



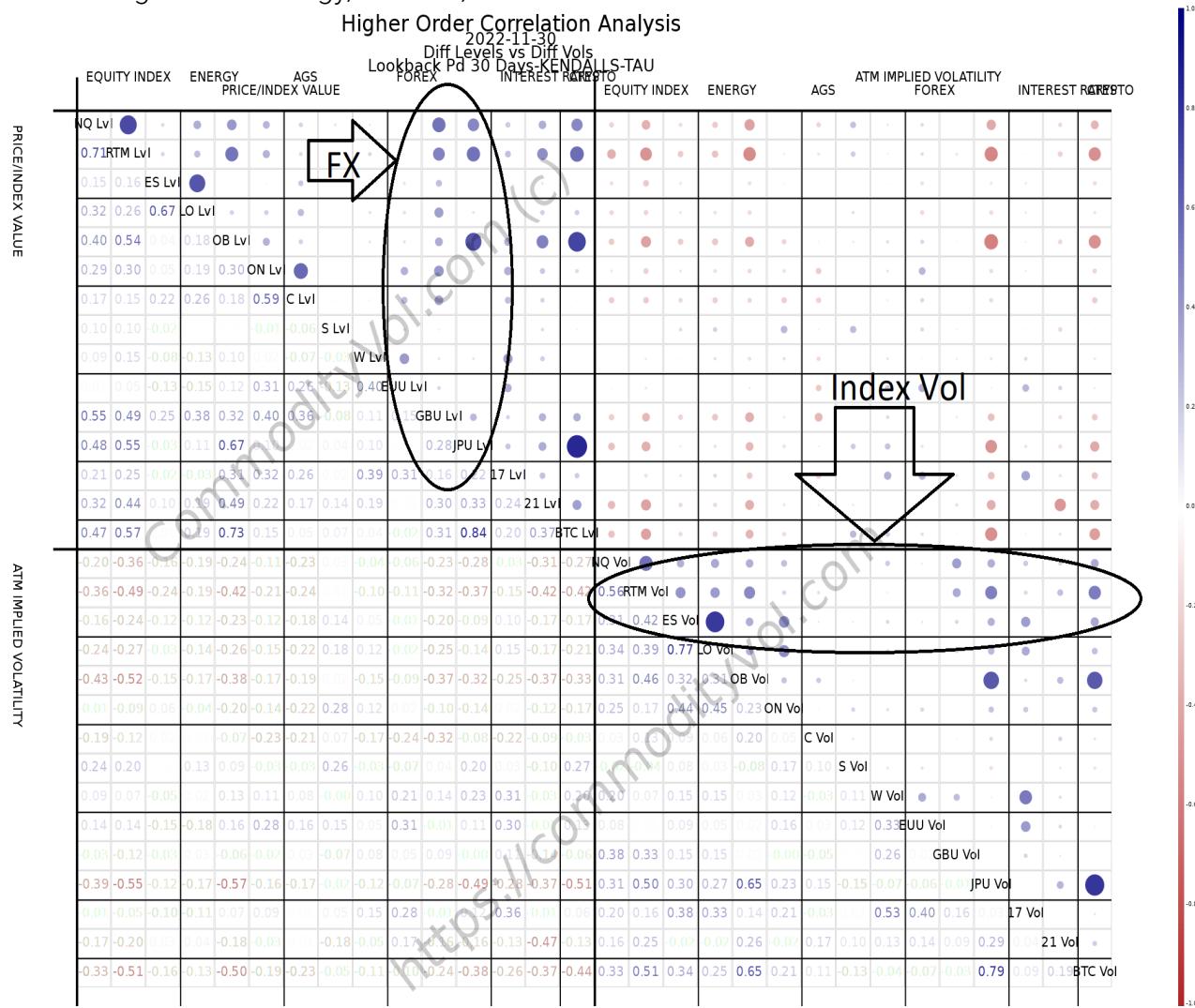
Welcome to our November 2022 Recap:

We are pleased to welcome you to our November 2022 month end report.

November came and left like a lamb. It was not the spoiler month that it occasionally masquerades as. The picture is one of moderation. Rates have moderated slightly. The FED comments yesterday gave the bullish parts of the population a reason to rejoice. The Chairman's statement that a reduction in the rate of discount rate increases was greeted by a rally in major equity and fixed income markets. Our view has been that generally the easy credit regime has persisted throughout this tightening. The discount rate changes are (relatively) minor adjustments. The 8.5 Trillion Dollar question is the disposition of the FED balance sheet. That number has only reduced modestly in the last few months. The easy money of the last 15 years gave us many gifts, but perhaps the most exciting is the crypto phenomenon. The very quiet implosion of FTX along with several other exchanges has so far caused very little real impact. The headline number of 30 Billion dollars seems to have disappeared without major fanfare or margin calls. Color us confused and thunderstruck. The 2007-2008 debacle was catalyzed by the failure of a pair of Bear Stearns funds, which totaled less than 2 Billion USD. While inflation is hot, we are skeptical that it is hot enough to make up that difference. At the very least the riches that crypto created were catalysts for luxury goods and real estate. It will be interesting to see what happens to those sectors as the unwinds ripple through.

Inflation seems to have moderated in some aspects of the real economy. There is, however, a developed theory of 'Hysteresis' in inflation theory, which posits that high levels of inflation induce higher demands for inflation protection among different actors in the economy. As these demands ripple through the economy, the final effect of a commodity or supply shock can be magnified many folds. We may be through the post COVID supply shocks, but the shock of visibly high inflation is just beginning to work itself through the system. For almost a generation people have taken the Goldilocks economy of low rates, low inflation, and low unemployment as the norm, not the aberration it is. As this bubble is burst, firms will have no choice but to build in some slop in their prices to insure against future price level increases. Labor will also begin to adjust their demands to guard against reduction in real wages. People are rightly worried about the potential rail workers strike. It could be the beginning of a widespread demand for higher wages in the face of real and expected inflation. The weather has also played a role in keeping energy prices down, but that might change in the next few days as major cold fronts are forecast for the US and Europe. It is folly to believe that the energy sanctions, disruptions in grain and fertilizer from Russia and the Ukraine, and spending on armaments will have no effect on shortages and general price levels.

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 high correlation to indexes and energy. Perhaps that hints at the connection we are seeing between the financial economy and the real economy. If we look at the correlations in changes in vol, we see something similar. Energy, Indexes, and FX vol seem to be linked.



As in previous letters we now comment on the action in different market segments.

Futures recovered this month, in line with the previous discussion. The rise in futures seems to be related to the duration of the underlying product. The Ultrabond futures rebounded the most, with Eurodollars the least. Vol was offered, continuing from last month.

Interest Rates ATM

30 Year Bond Detail

10 Year Note Detail

Ultrabond

The US Dollar was down across the board versus other currencies. This is not terribly surprising. The US Dollar has been incredibly strong for most of the year. The drumbeat of the Russo-Ukrainian-NATO war seems to have joined the drumbeat of everyday news and has lost the sensationalist appeal of the previous months. The ameliorative effect of mild weather is also another reason for this. It will be interesting to see what effect a cold snap has on the Pound and Euro. Vol was down in both those currencies. The Yen's levitating continues, but vol is rising. In general, vol was up for most of the currencies. Crypto was a different story. Ethereum futures were down 18% and Bitcoin futures were down 16%. Oddly, vol increased for Bitcoin but not Ethereum.

[Foreign Exchange ATM](#)

[Yen Detail](#)

[Bitcoin Detail](#)

[Ethereum Detail](#)

Neither high consumer prices, higher rates, crypto implosion, or looming job actions in rail could dissuade equity markets from a rally. The rally was a little more muted than October's rally, but it continues to be broad based. Vol came off dramatically in all of the markets. Just as in last month's rally, VIX was decimated. It was down by a greater margin than the SP vol. This would suggest wings have gotten more flat in the SP500 curves. It isn't clear what is driving this phenomenon.

[EquityIndex ATM](#)

[SP500 Detail](#)

[VIX Detail](#)

Natural gas rocketed up, vol was down small. A lot of the activity in the energy sector can be summarized as a form of 'Waiting on Godot'. Natural gas is waiting on the situation with Freeport. If the LNG export terminal comes online, the bullishness in Natty Gas will continue. Furthermore, there is a wait for the weather, here and in Europe. Should the weather turn frosty, it will have major effects across the board. We see futures rallying for the Korea/Japan marker as well as domestic coal. The much publicized Heating Oil and Diesel shortage has yet to manifest itself. Again, the market and consumers are waiting for the cold. Oil is also stuck in a waiting game. Vols are stuck in a tight range. Prices were down for WTI and Brent, but there is a massive overhang. First is the introduction and effect of the Russian 'Price Cap' effort. There is no doubt in this author's mind that Russian oil will make it to market and the cap will be a failure in anything but raising prices for Western consumers. However, the cap will require all sorts of machinations, which will add rigidity to the international oil market. Ultimately the consumer will pay that price. Second is the state of demand. Markets are watching the COVID lockdowns in China. There are also real concerns about economic activity domestically.

[Energy ATM](#)

[US Natty Gas Detail](#)

[Details Energy](#)

As always we welcome you to visit our website and hope to help you manage risk!

The wheat contract was down 11% this month. This was the biggest price mover in the

ags. Generally, ags were quite subdued. In most cases, vol was down spectacularly. The standouts were the big ag commodities like Soybeans, Wheat, and Corn. Live and Feeder cattle were both bid, but their vol moved in different directions.

[Ags ATM](#)

[Wheat Detail](#)

[Kansas City Wheat Detail](#)

[Live Cattle Detail](#)

[Ags Details](#)

Metals, with the exception of Palladium, all rallied spectacularly. The Chinese COVID lockdown concerns seem to be overwhelmed by either inflationary expectations or some rebound in economic activity. Implied volatility, at least at the money, was down across the board.

[Metals ATM](#)

[Gold Detail](#)

[Copper Detail](#)

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At The Money Roundup of Products

InterestRates

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/26	2 YR US Treasury Note	+0.582 [+0.6%]	-0.001 [-2.7%]
CBT/25	5 YR US Treasury Note	+2.039 [+1.9%]	-0.007 [-10.3%]
CBT/21	10 YR US Treasury Note	+2.922 [+2.6%]	-0.014 [-14.3%]
CBT/17	30 YR US Treasury Bond	+5.969 [+4.9%]	-0.024 [-14.6%]
CME/ED	Eurodollar	+0.223 [+0.2%]	-0.005 [-46.6%]
CBT/UBE	Long Term US Treasury Bond	+6.875 [+5.3%]	-0.032 [-14.1%]

Forex

exch/prod	desc	futures chng [%]	vol chng [%]
CME/ADU	AUDUSD 2pmfix	+0.039 [+6.0%]	-0.003 [-2.0%]
CME/BTC	Bitcoin	-3400.000 [-16.6%]	+0.057 [+11.0%]
CME/BR	BRLUSD Monthly	-0.004 [-2.2%]	-0.000 [-0.0%]
CME/CAU	CADUSD 2pmfix	+0.010 [+1.3%]	+0.012 [+12.6%]
CME/CHU	CHFUSD 2pmfix	+0.055 [+5.5%]	+0.006 [+5.9%]
CME/ETH	Ethereum Futures	-287.000 [-18.2%]	-0.023 [-3.1%]
CME/EUU	EURUSD 2pmfix	+0.051 [+5.2%]	-0.001 [-0.5%]
CME/GBU	GBPUSD 2pmfix	+0.056 [+4.9%]	-0.012 [-8.7%]
CME/JPU	JPYUSD 2pmfix	+0.000 [+7.1%]	+0.011 [+8.9%]
CME/MP	Mexican Peso	+0.001 [+2.7%]	+0.010 [+9.3%]
CME/NE	New Zealand	+0.045 [+7.8%]	-0.006 [-4.0%]

EquityIndex

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/YM	E-Mini Dow	+1914.000 [+5.9%]	-0.053 [-23.4%]
CME/NQ	E-Mini Nasdaq	+710.250 [+6.3%]	-0.033 [-10.7%]
CME/RTO	E-Mini Russell 2000	+30.900 [+1.7%]	-0.038 [-12.9%]
CME/RTM	E-Mini Russell EOM	+46.400 [+2.5%]	-0.057 [-19.4%]
CME/ES	E-Mini S&P 500	+215.250 [+5.6%]	-0.037 [-14.8%]
CBOE/VIX	VIX Volatility Index	-5.230 [-20.3%]	-0.088 [-10.6%]

Energy

exch/prod	desc	futures chng [%]	vol chng [%]
NYMEX/BZO	Brent Crude Oil Margin	-7.680 [-8.1%]	+0.025 [+5.6%]
NYMEX/BE	Brent Euro Style	-7.680 [-8.1%]	+0.018 [+4.1%]
NYMEX/CVR	Chicago Ethanol(platts) Average Price	-0.305 [-11.8%]	-0.003 [-1.6%]
NYMEX/MTO	Coal Api2 Cif Ara Argsmccloskey	+50.500 [+22.4%]	+0.171 [+15.3%]
NYMEX/LO	Crude Oil	-7.820 [-8.8%]	+0.015 [+3.3%]
NYMEX/LN	European Natural Gas	+1.216 [+21.3%]	-0.017 [-1.7%]
NYMEX/E7	Henry Hub Financial Last Day	+1.216 [+21.3%]	-0.024 [-2.3%]
NYMEX/JKO	LNG Japan/korea Marker (platts) Average Price	+8.630 [+31.3%]	+0.612 [+149.3%]
NYMEX/ON	Natural Gas	+1.216 [+21.3%]	-0.017 [-1.7%]
NYMEX/OH	NY Harbor ULSD	-0.258 [-7.1%]	-0.103 [-19.0%]
NYMEX/OB	RBOB	-0.210 [-8.1%]	-0.026 [-5.4%]

Ags

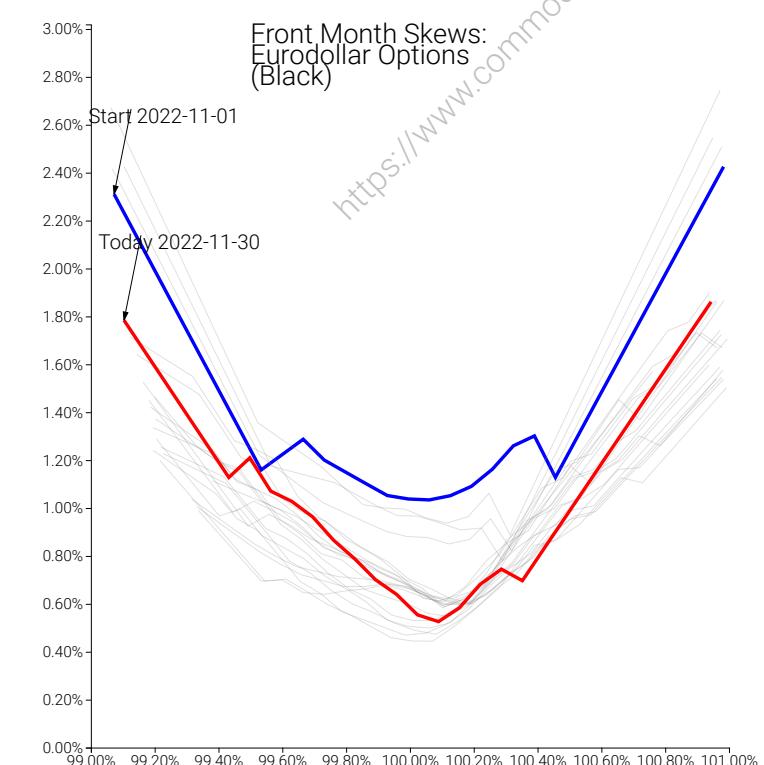
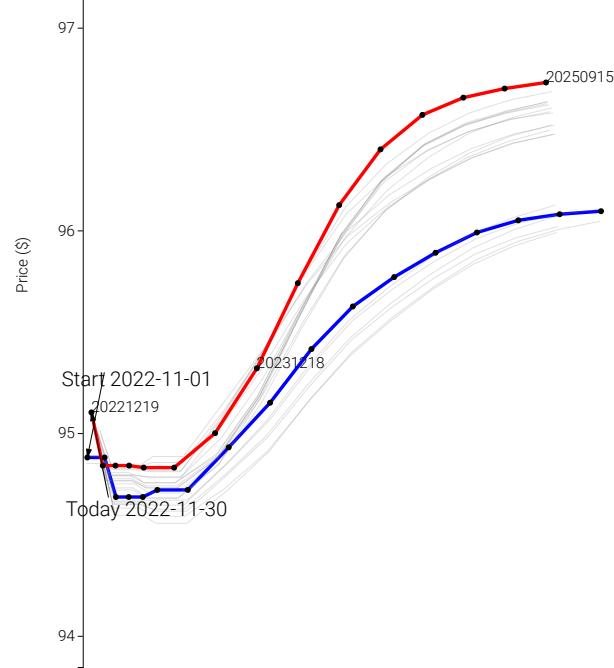
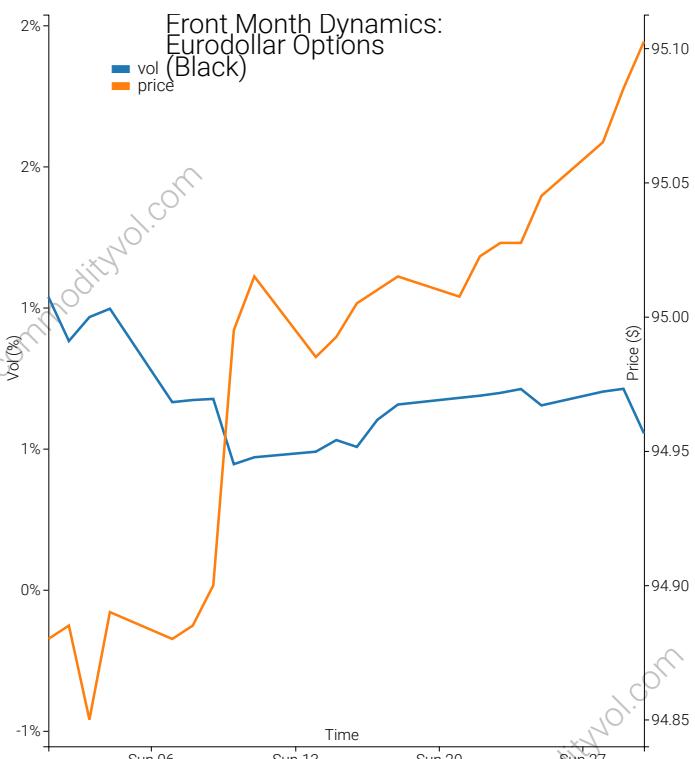
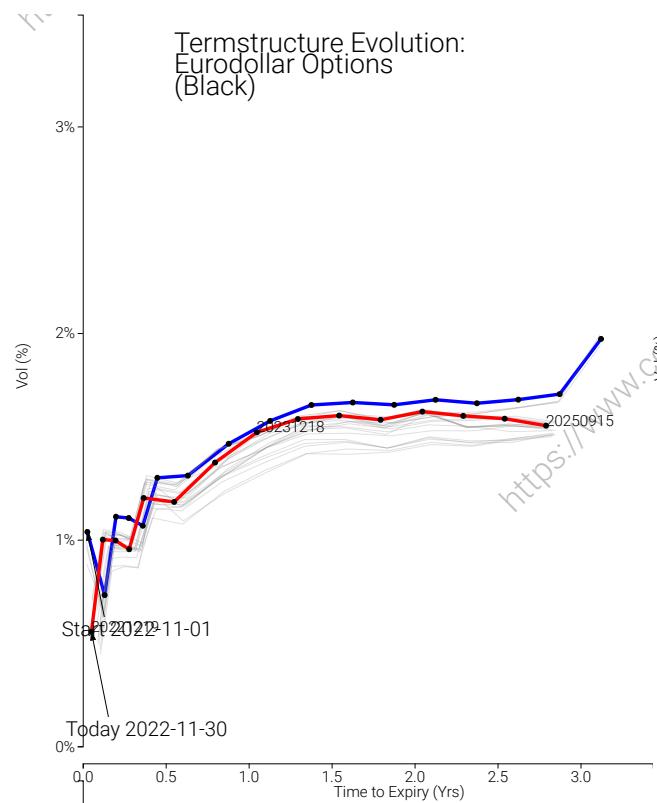
exch/prod	desc	futures chng [%]	vol chng [%]
CME/DK	Class IV Milk	-1.060 [-4.7%]	-0.054 [-31.6%]
CBT/C	Corn	-0.308 [-4.4%]	-0.079 [-33.7%]
CME/62	Feeder Cattle	+3.550 [+2.0%]	+0.014 [+14.1%]
CBT/KW	KC HRW Wheat	-0.902 [-9.1%]	-0.166 [-41.4%]
CME/LN	Lean Hog	-2.300 [-2.7%]	-0.055 [-23.4%]
CME/48	Live Cattle	+3.725 [+2.5%]	-0.023 [-20.1%]
CME/NF	Nonfat Dry Milk	-7.725 [-5.1%]	+0.010 [+10.8%]
CBT/O	Oats	-0.138 [-3.4%]	-0.021 [-4.5%]
CBT/14	Rough Rice	+0.160 [+0.9%]	+0.017 [+15.3%]
CBT/S	Soybean	+0.218 [+1.5%]	-0.025 [-13.1%]
CBT/06	Soybean Meal	-7.000 [-1.6%]	-0.040 [-16.7%]
CBT/07	Soybean Oil	-1.490 [-2.0%]	+0.033 [+11.1%]
CBT/W	Wheat	-1.070 [-11.9%]	-0.165 [-37.1%]

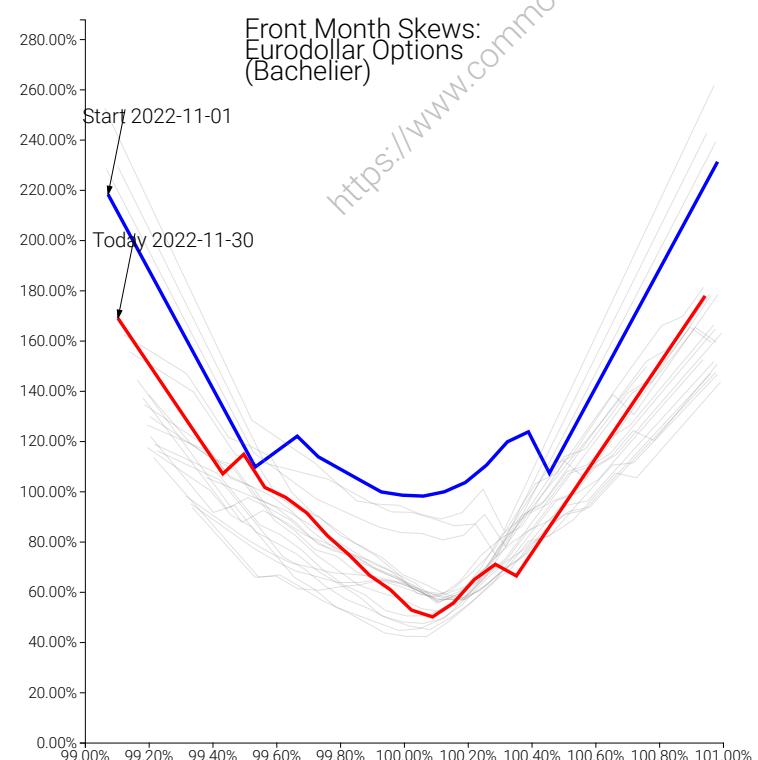
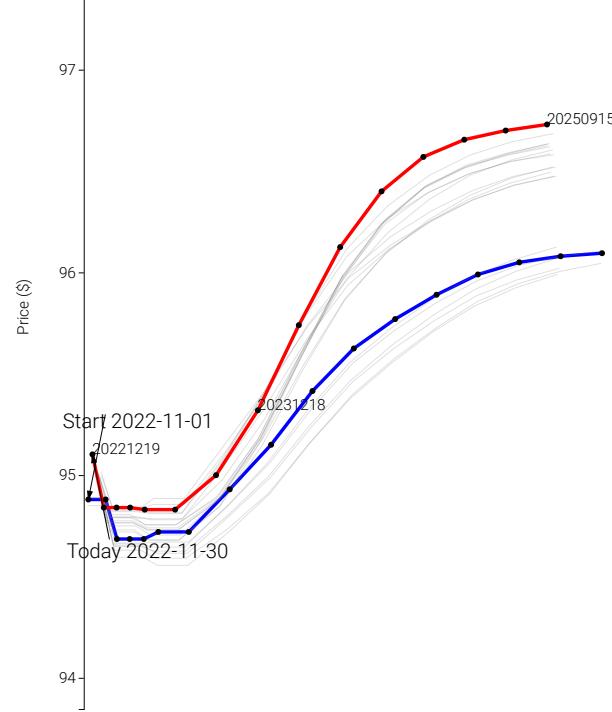
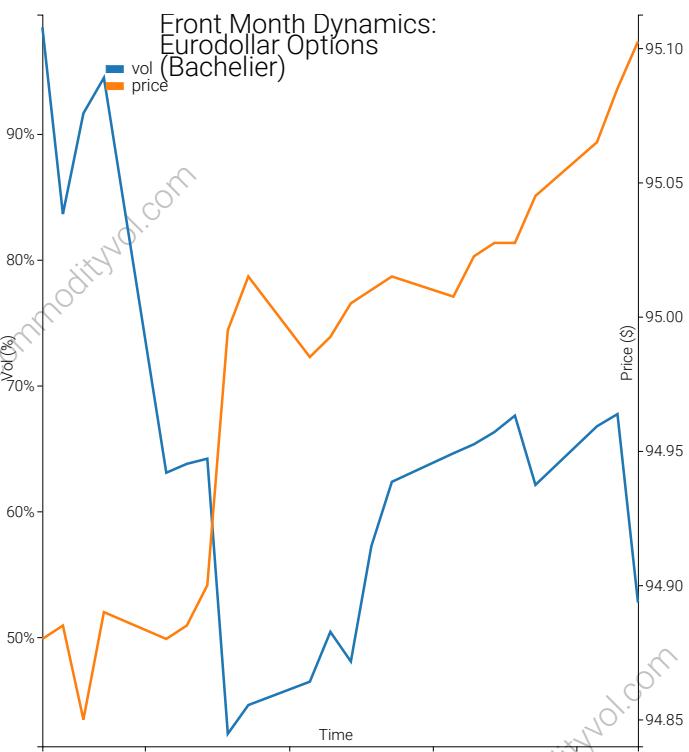
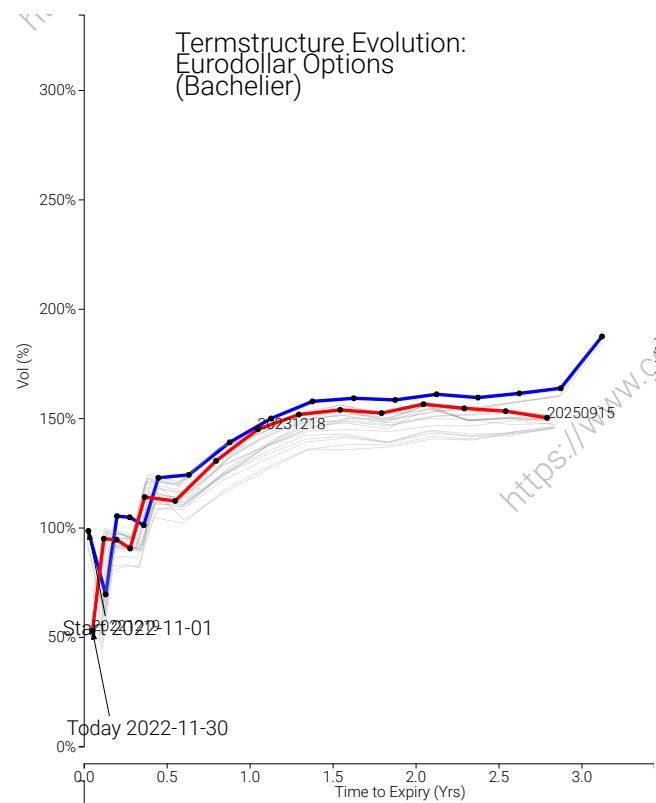
Metals

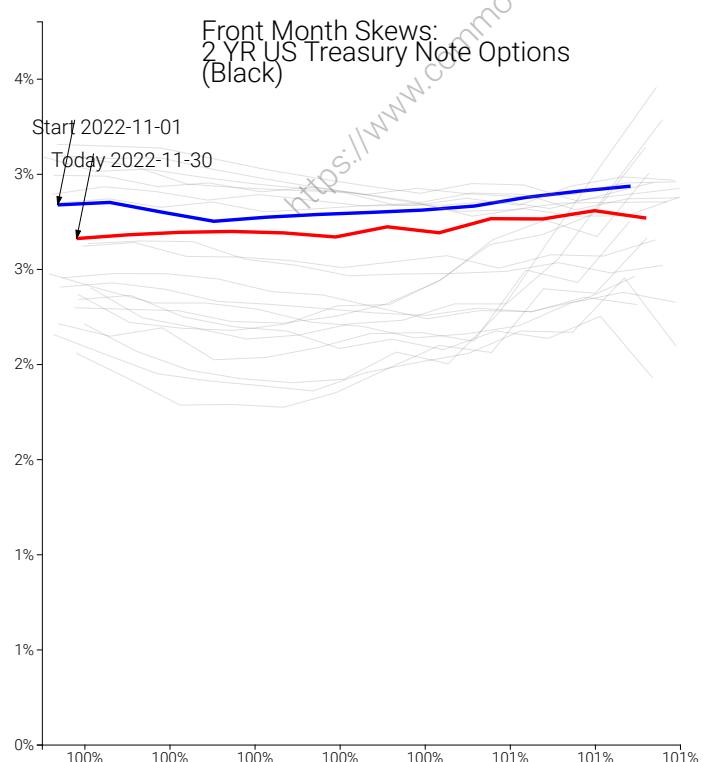
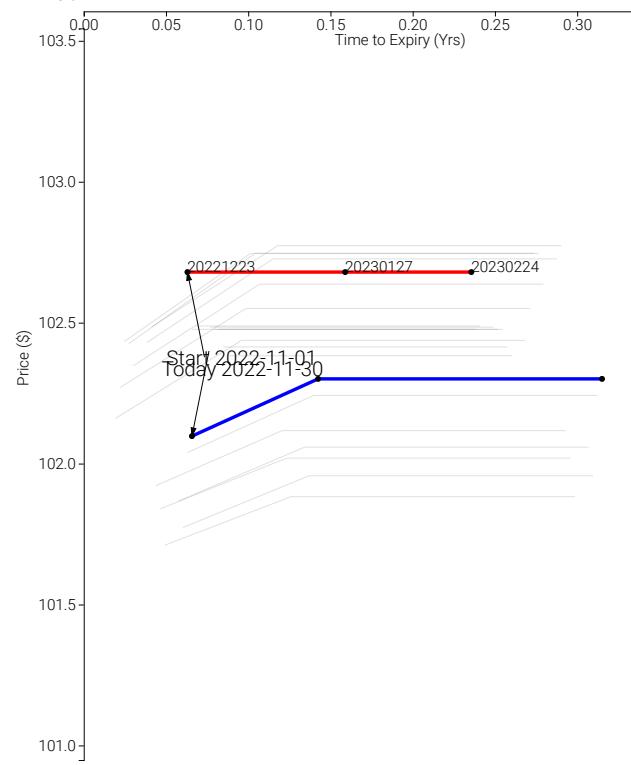
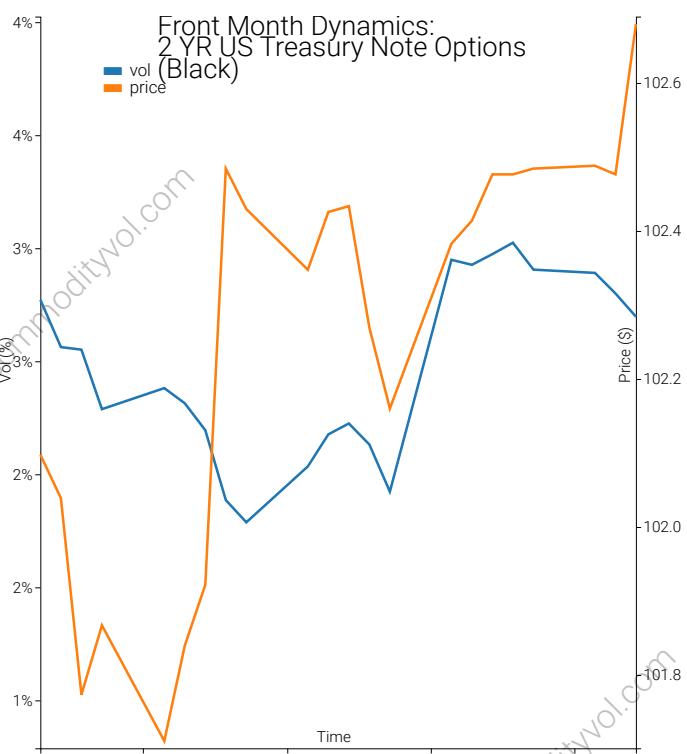
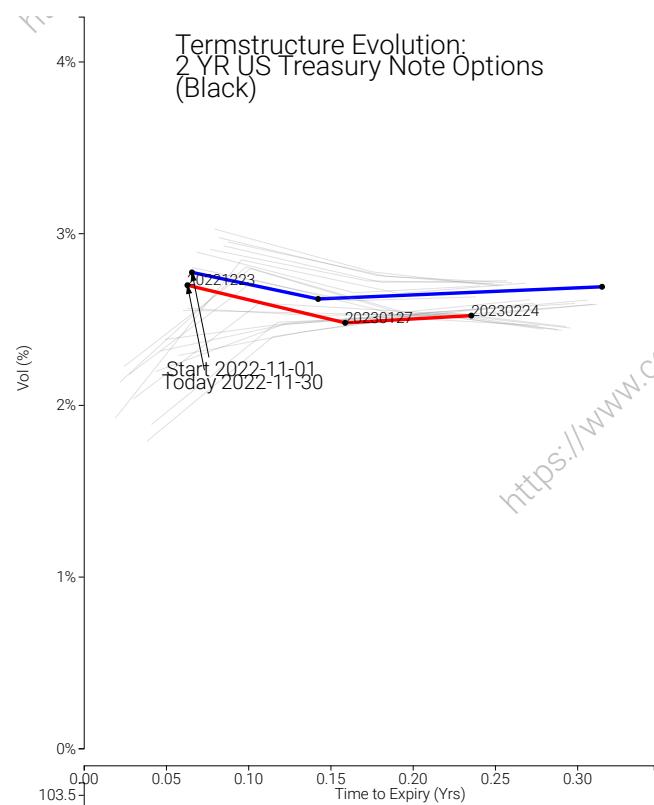
exch/prod	desc	futures chng [%]	vol chng [%]
COMEX/HX	Copper	+0.265 [+7.6%]	-0.029 [-9.4%]
COMEX/OG	Gold	+110.200 [+6.7%]	-0.027 [-16.3%]
NYMEX/PAO	Palladium	-11.000 [-0.6%]	-0.045 [-8.9%]
NYMEX/PO	Platinum	+88.800 [+9.3%]	-0.007 [-2.2%]
COMEX/SO	Silver	+2.114 [+10.7%]	-0.055 [-16.0%]

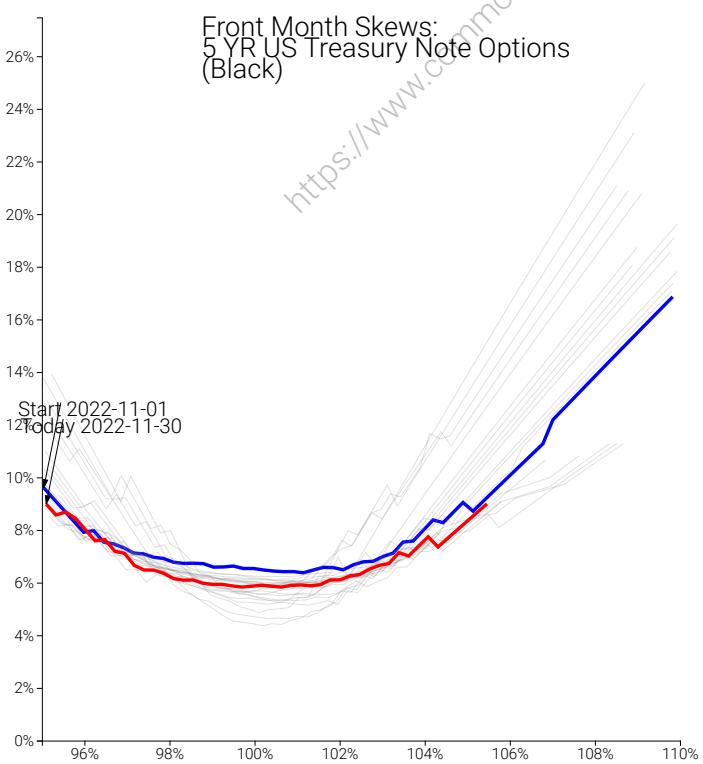
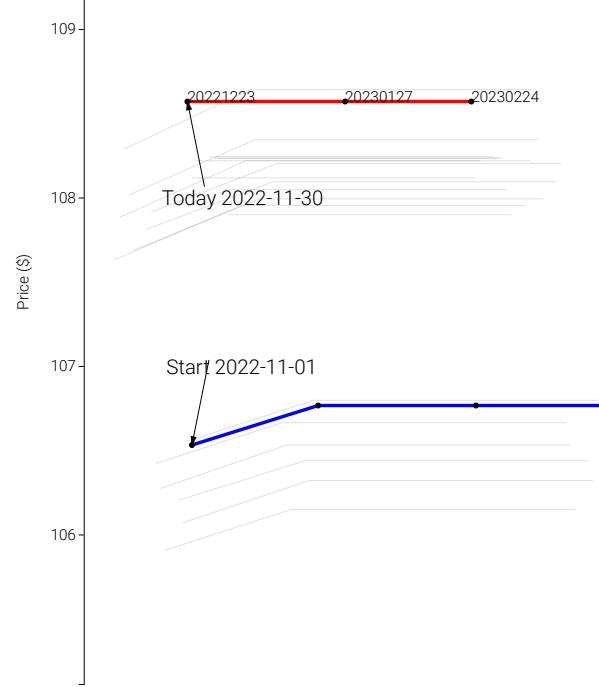
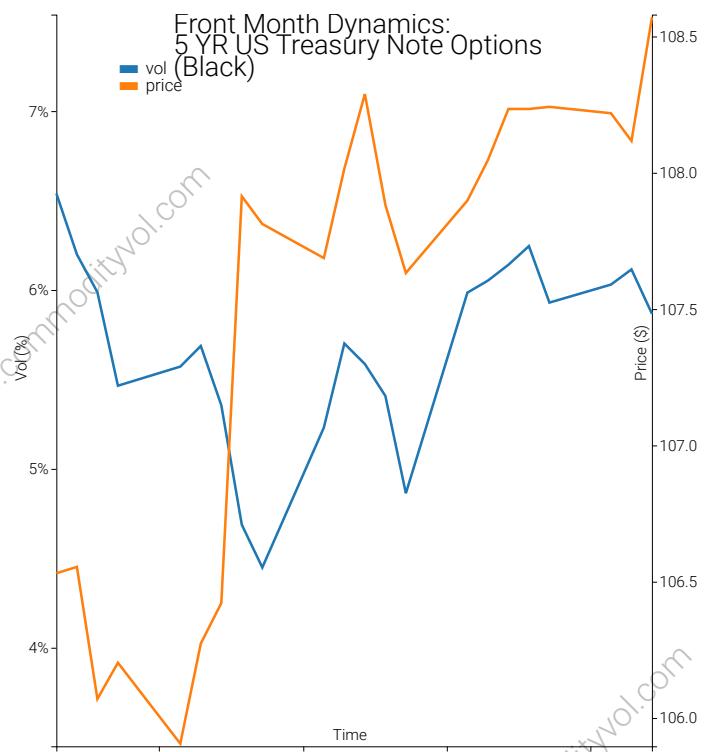
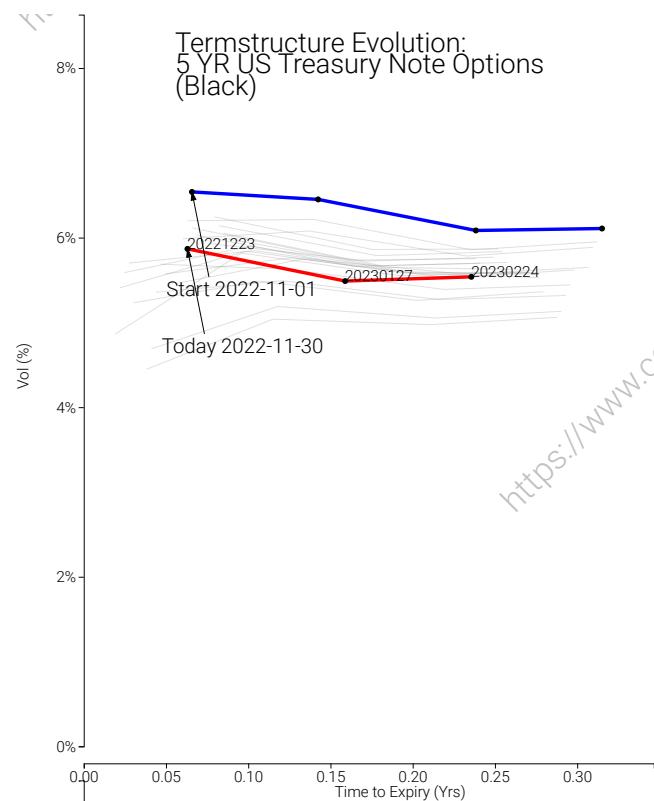
Skews, Termstructures and more

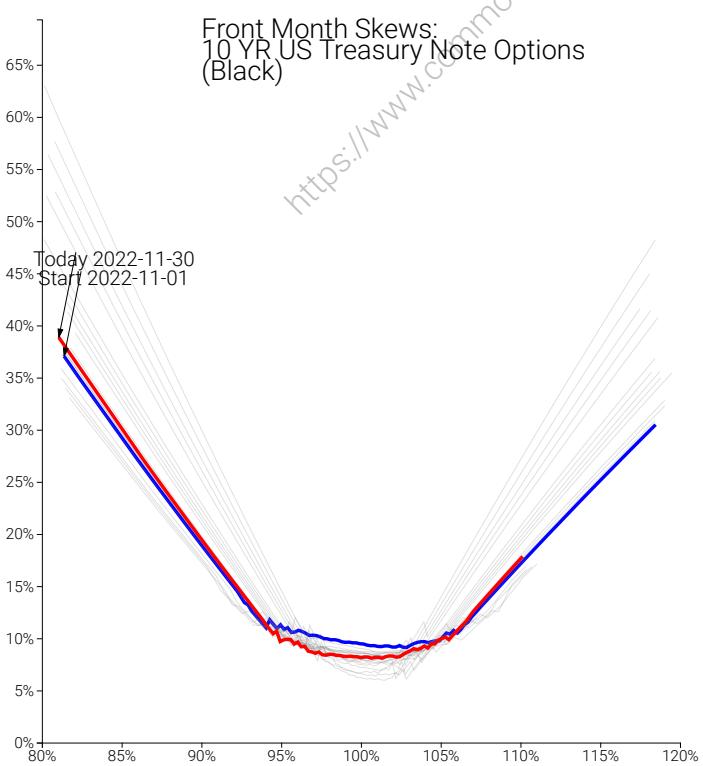
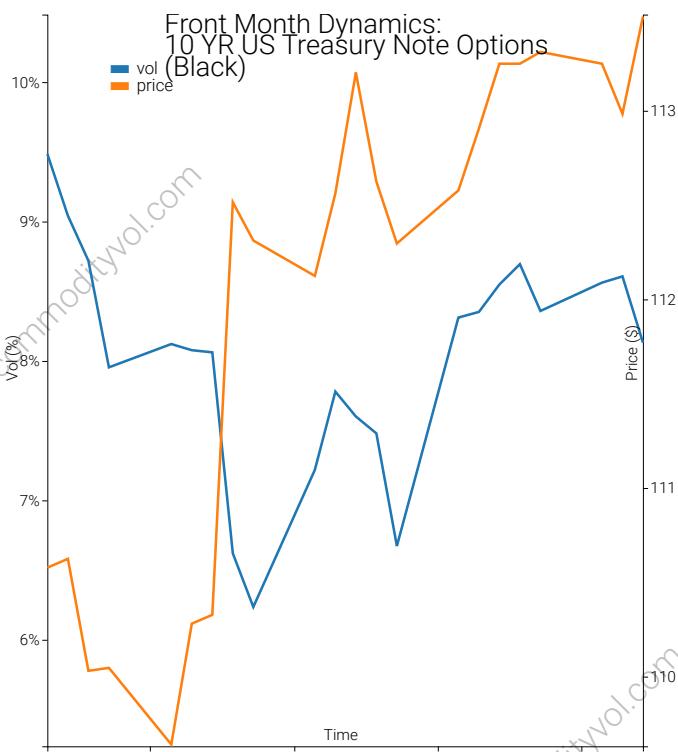
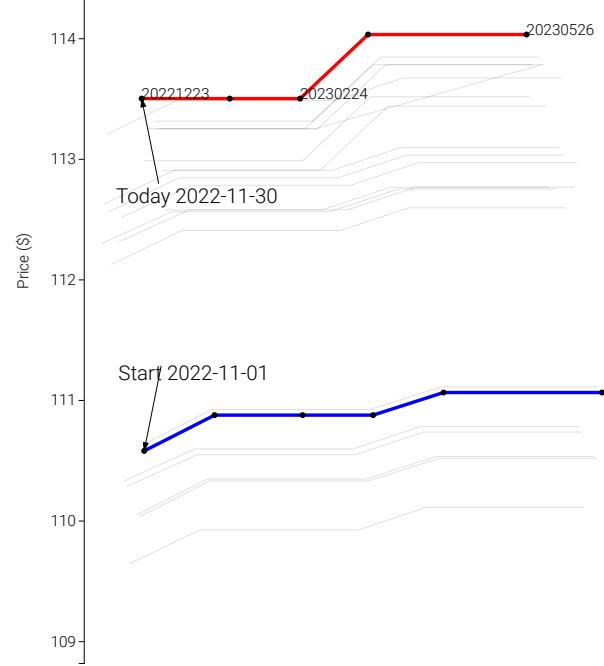
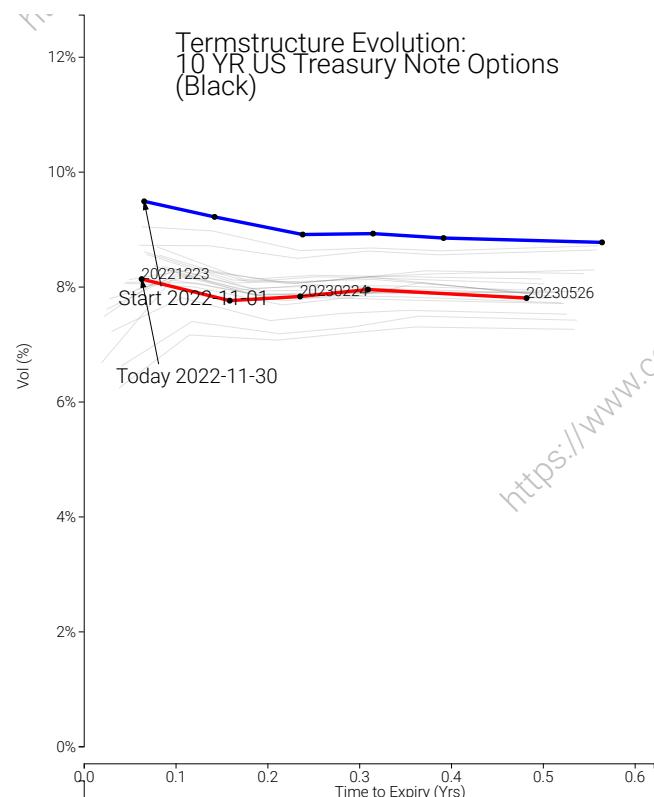
InterestRates: Fixed Income and STIRS

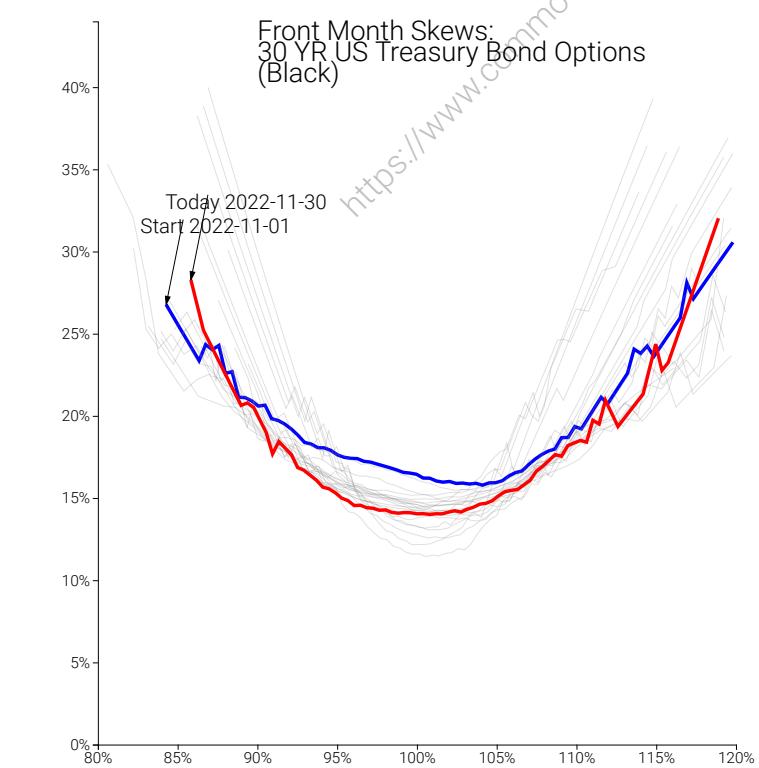
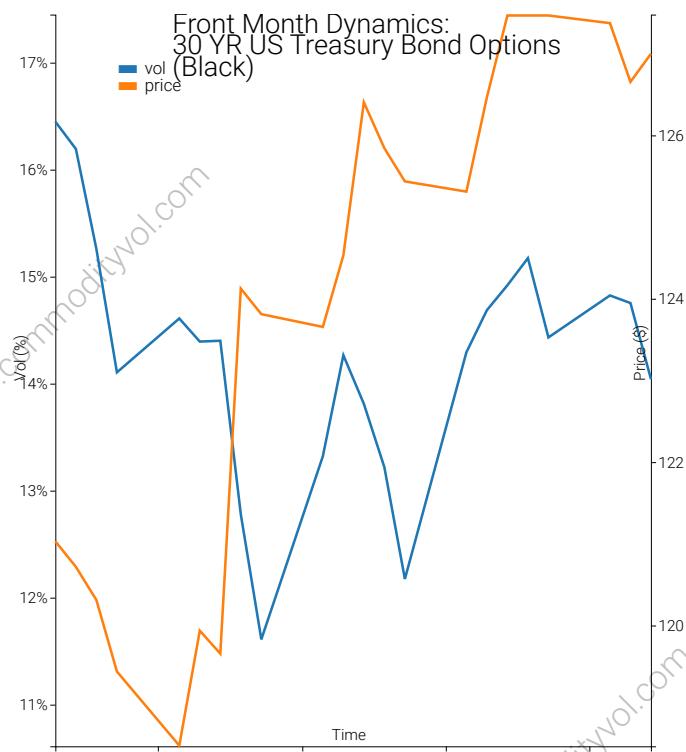
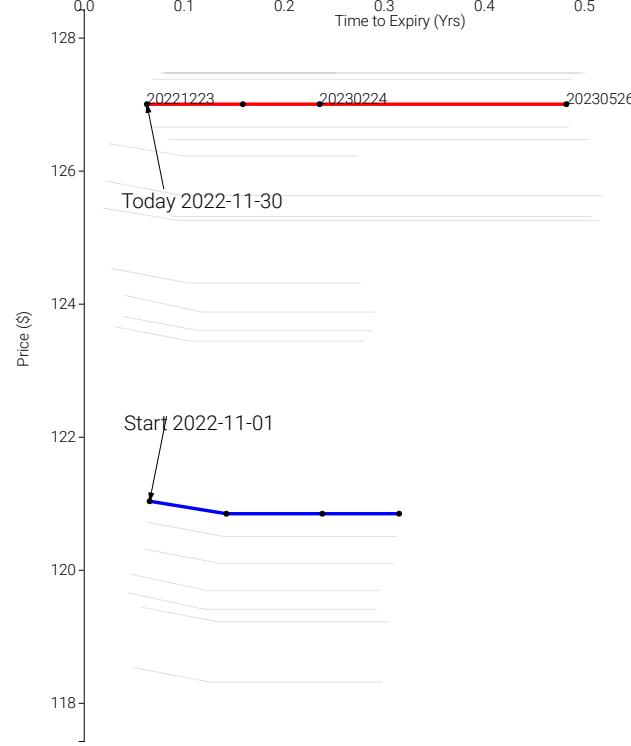
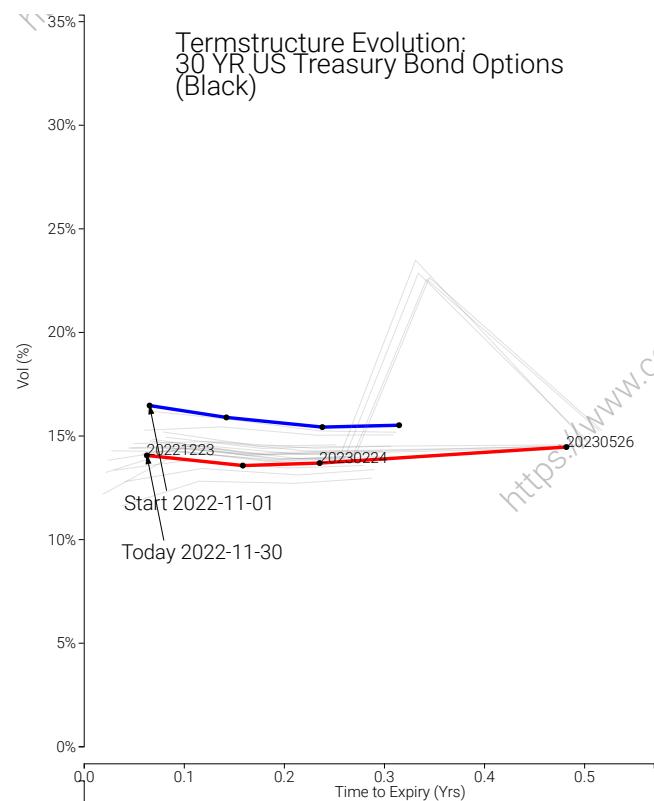


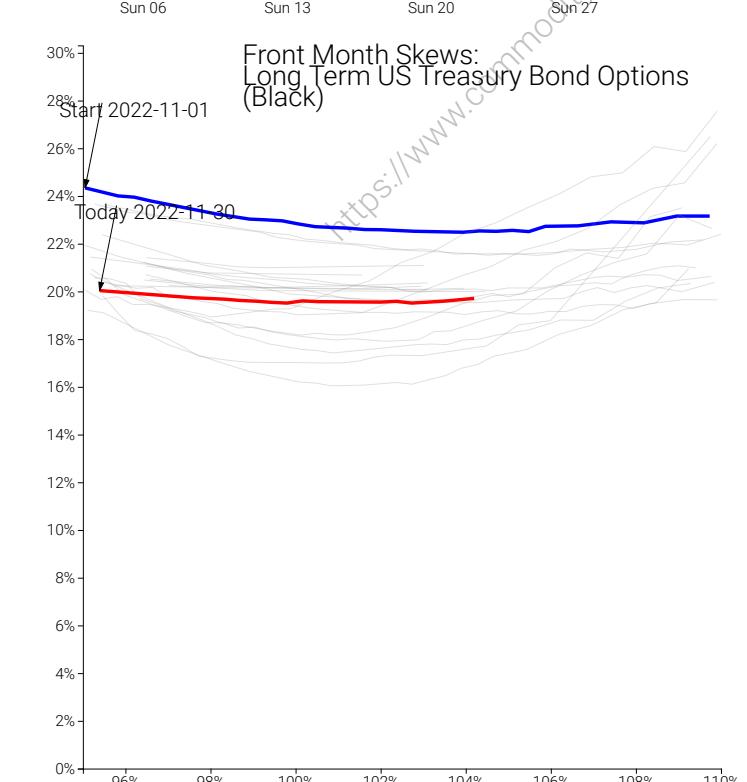
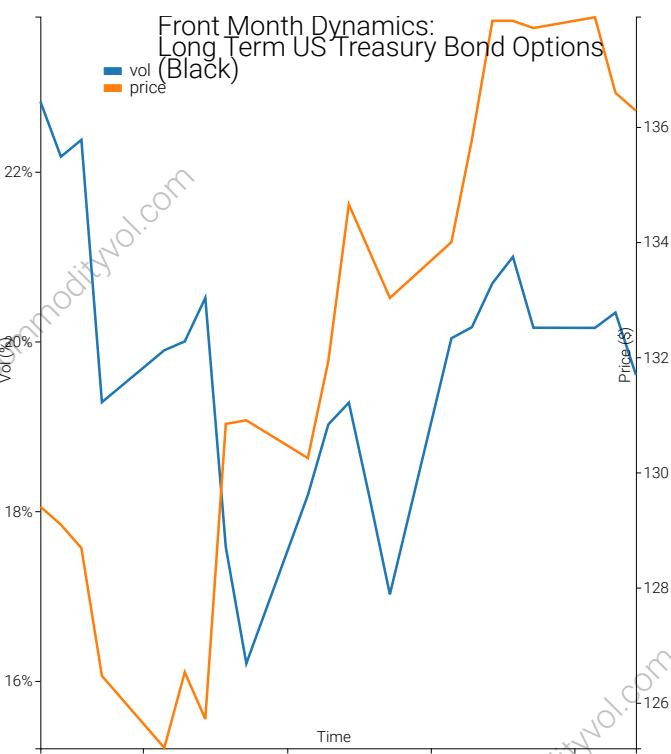
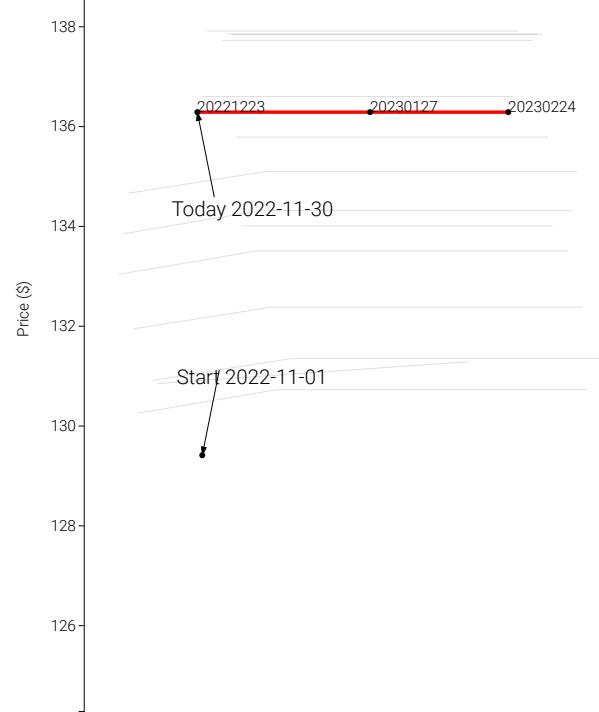
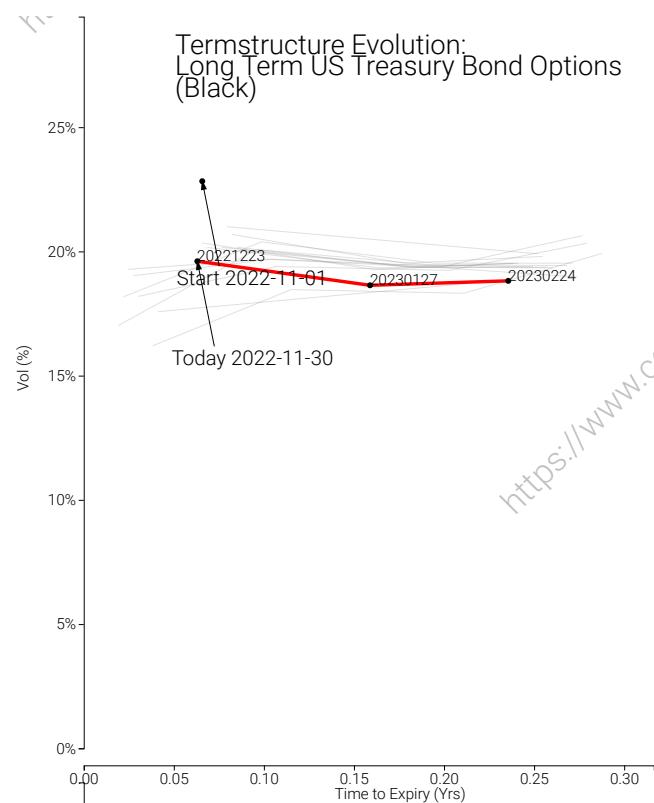




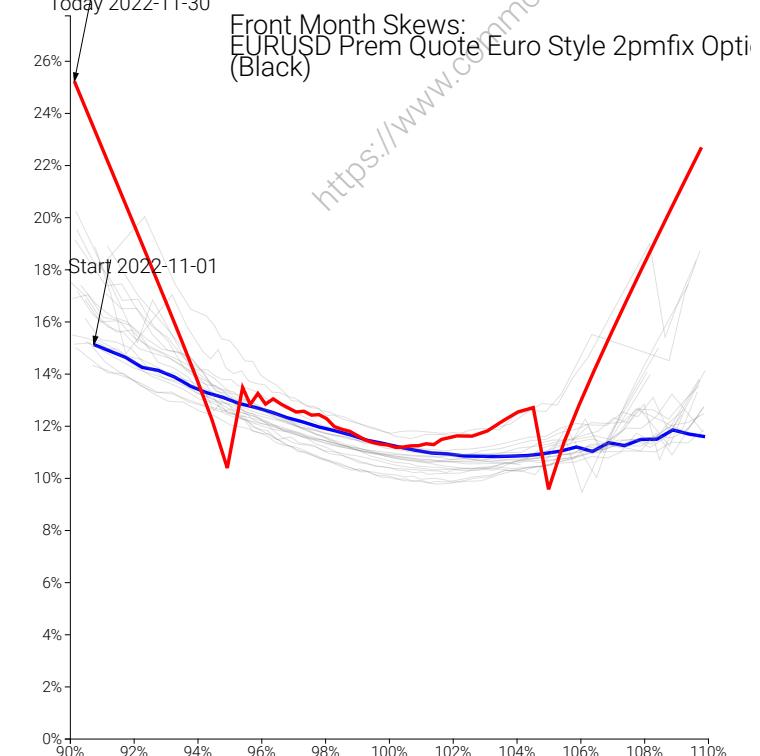
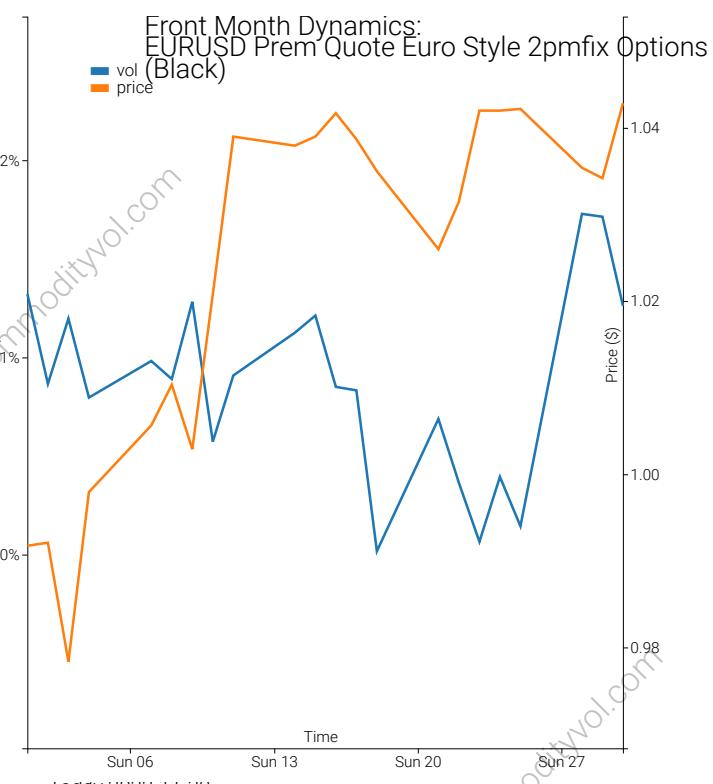
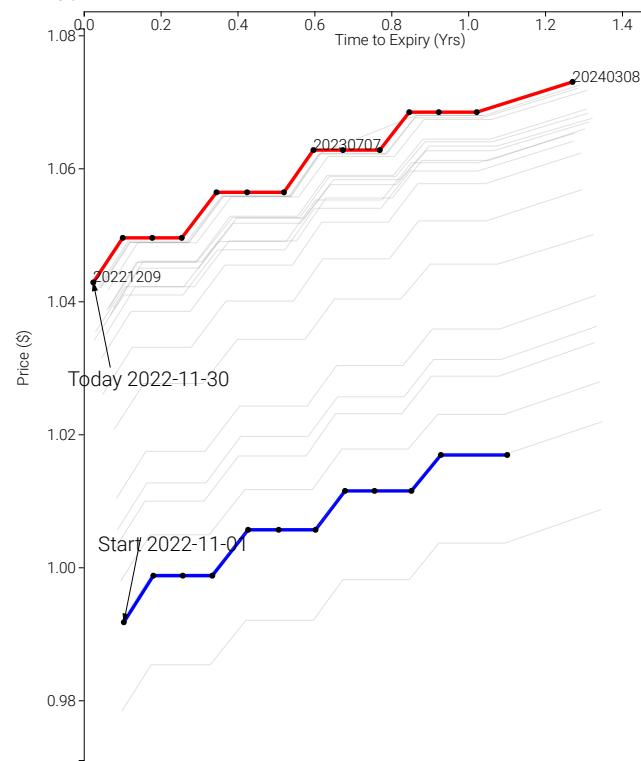
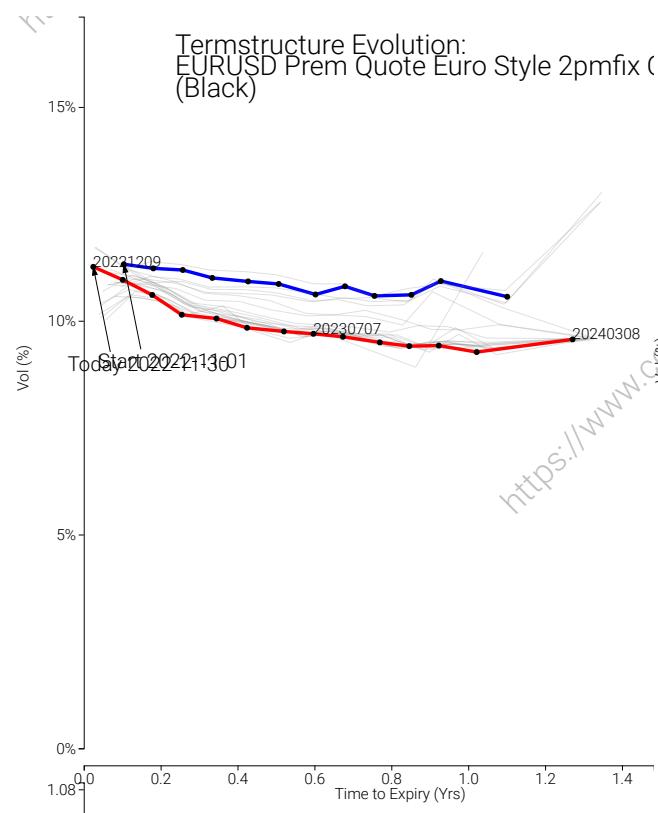


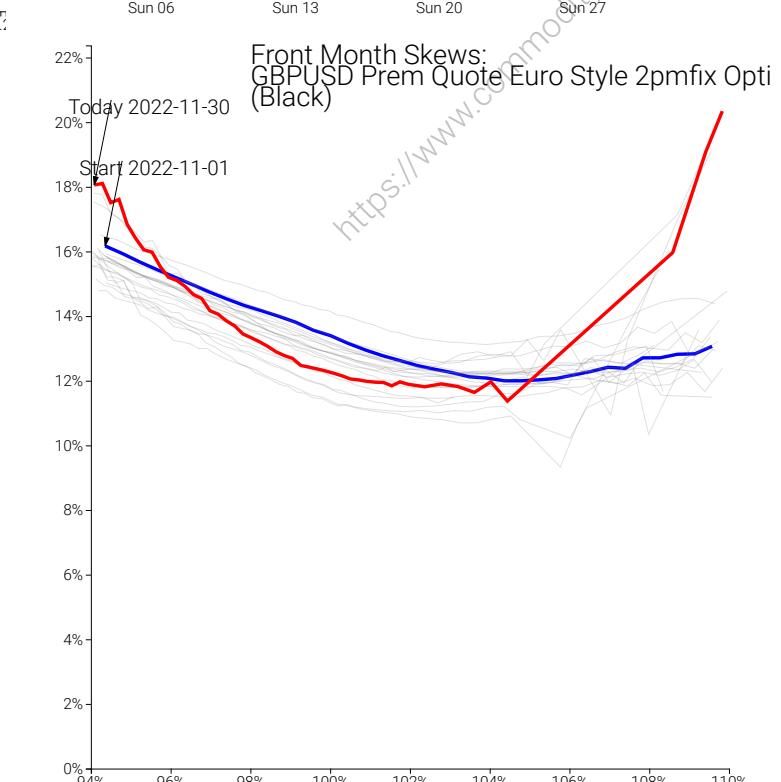
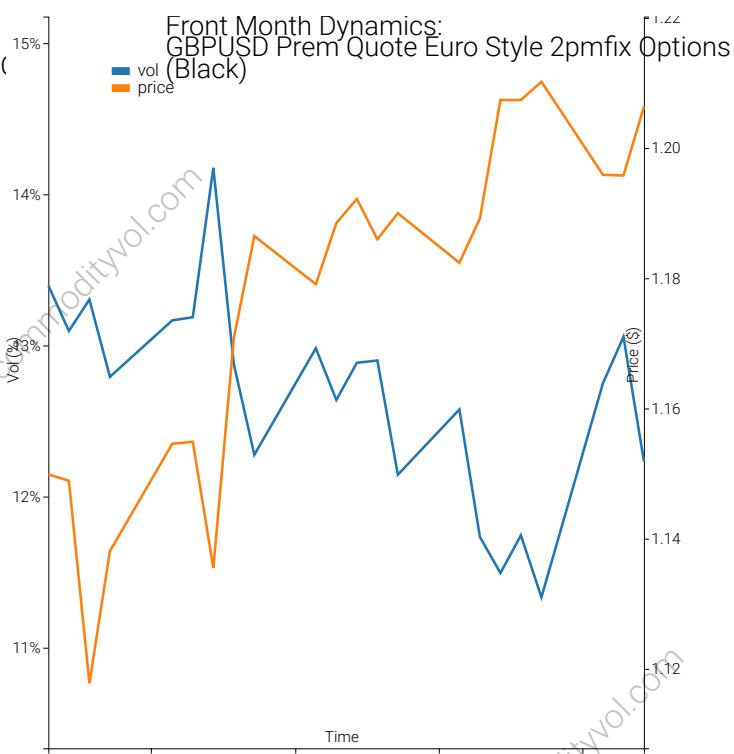
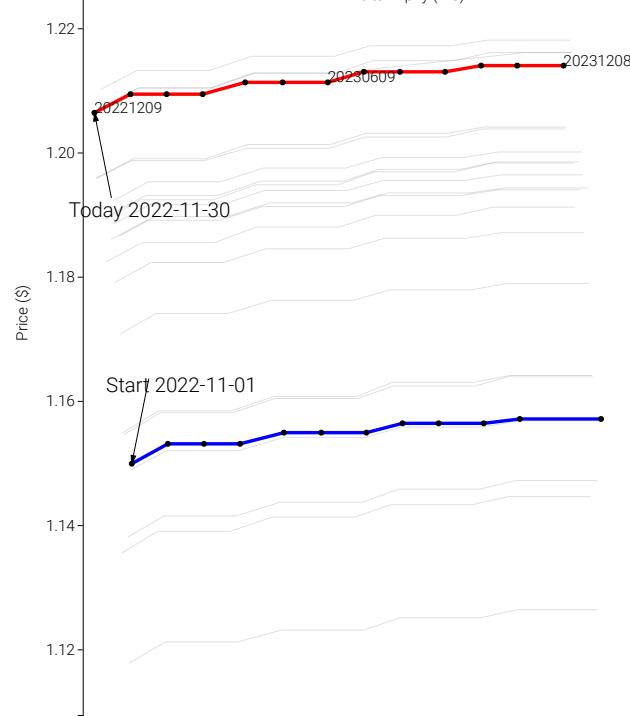
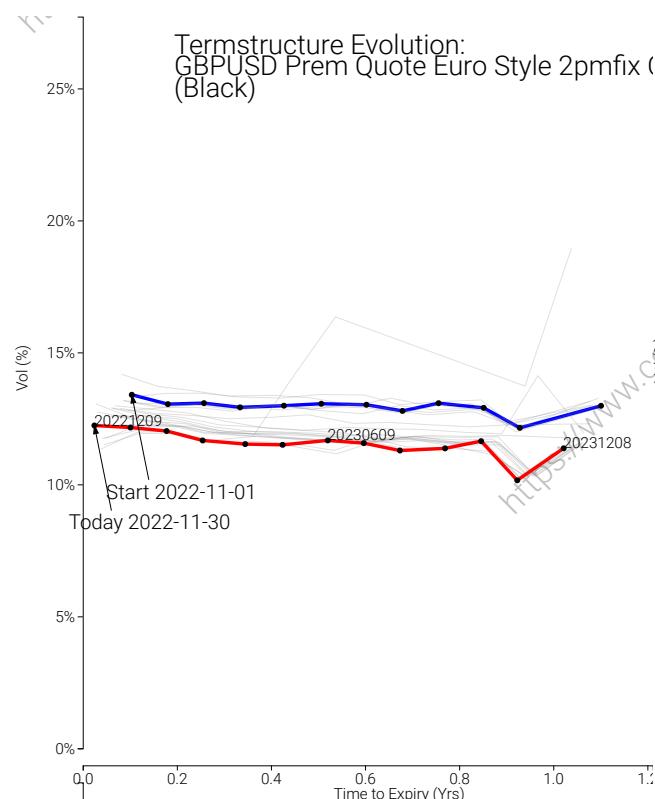


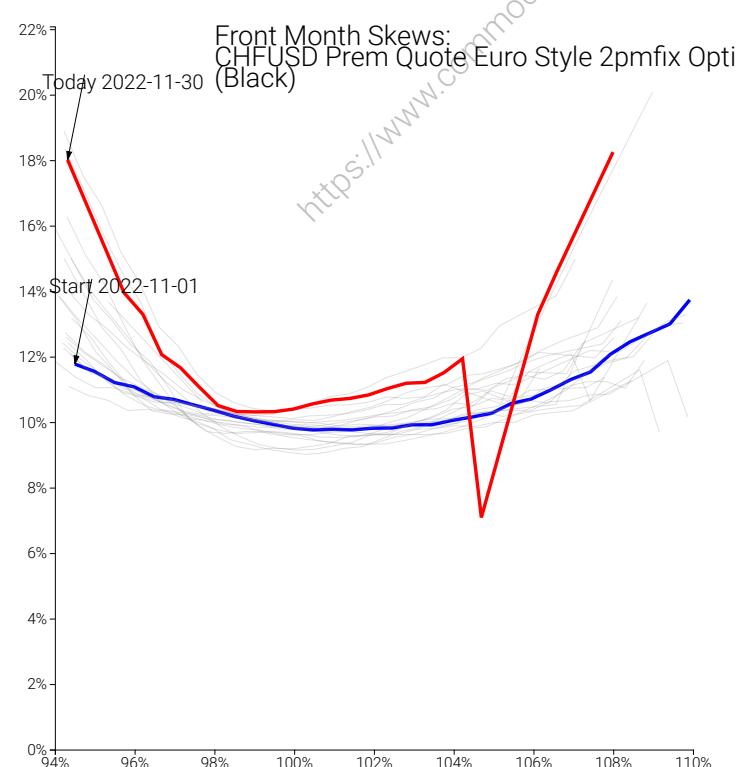
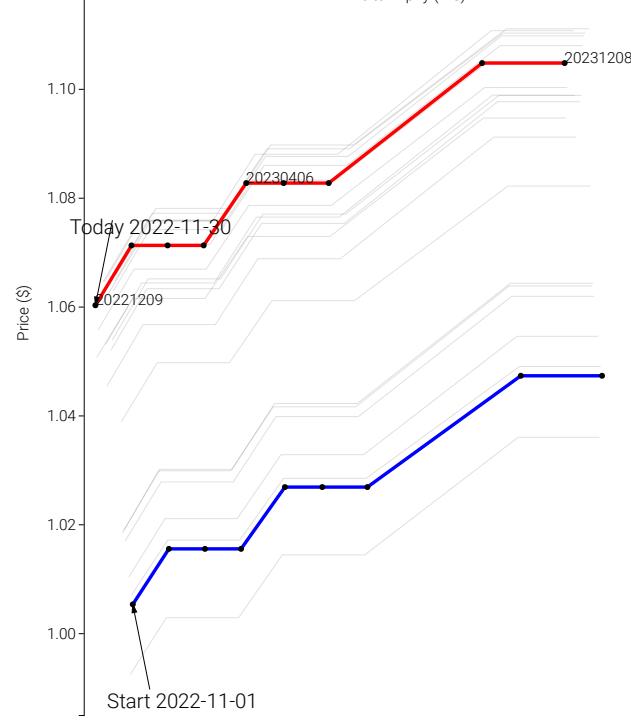
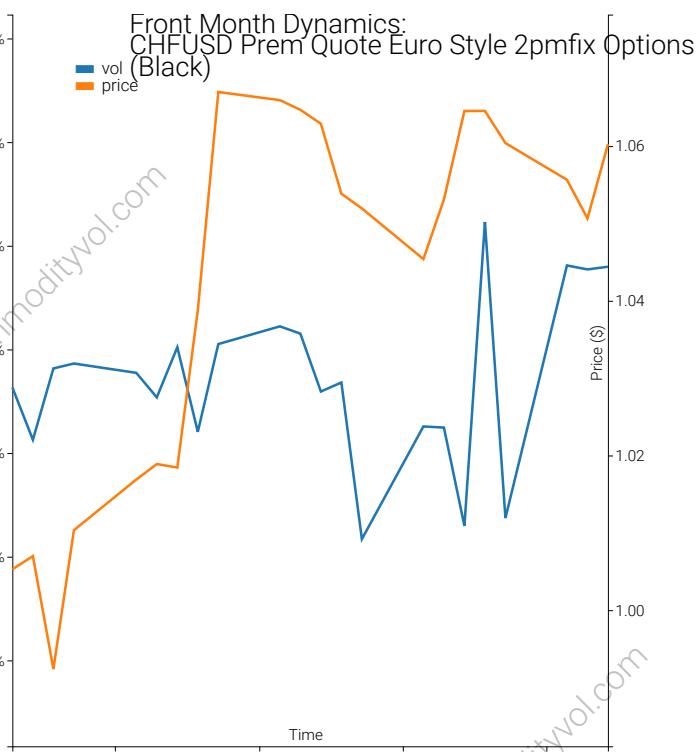
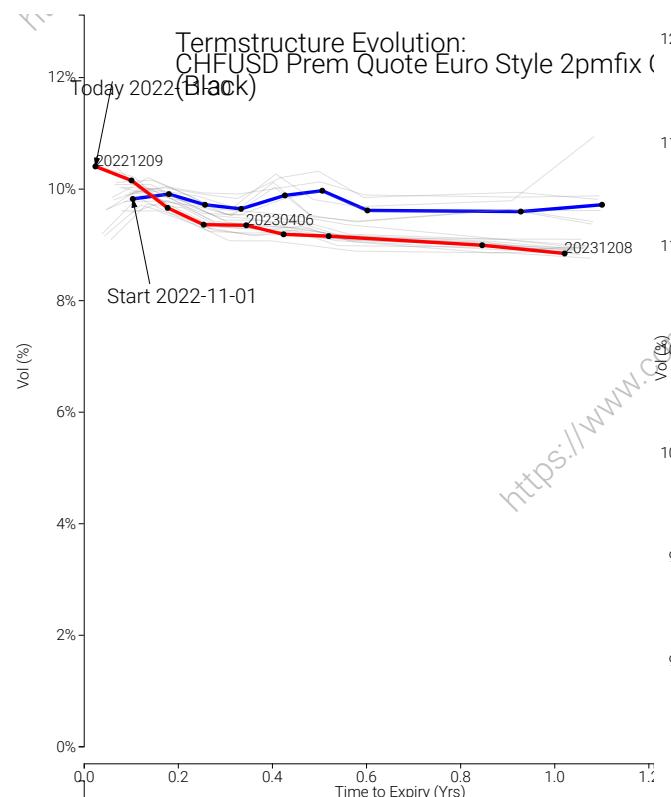


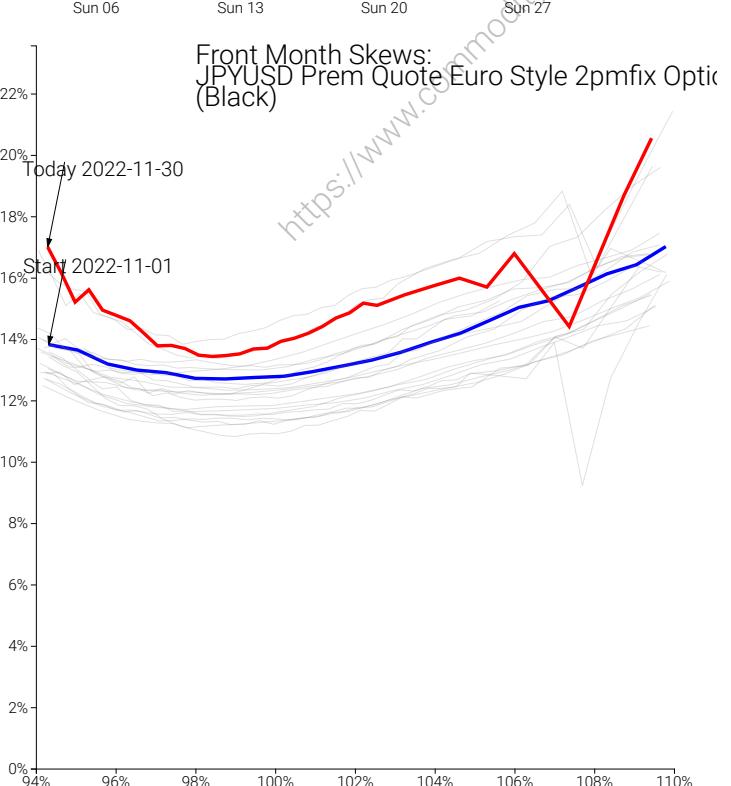
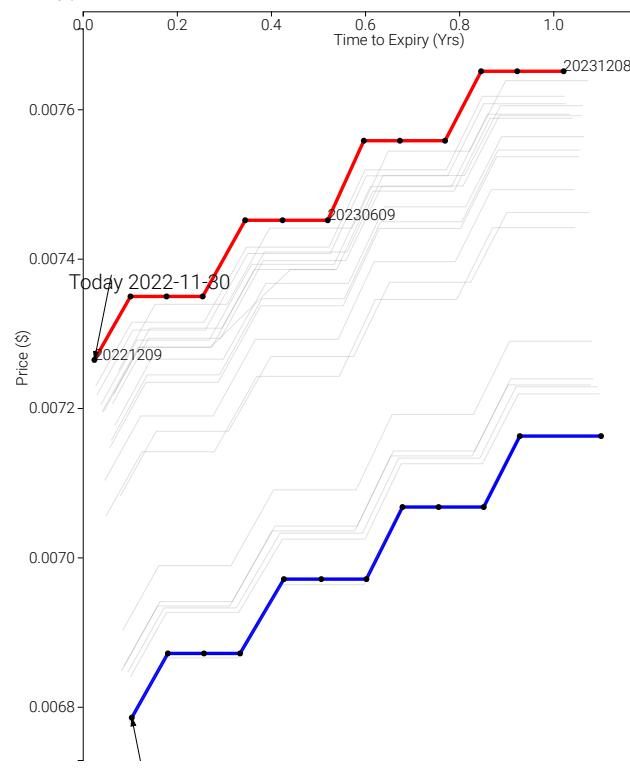
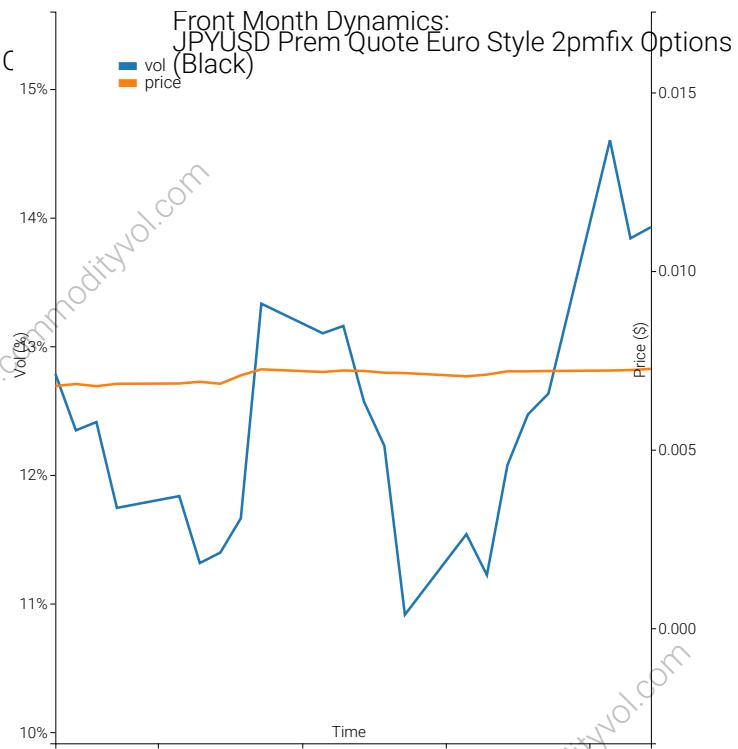
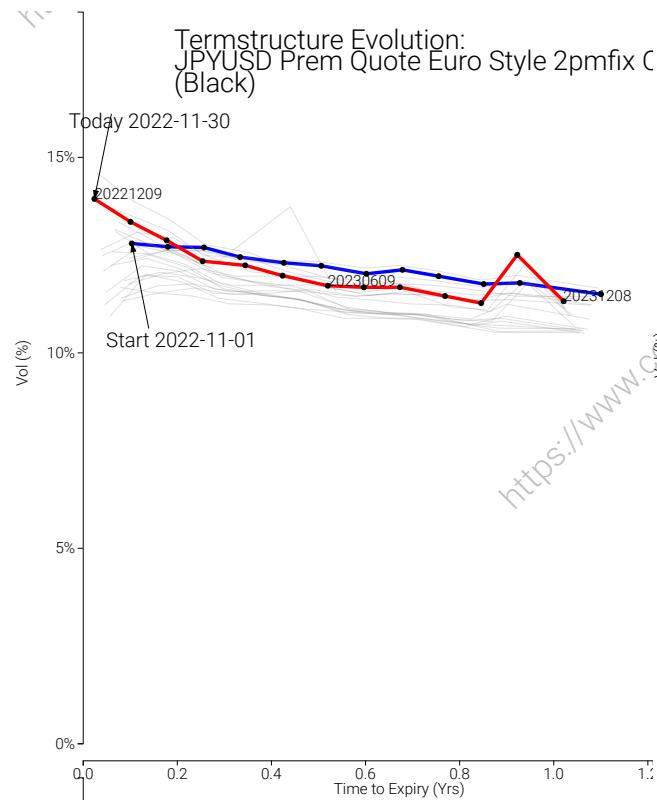


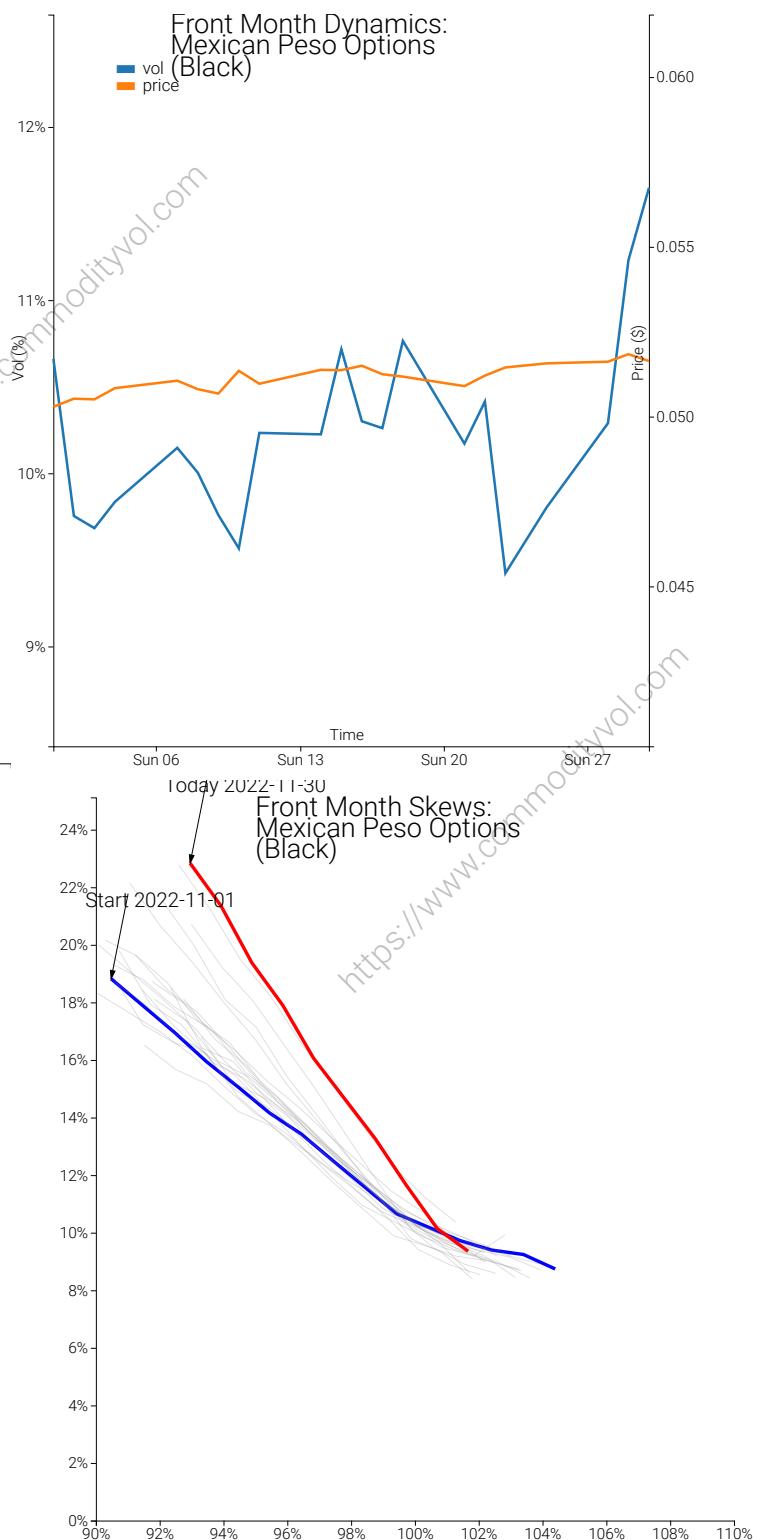
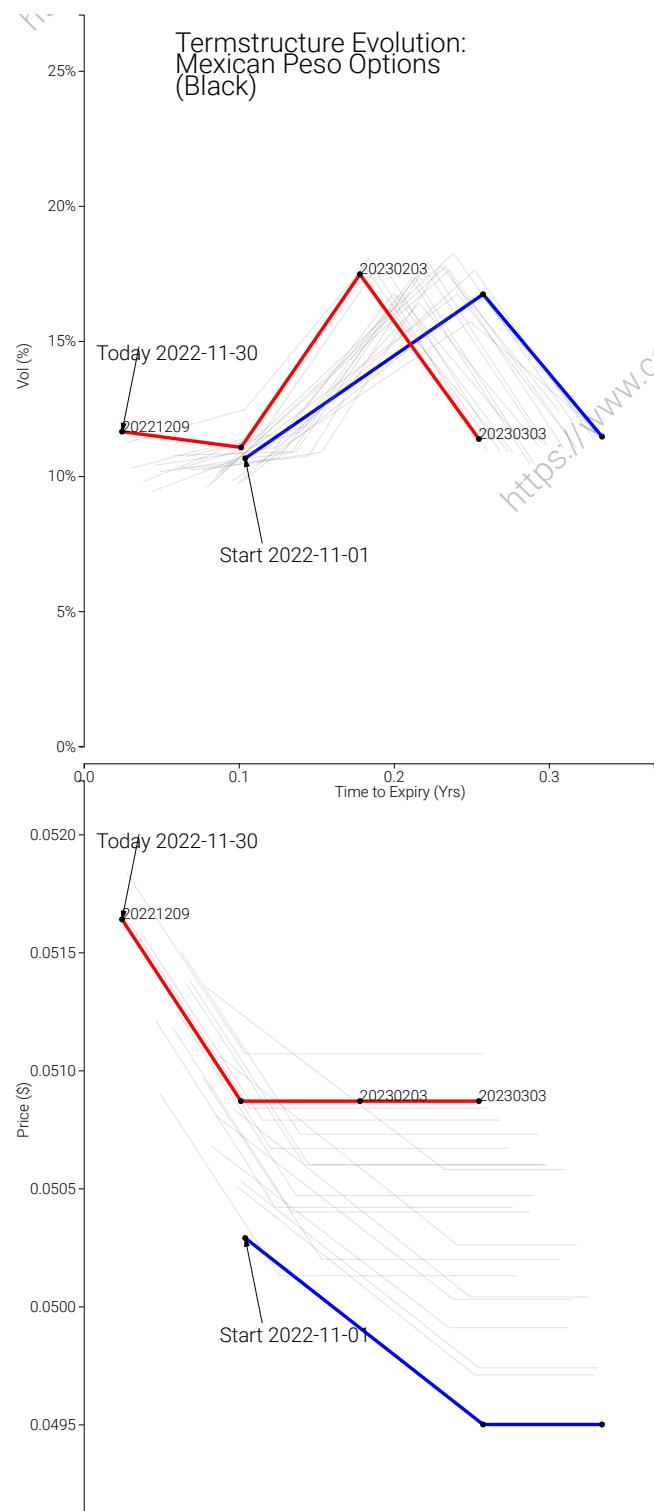
Forex

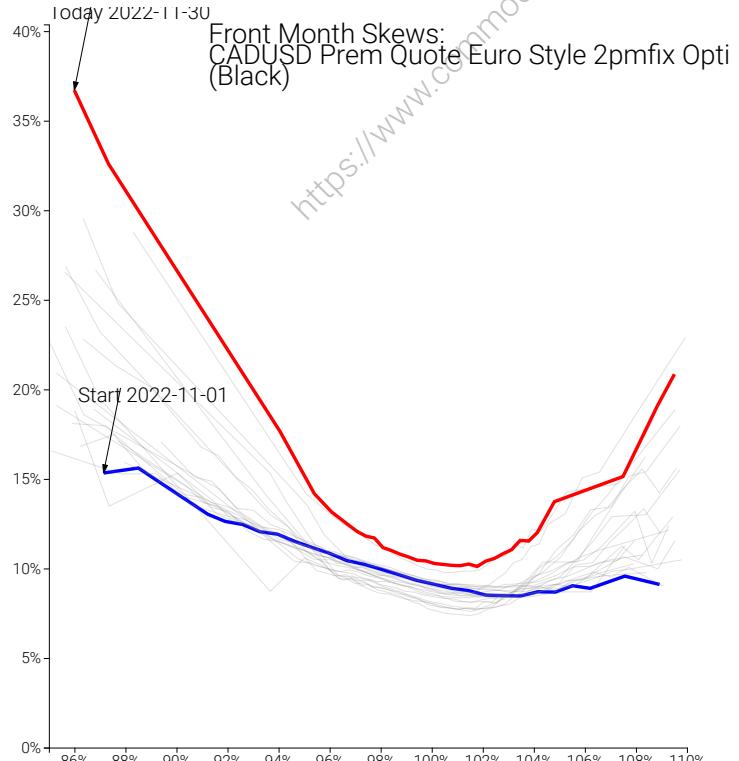
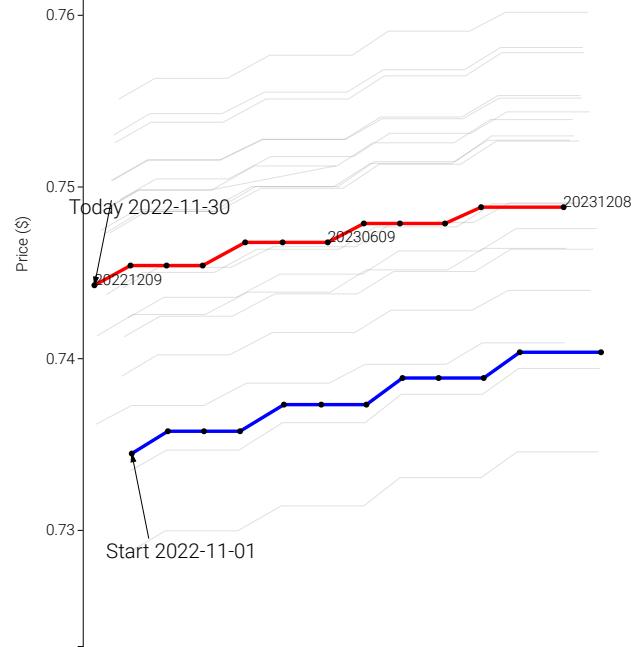
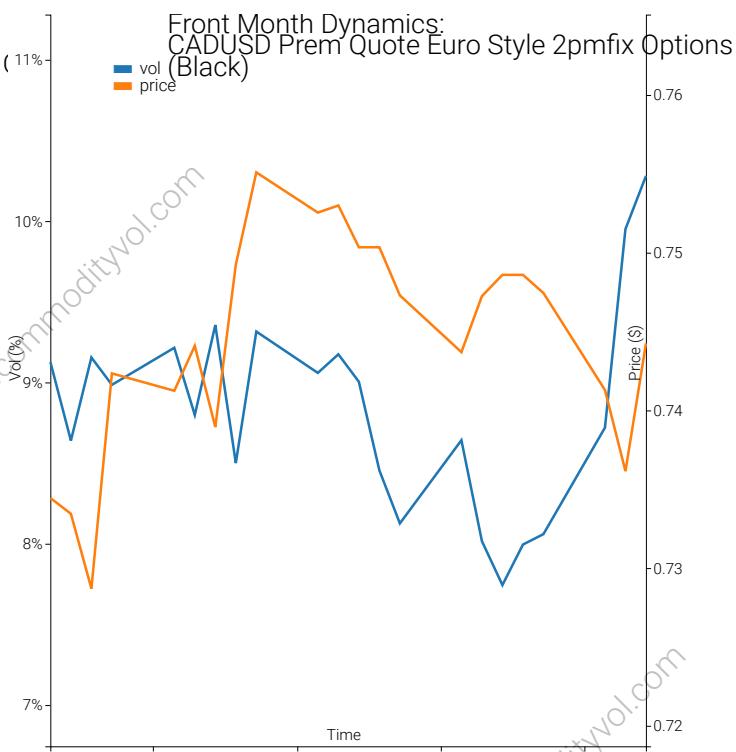
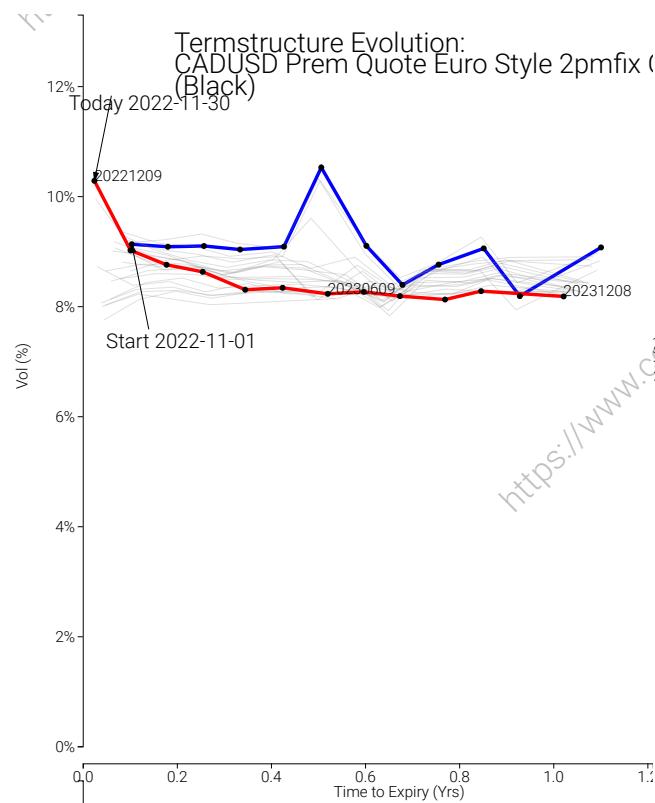


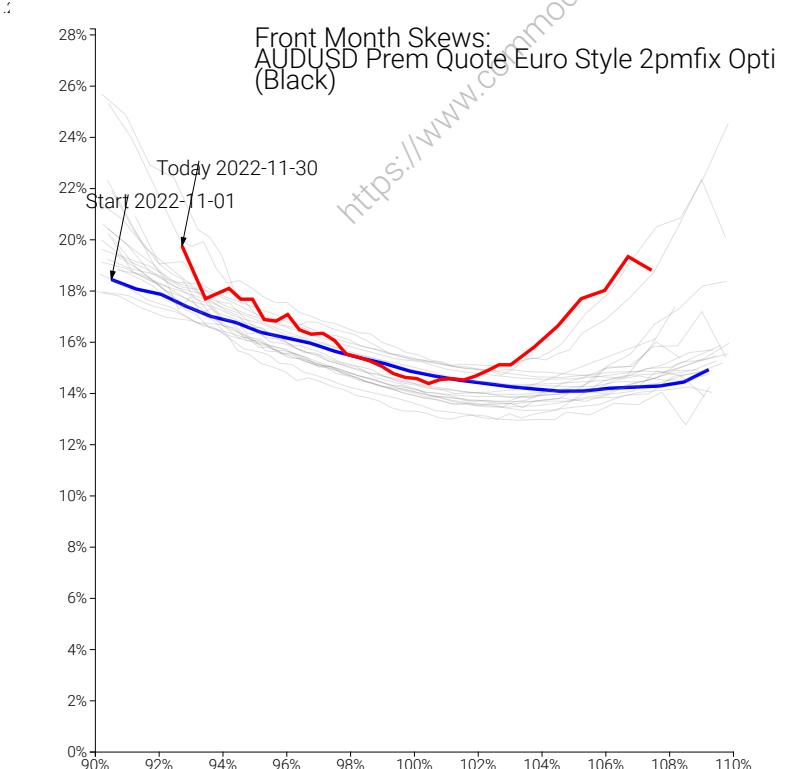
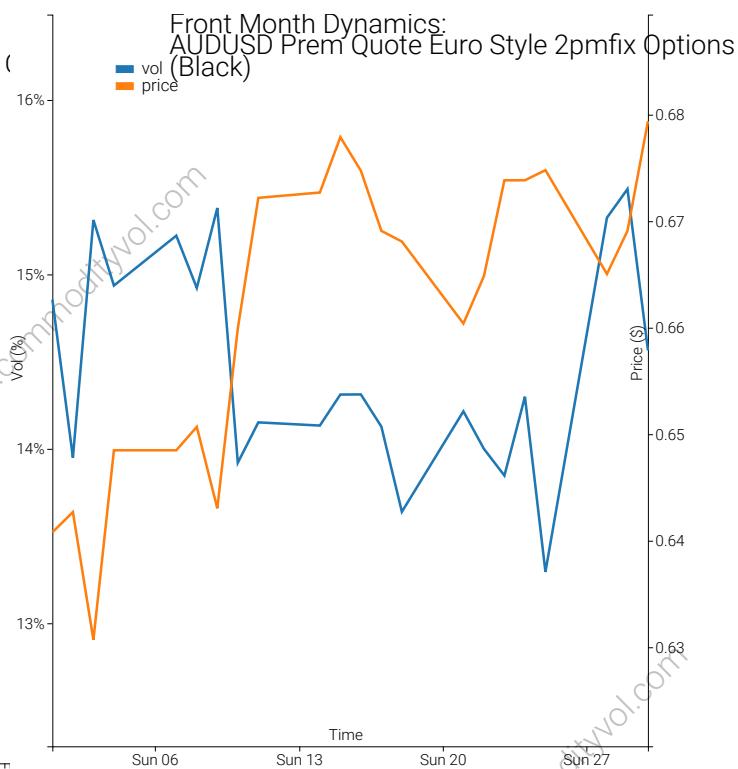
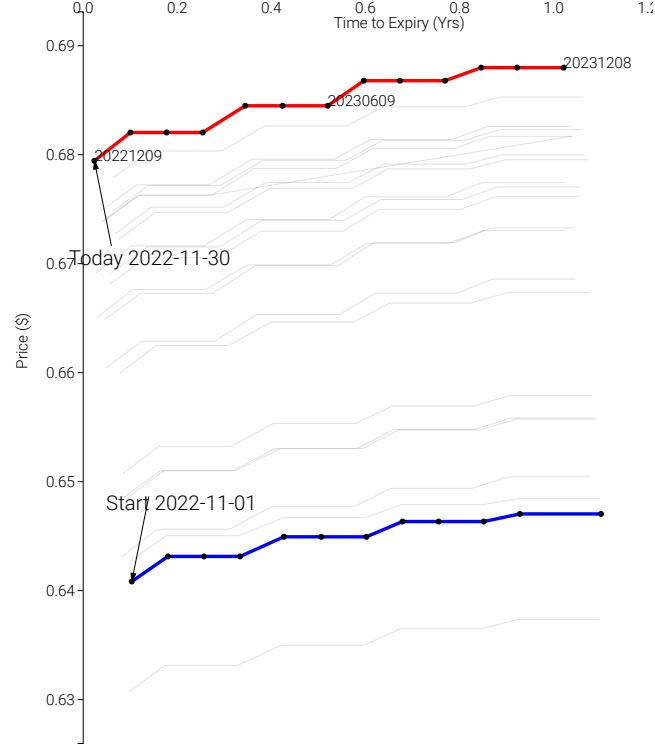
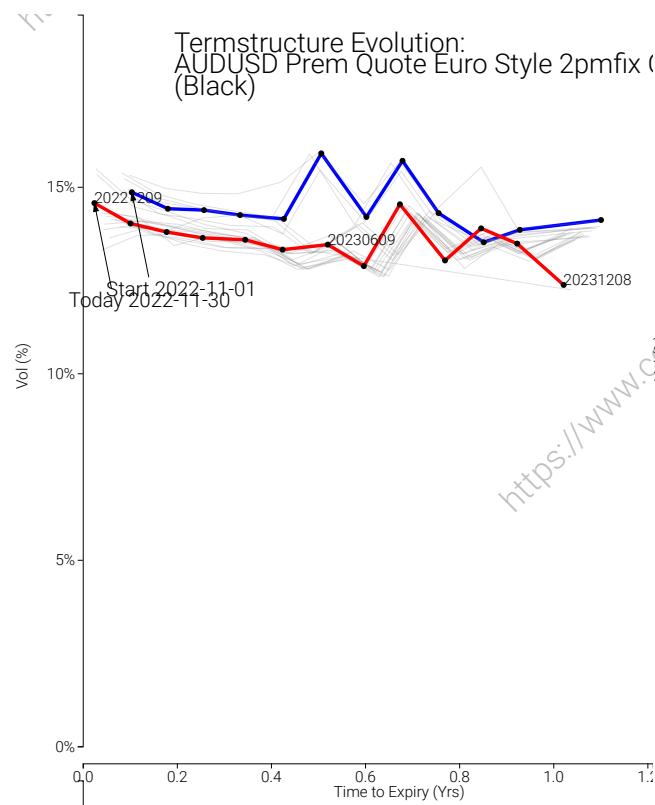


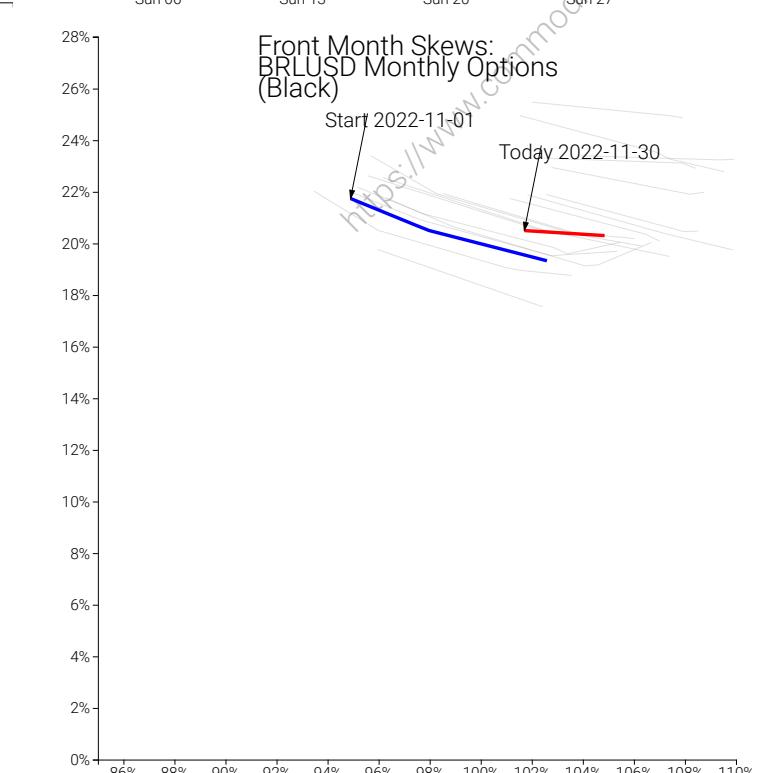
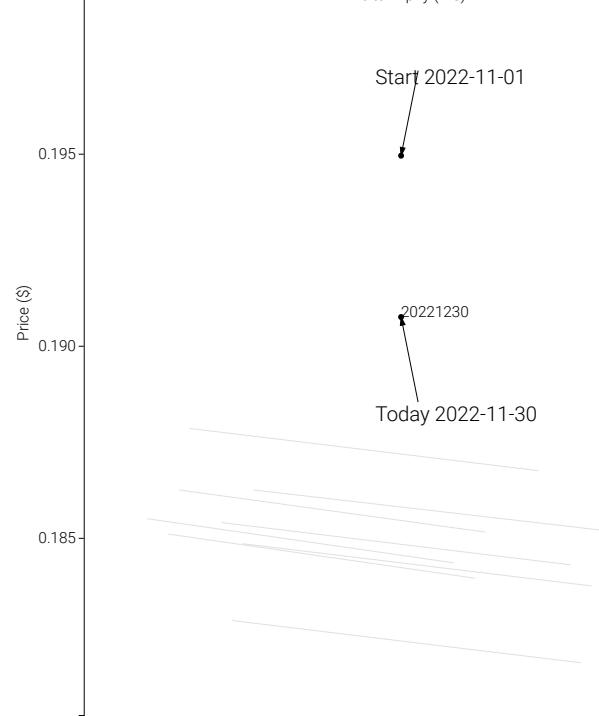
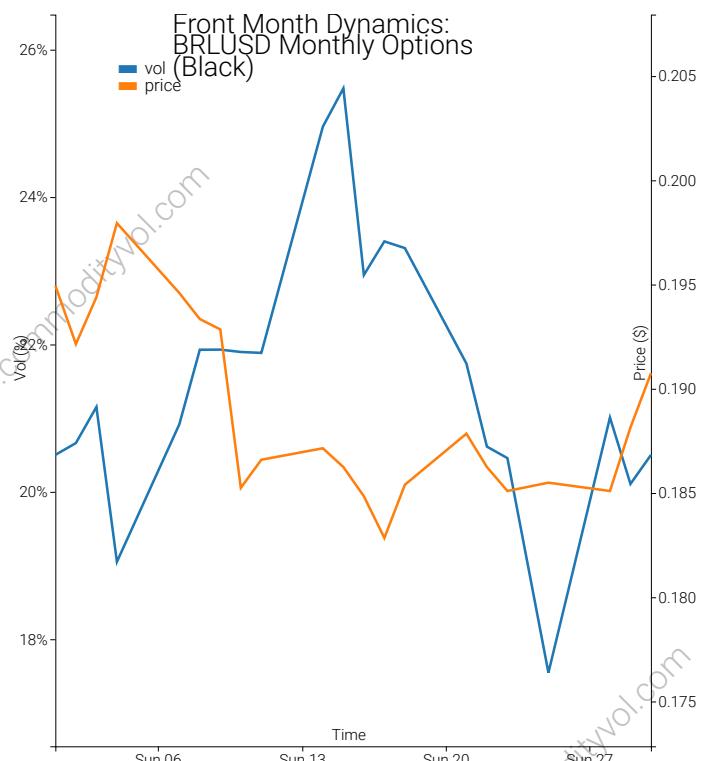
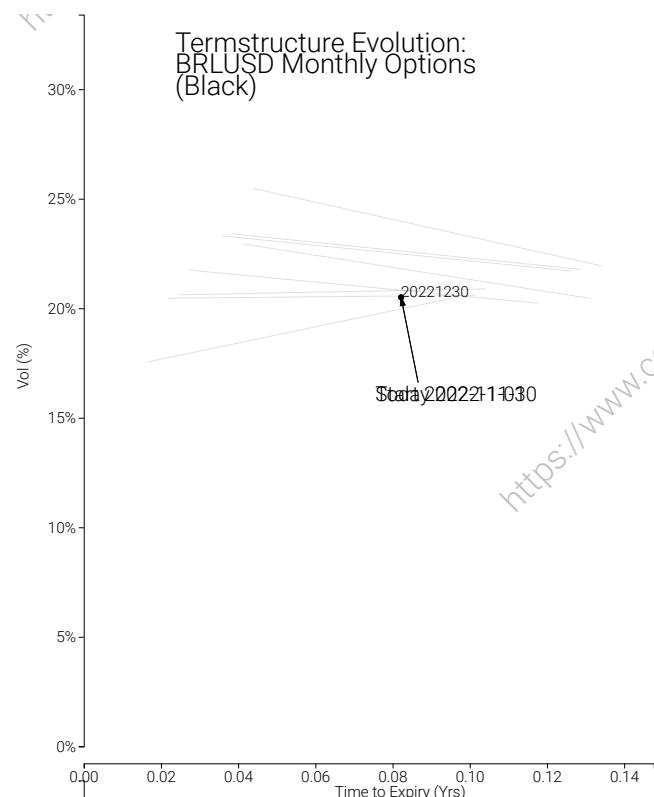


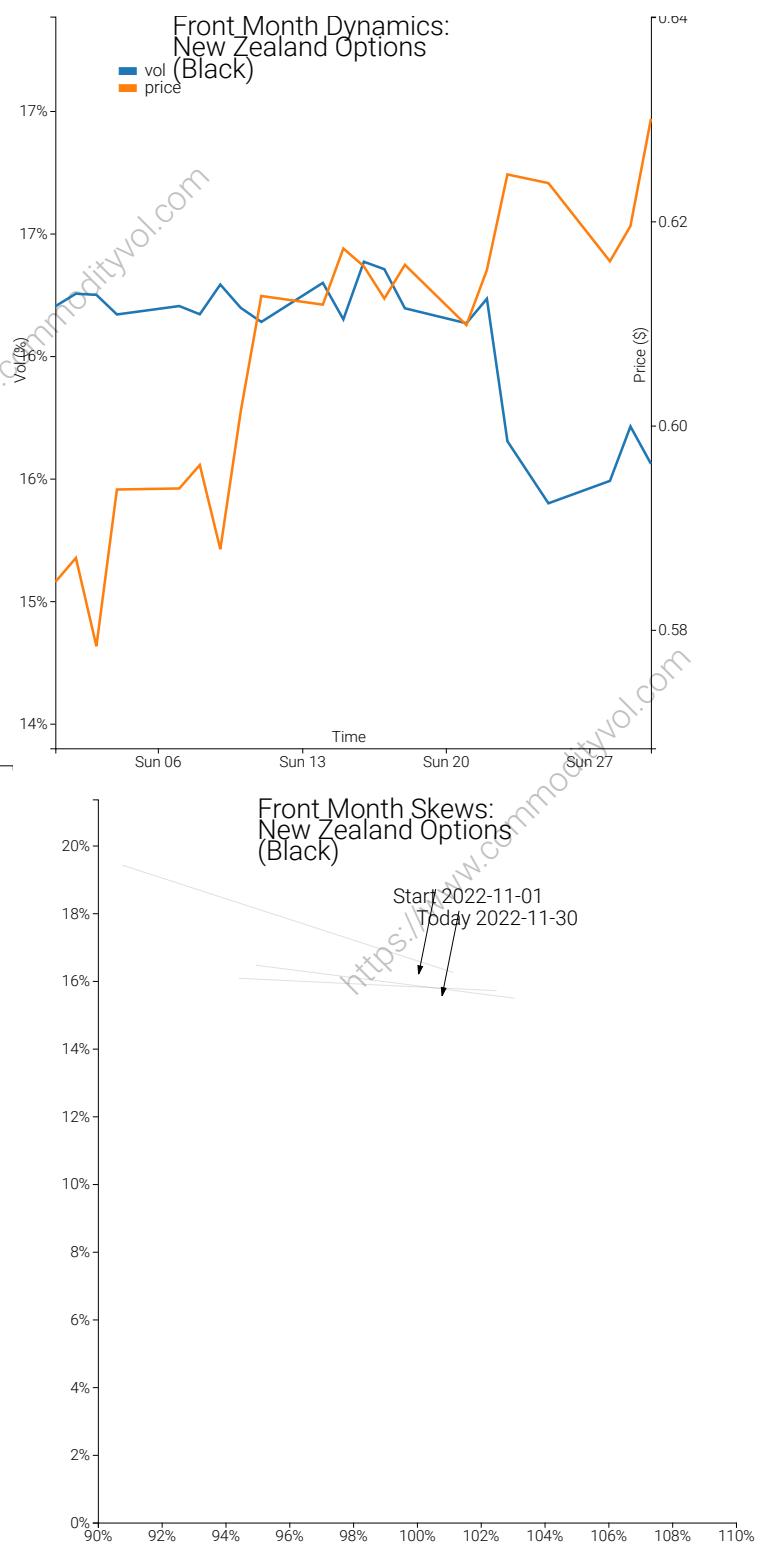
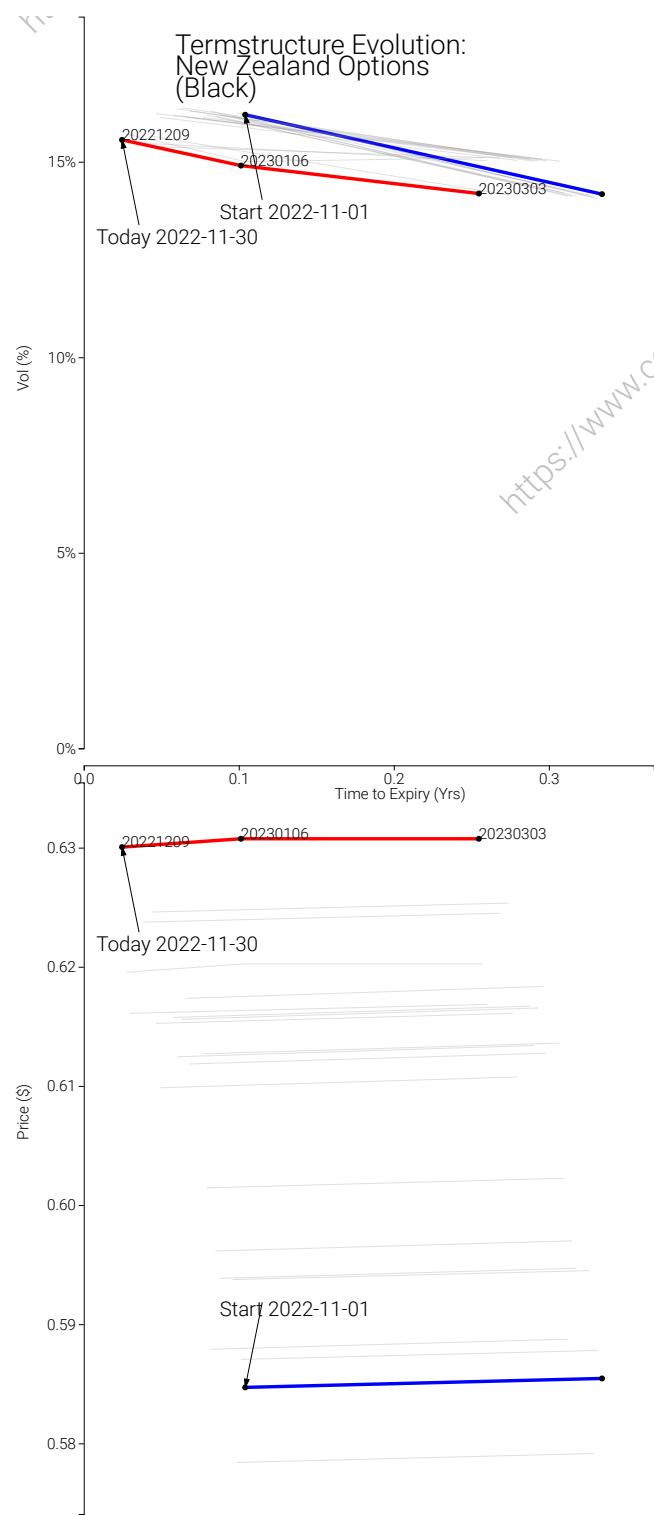


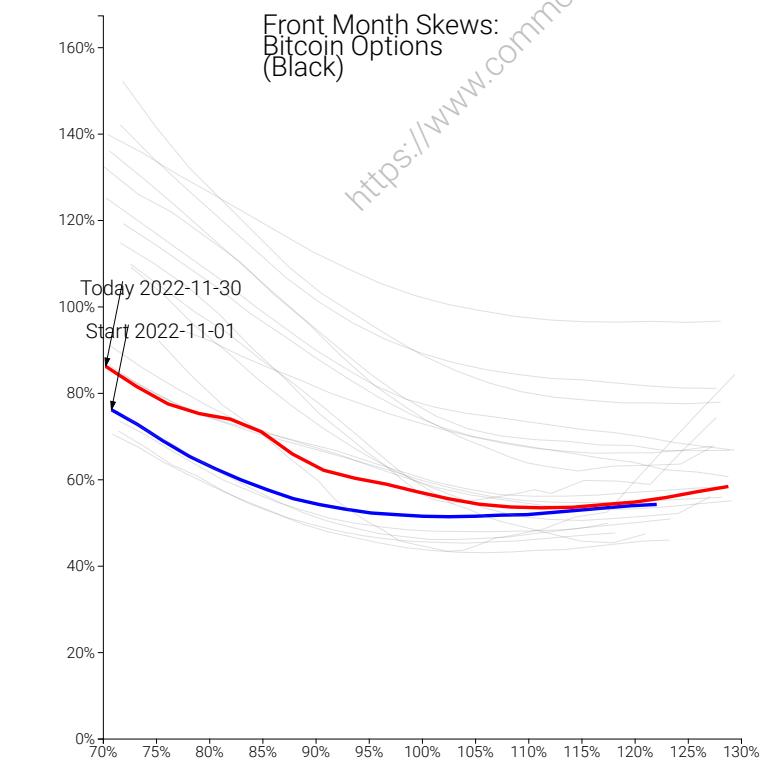
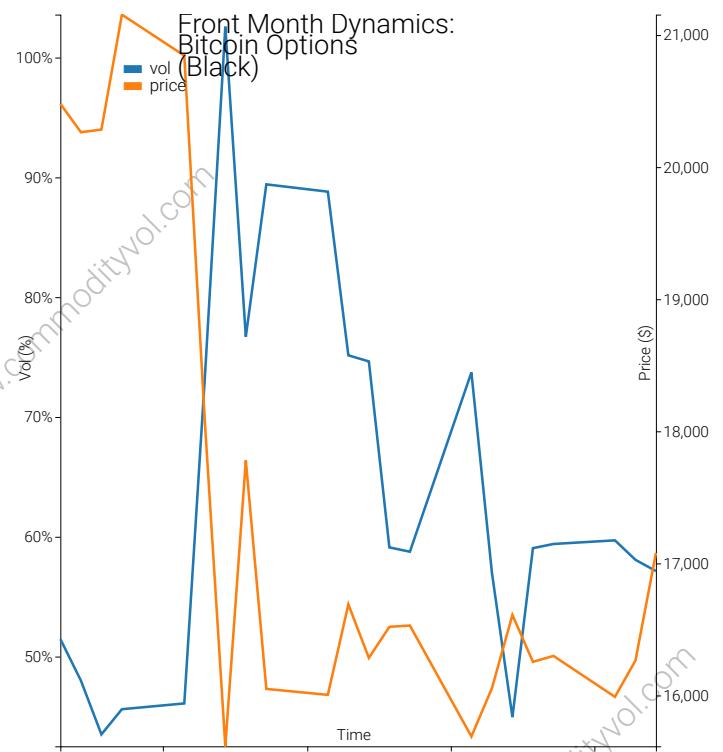
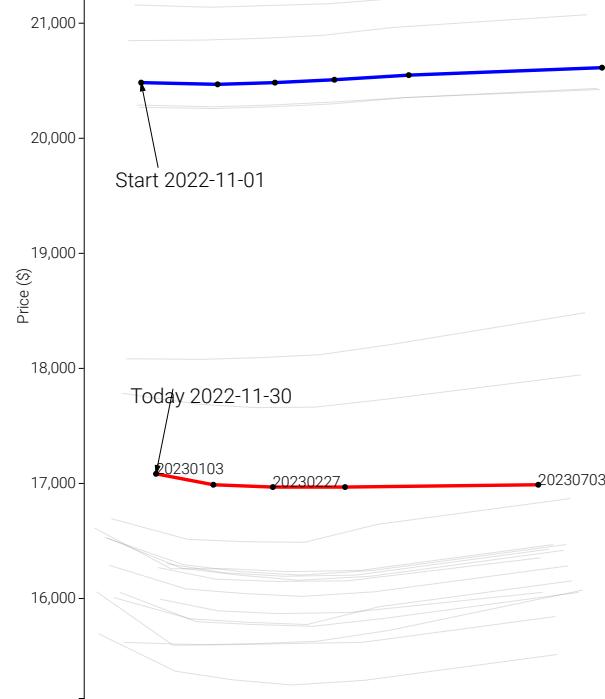
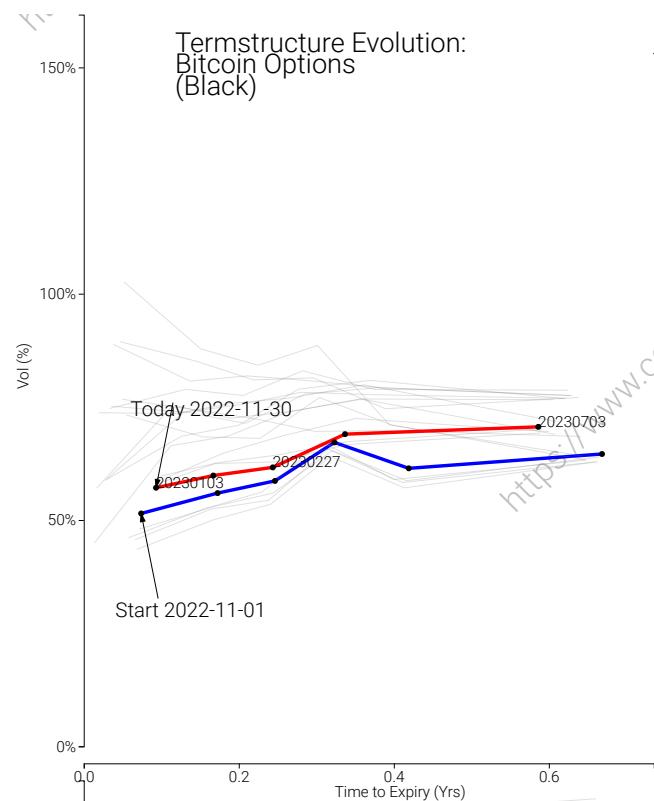


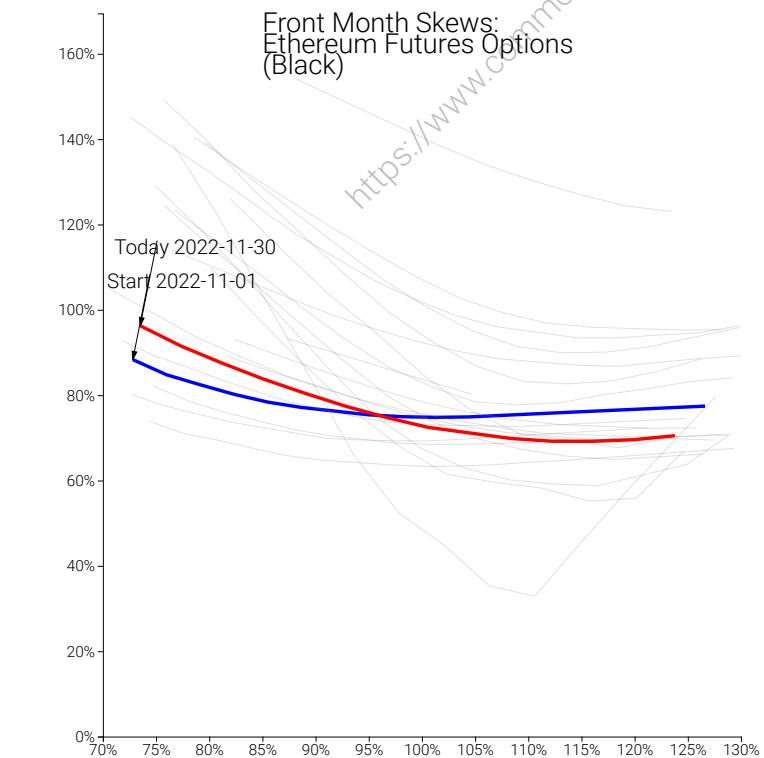
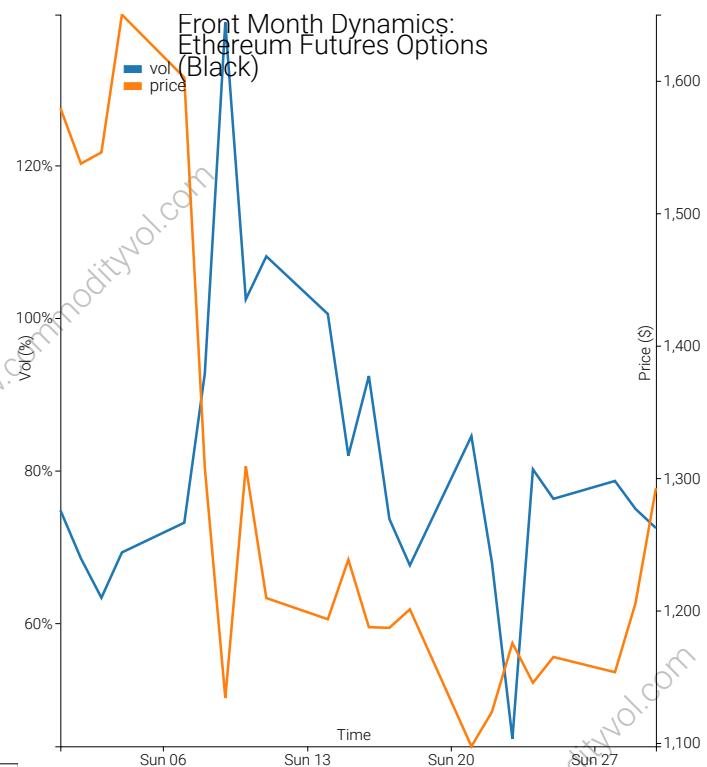
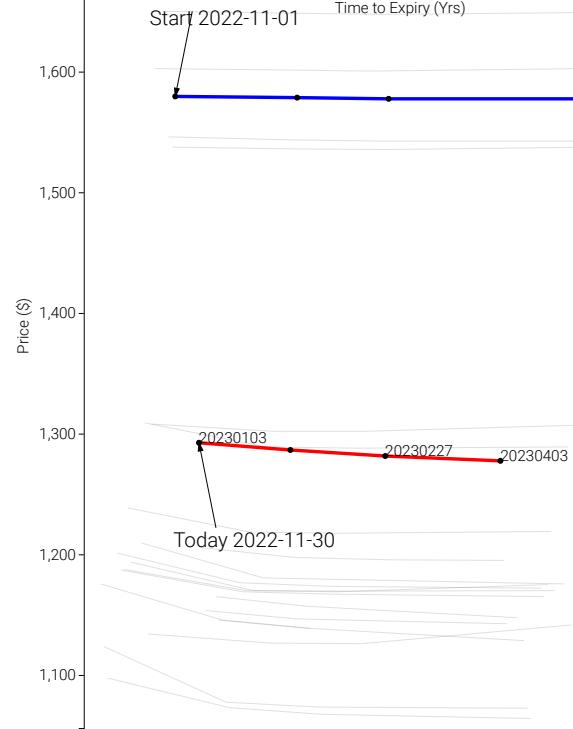
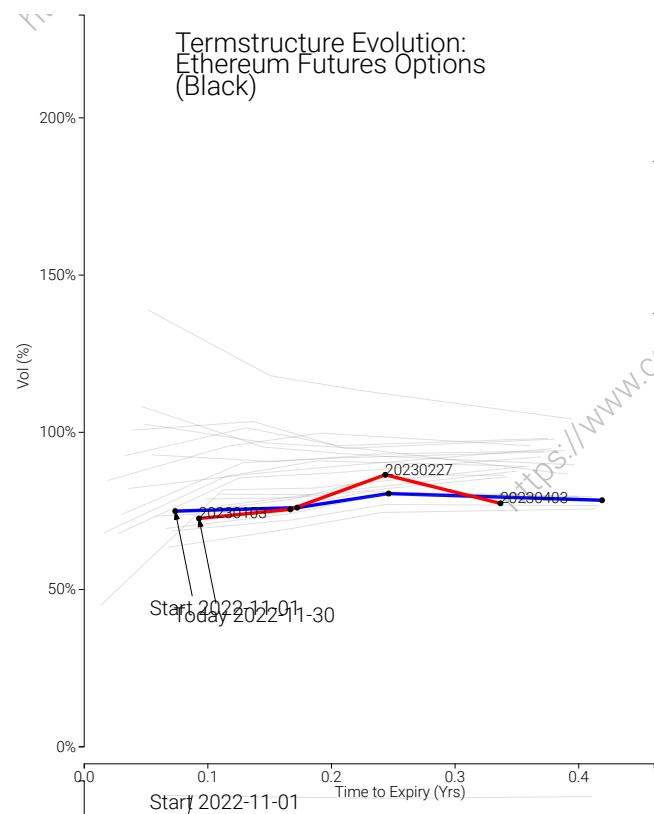




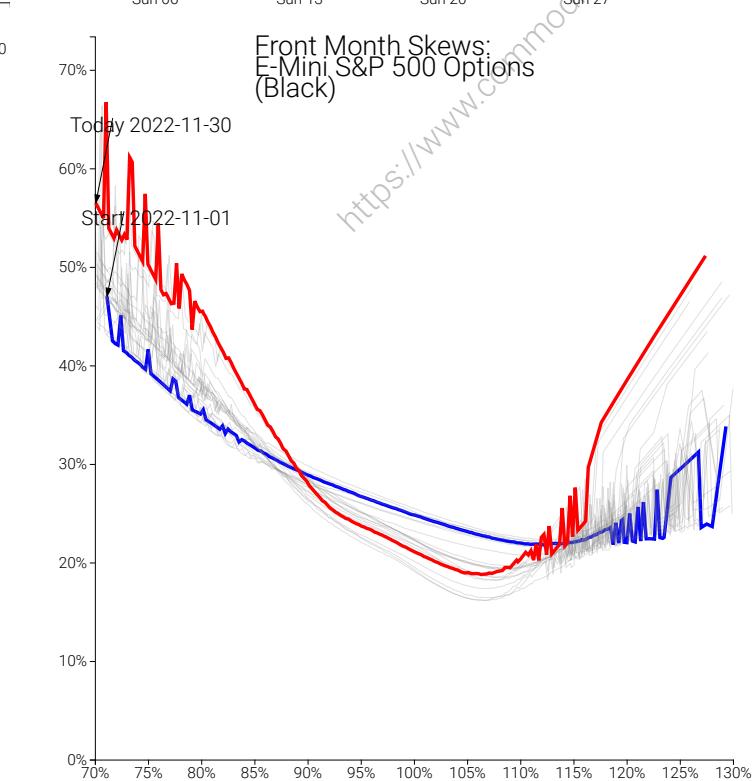
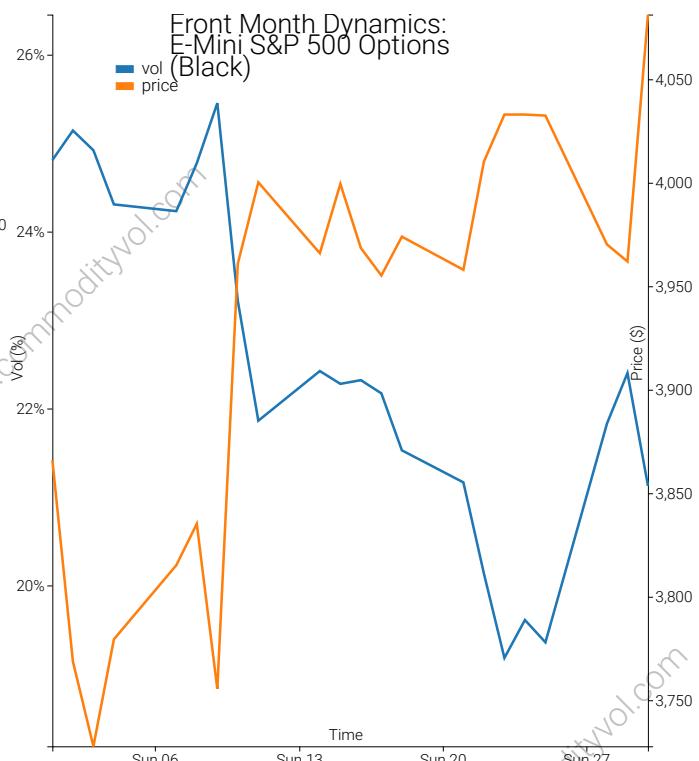
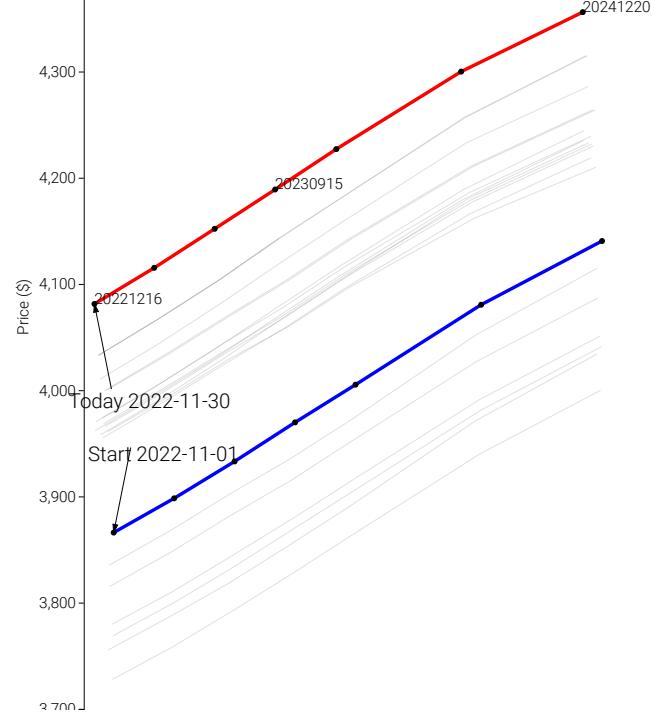
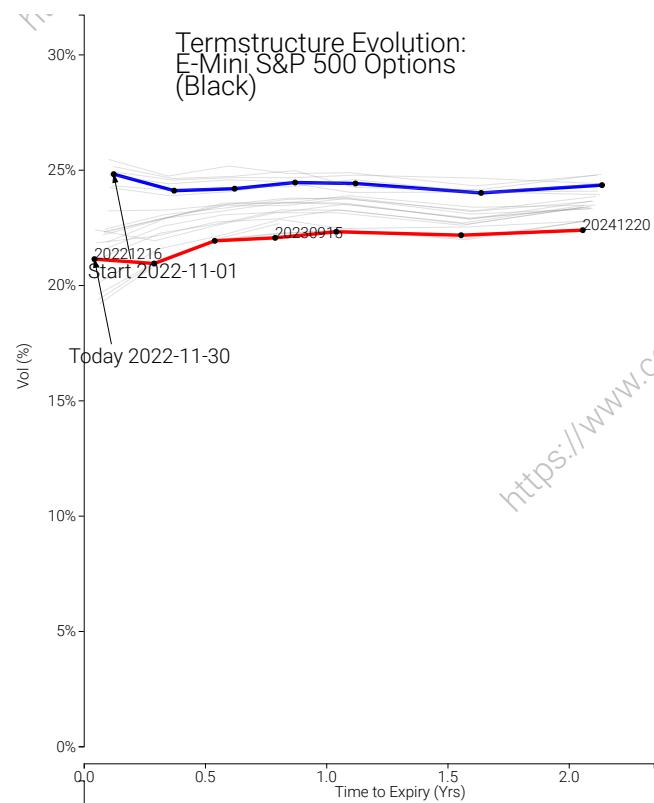


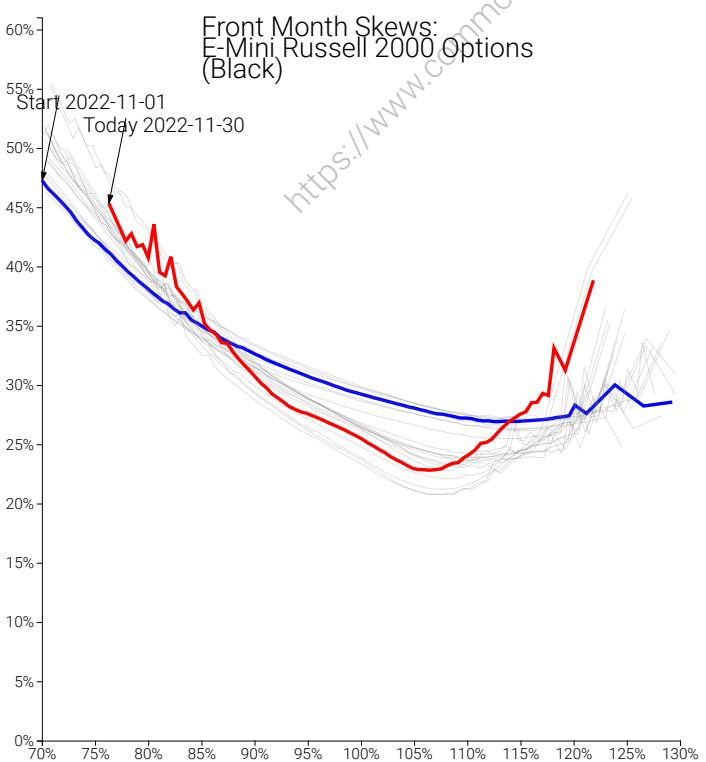
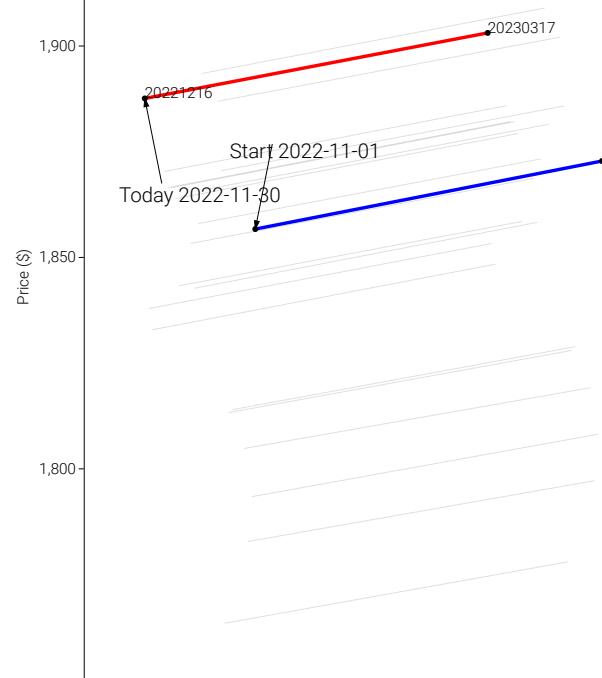
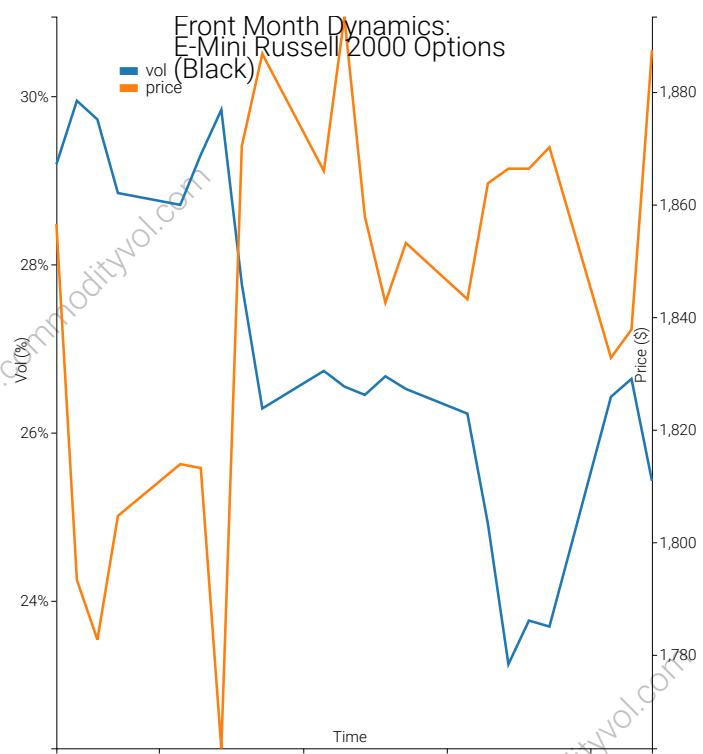
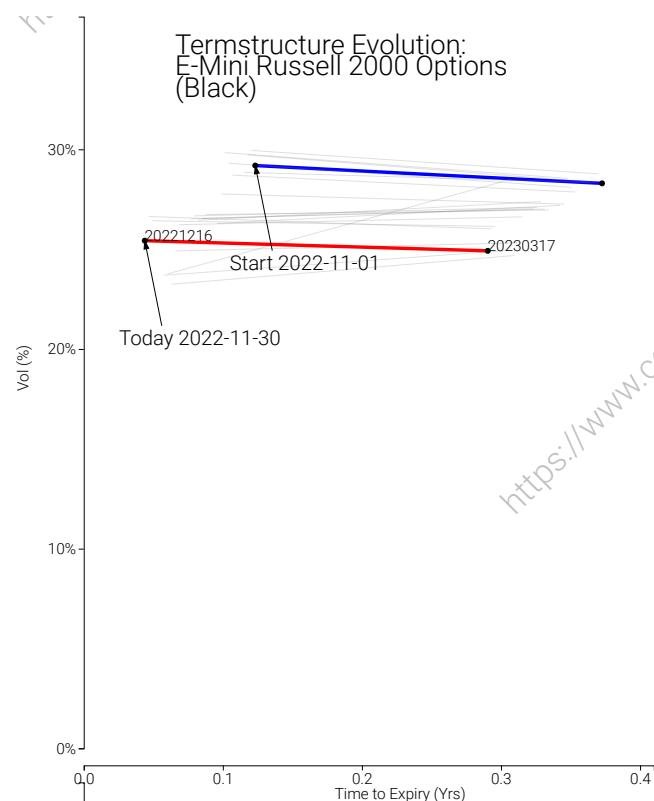


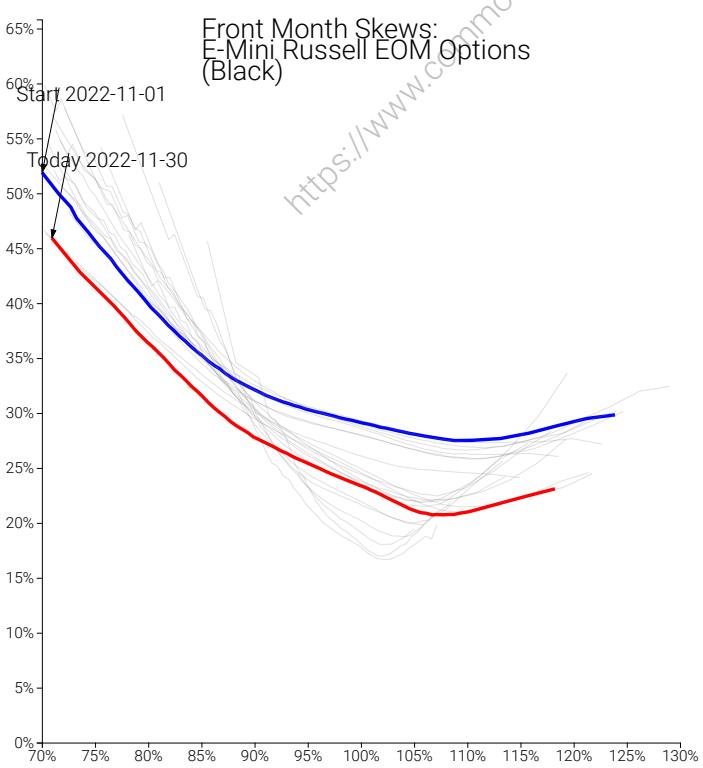
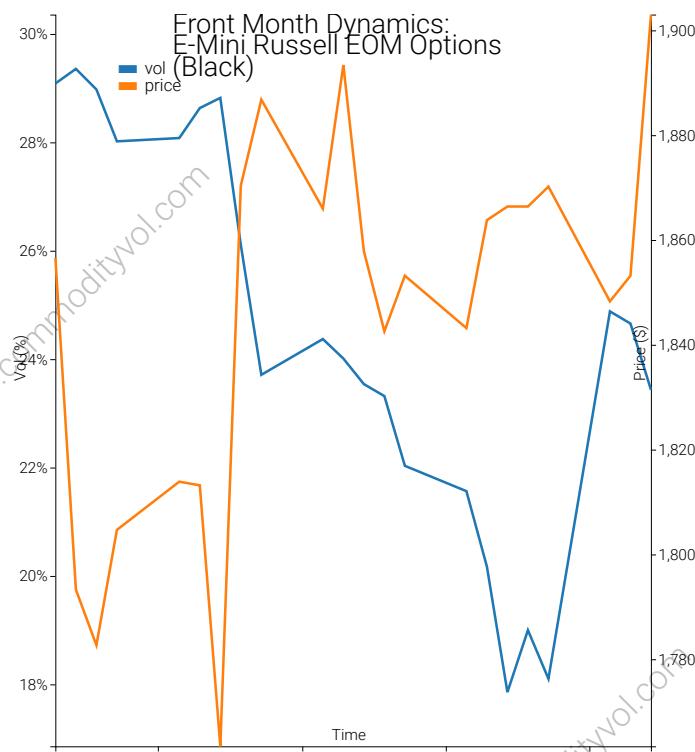
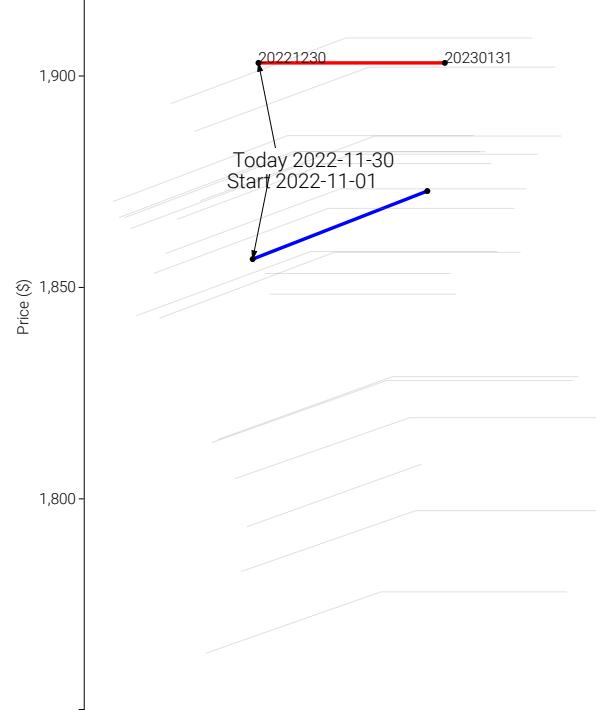
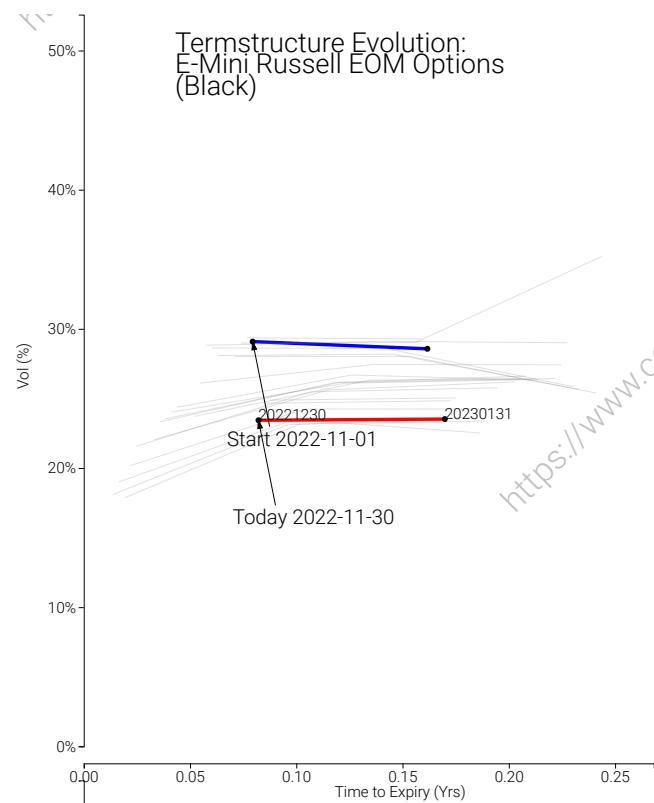


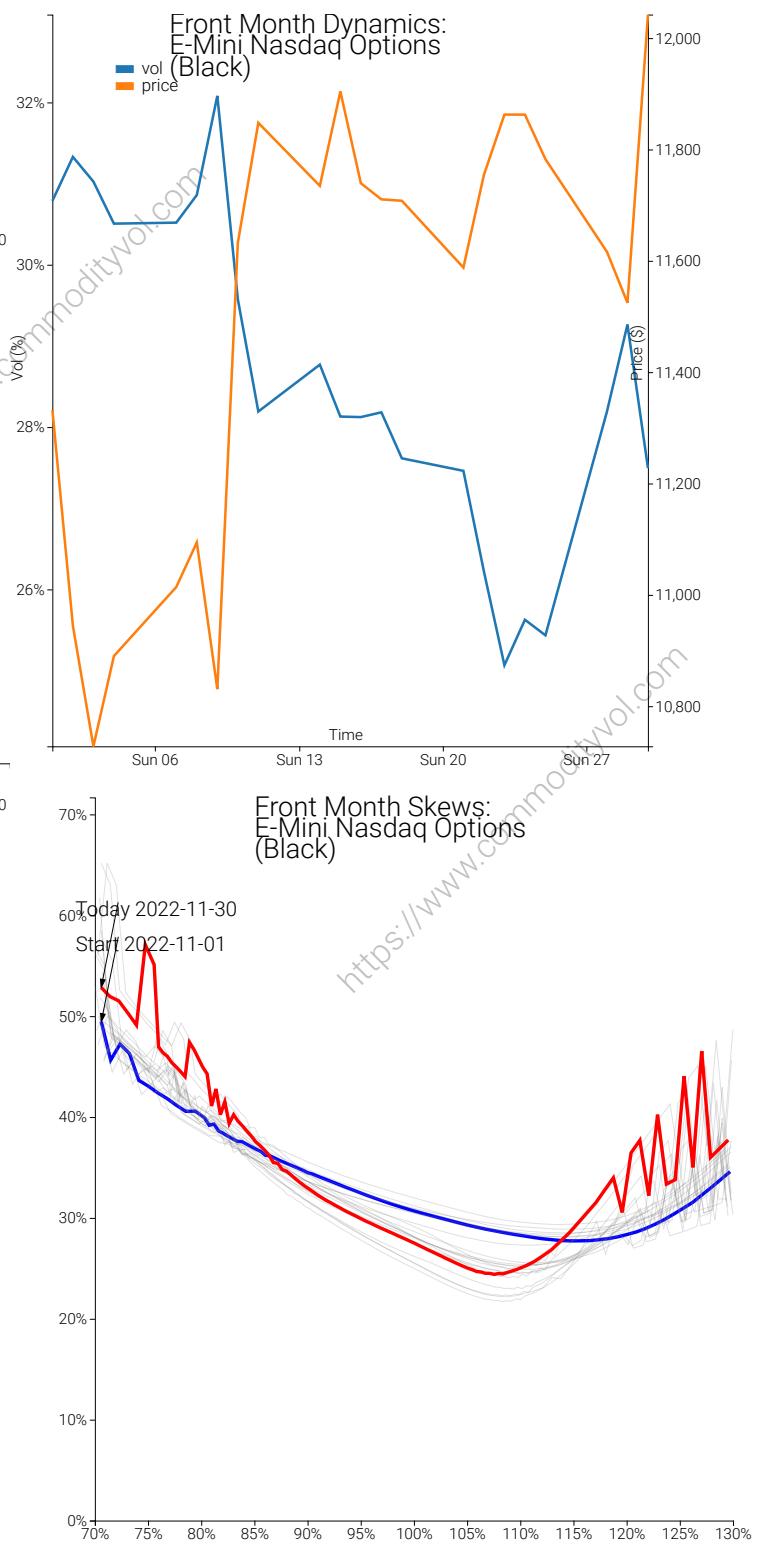
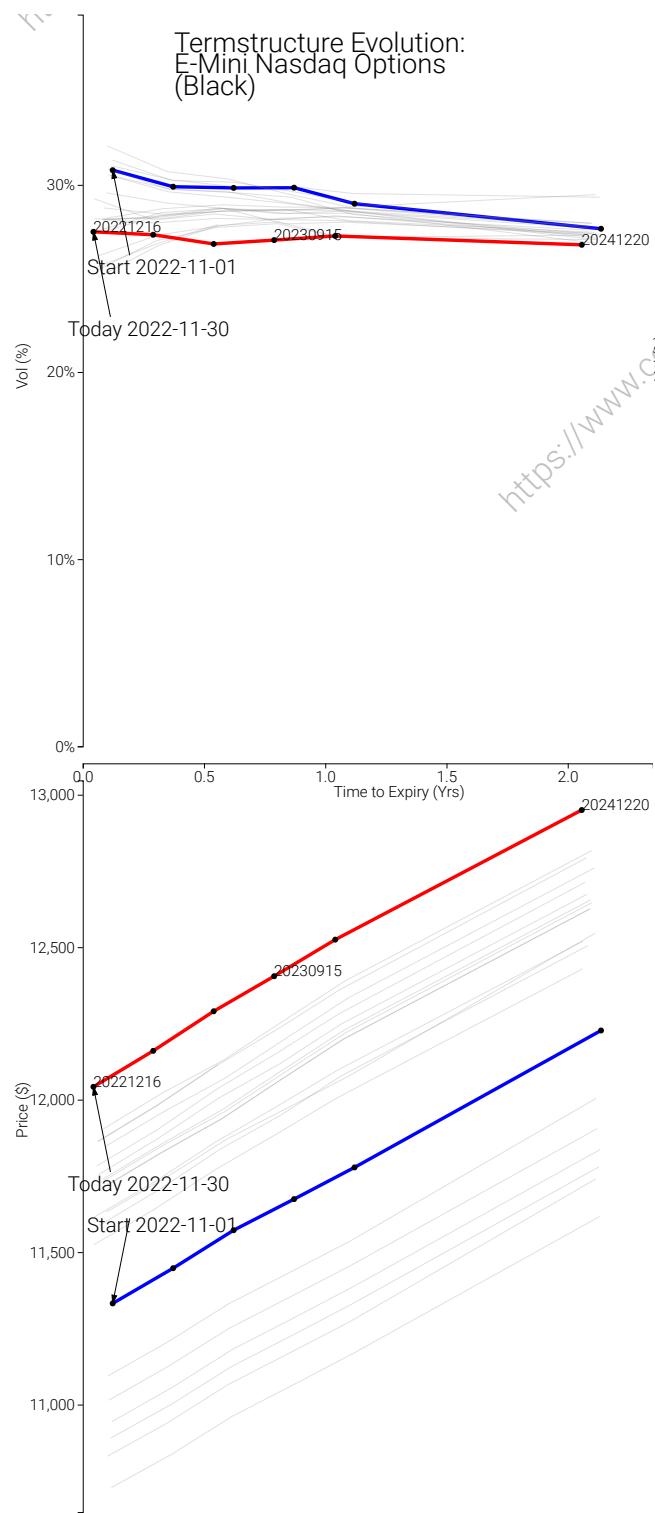


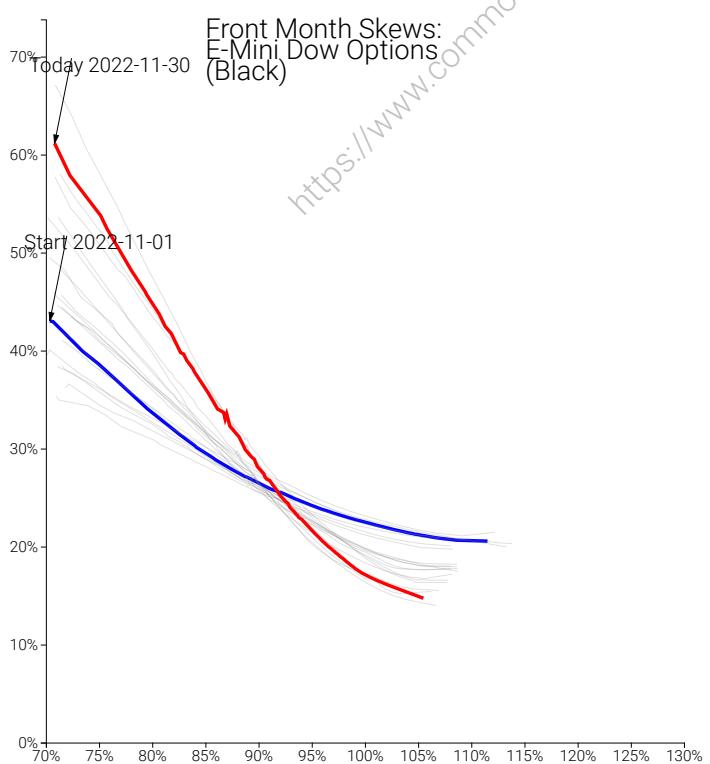
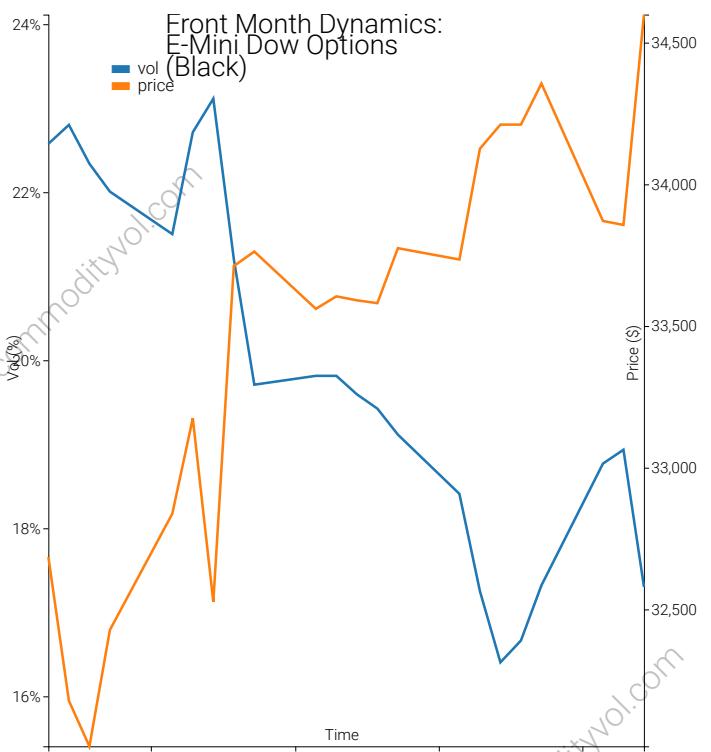
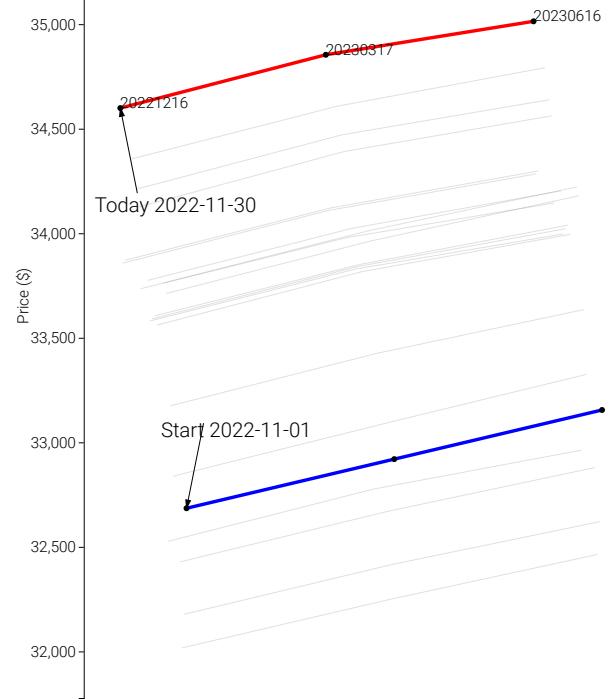
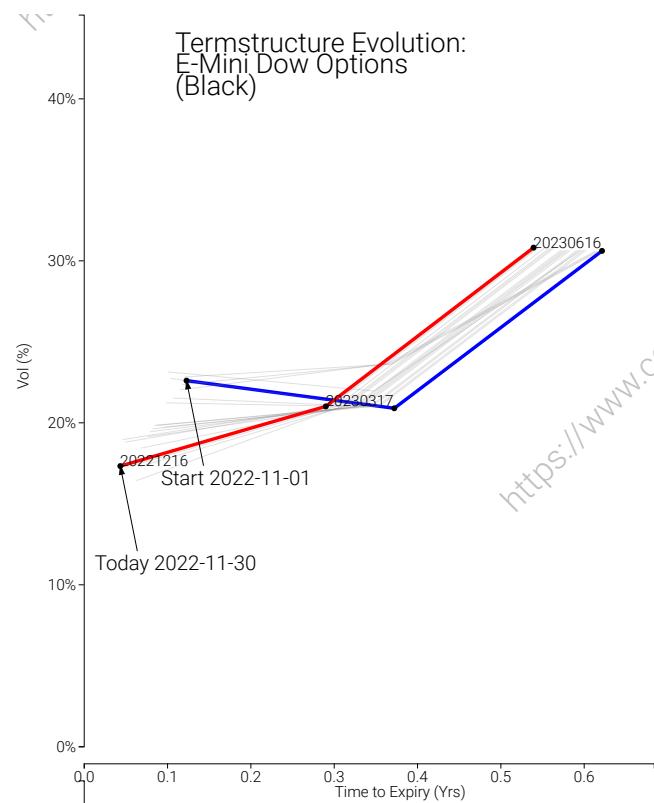
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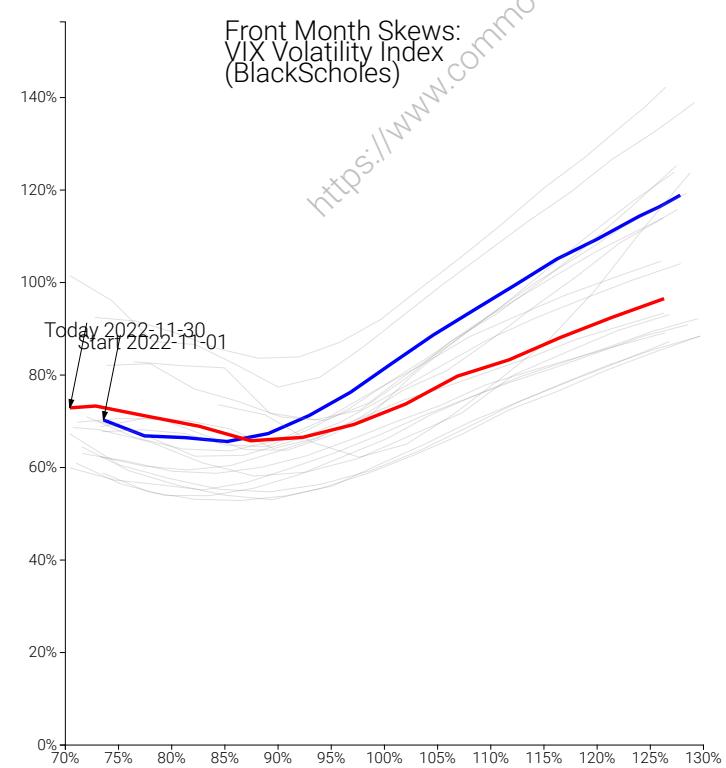
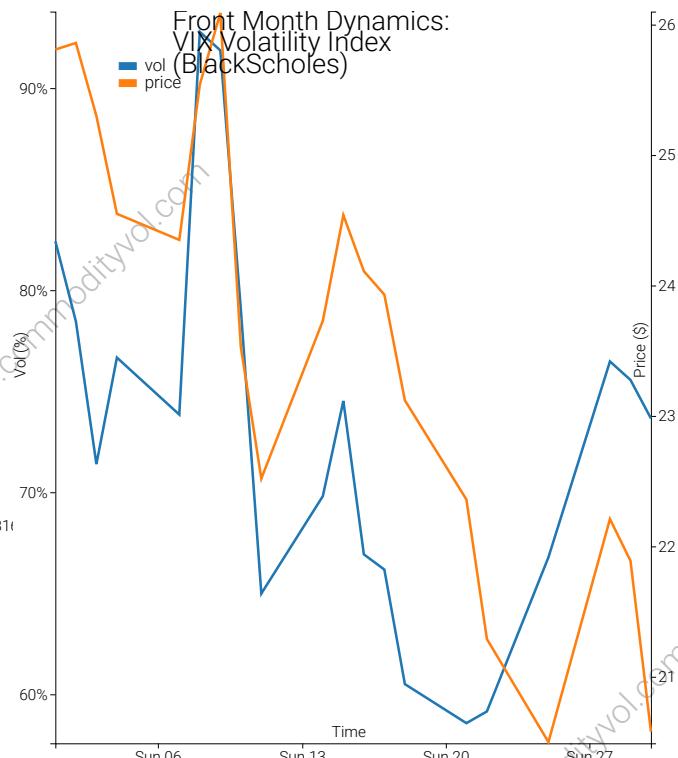
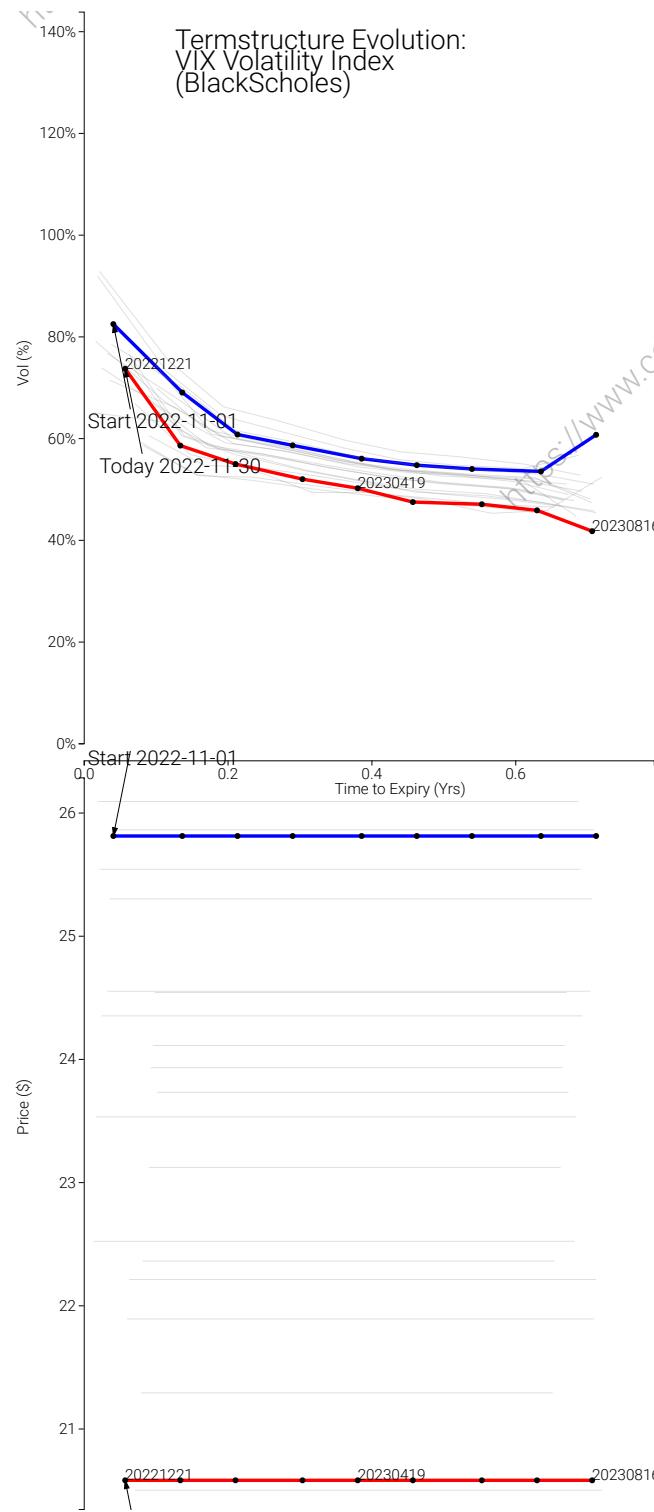




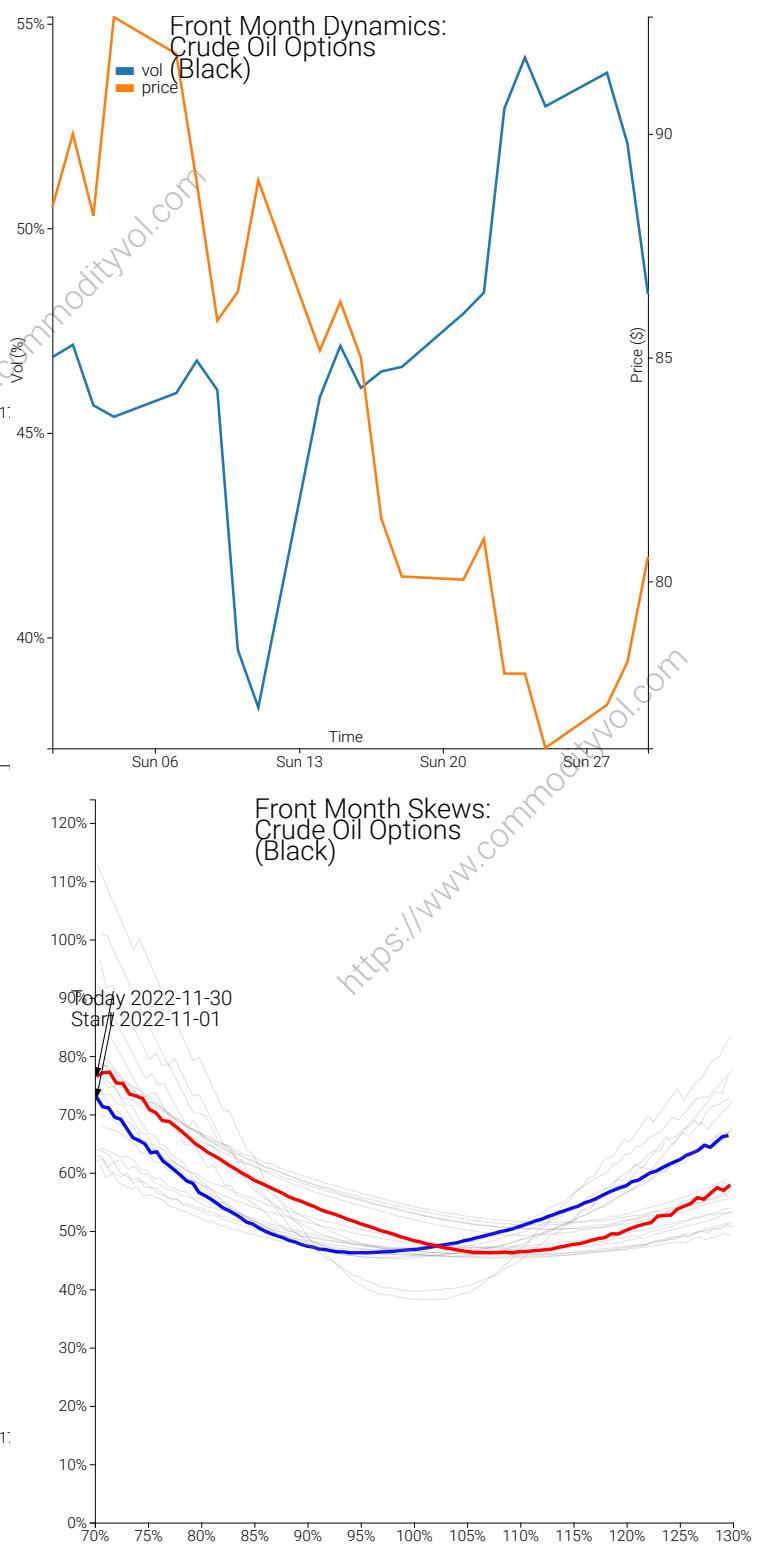
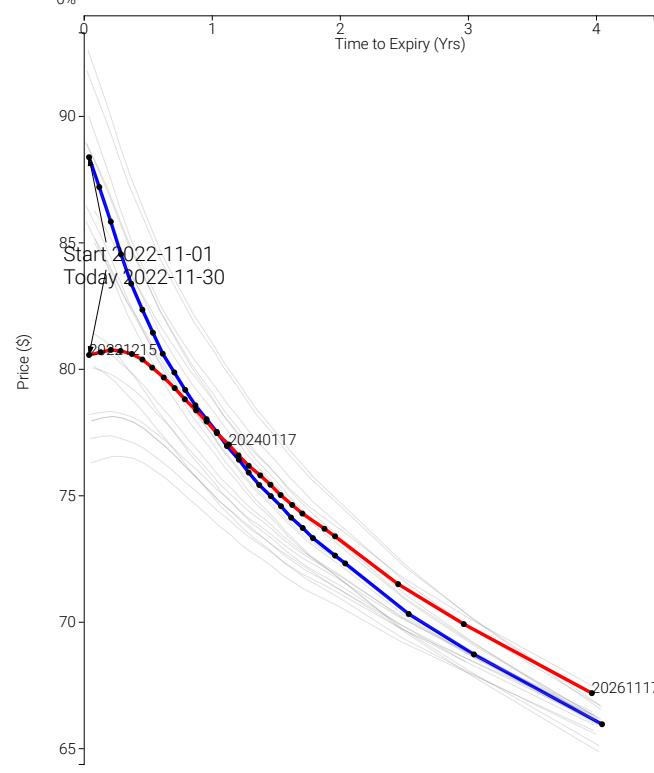
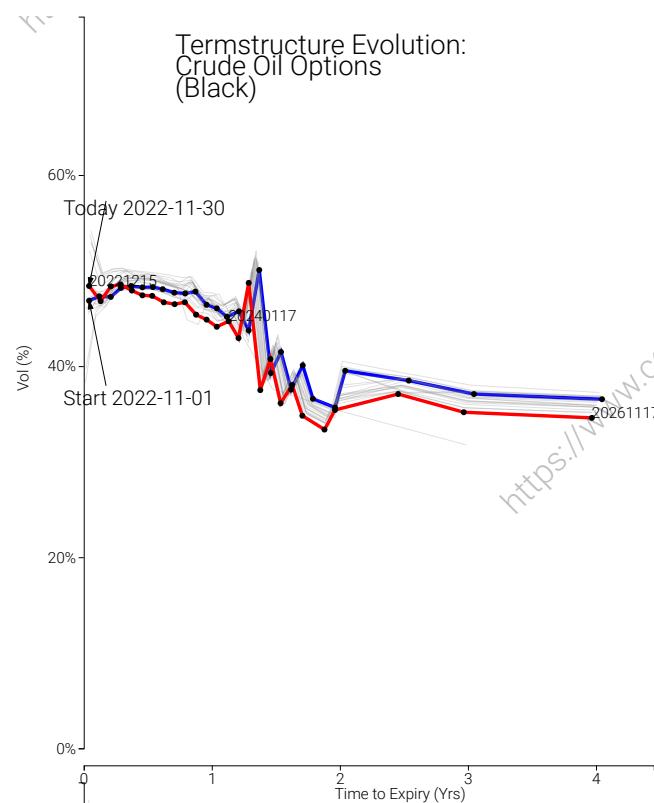


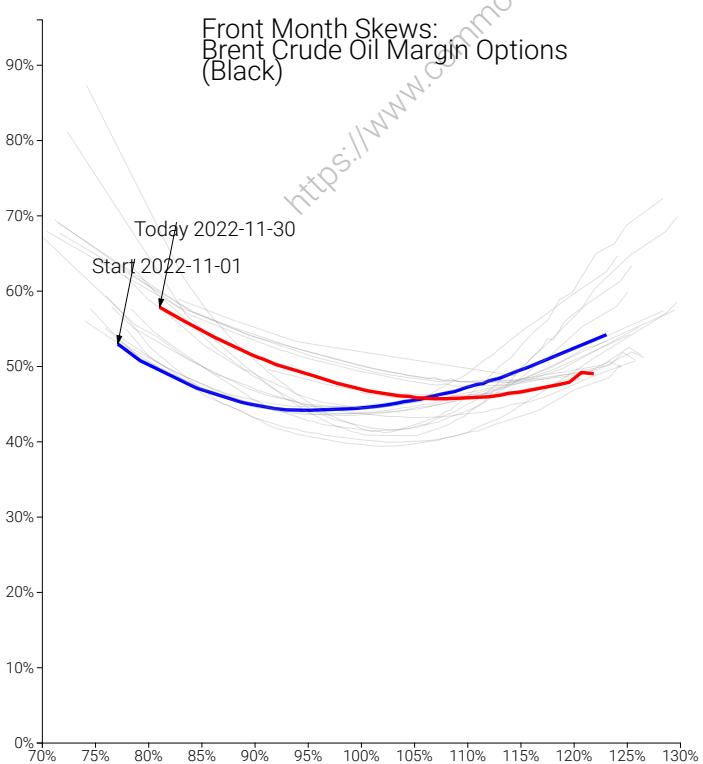
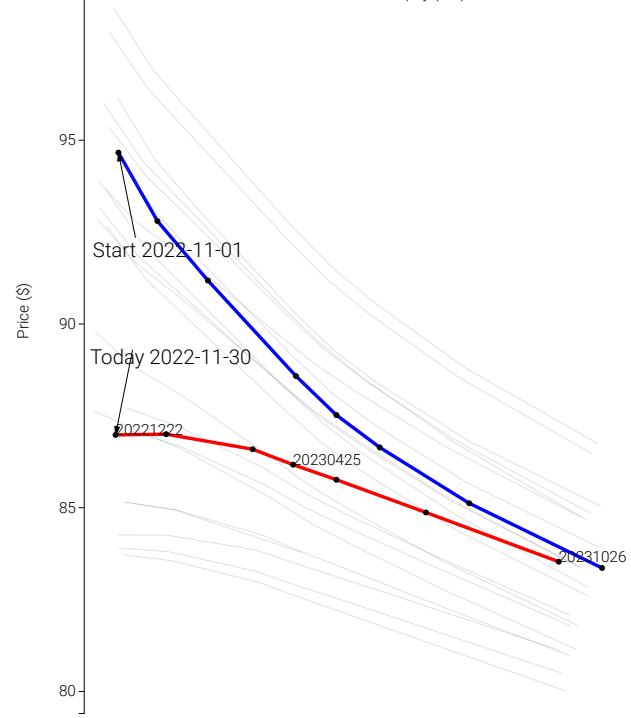
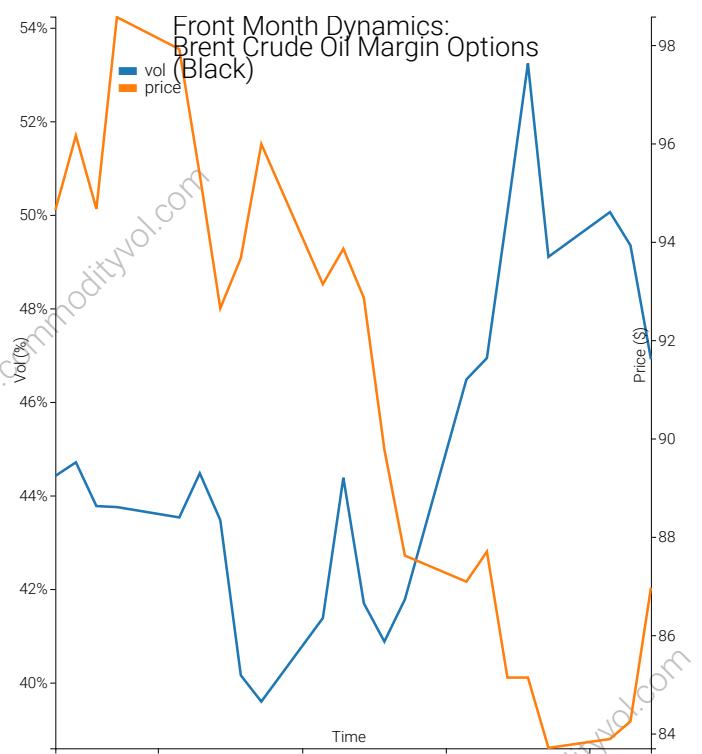
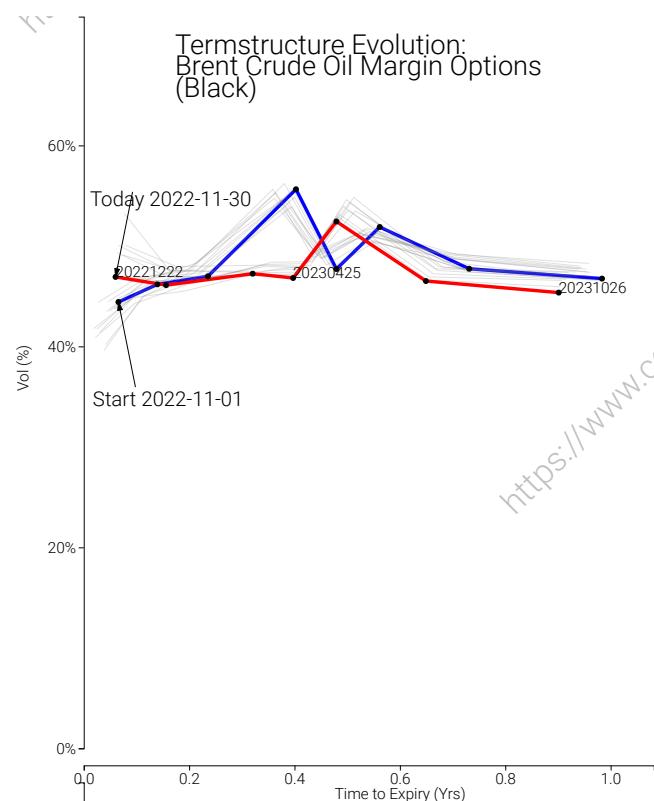


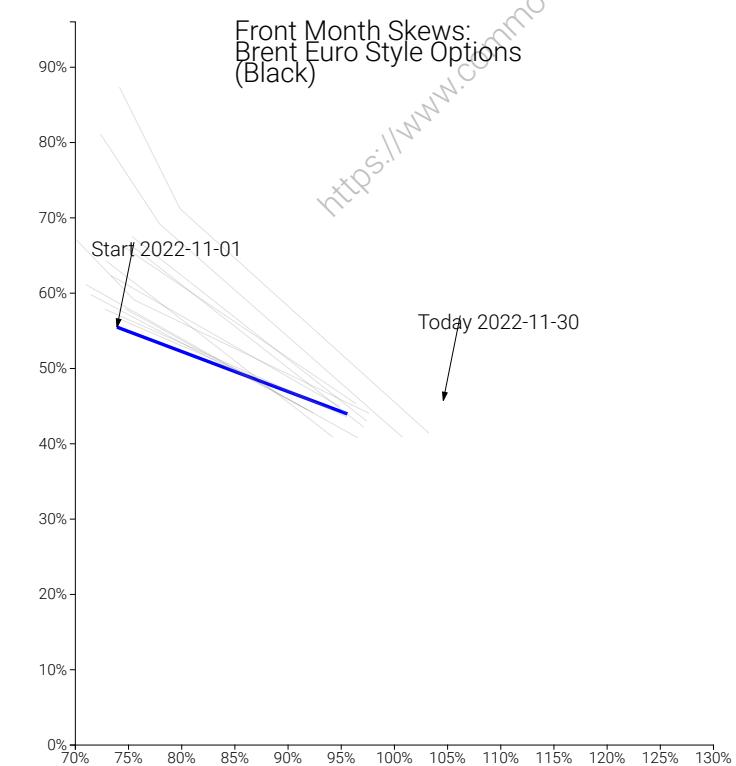
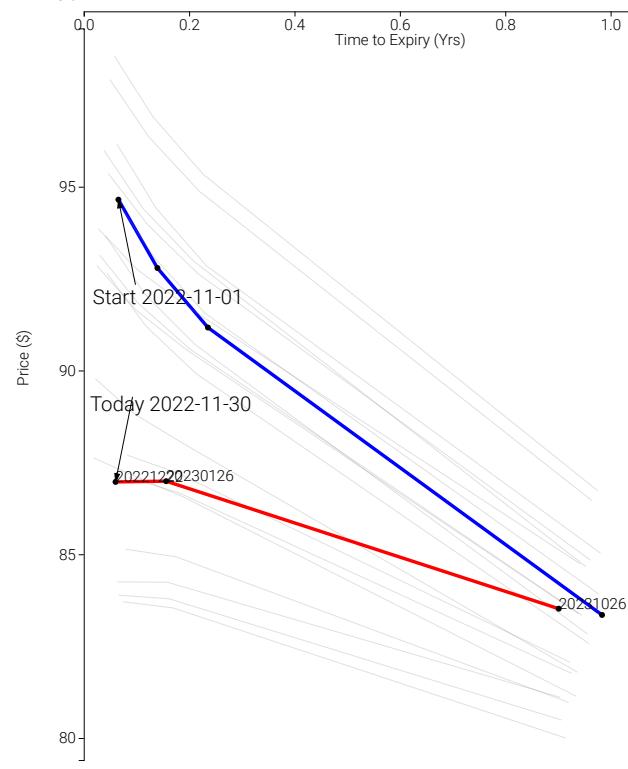
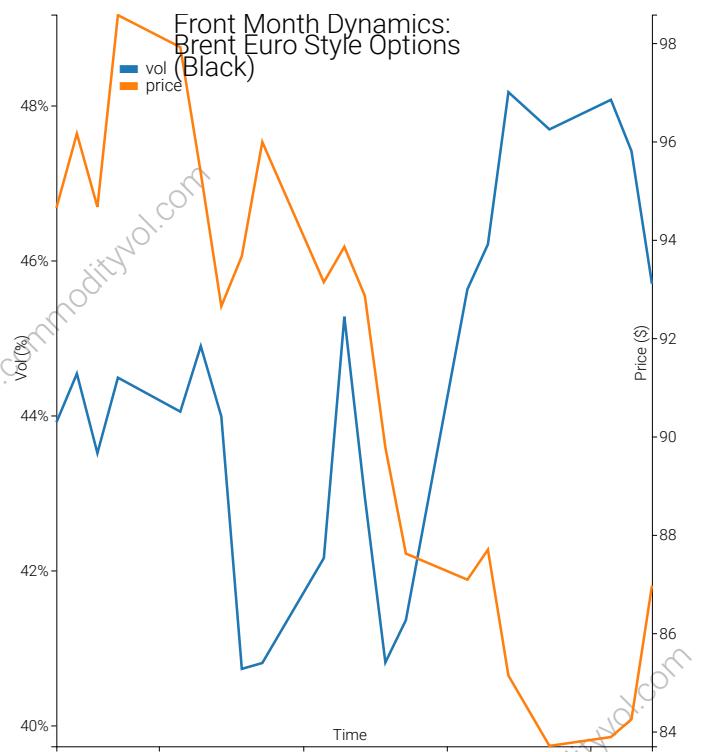
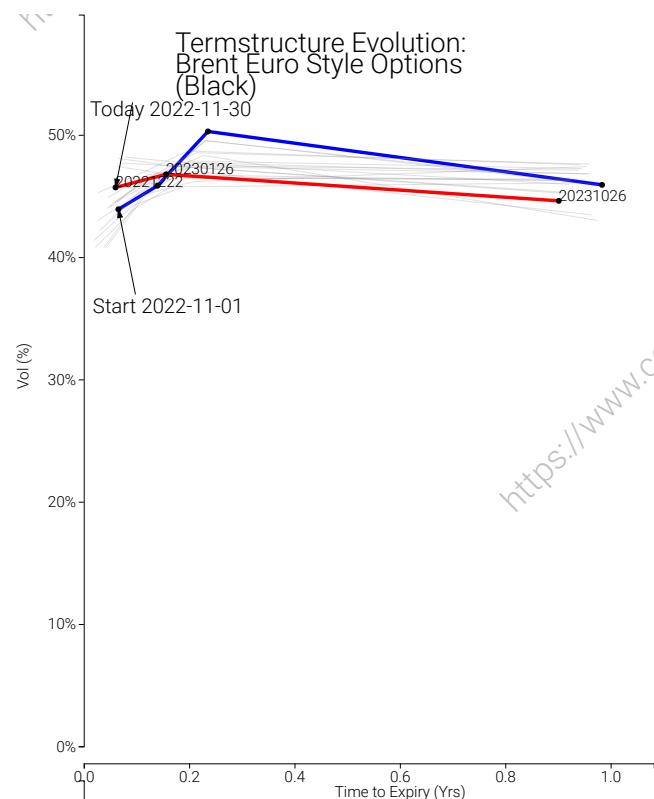


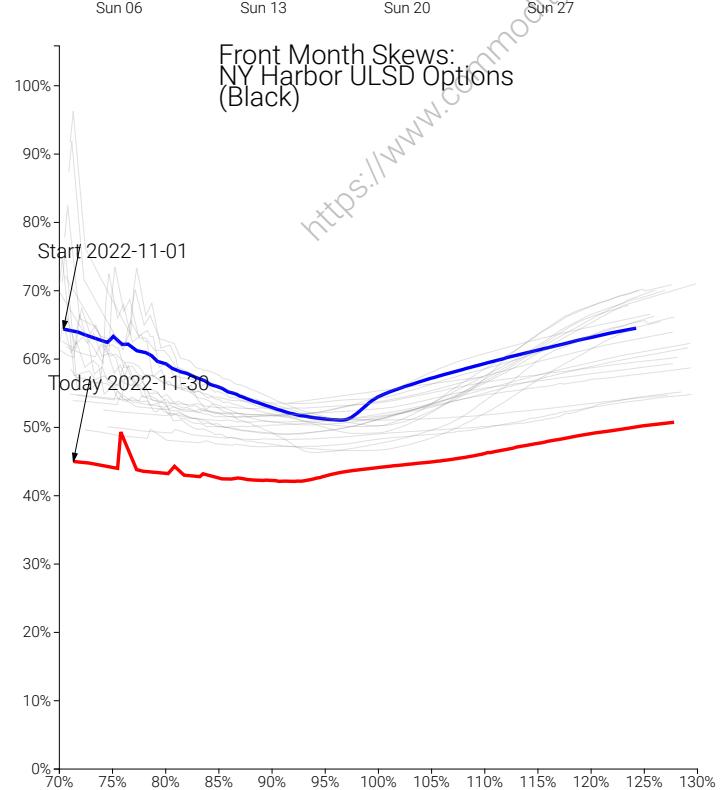
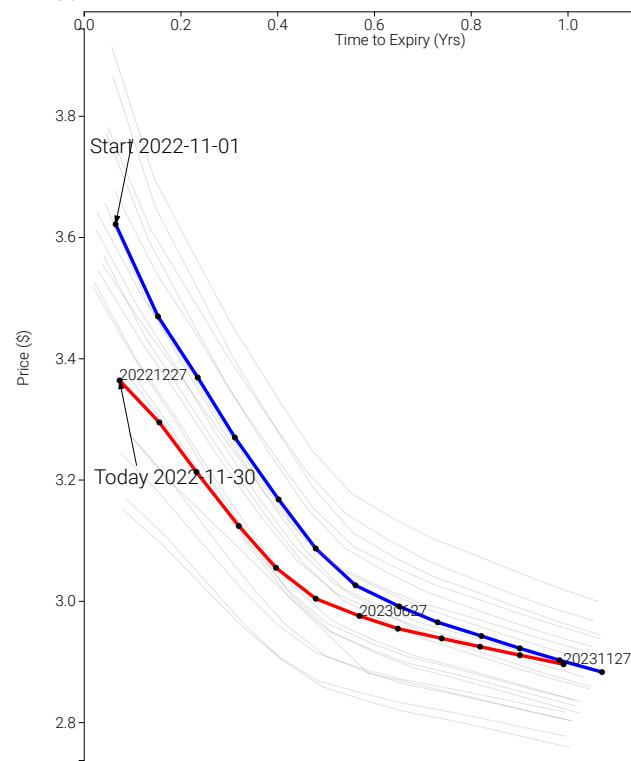
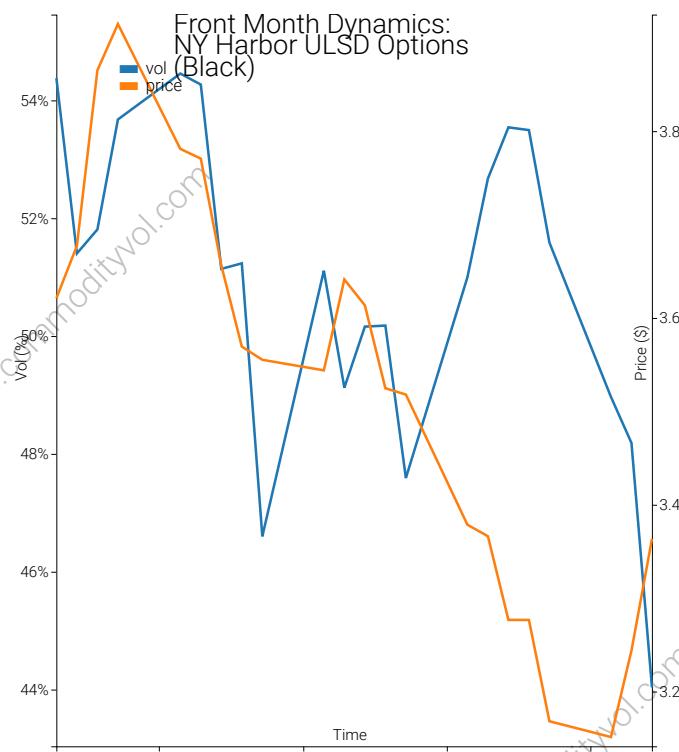
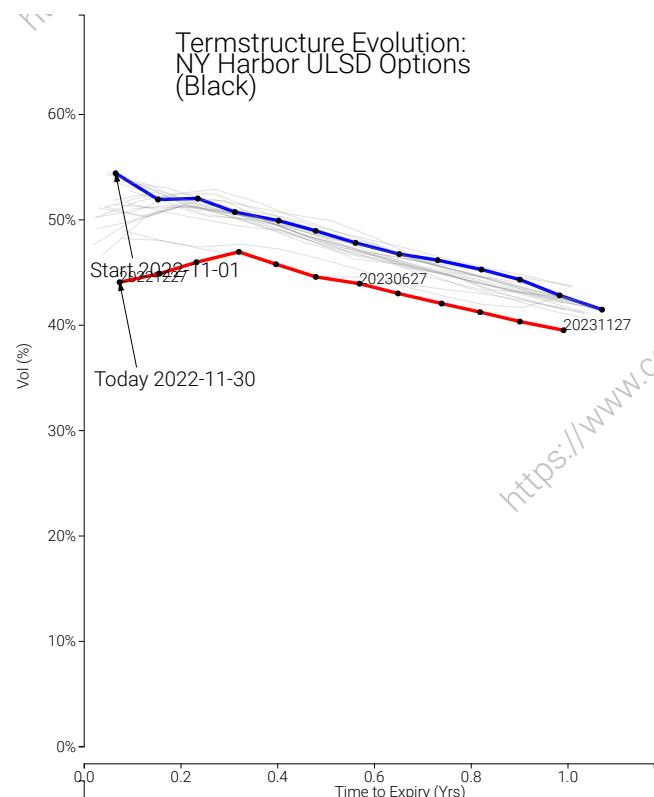


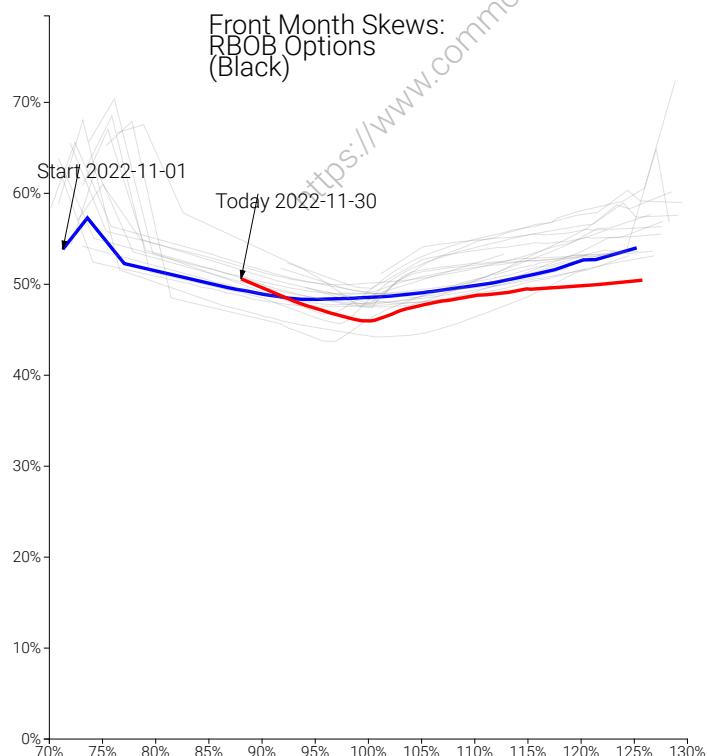
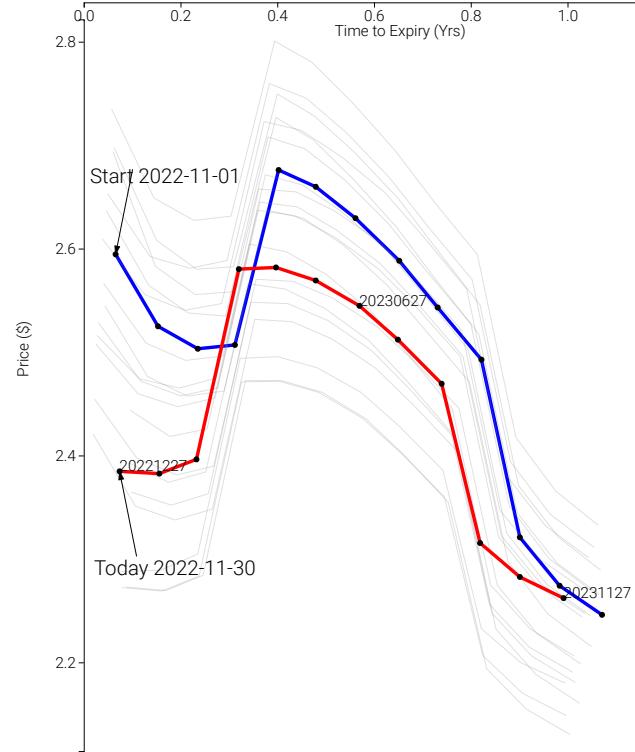
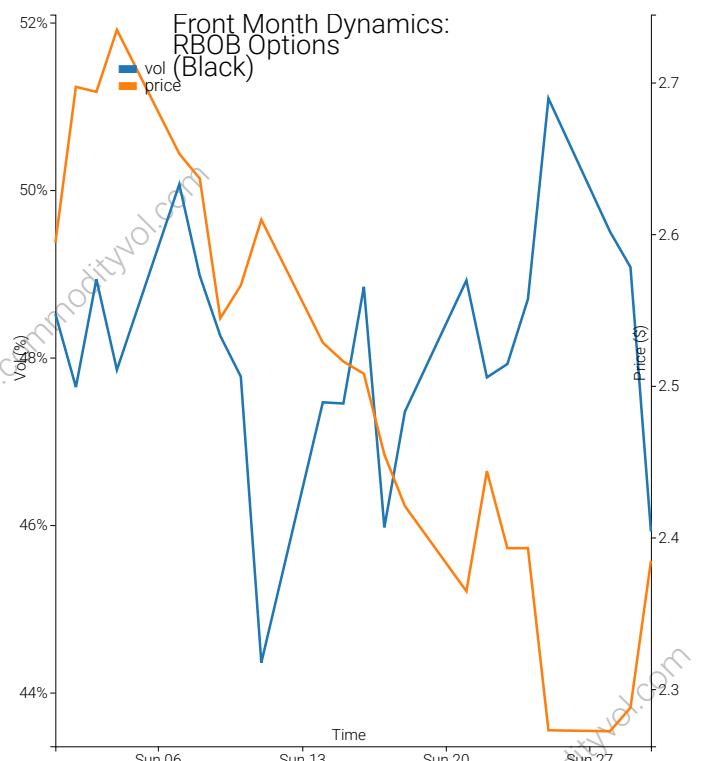
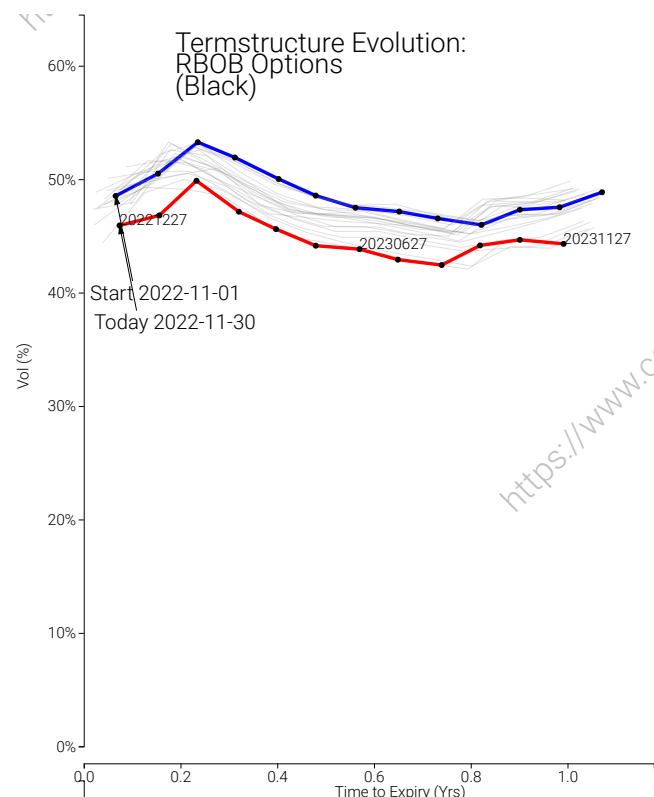
Energy: Crude and Derivatives

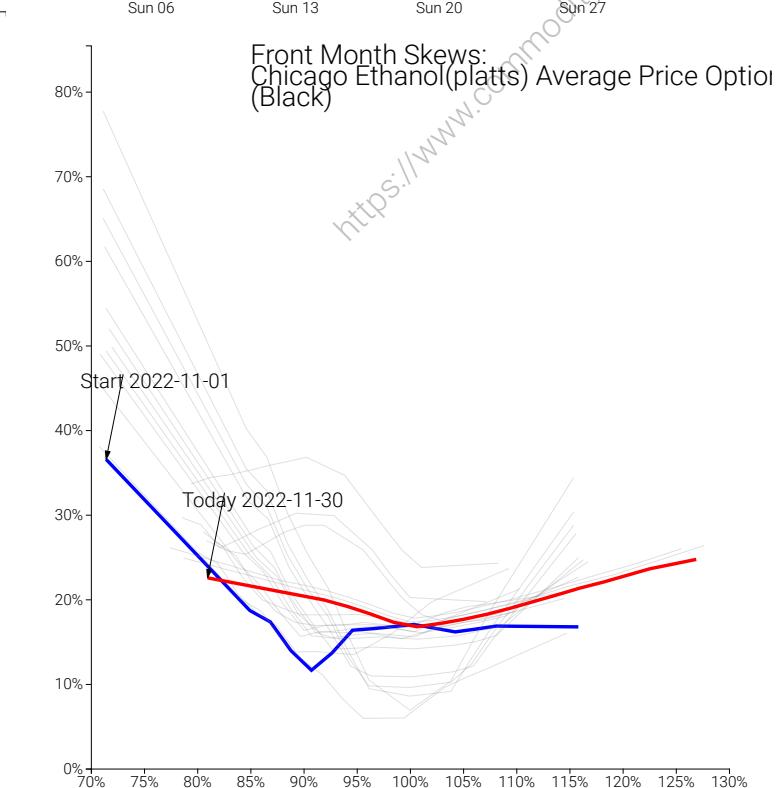
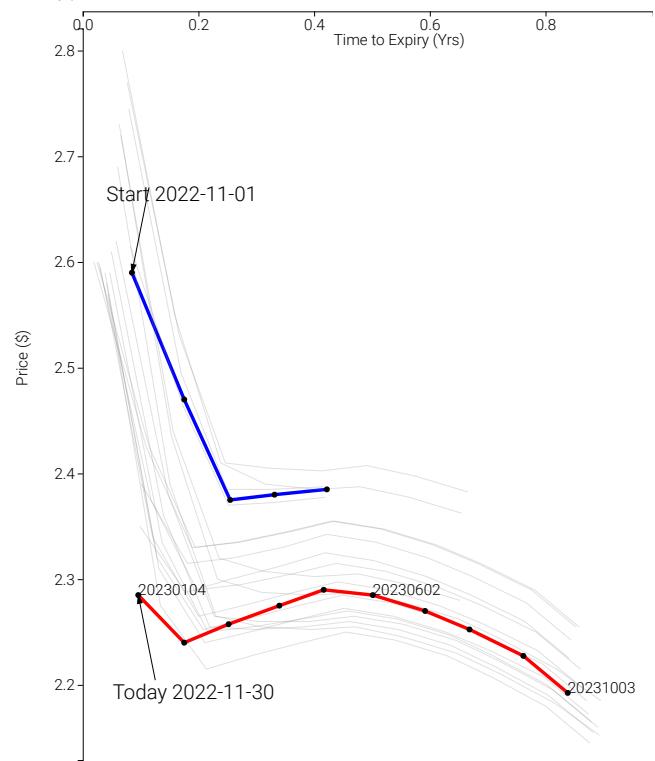
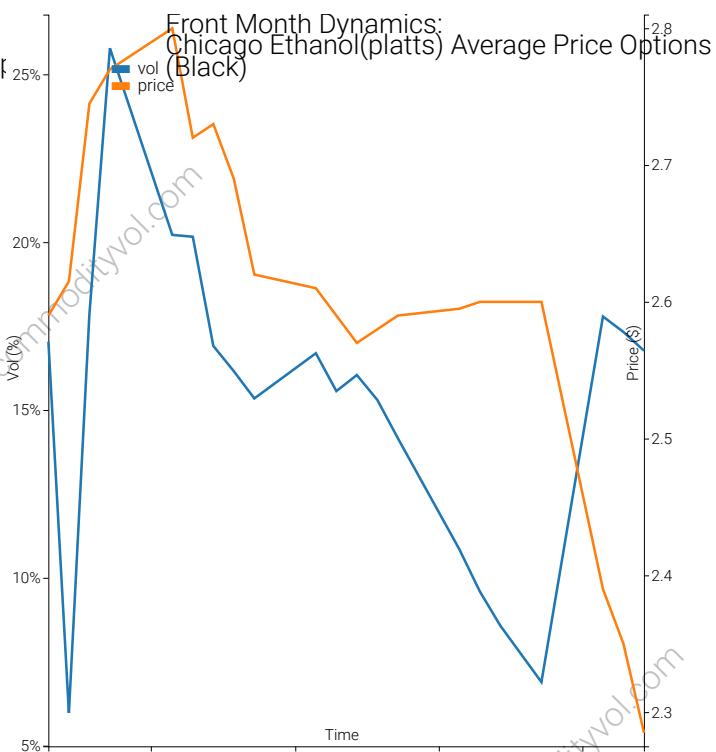
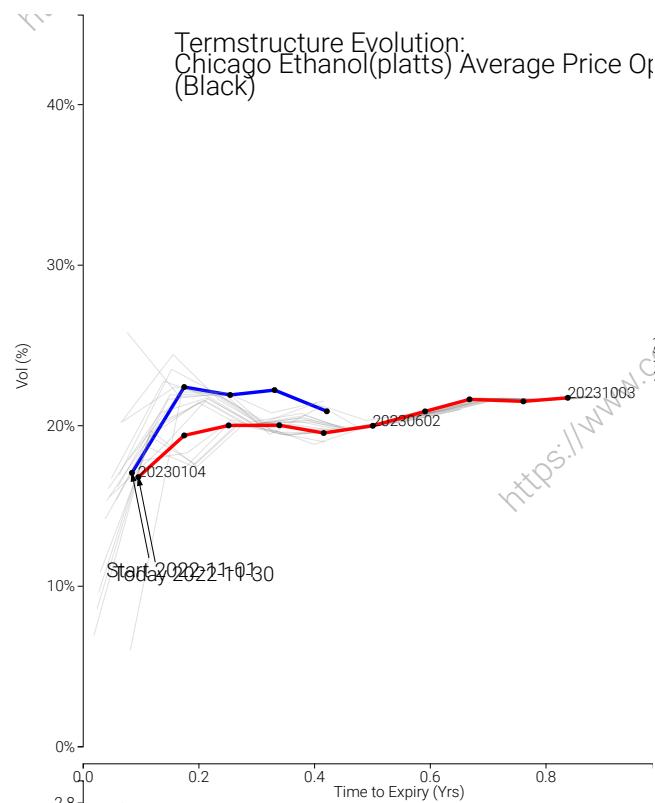




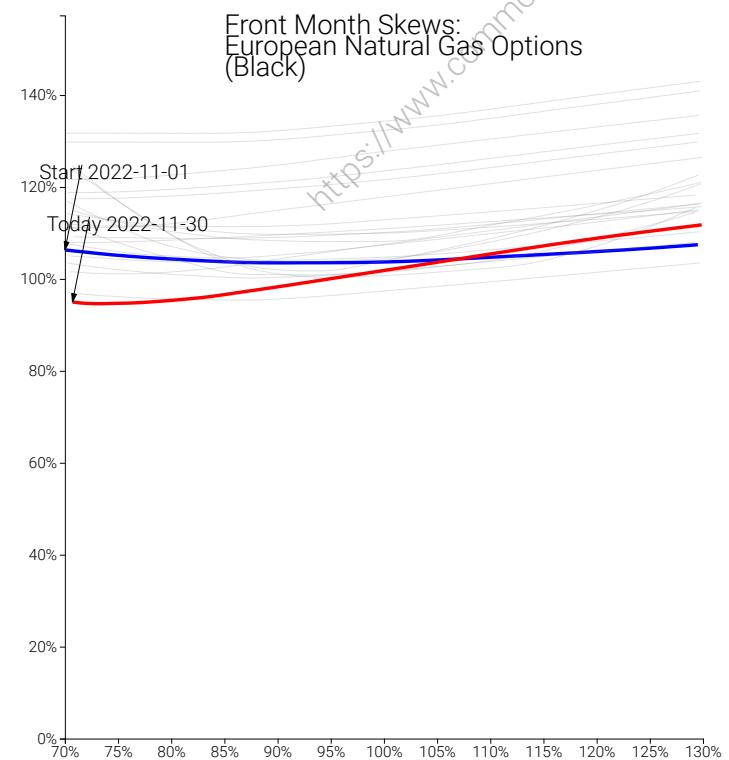
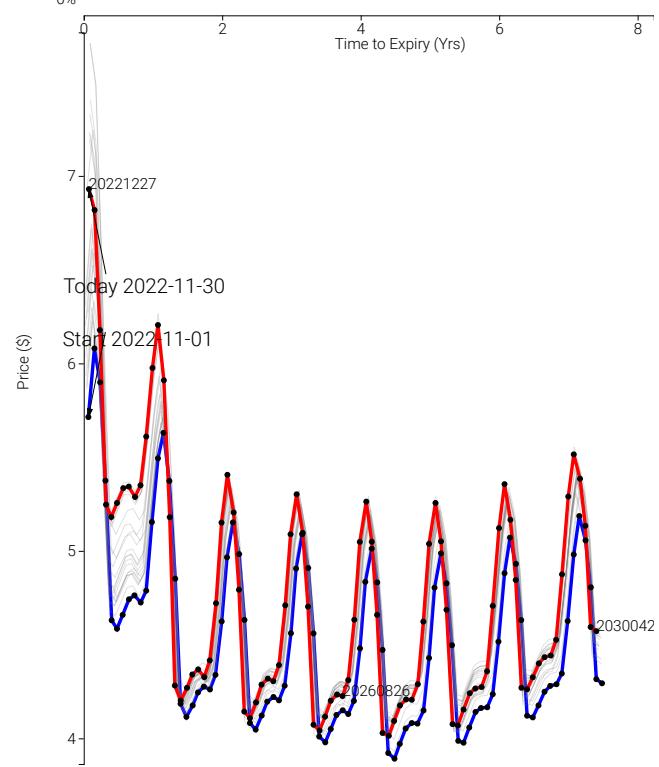
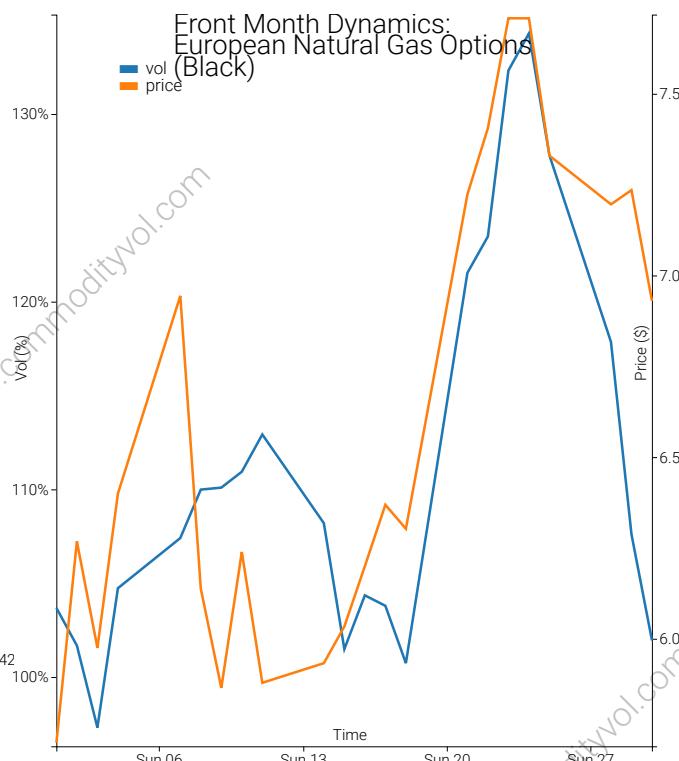
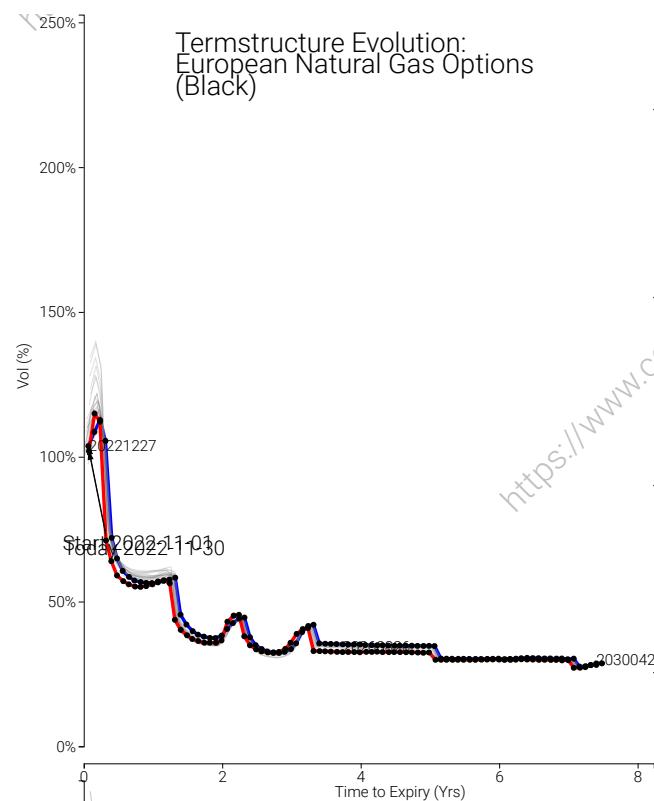


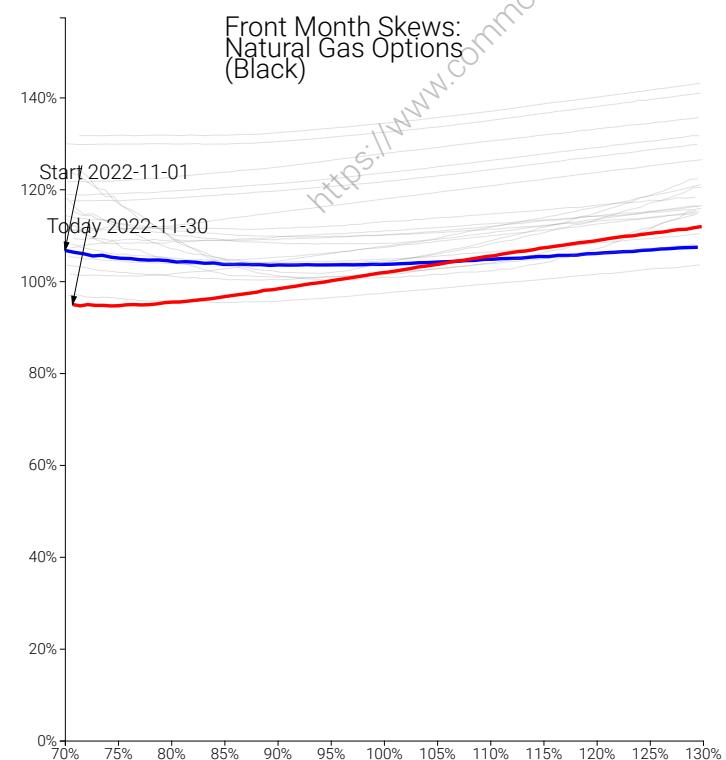
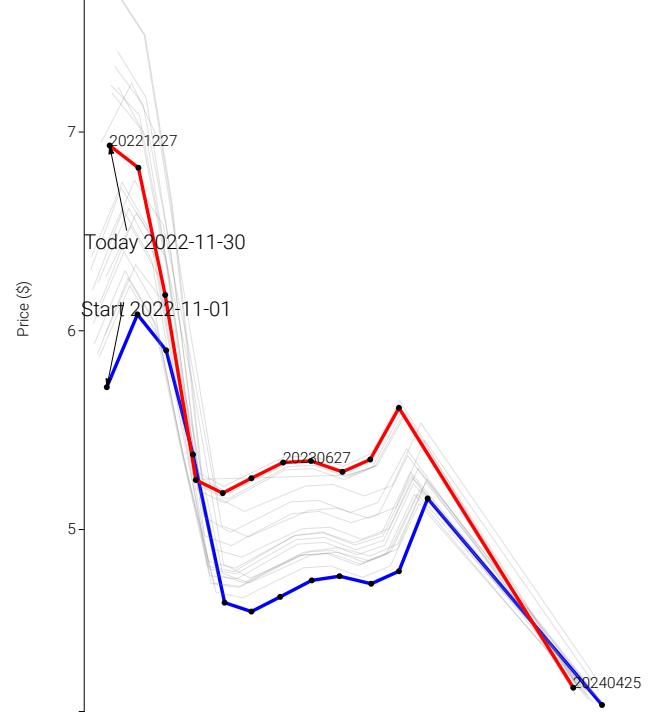
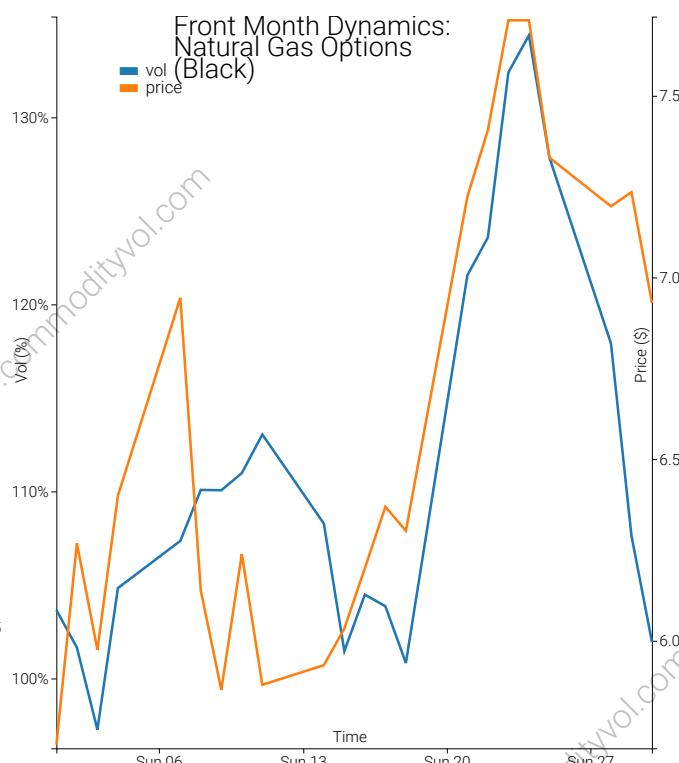
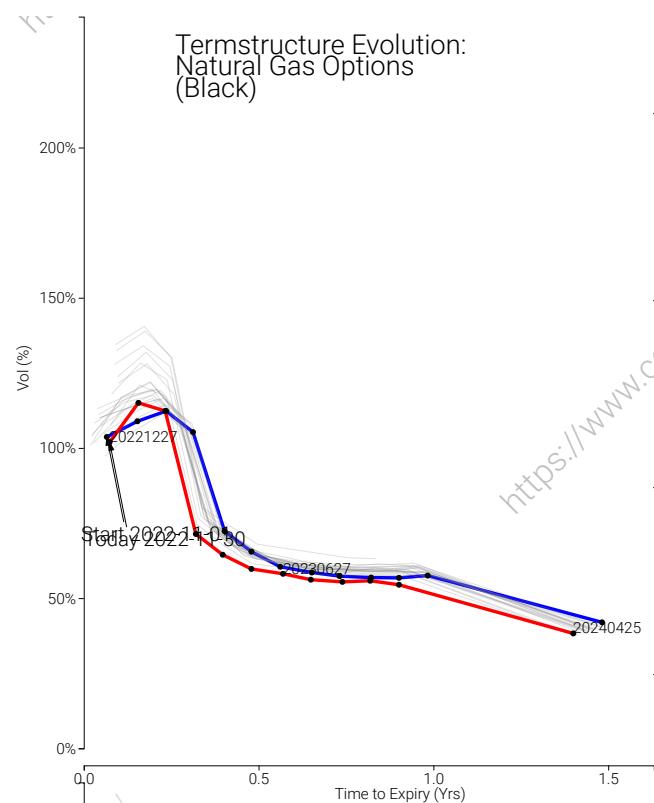


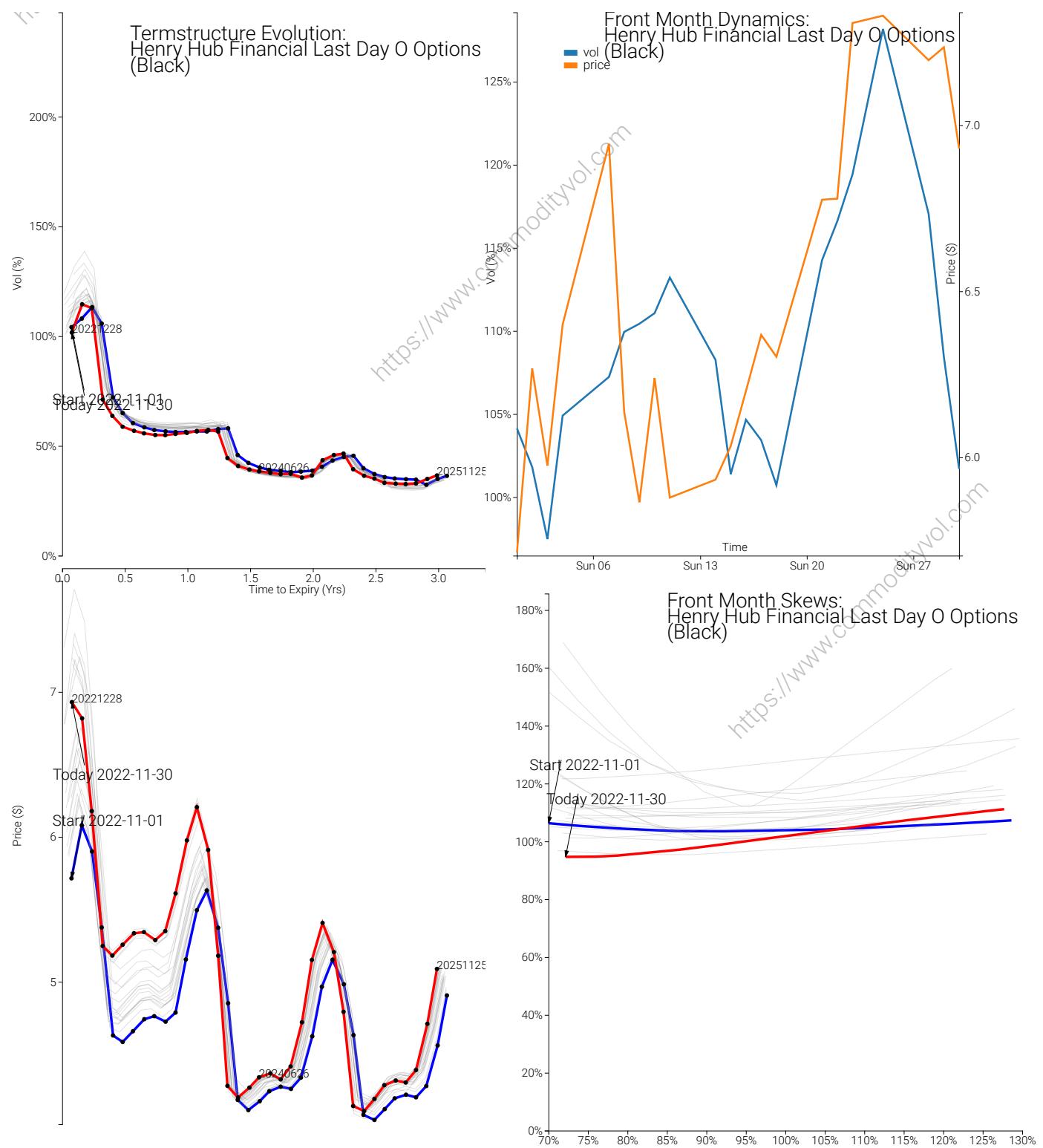


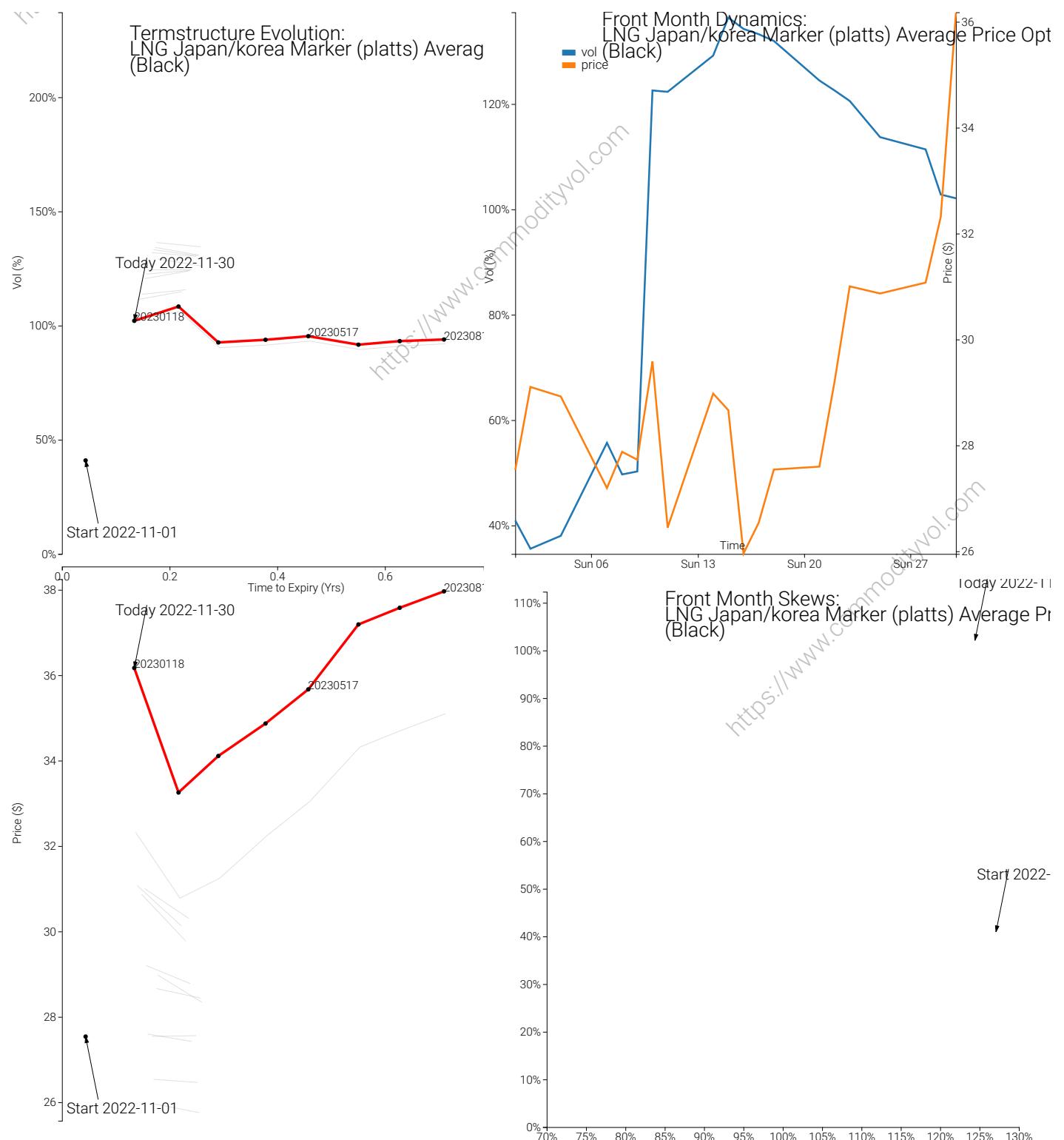


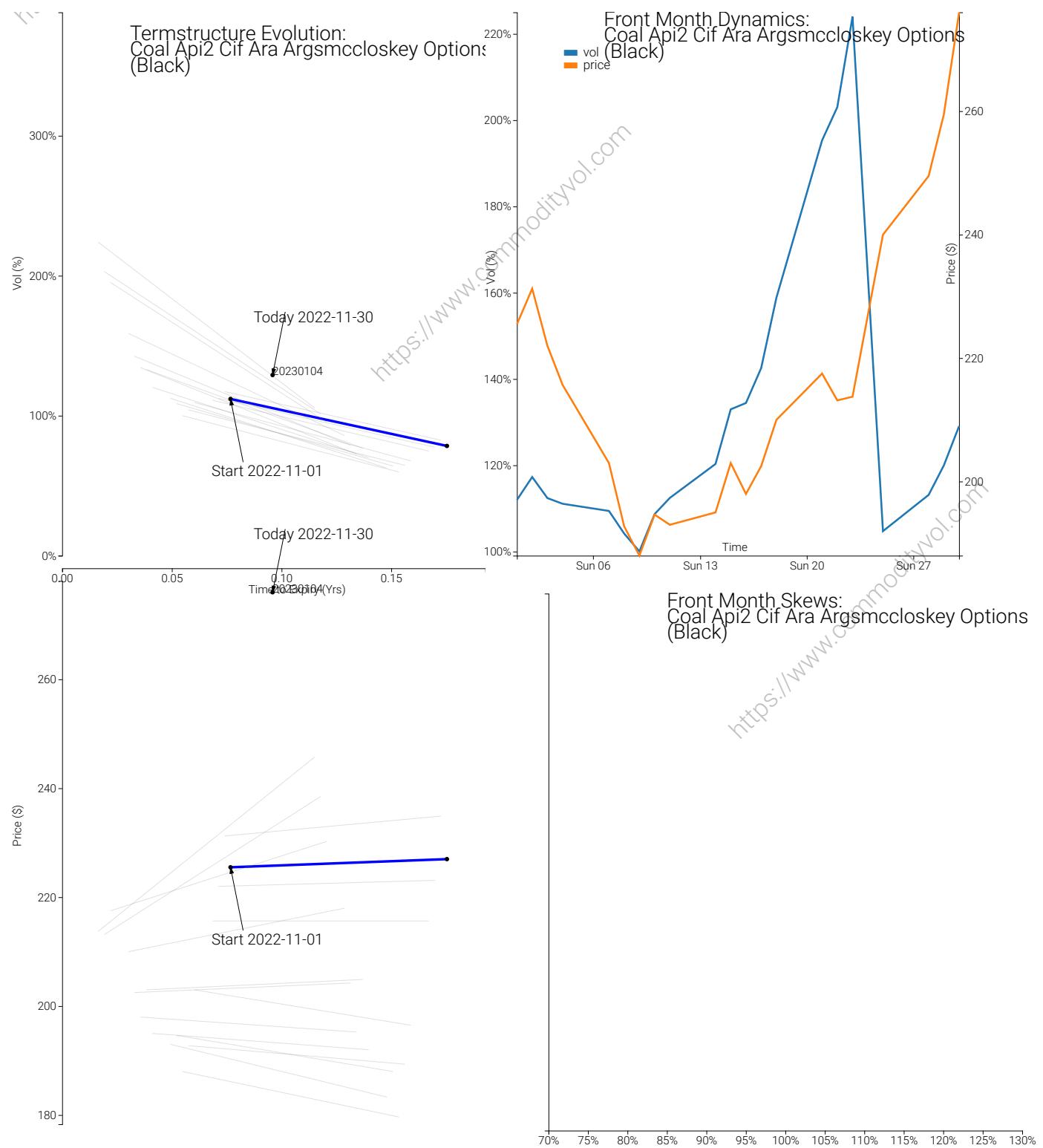
Energy: Natural Gas



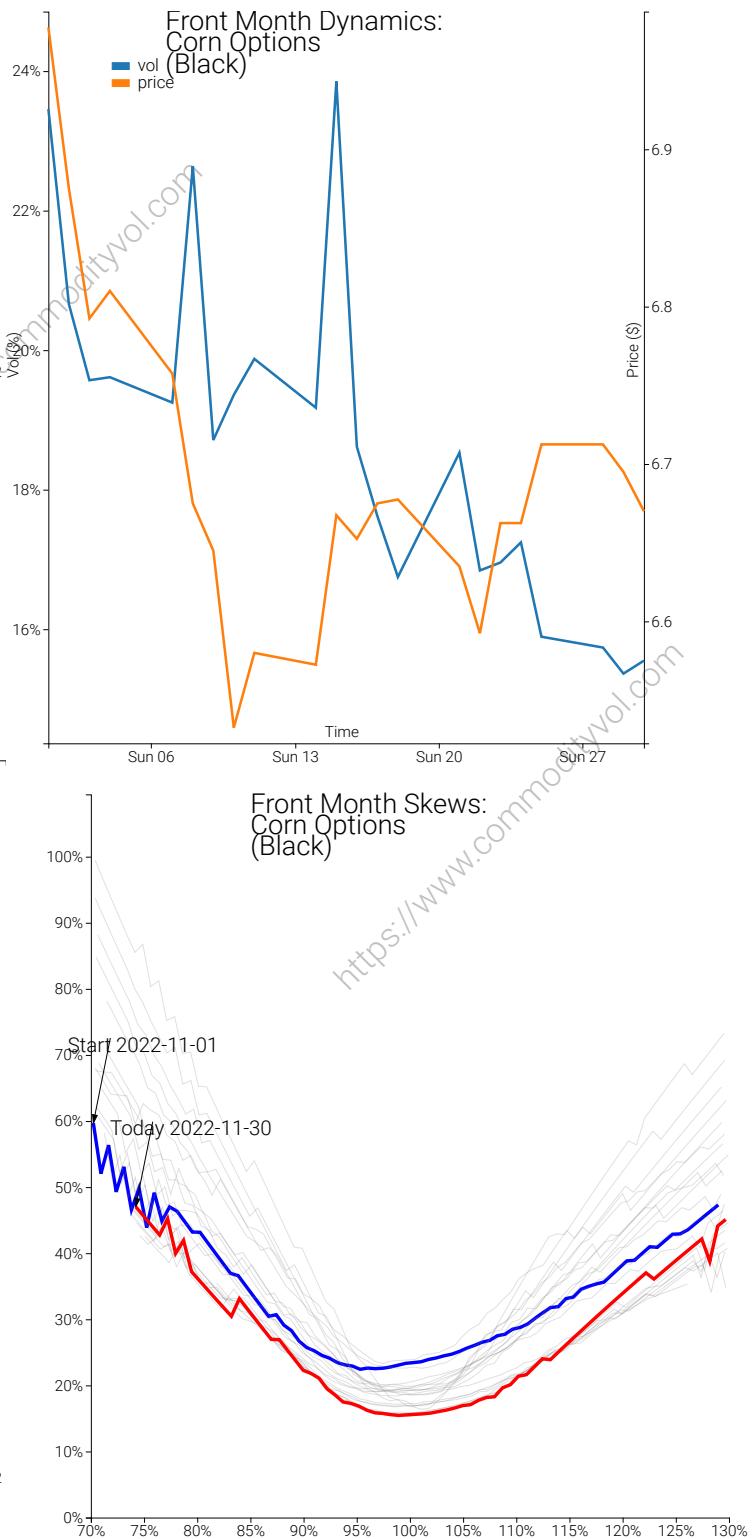
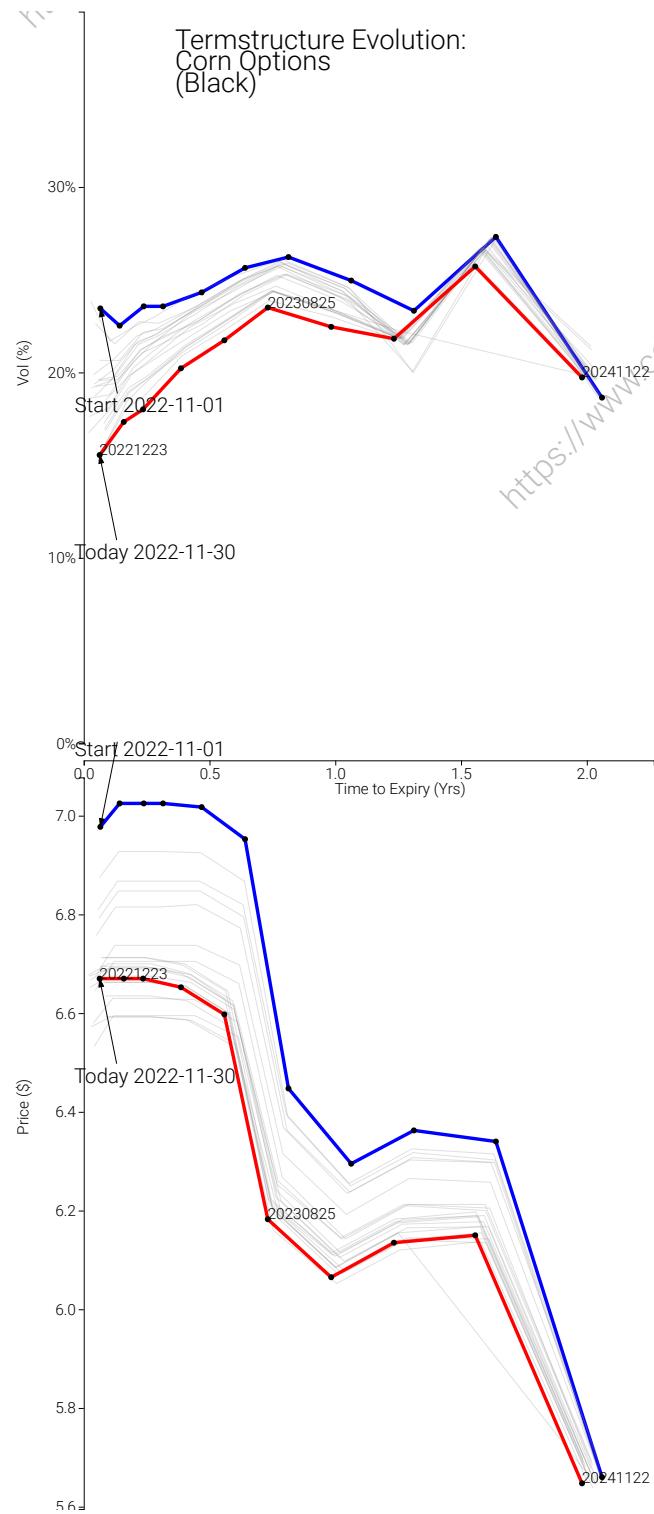


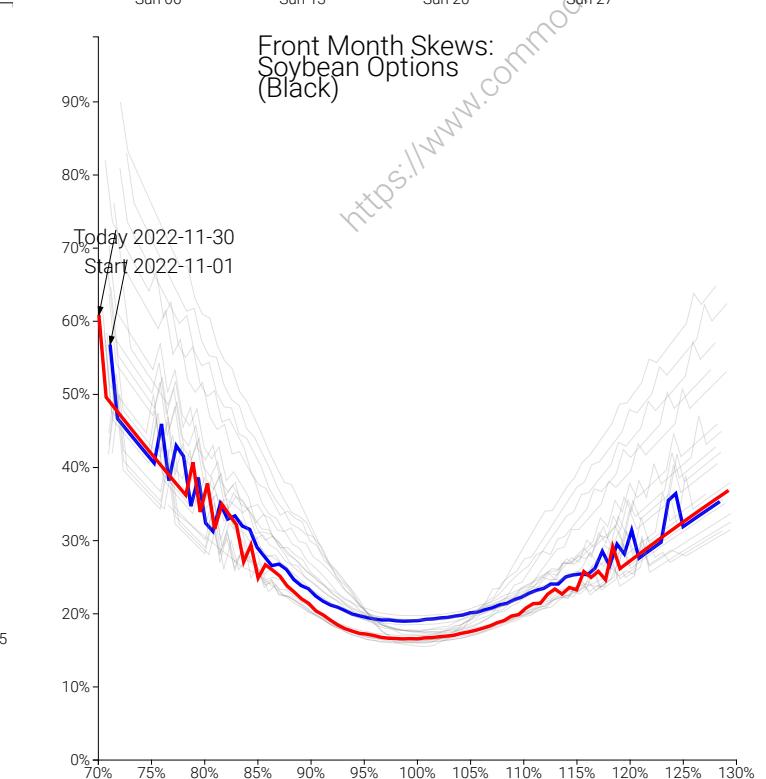
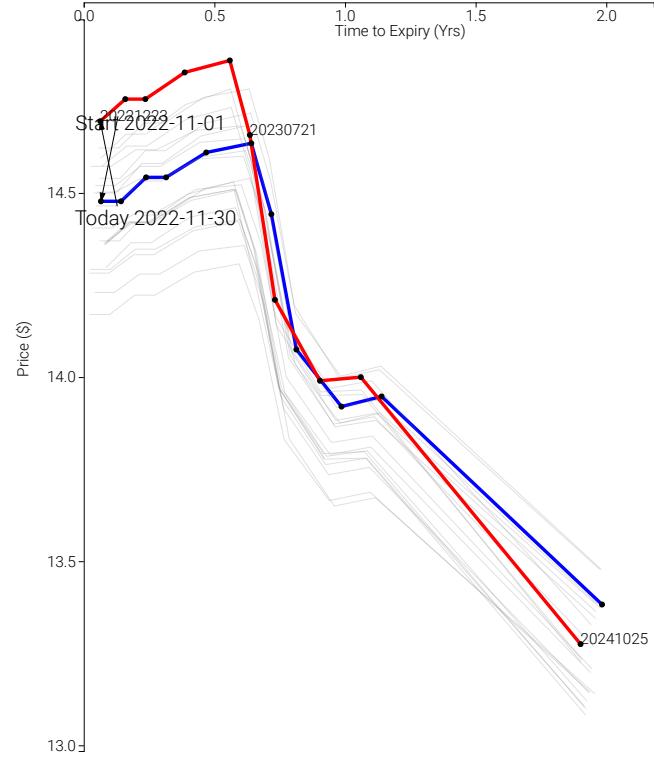
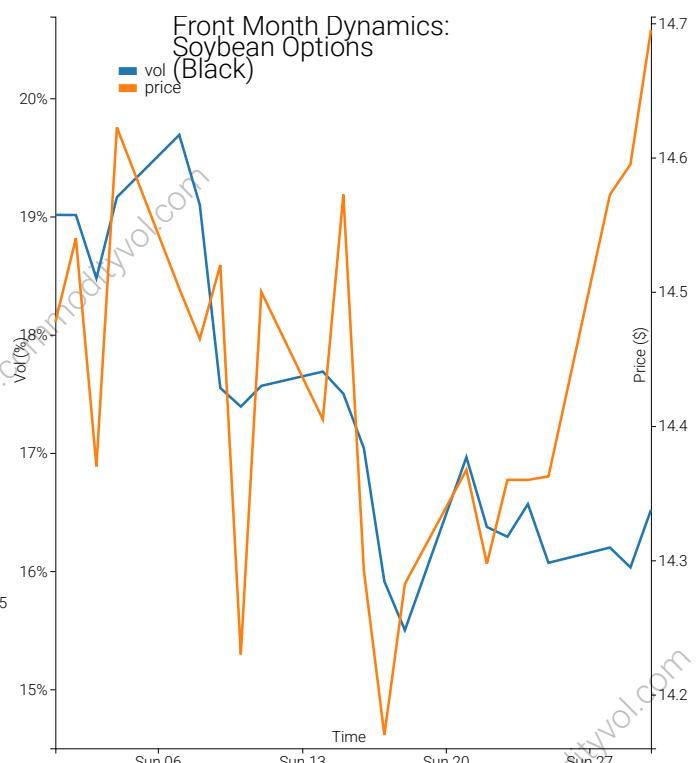
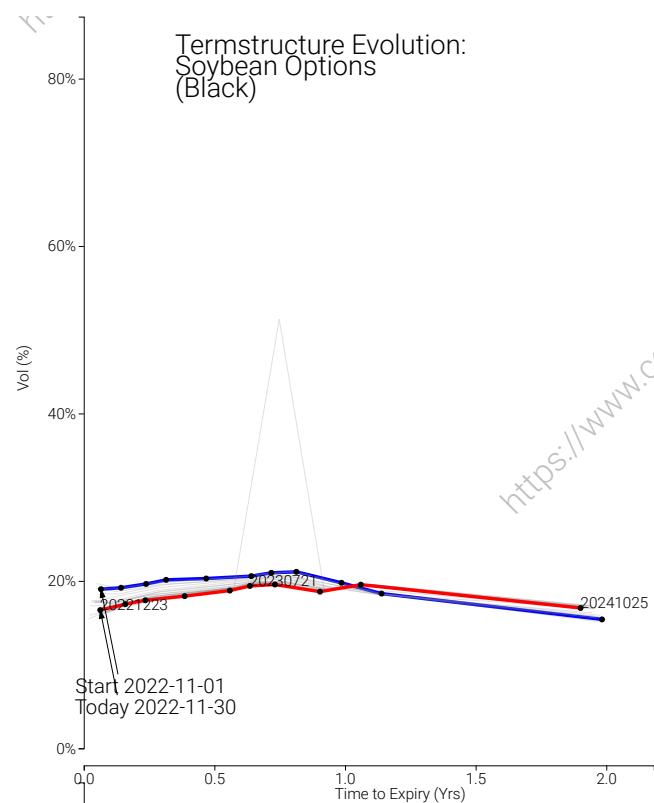


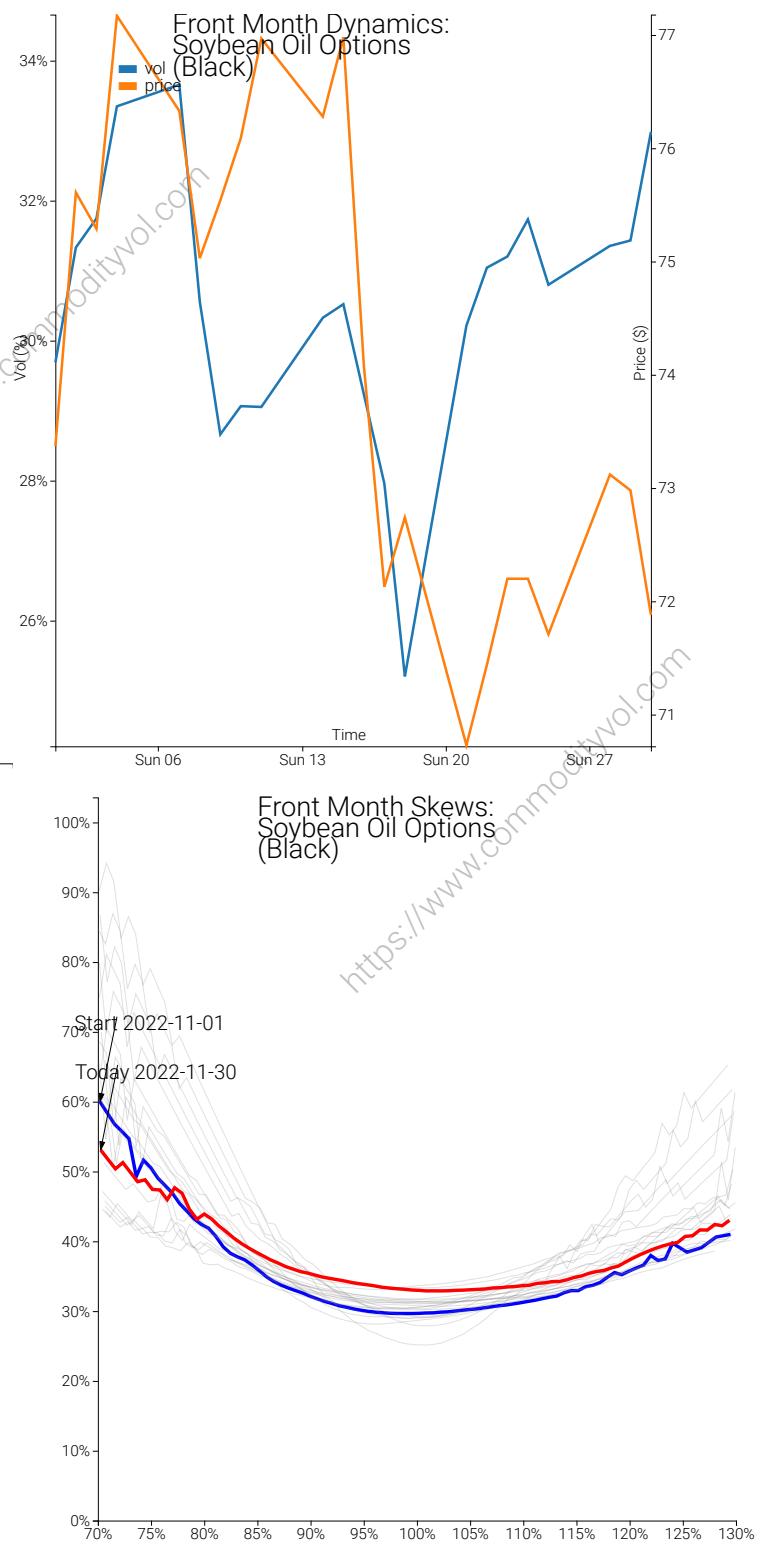
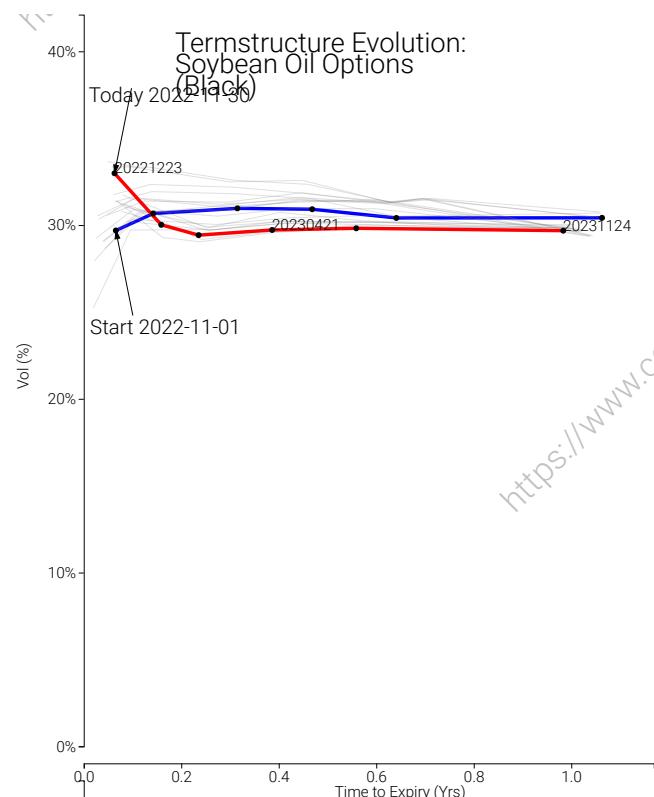


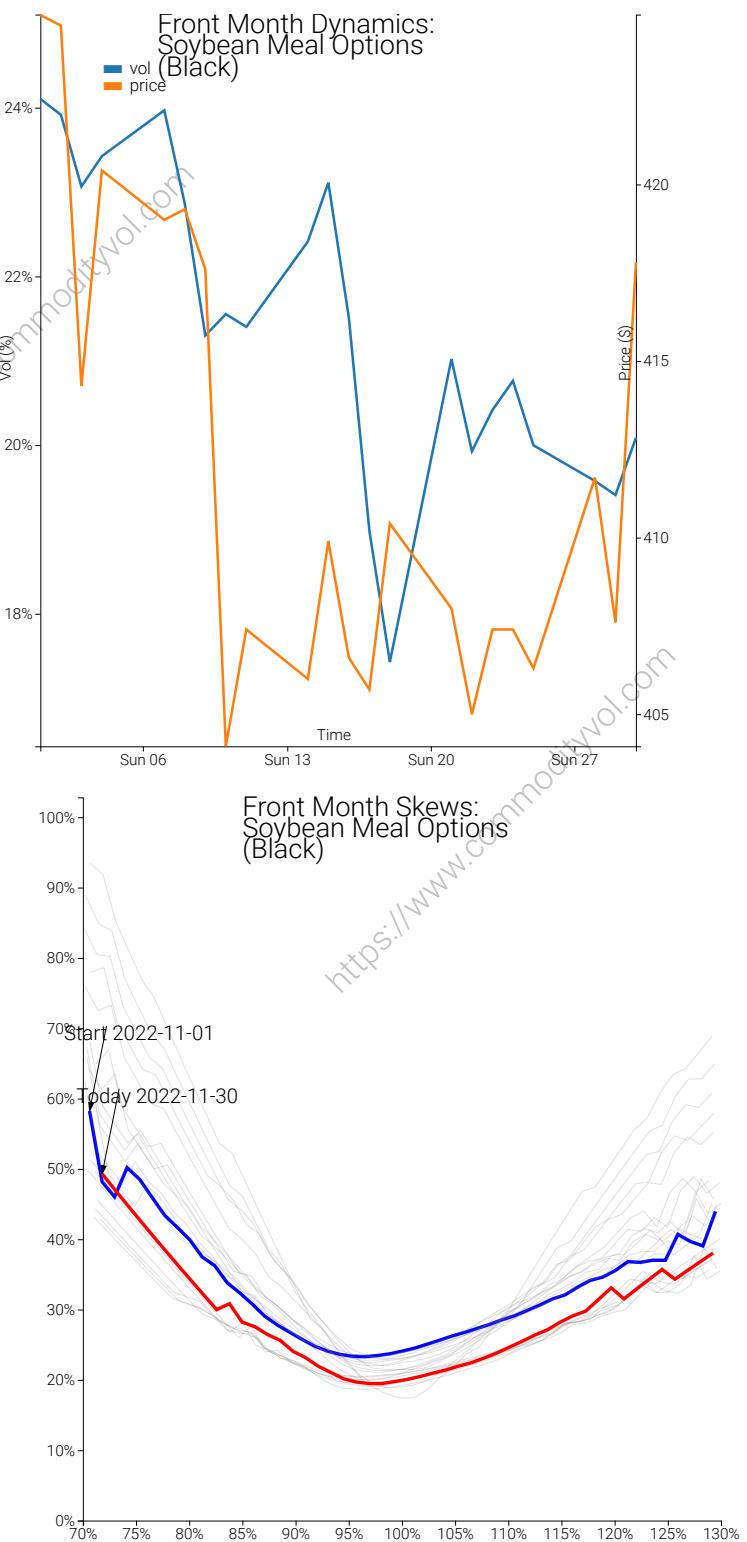
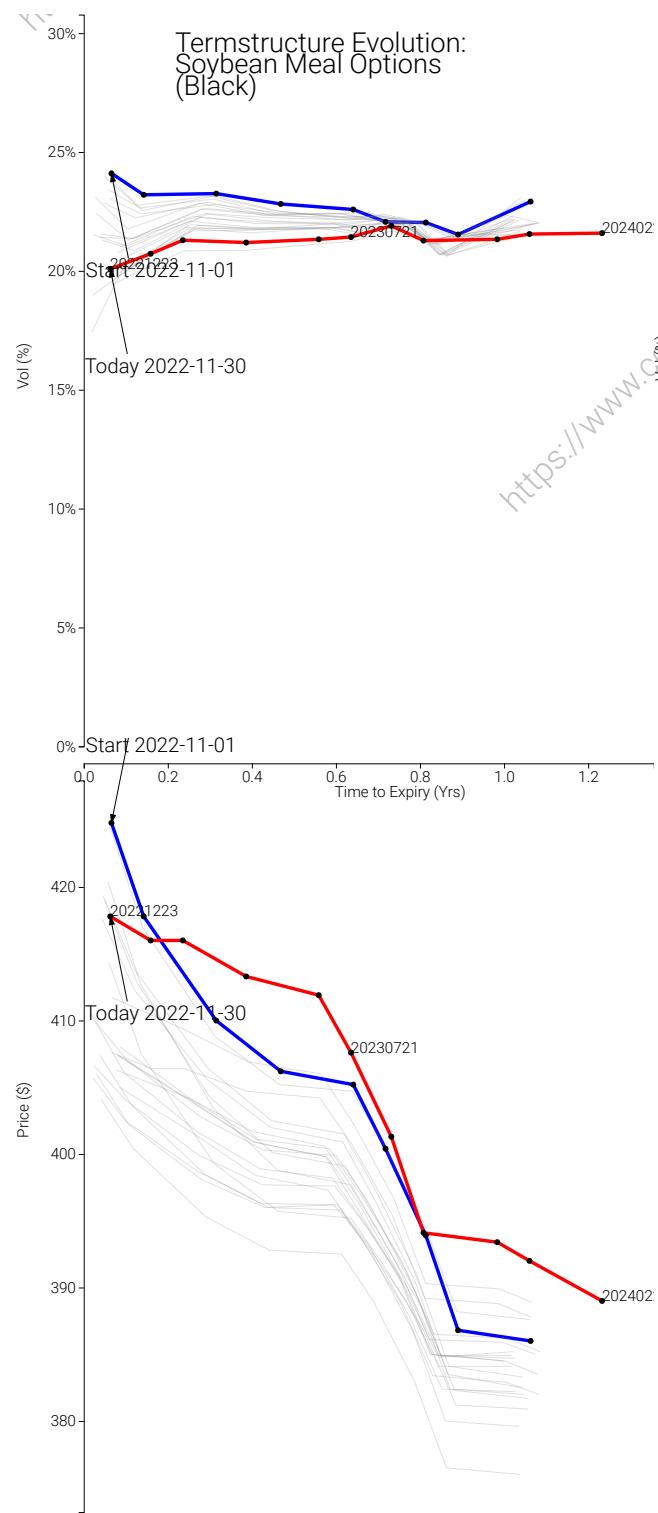


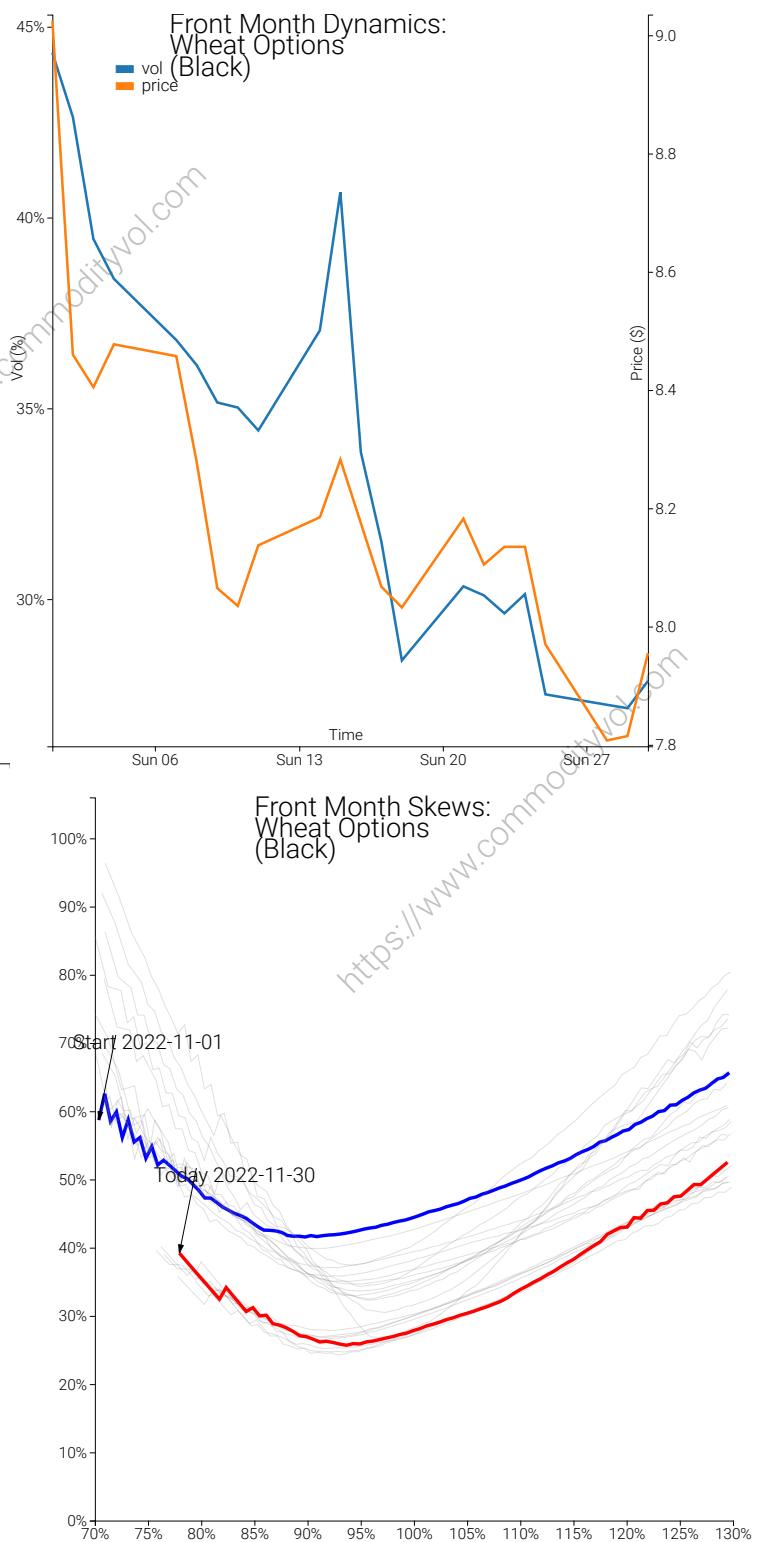
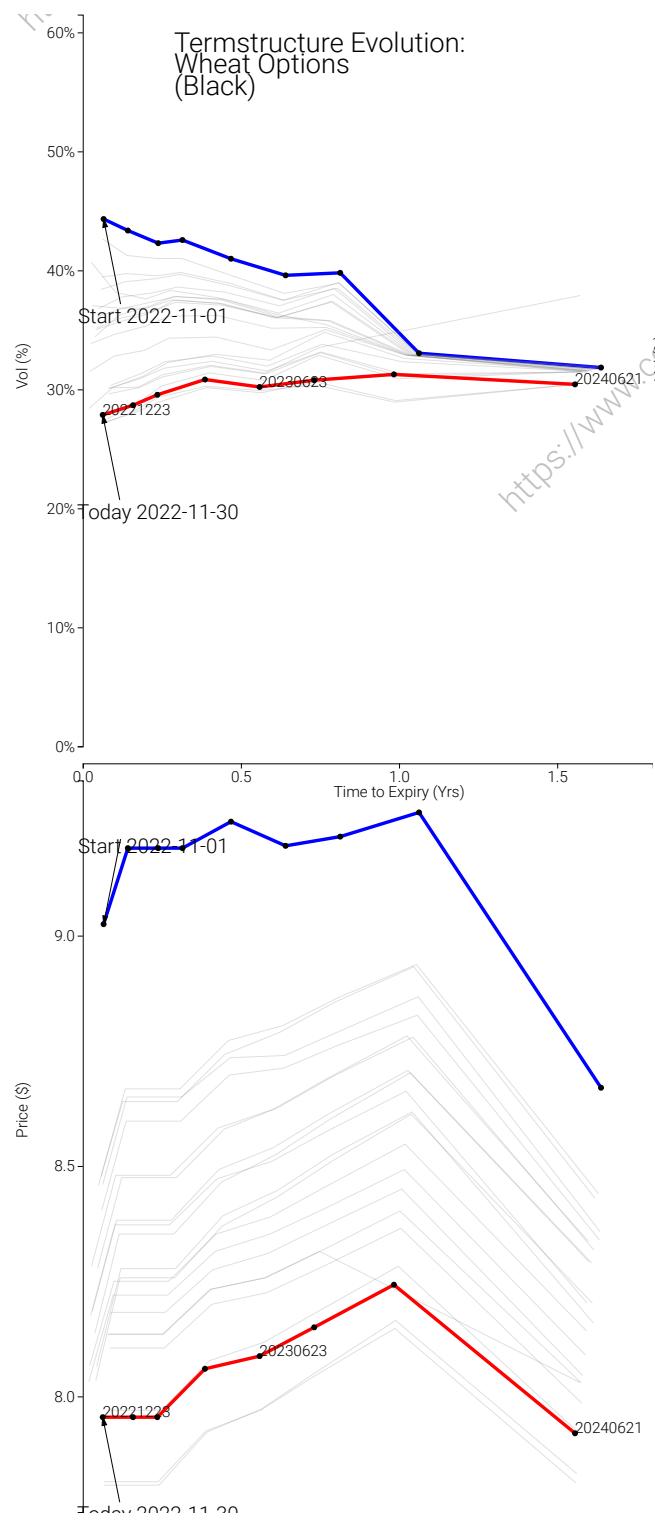
Ags: Grains, Oilseeds, and so forth

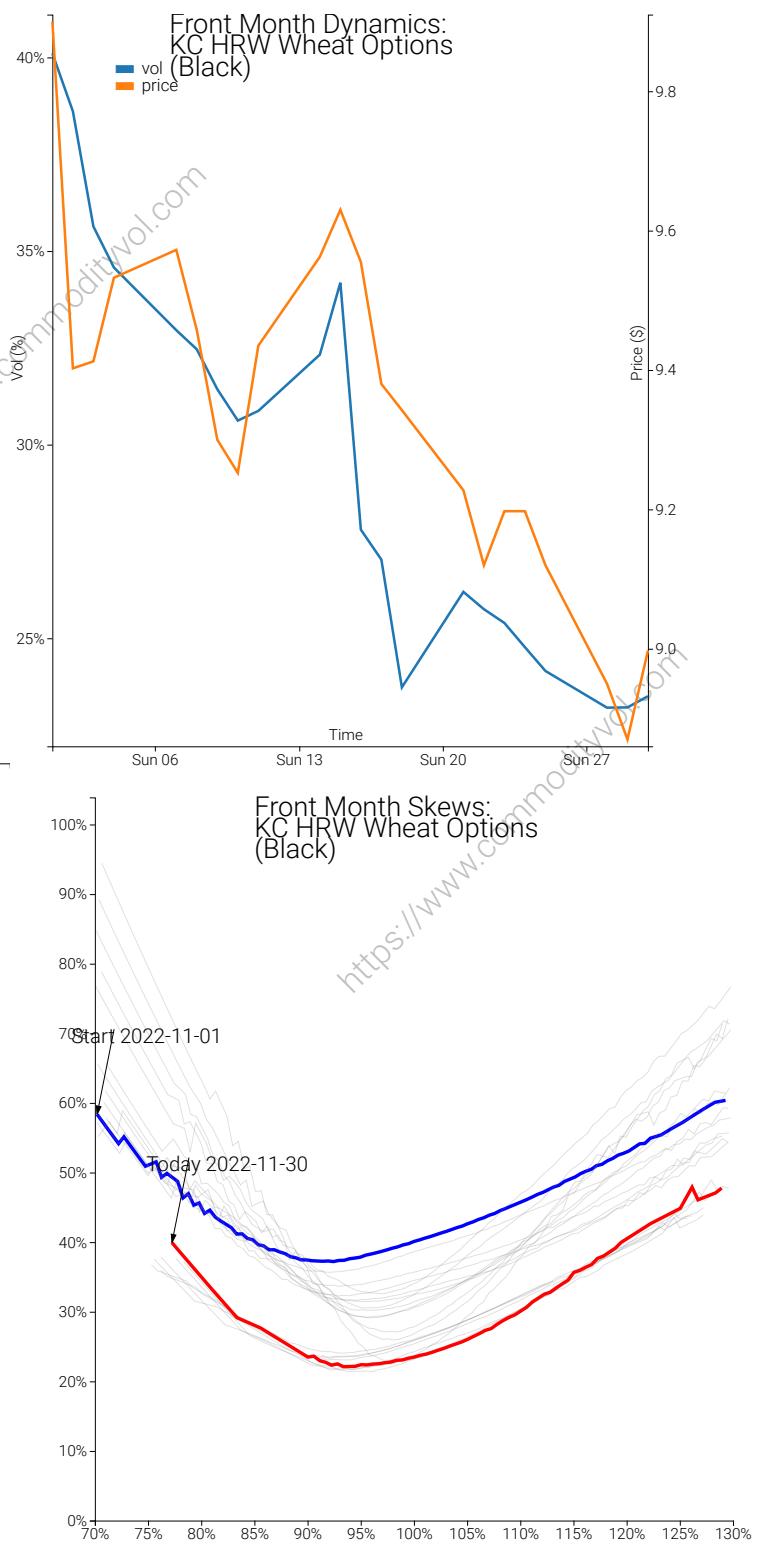
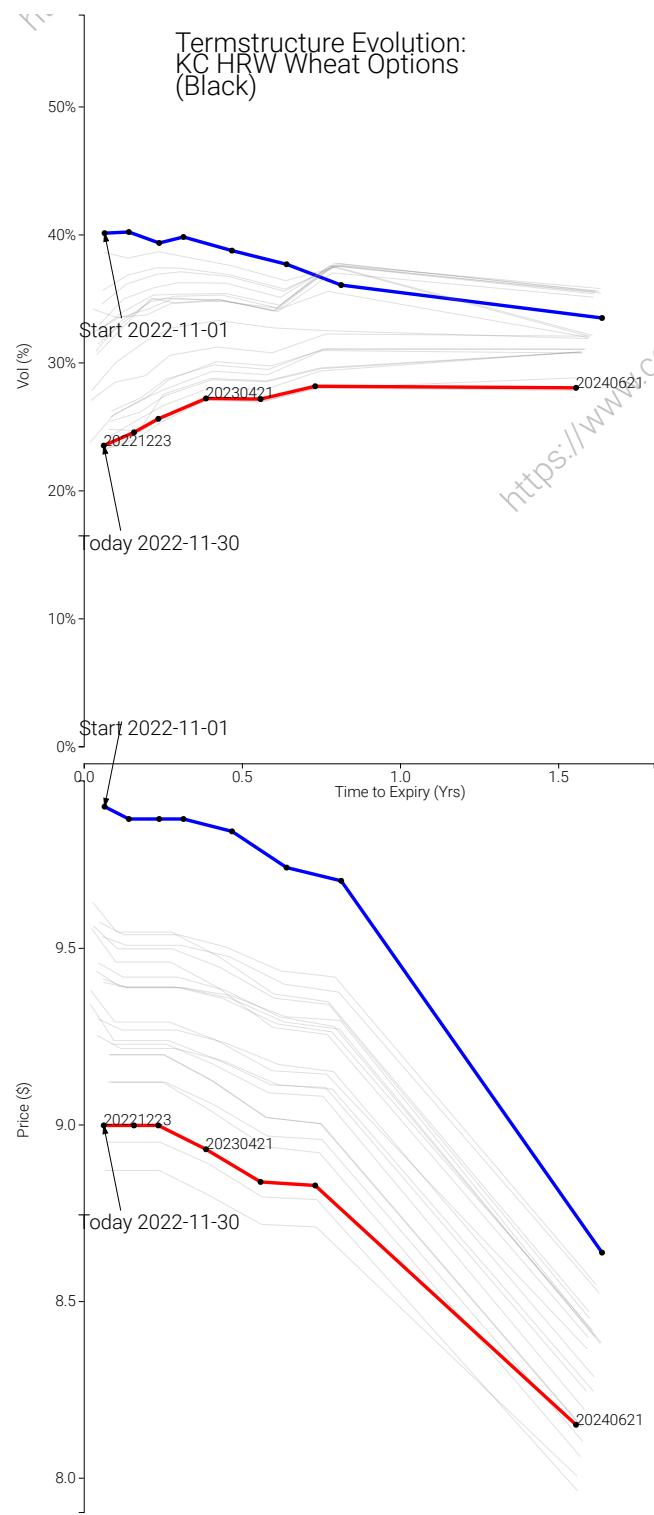


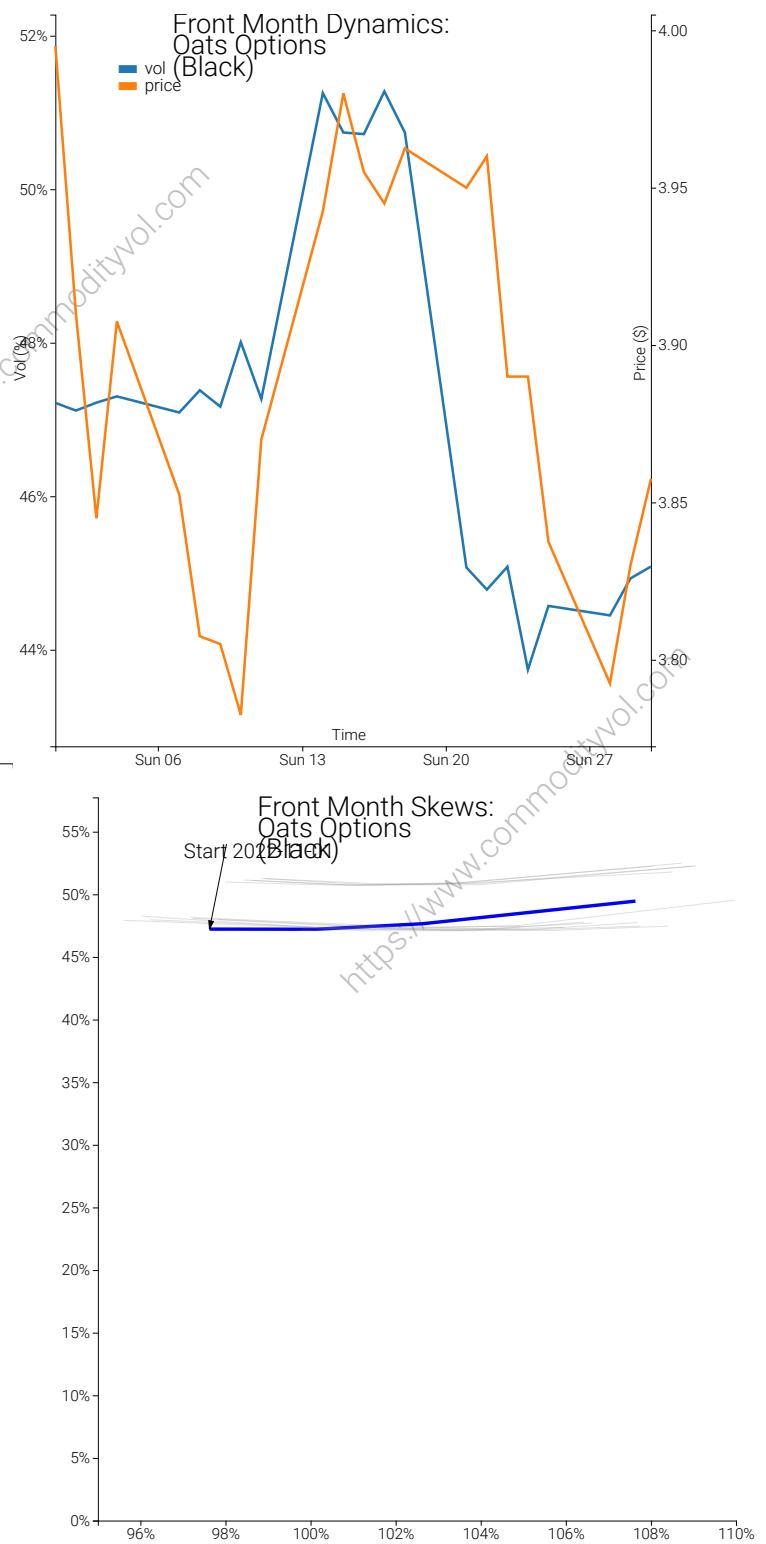
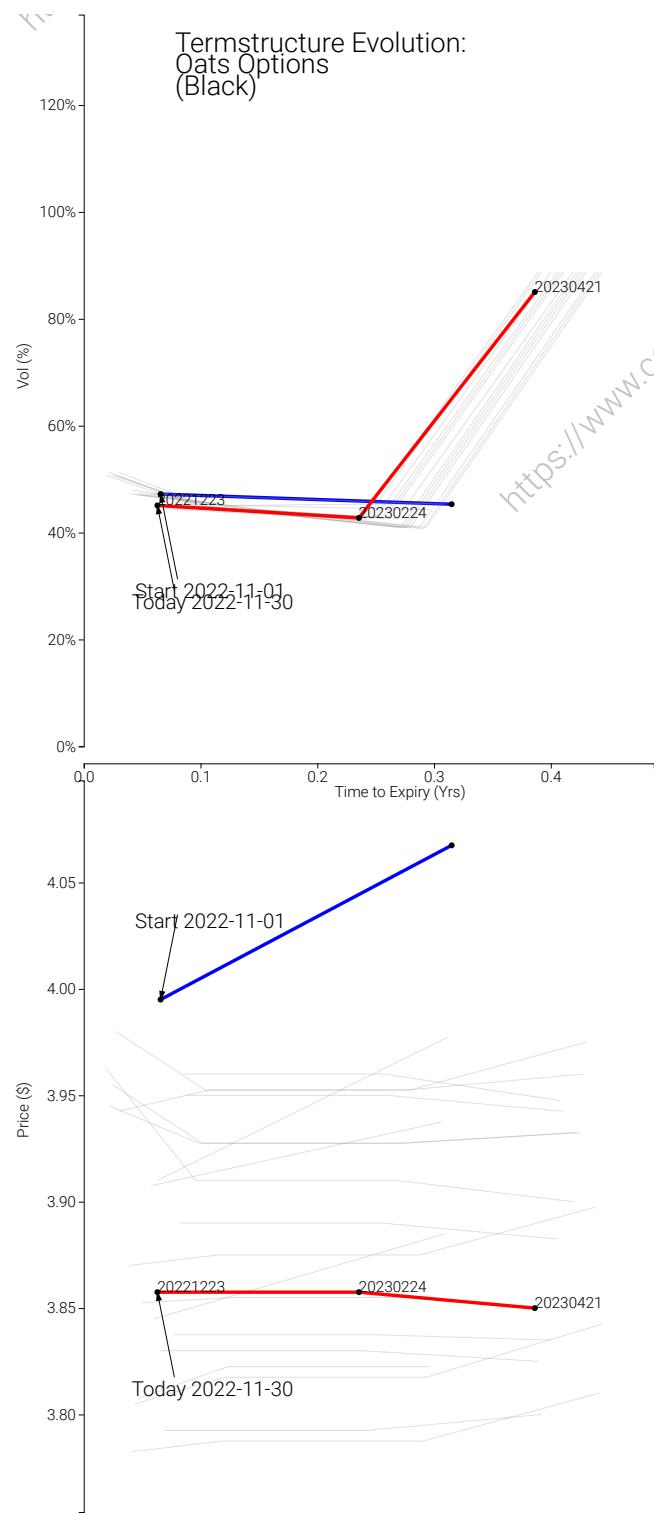


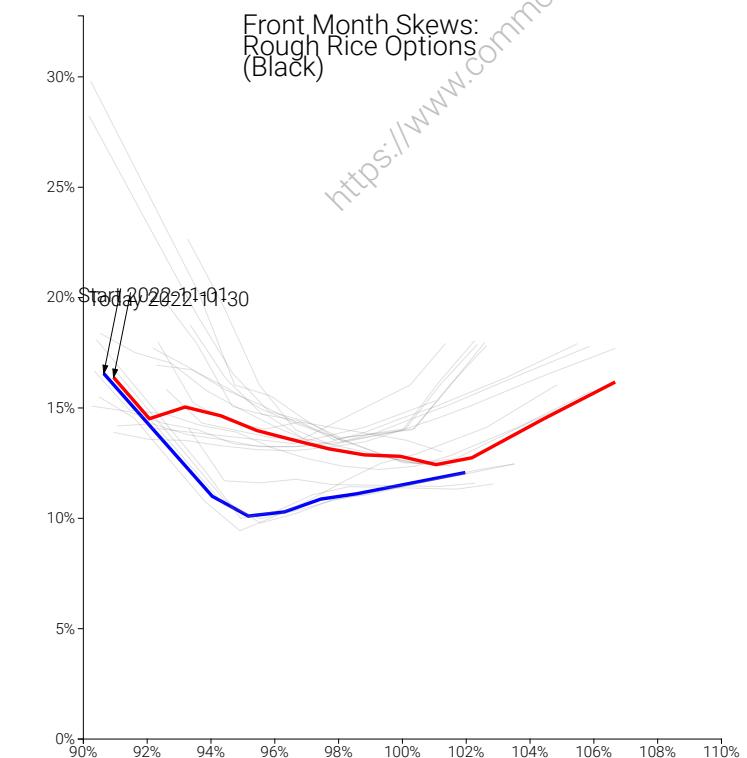
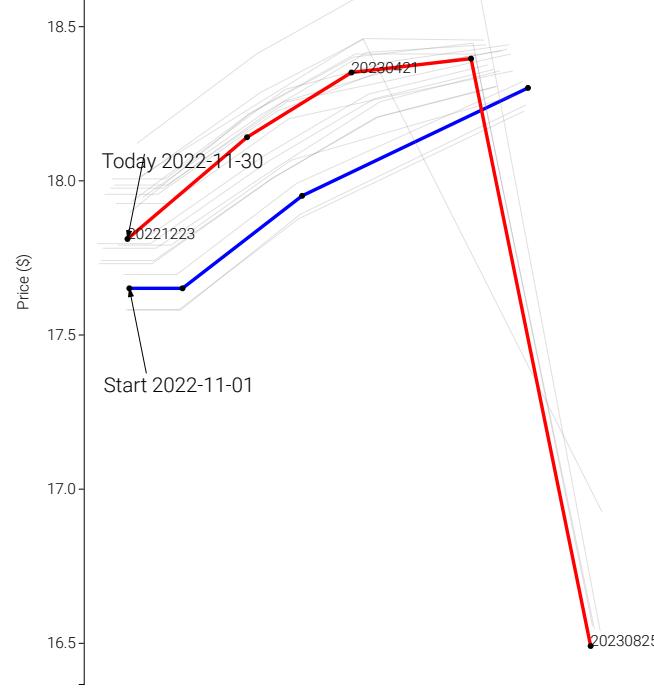
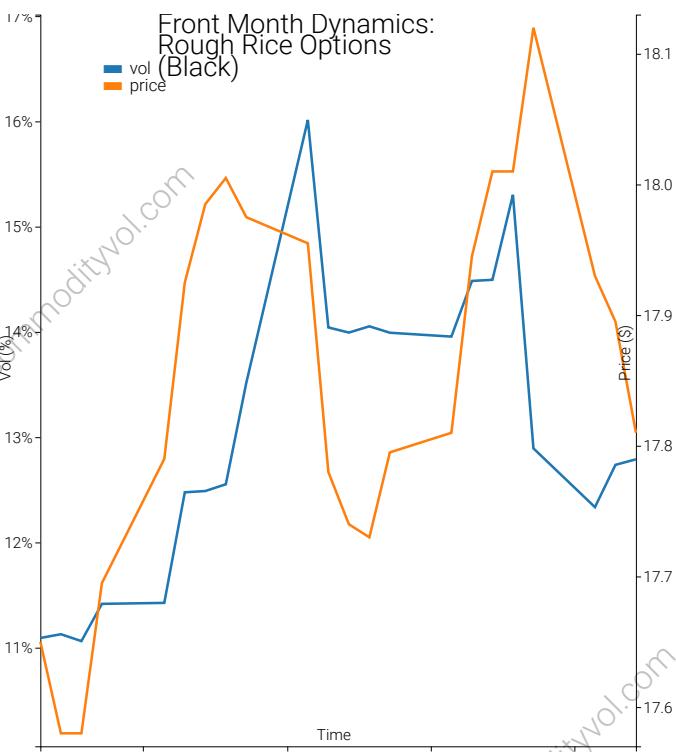
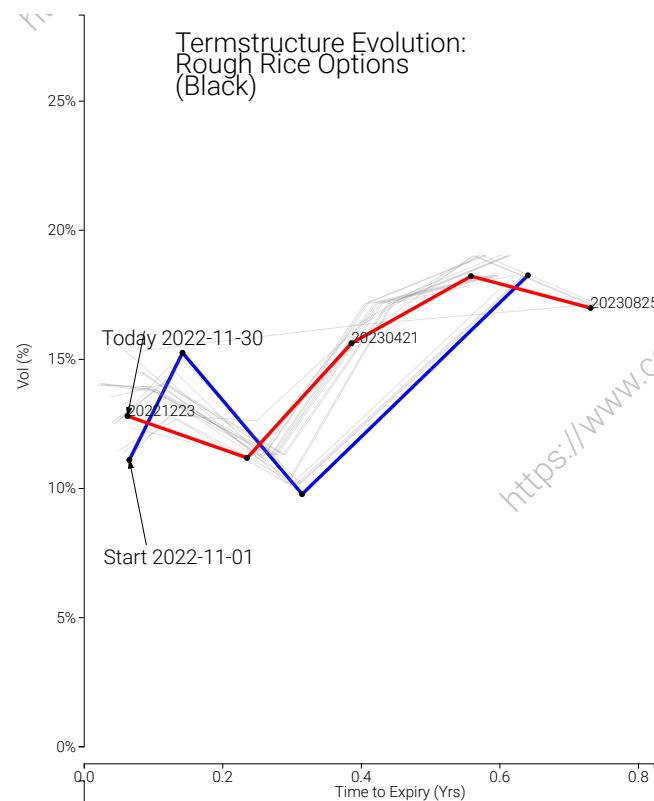


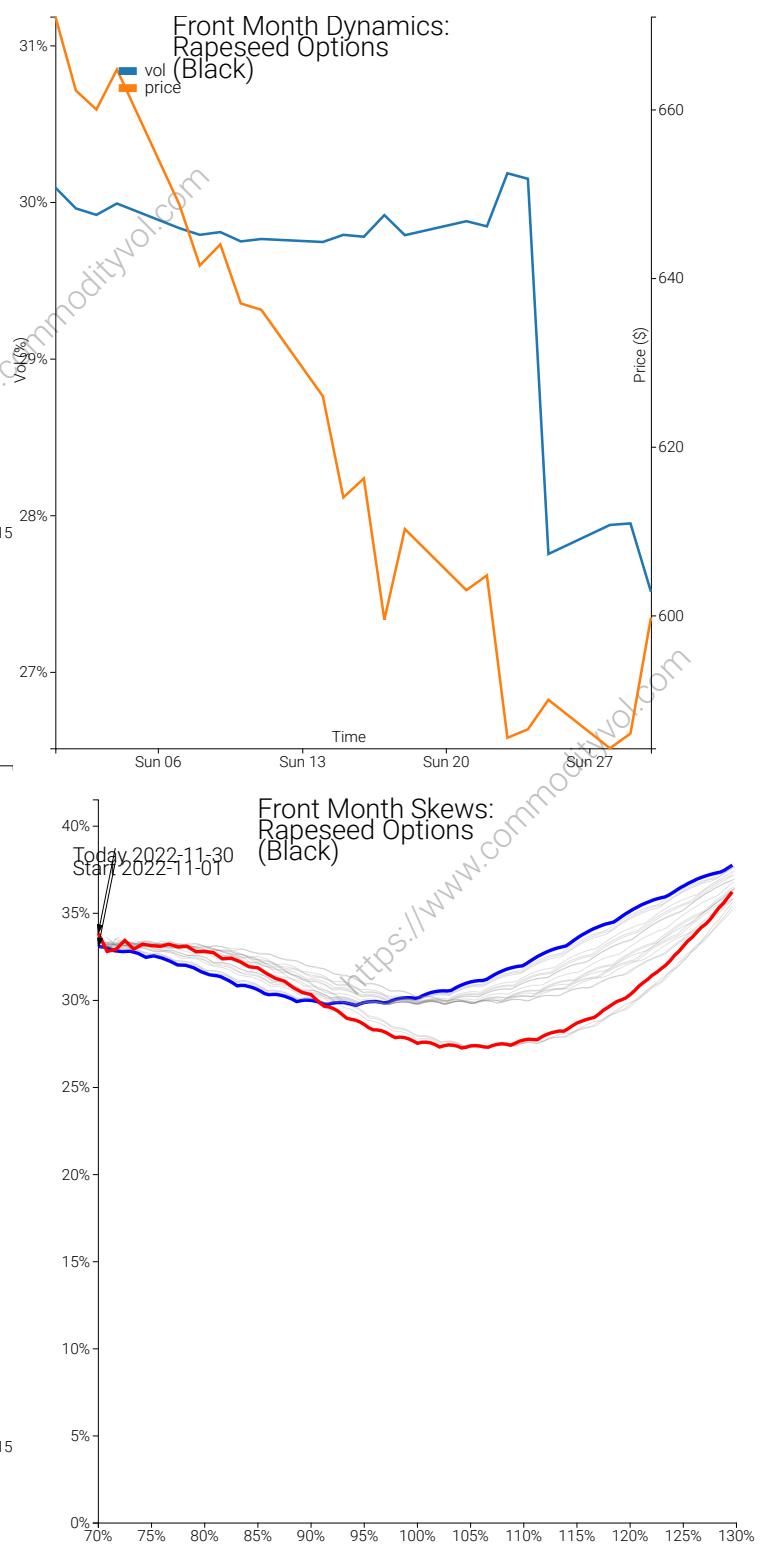
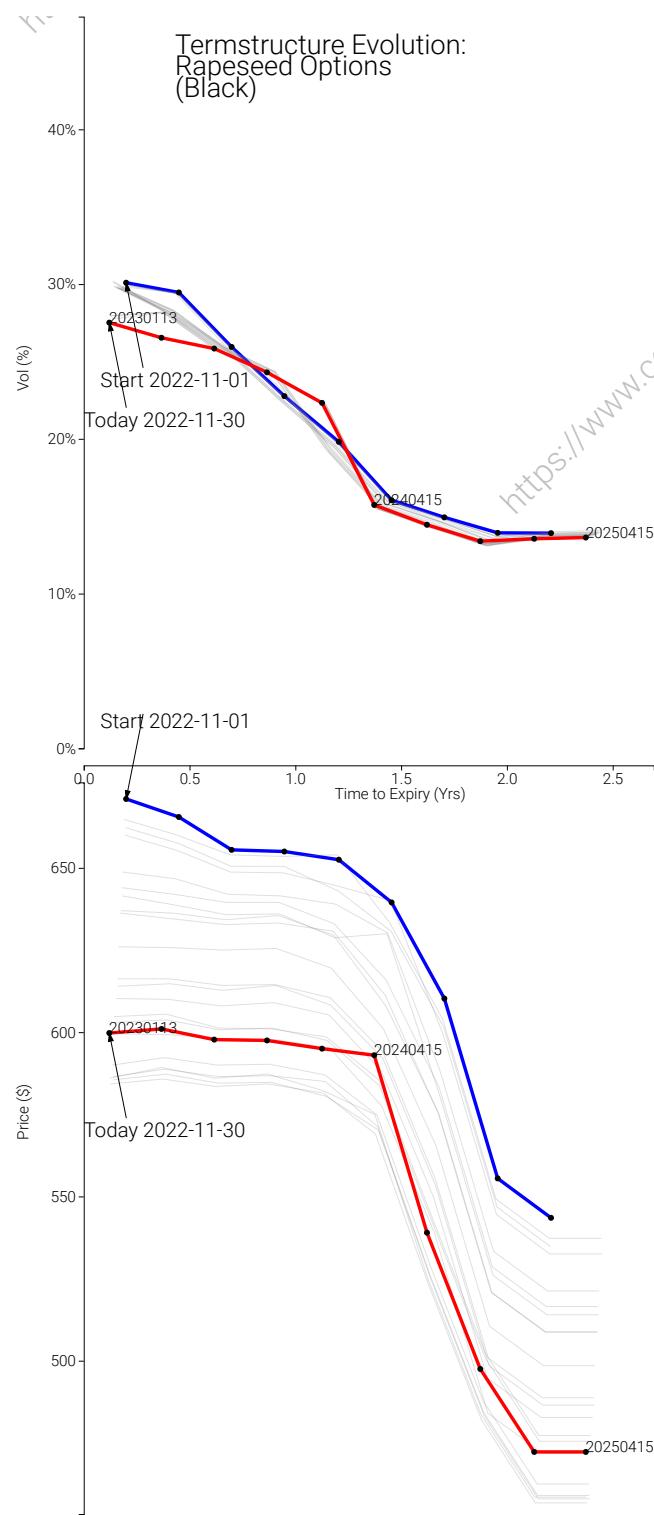




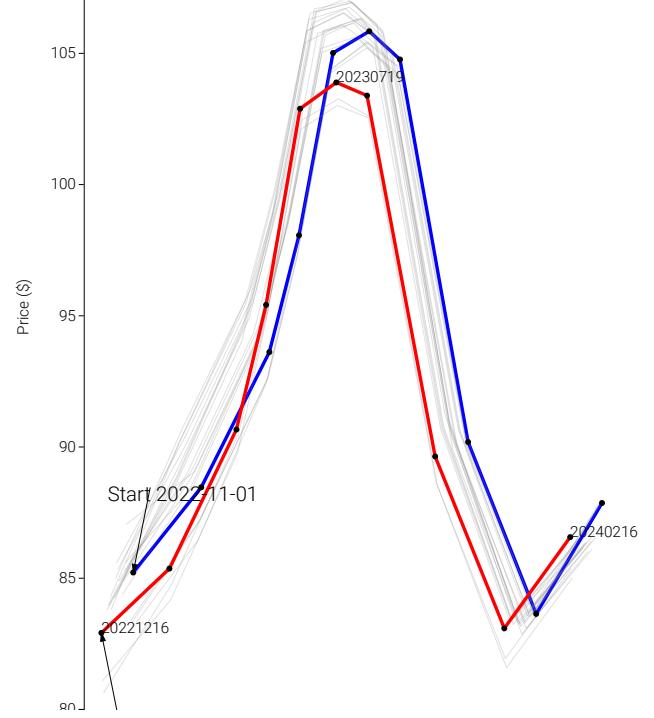
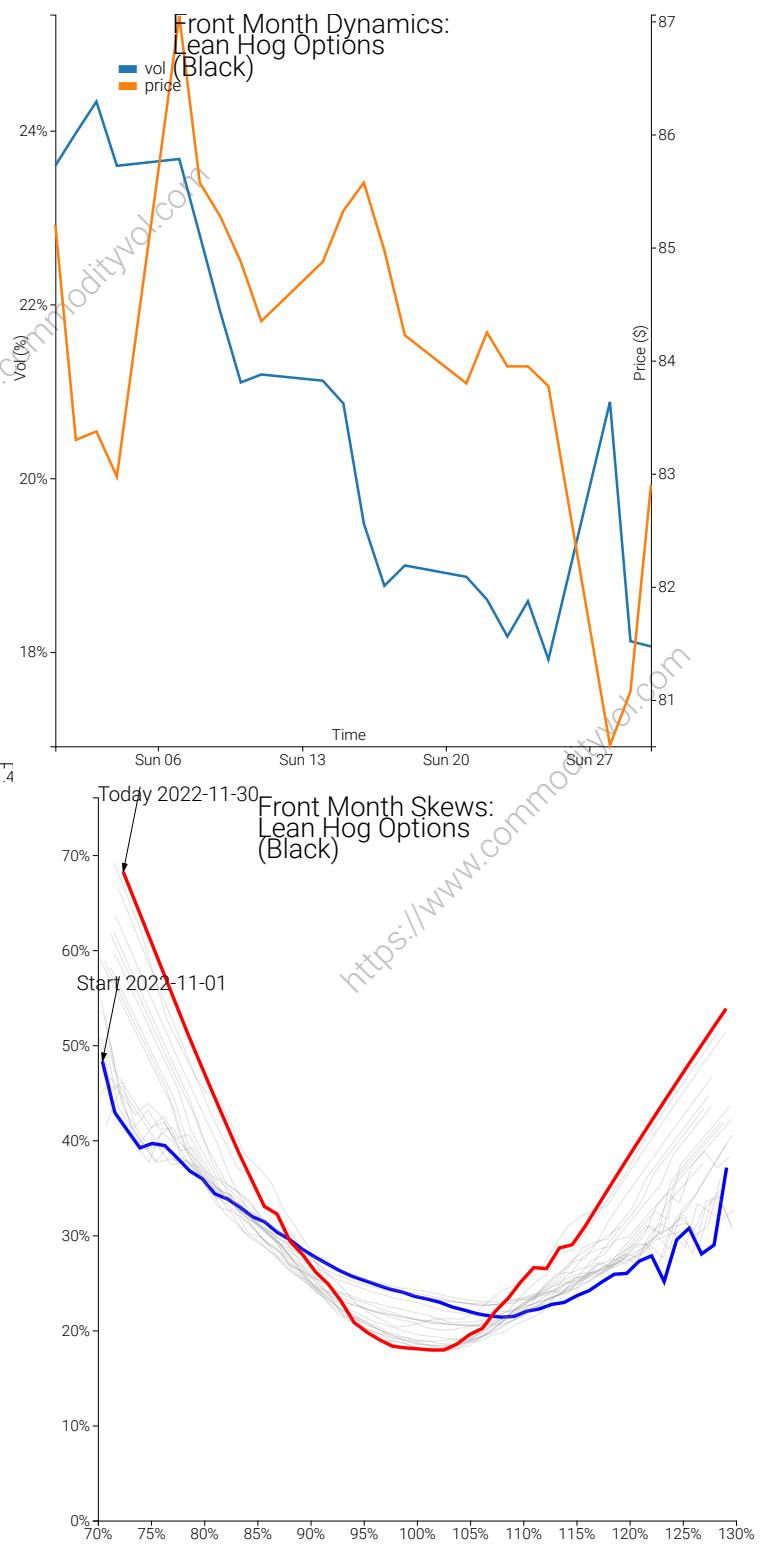
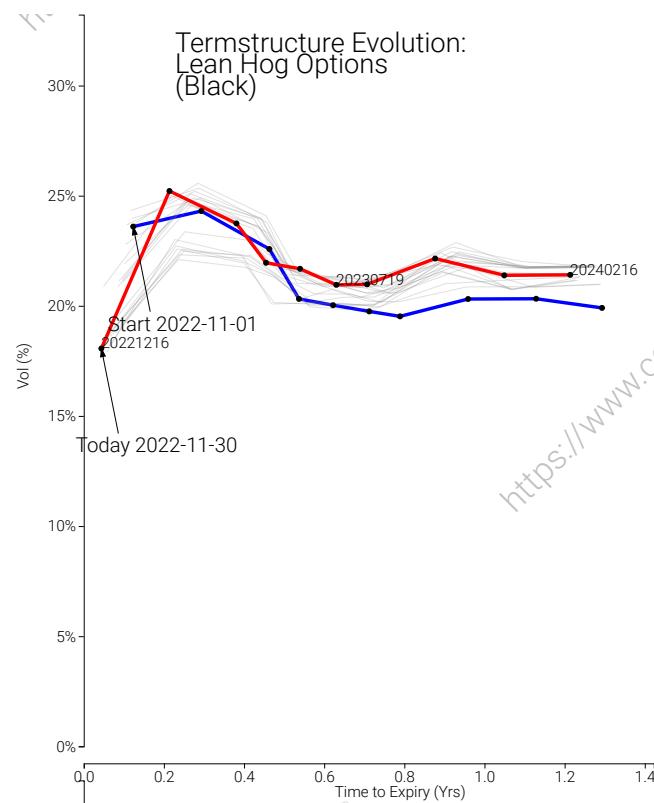


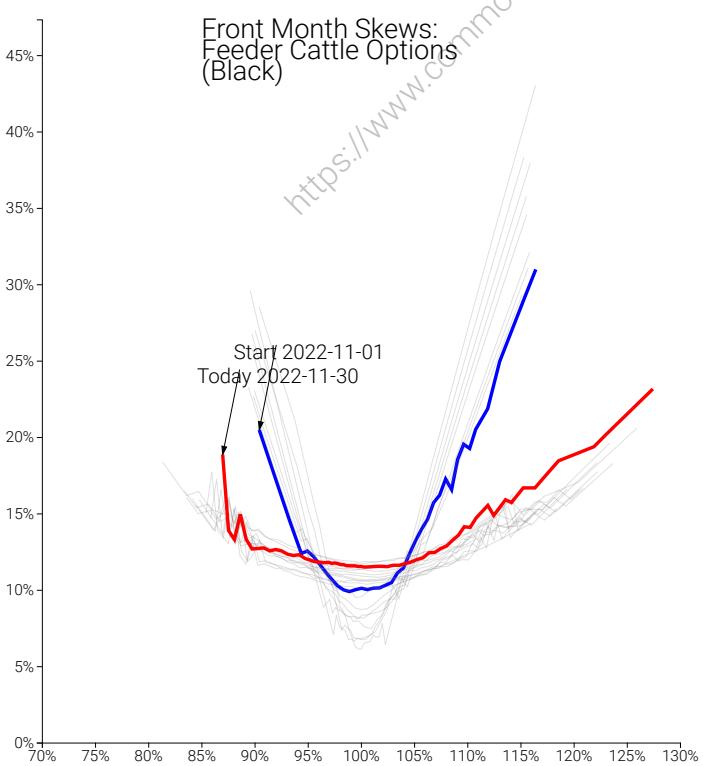
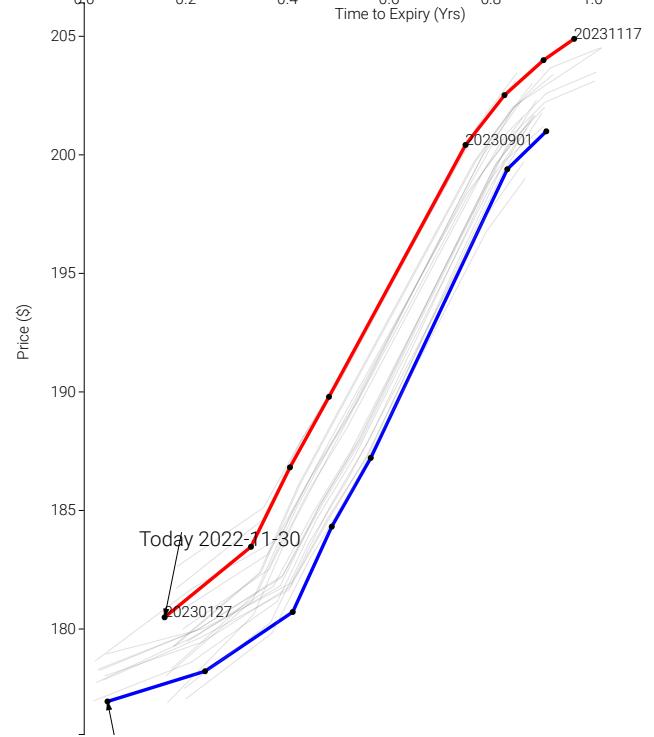
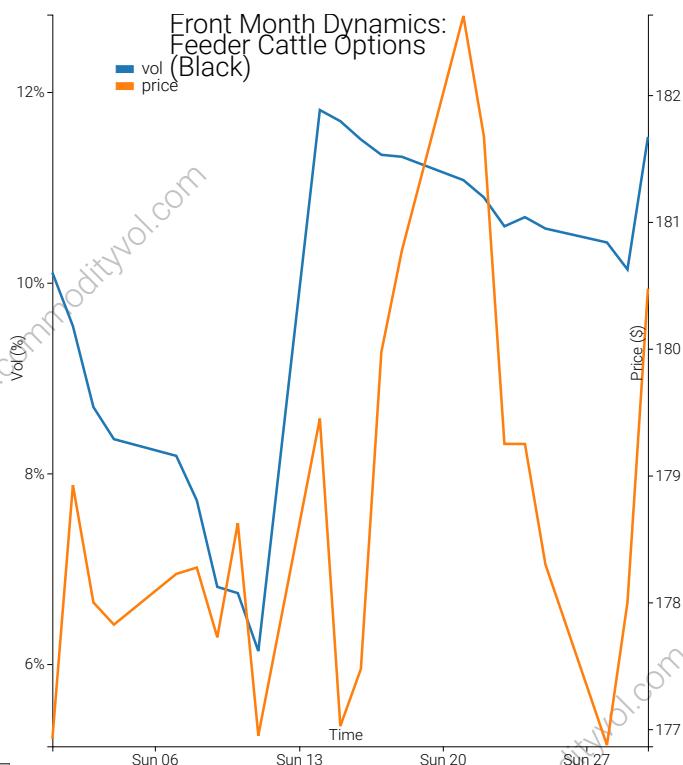
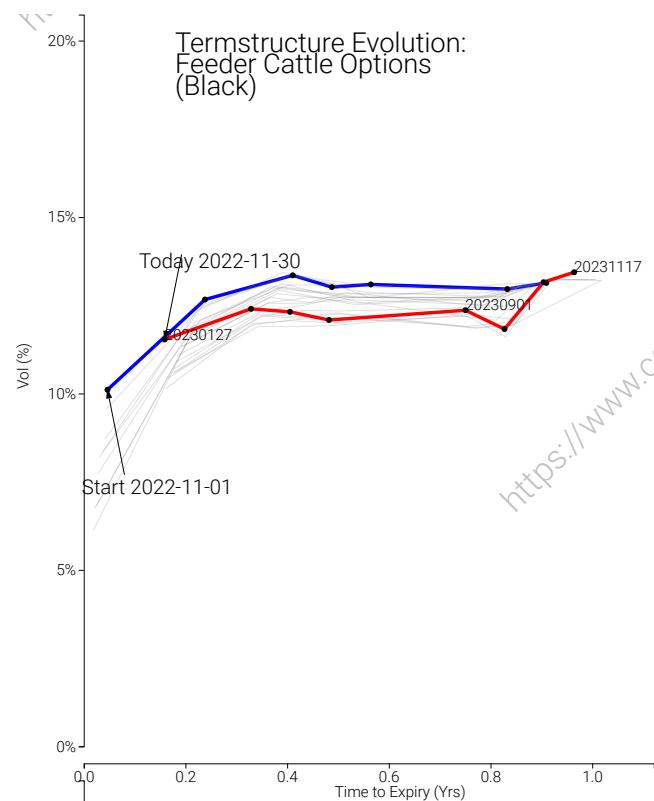


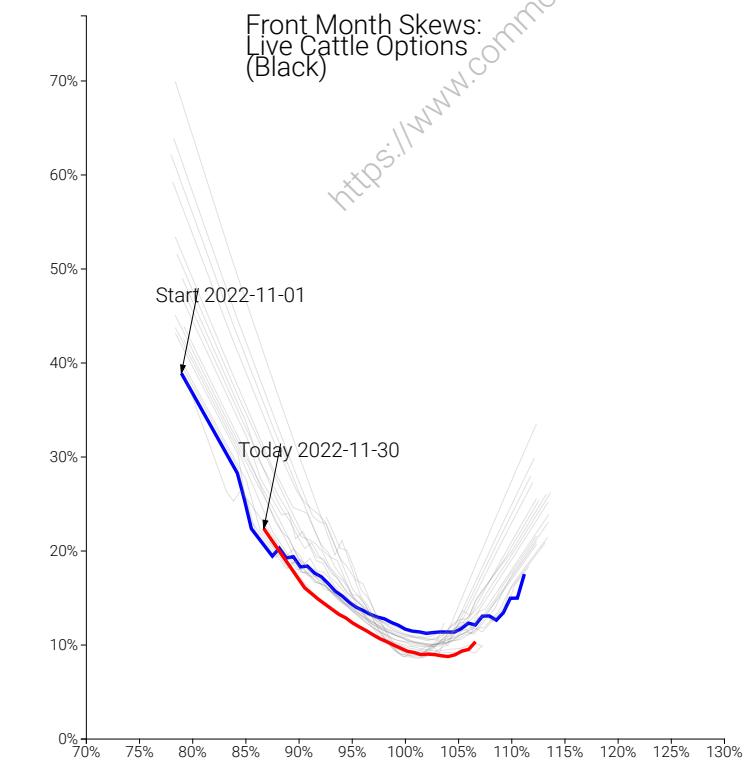
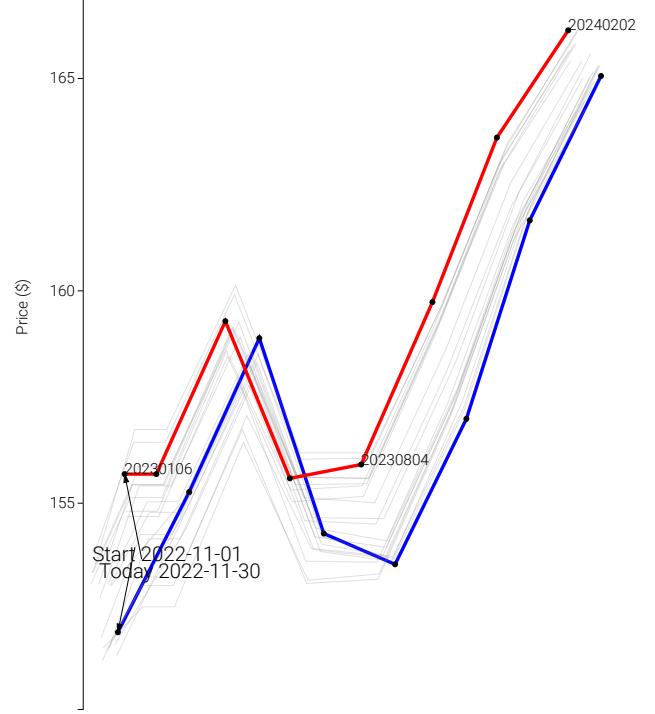
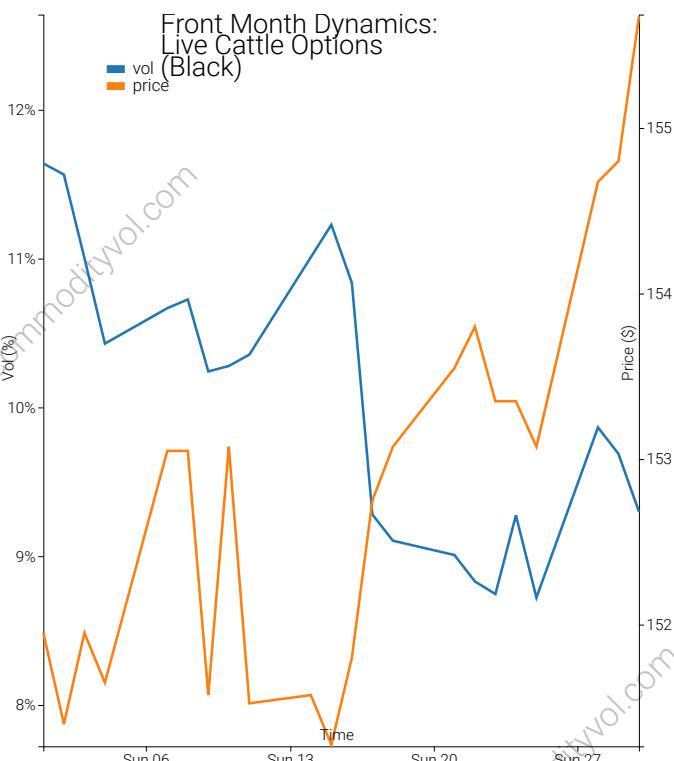
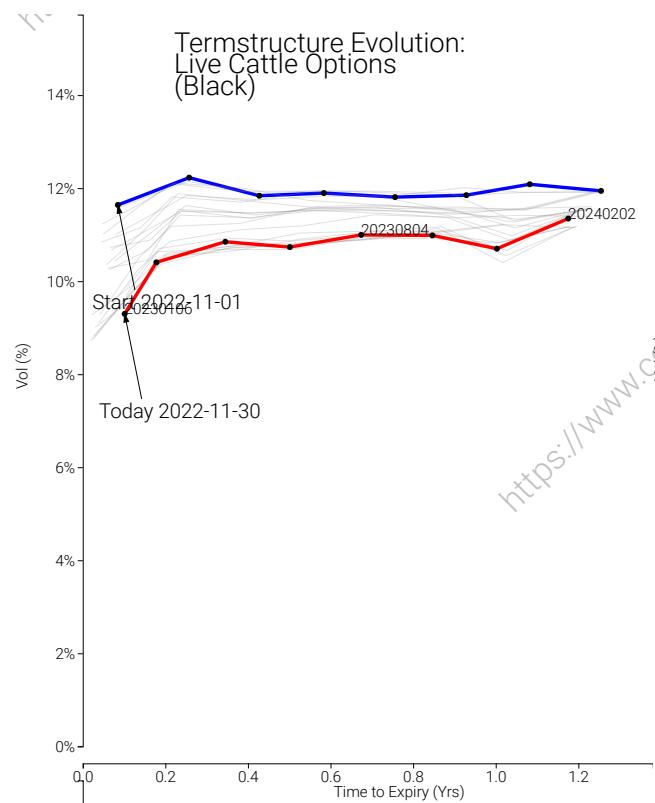


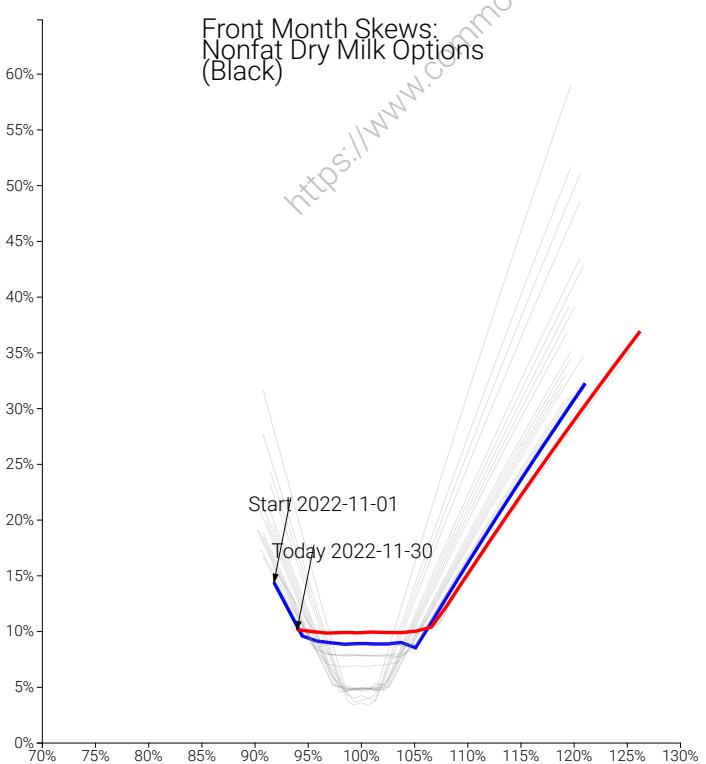
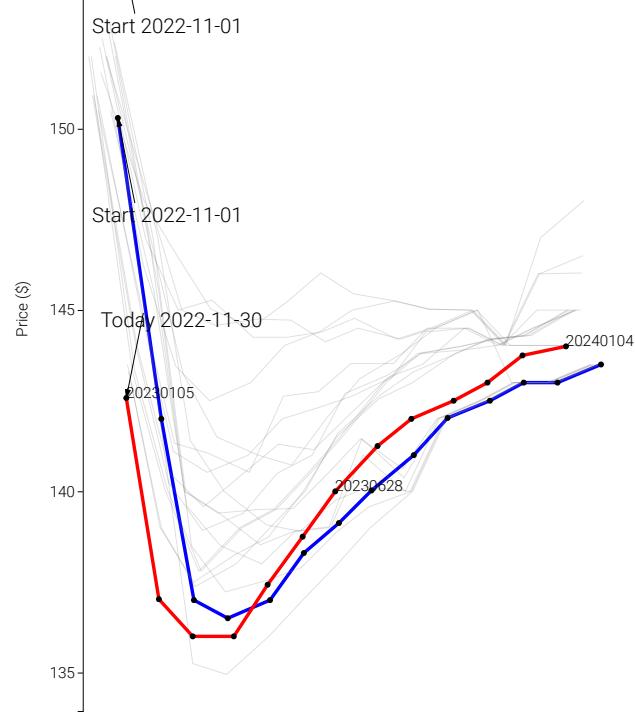
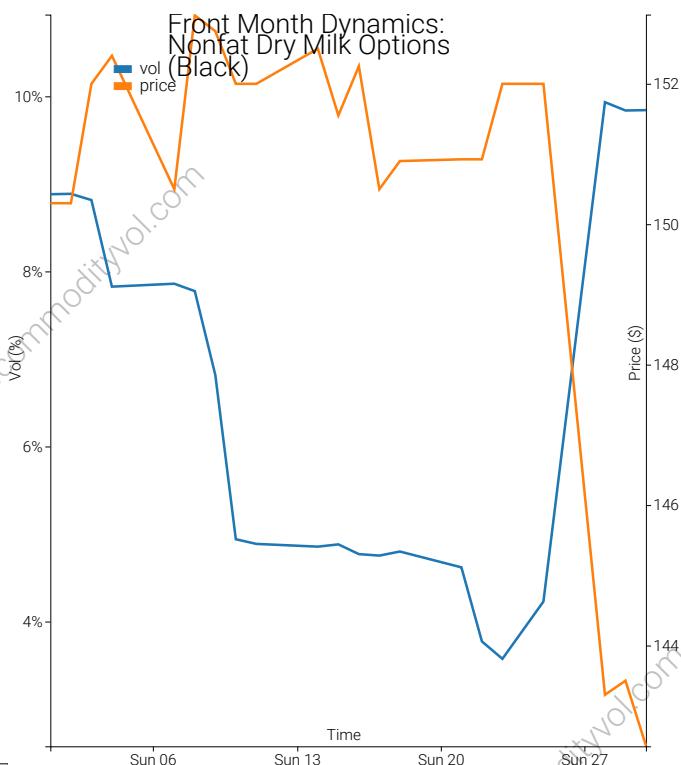
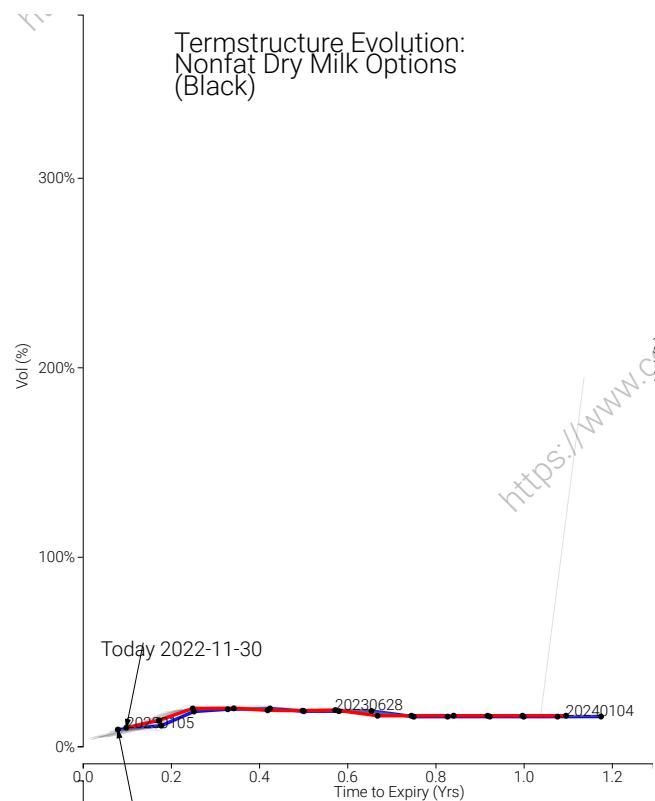


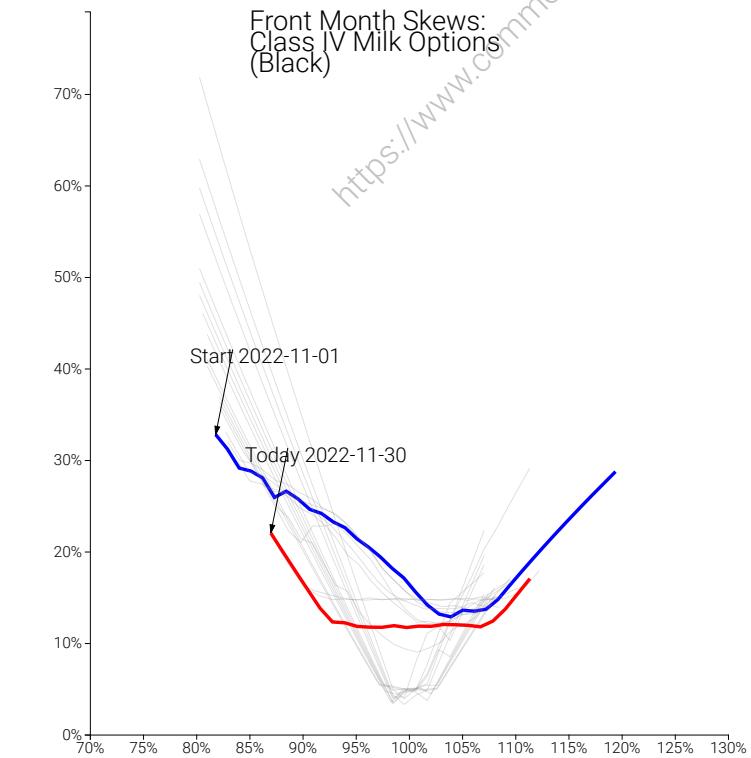
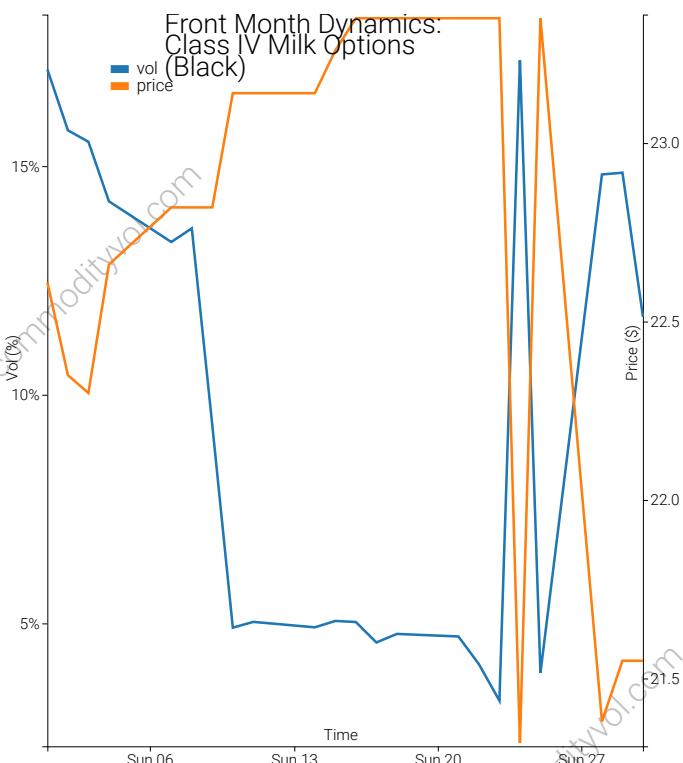
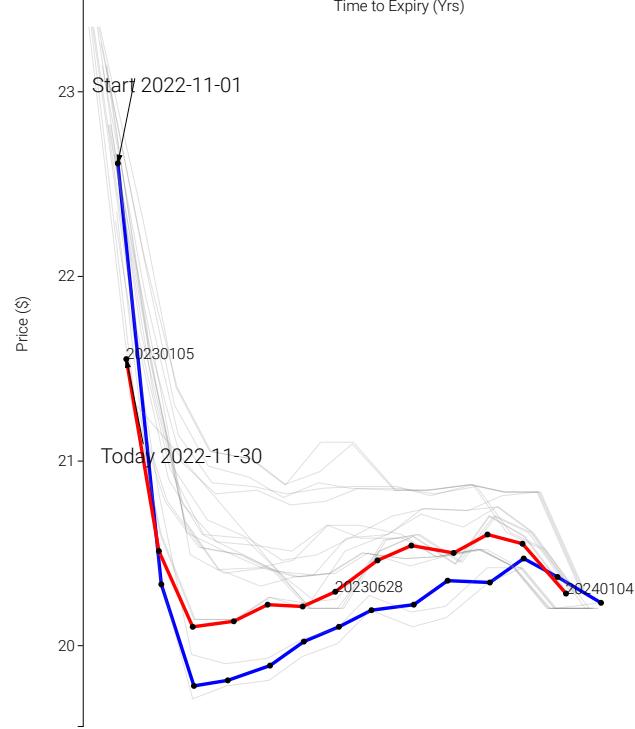
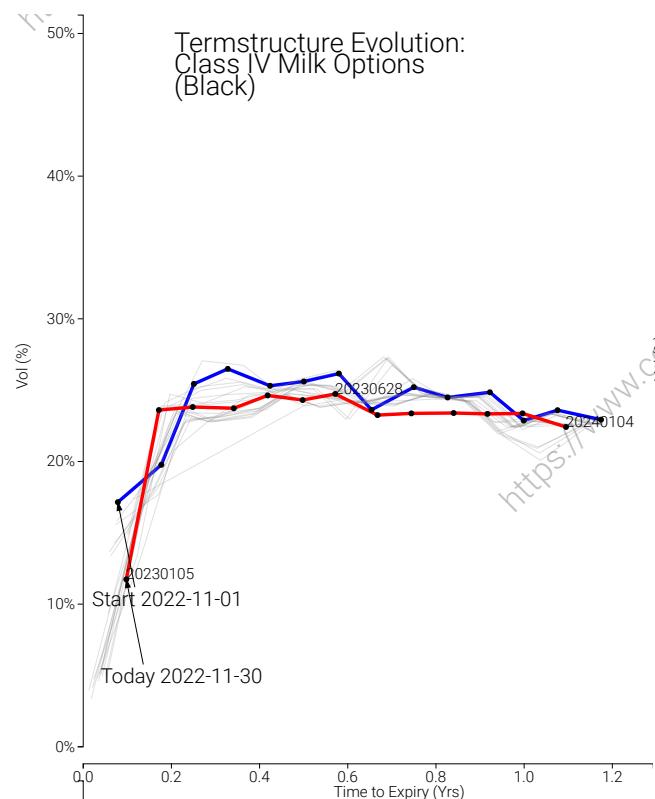
Ags: Proteins, Meats and so forth



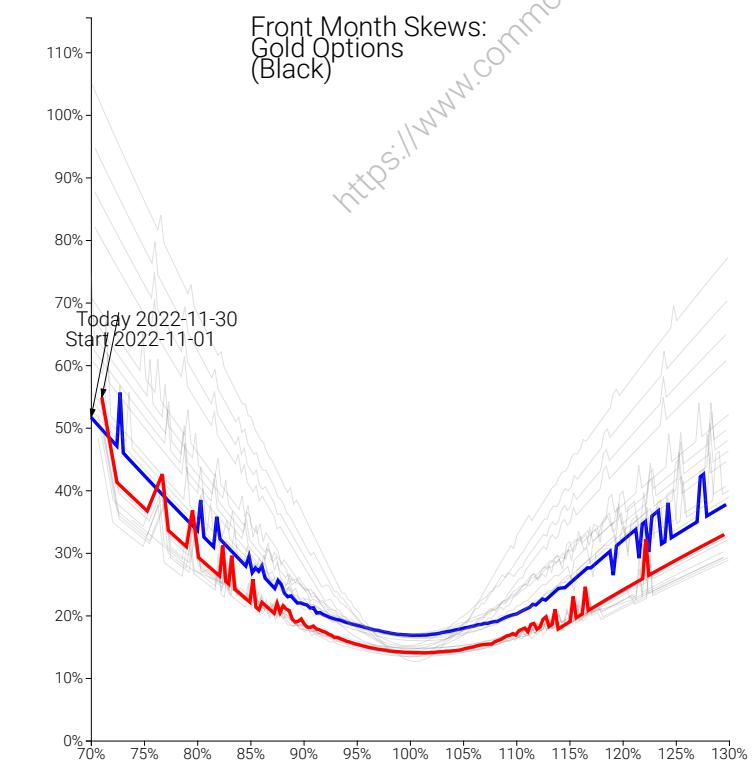
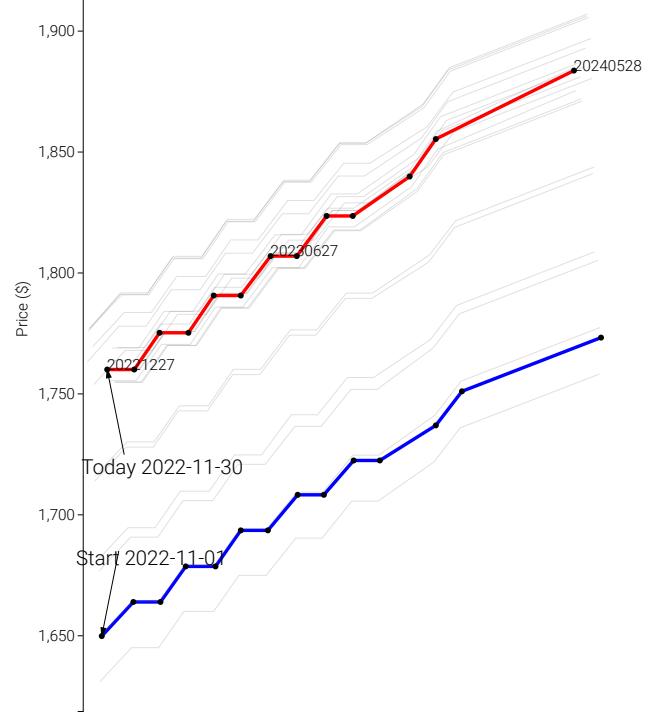
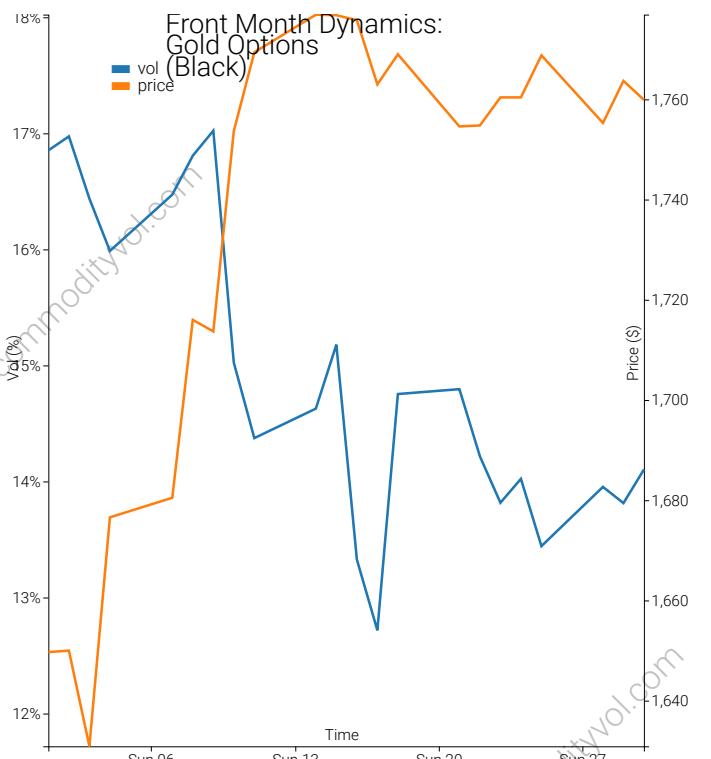
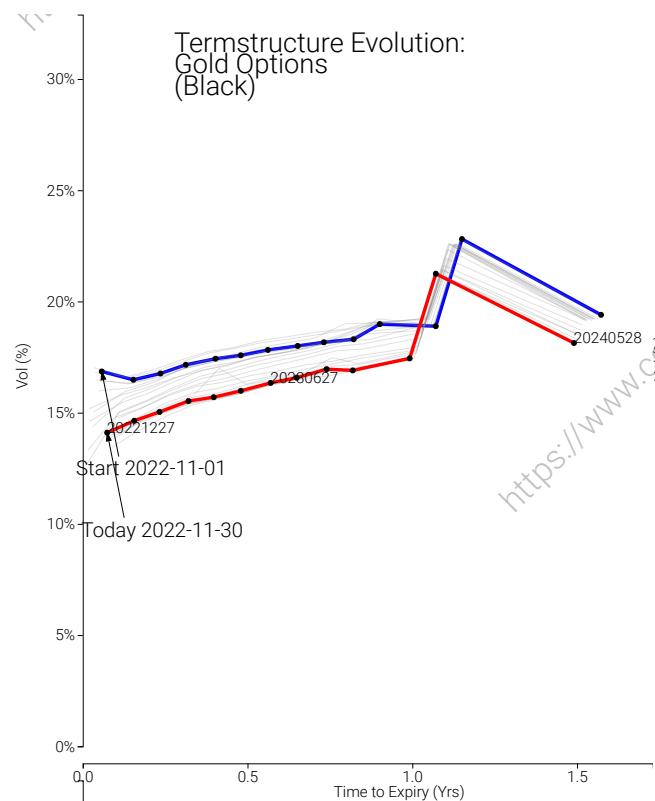


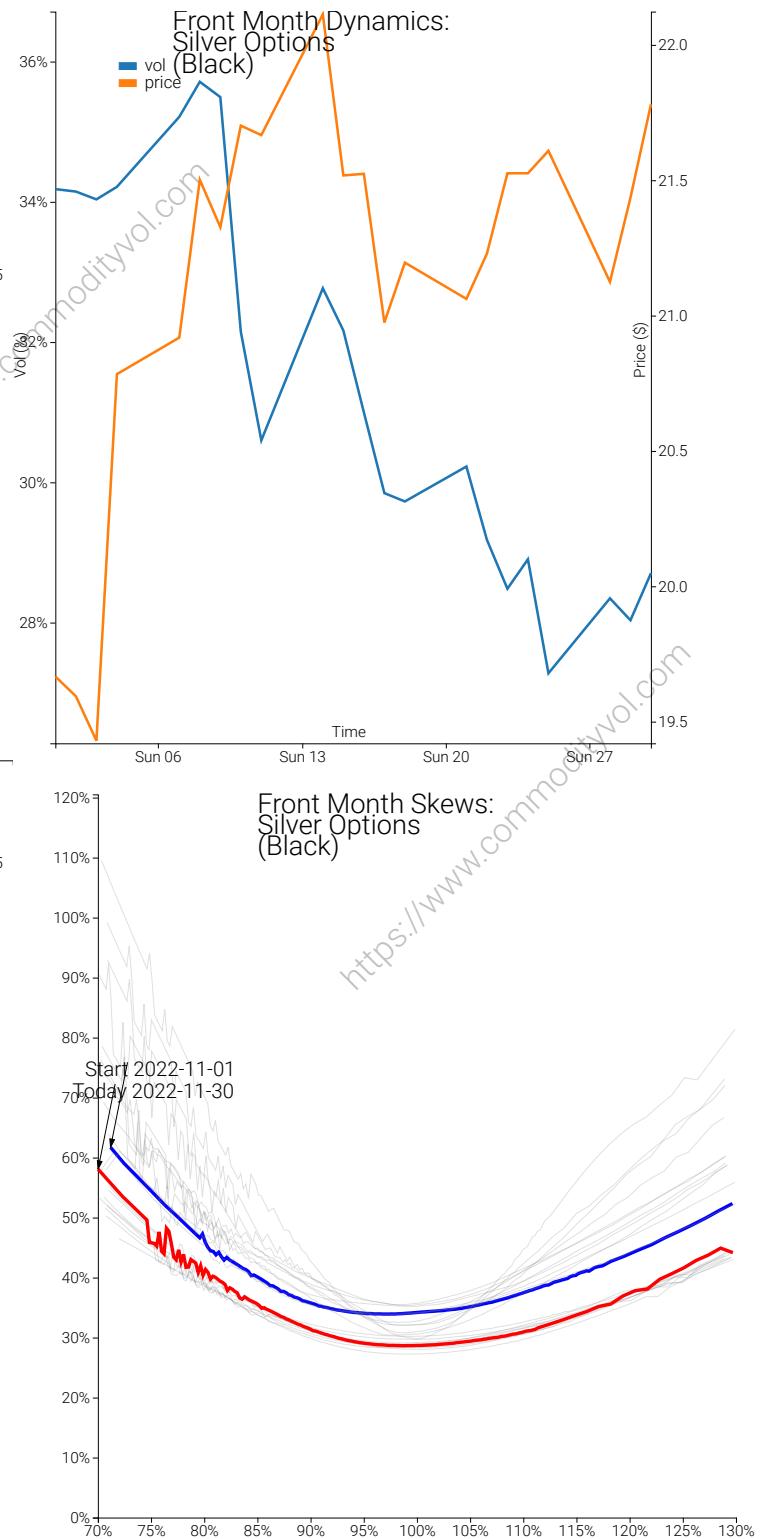
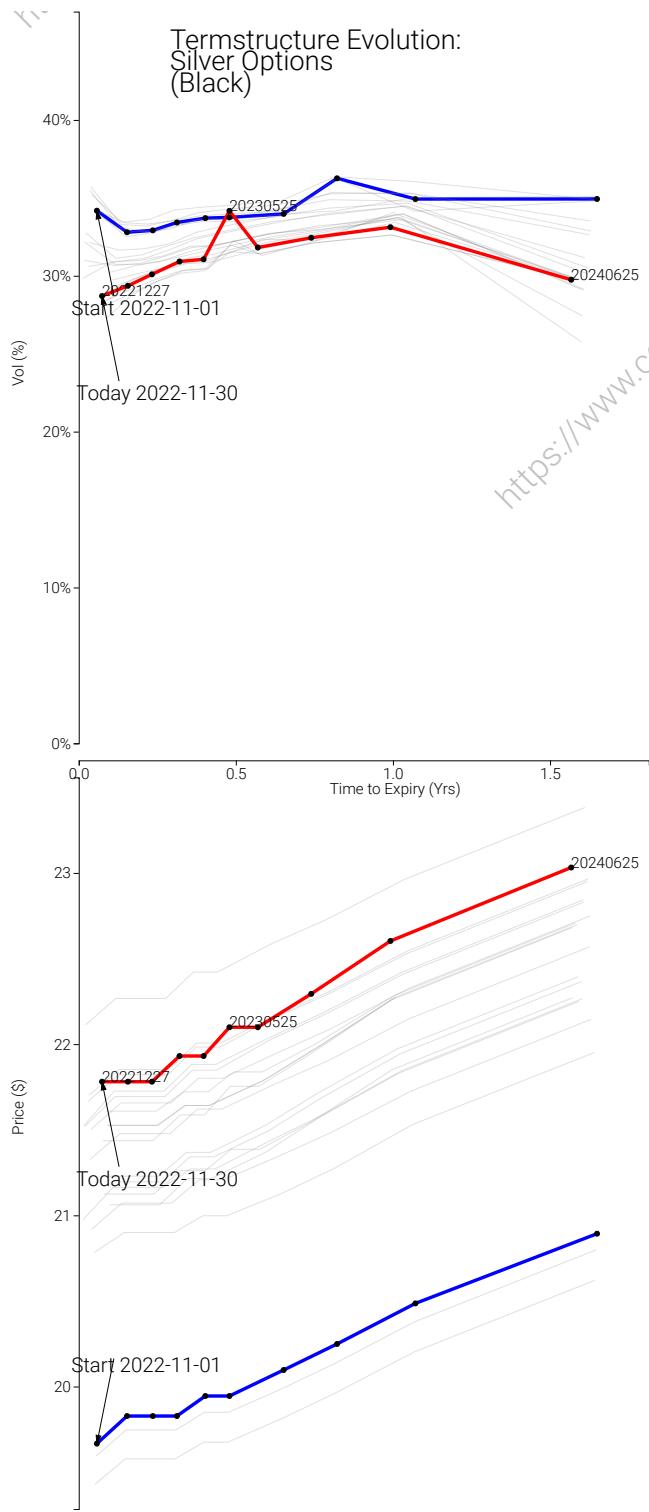


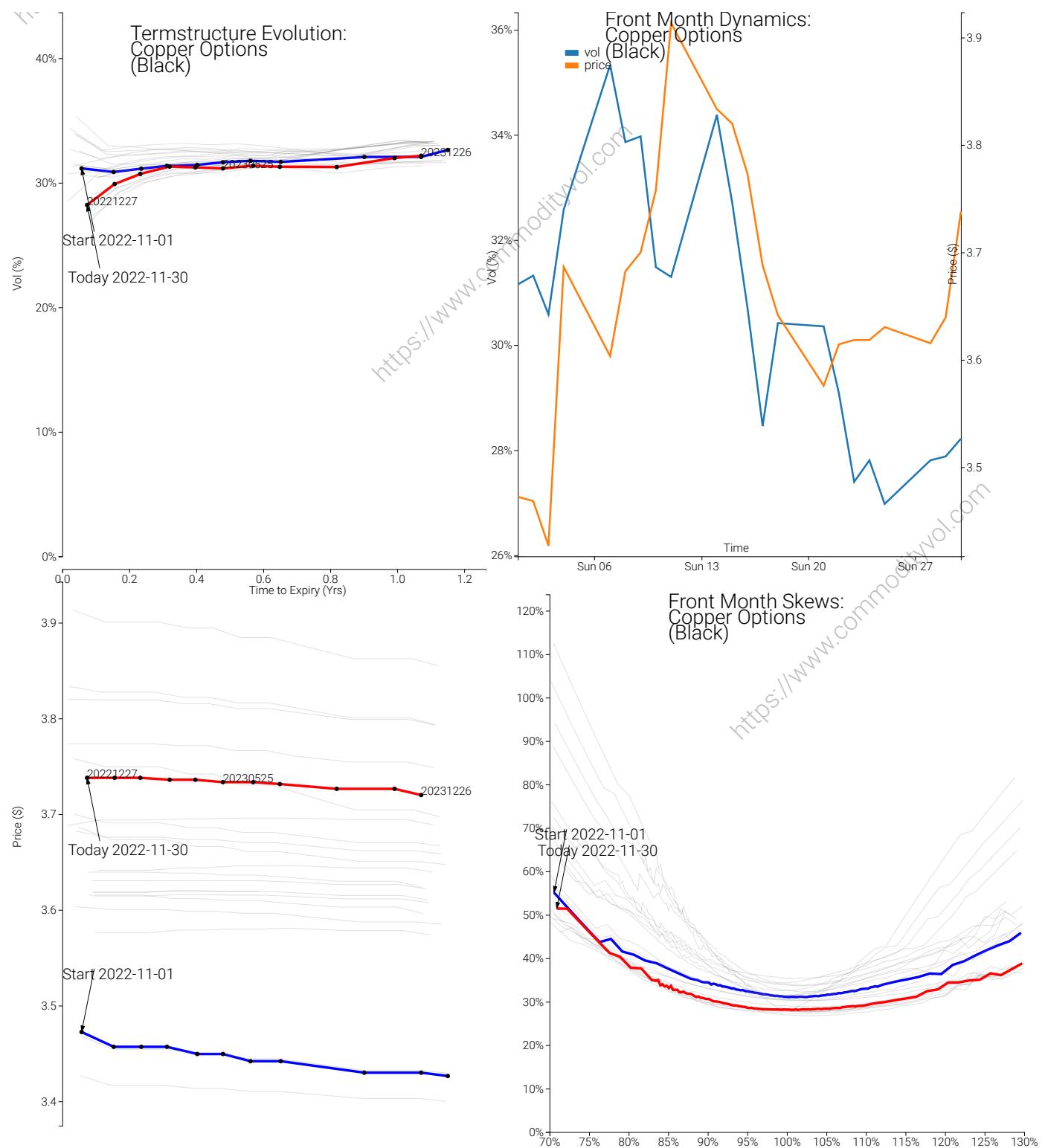


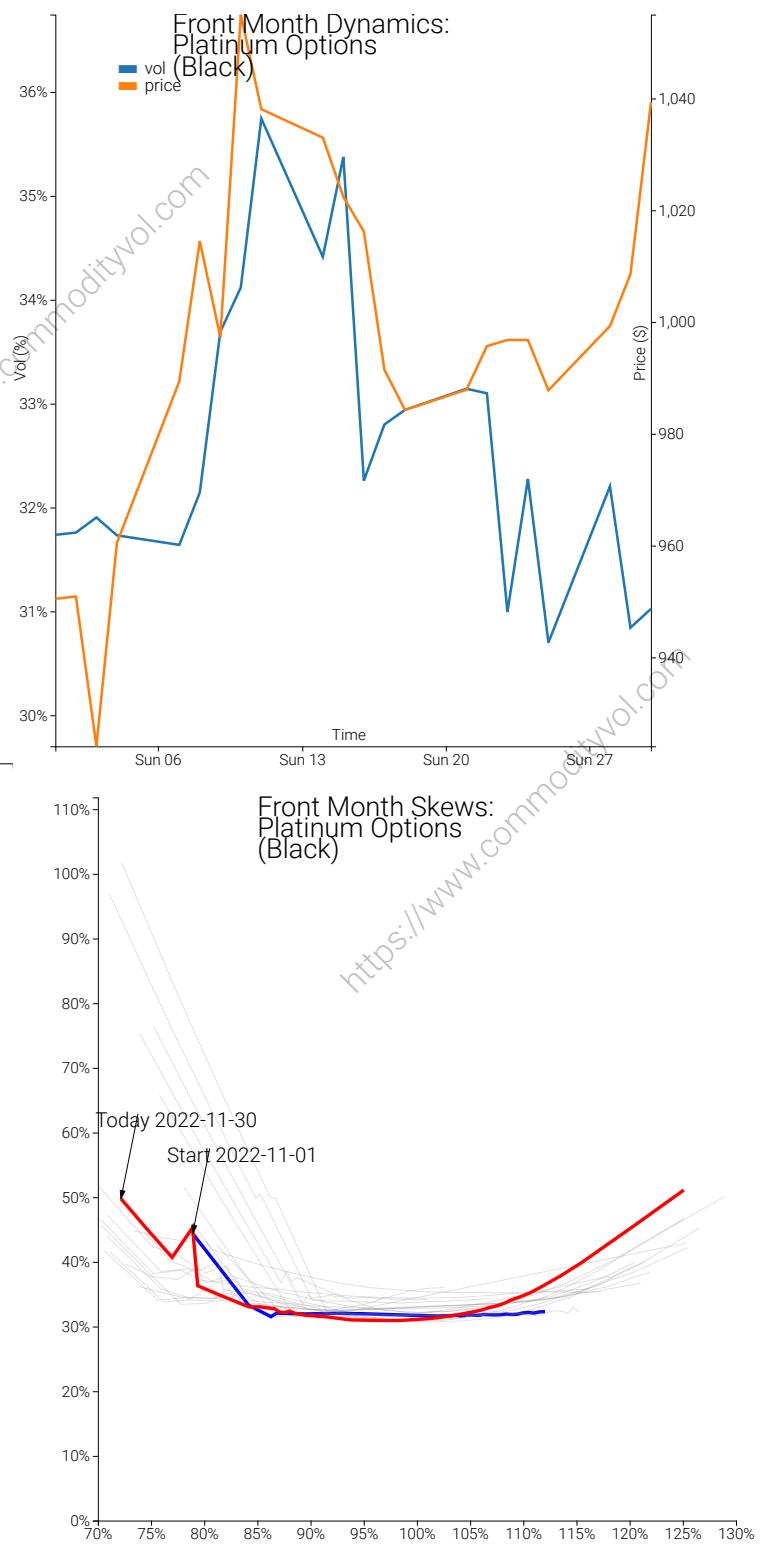
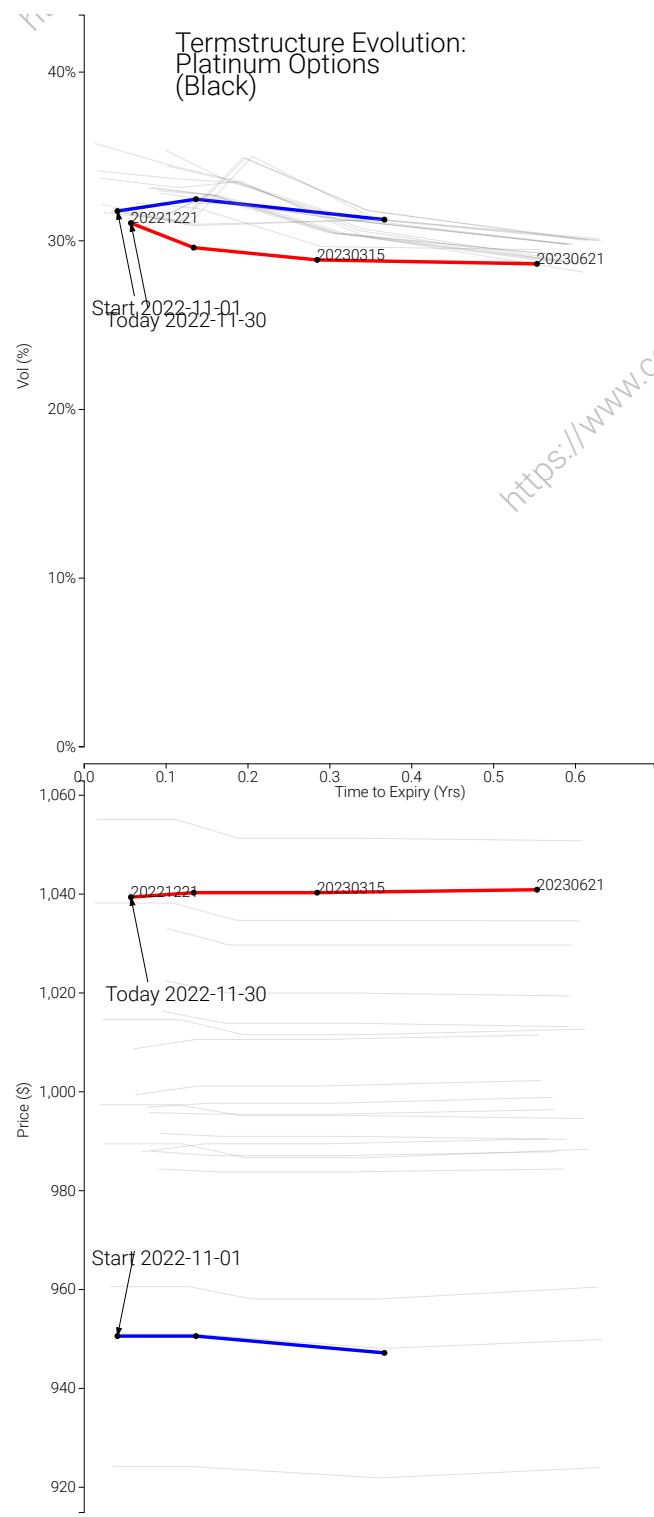


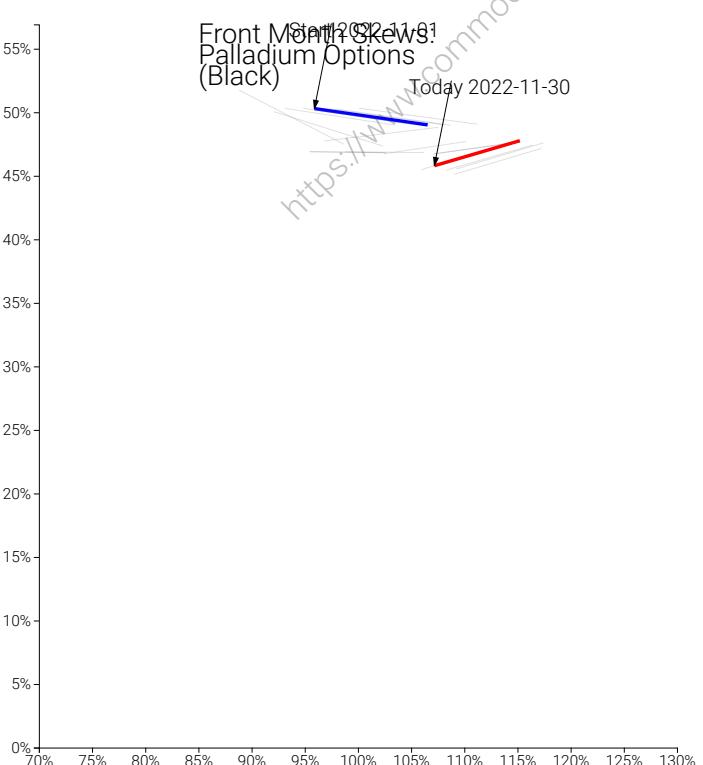
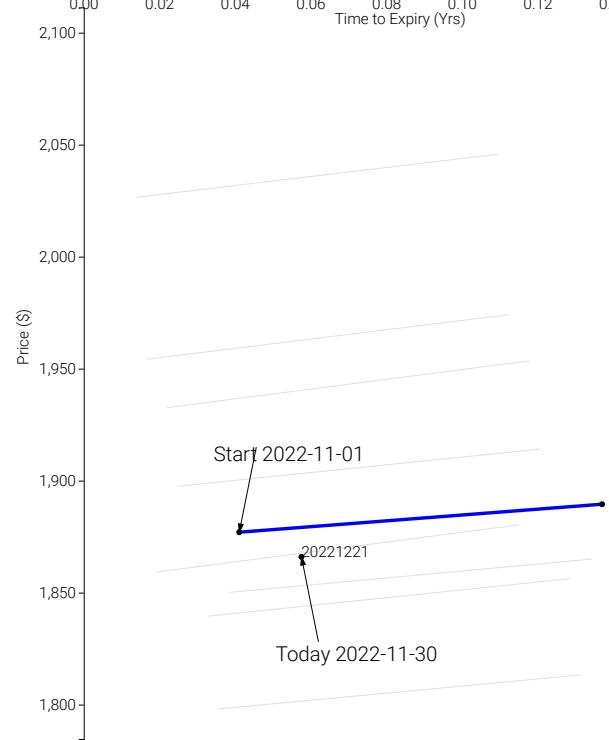
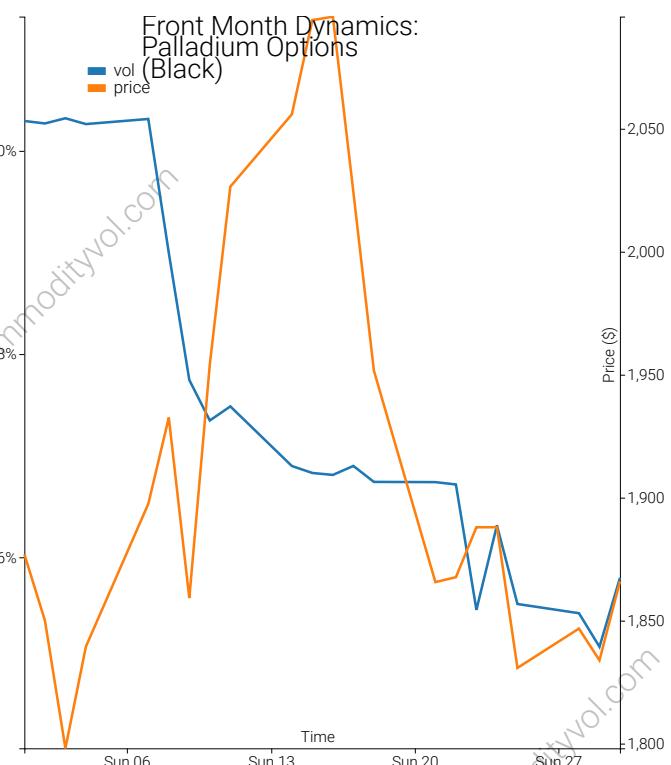
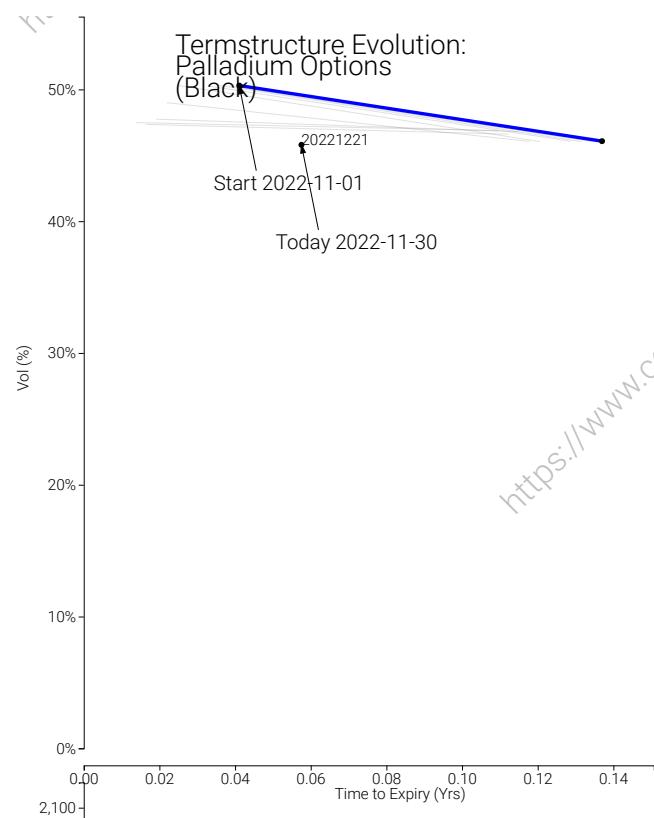
Metals









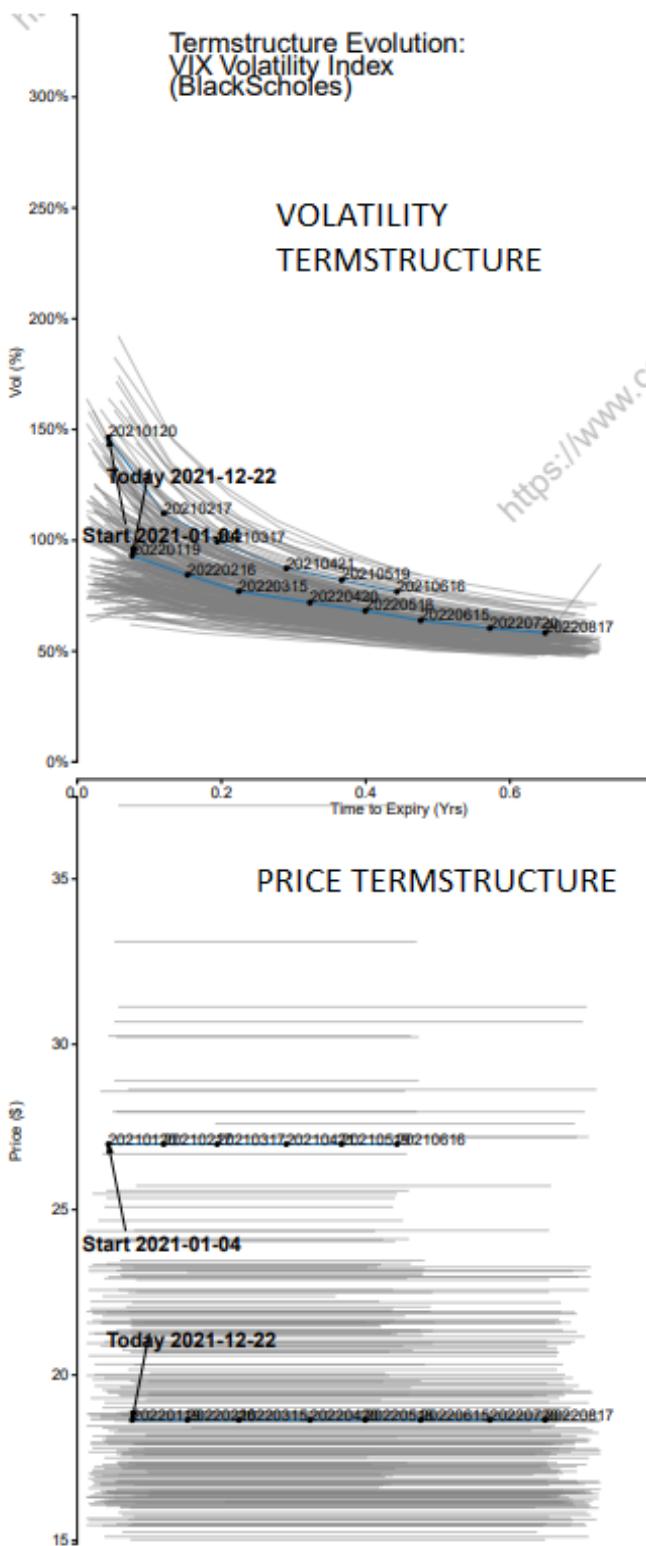


Explanation:

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:

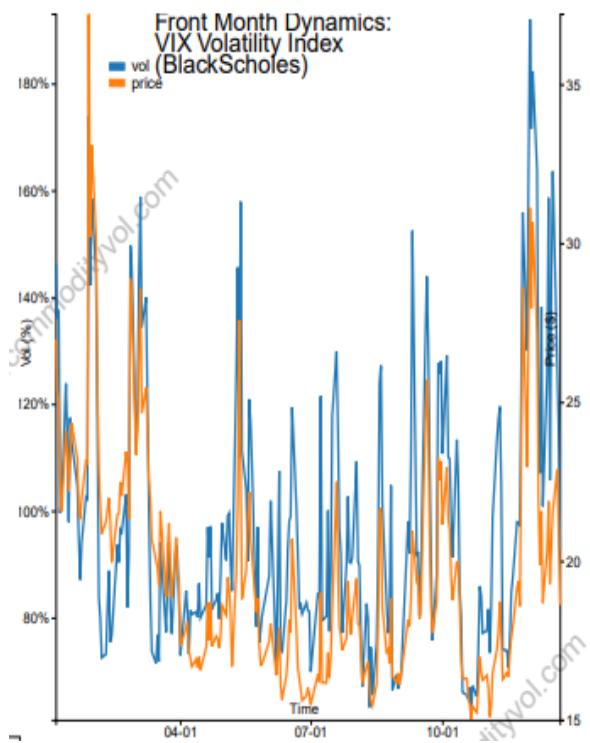
Stacked on top of the other on the left hand side, see the termstructures of vol and the (underlying) futures contract price.



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:

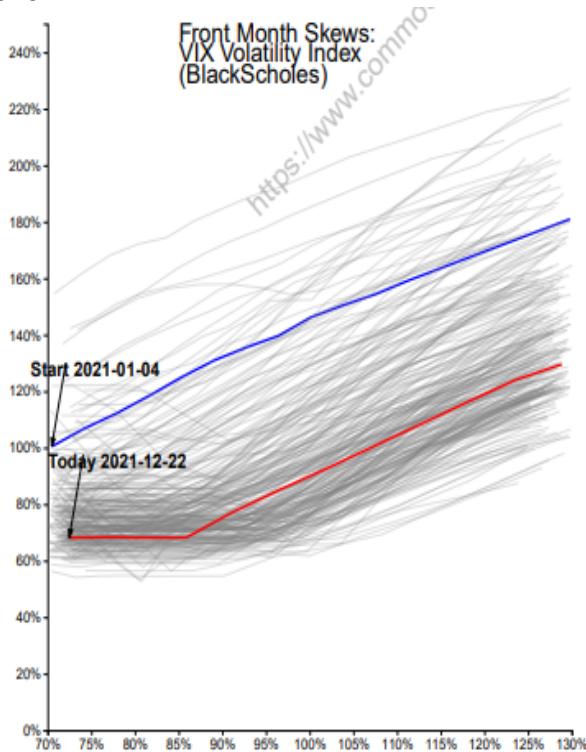
On the right hand panel we have the price and implied volatility of the front month contract.



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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