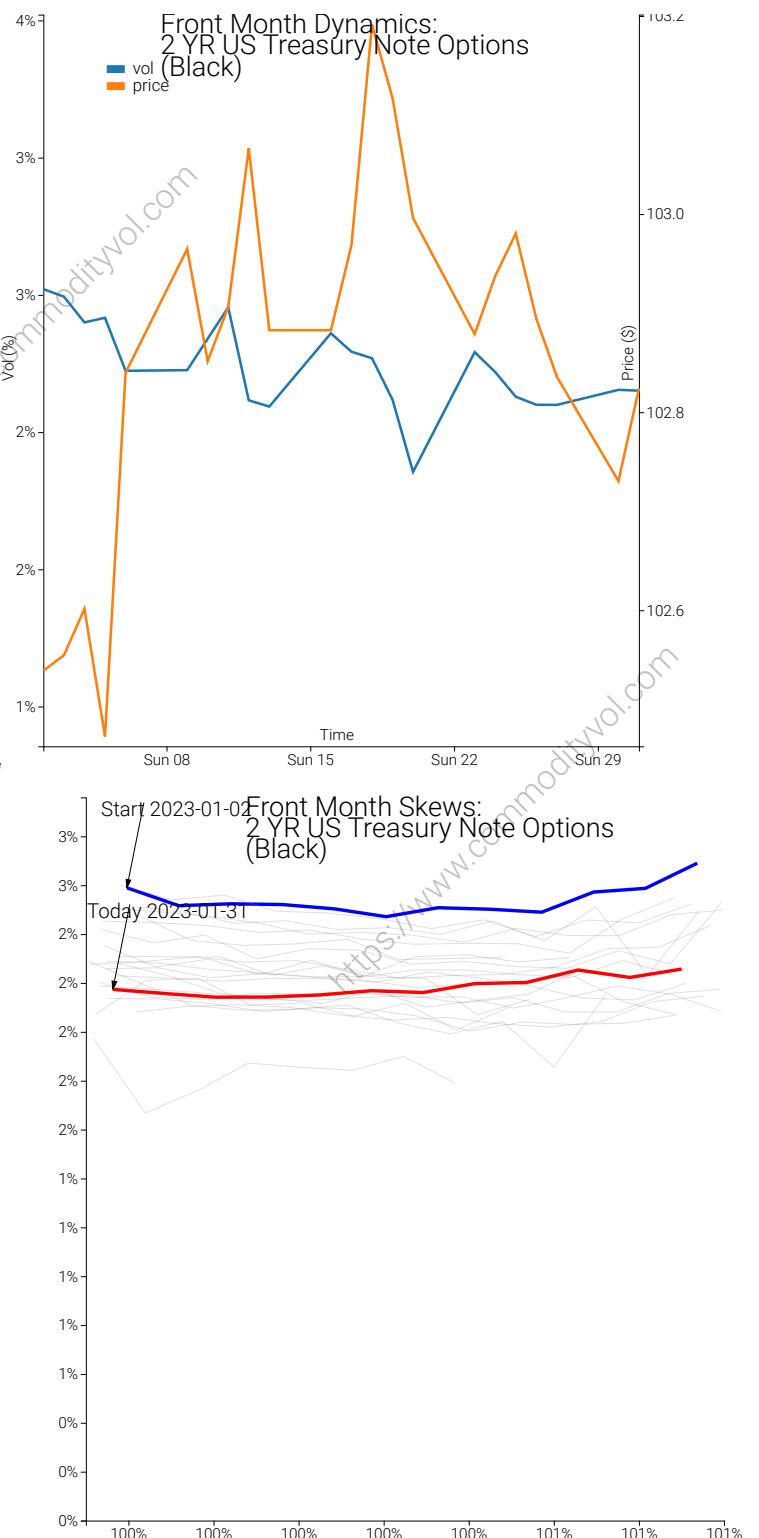
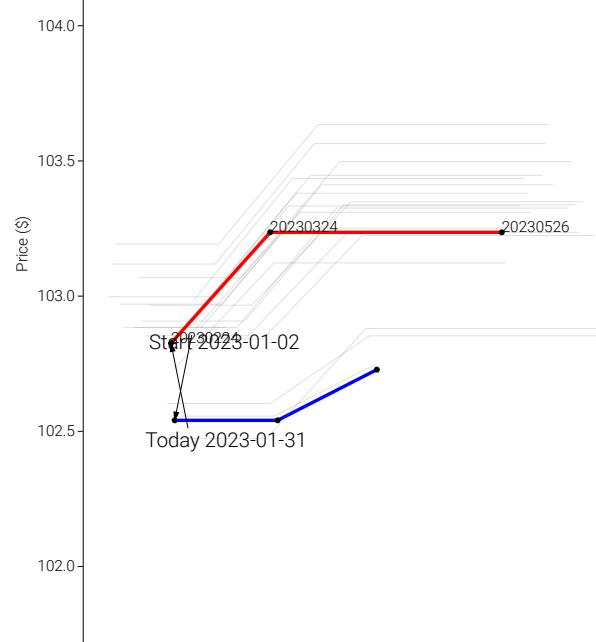
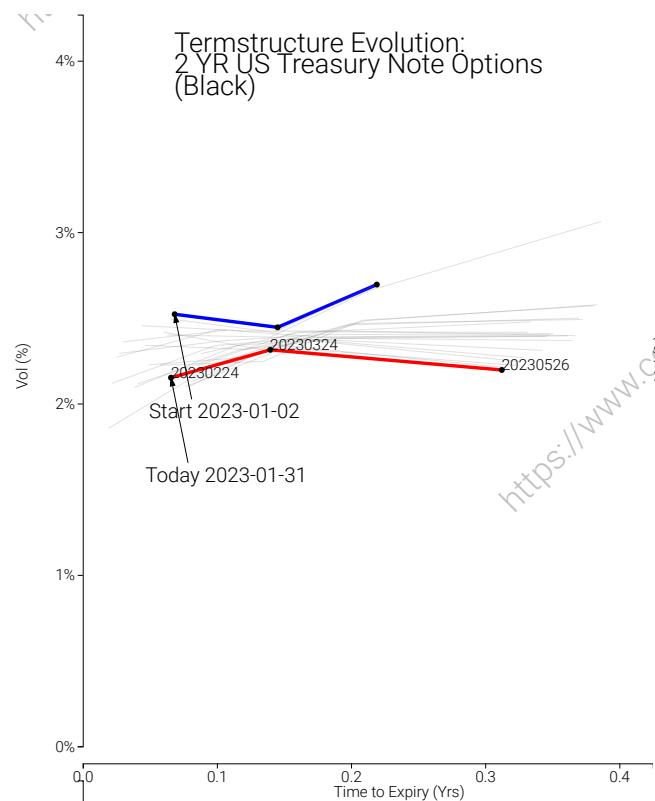


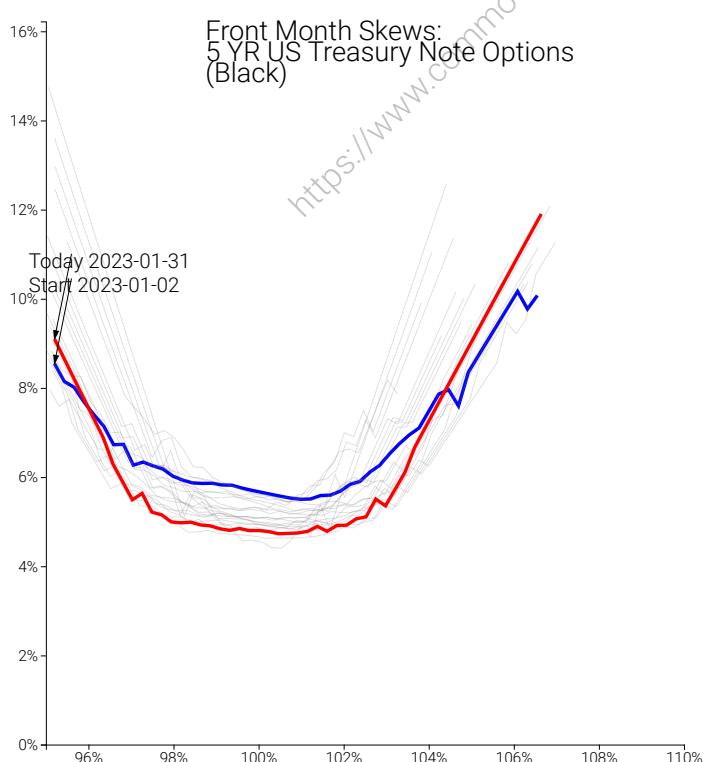
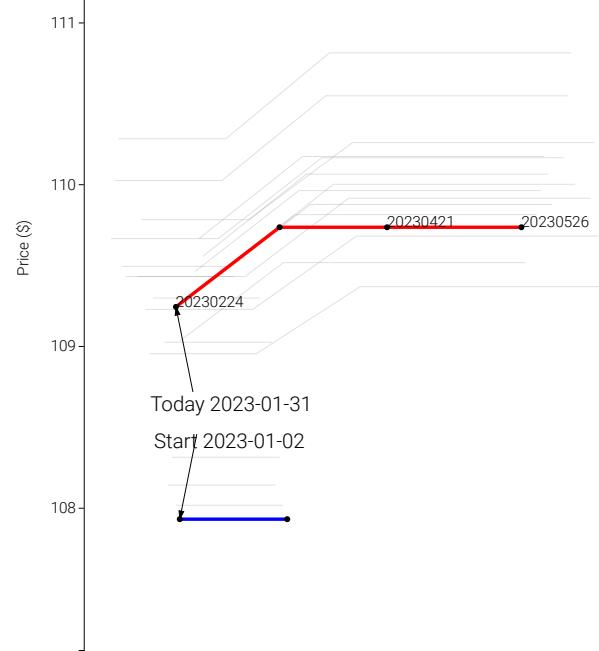
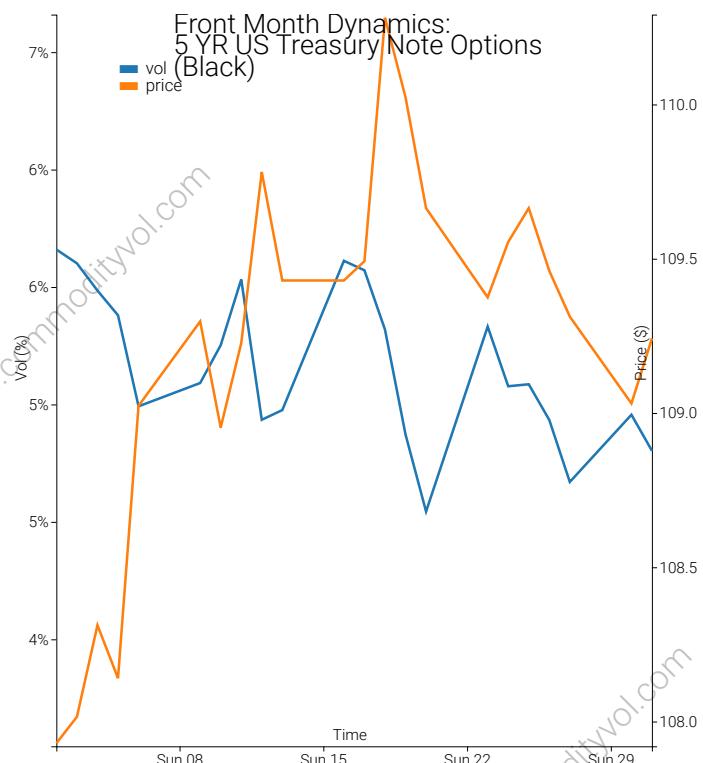
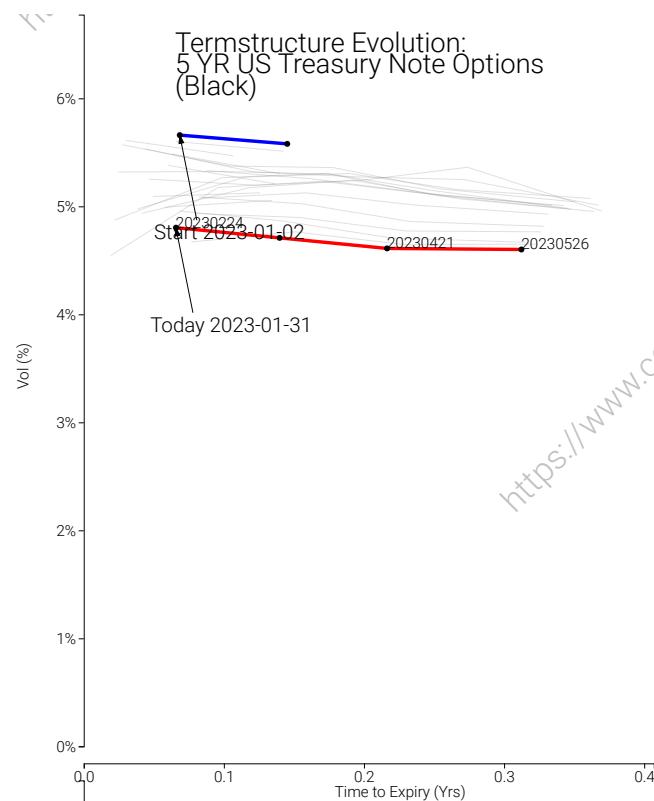


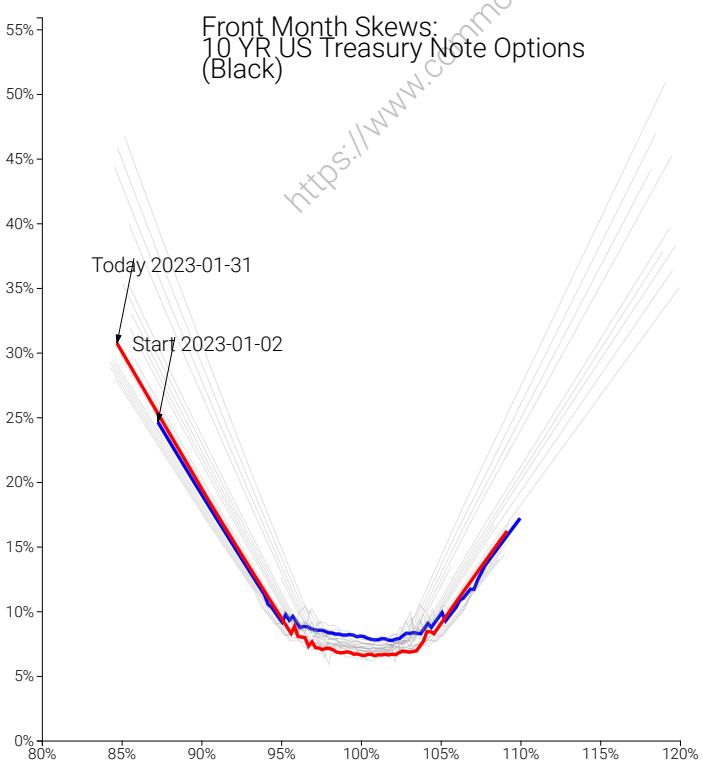
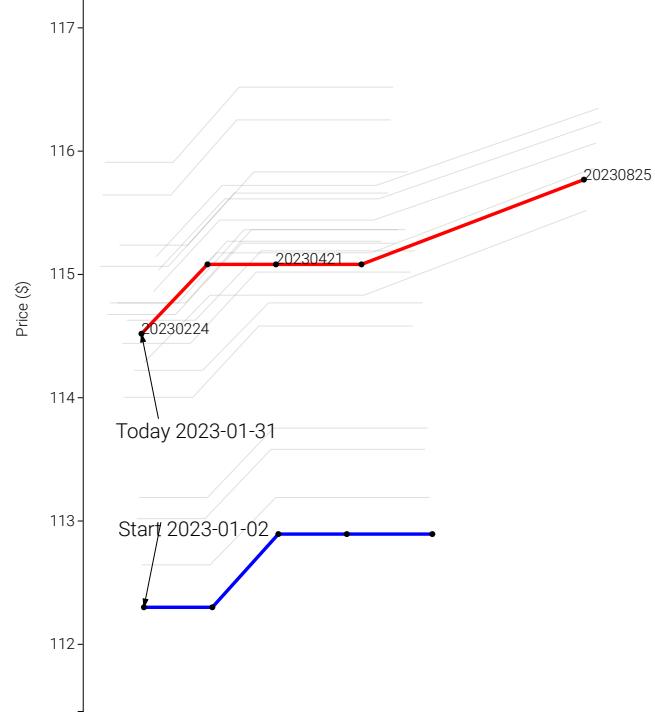
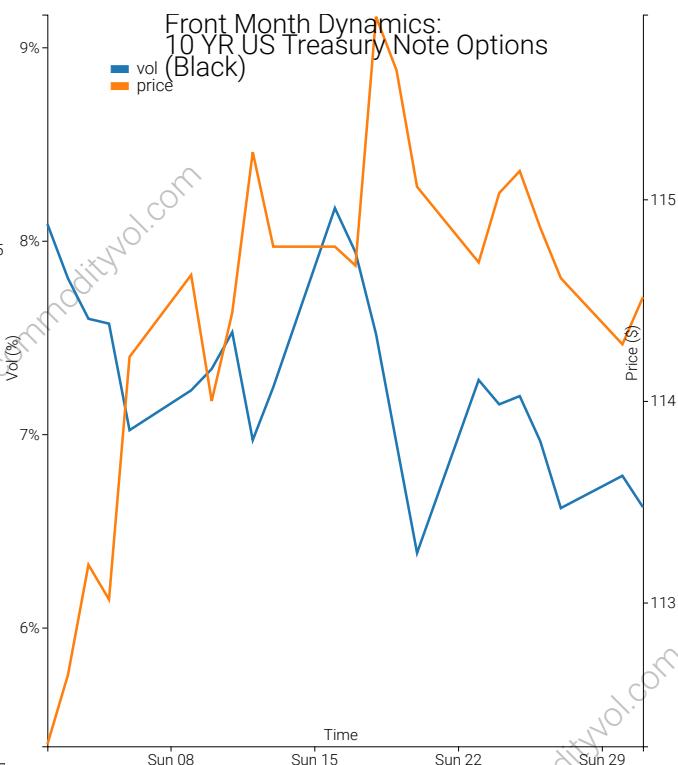
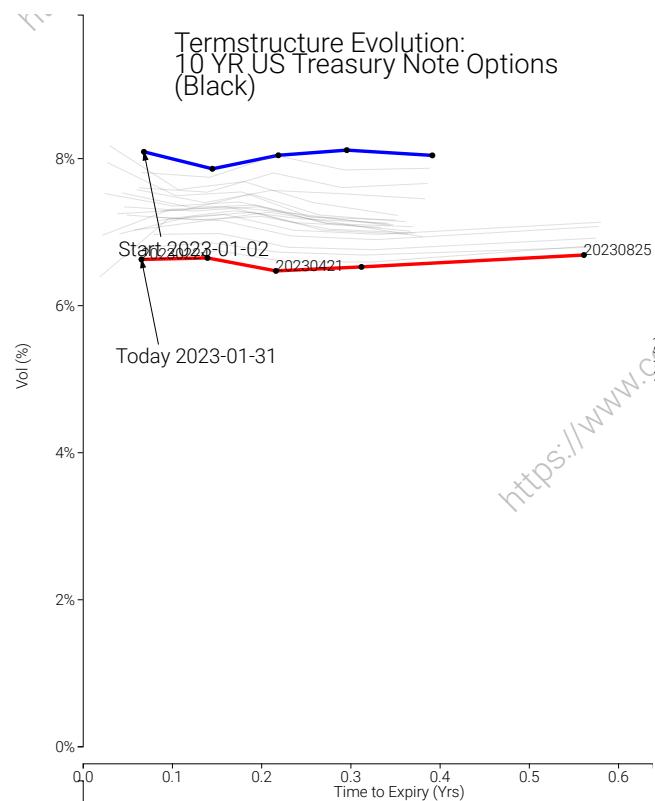
InterestRates: Fixed Income and STIRS

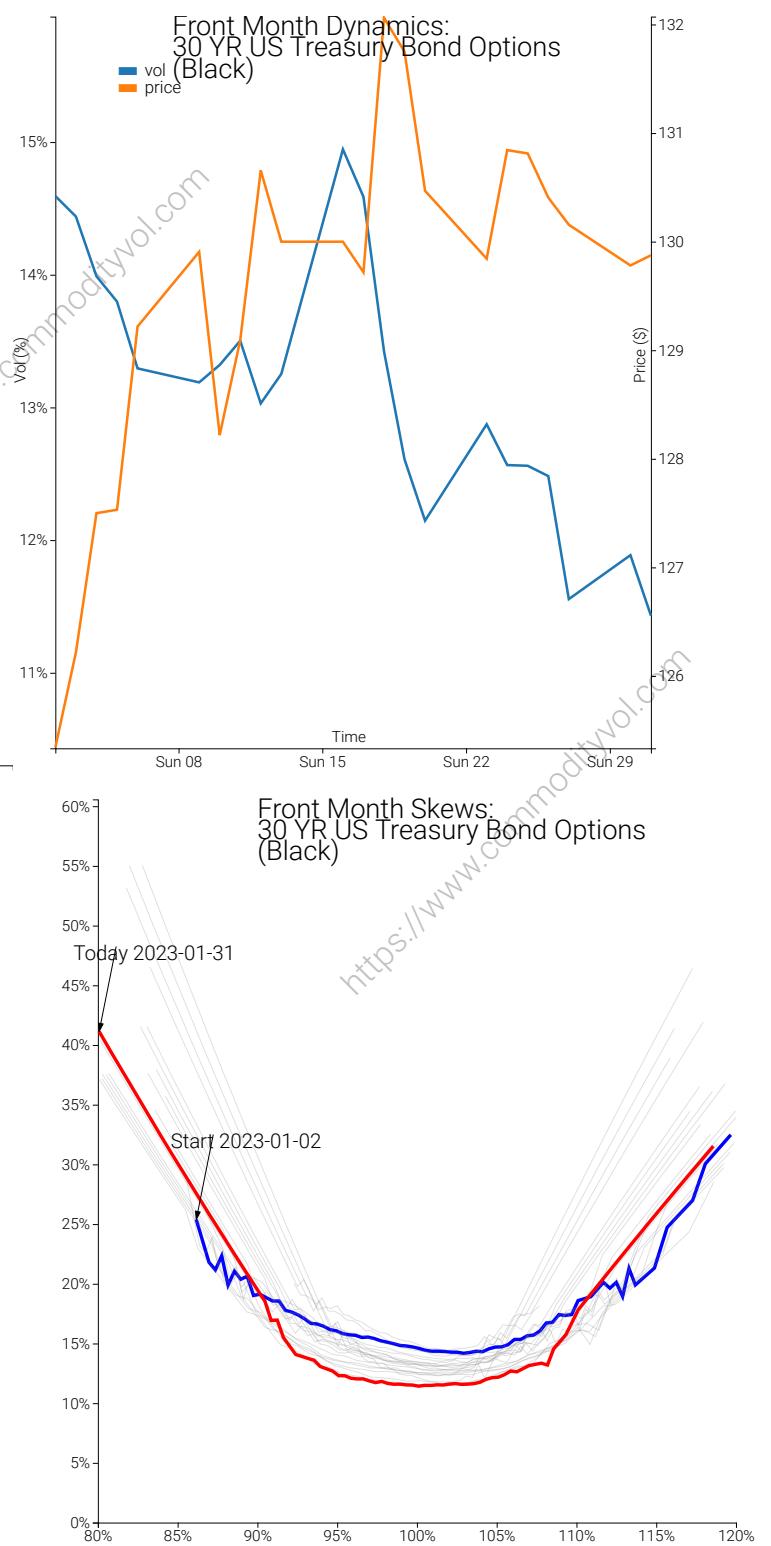
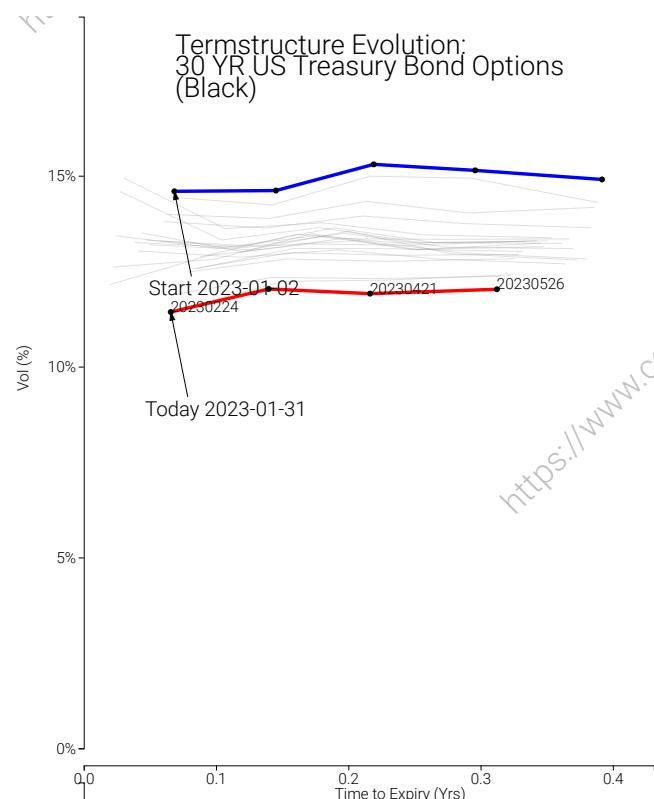


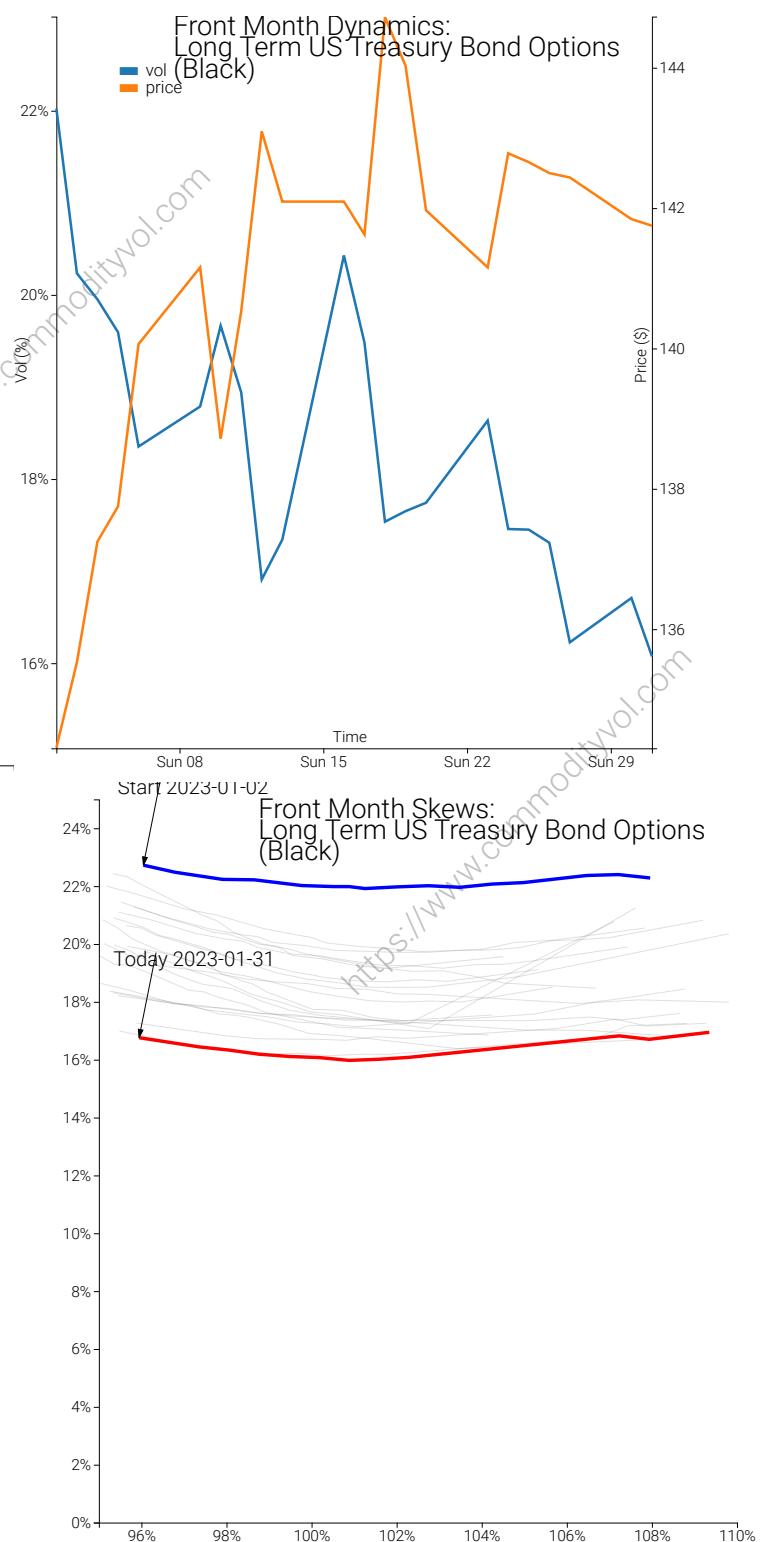
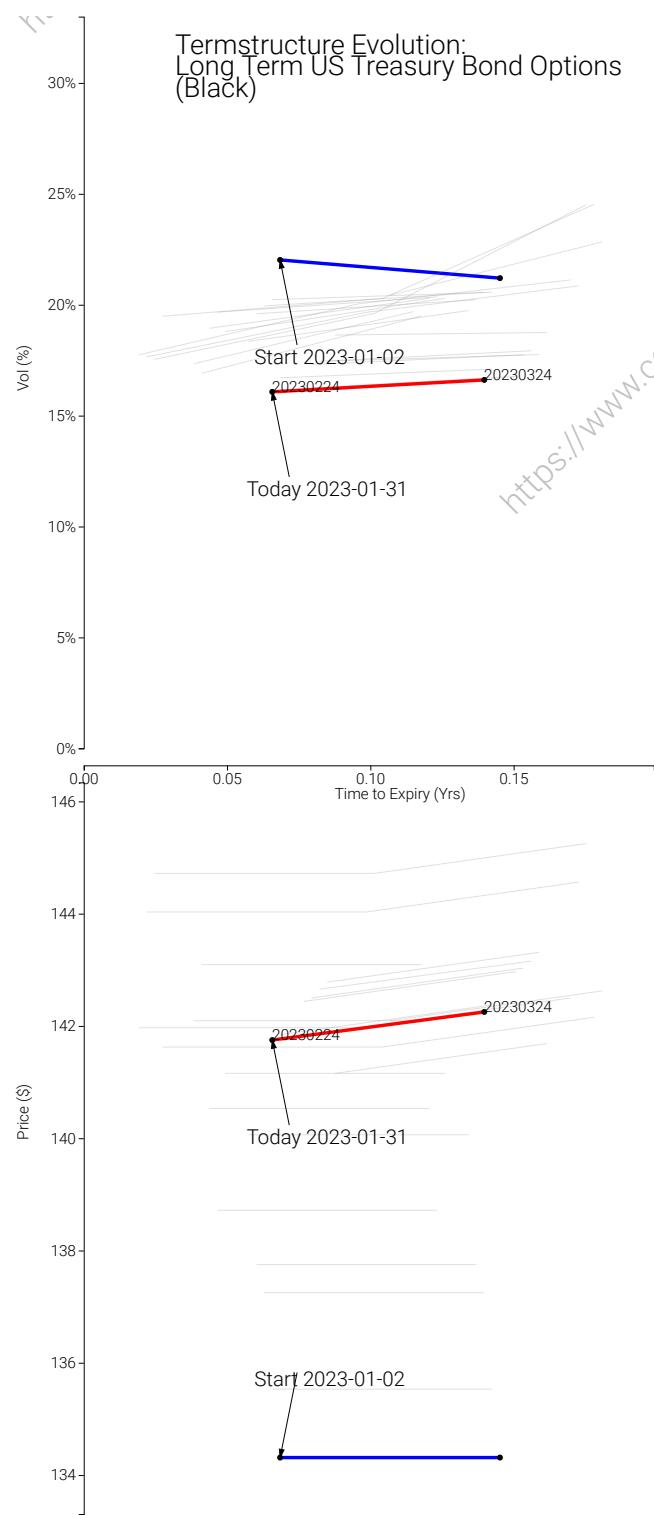




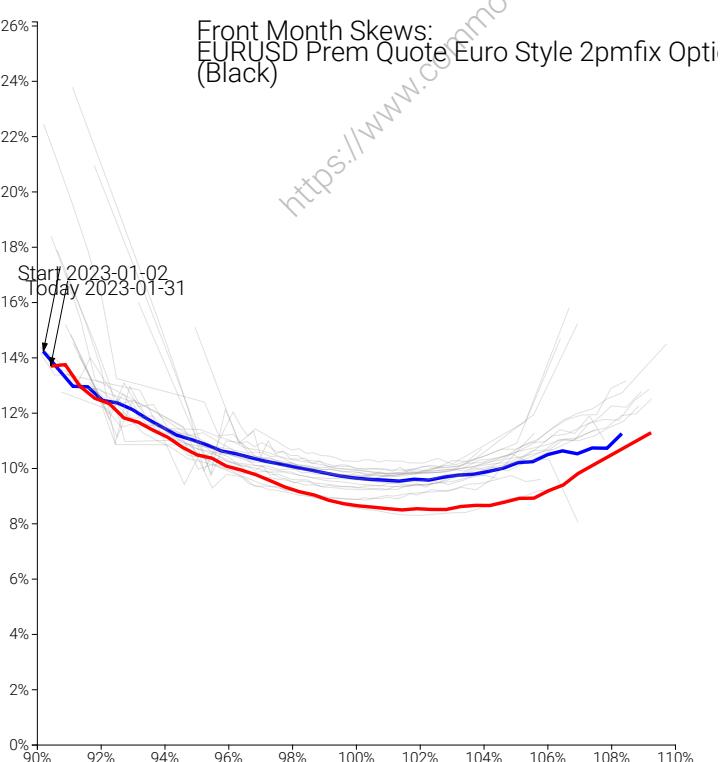
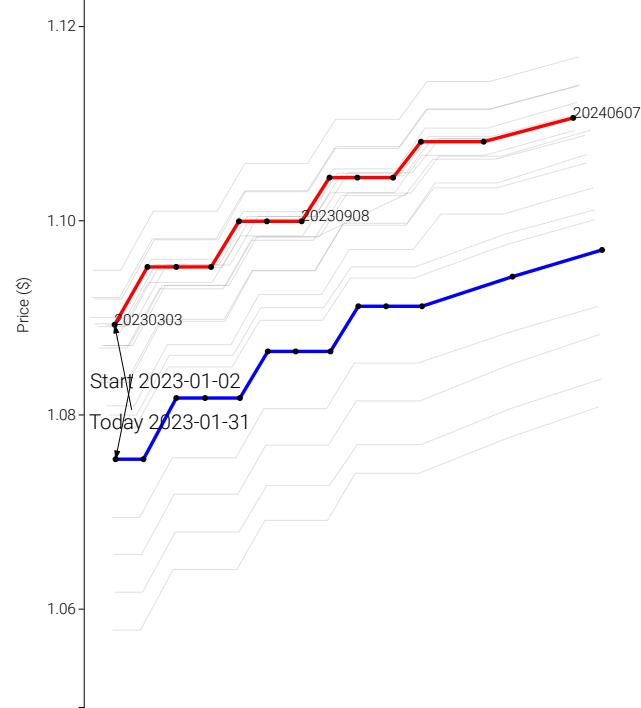
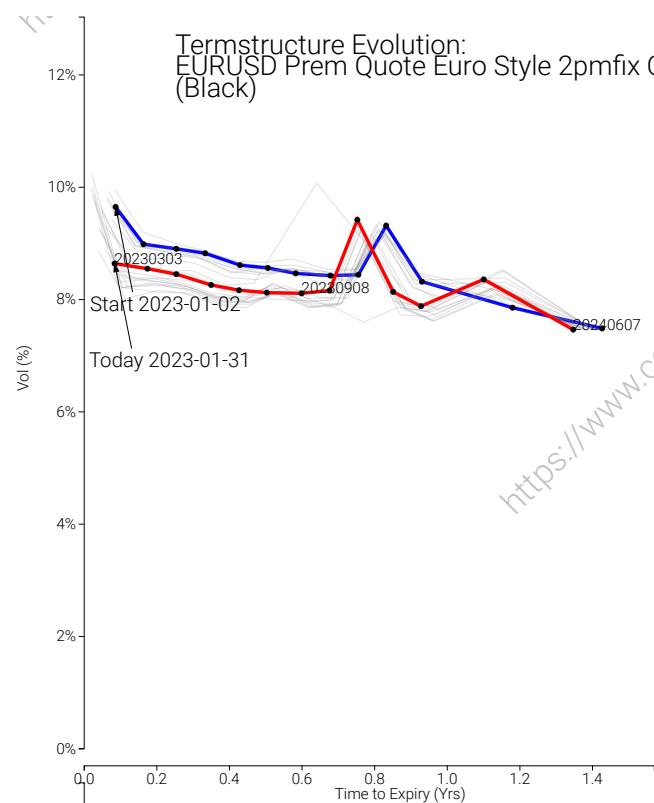


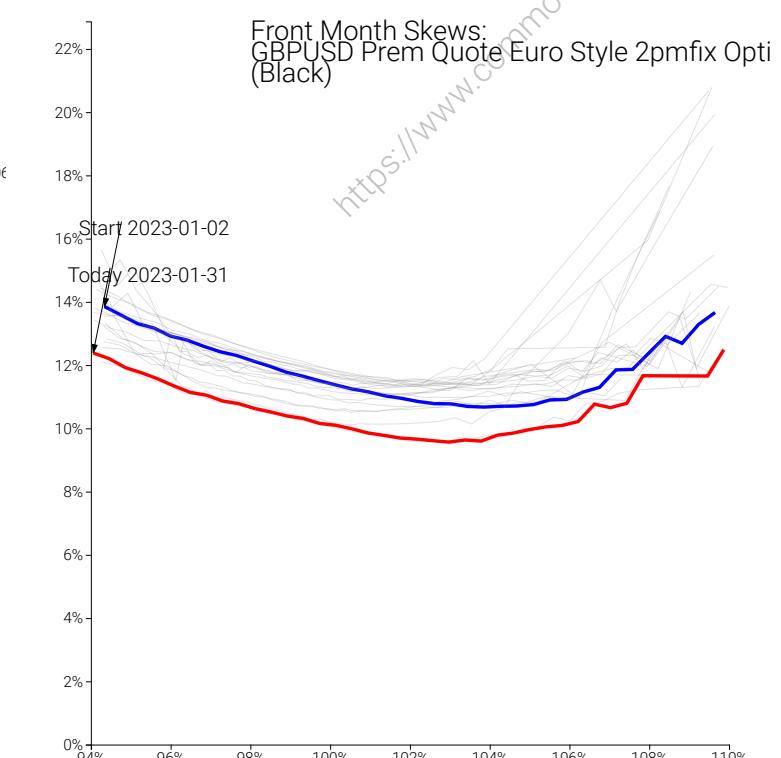
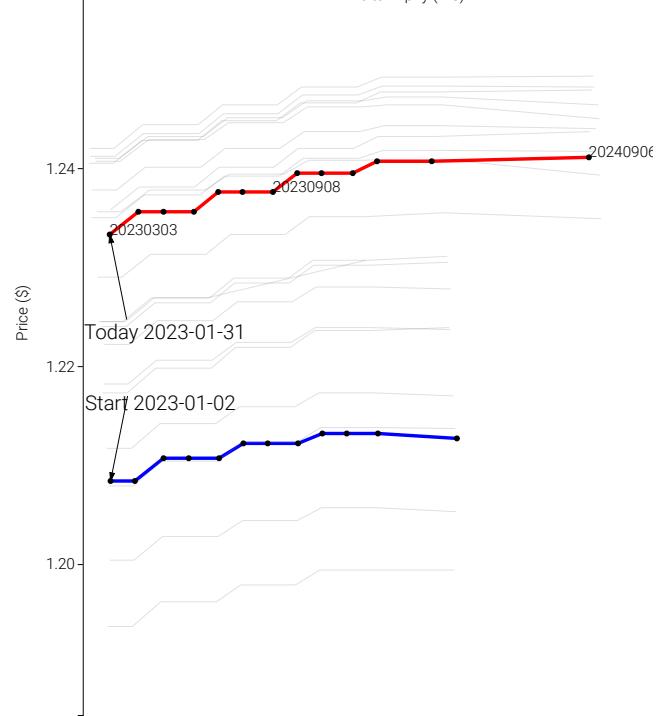
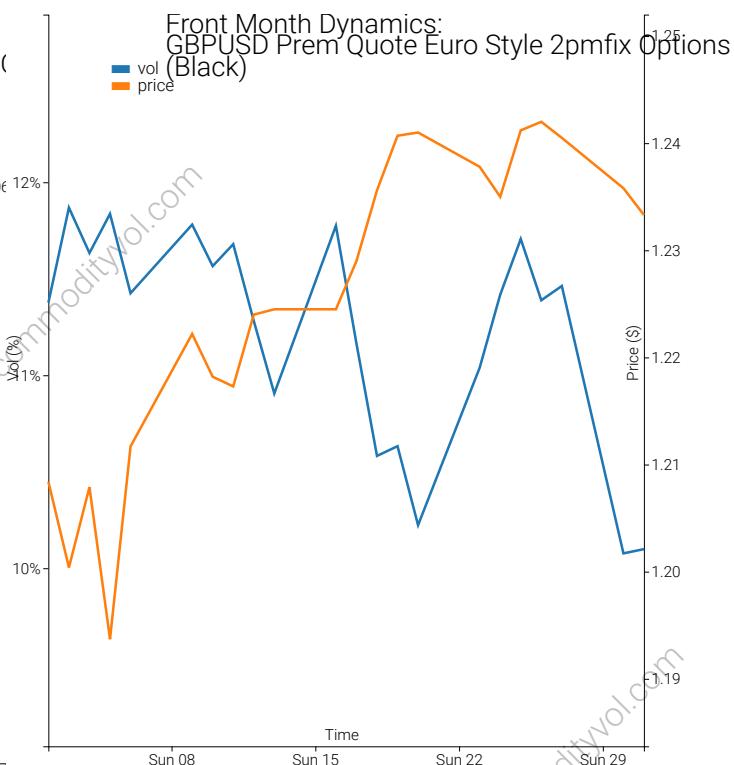
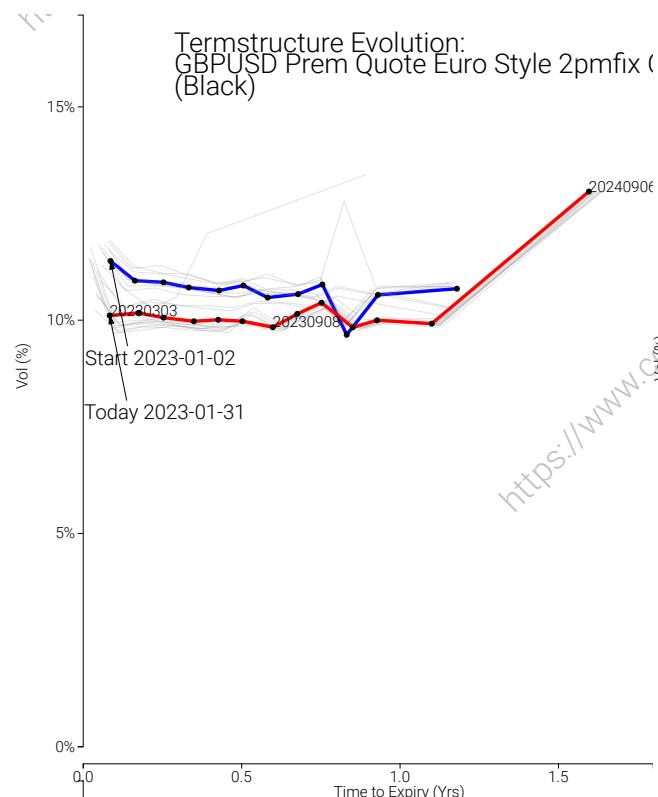


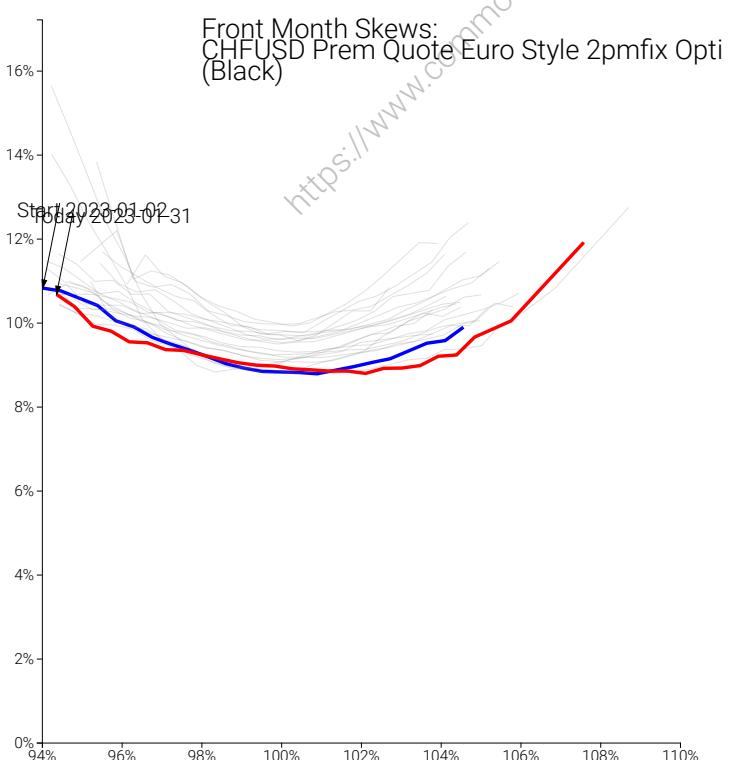
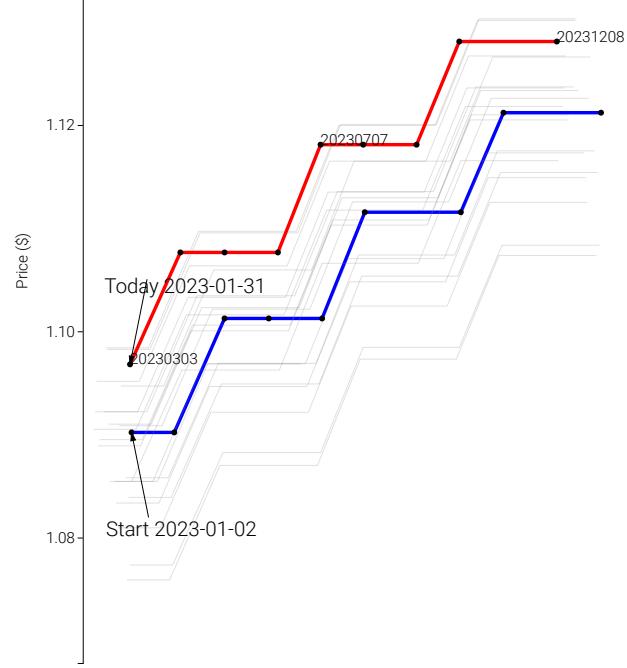
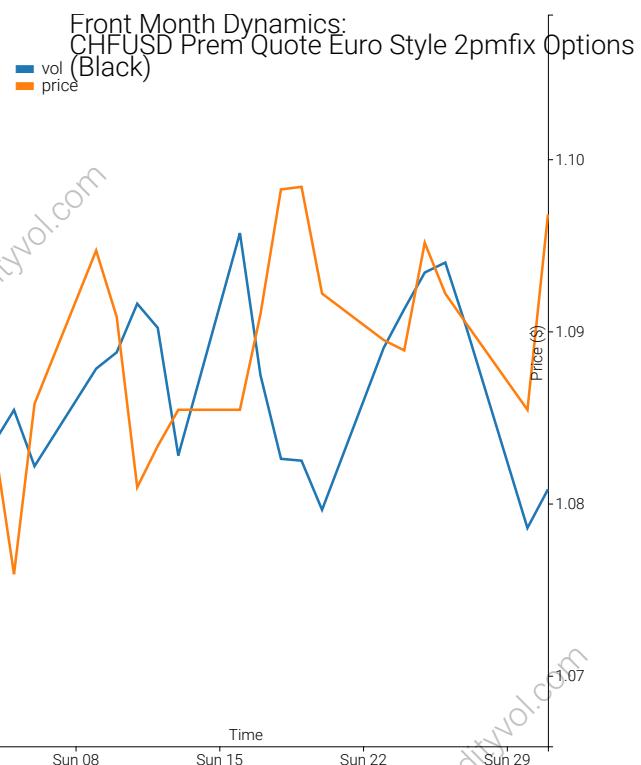
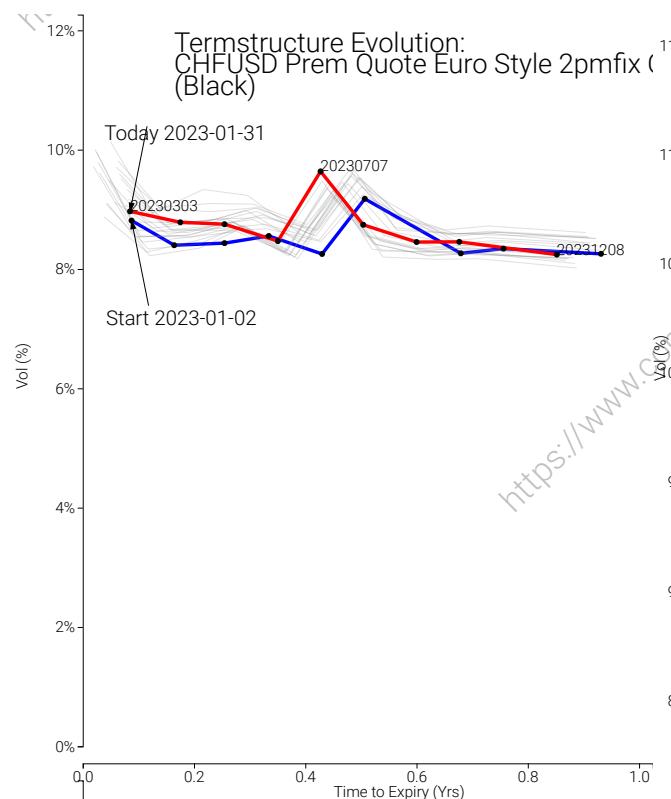


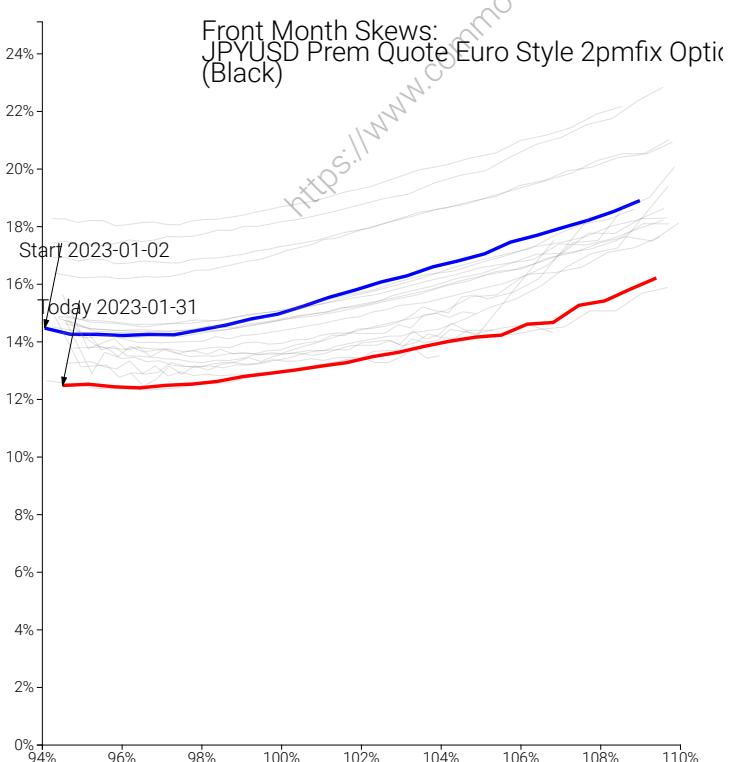
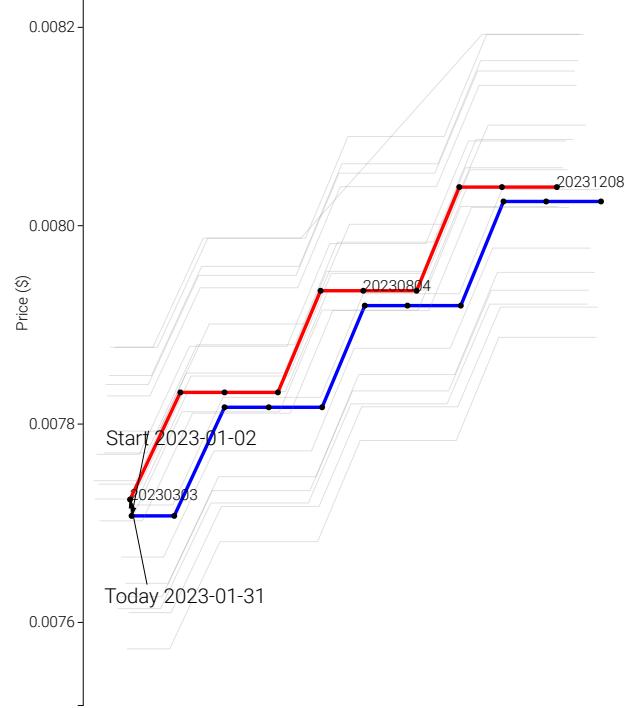
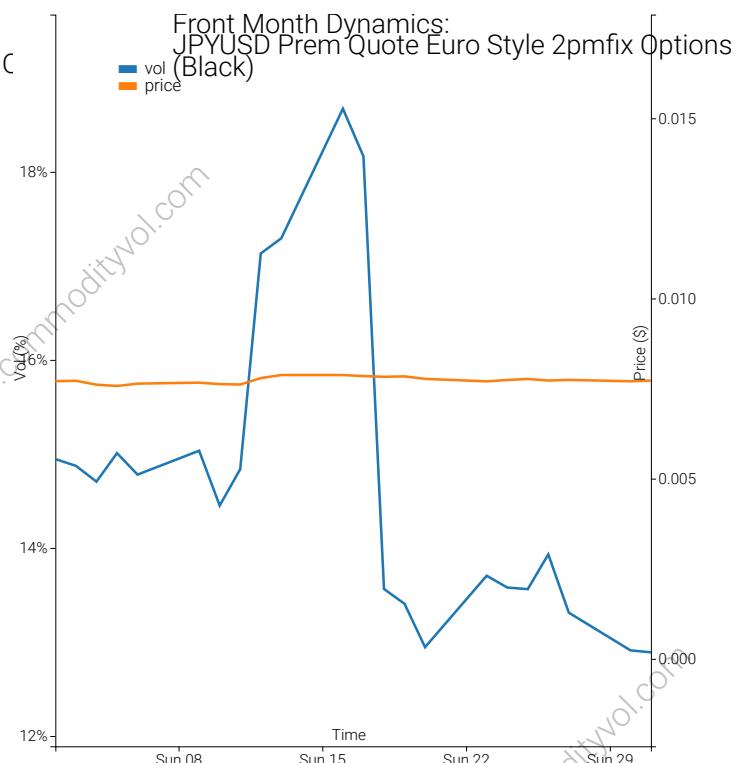
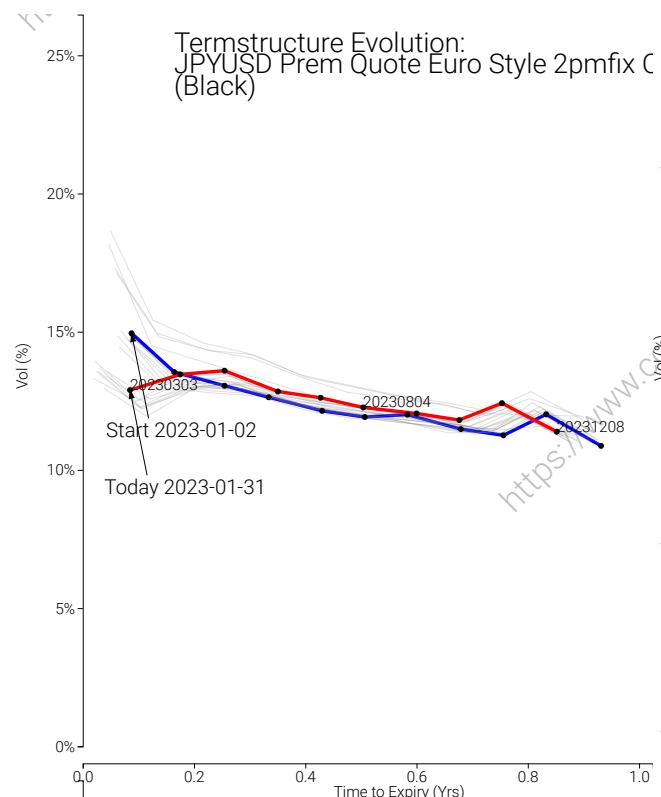


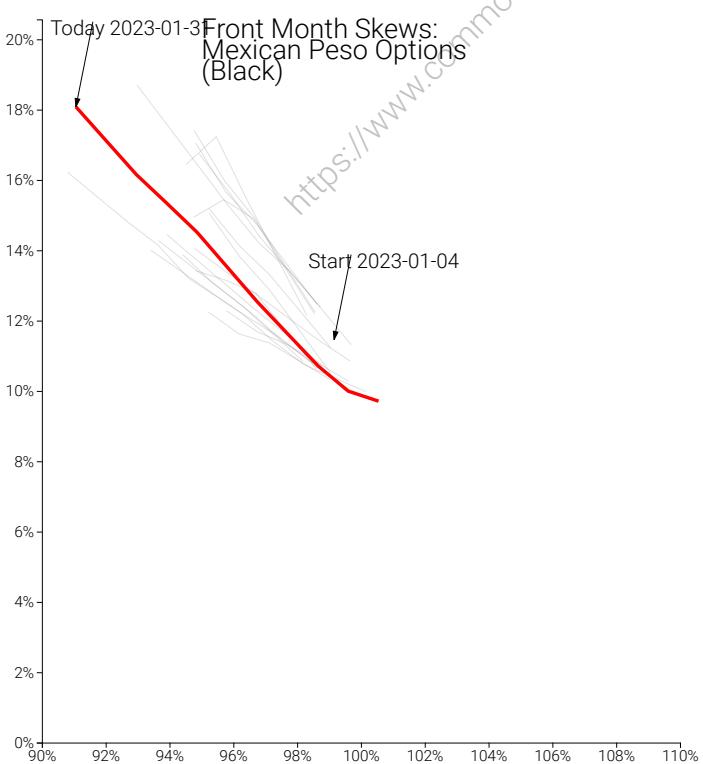
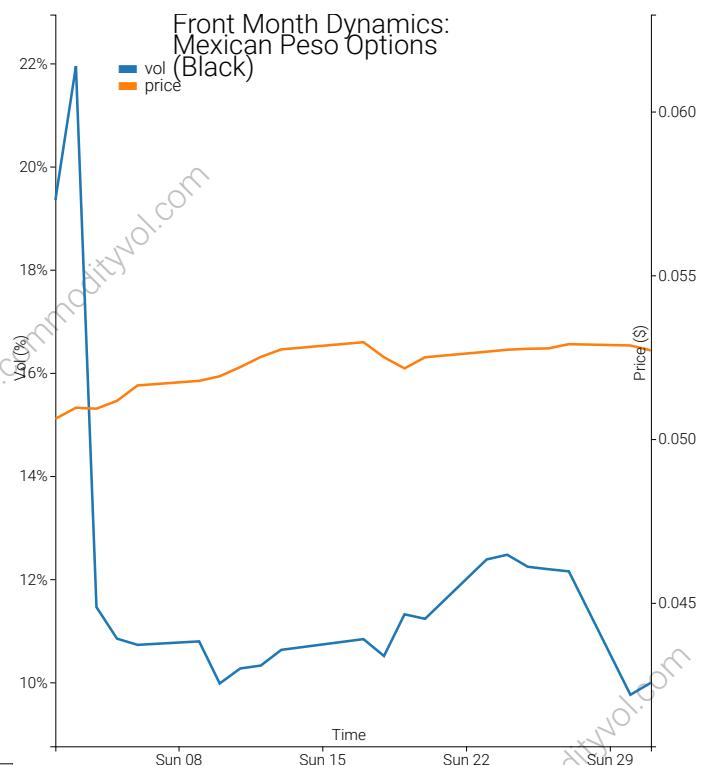
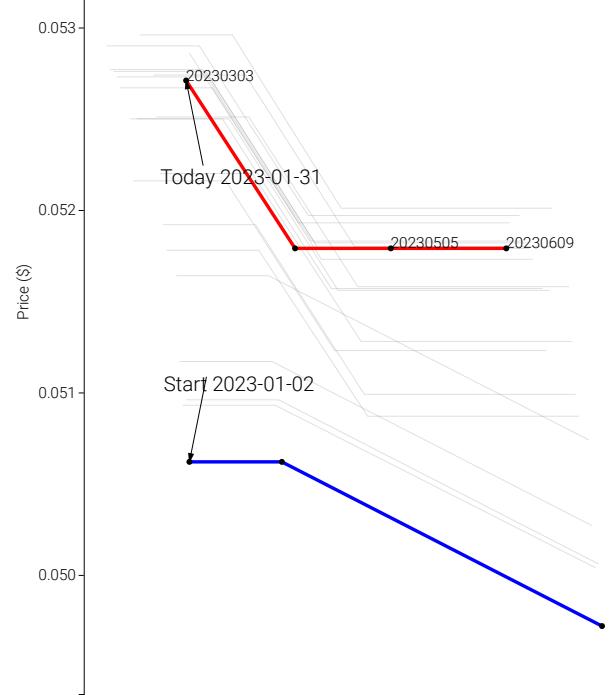
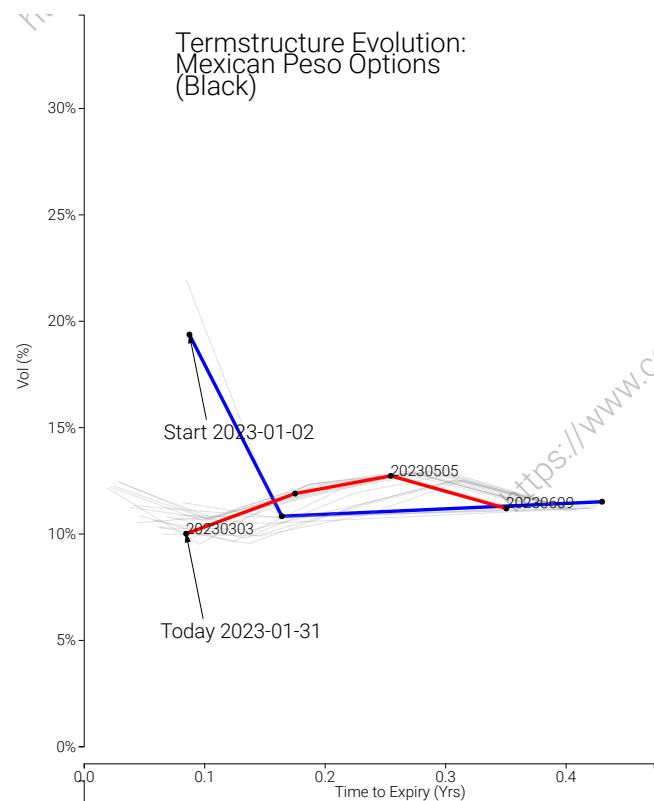
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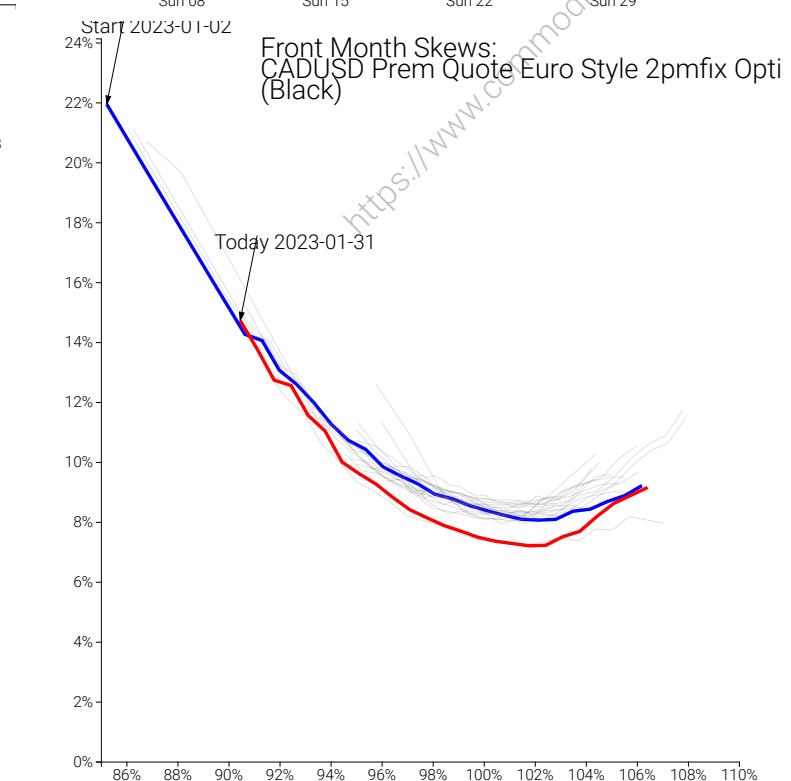
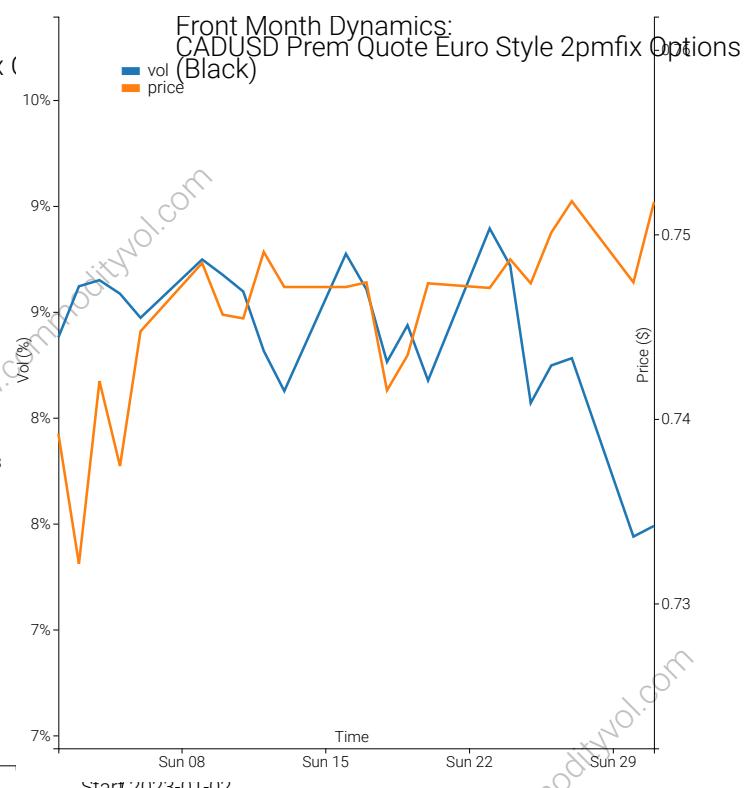
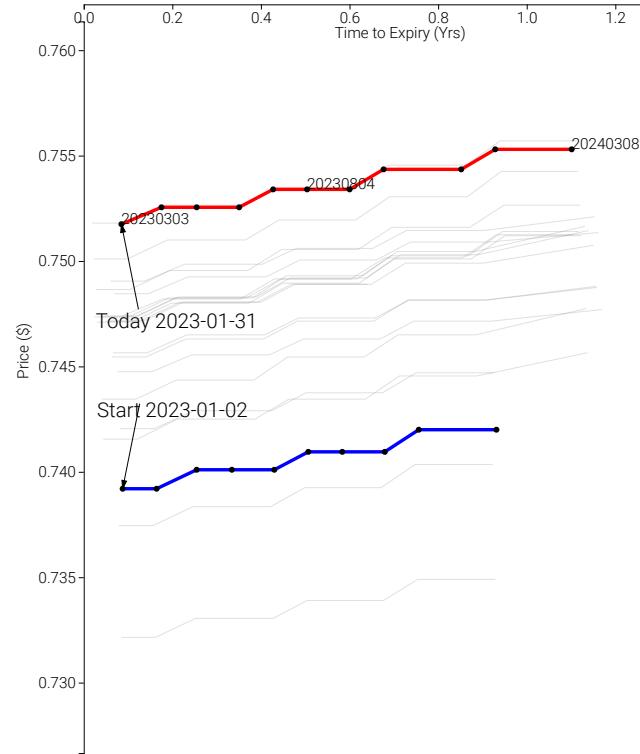
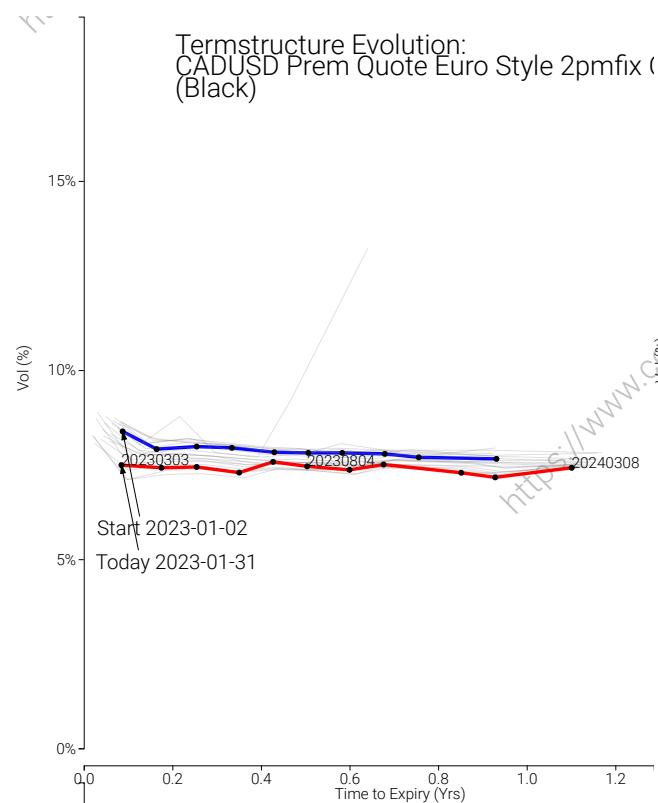


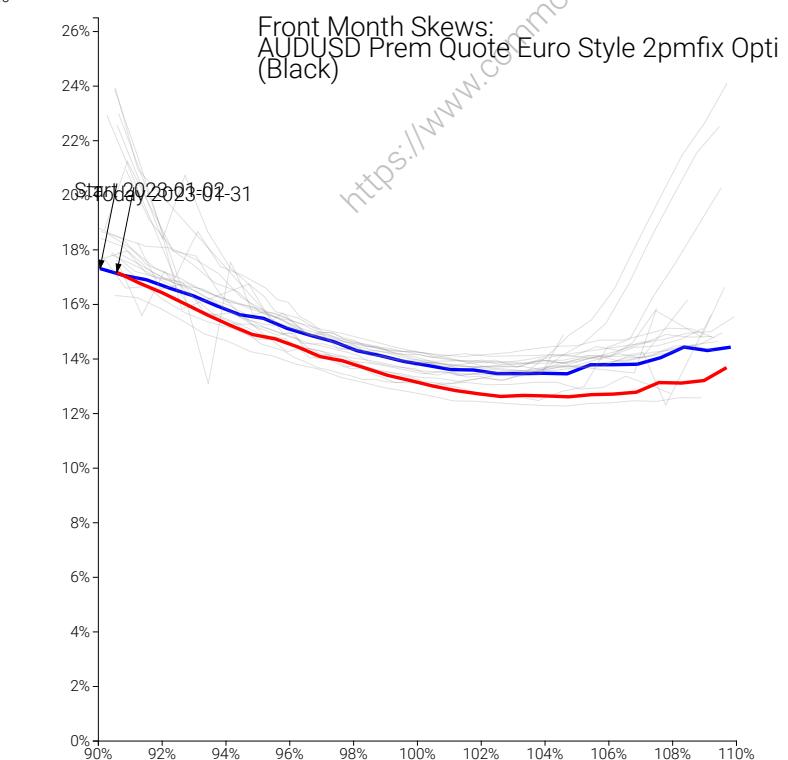
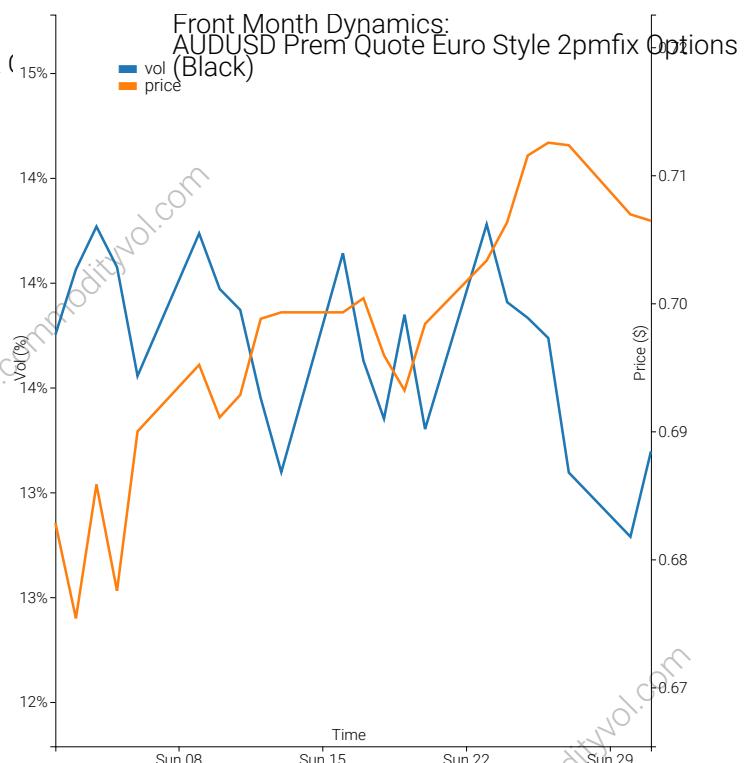
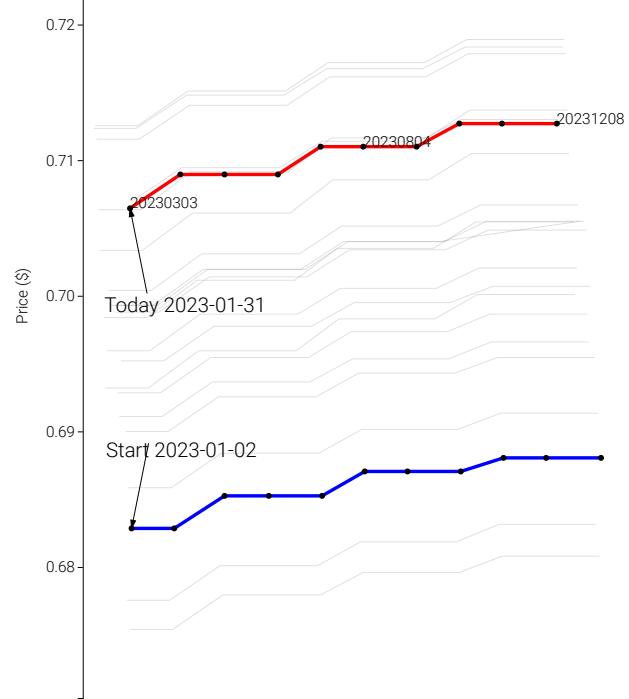
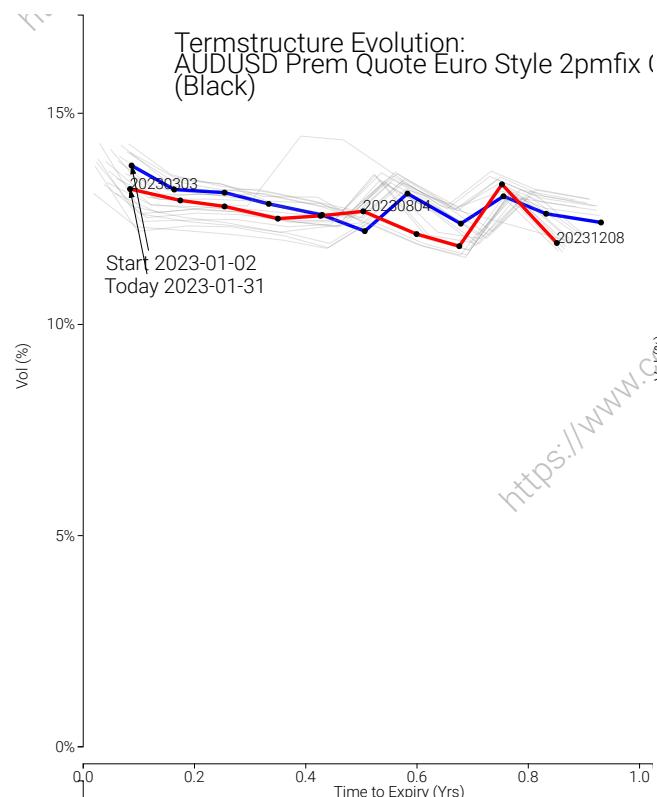


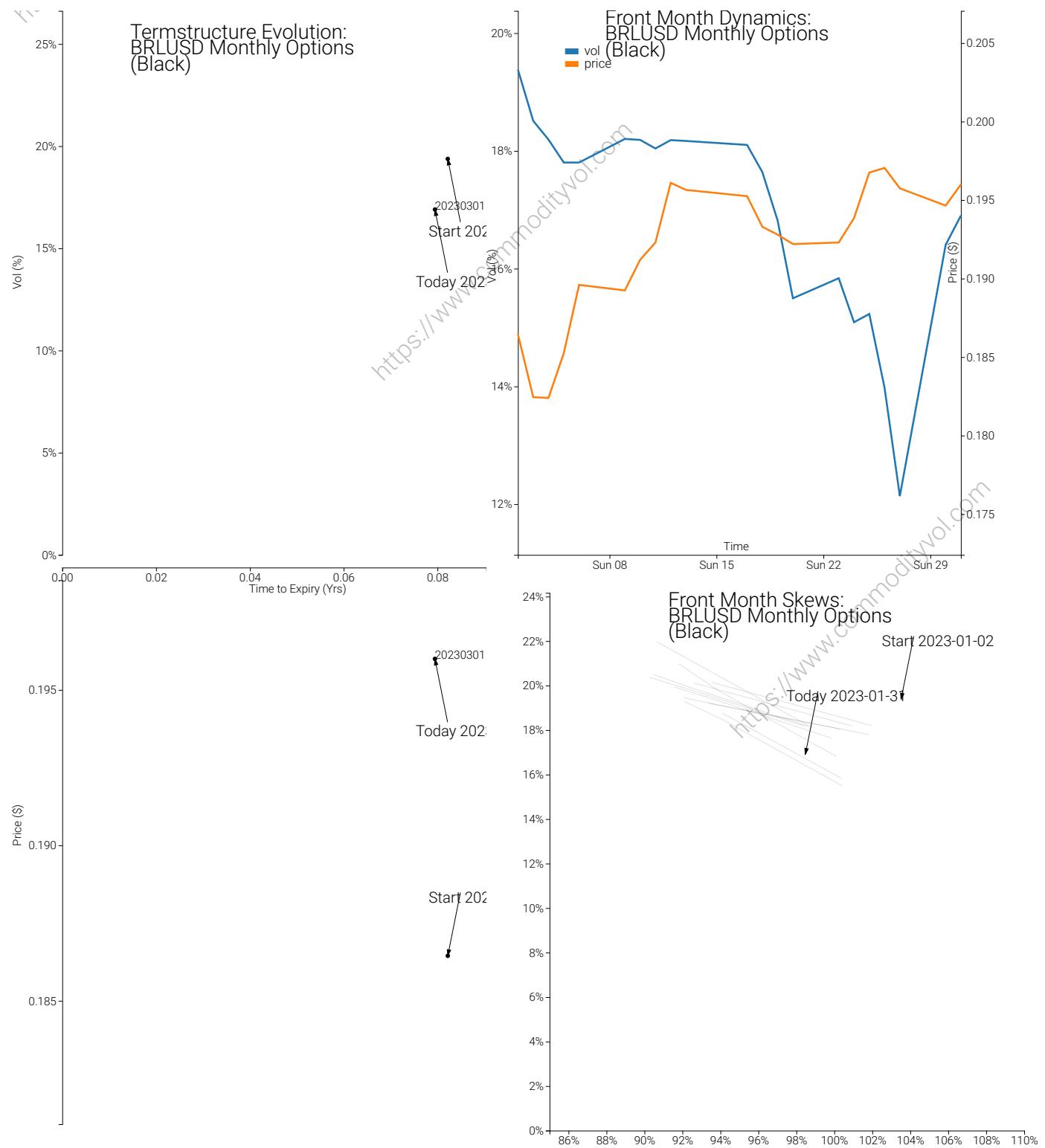


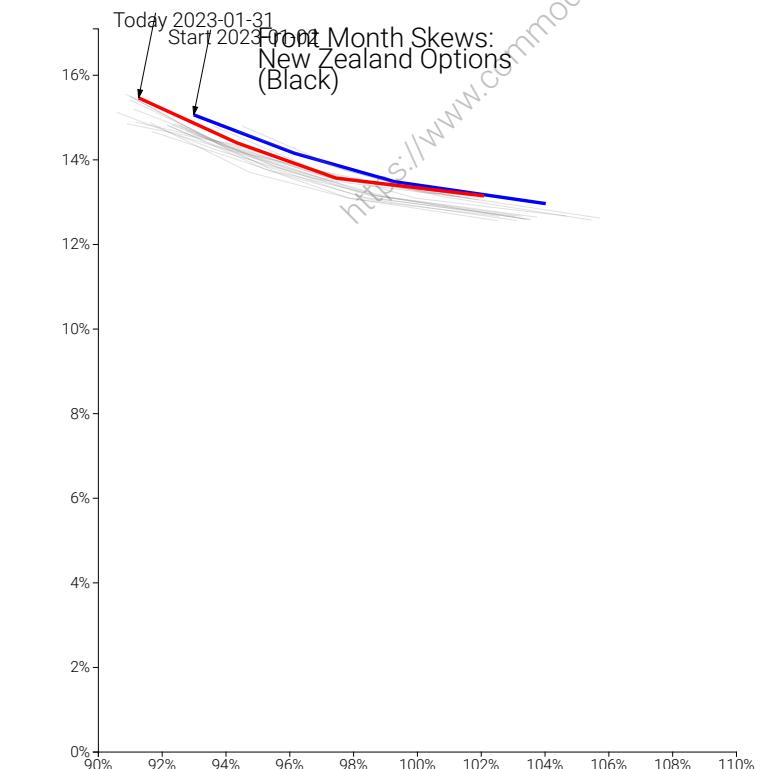
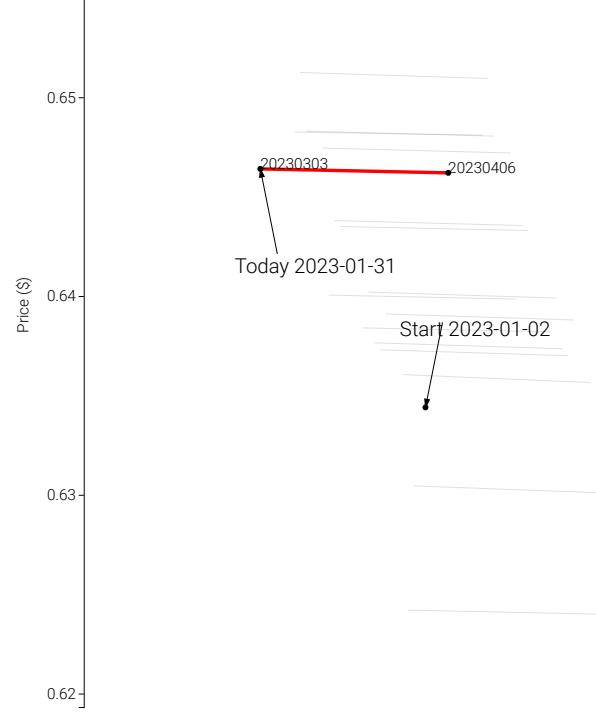
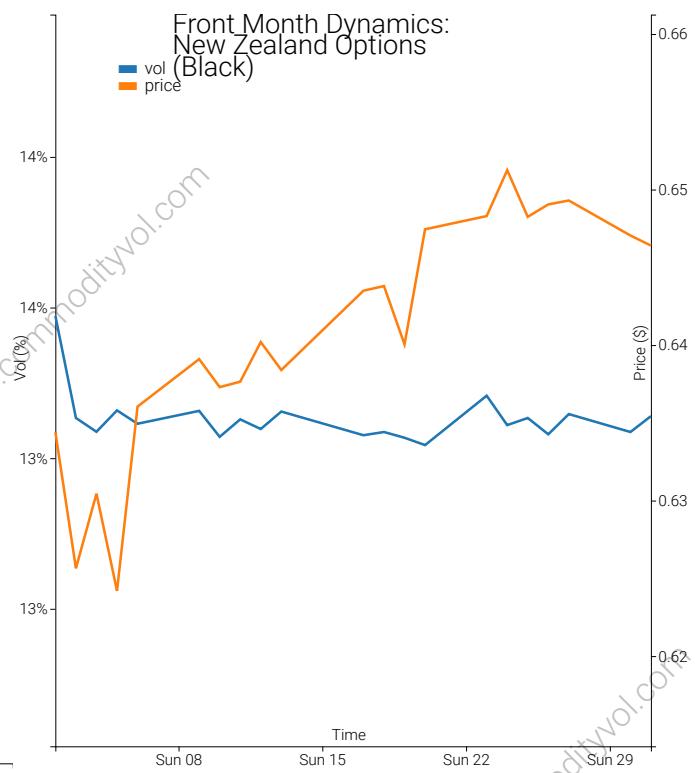
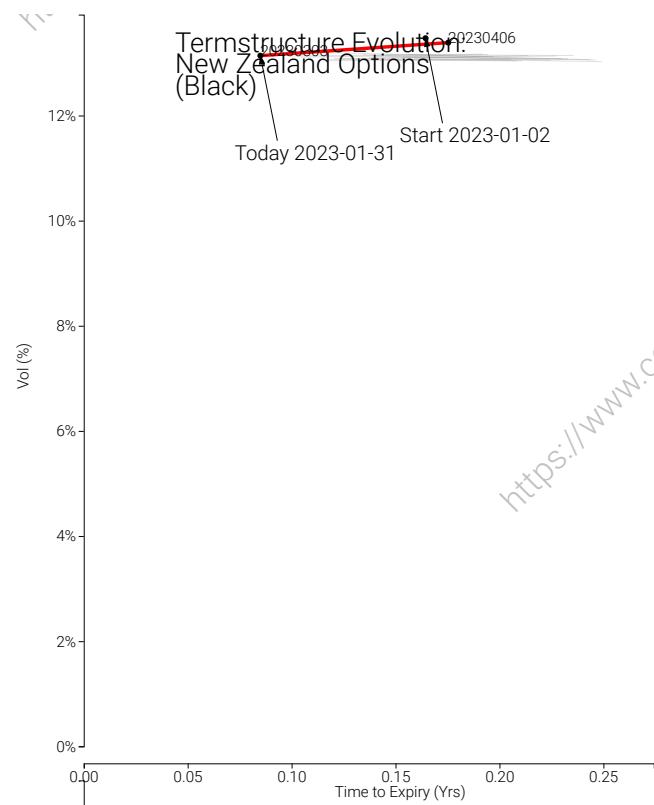


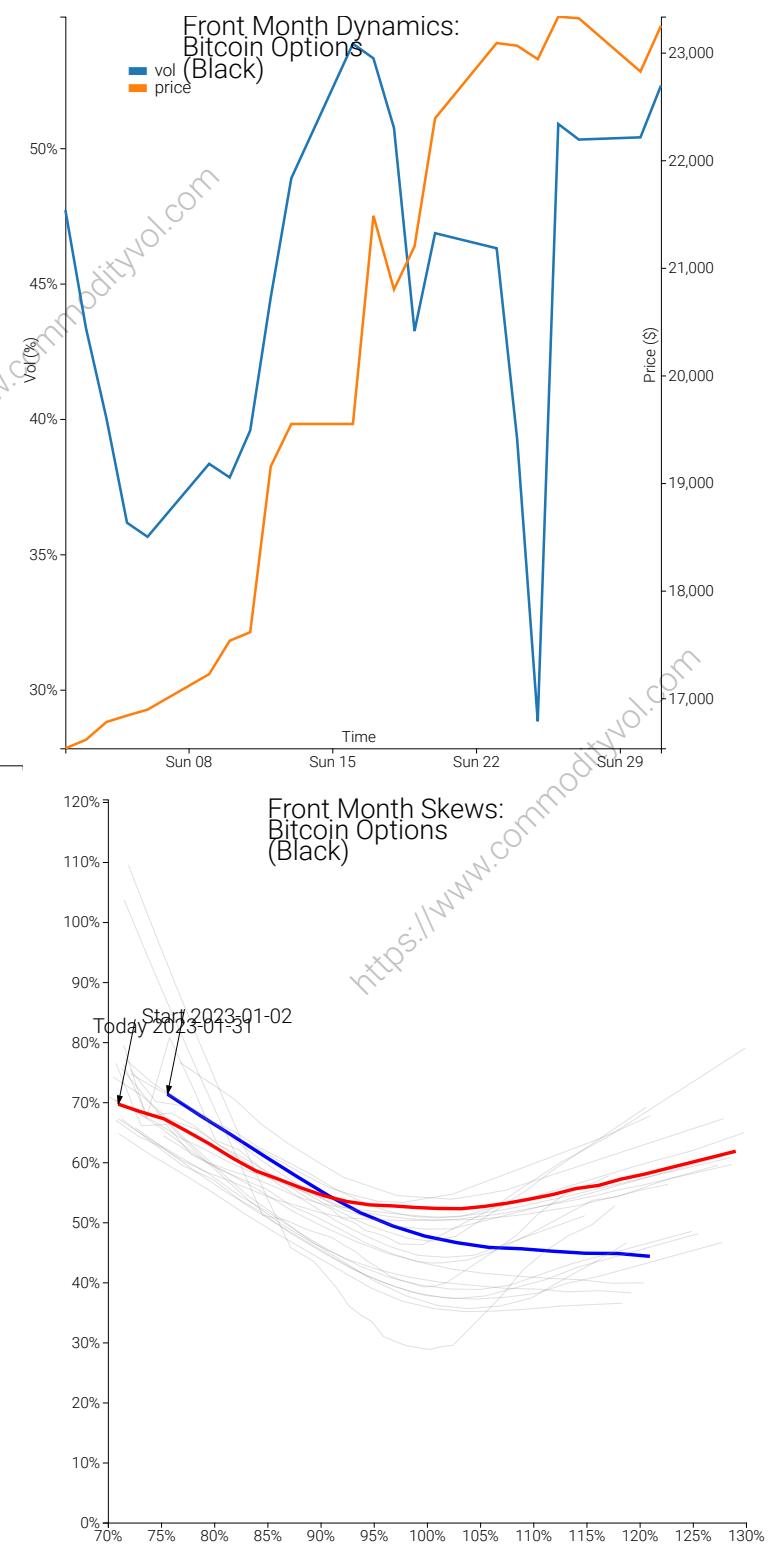
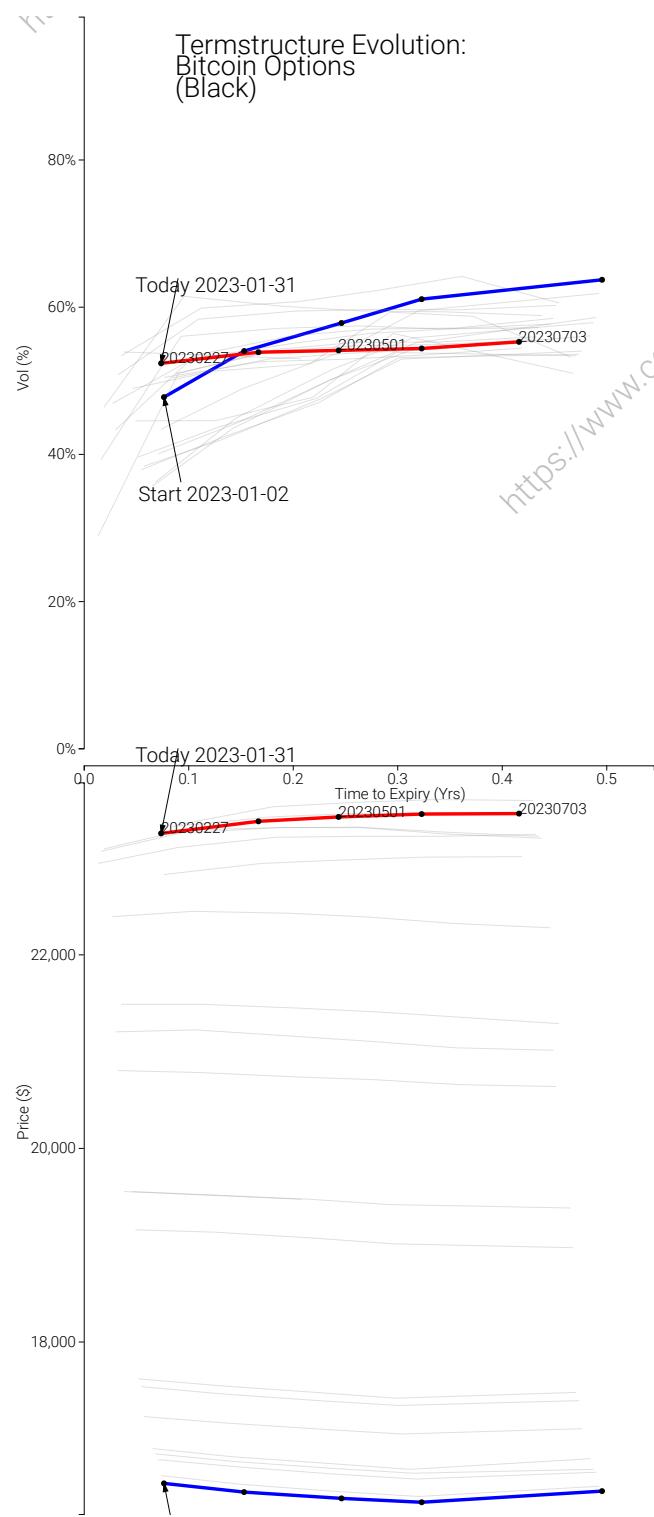


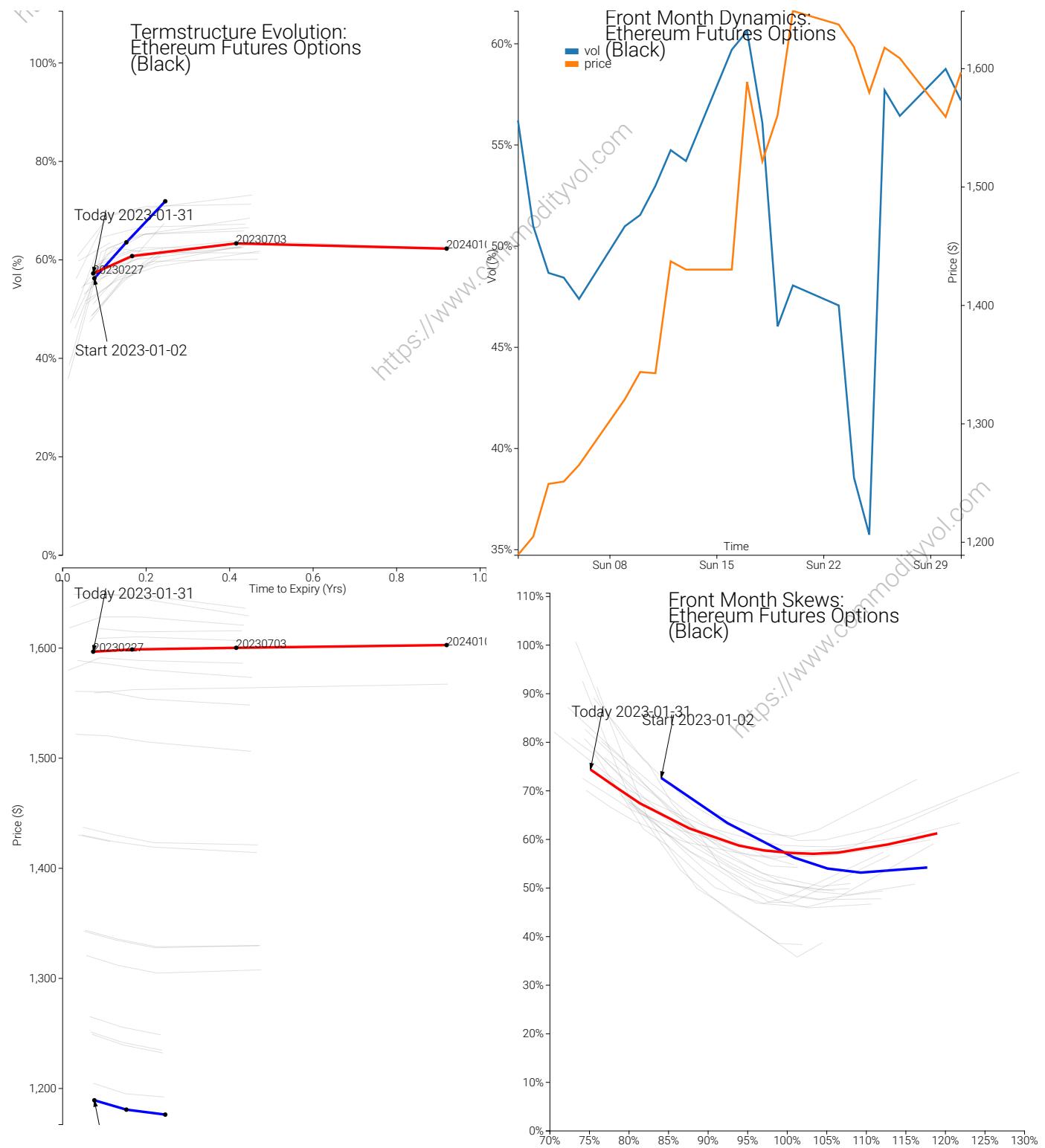




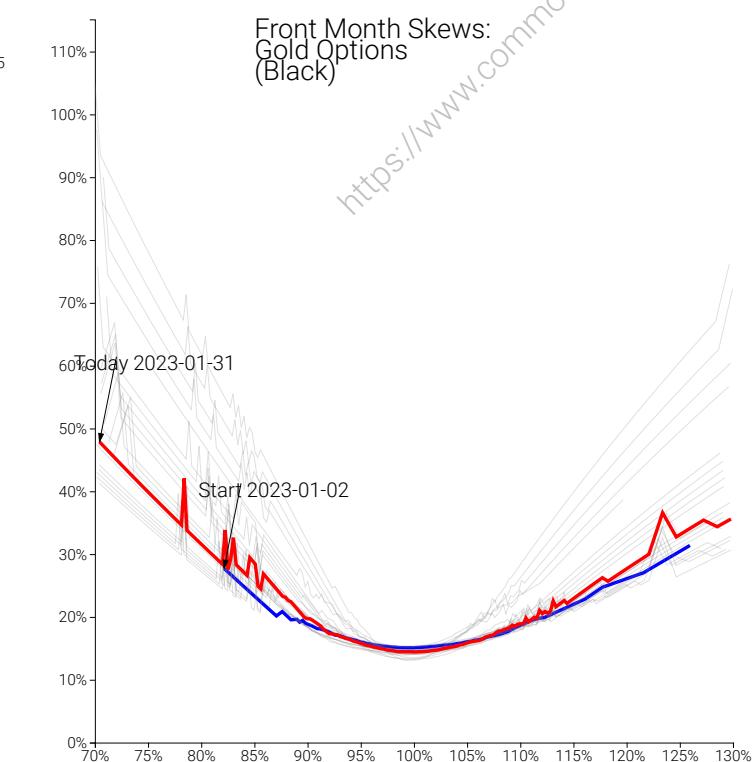
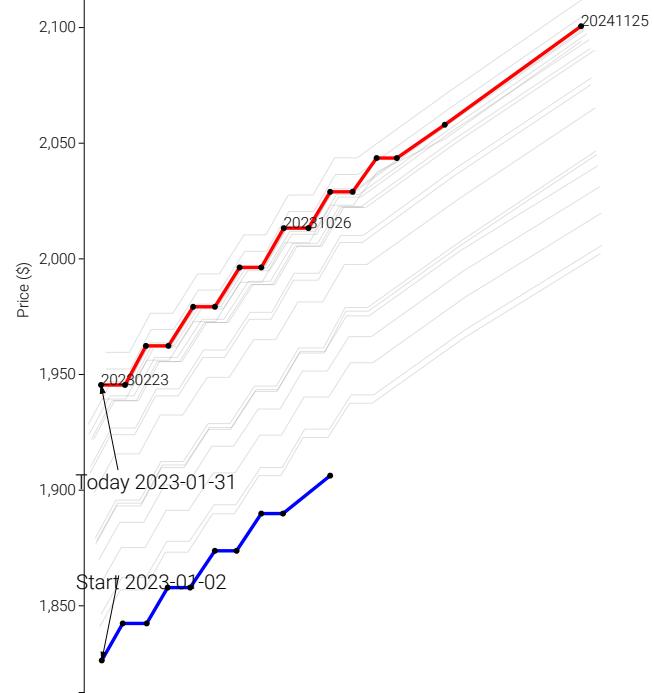
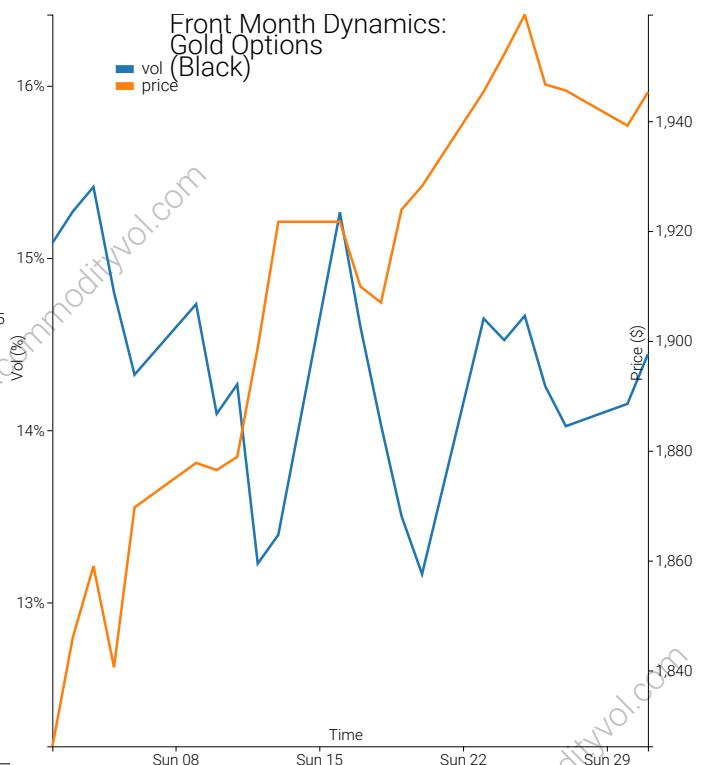
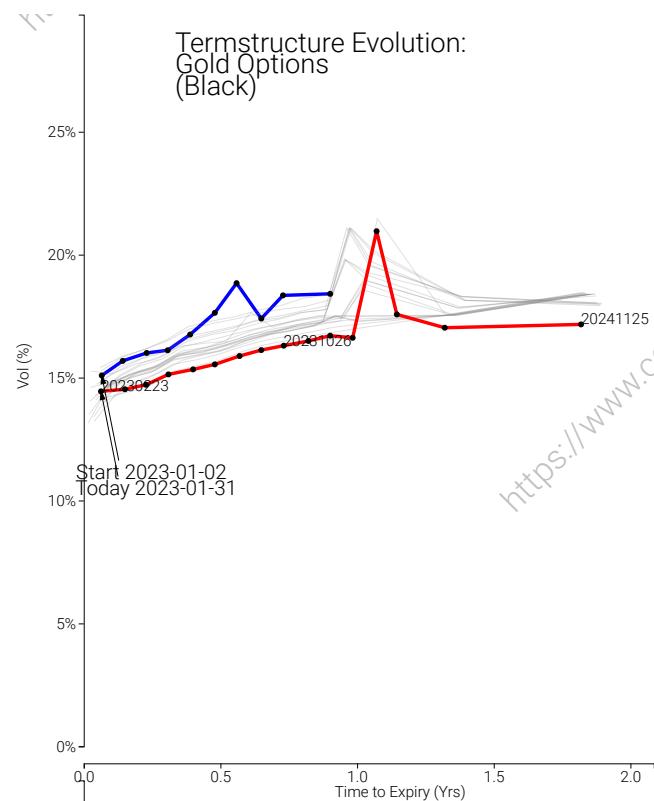


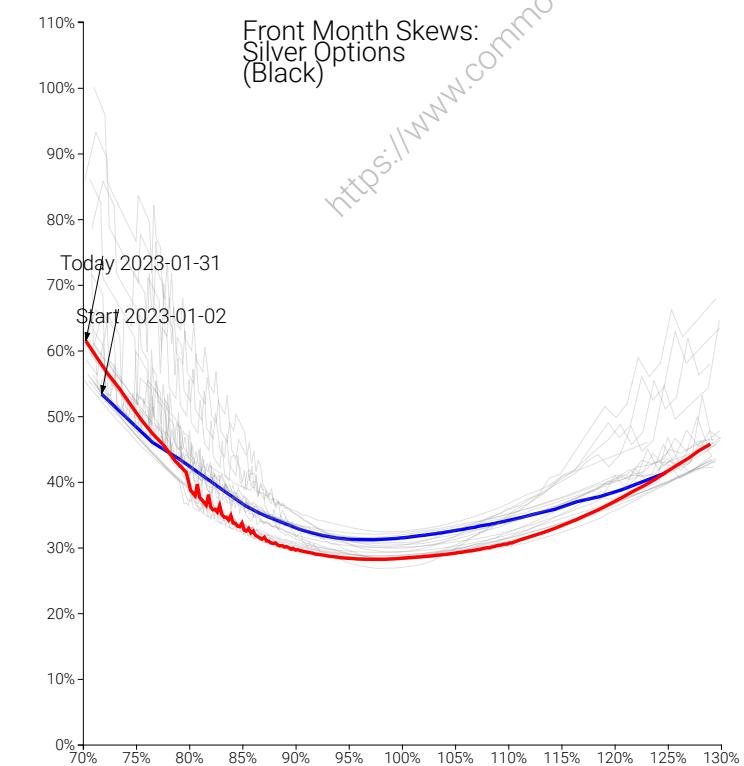
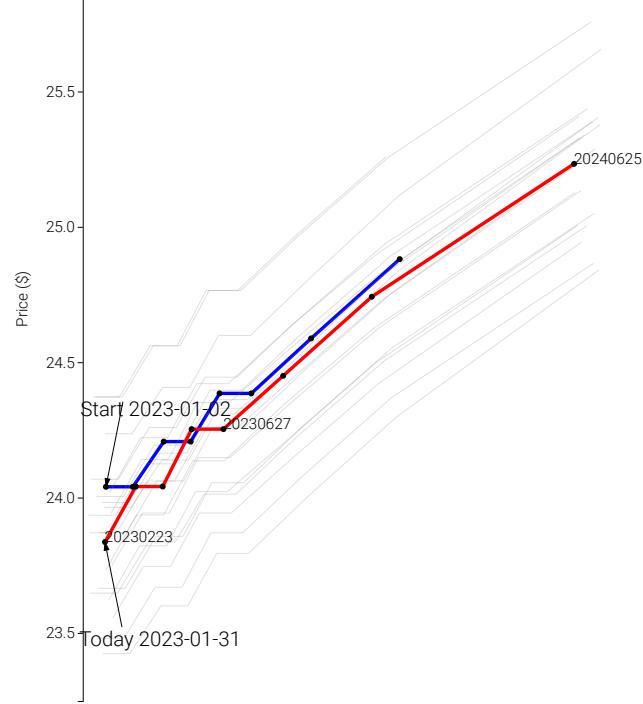
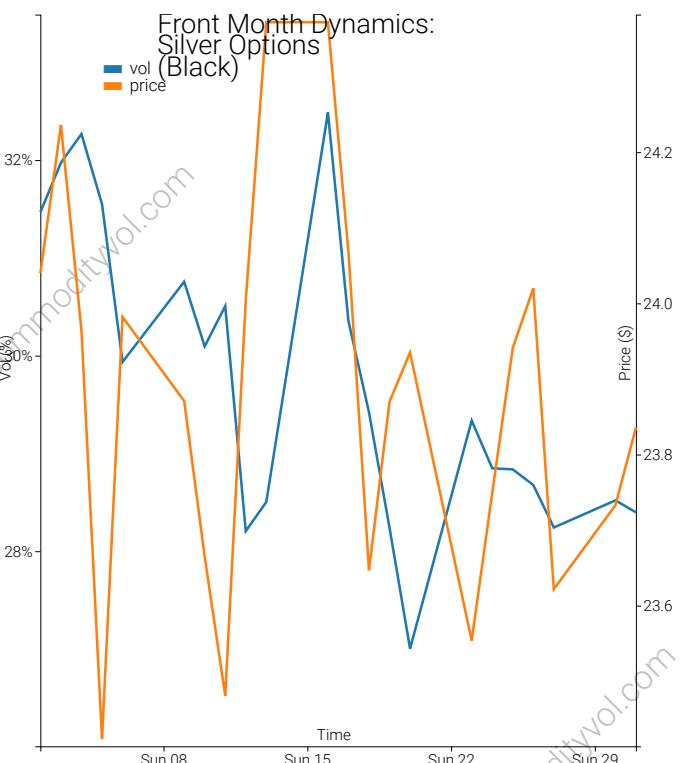
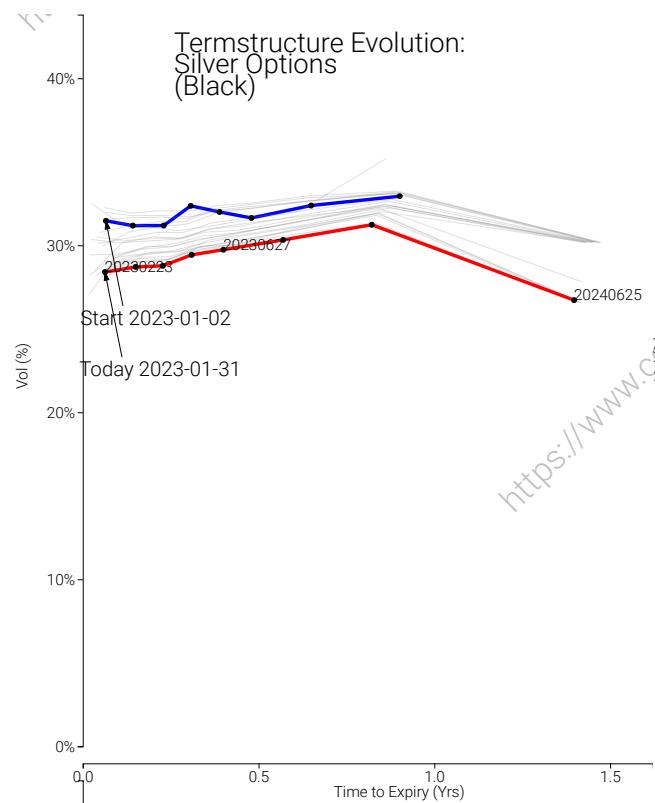


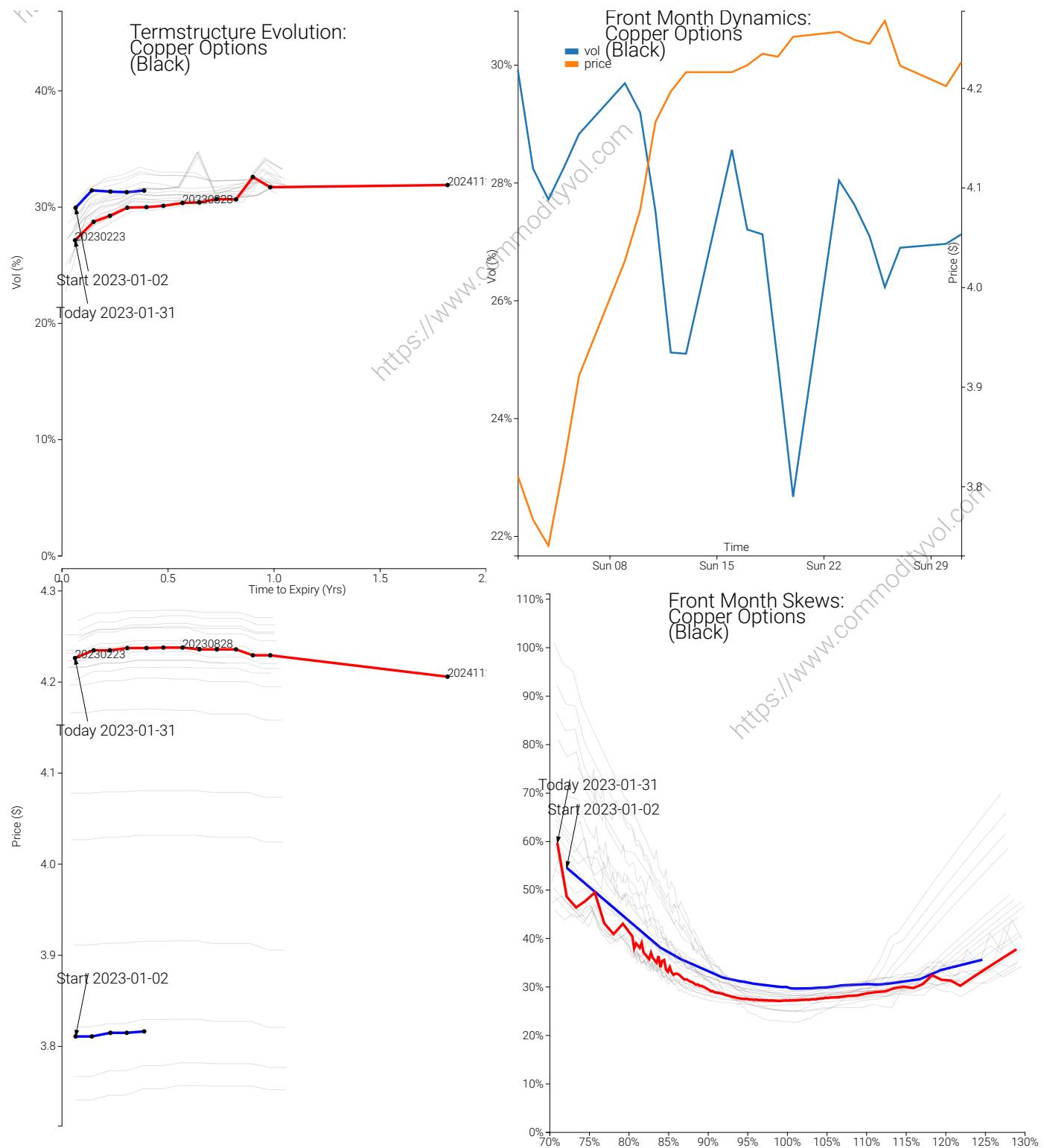


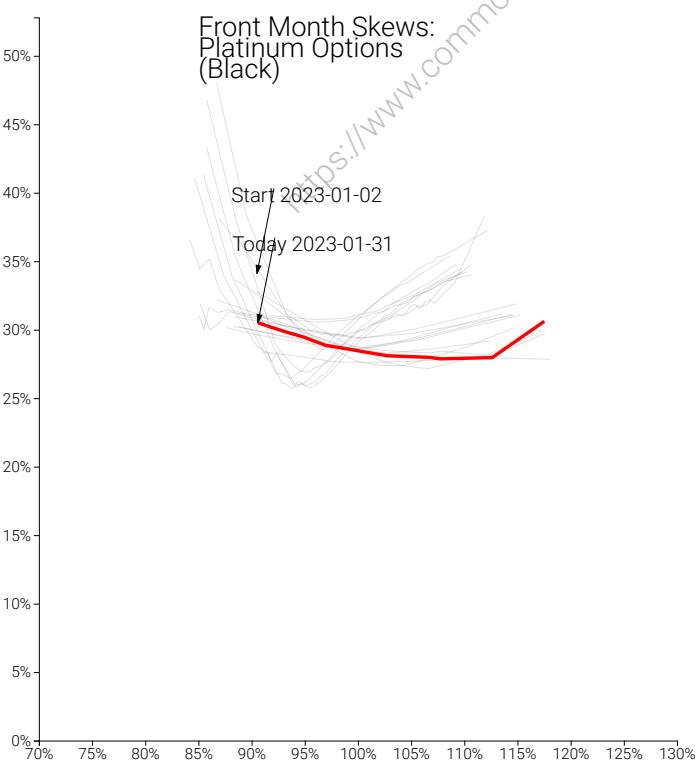
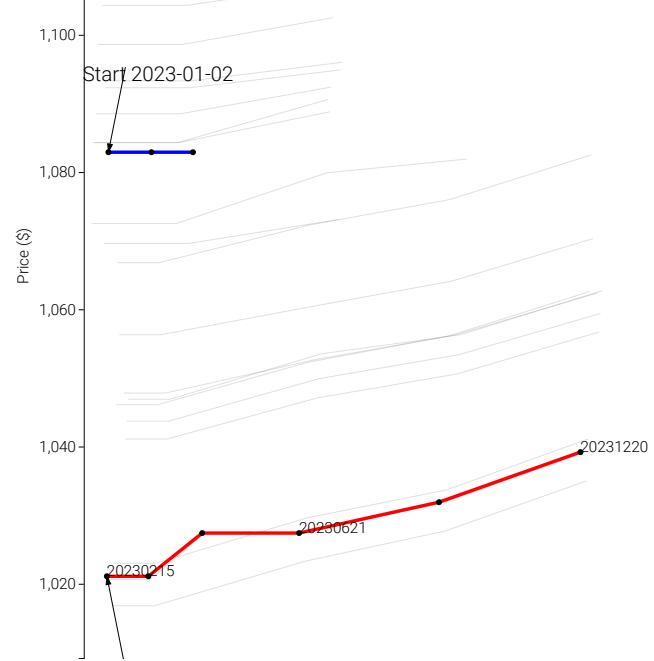
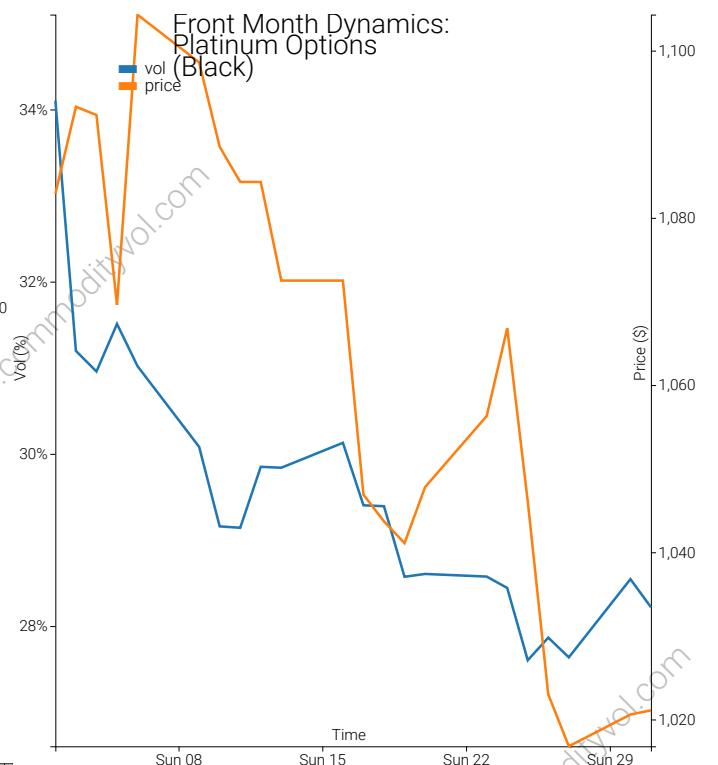
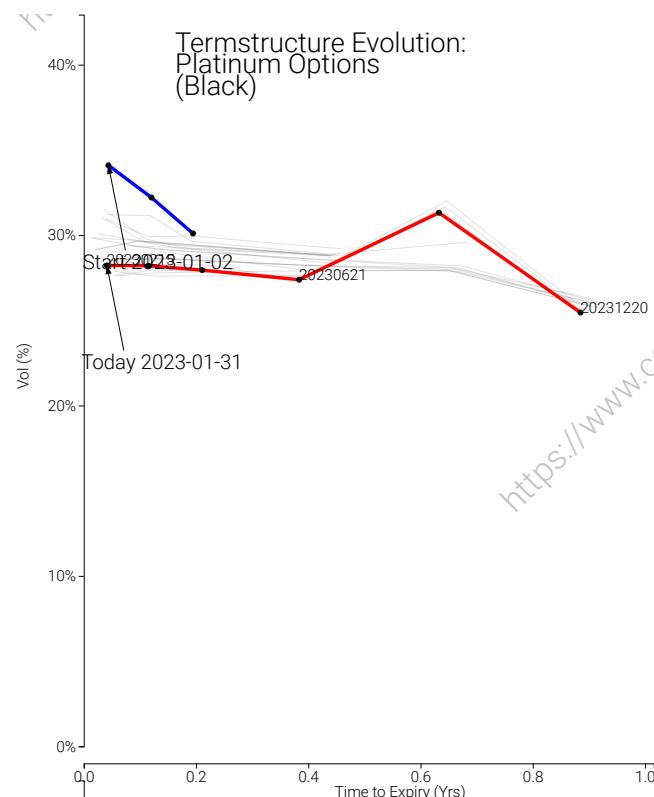


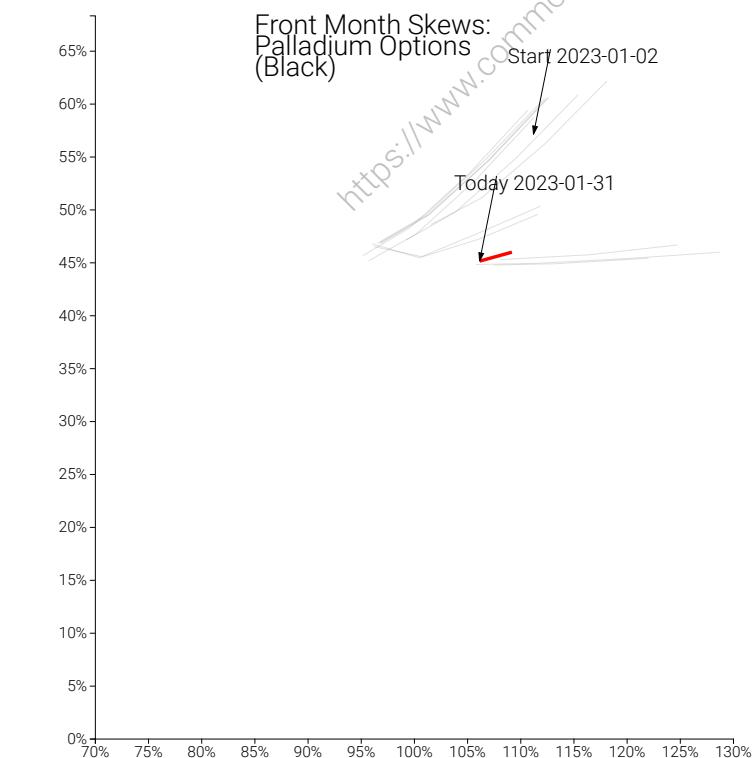
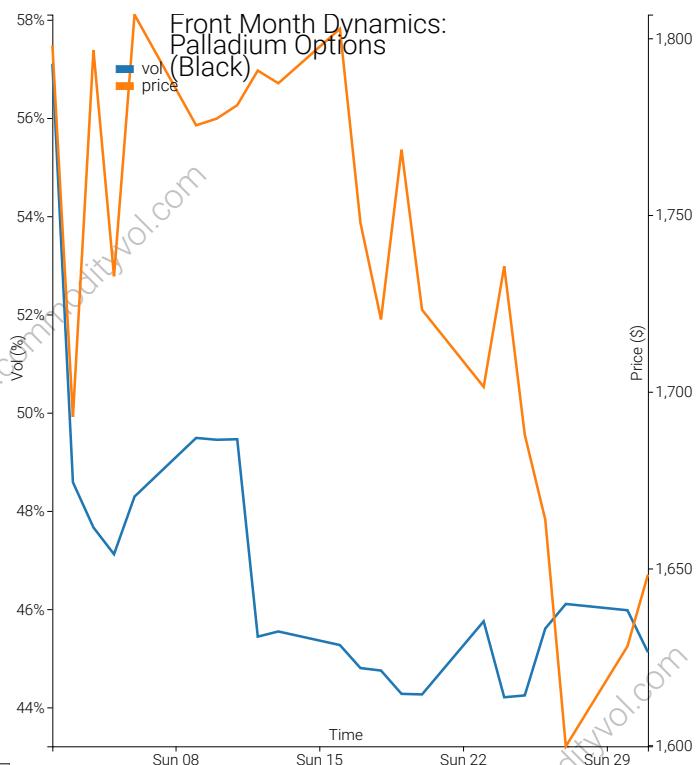
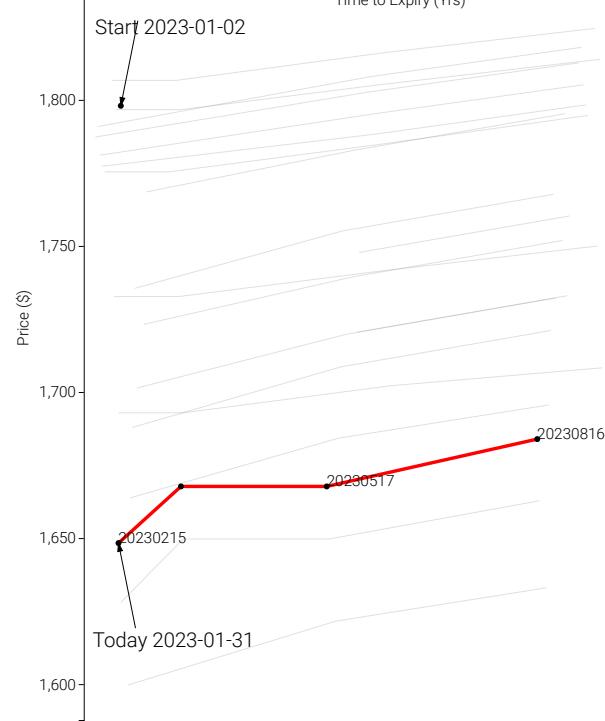
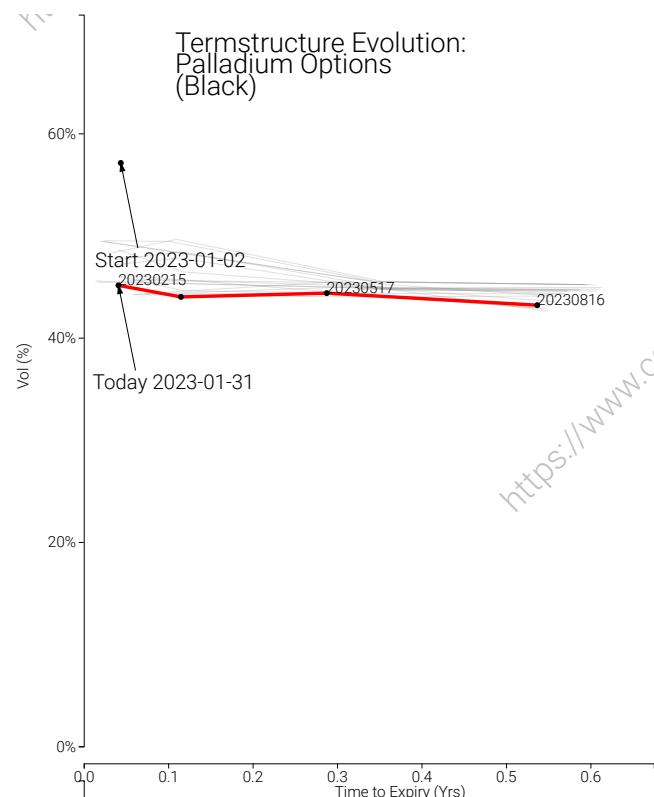
Metals



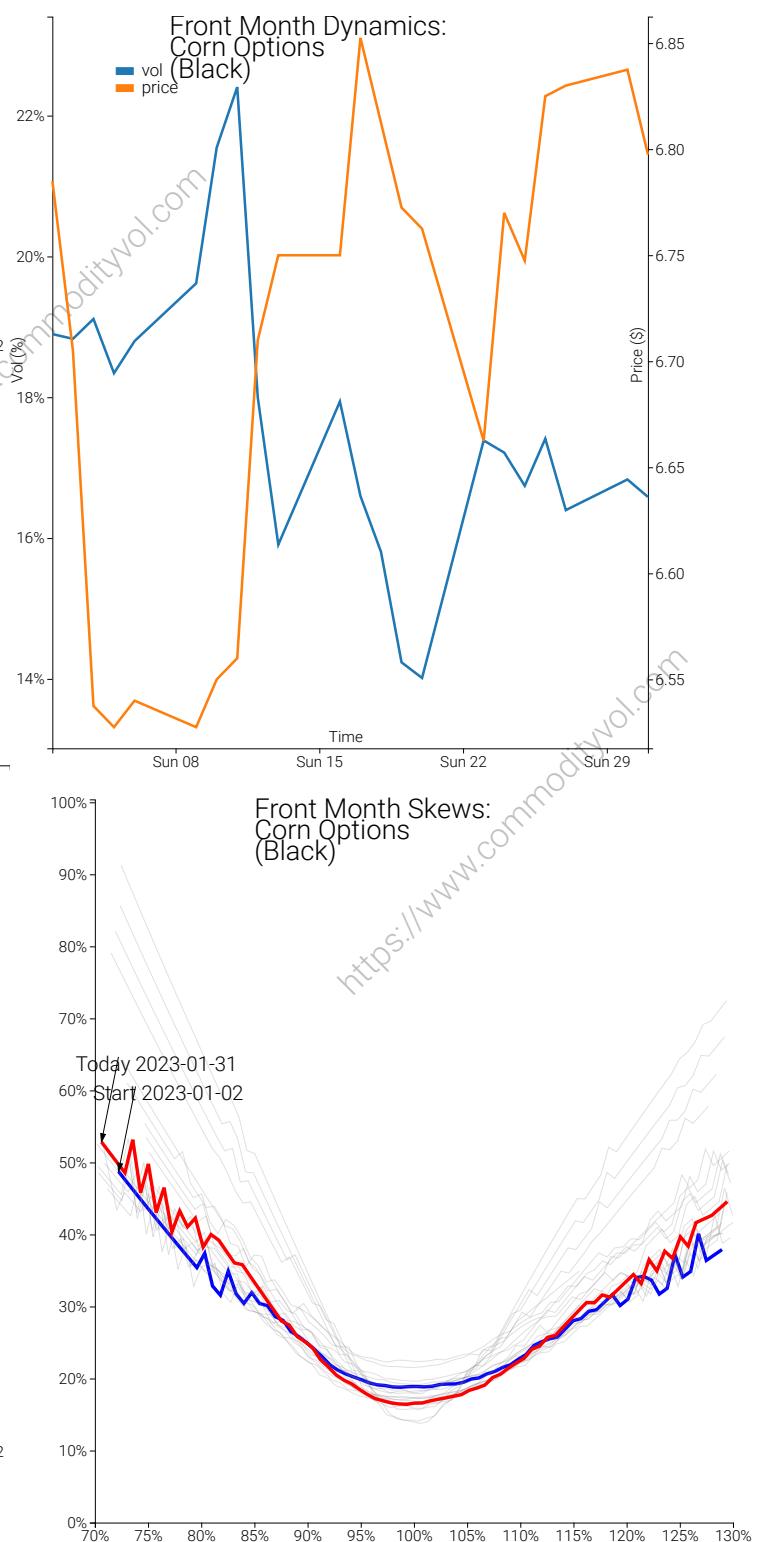
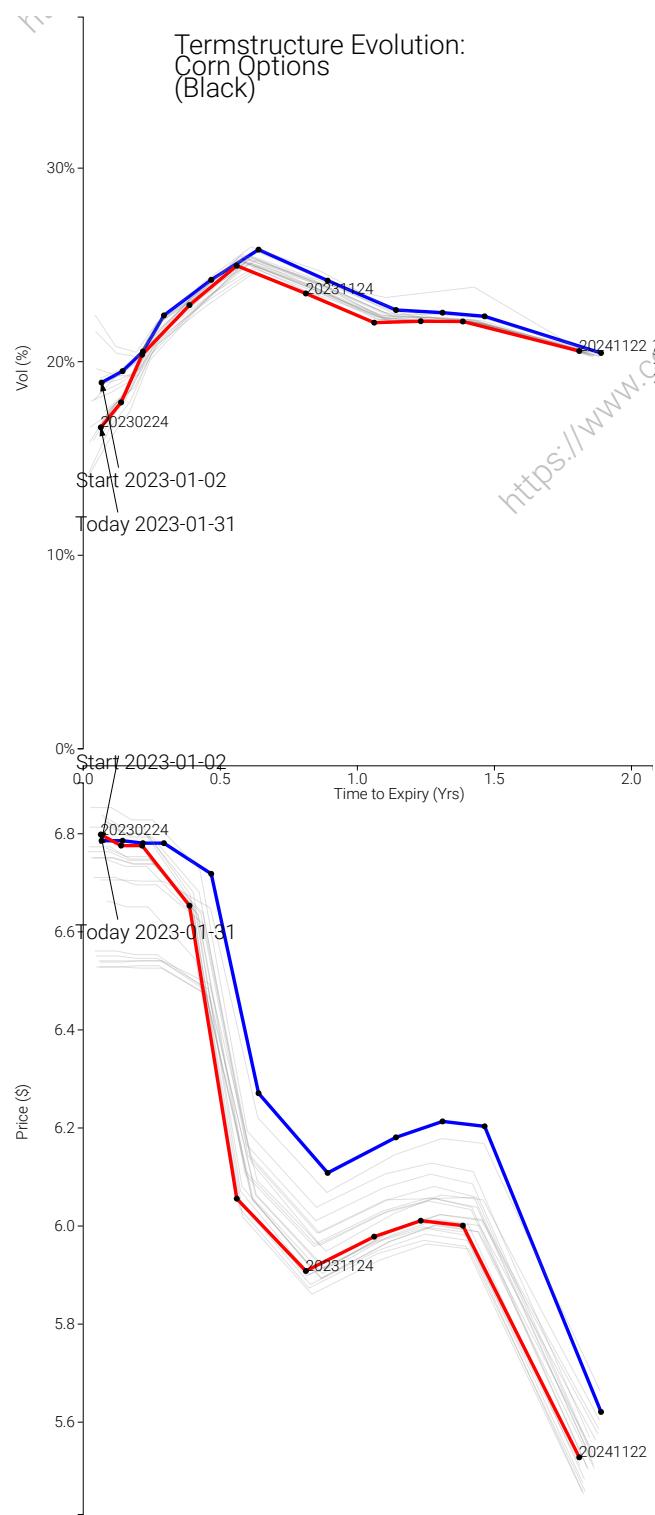


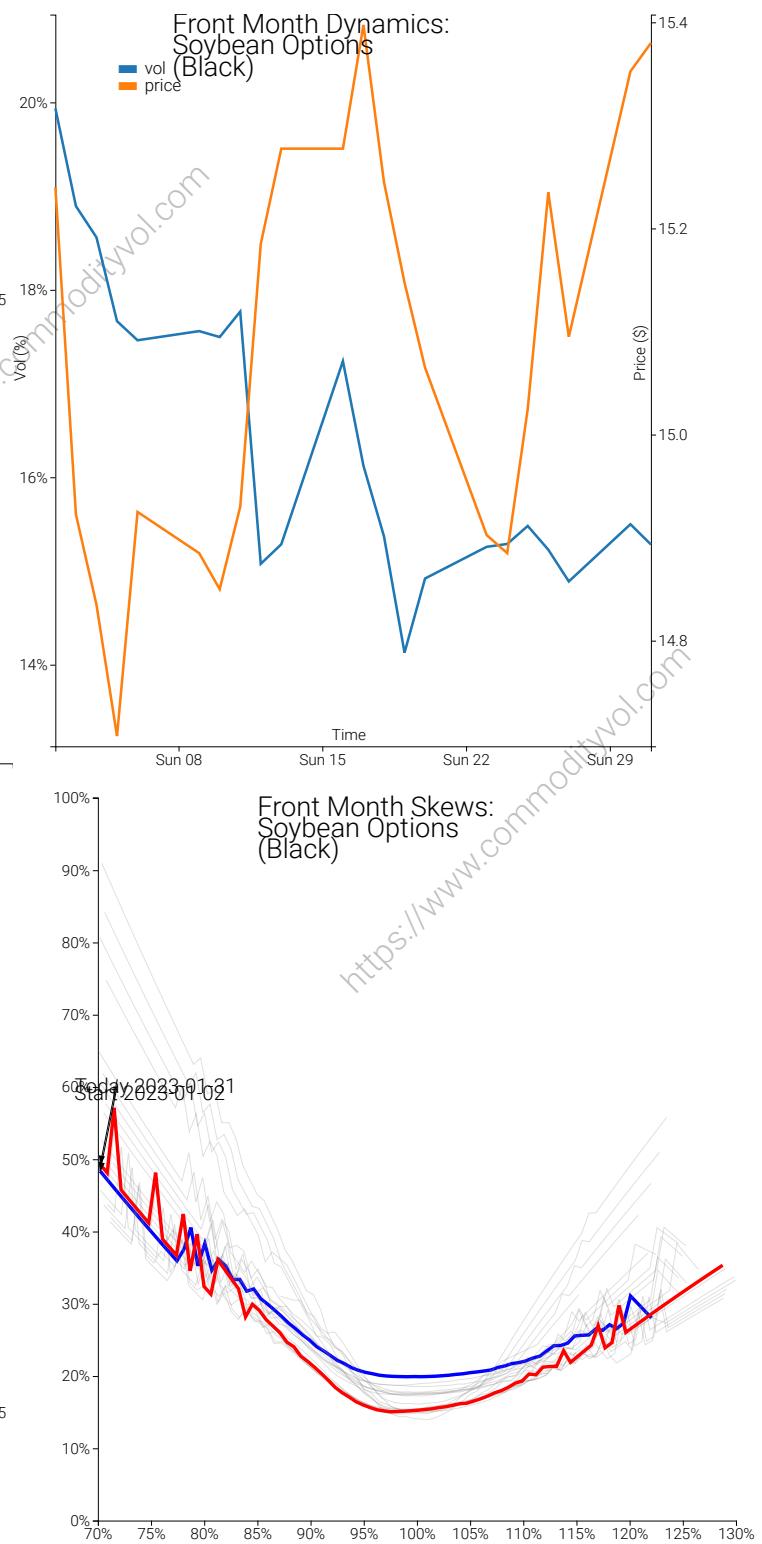
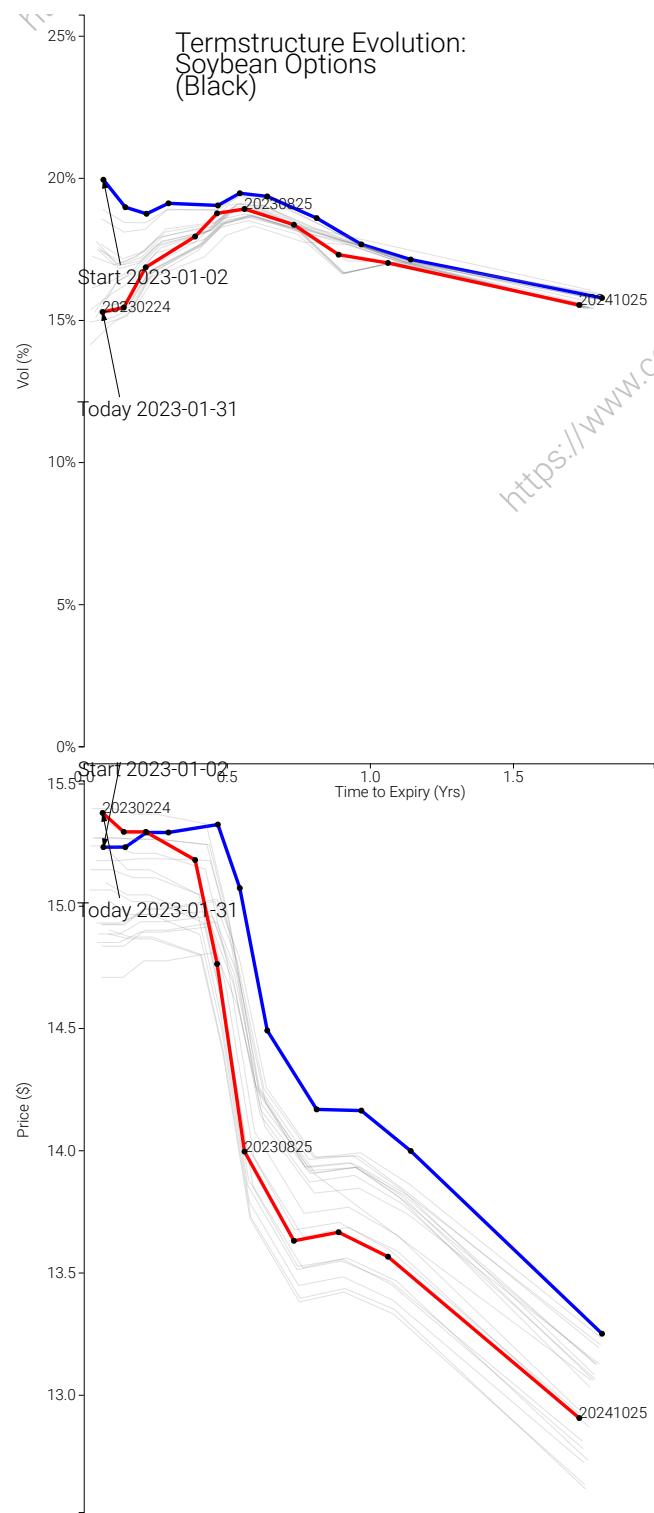


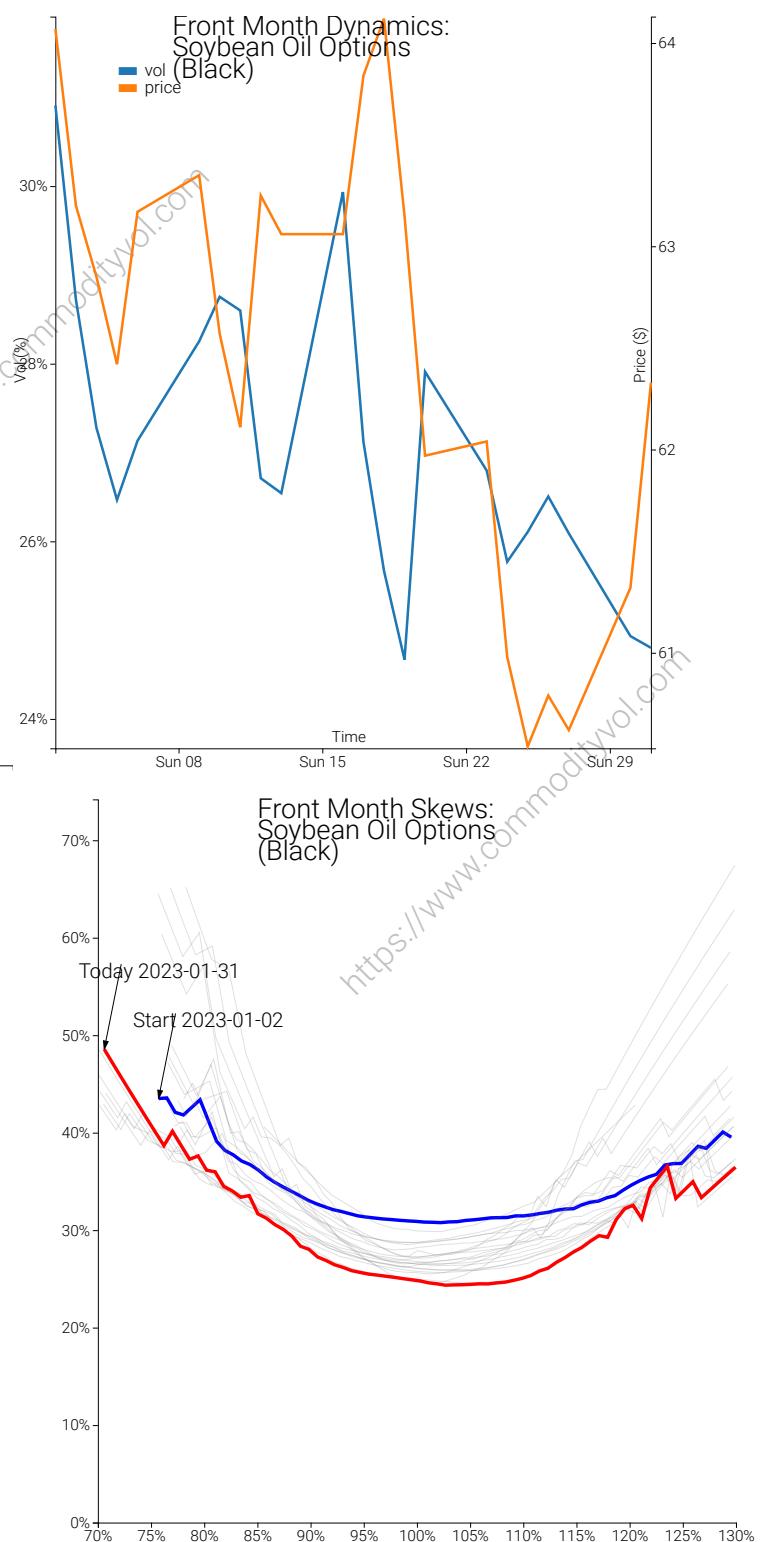
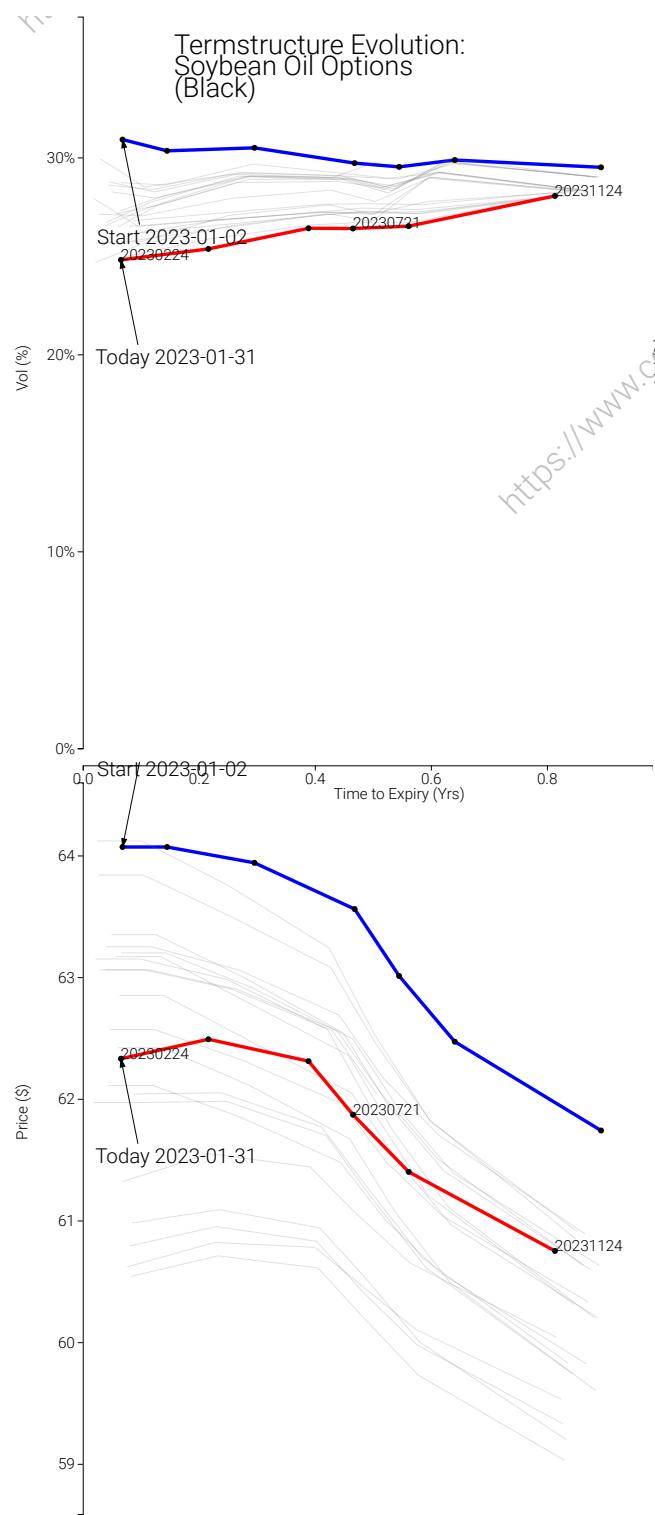


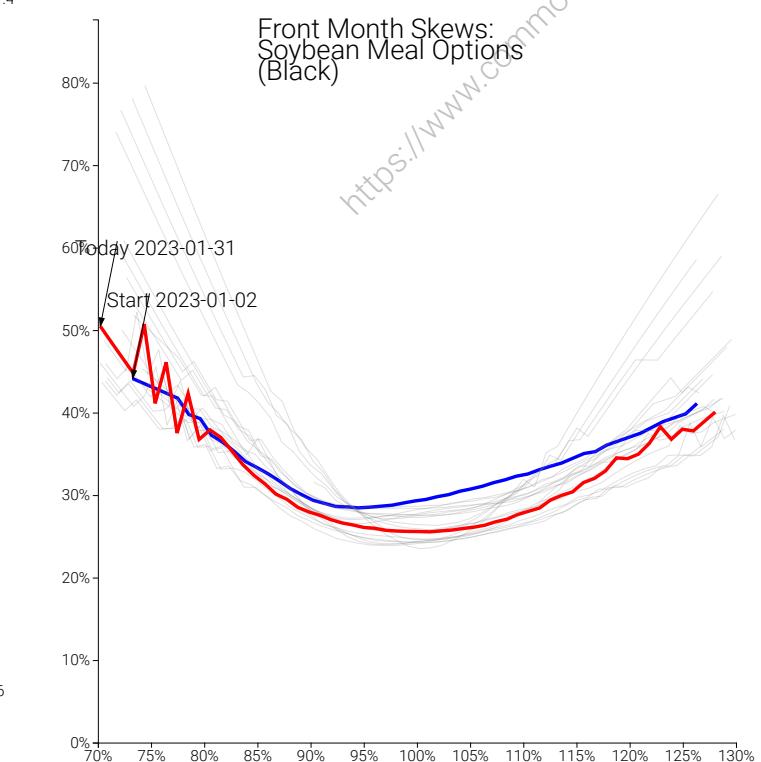
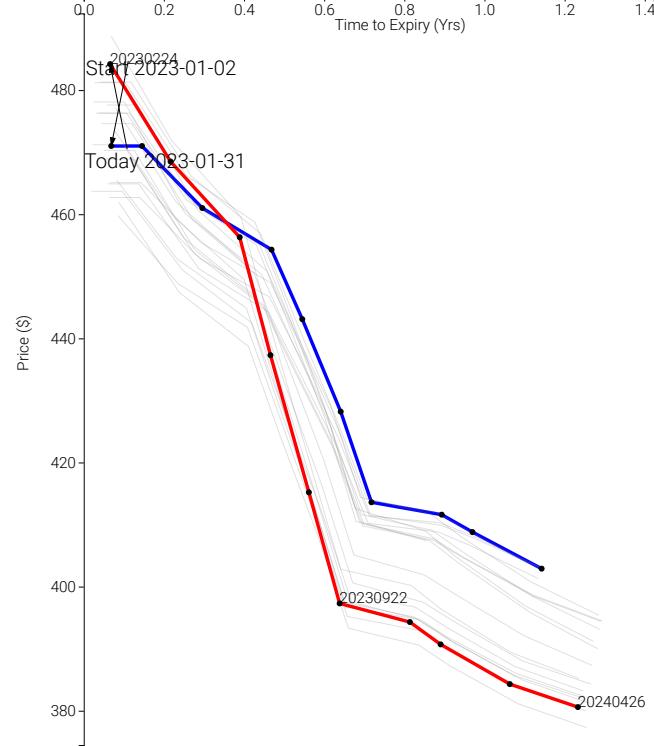
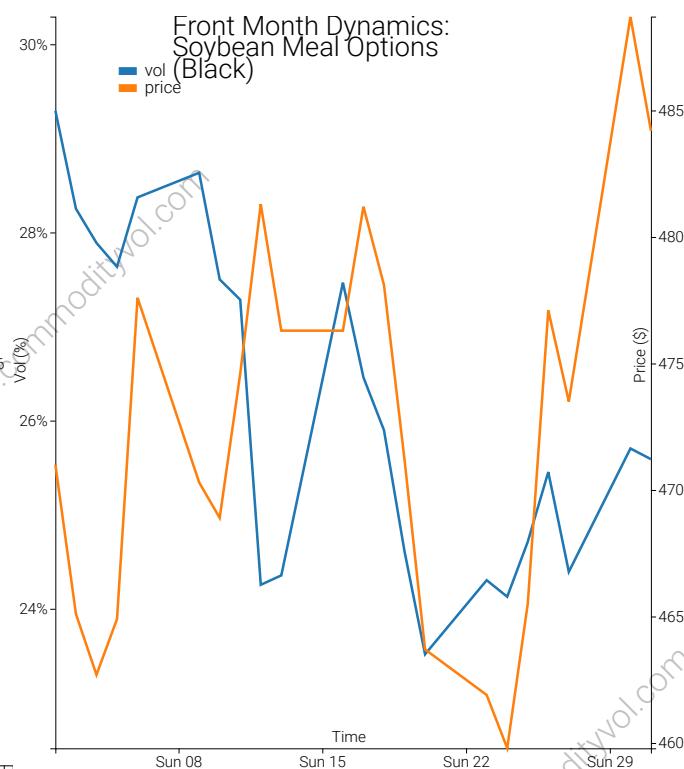
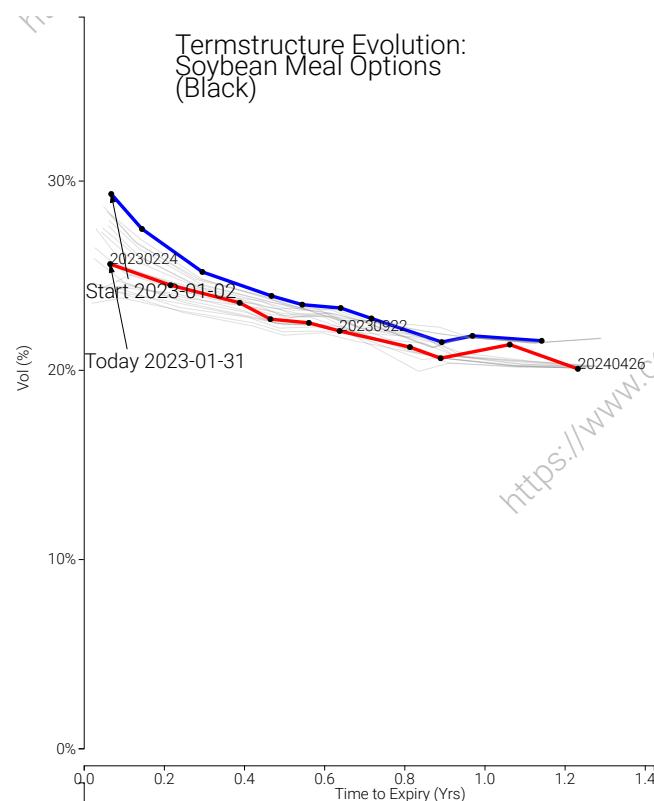


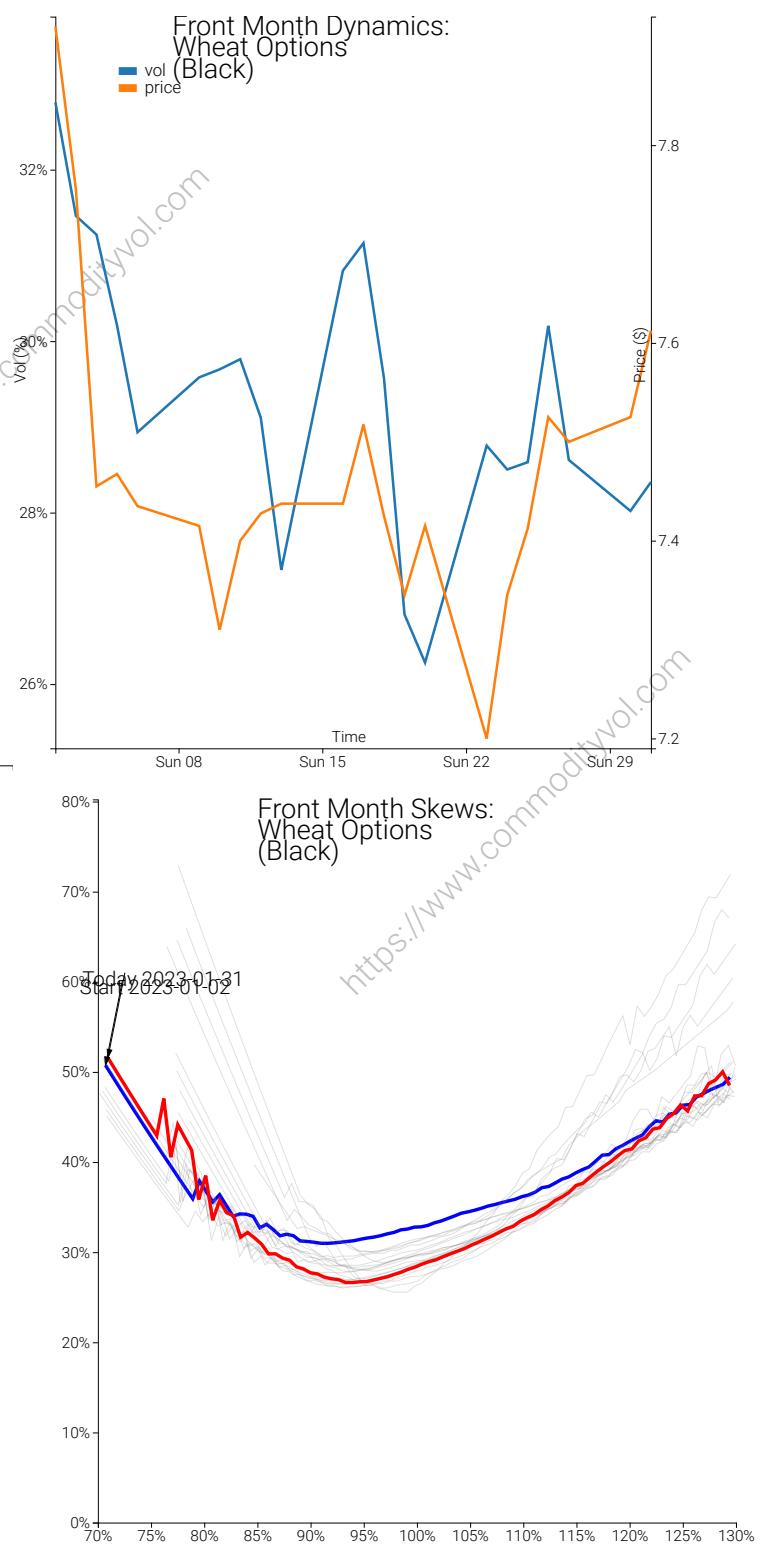
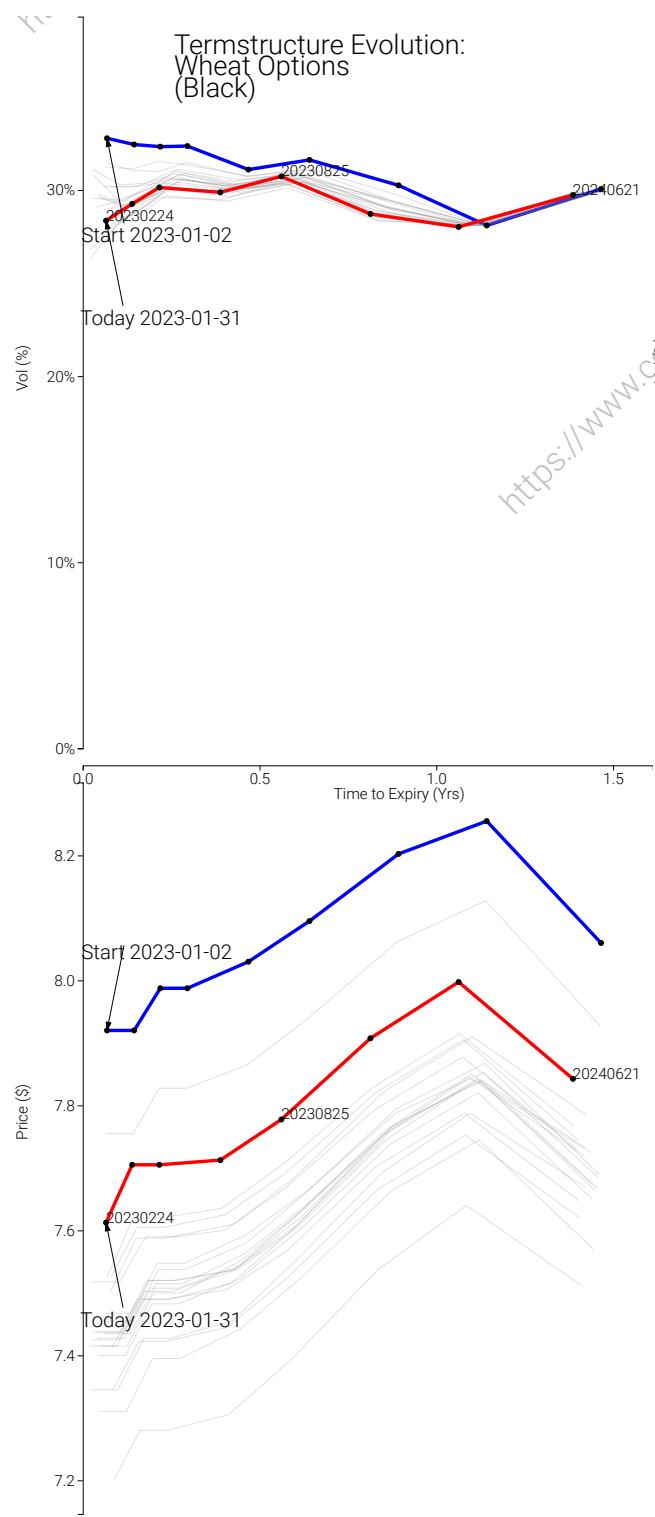
Ags: Grains, Oilseeds, and so forth

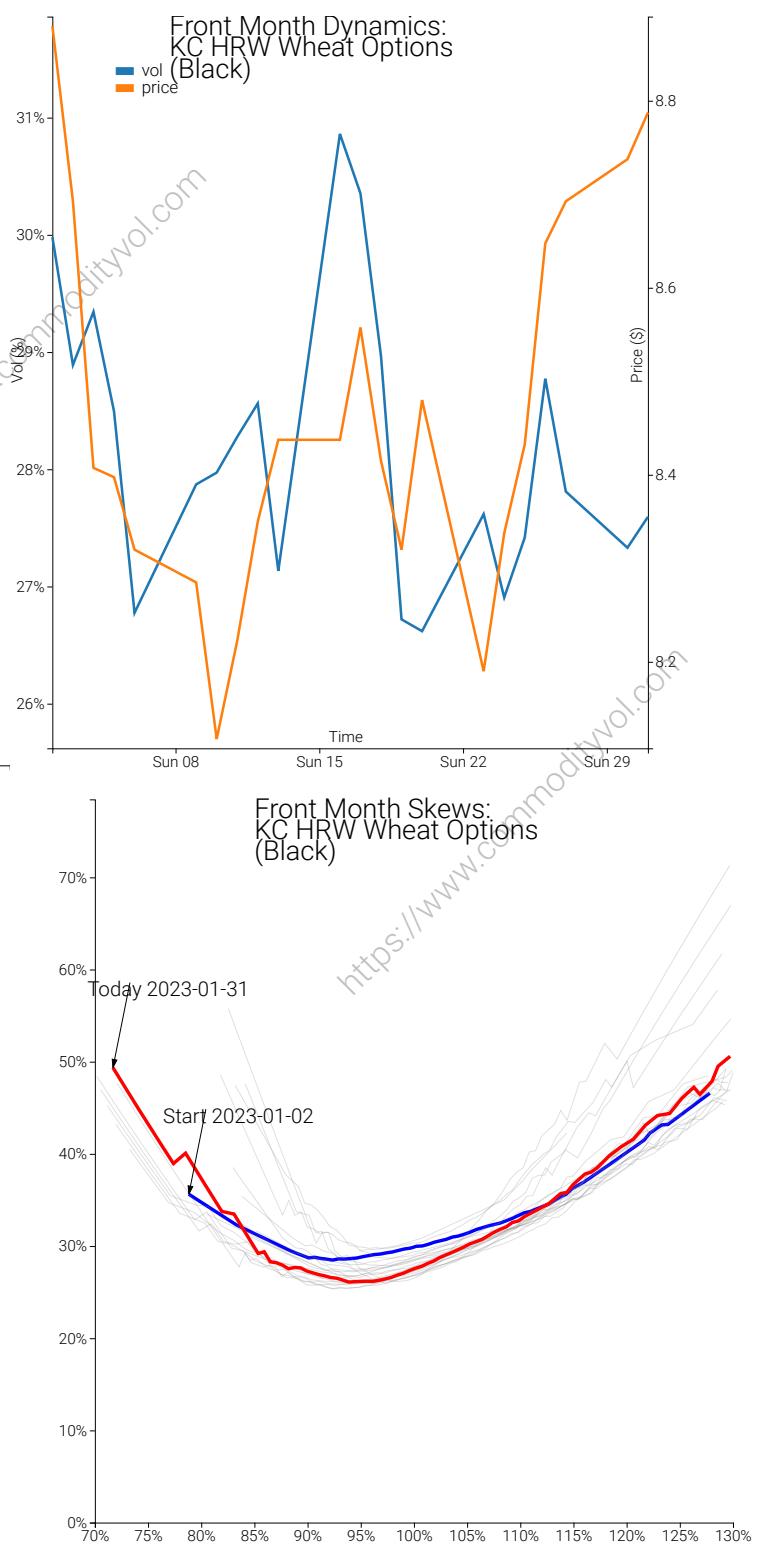
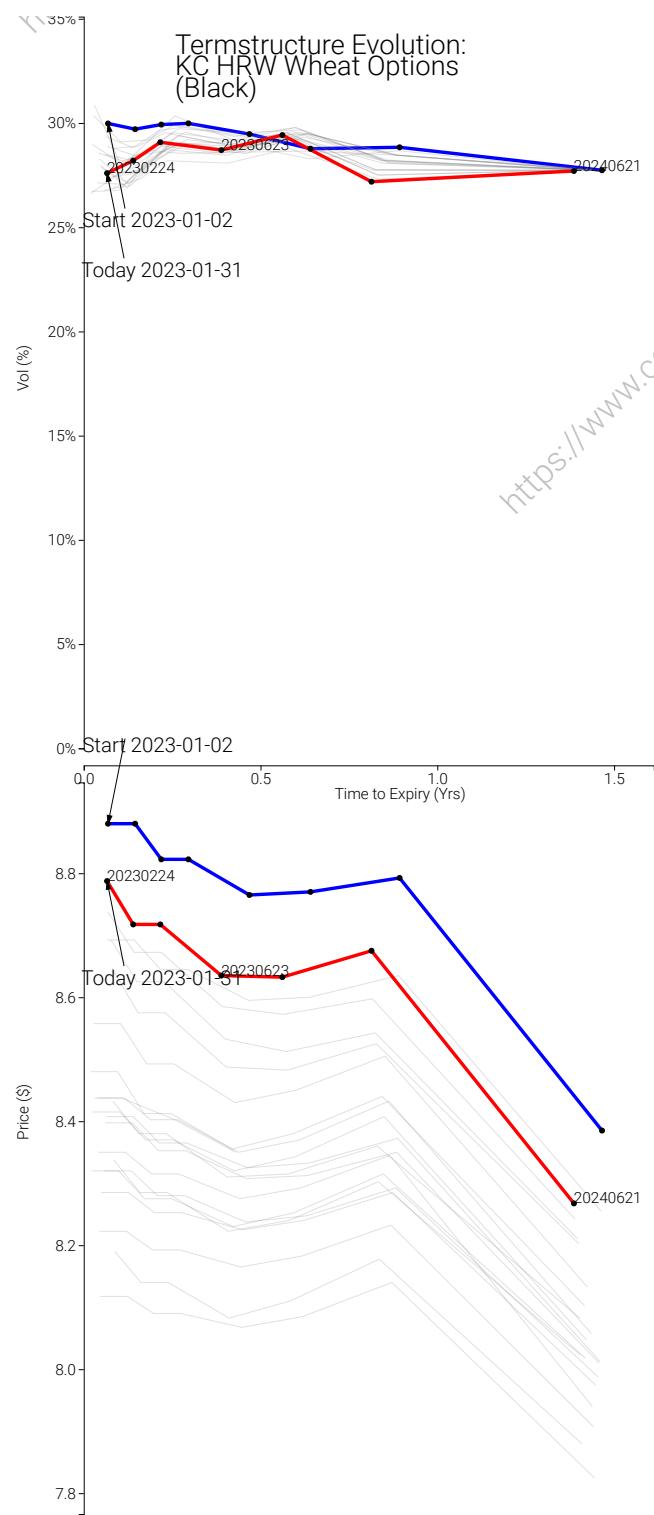


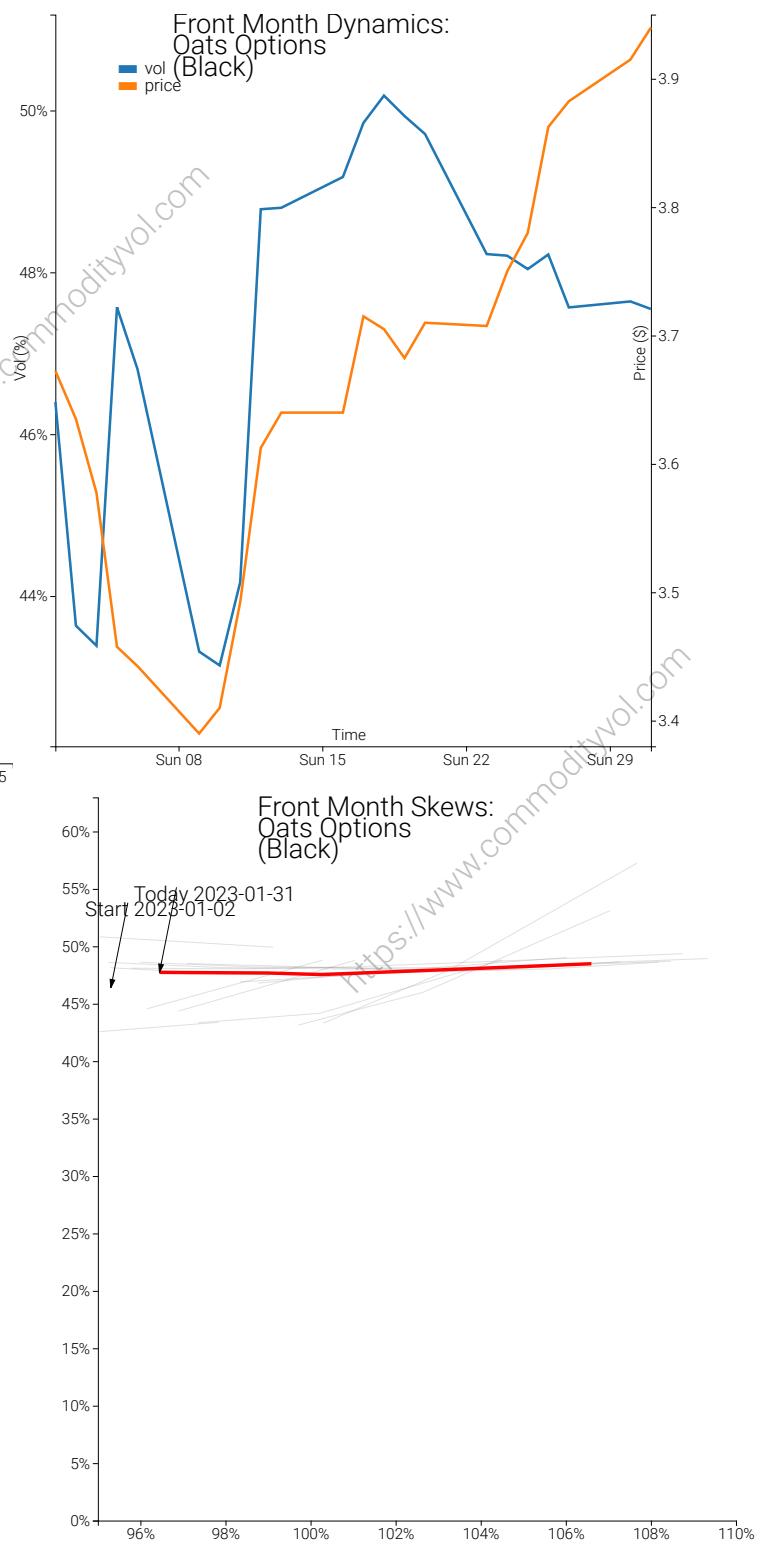
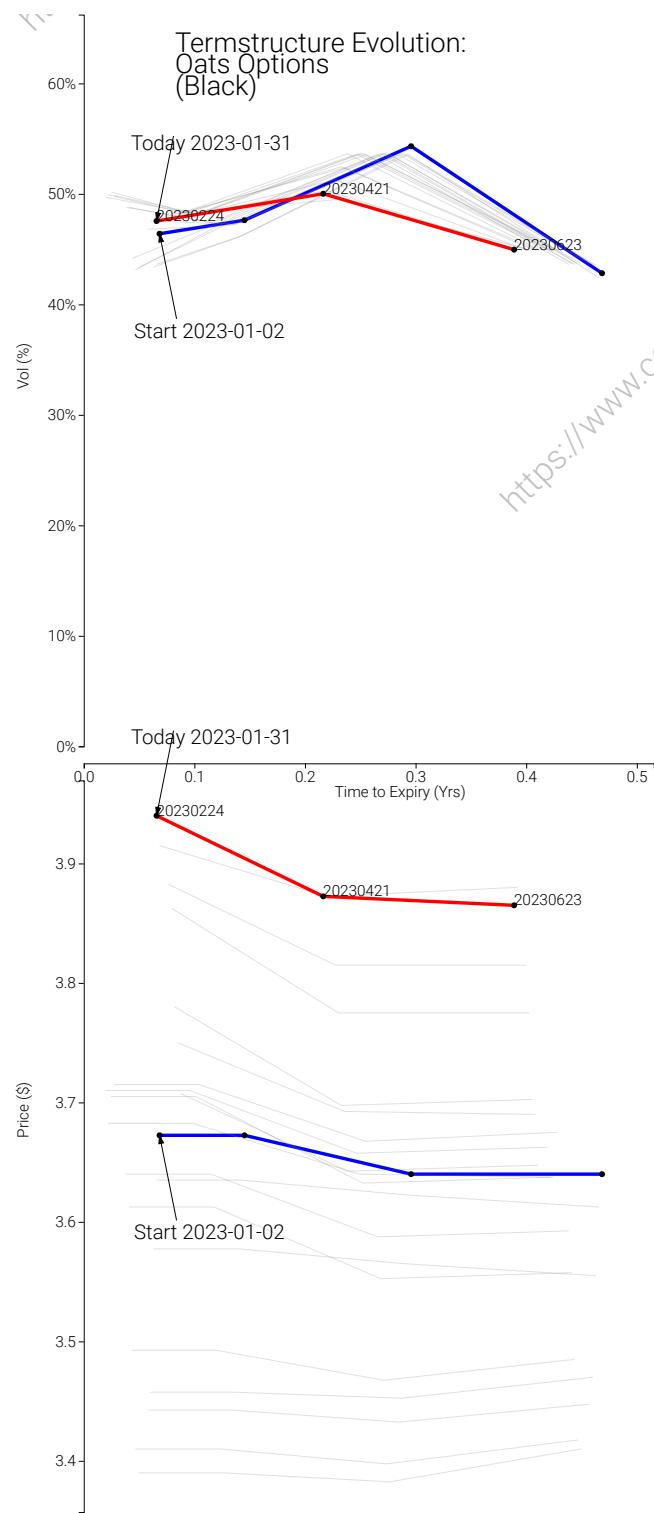


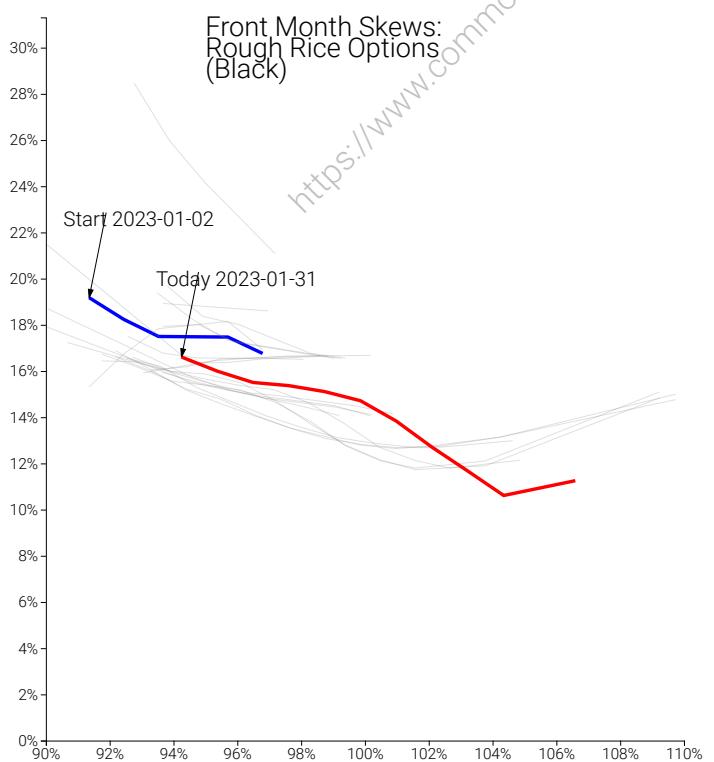
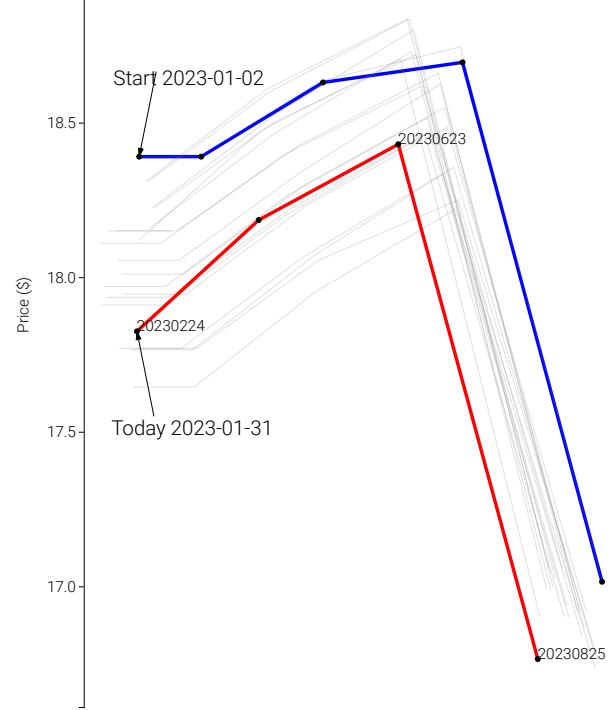
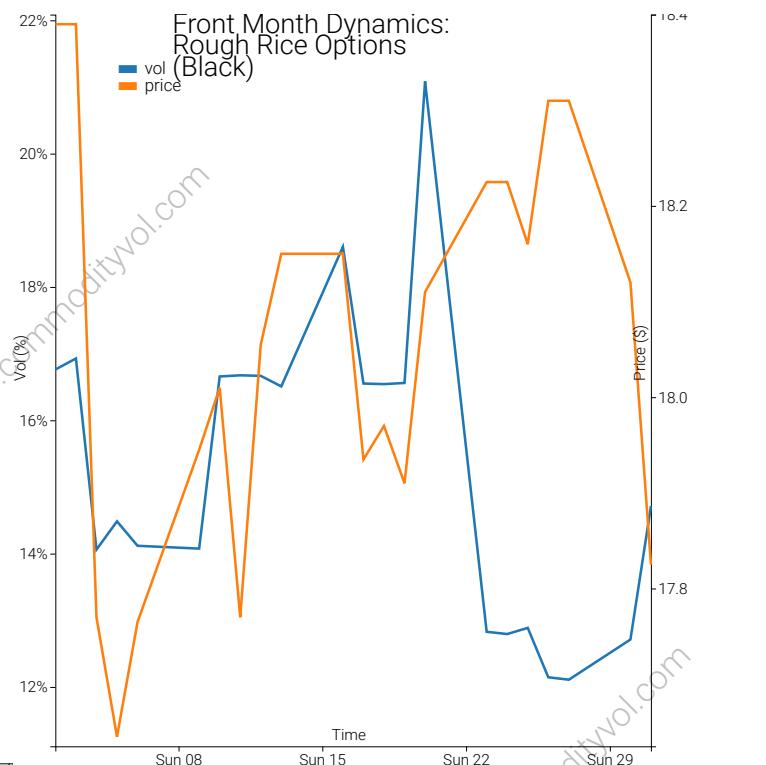
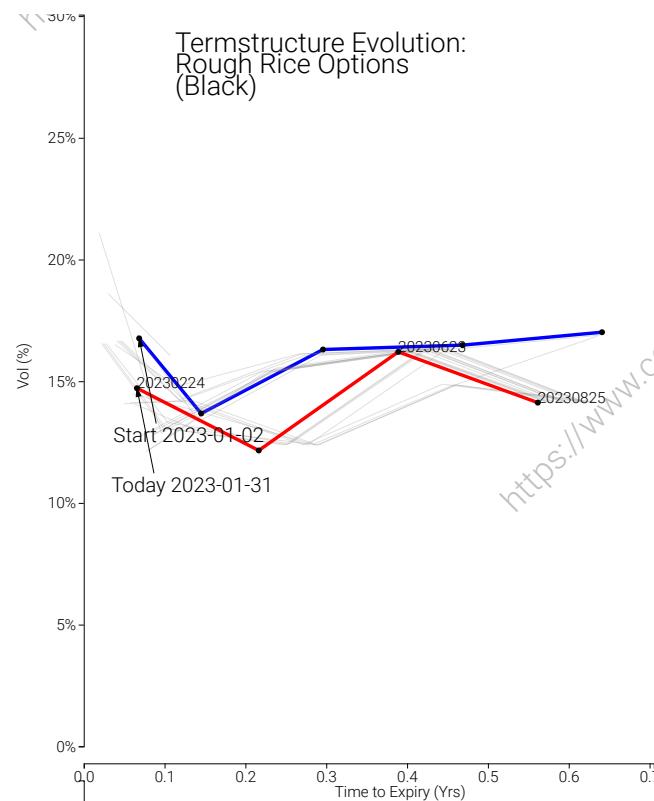


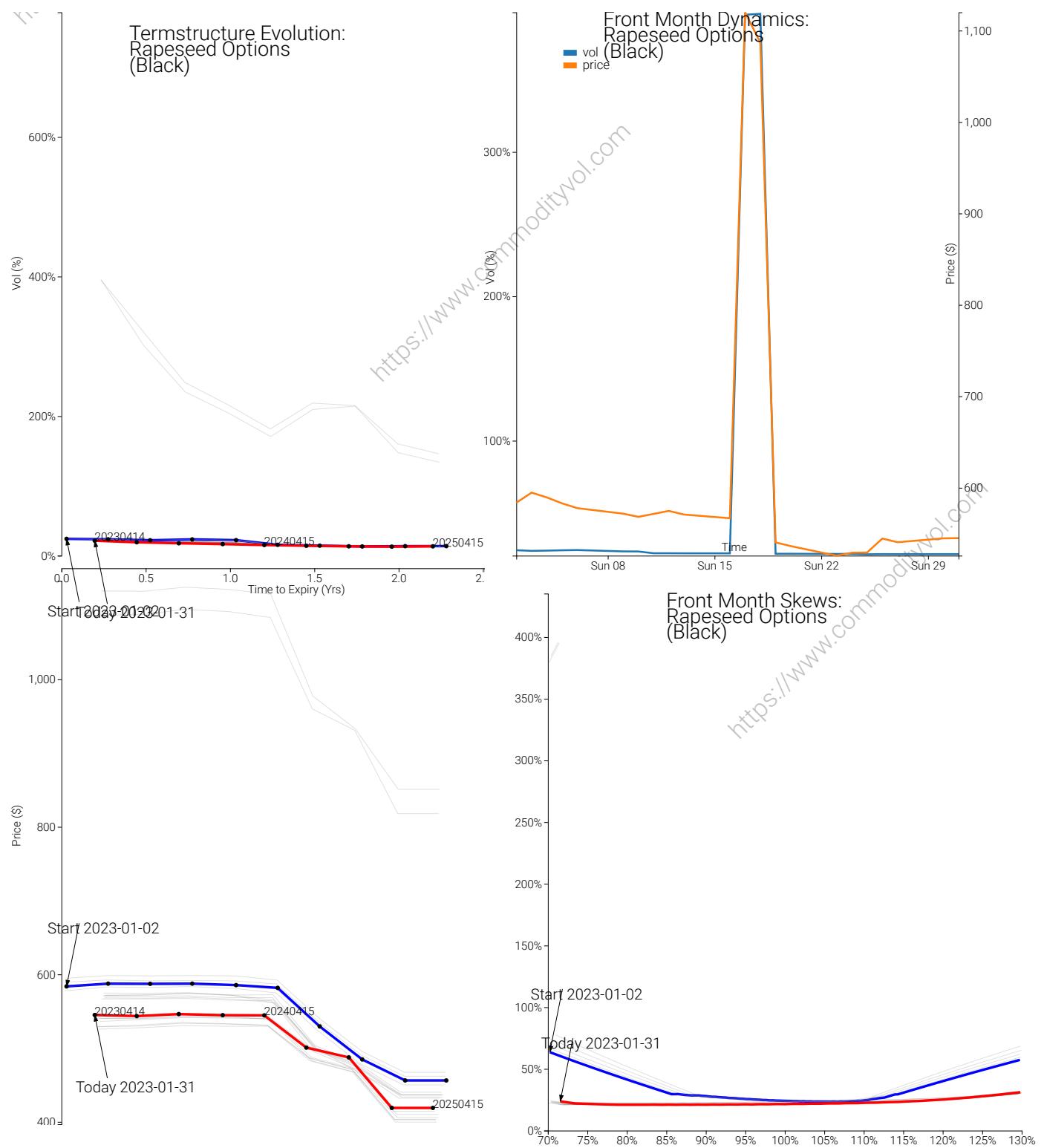




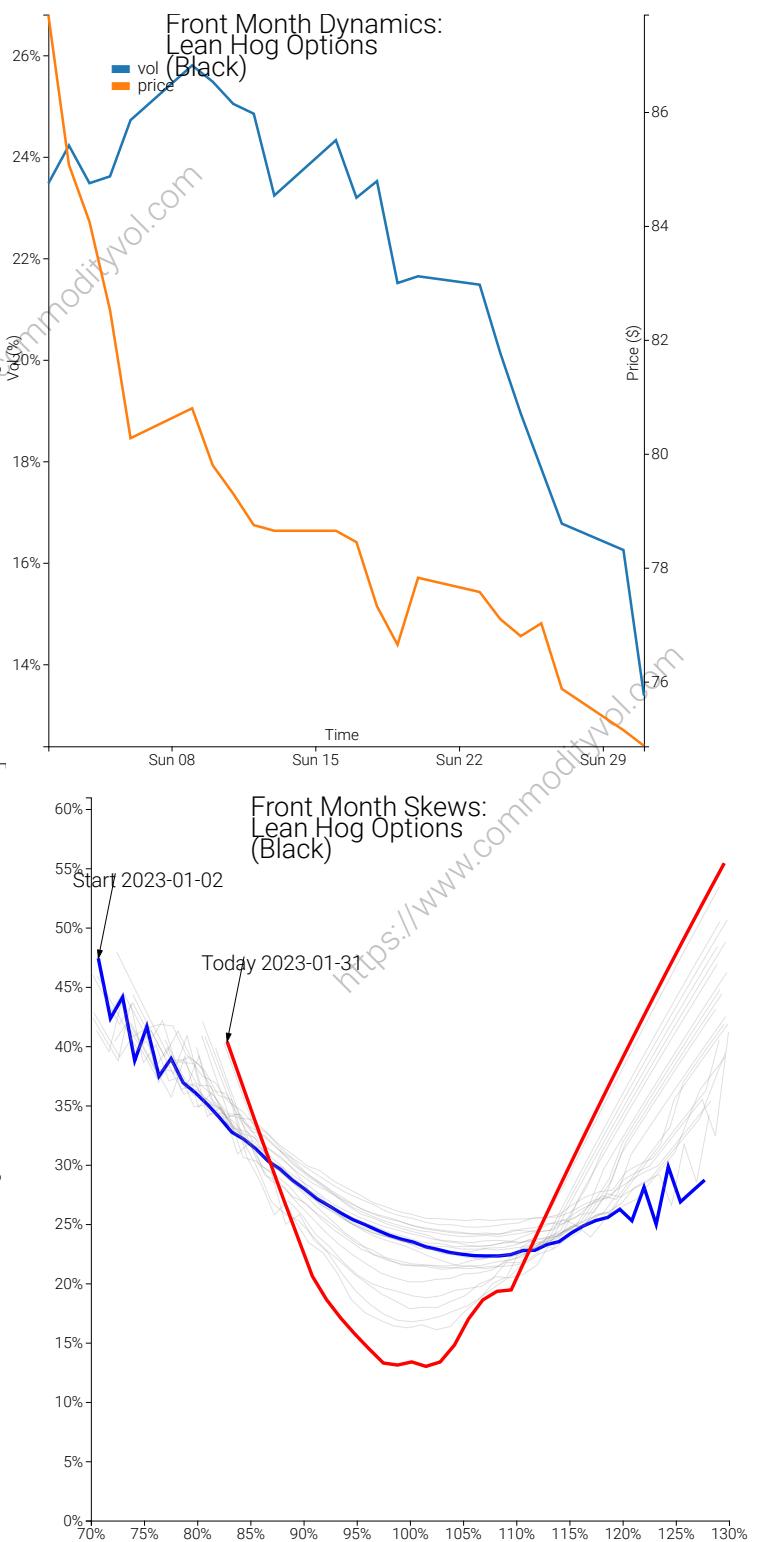
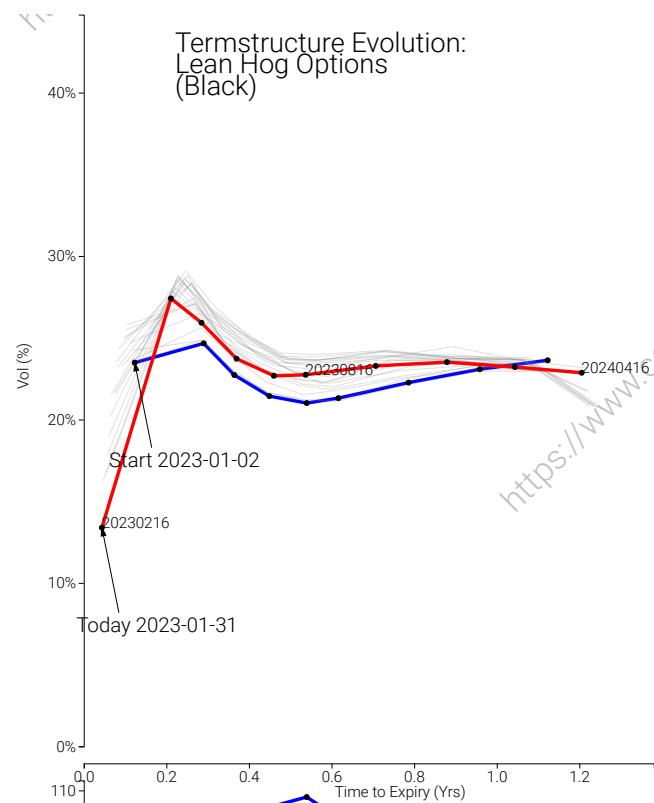


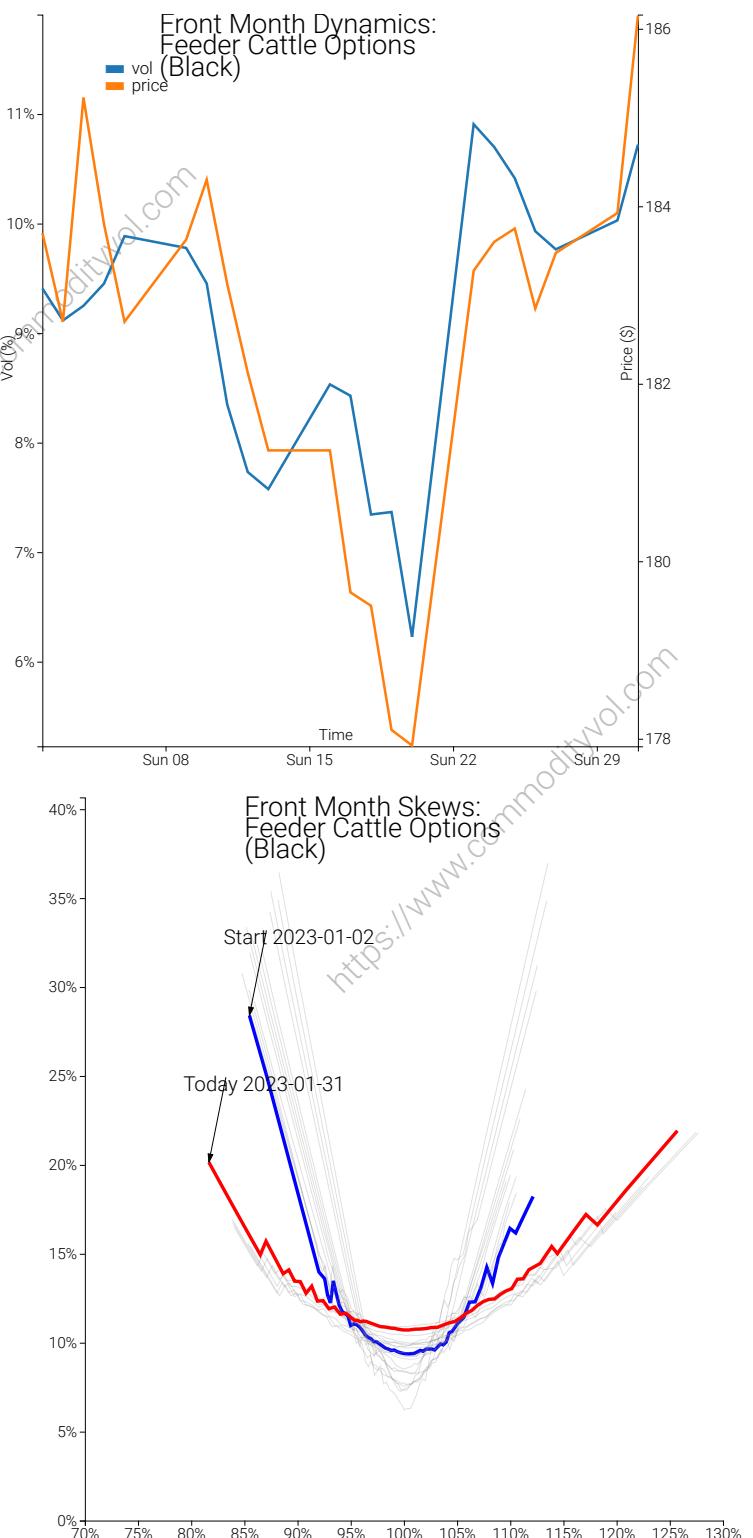
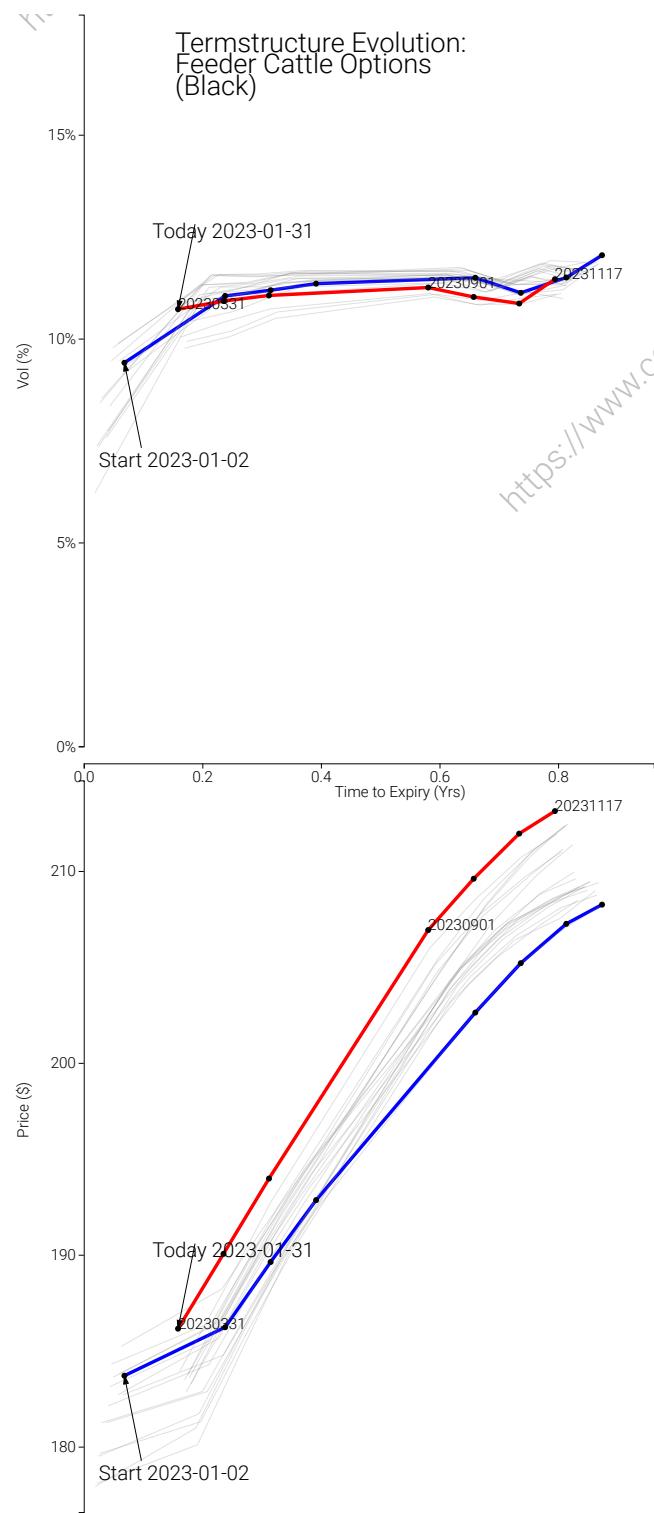


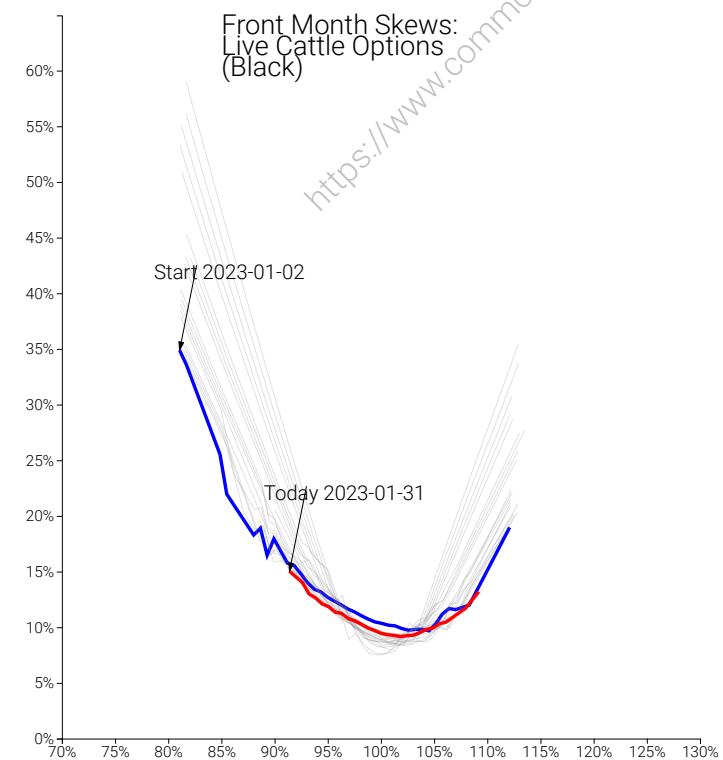
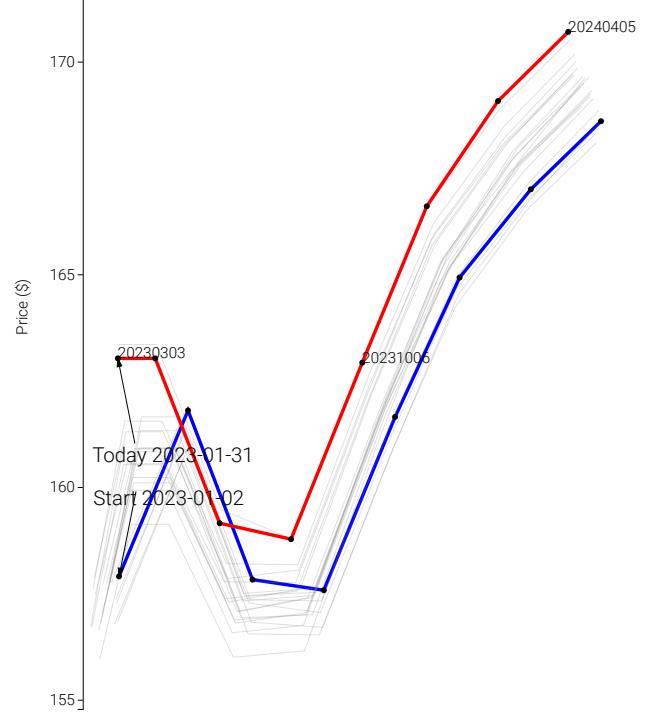
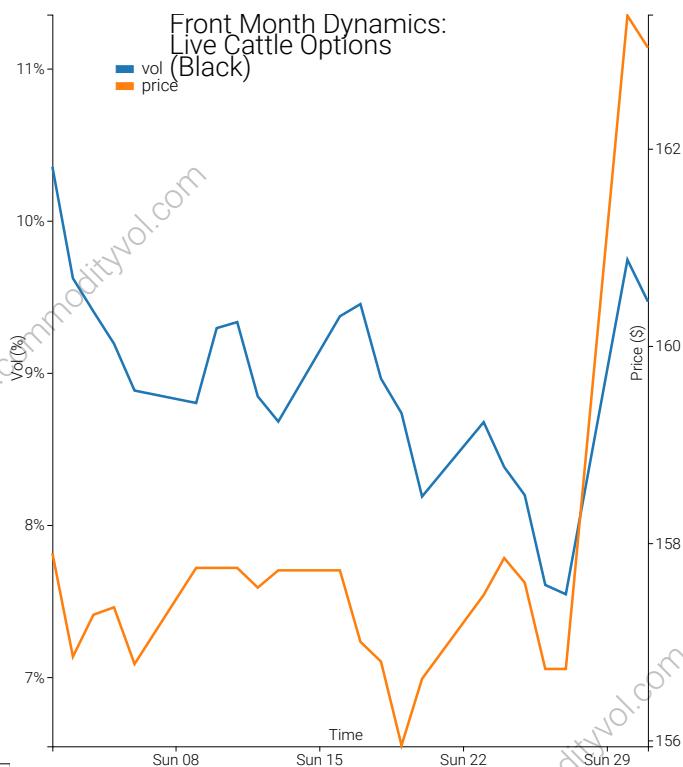
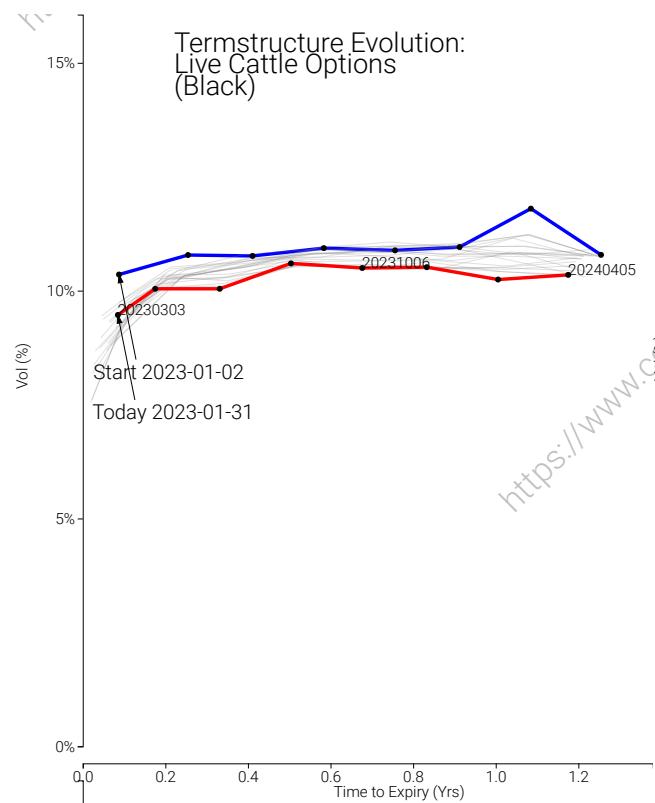


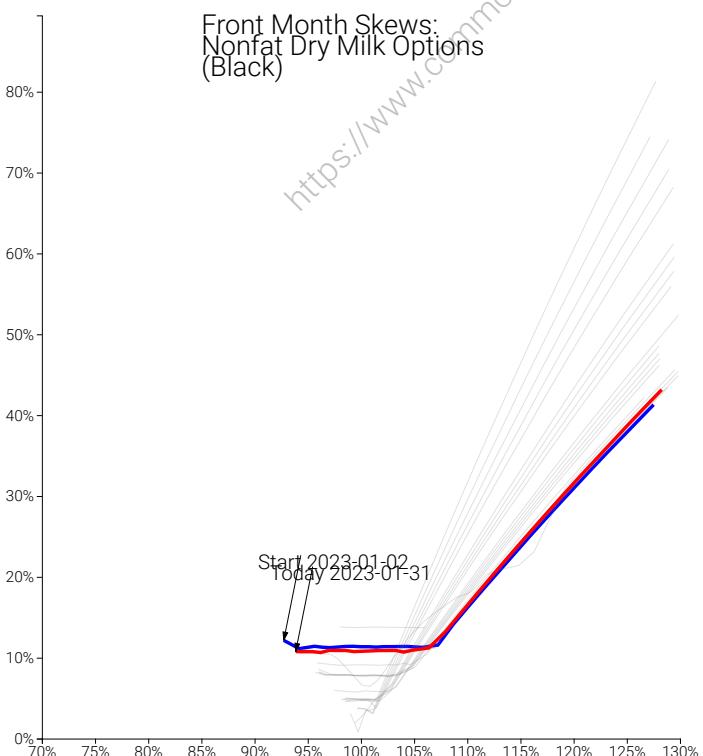
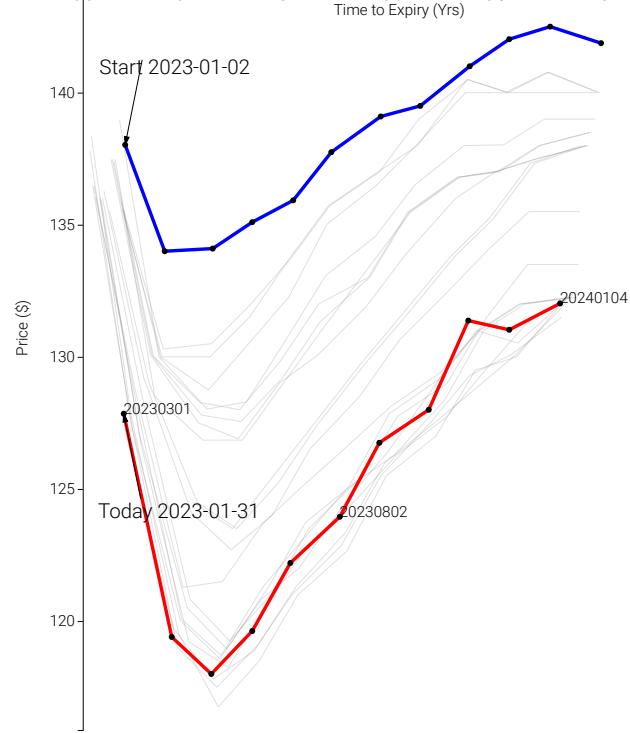
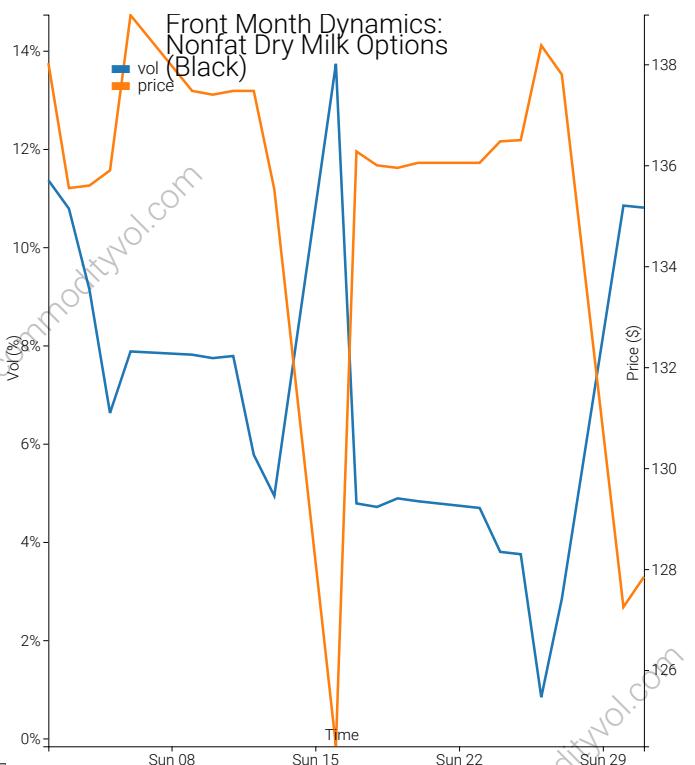
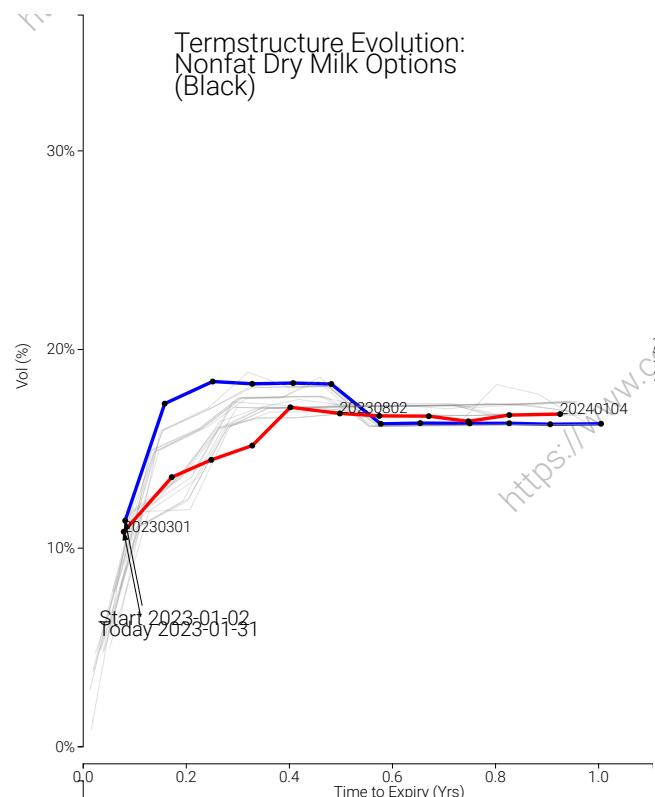


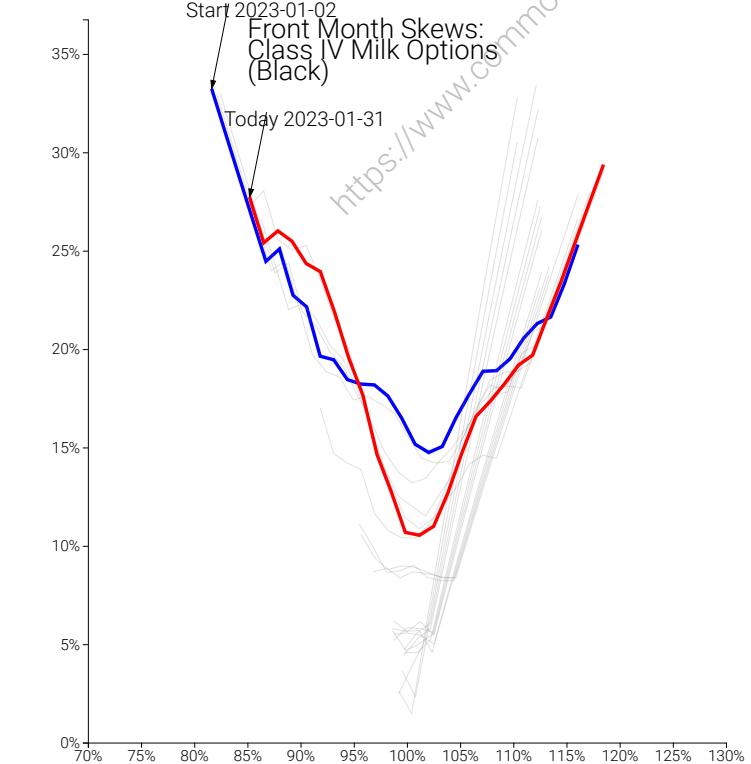
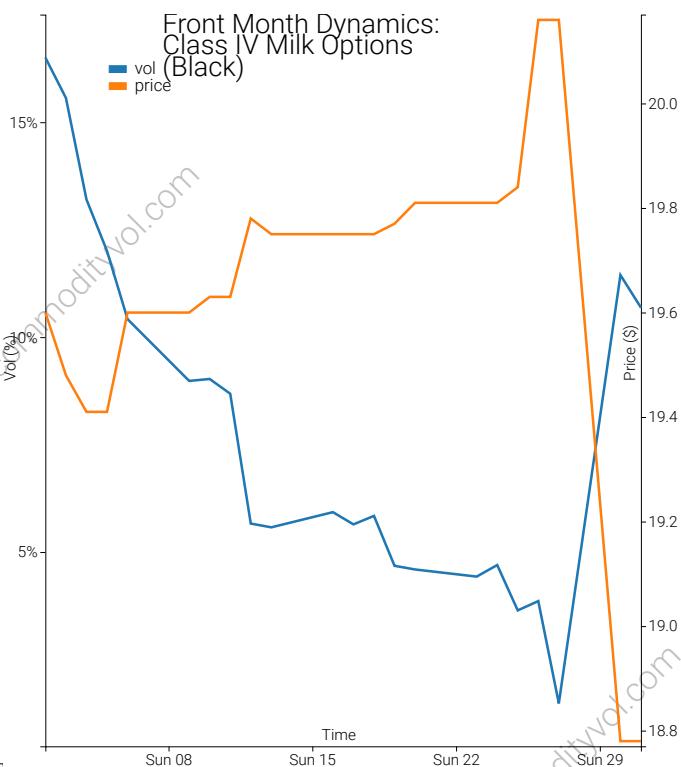
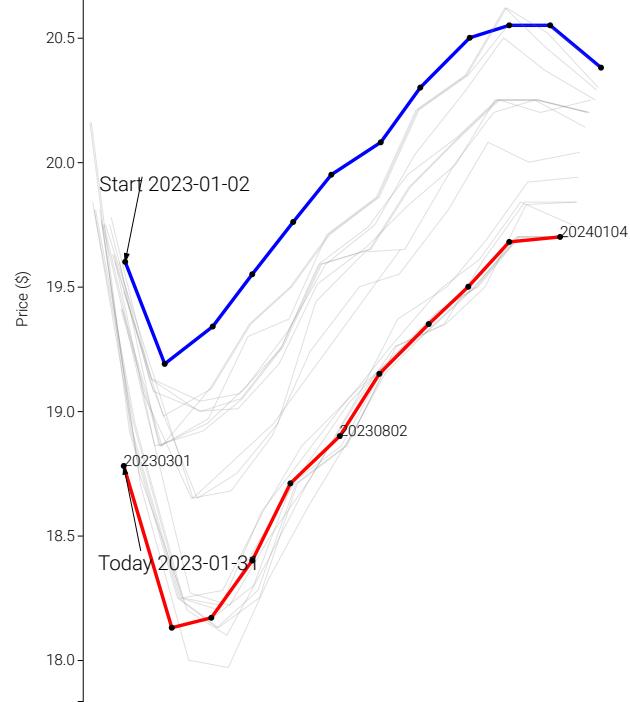
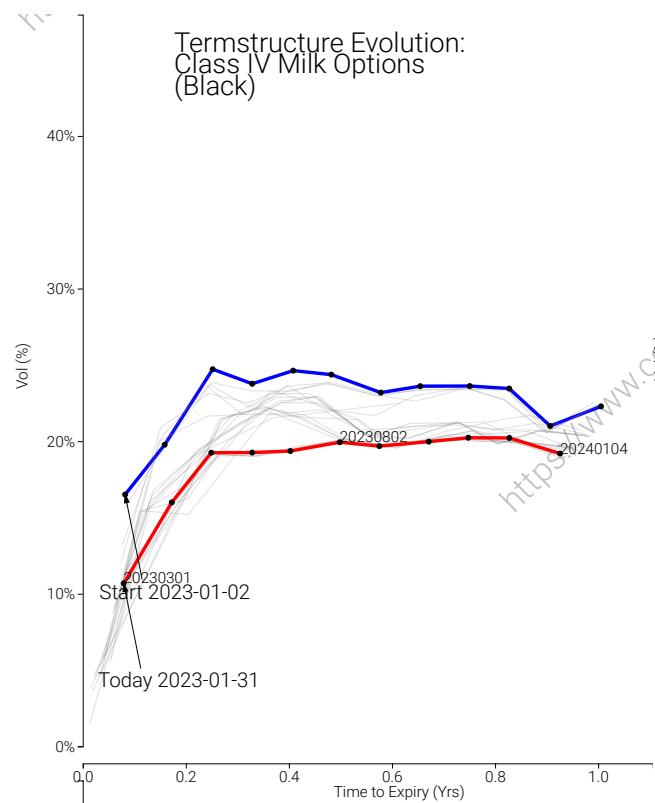
Ags: Proteins, Meats and so forth









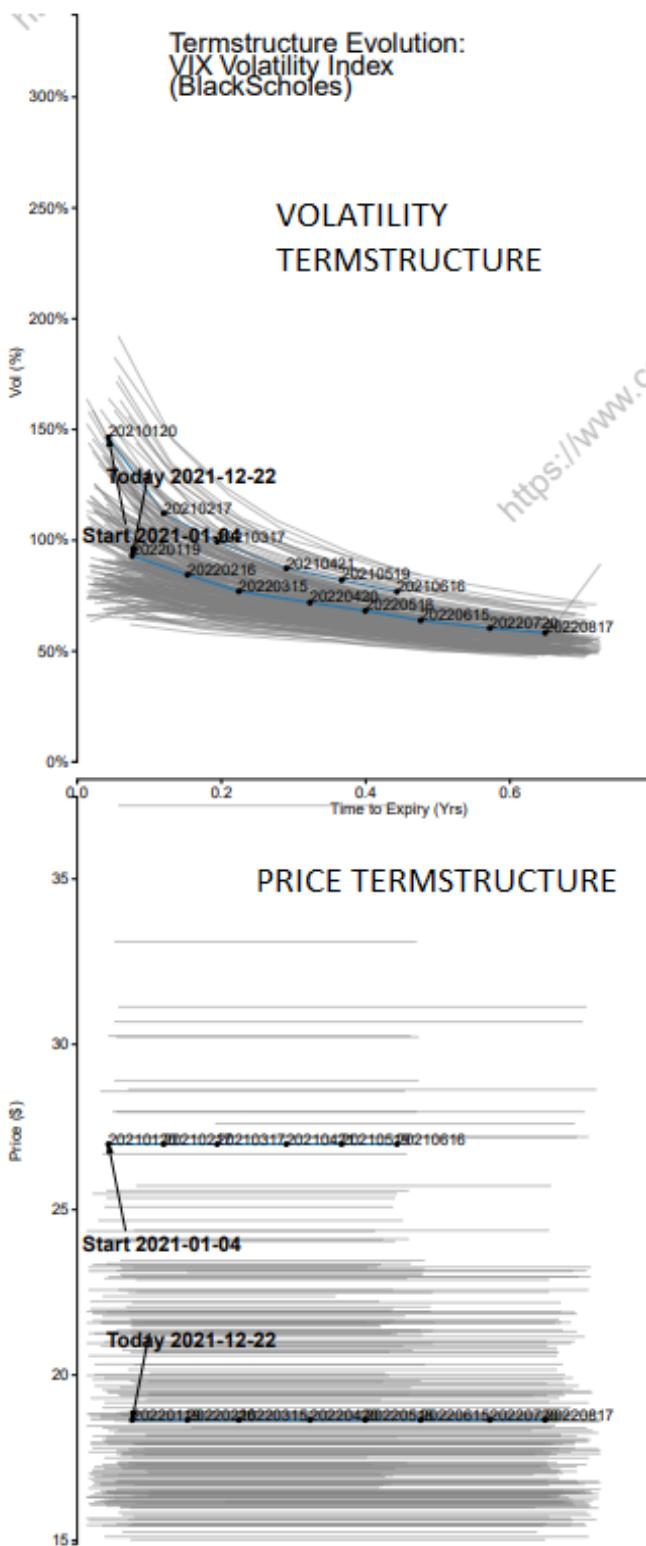


Explanation:

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:

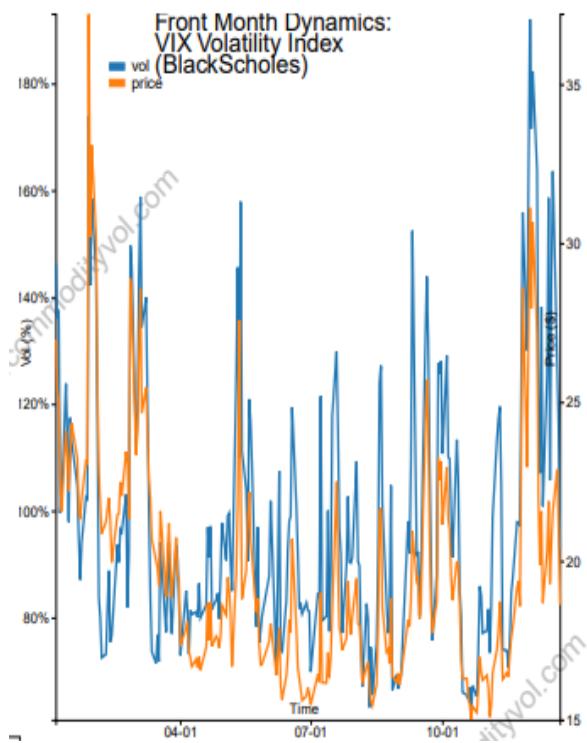
Stacked on top of the other on the left hand side, see the termstructures of vol and the (underlying) futures contract price.



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:

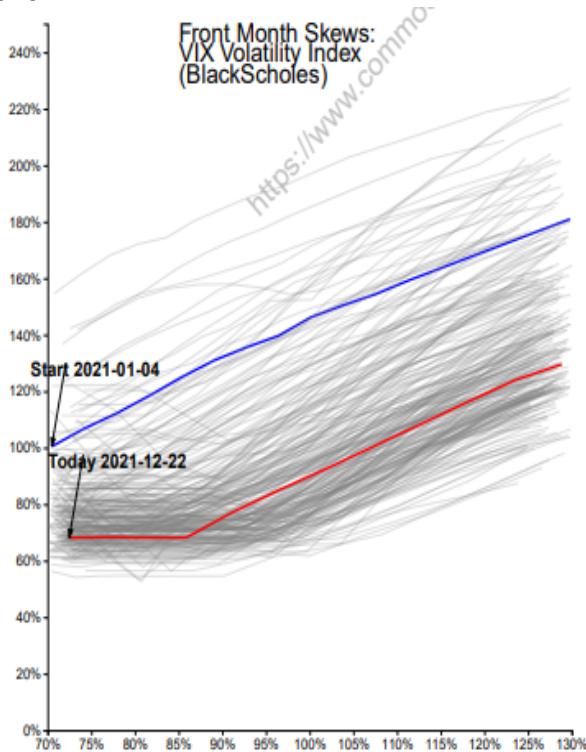
On the right hand panel we have the price and implied volatility of the front month contract.



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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