



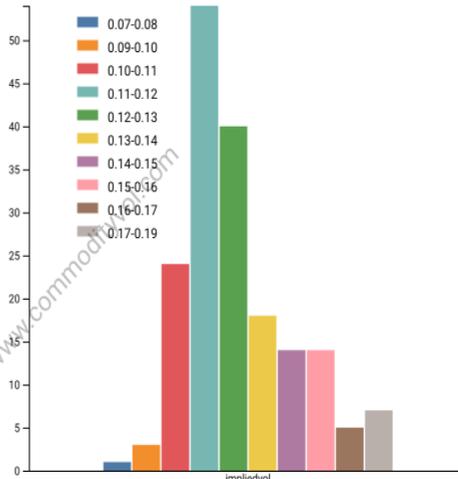
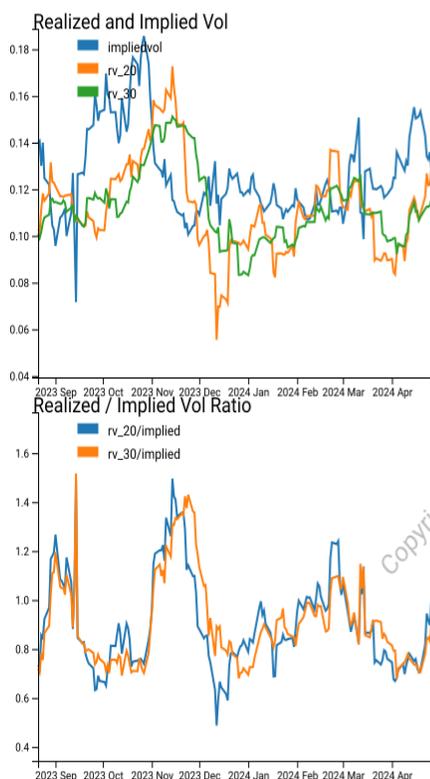
## **Welcome to our April 2024 Recap:**

We are pleased to welcome you to our April 2024 month-end report.

We started this missive last month with the inexorable march of equities, and the twins of this current march up are obesity and AI. Eli Lilly raised its estimates for the year based on superb results selling their weight loss pill. AI seems to be taking a breather. Our skepticism of AI is well known. It can do some interesting parlor tricks, but the people who tout its intelligence probably don't really understand that word. The news isn't all good. Meta fell on its face. While yesterday's darling, Tesla, seems to have had a recovery. This is the peril of story stocks. Our opinion is that the entire financial index market is a giant story stock. The hoped for interest rate moderation seems to have been put off for a little longer. The 10 Year is knocking on 5%, but hope springs eternal. Again, considering the relatively hot inflation number, we continue to stick by our higher for longer prediction. This is an interesting corner that the Greenspan-Bernanke legacy has painted us into. Debt might matter. Central bank assets might matter. Printing scraps of green linen fools the rubes in the short run (as Friedman and Modigliani argued). The budgetary impact of higher rates on the federal budget is clear, but the US state and local governments are also heavily burdened by debt. The nationalization of this state debt is most likely the hope of many governors. If anything brings the bond vigilantes back (like zombies), it will be this. Oddly enough, the widely recognized glut of commercial real estate hasn't yet metastasized into the wasteland that everyone expects. Much like Socrates's suicide, commercial real estate is becoming one of the most widely expected demises.

Other news of the last month has been decidedly political. Whether it is the dumpster fire US presidential election, aid to foreign countries mired in war, pointed snubs of US diplomats by the US's biggest trading partner or undocumented migrants, it is not pretty. Foreigners holding US dollars should be scratching their head and wondering how the ZIG is more sound than the USD. The rest of the OECD world isn't exactly knocking things out of the park. We end with an analytic that shows realized and implied vols over time for the SP500. You'll notice that realized vol hit its lows in late December, and has risen. For a while, implied vol was running ahead of things, but that recently changed.

## E-Mini S&P 500 Options Front Month 50Δ Last 180 days



	mean	median	min	max	stddev
impliedvol	0.126	0.121	0.072	0.186	0.019
dailyreturn	0.001	0.001	-0.017	0.020	0.007
sqrt(dr*dr*252)	0.089	0.075	0.000	0.319	0.075
vol_ma_20	0.126	0.120	0.112	0.162	0.014
vol_ma_30	0.126	0.121	0.113	0.159	0.012
rv_20	0.112	0.111	0.056	0.173	0.020
rv_30	0.113	0.110	0.083	0.151	0.016

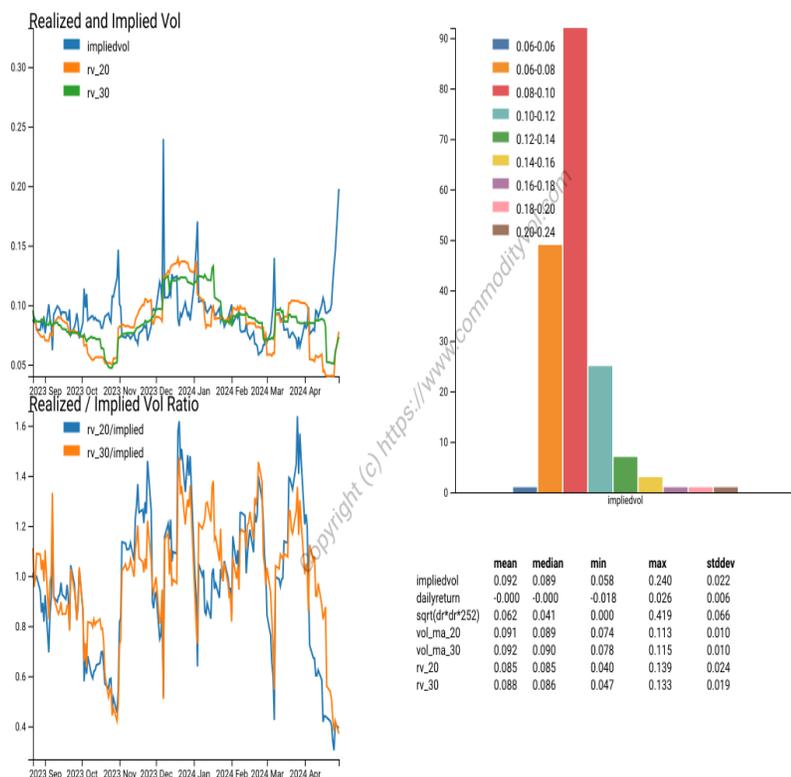
What goes up, must come down. No tree grows to Heaven! These aphorisms are beginning to ring true as the Cocoa rocket move reverses. The softs are infamous for the 'rats at the warehouse in Ghana' line about any break out rally. We are seeing a similar break out in coffee. As an aside, we are evaluating the possibility of including softs in our monthly roundup. The proteins, feeder cattle and hogs, rallied off the recent weakness. Overall, aside from lean cattle, milk and soybeans, ags were broadly strong.

Crude oil continued its slide. Again, we talk about the puzzle of calmness in energy markets. The blockage of the Red Sea continues. The warfare in the Mideast is ongoing, the price of oil is coming down! Makes sense right? Vol was down across the board. There are rumors that the persistent harassment of Russian refiners (by Ukrainian drones) is causing Russian crude to be offered to the World market. We might expect distillates to trade more richly. It doesn't seem that's true either. In the US it hasn't. The term halcyon comes to mind. Energy is in some halcyon state of grace. It is interesting because more and more the Green Movement, which was so loud a few years ago, is petering out. Given the World situation and the unrealistic aims of the Green Movement, a bit of volatility might be in order.

The Yen was again the talk of the town. The Japanese government has gone down the path of supporting the Yen. Could this be the beginning of the end of the chumminess between OECD Central Banks. We certainly hope so. If there is one bulwark against all of the excesses of the Bernanke/Greenspan/Powell era, it is a rapidly rallying (or collapsing) exchange rate. It will be interesting to see how the BOJ tries to fight deflation and hold the Yen up. It is almost like being a

little pregnant, an implausible idea. Consistent with one's imagination, Yen vol was a bottle rocket. The other standouts were the crypto currencies. Both the ETH and BTC contracts sold off aggressively. Vol sold off in both crypto futures as well.

JPYUSD Prem Quote Euro Style 2pmfix Options Front Month 50Δ Last 180 days



Metals proceeded to be up sharply (except for palladium). Copper and silver futures were hot. There are rumors of China stockpiling copper for reasons not readily clear. The precious metal moves are very consistent with fears that money is out of control. The dynamics of inflation and employment considerations have gotten much more complicated. We generally expected this, though must give central banks their due. It has taken a lot longer for the World to recognize the bad spot it is in. Miracles do happen, and perhaps there is some technological innovation that will clean up this mess (or at least bamboozle a new generation), but our feeling is that the BOJ isn't the only bank facing inconsistent goals. The metals markets are tell us that.

We now proceed to our dive into the different market segments and our observations.

## Forex

Both ETH and BTC futures were down dramatically against very strong prior months. The sell off in vol was a relatively simple affair. The front month skews just shifted down. The Yen vol move is a bit terrifying, nearly 200Bps in ATM vol is nothing to sneeze at. To be fair, vol was moving in the Aussie Dollar and the Peso. Things are bumping in FX!

[Foreign Exchange ATM](#)

[Bitcoin Detail](#)

[Ethereum Detail](#)

[Yen Detail](#)

[Peso Detail](#)

## **Rates**

Typically, there is some disparate movements between SOFR and the Note/Bond futures. This month, it is all red. It is surprising that so much was wagered on an ameliorating interest rate picture. The size of the moves in the futures was related to the maturity of the underlying product, so the moves in the 30Year were much more amplified than the 10Year. Considering the moves, vol was relatively sedate. The 10 Year vol termstructure pivoted at the 3 month mark. The 30Year vol curve moved in a parallel fashion.

[Interest Rates ATM](#)

[30 Year Detail](#)

[SOFR Detail](#)

## **Equity Indexes**

Equity indexes found themselves in uncertain territory. They were down. The Nasdaq was down more than 3%, Russell down almost 5% and SP was down more than 3%. The VIX index was up more than 7% while SP500 vol was up more 5%. In all cases, the front month skew improved. The puts became more bid. The cost of insurance increased. There is still a lot of vol to make up to get back to historical norms. We expect vol to increase as we head into November, perhaps in a repeat of Trump/Clinton.

[EquityIndex ATM](#)

[SP500 Detail](#)

[Russell Detail](#)

[VIX Detail](#)

## **Metals**

Metals were all up. In gold, the near strikes and call wing were bid. This might be related to the moves in fixed income. However, if rates and monetary policy are tighter for longer, then it would seem to create a ceiling on gold price. Silver vol was uniformly up. Copper had some interesting effects. First, the front month skew was bid in the near atm strikes. Additionally, the termstructure of vol seemed to pivot at the 1 year point. The front of the expiry structure was sold off, while the back moved up. Again, perhaps this is the signal that sluggishness remains for at least a year. Palladium vol was offered across the entire strike space.

[Metals ATM](#)

[Gold Detail](#)

[Palladium Detail](#)

[Copper Detail](#)

## **Ags**

Feeder and live cattle had massive bids in vol. Meats have had an awesome run. Live cattle gave up some of the run, but vol was bid aggressively. Feeder cattle showed a bid in price and vol. Corn's put skew seems to have been sold off. Soybeans sold off aggressively on

massively weaker vol.

[Ags ATM](#)

[Feeder Cattle Detail](#)

[Live Cattle Detail](#)

[Corn Detail](#)

[Soybean Detail](#)

[Ags Details](#)

## **Energy**

Oil, whether Brent or WTI, had a strong month, about 4% up. Vol was crushed in WTI, with the put wing coming off aggressively (on a weaker overall vol curve). Again, as in the case of equity indexes, there is a lot of turmoil in the World. Oil seems to be very confident, perhaps the SPR buying is the back stop killing the put wing and the middling economy will not ignite a strong bid for energy. Natural gas continued to slip on the soap in the shower. Unlike the past few years, vol has been offered consistently. The days where US Natty gas prices would harmonize with European ones seem very far in the past.

[Energy ATM](#)

[US Natty Gas Detail](#)

[WTI Crude Detail](#)

[Details Energy](#)

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

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

[info@commodityvol.com](mailto:info@commodityvol.com)

## **At The Money Roundup of Products**

## Forex

exch/prod	desc	futures chng [%]	vol chng [%]
CME/ADU	AUDUSD 2pmfix	-0.001 [-0.1%]	-0.006 [-6.5%]
CME/BTC	Bitcoin	-10980.000 [-15.6%]	-0.140 [-19.8%]
CME/CAU	CADUSD 2pmfix	-0.010 [-1.3%]	-0.002 [-4.4%]
CME/CHU	CHFUSD 2pmfix	-0.020 [-1.8%]	-0.016 [-20.1%]
CME/ETH	Ethereum	-587.000 [-16.7%]	-0.071 [-9.7%]
CME/EUU	EURUSD 2pmfix	-0.007 [-0.7%]	-0.010 [-13.5%]
CME/GBU	GBPUSD 2pmfix	-0.004 [-0.3%]	-0.007 [-8.9%]
CME/JPU	JPYUSD 2pmfix	-0.000 [-4.2%]	+0.019 [+23.1%]
CME/MP	Mexican Peso	-0.001 [-2.3%]	+0.025 [+26.4%]
CME/NE	New Zealand	-0.014 [-2.3%]	+0.006 [+7.1%]

## Energy

exch/prod	desc	futures chng [%]	vol chng [%]
NYMEX/BZO	Brent Crude Oil Margin	-1.090 [-1.2%]	-0.016 [-7.0%]
NYMEX/CVR	Chicago Ethanol(platts) Average Price	+0.065 [+4.0%]	-0.033 [-18.3%]
NYMEX/LO	Crude Oil	-1.780 [-2.1%]	-0.009 [-3.9%]
NYMEX/LN	European Natural Gas	+0.154 [+8.4%]	-0.009 [-1.7%]
NYMEX/E7	Henry Hub Financial Last Day	+0.154 [+8.4%]	-0.004 [-0.7%]
NYMEX/ON	Natural Gas	+0.154 [+8.4%]	-0.013 [-2.3%]
NYMEX/OH	NY Harbor ULSD	-0.099 [-3.8%]	-0.046 [-15.1%]
NYMEX/OB	RBOB	-0.019 [-0.7%]	-0.048 [-15.7%]

exch/prod	desc	futures chng [%]	vol chng [%]
CME/DK	Class IV Milk	+0.220 [+1.1%]	-0.062 [-36.3%]
CBT/C	Corn	+0.112 [+2.6%]	+0.000 [+0.2%]
ENXT_COM/OMA	Corn/Mais	+11.250 [+5.8%]	+0.000 [+0.2%]
CME/62	Feeder Cattle	+4.150 [+1.7%]	-0.047 [-26.8%]
CBT/KW	KC HRW Wheat	+0.597 [+10.4%]	+0.050 [+16.3%]
CME/LN	Lean Hog	+7.200 [+8.3%]	+0.036 [+32.7%]
CME/48	Live Cattle	-5.100 [-2.8%]	-0.034 [-15.2%]
ENXT_COM/OBM	Milling Wheat / Ble de Meunerie	+28.250 [+14.0%]	+0.009 [+3.4%]
CME/NF	Nonfat Dry Milk	-2.675 [-2.3%]	-0.015 [-17.4%]
CBT/O	Oats	+0.137 [+3.9%]	-0.056 [-12.1%]
ENXT_COM/OCO	Rapeseed	+19.250 [+4.3%]	-0.022 [-10.6%]
CBT/14	Rough Rice	+2.985 [+18.3%]	+0.036 [+21.9%]
CBT/S	Soybean	-0.227 [-1.9%]	+0.016 [+9.8%]
CBT/06	Soybean Meal	+18.500 [+5.5%]	+0.025 [+11.0%]
CBT/07	Soybean Oil	-5.230 [-10.8%]	+0.010 [+3.3%]
CBT/W	Wheat	+0.462 [+8.3%]	+0.038 [+12.5%]

## Metals

exch/prod	desc	futures chng [%]	vol chng [%]
COMEX/HX	Copper	+0.516 [+12.7%]	+0.060 [+31.6%]
COMEX/OG	Gold	+45.800 [+2.0%]	+0.010 [+7.0%]
NYMEX/PAO	Palladium	-51.200 [-5.1%]	-0.003 [-0.7%]
NYMEX/PO	Platinum	+36.800 [+4.0%]	+0.007 [+3.2%]
COMEX/SO	Silver	+1.581 [+6.3%]	+0.005 [+1.9%]

## InterestRates

exch/prod	desc	futures chng [%]	vol chng [%]
CBT/26	2 YR US Treasury Note	-0.946 [-0.9%]	-0.004 [-20.5%]
CBT/25	5 YR US Treasury Note	-2.224 [-2.1%]	-0.007 [-16.5%]
CBT/21	10 YR US Treasury Note	-2.782 [-2.5%]	-0.012 [-21.2%]
CBT/17	30 YR US Treasury Bond	-5.240 [-4.4%]	+0.008 [+7.4%]
CBT/UBE	Long Term US Treasury Bond	-7.007 [-5.6%]	+0.013 [+9.6%]
CME/S0	One-year Mid-curve Three-month SOFR	-0.530 [-0.6%]	+0.002 [+11.3%]
CME/SR3	Three-month SOFR	-0.135 [-0.1%]	-0.002 [-41.0%]
CME/S3	Three-year Mid-curve Three-month SOFR	-0.400 [-0.4%]	+0.002 [+11.7%]
CME/S2	Two-year Mid-curve Three-month SOFR	-0.490 [-0.5%]	+0.002 [+11.3%]

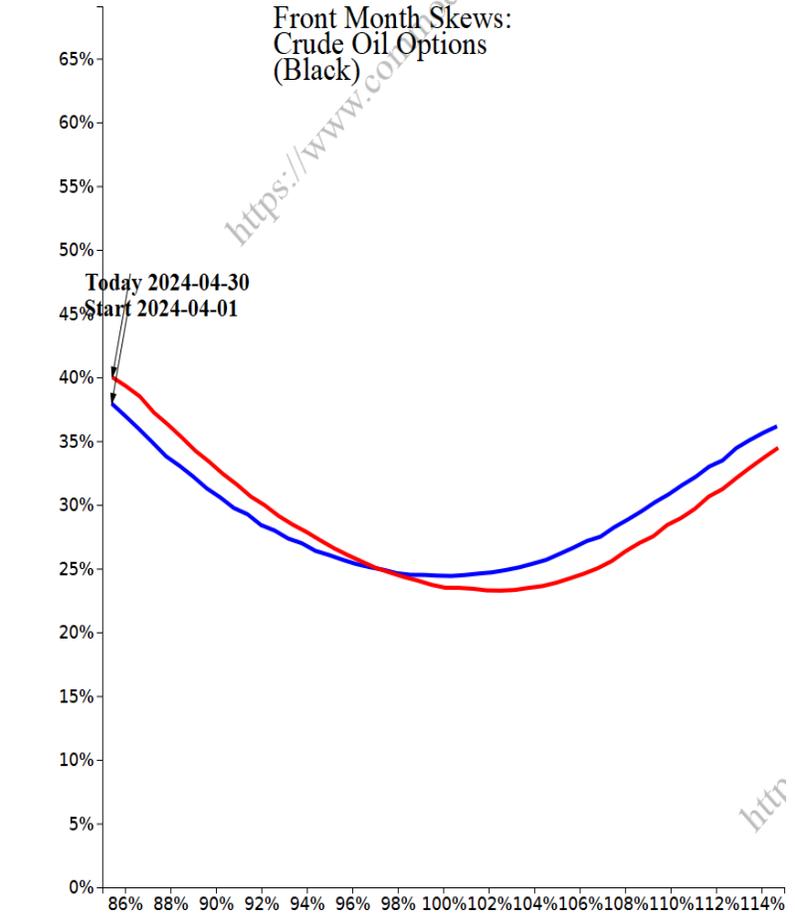
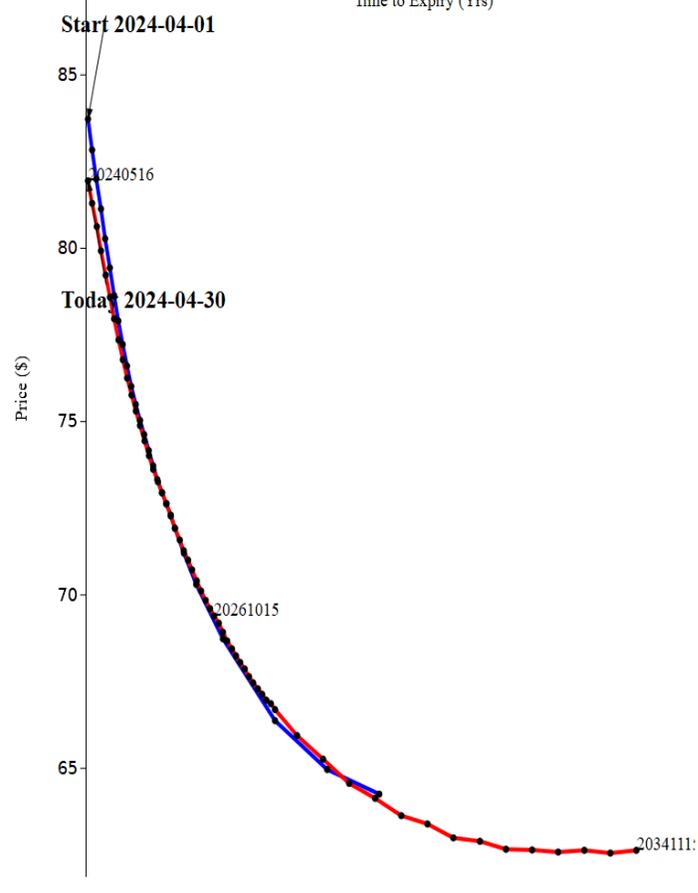
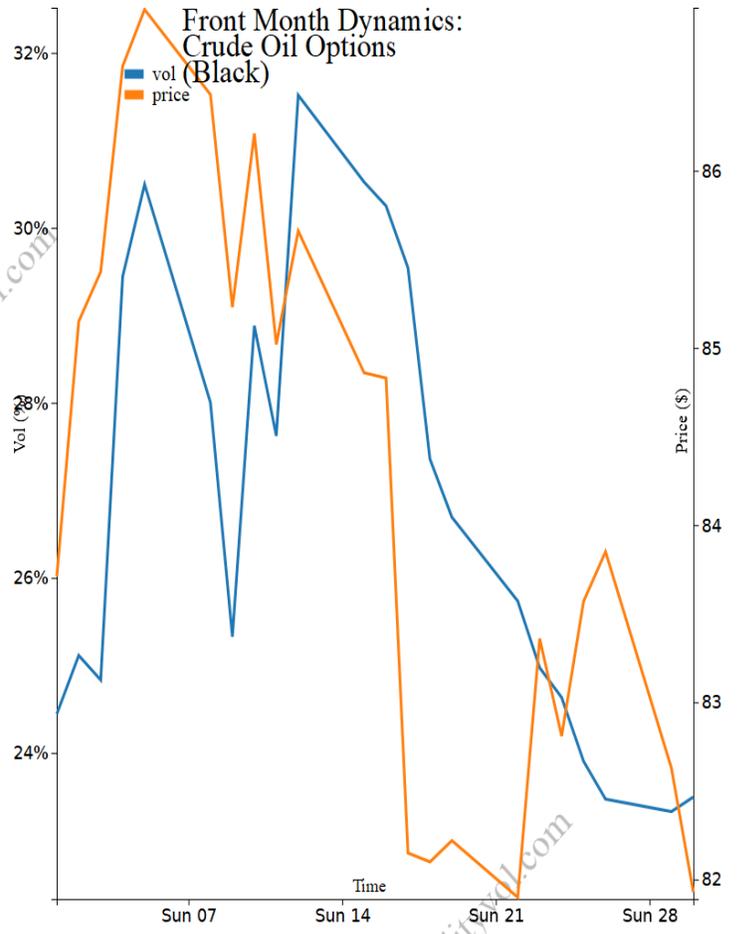
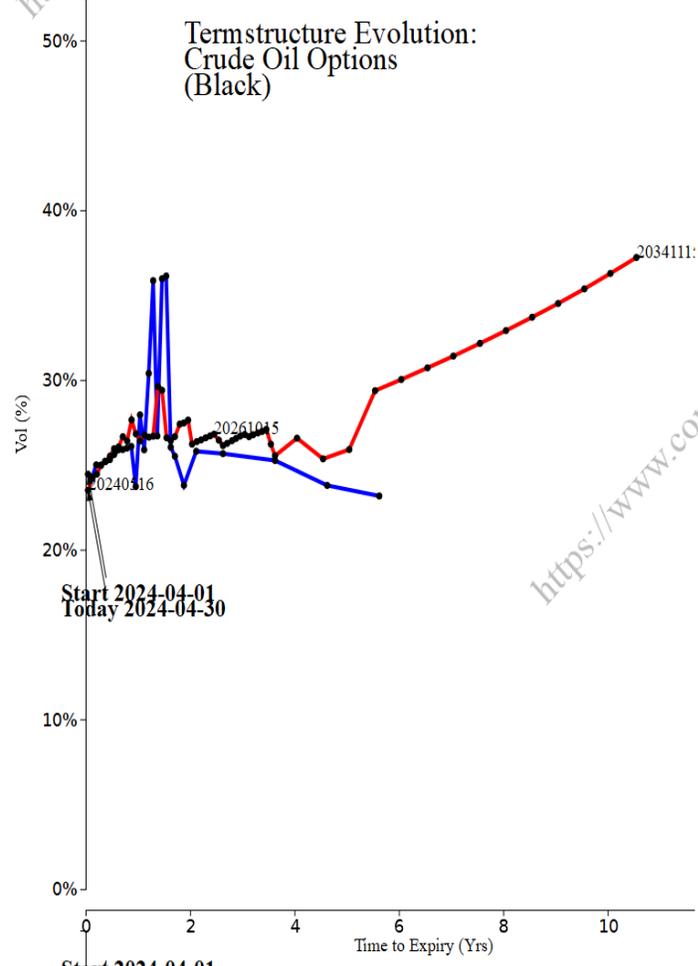
## EquityIndex

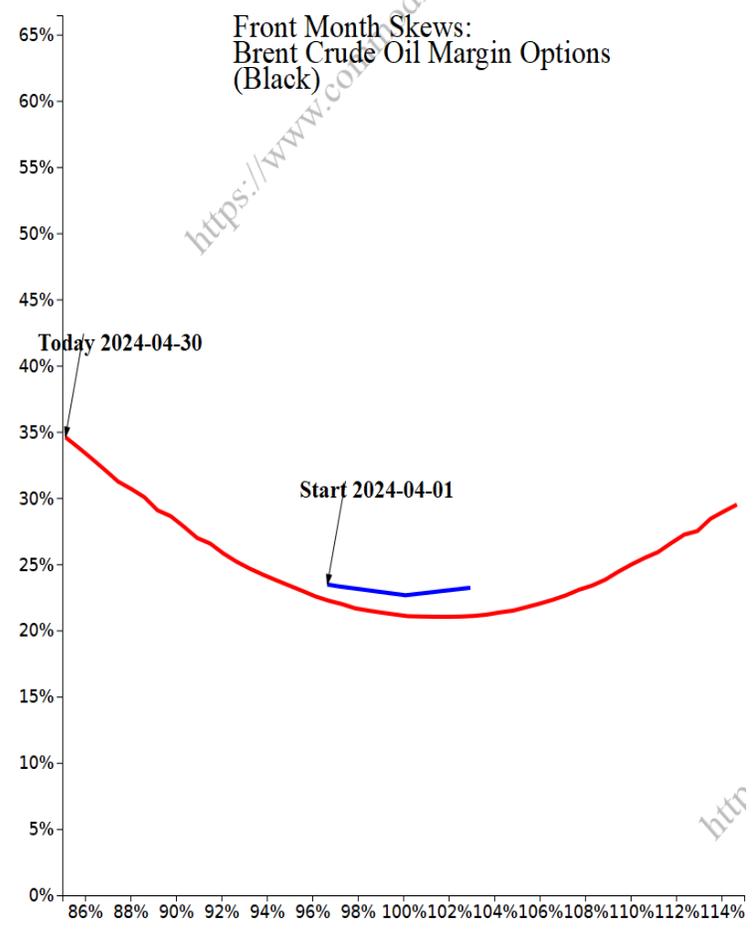
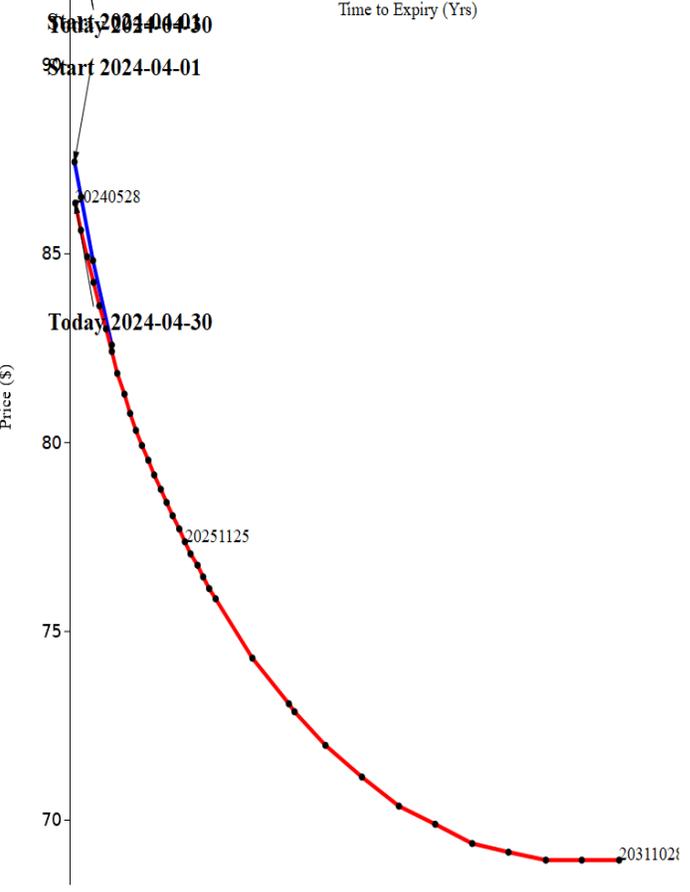
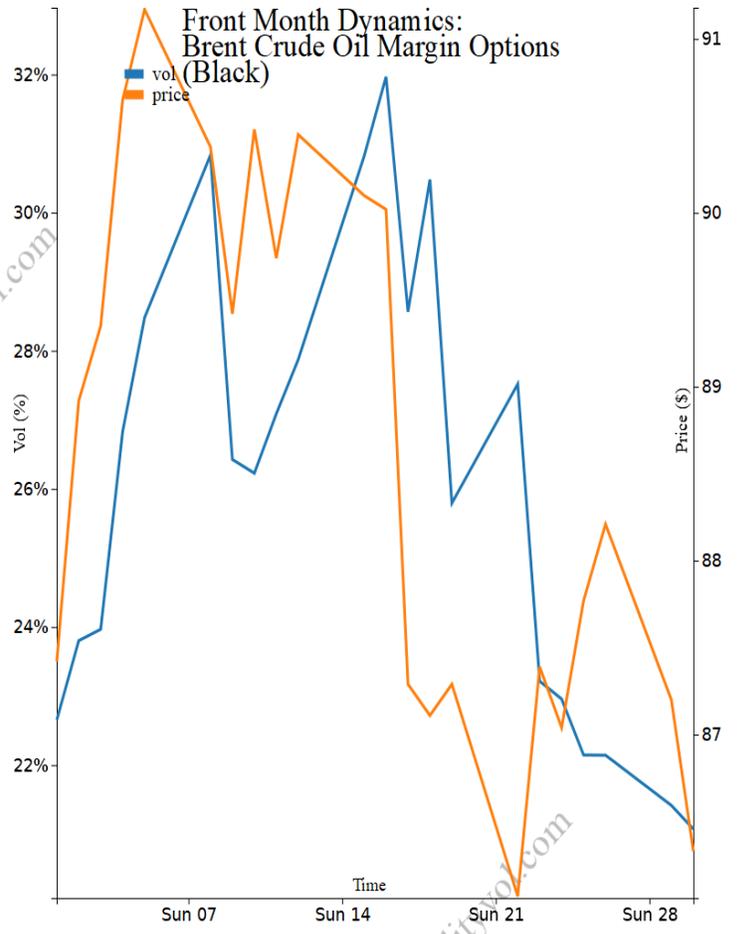
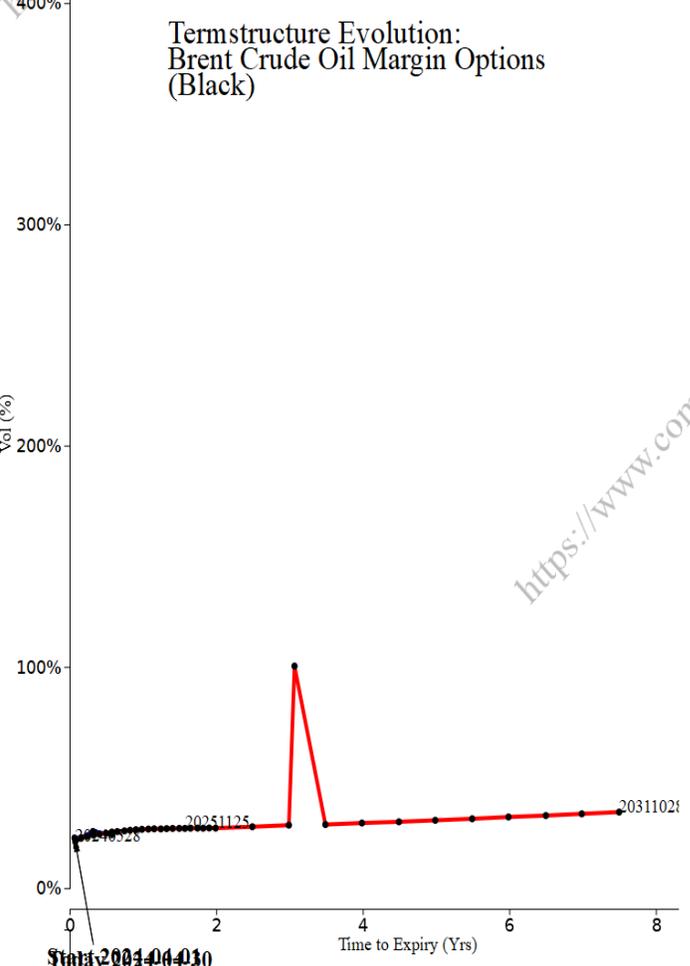
exch/prod	desc	futures chng [%]	vol chng [%]
ENXT_EQIDX/AEX	Amsterdam Exchange index	+0.850 [+0.1%]	+0.022 [+17.0%]
CBT/YM	E-Mini Dow	-671.000 [-1.7%]	-0.006 [-4.9%]
CME/NQ	E-Mini Nasdaq	-926.000 [-5.0%]	+0.015 [+8.9%]
CME/RTO	E-Mini Russell 2000	-137.400 [-6.5%]	+0.011 [+5.6%]
CME/RTM	E-Mini Russell EOM	-137.400 [-6.5%]	+0.017 [+9.5%]
CME/ES	E-Mini S&P 500	-228.250 [-4.3%]	+0.015 [+12.1%]
CBOE/VIX	VIX Volatility Index	+2.000 [+14.7%]	+0.160 [+28.8%]

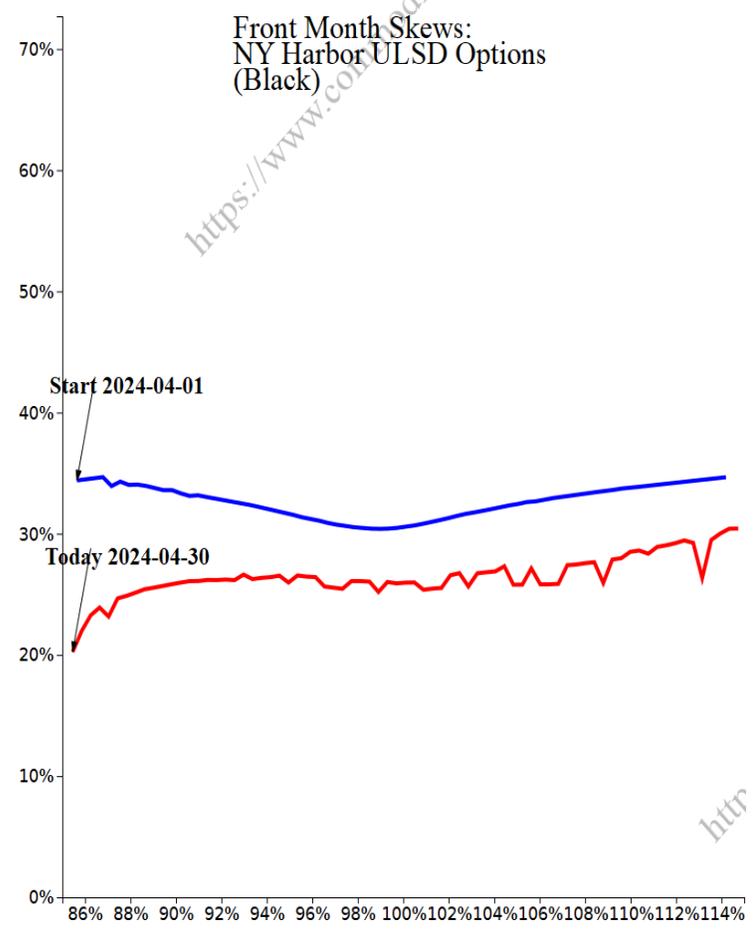
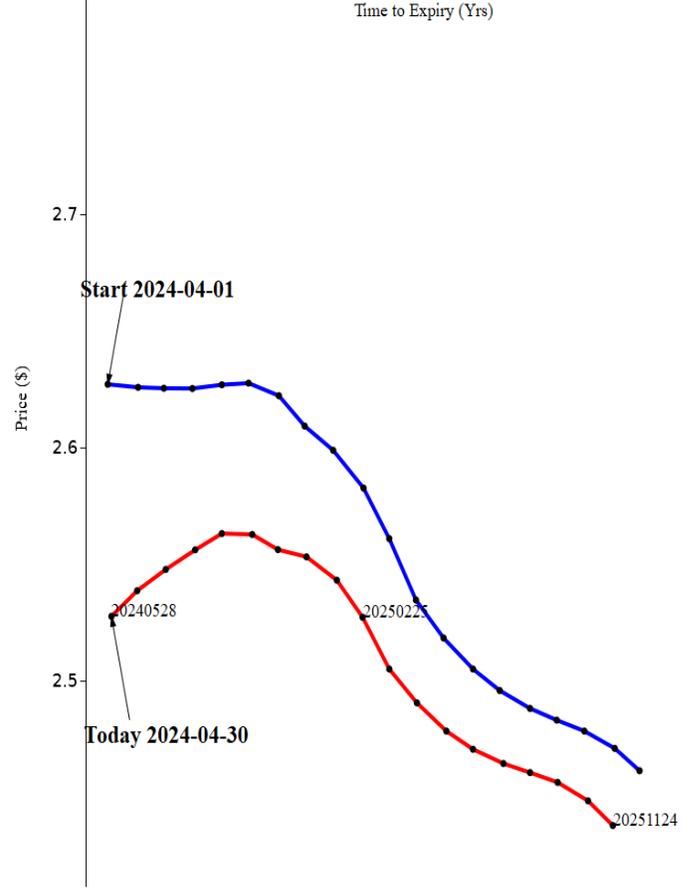
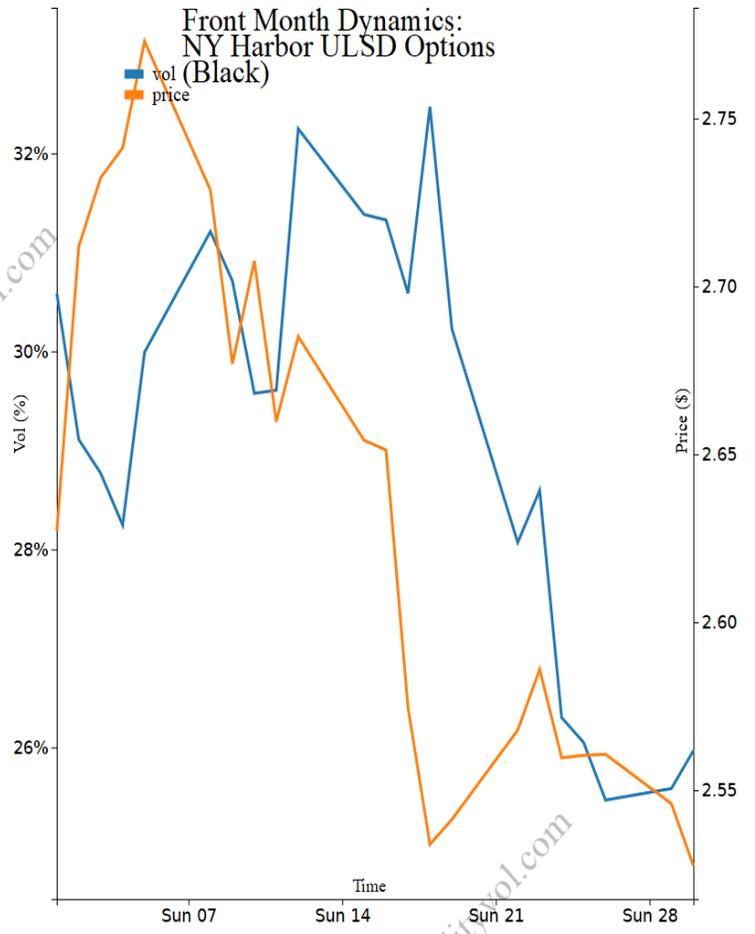
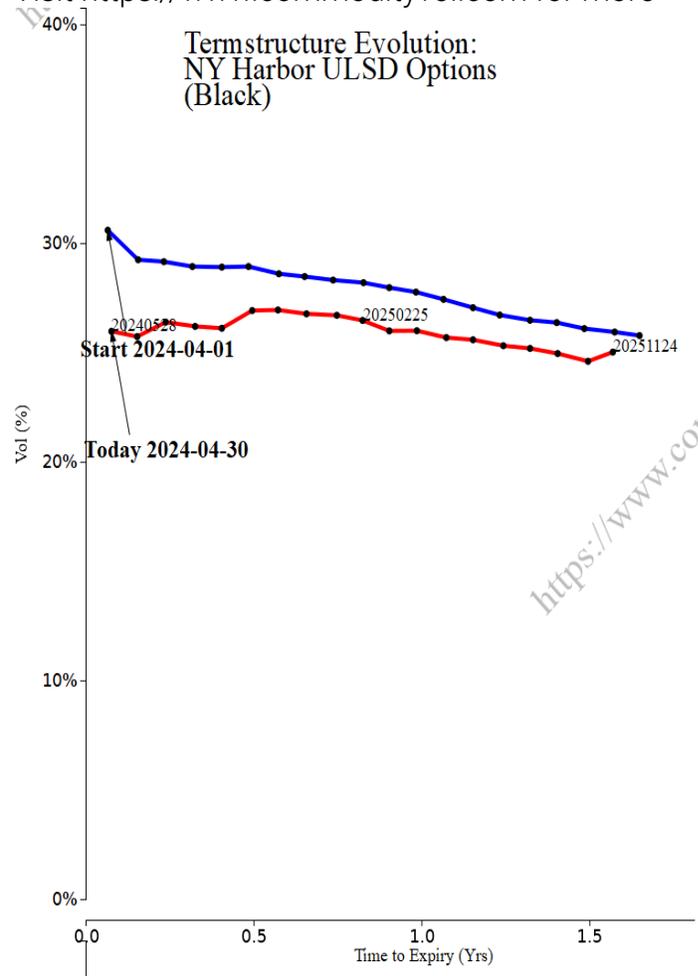


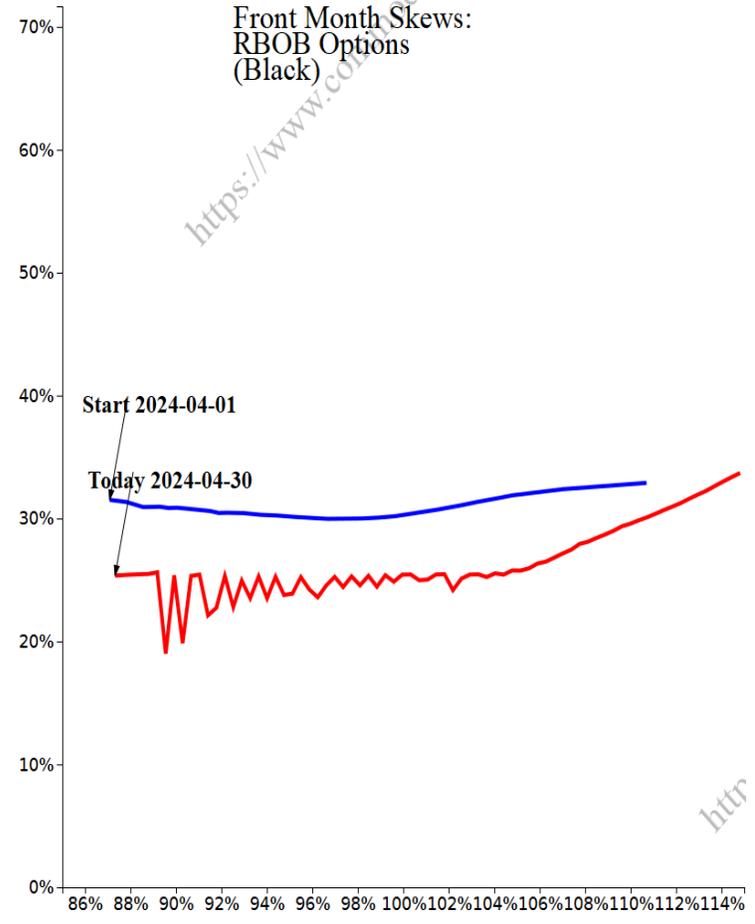
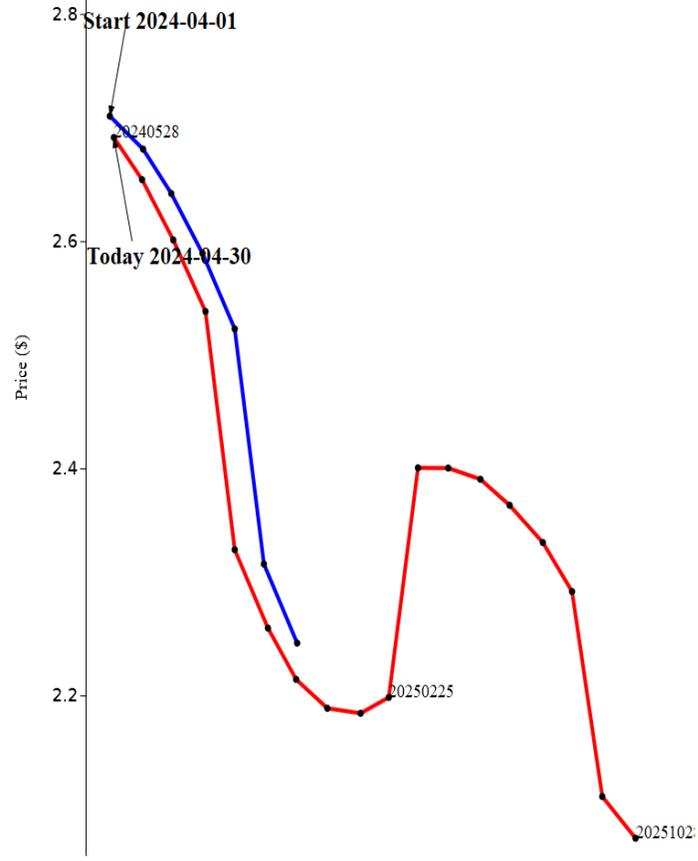
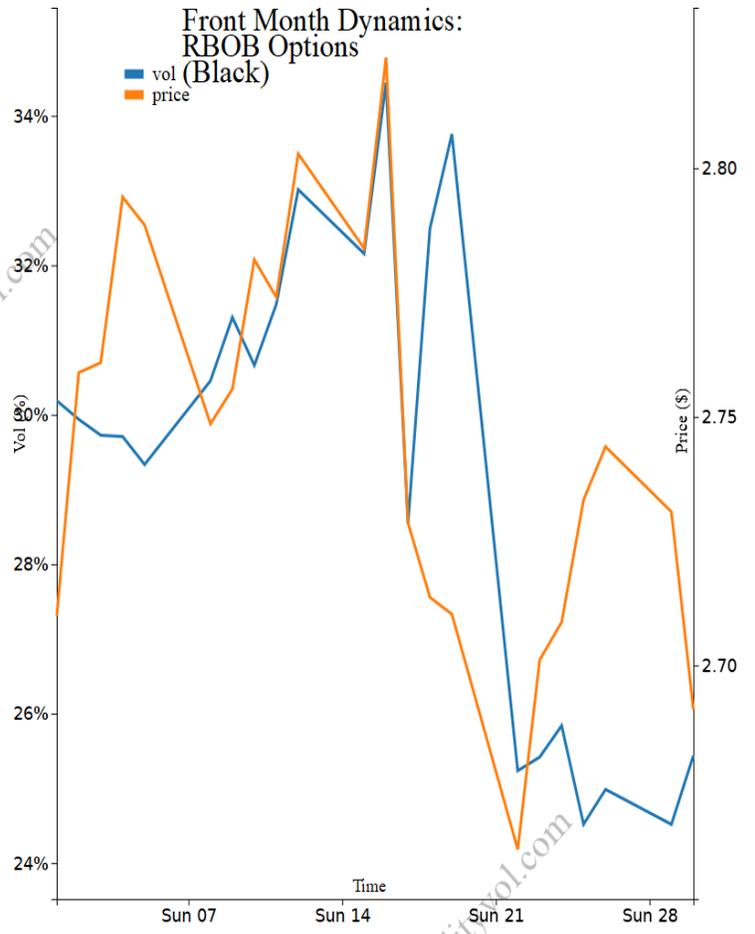
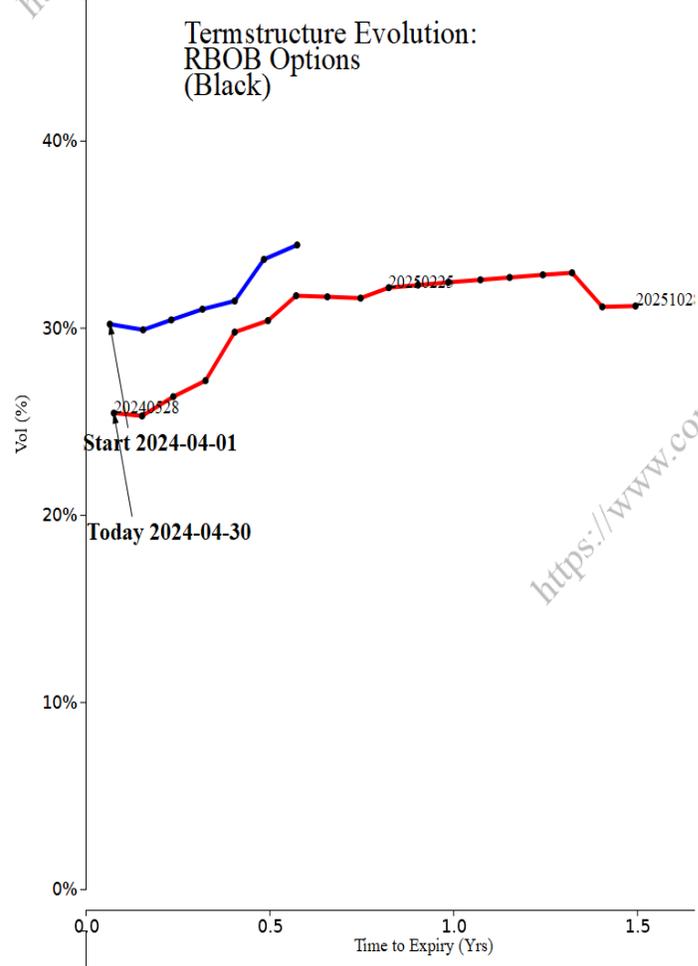
## **Skews, Termstructures and more**

## **Energy: Crude and Derivatives**

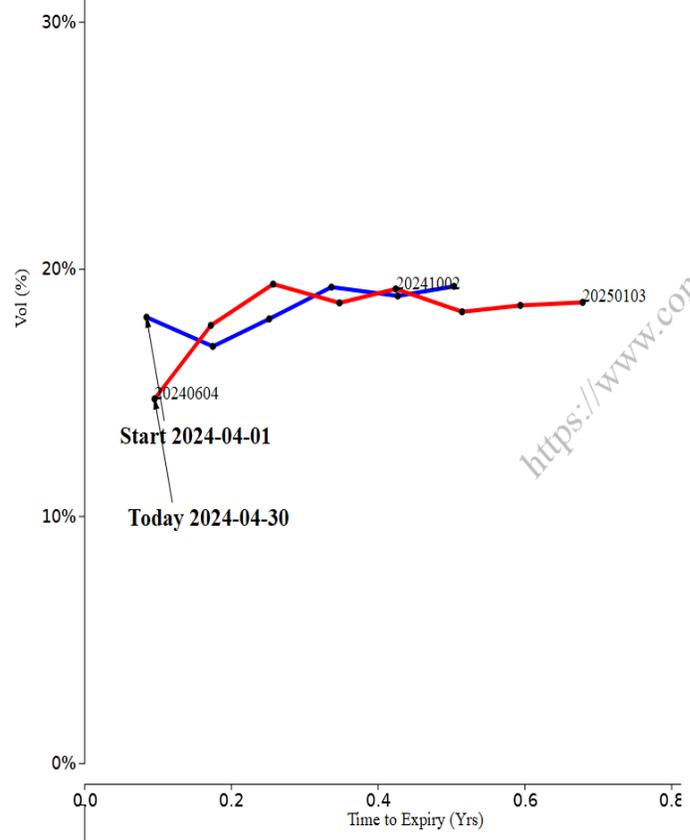




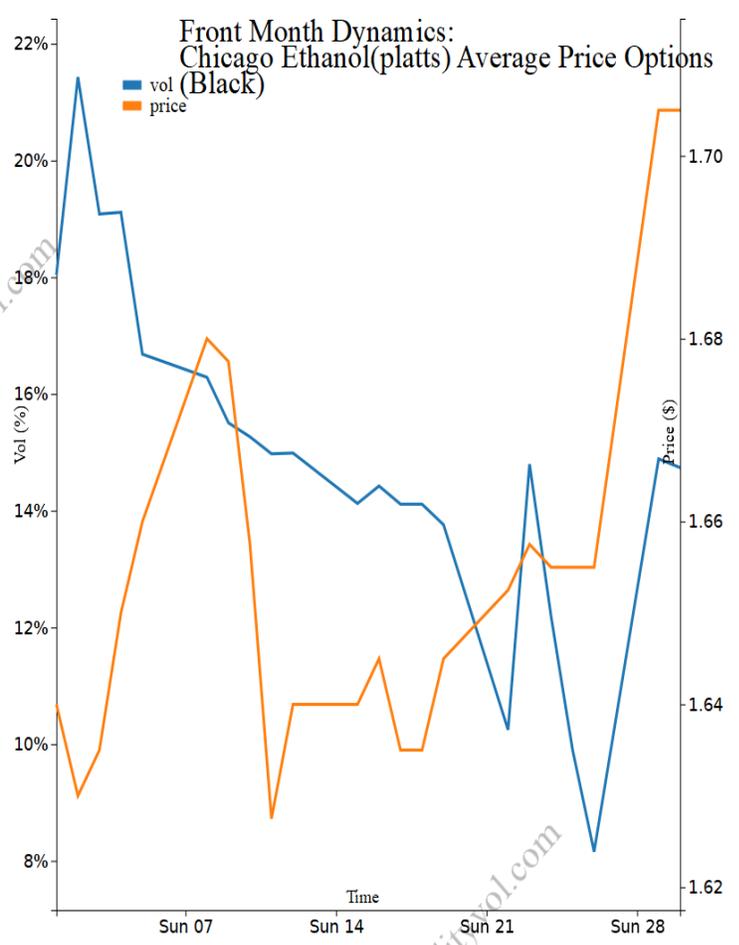




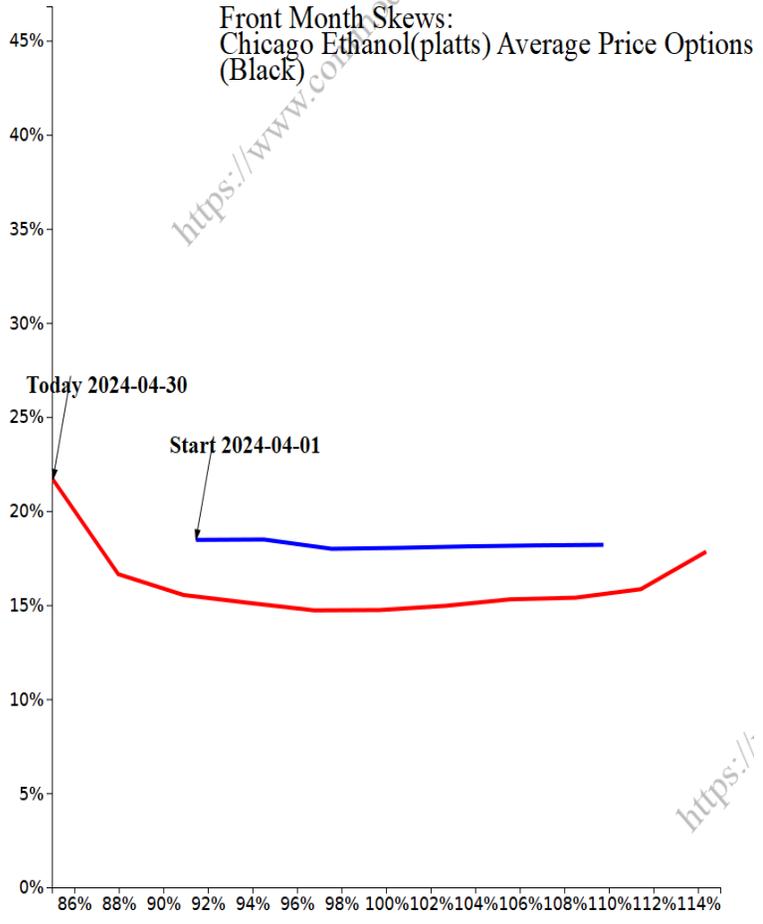
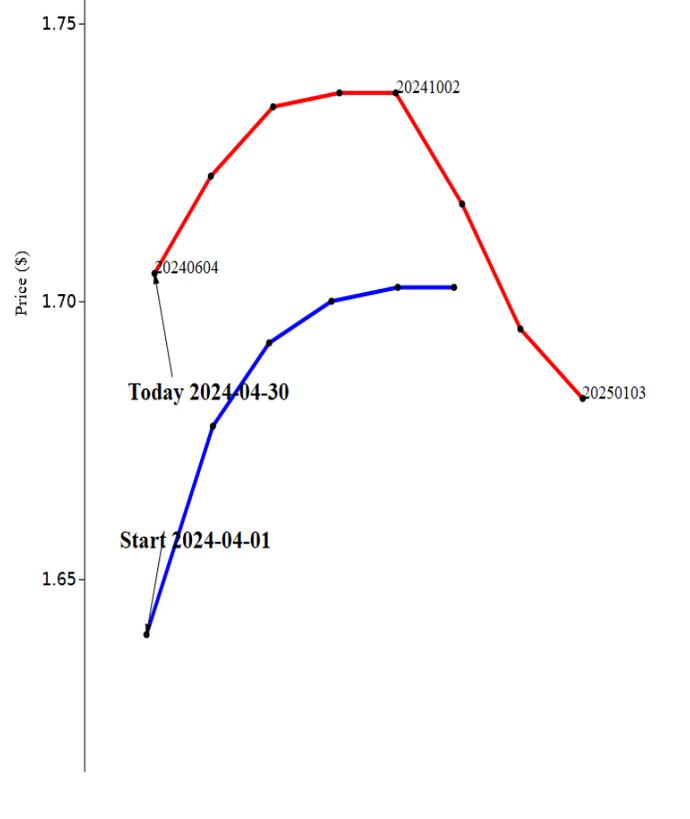
Termstructure Evolution:  
Chicago Ethanol(platts) Average Price Options  
(Black)



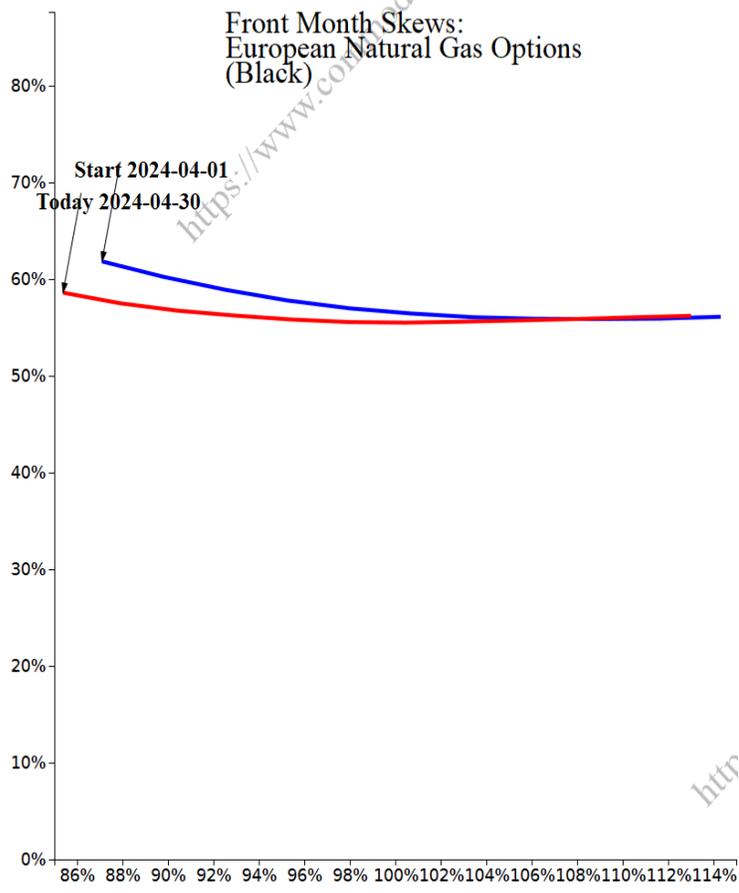
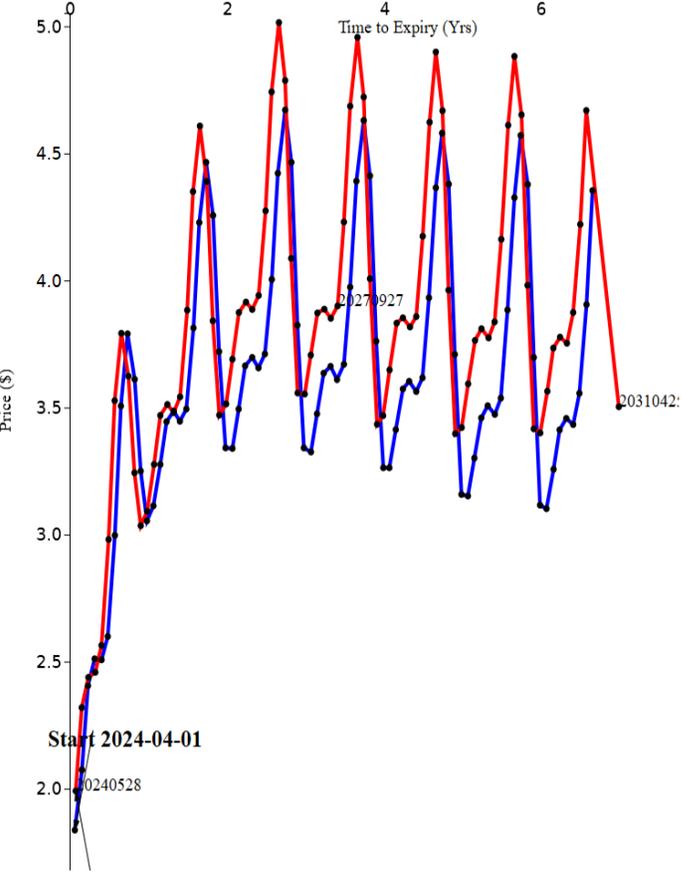
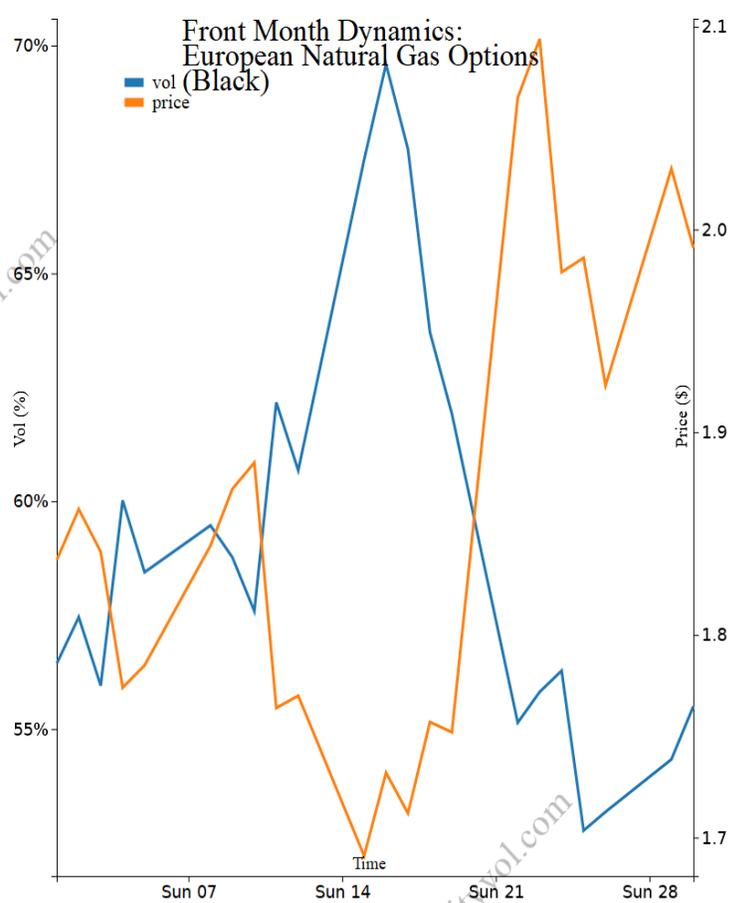
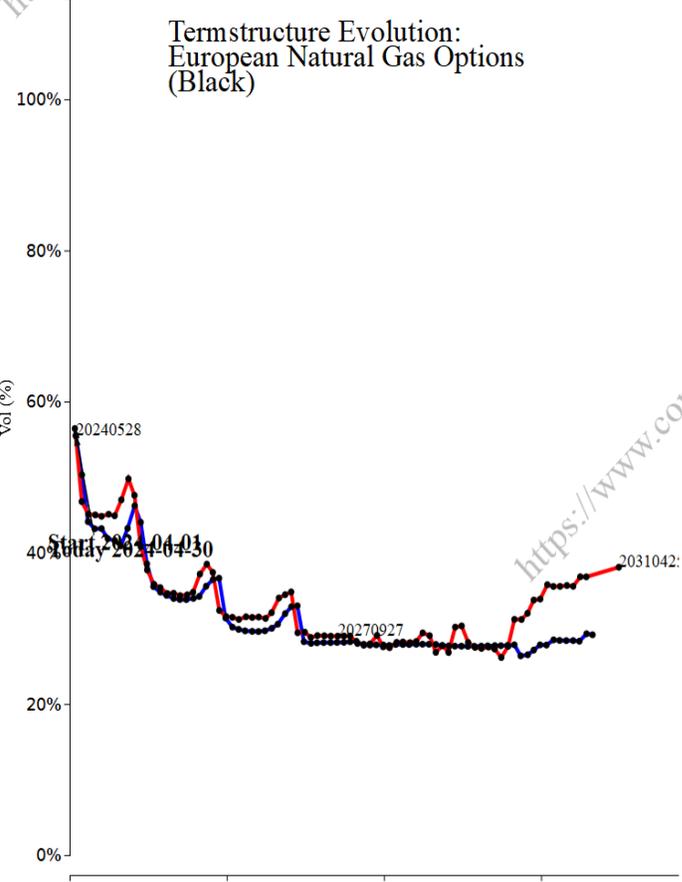
Front Month Dynamics:  
Chicago Ethanol(platts) Average Price Options  
(Black)

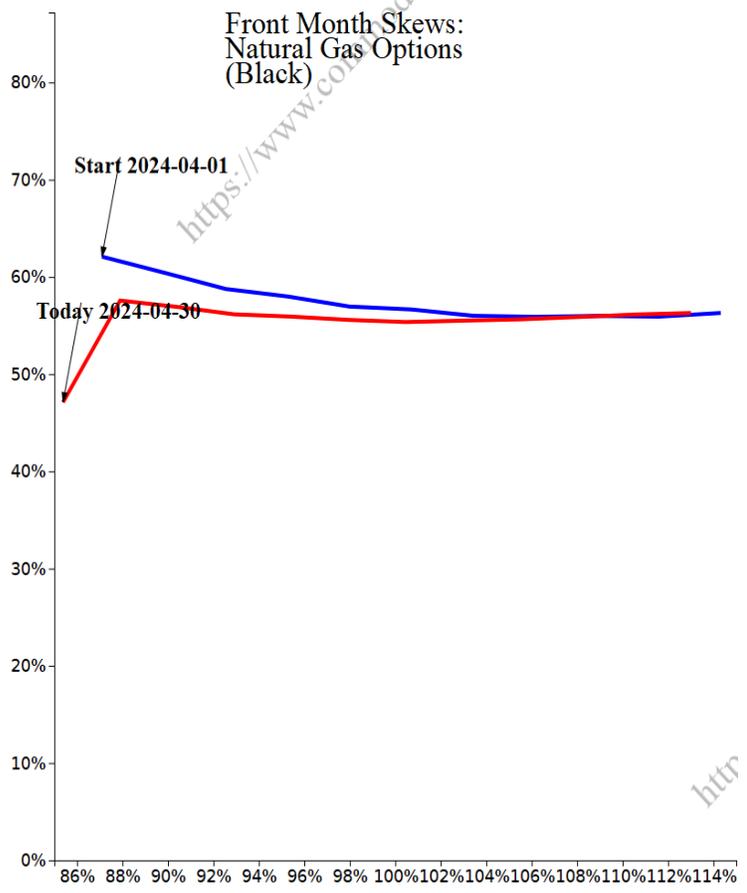
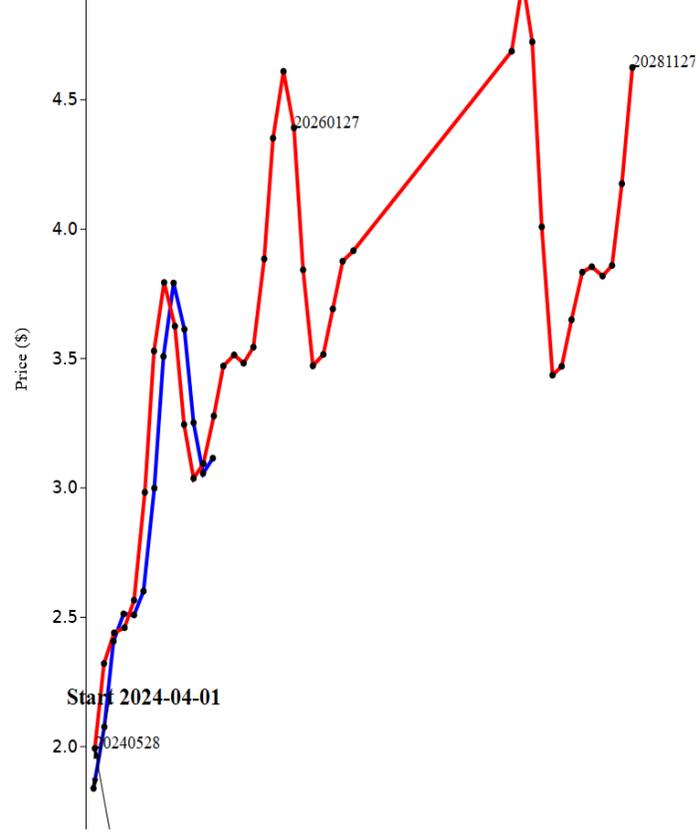
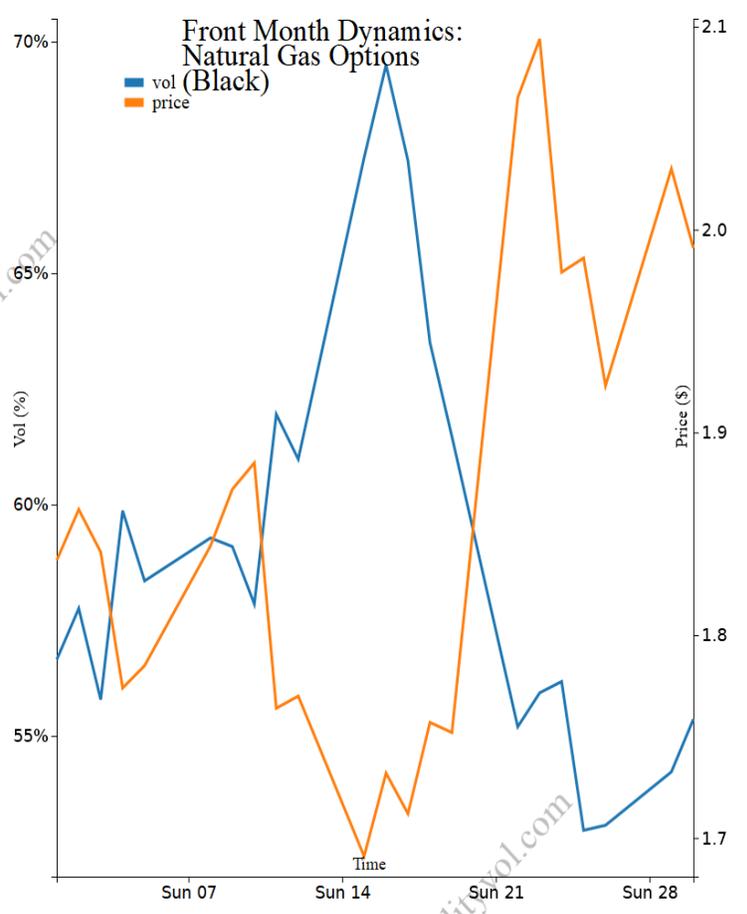
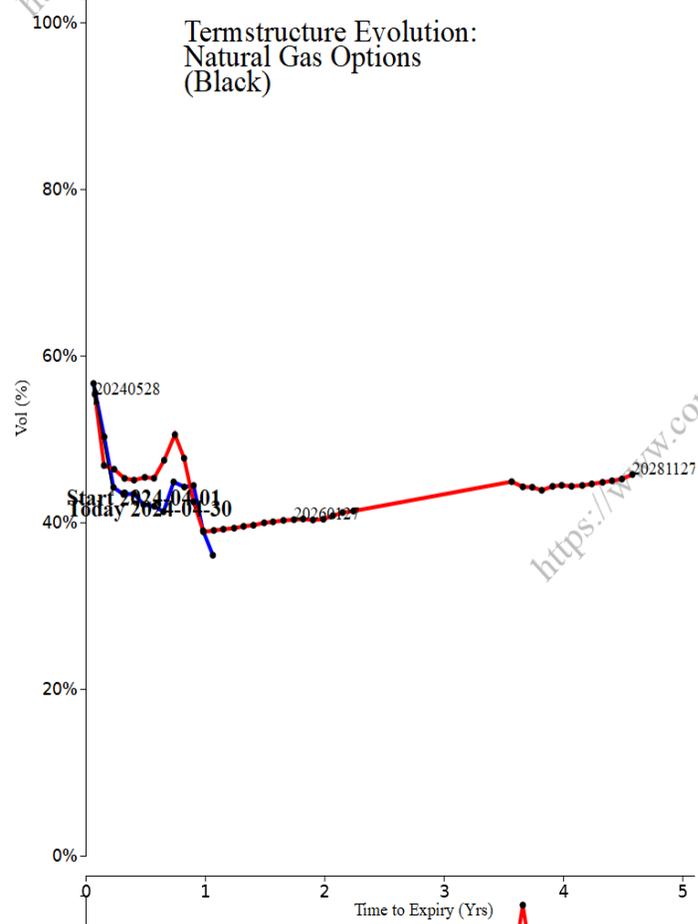


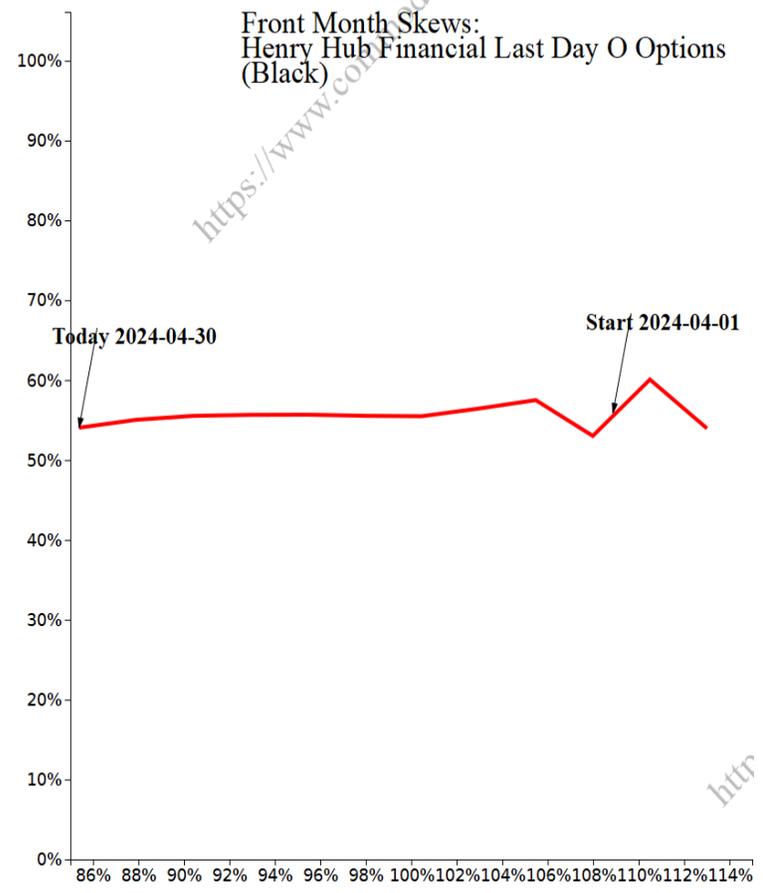
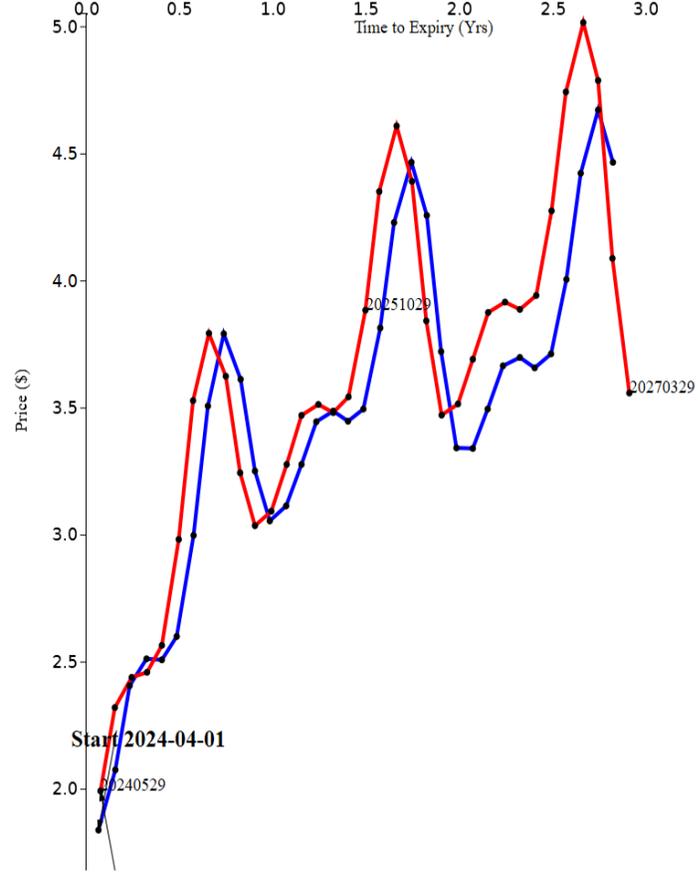
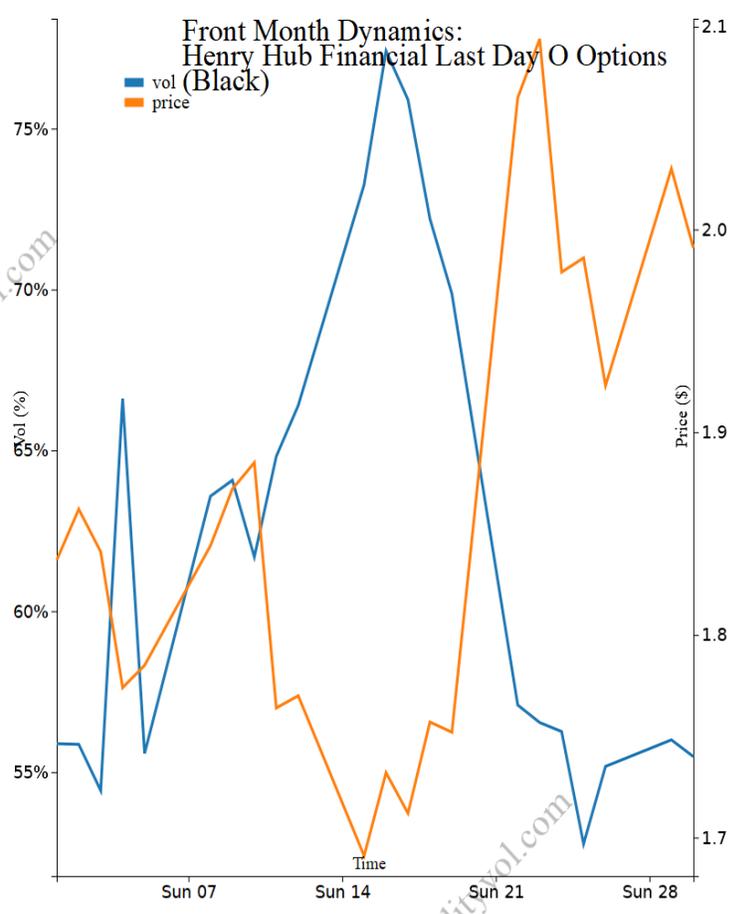
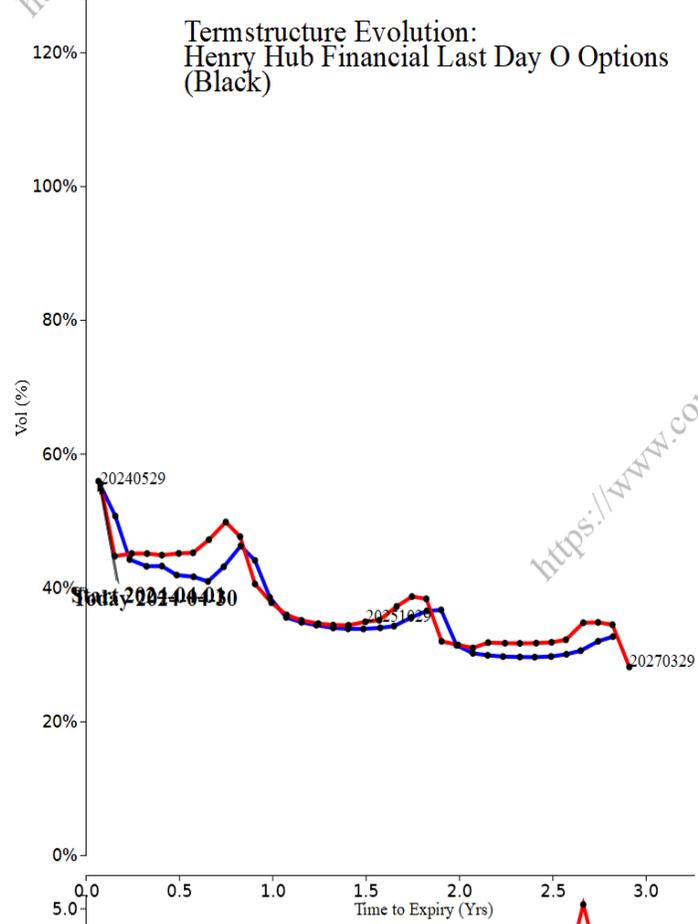
Front Month Skews:  
Chicago Ethanol(platts) Average Price Options  
(Black)



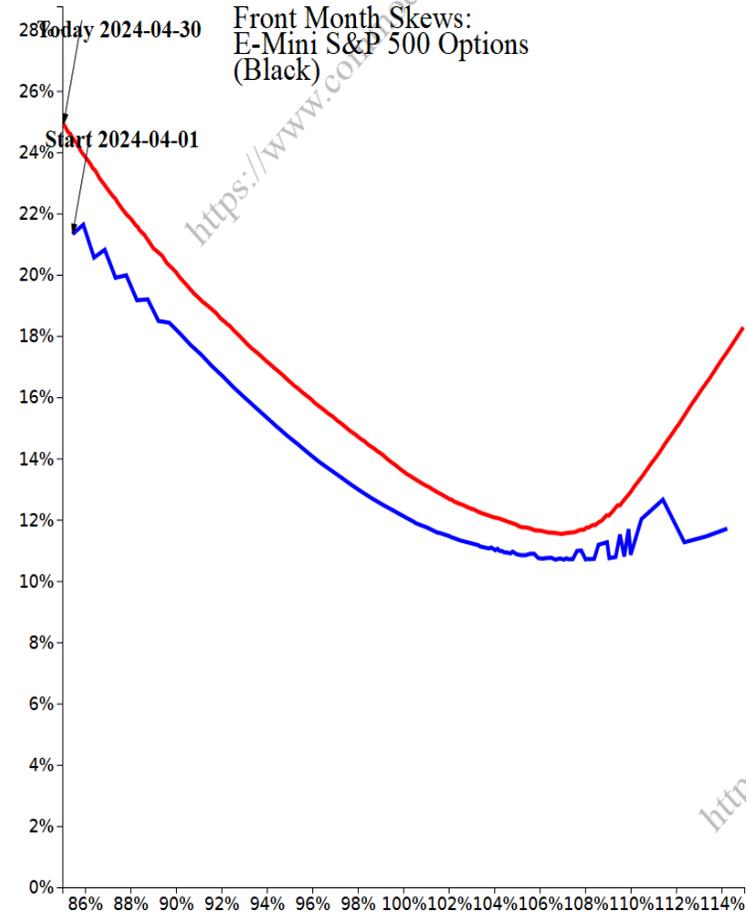
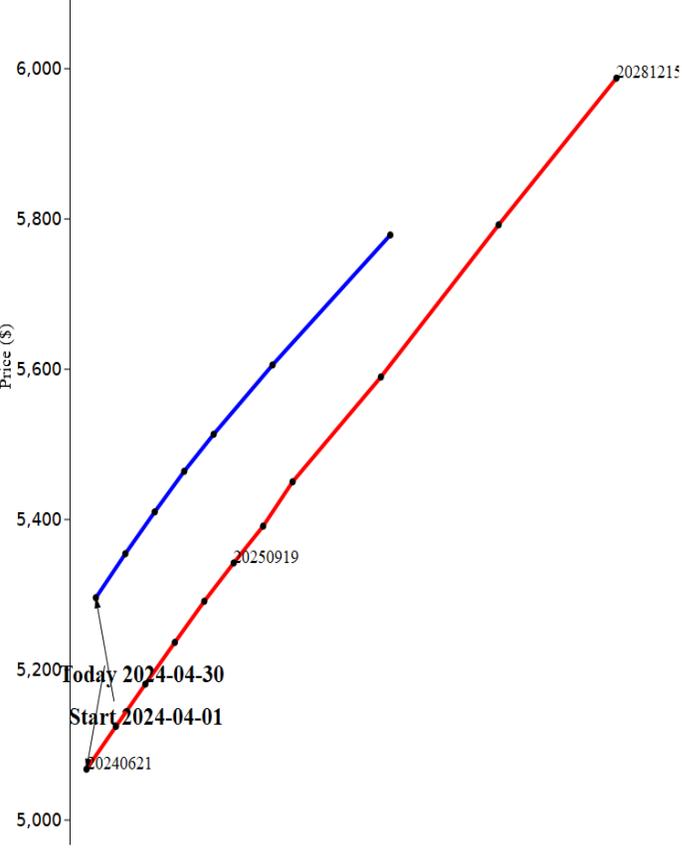
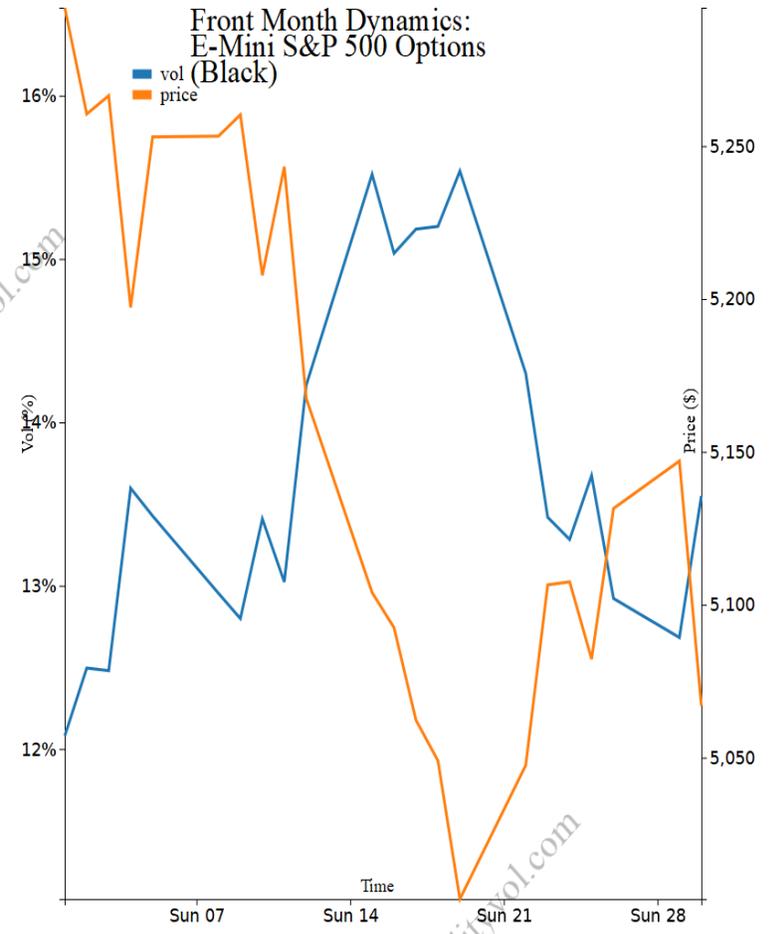
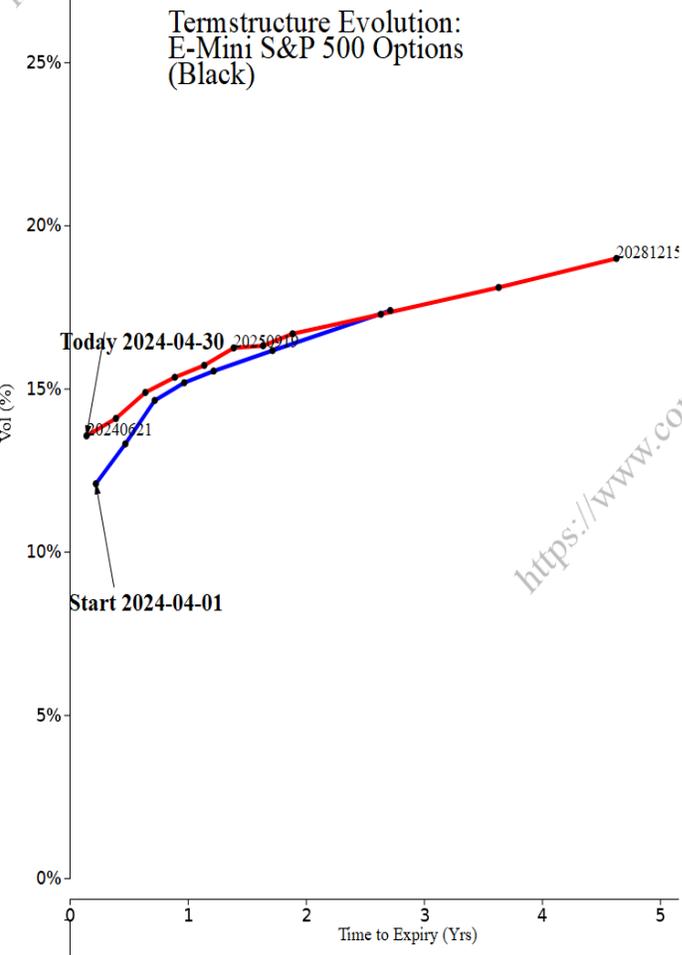
## **Energy: Natural Gas**

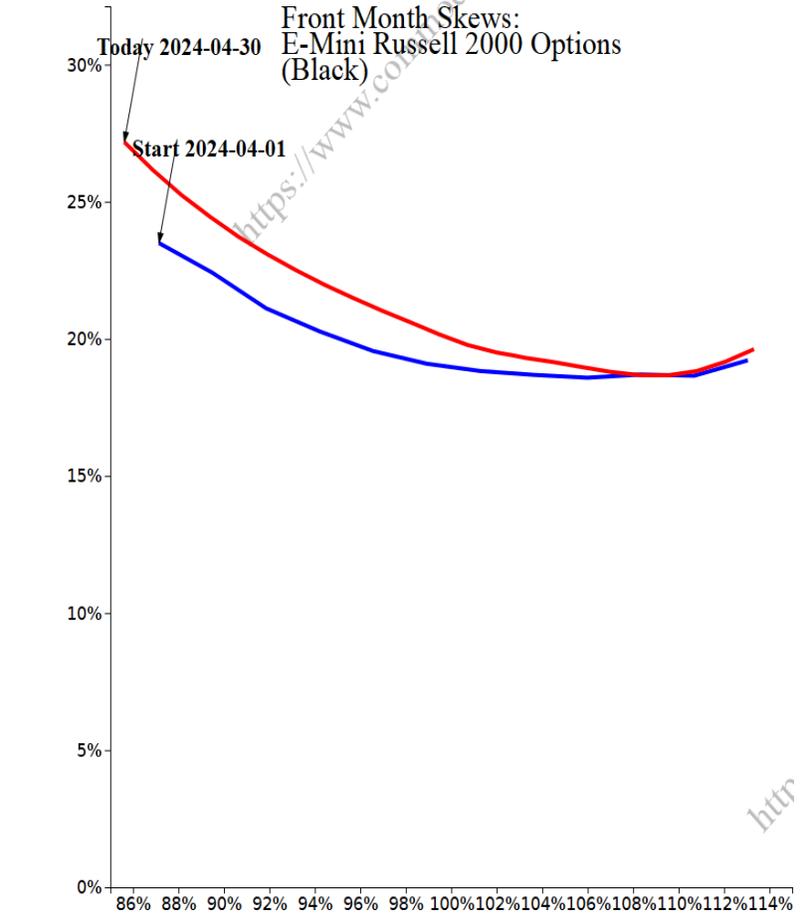
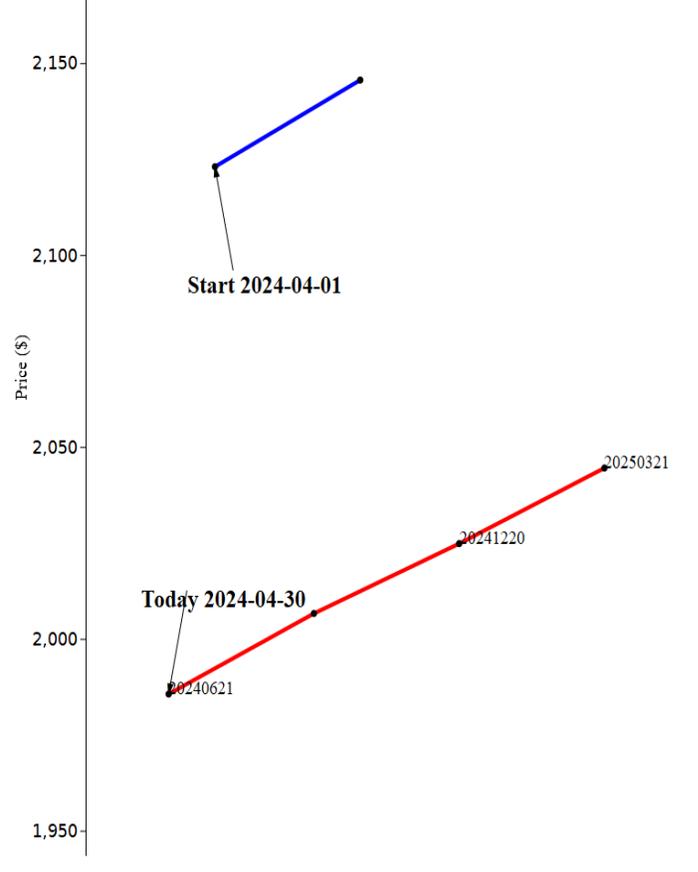
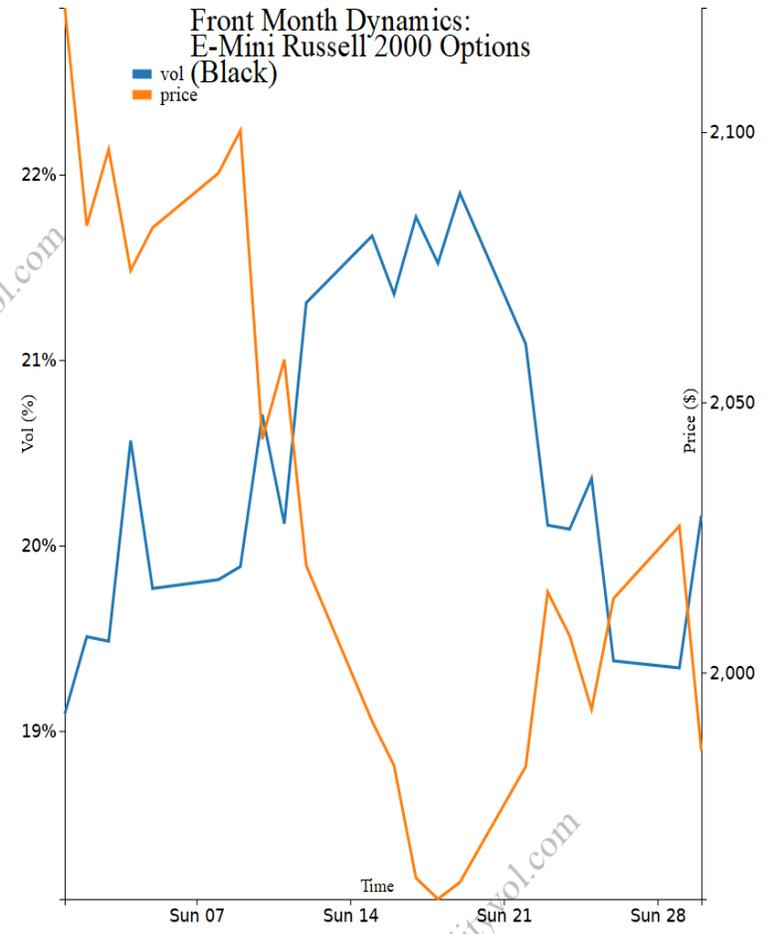
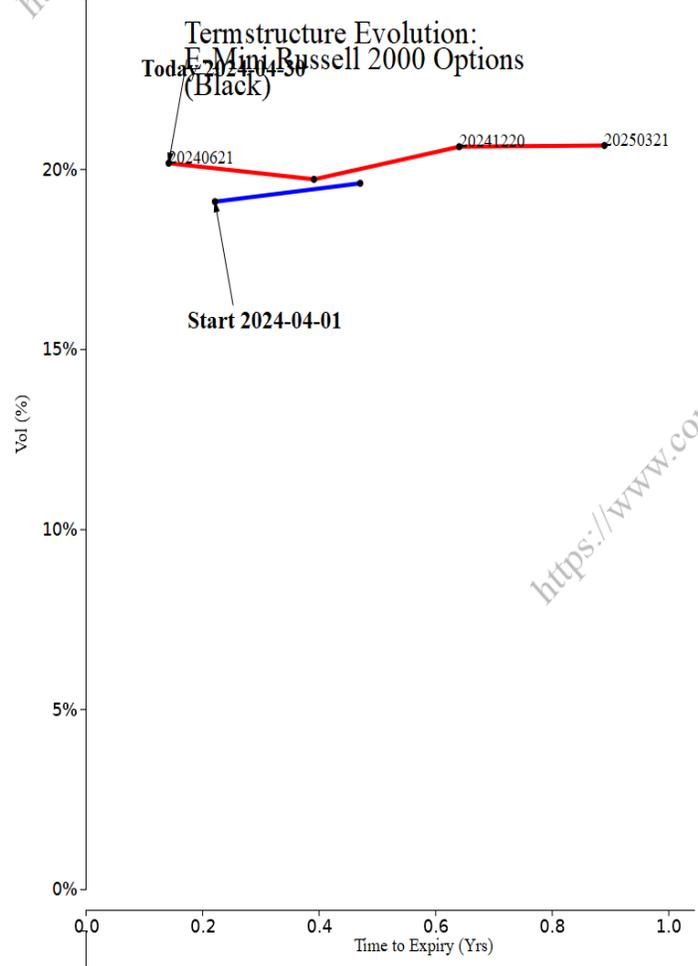


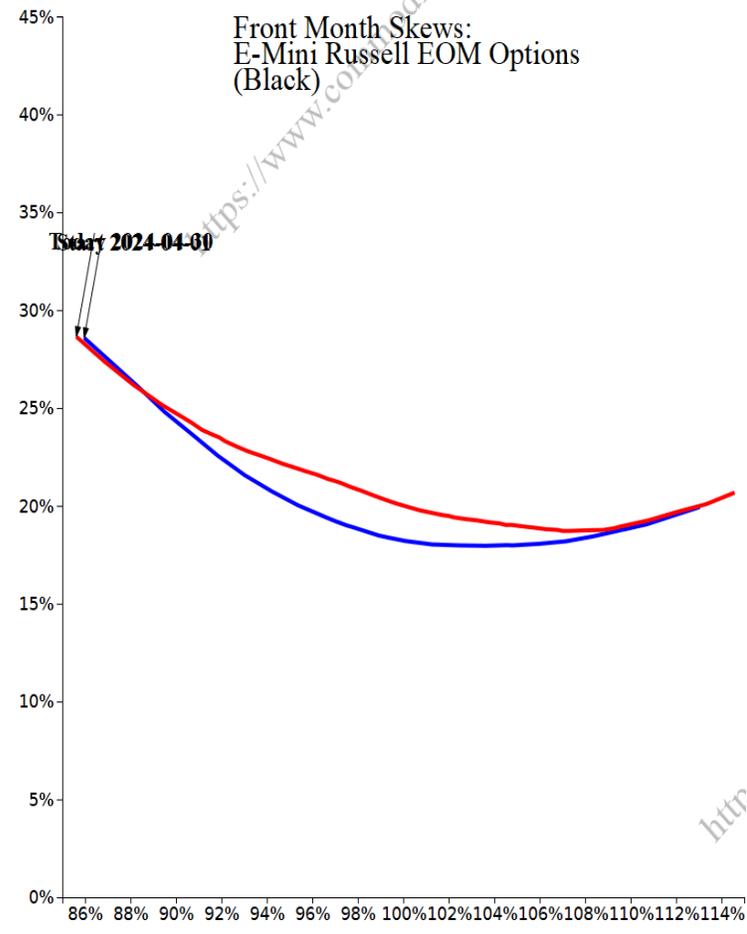
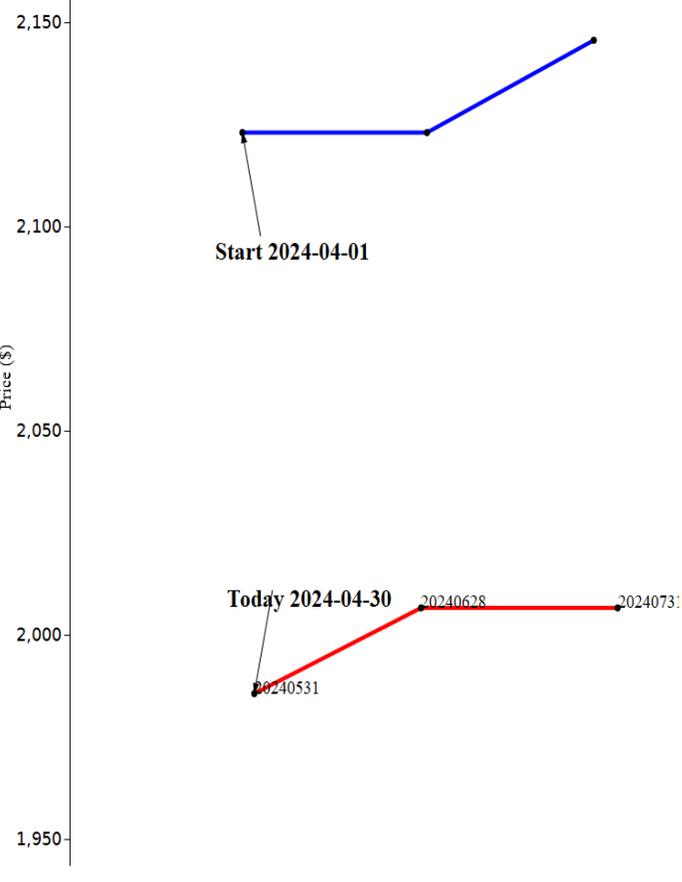
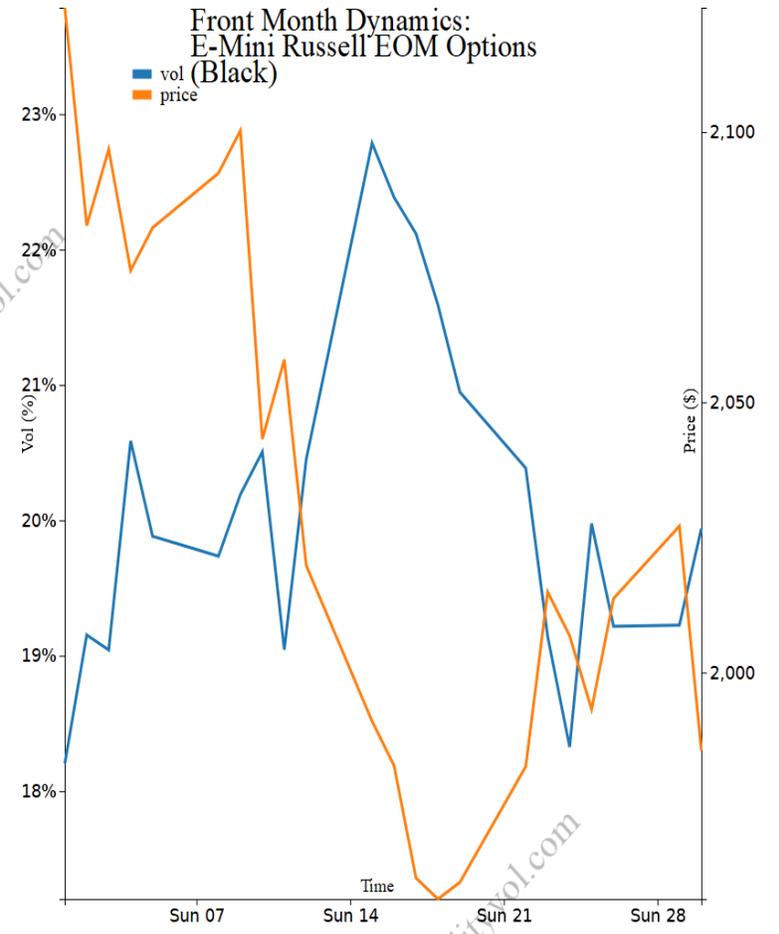
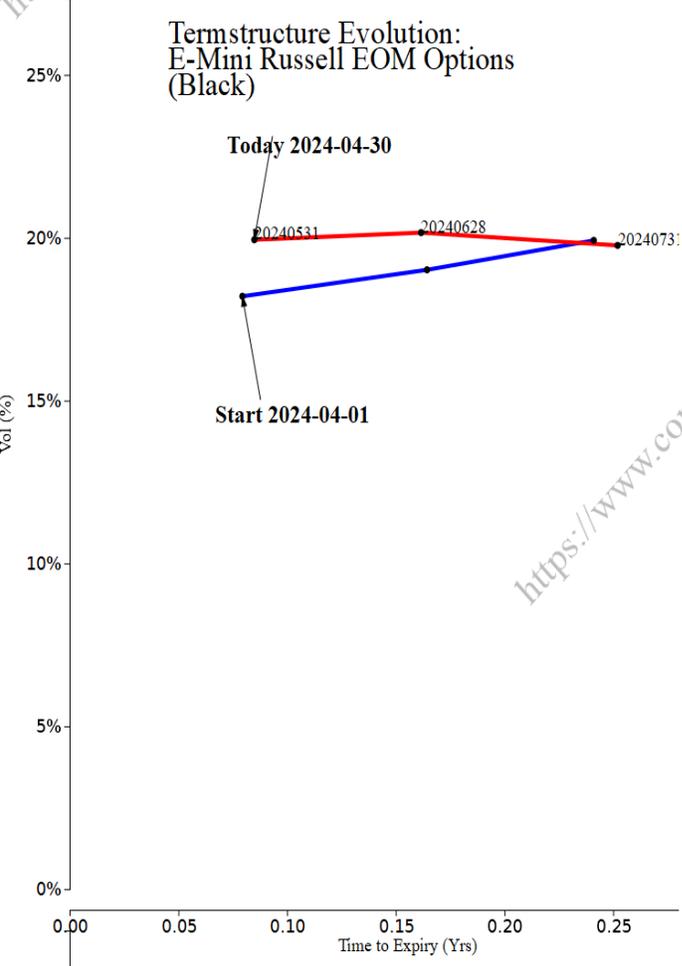




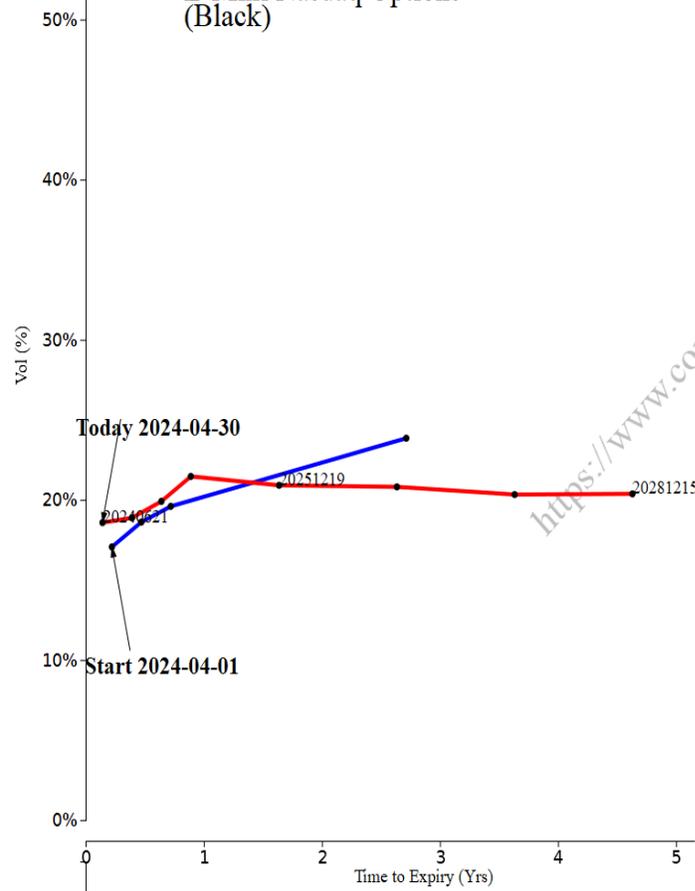
**EquityIndex**



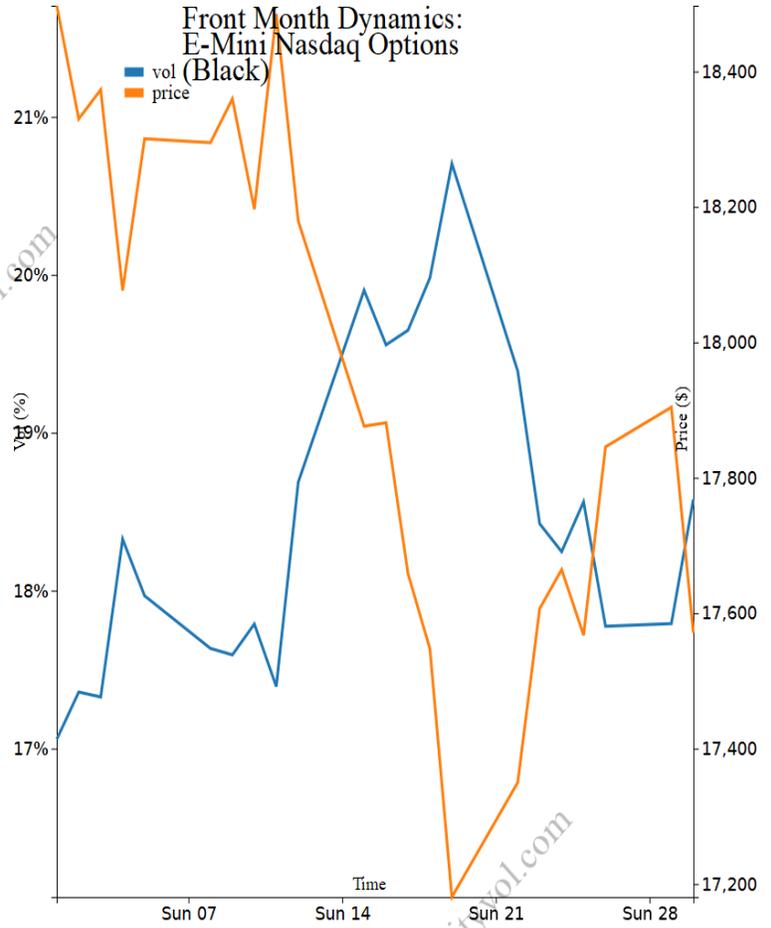




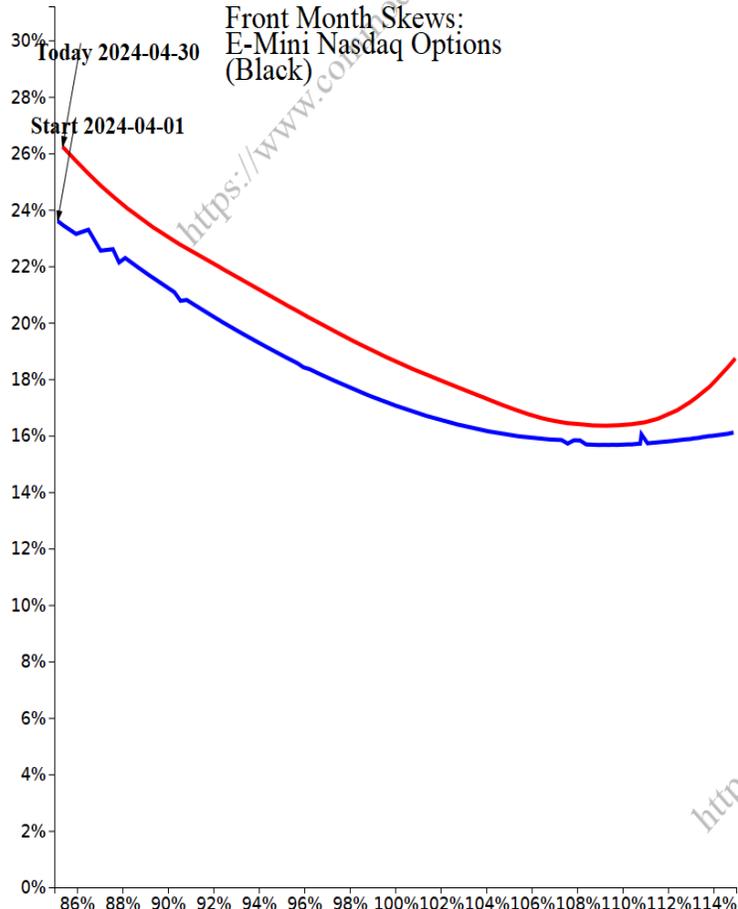
Termstructure Evolution:  
E-Mini Nasdaq Options  
(Black)



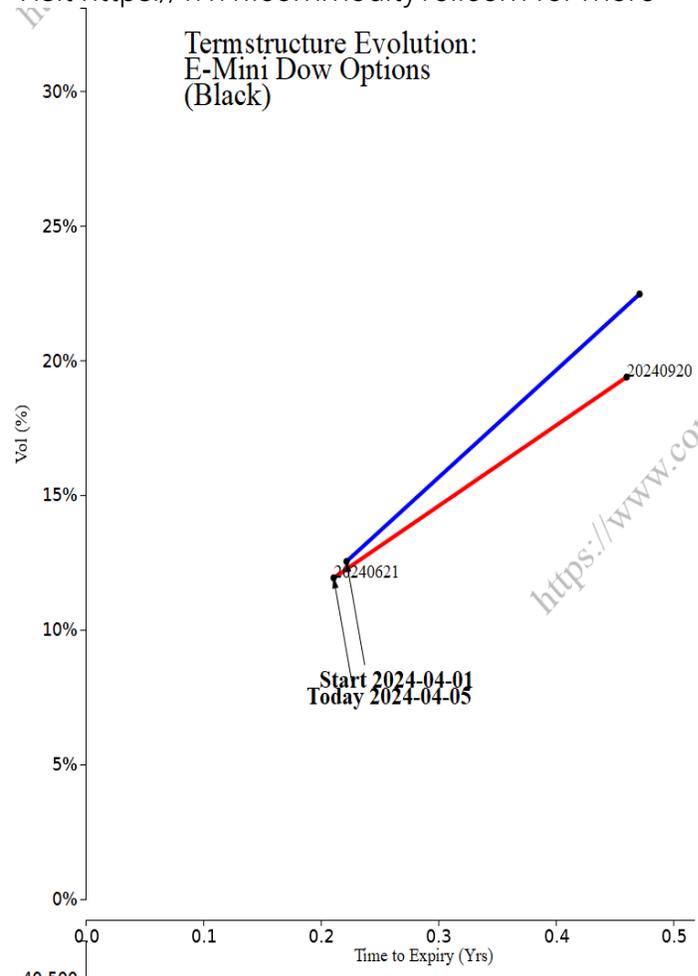
Front Month Dynamics:  
E-Mini Nasdaq Options  
(Black)



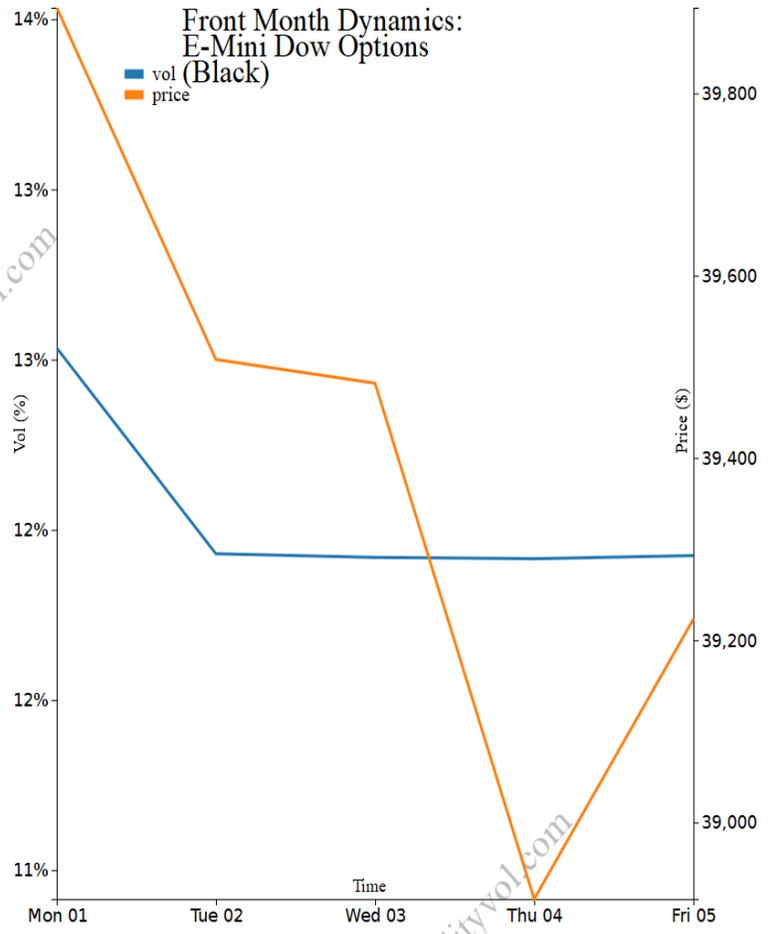
Front Month Skews:  
E-Mini Nasdaq Options  
(Black)



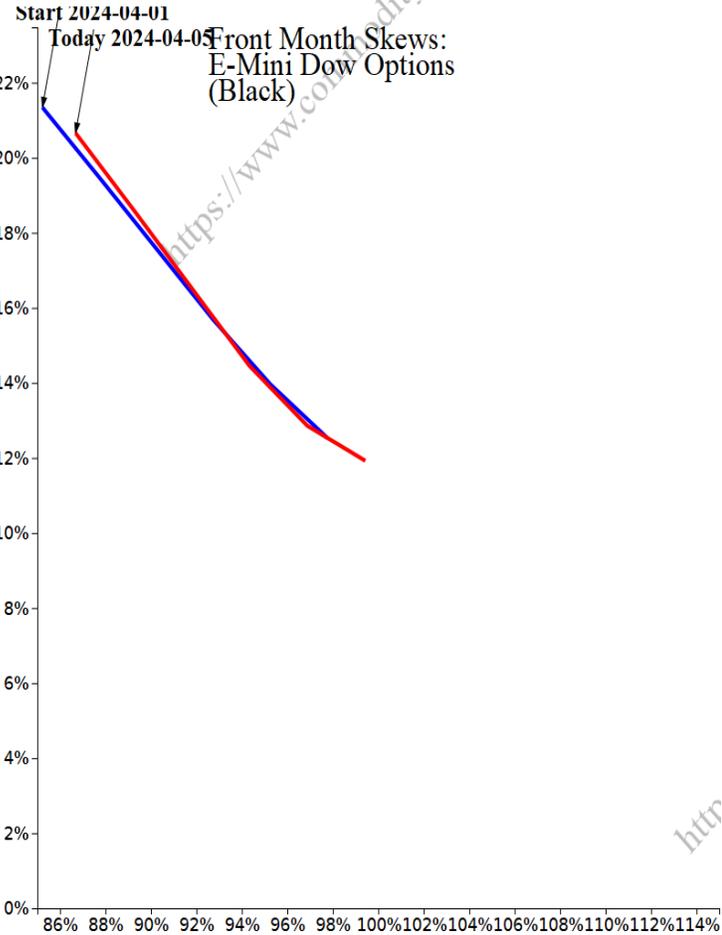
Termstructure Evolution:  
E-Mini Dow Options  
(Black)

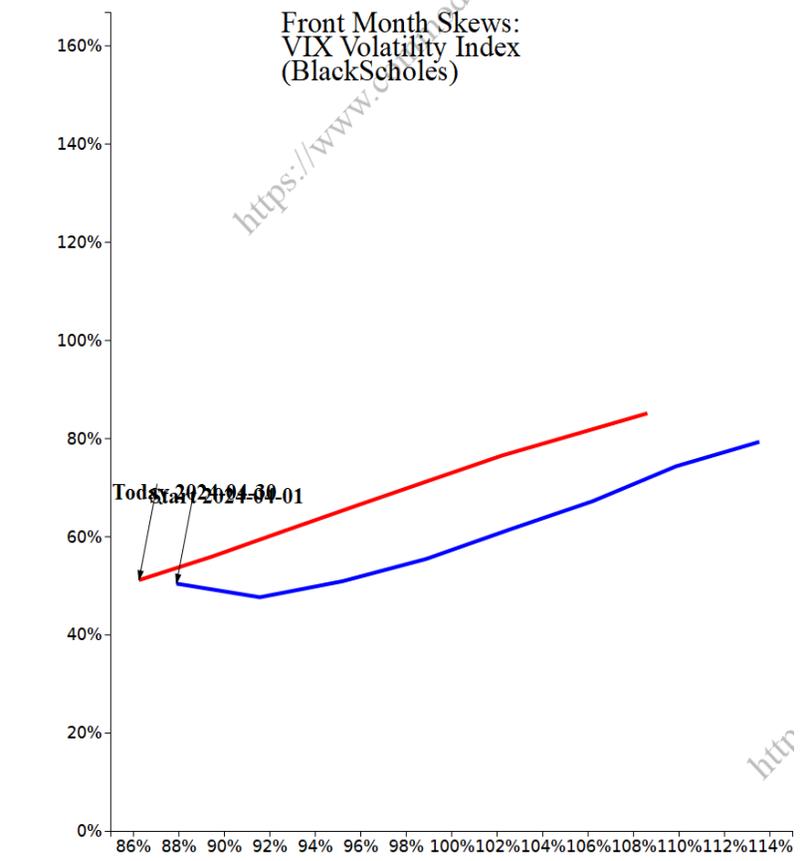
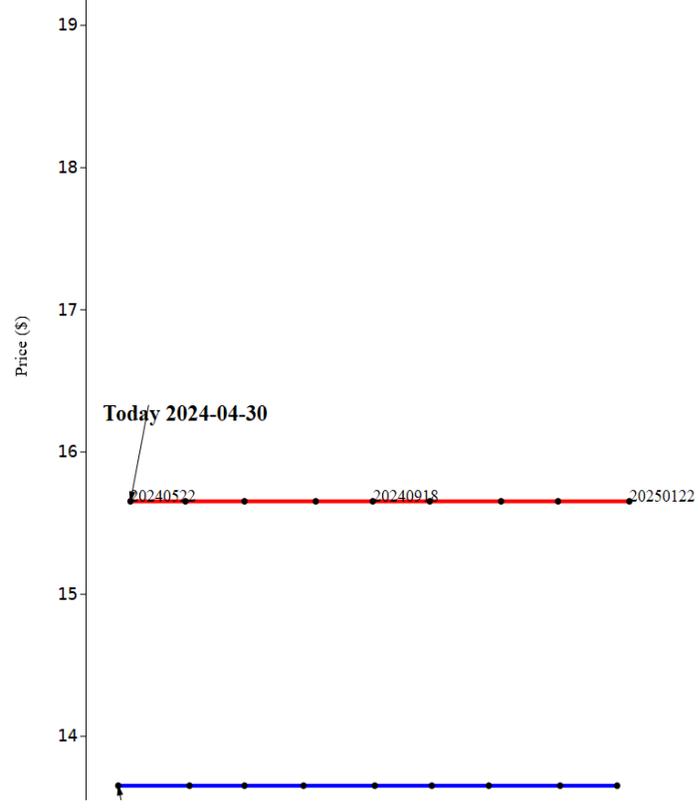
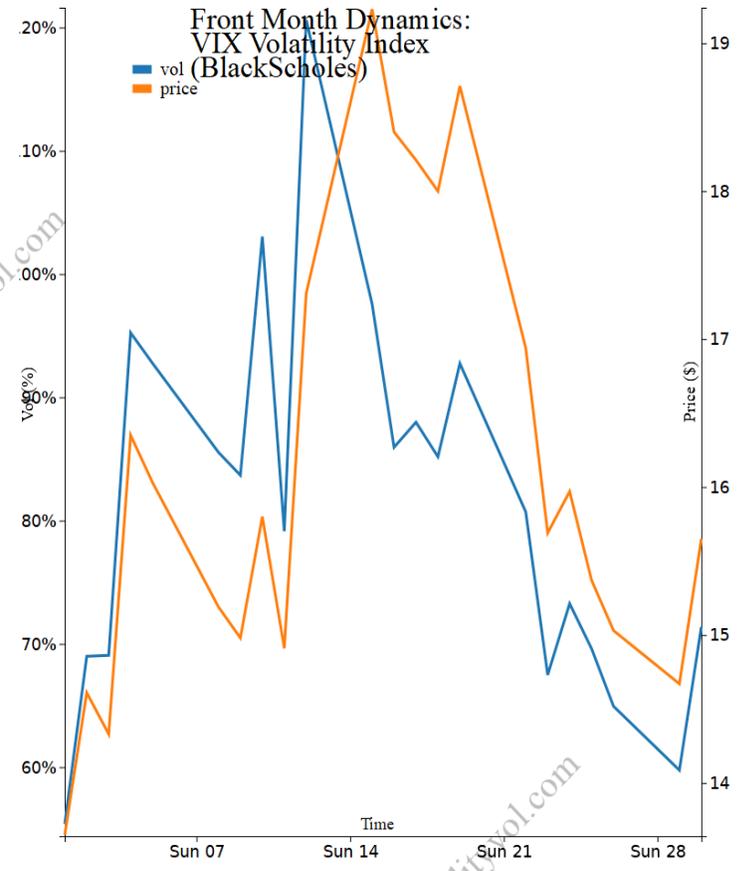
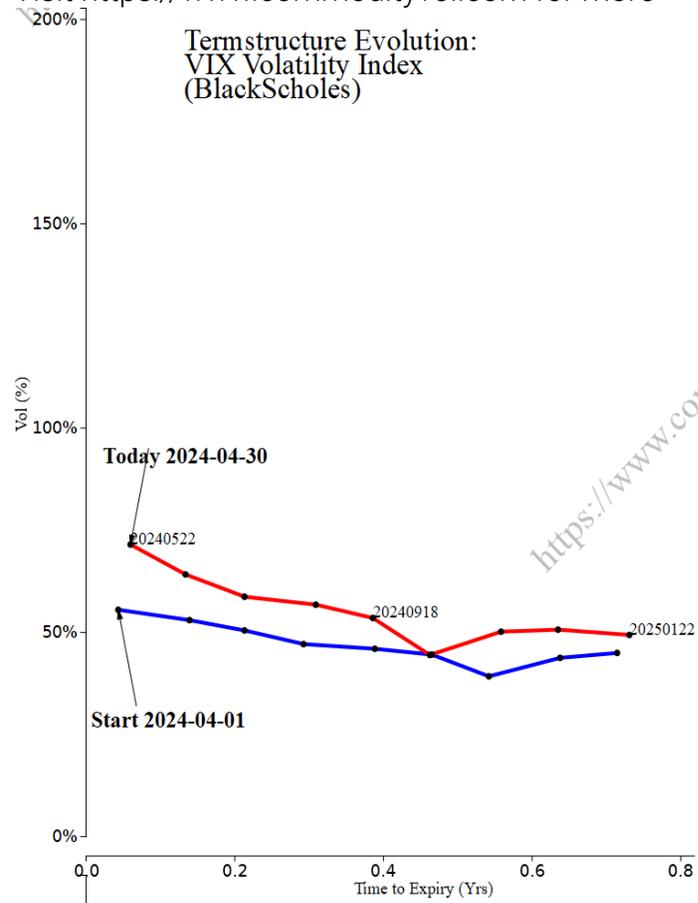


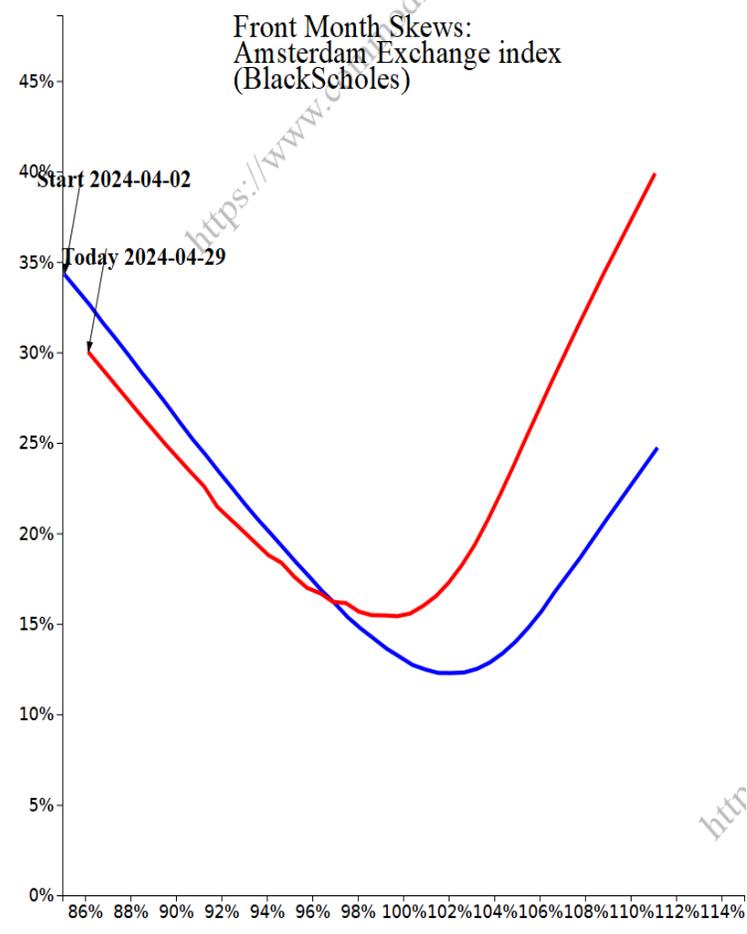
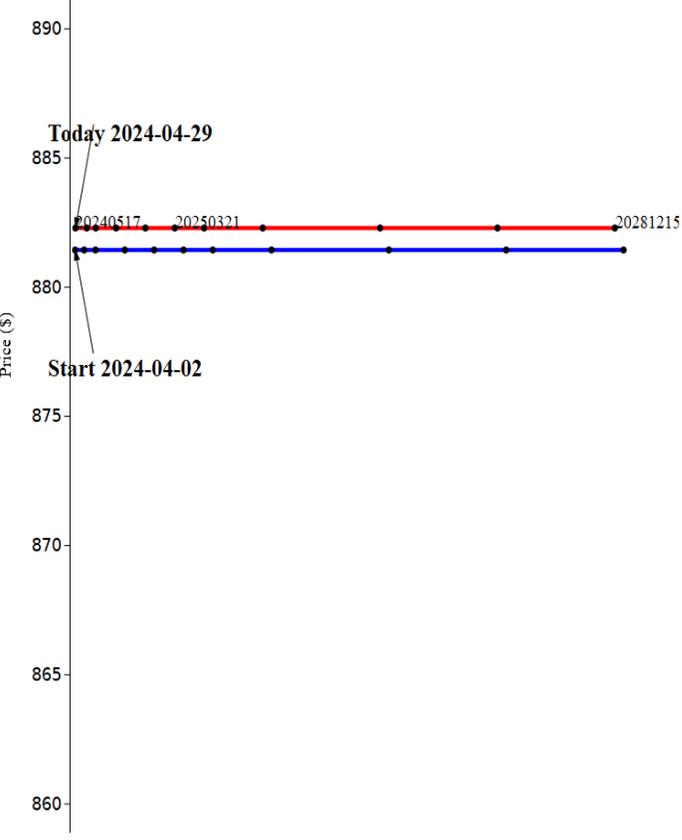
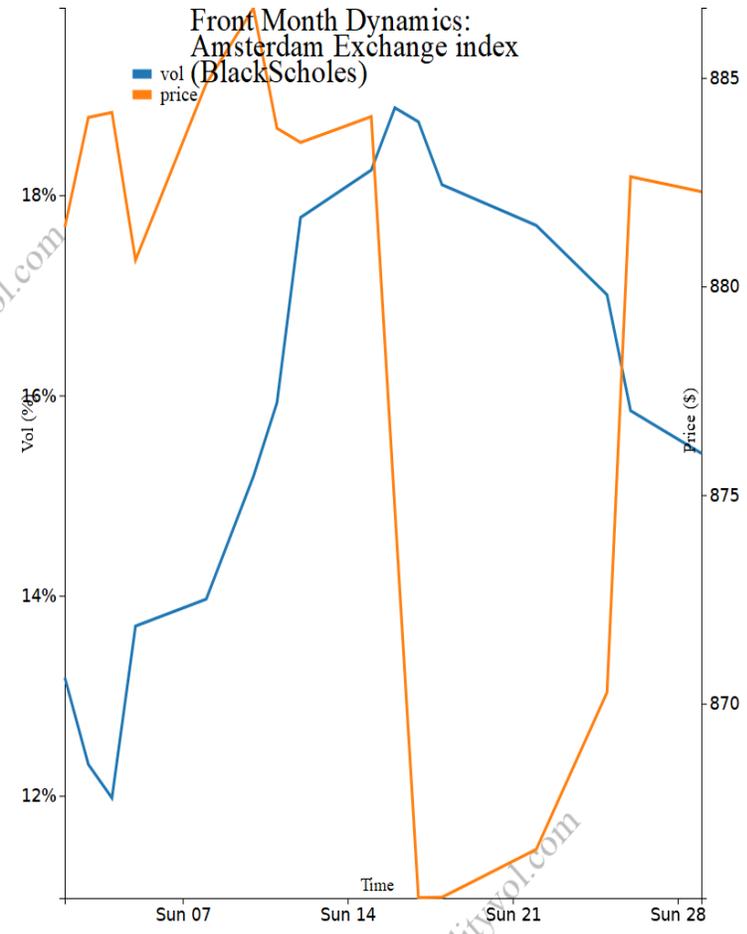
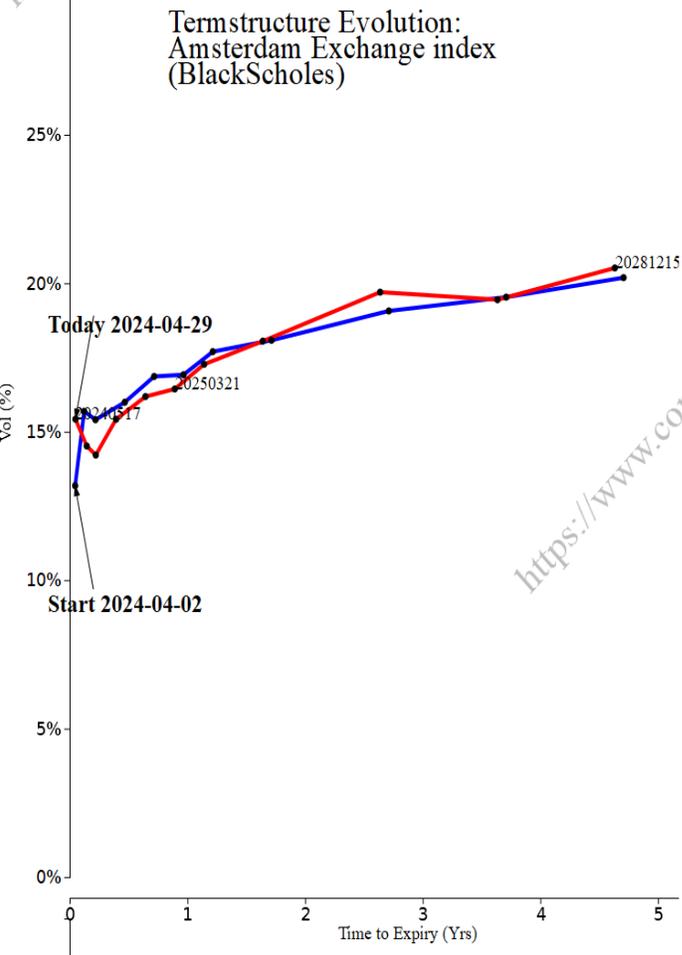
Front Month Dynamics:  
E-Mini Dow Options  
(Black)



Front Month Skews:  
E-Mini Dow Options  
(Black)

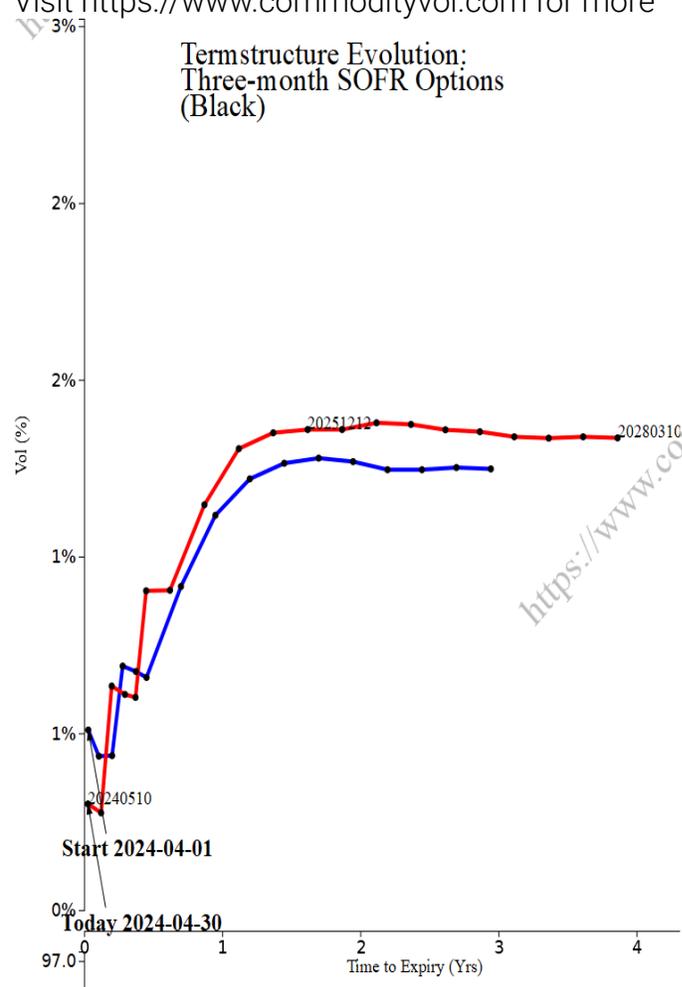




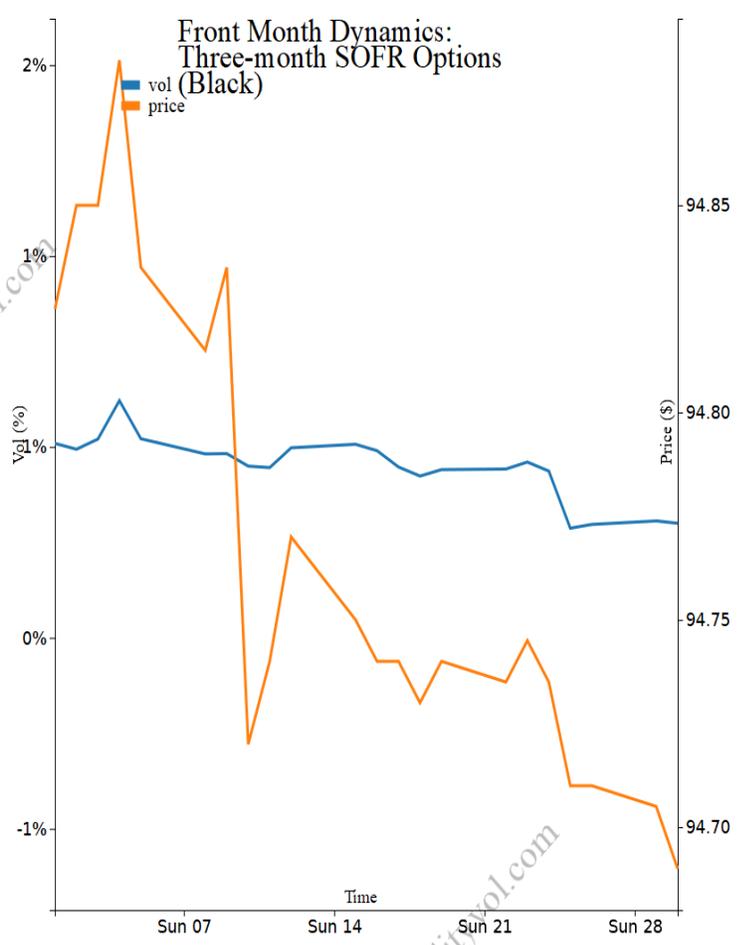


## **InterestRates: Fixed Income and STIRS**

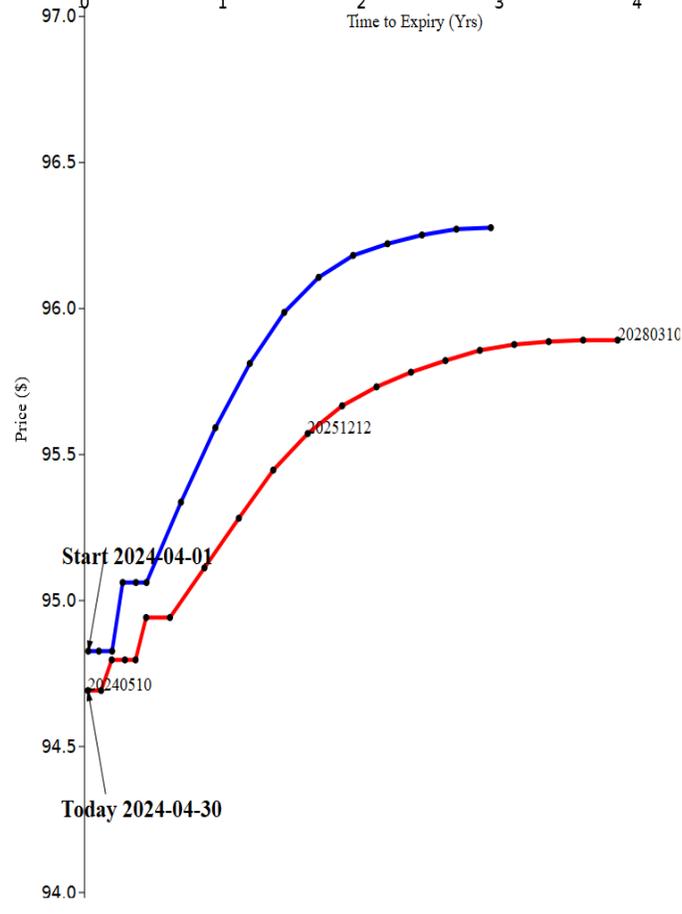
**Termstructure Evolution:  
Three-month SOFR Options  
(Black)**



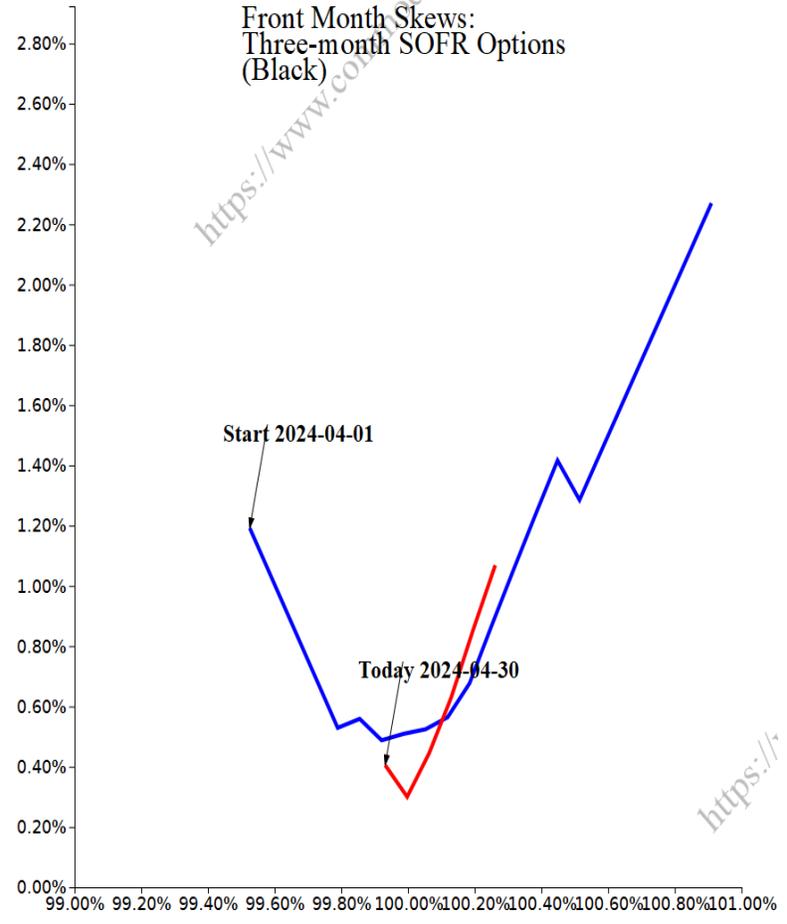
**Front Month Dynamics:  
Three-month SOFR Options  
(Black)**

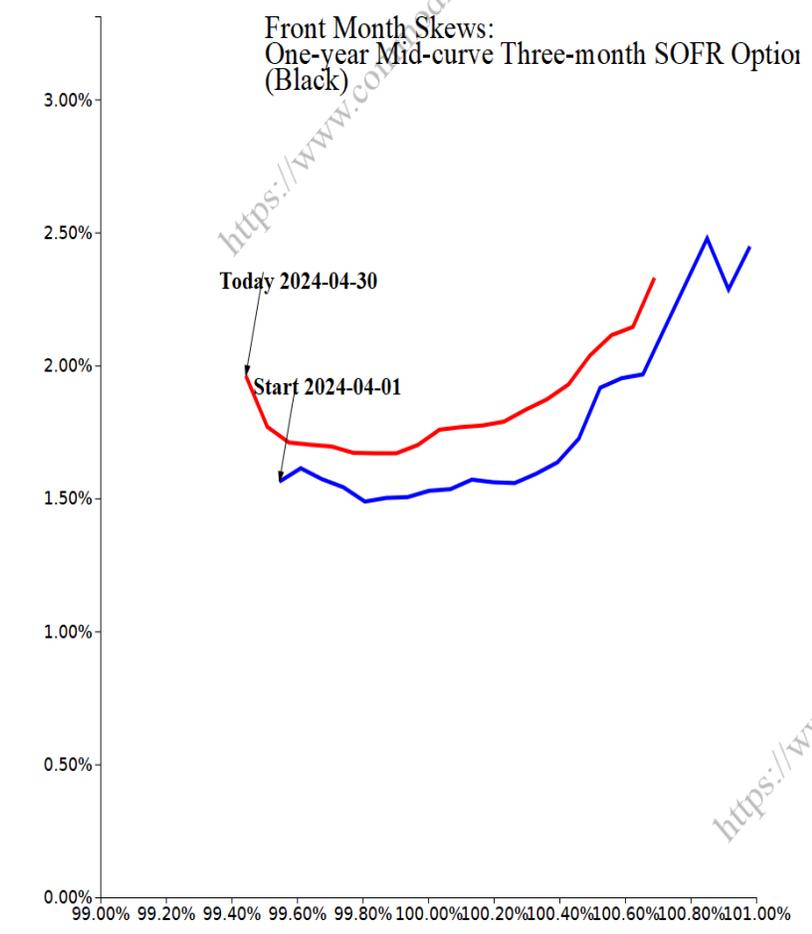
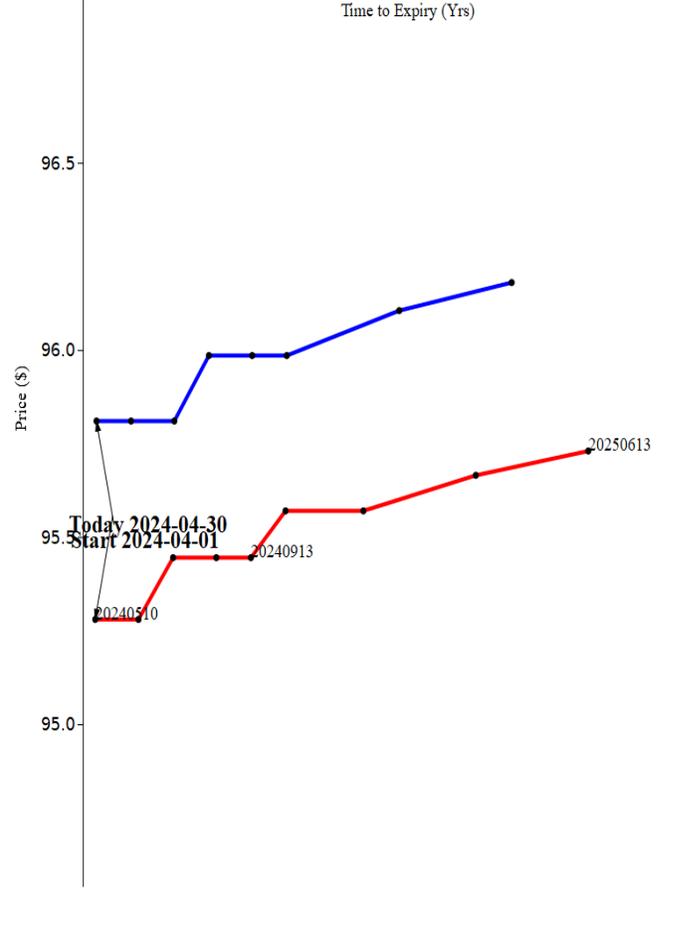
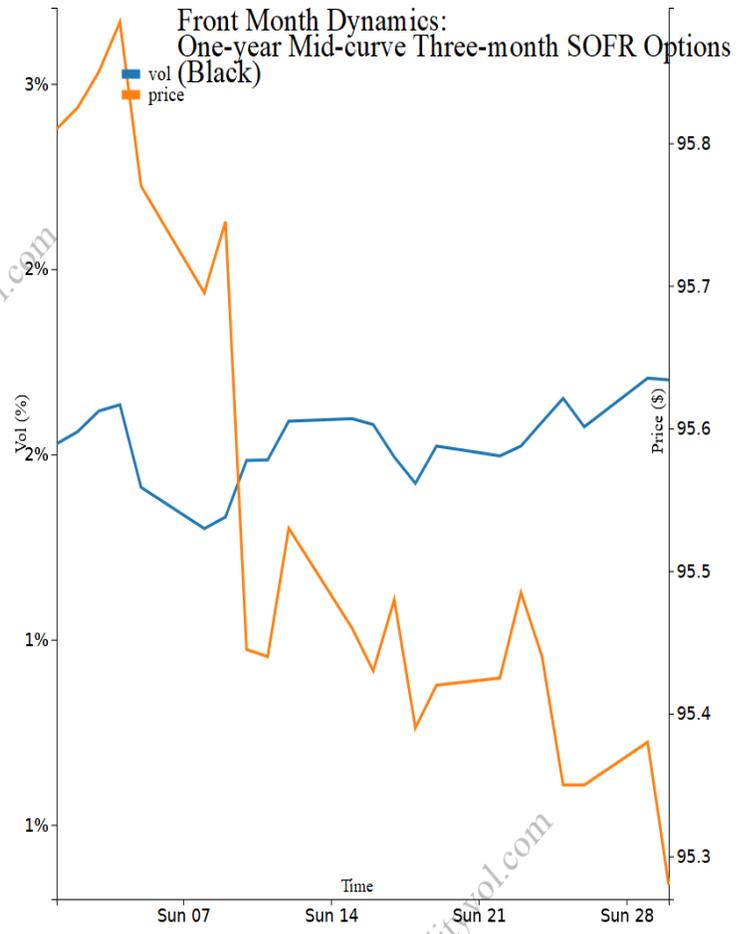
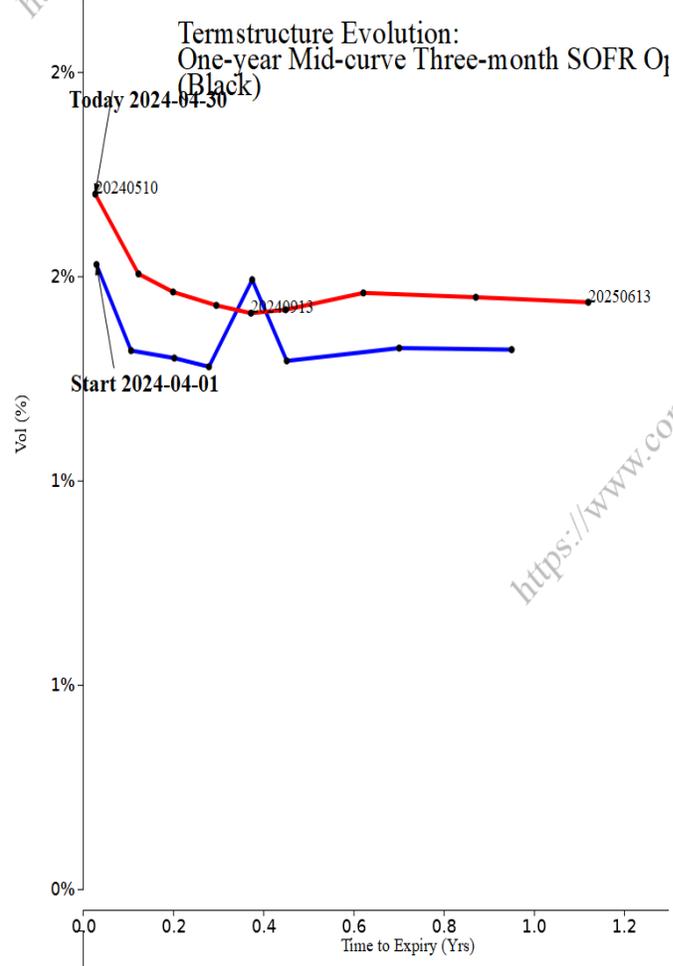


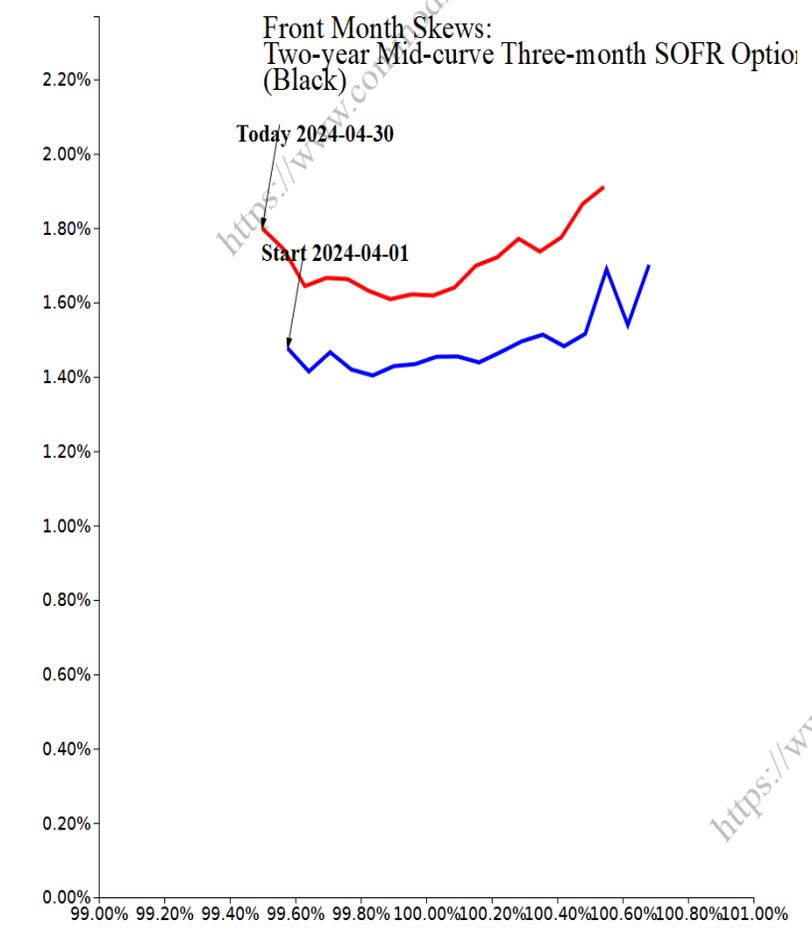
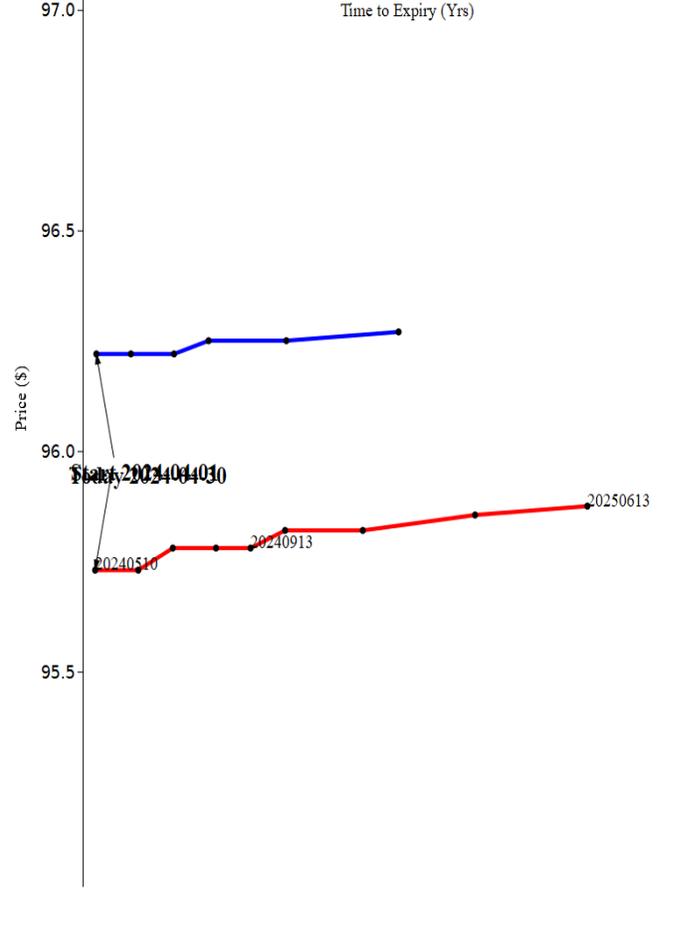
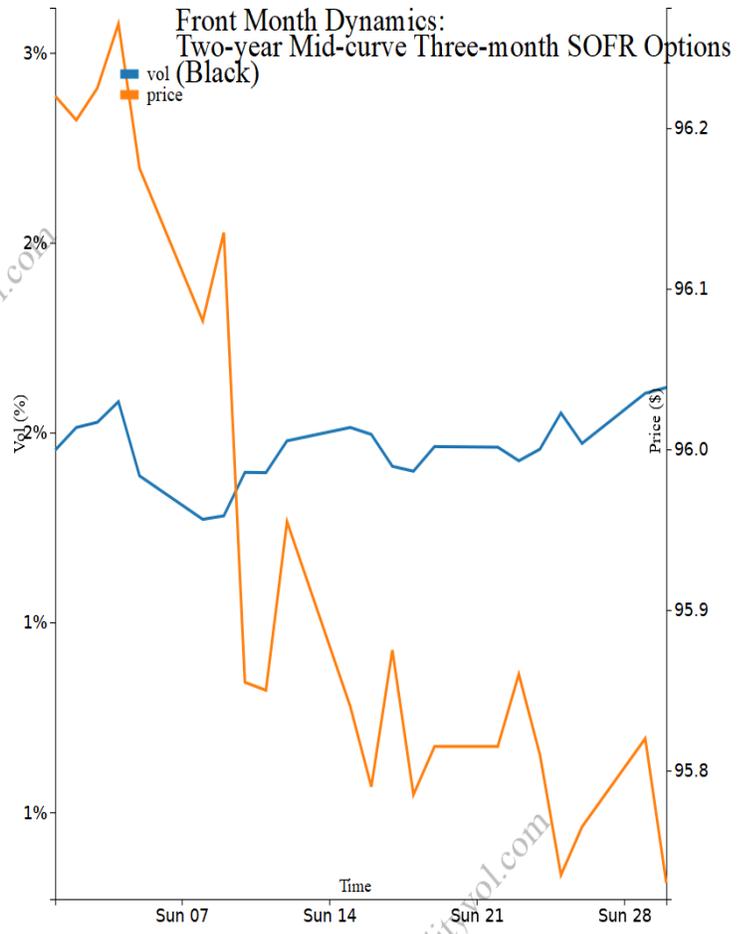
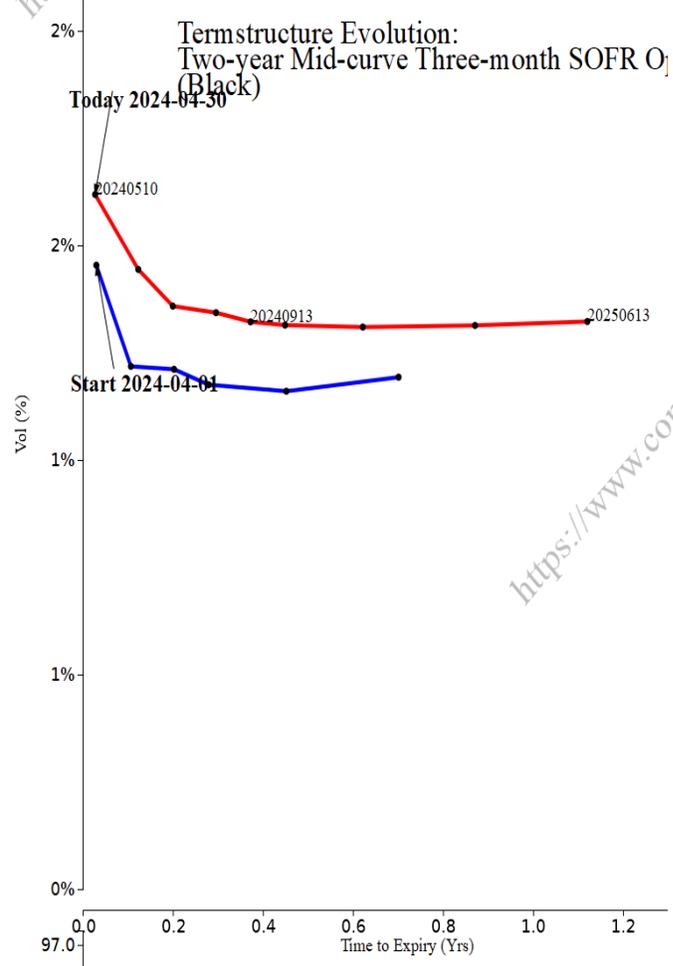
**Termstructure Evolution:  
Three-month SOFR Options  
(Black)**

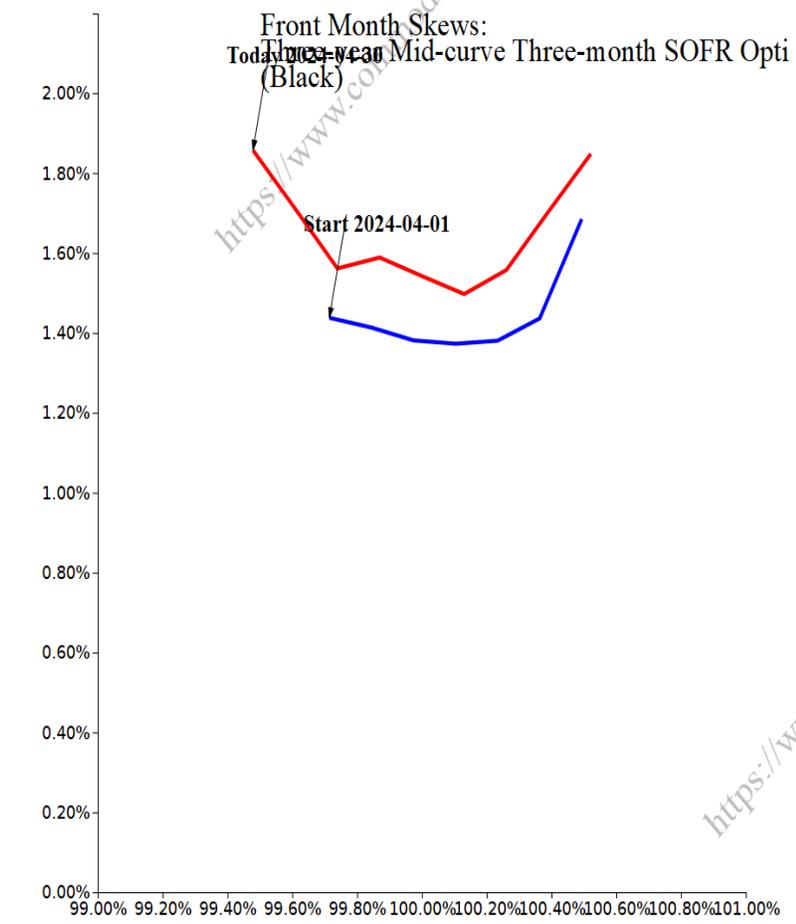
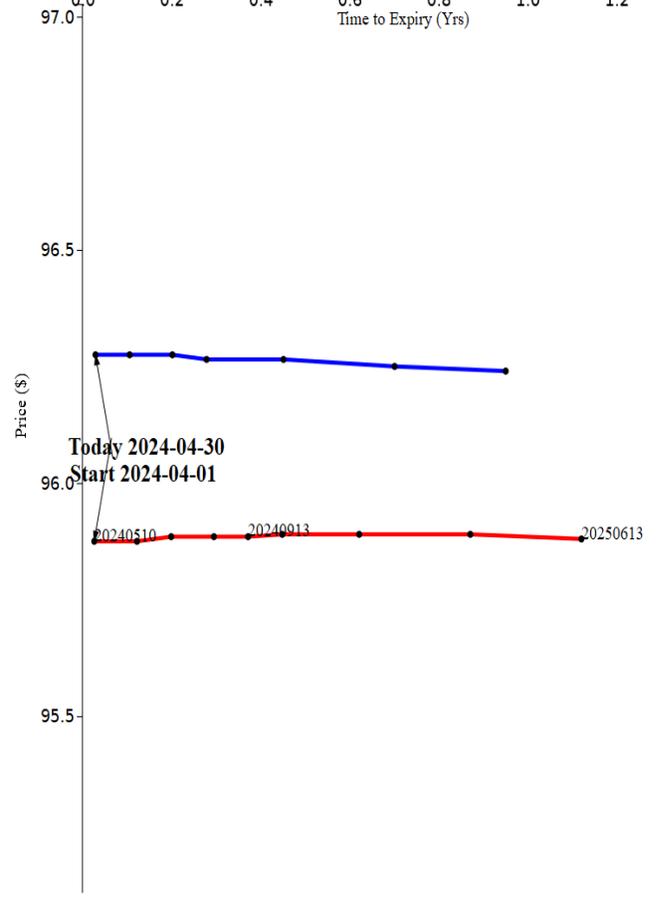
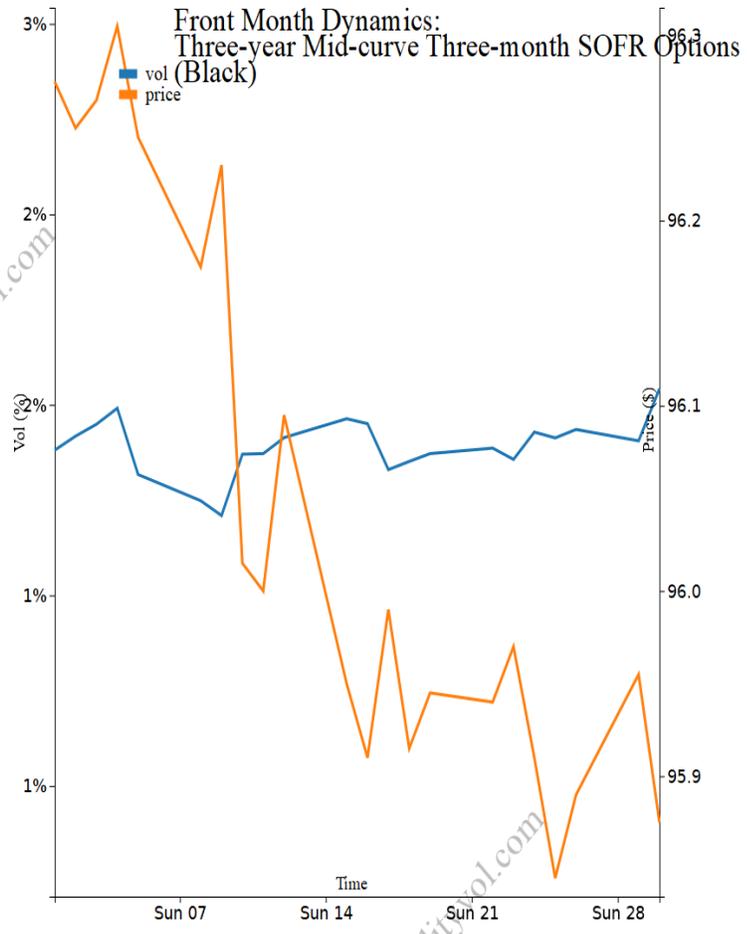
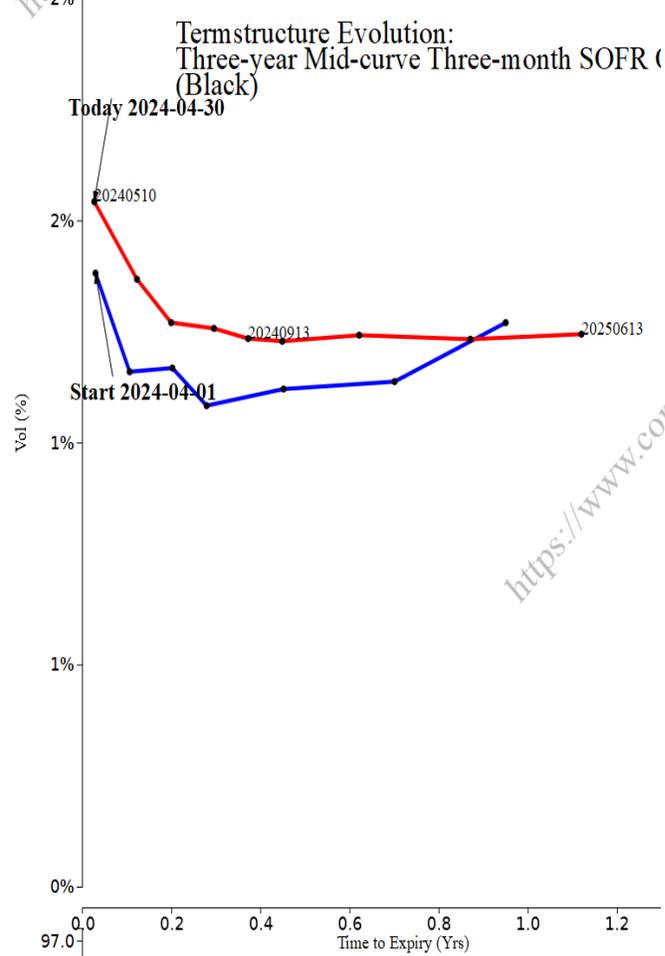


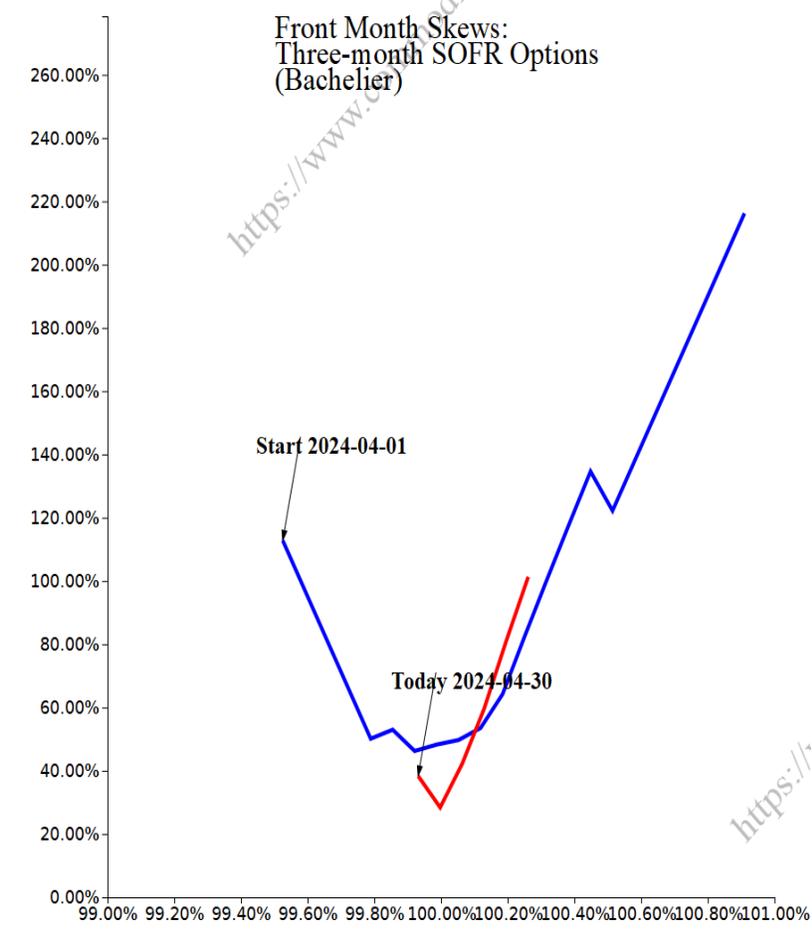
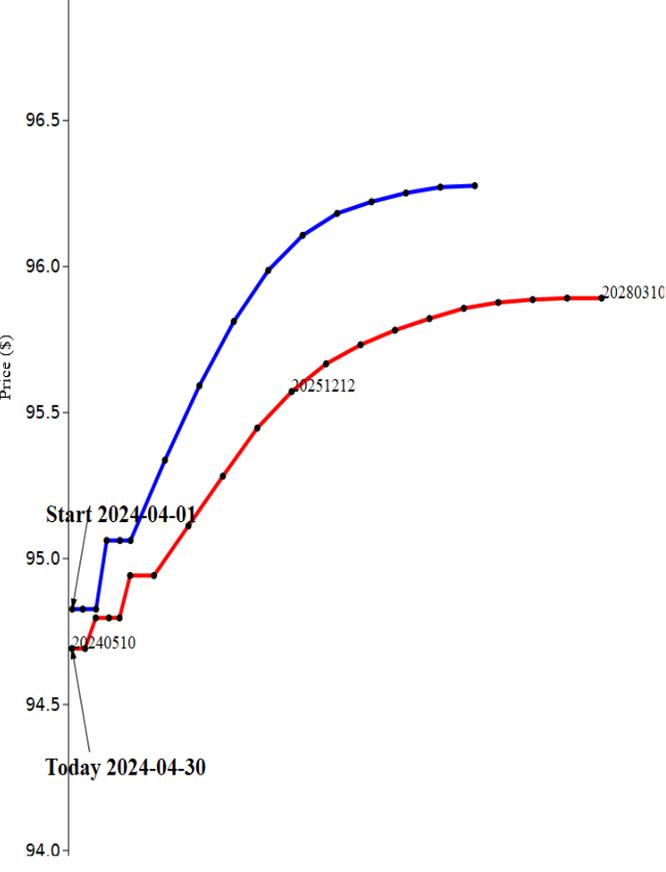
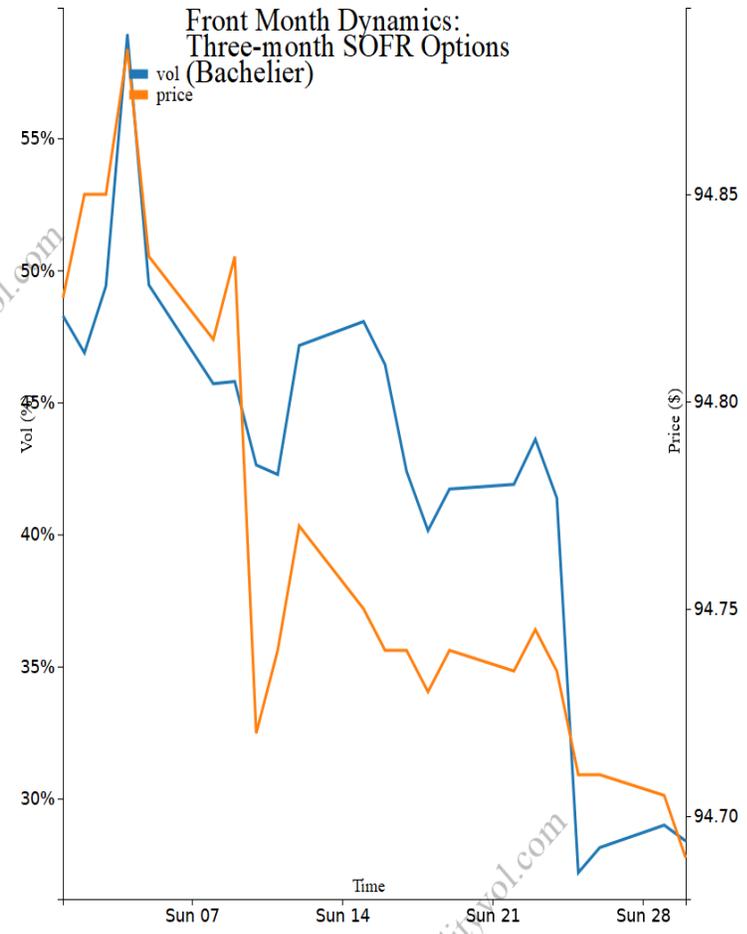
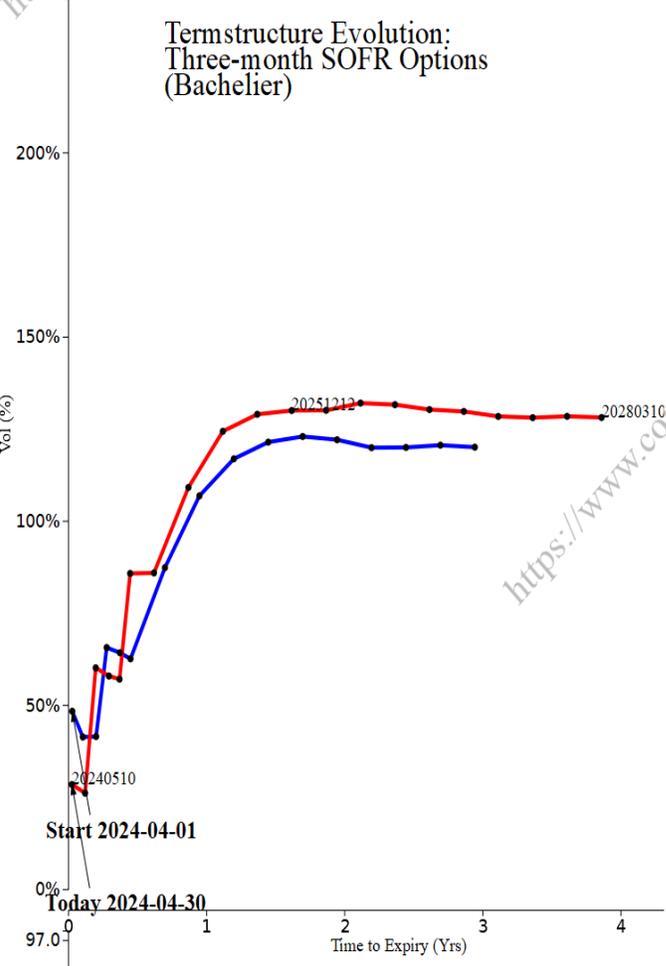
**Front Month Skews:  
Three-month SOFR Options  
(Black)**

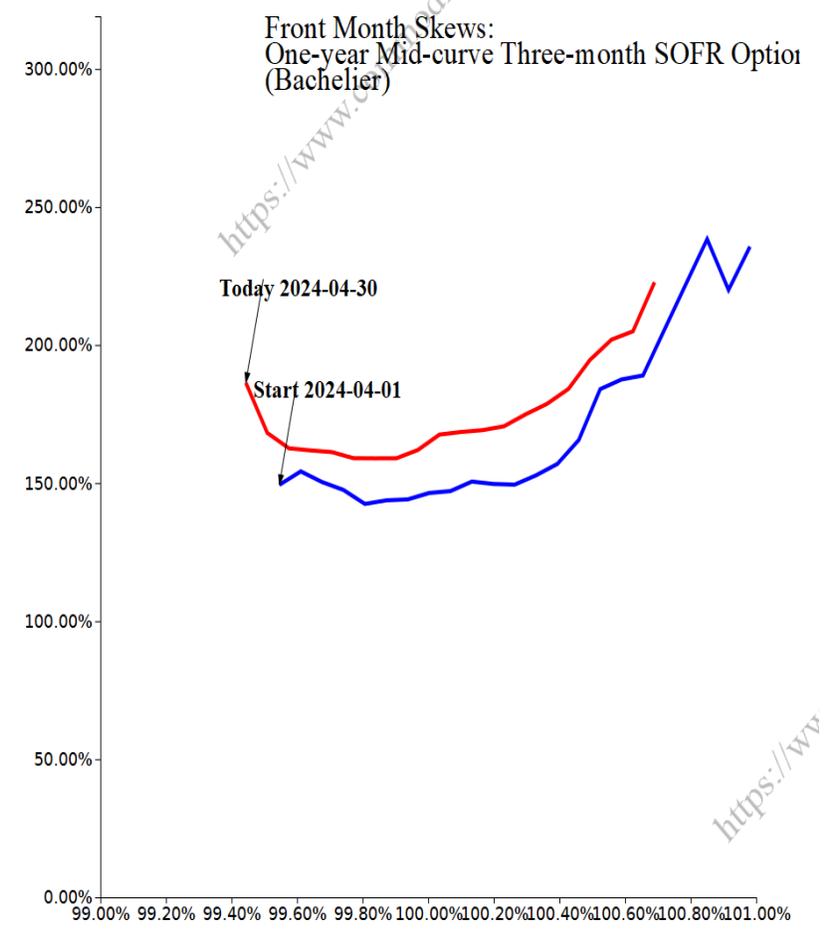
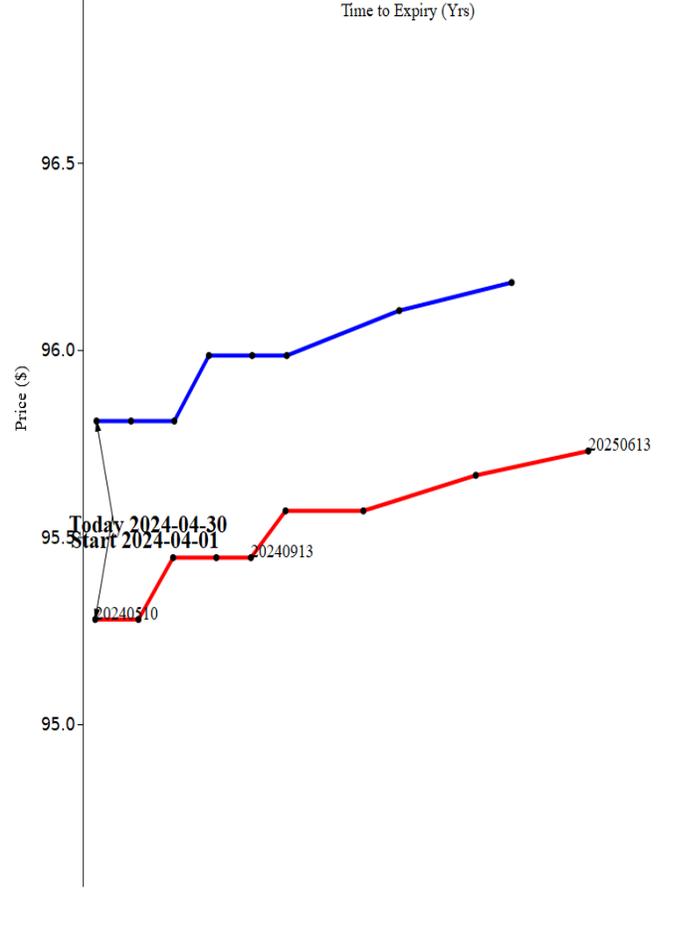
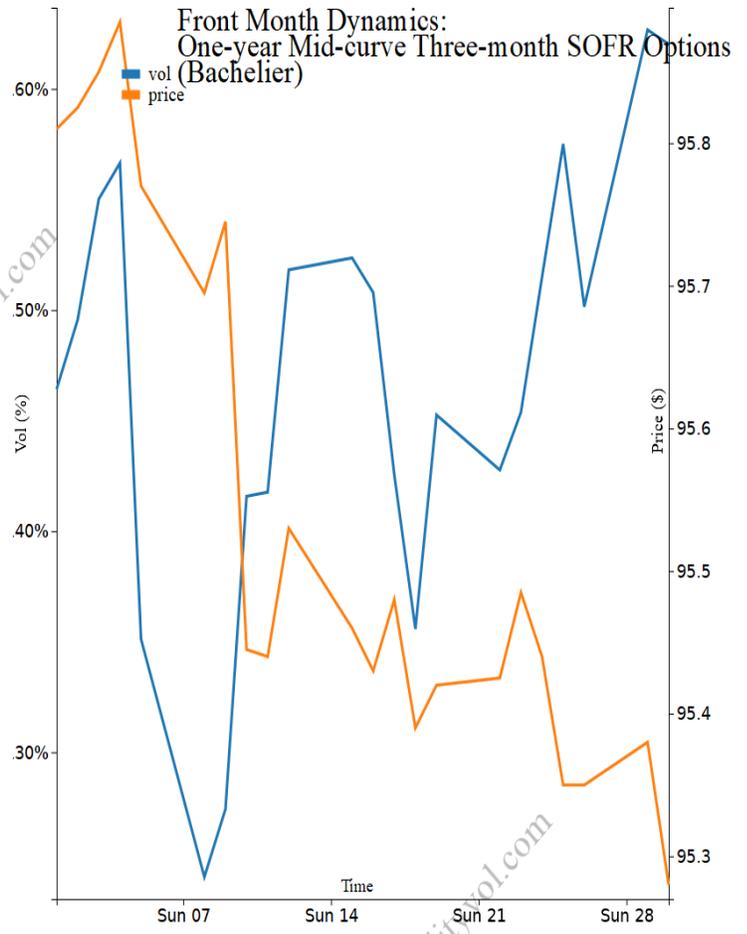
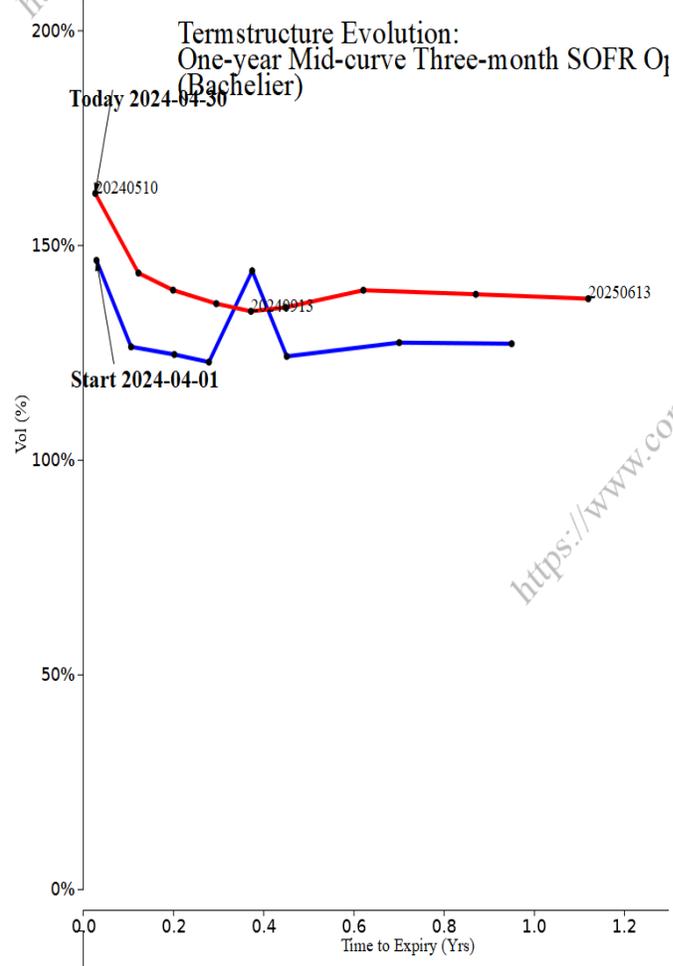


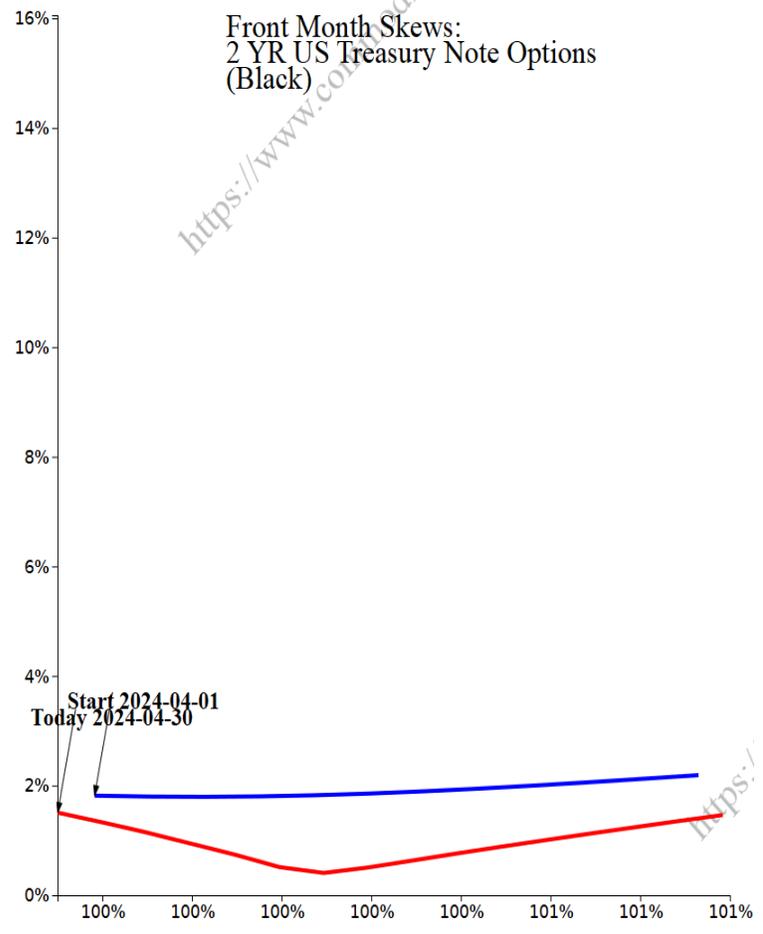
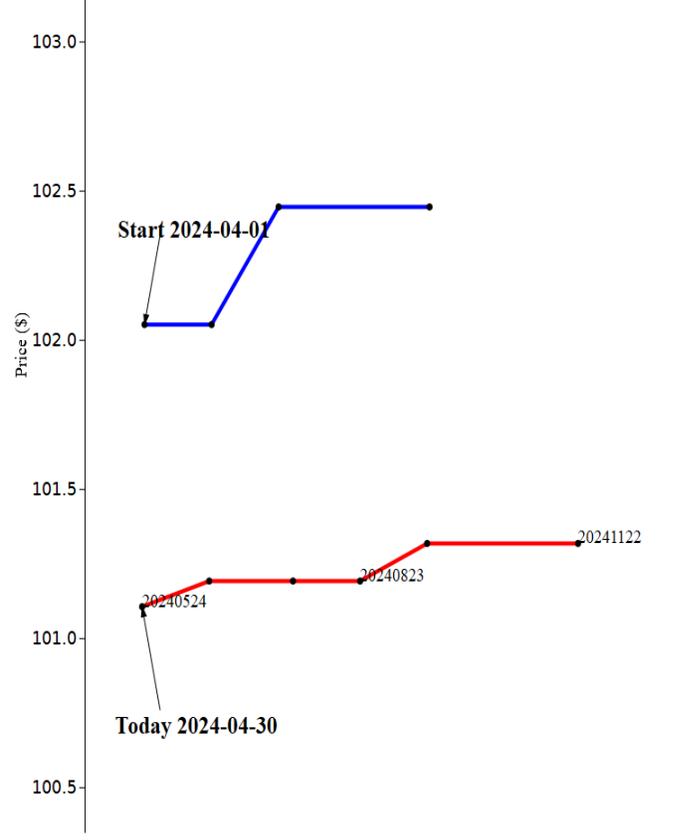
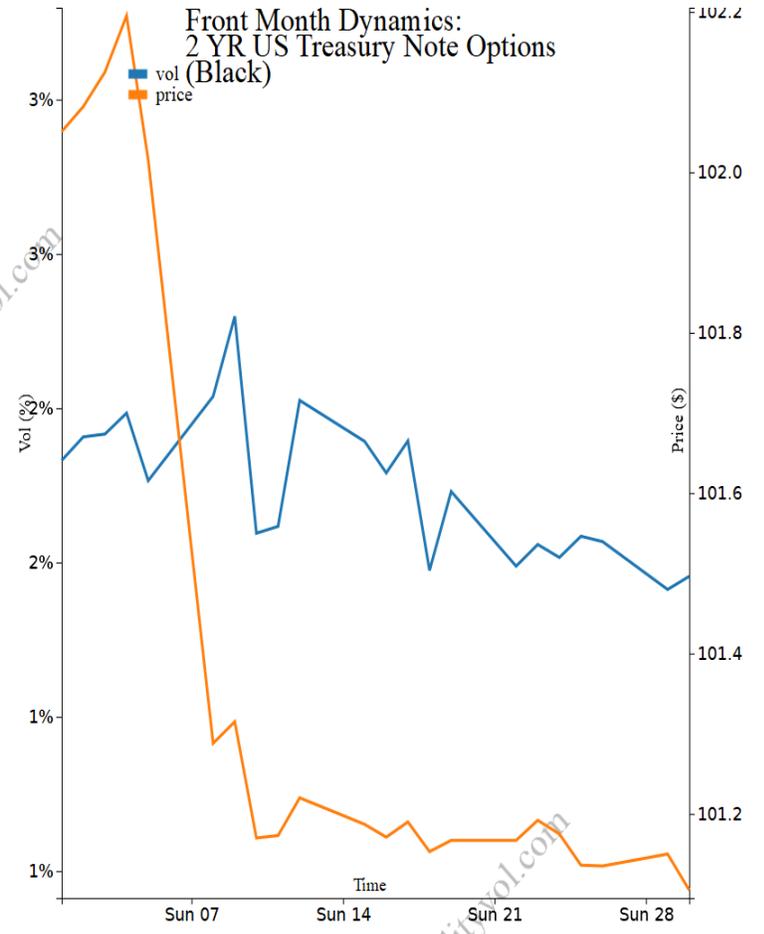
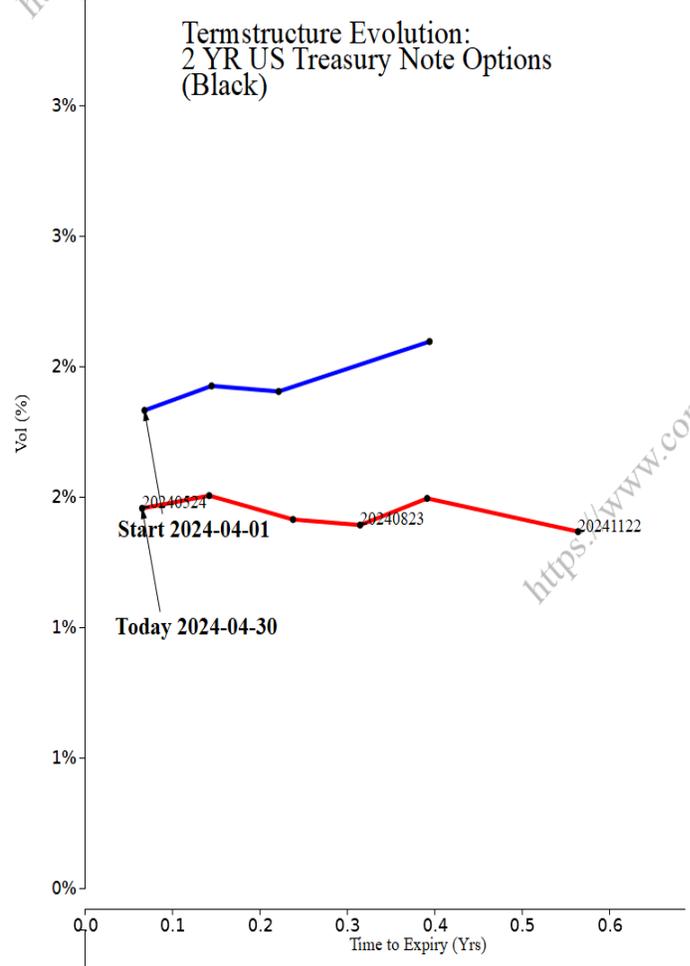




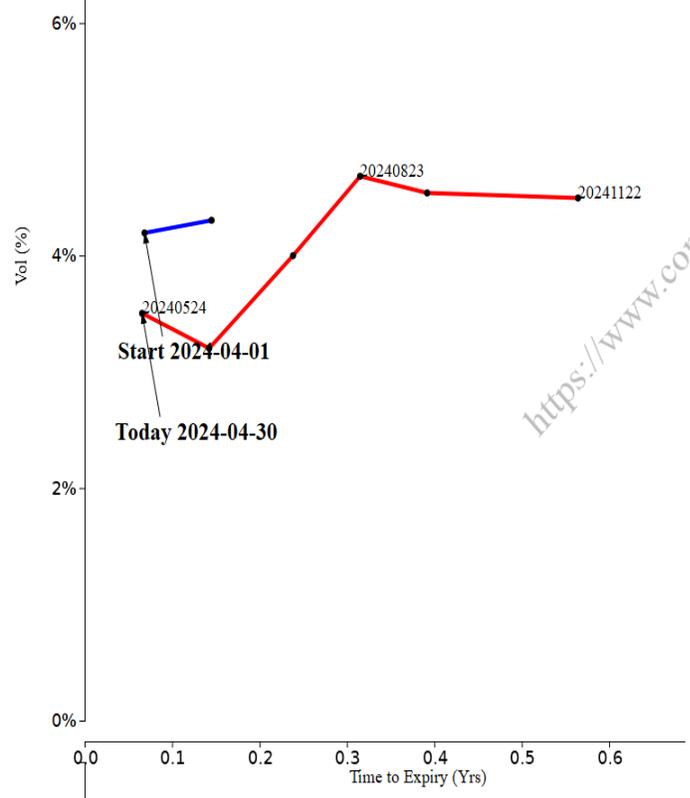




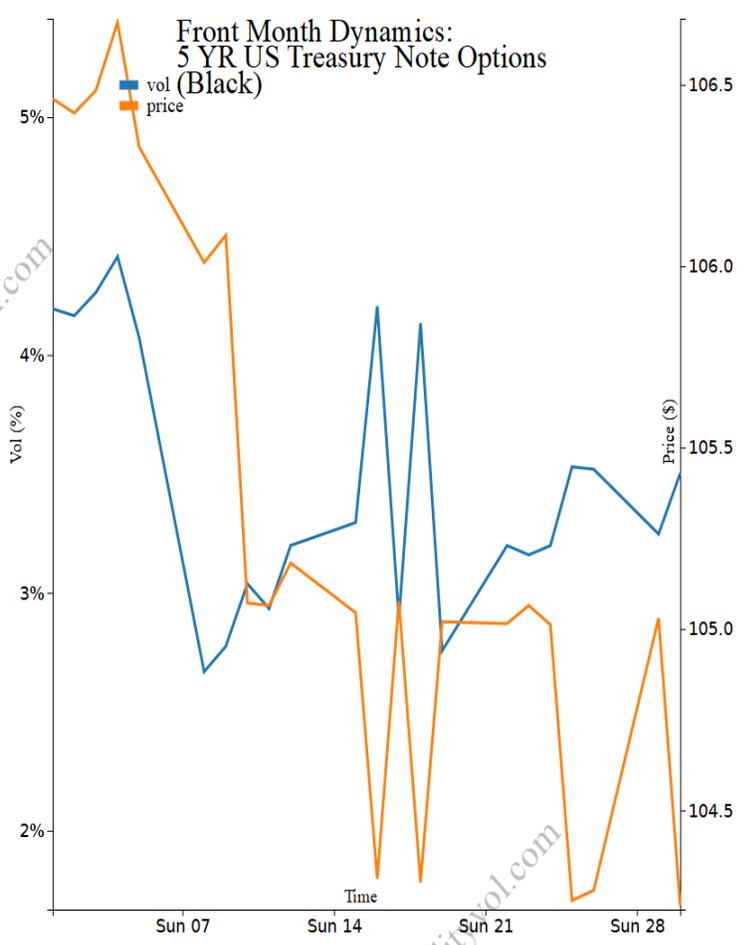




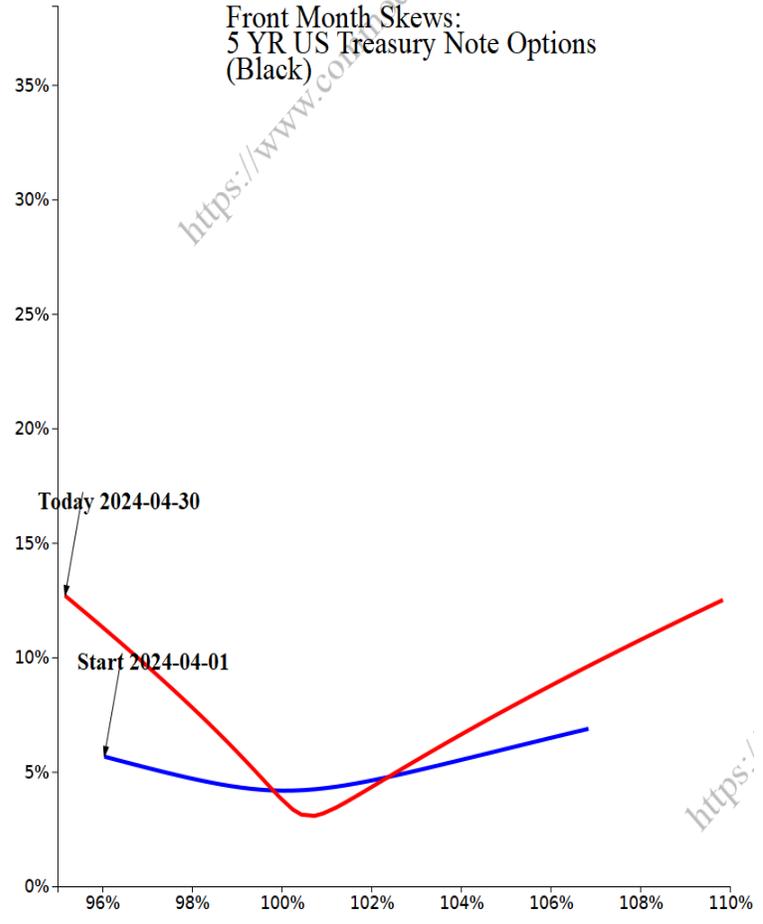
Termstructure Evolution:  
5 YR US Treasury Note Options  
(Black)



Front Month Dynamics:  
5 YR US Treasury Note Options  
(Black)



Front Month Skews:  
5 YR US Treasury Note Options  
(Black)

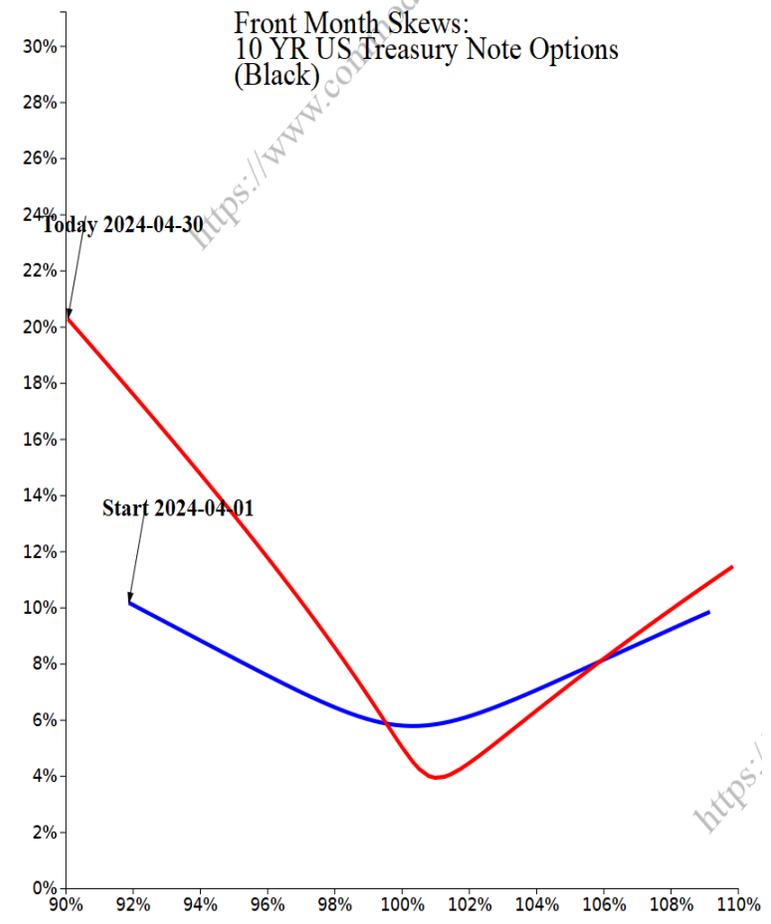
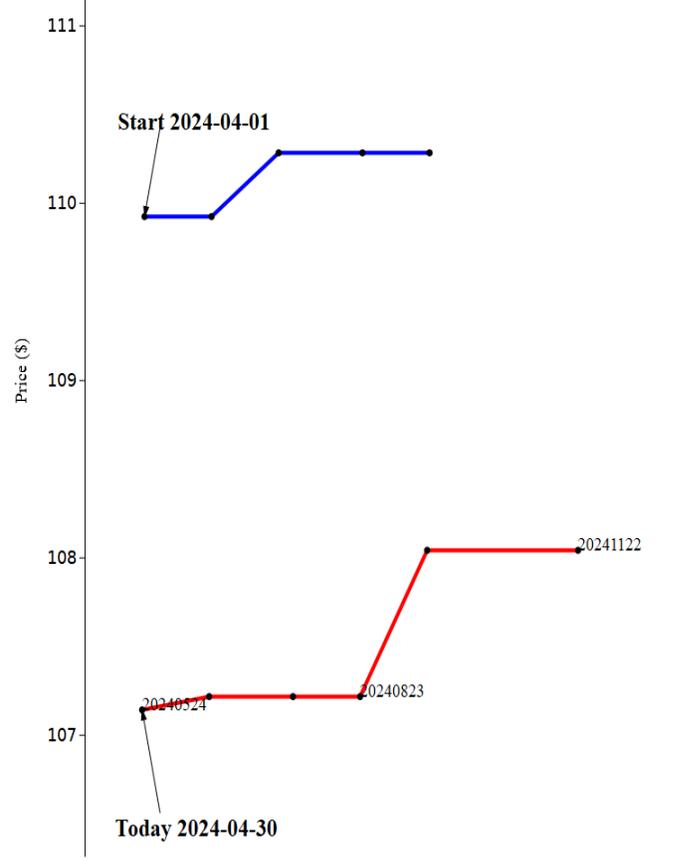
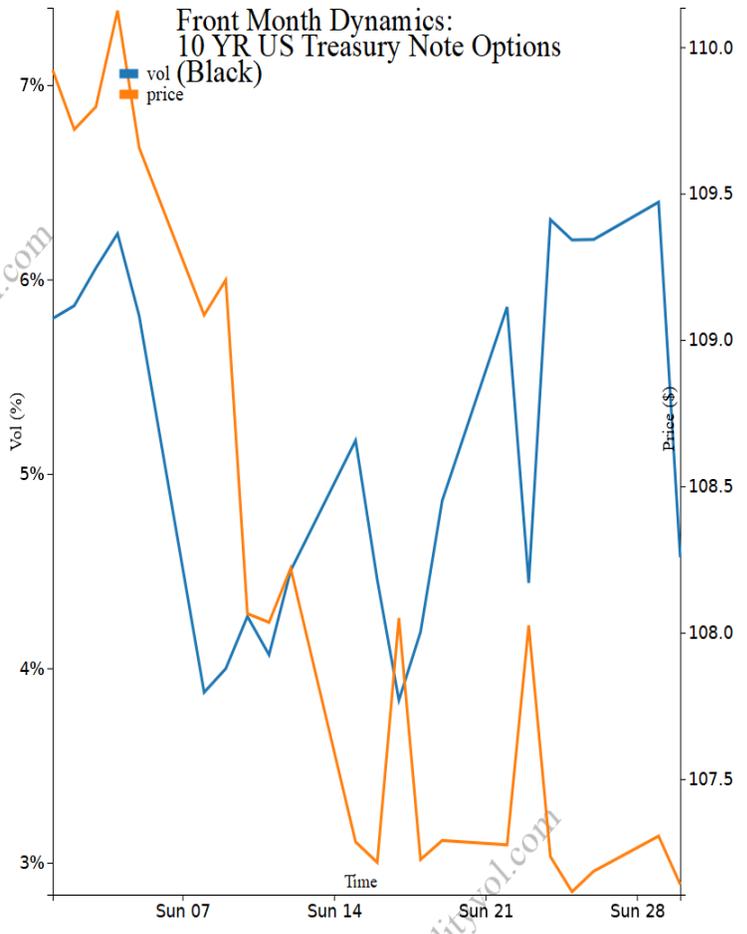
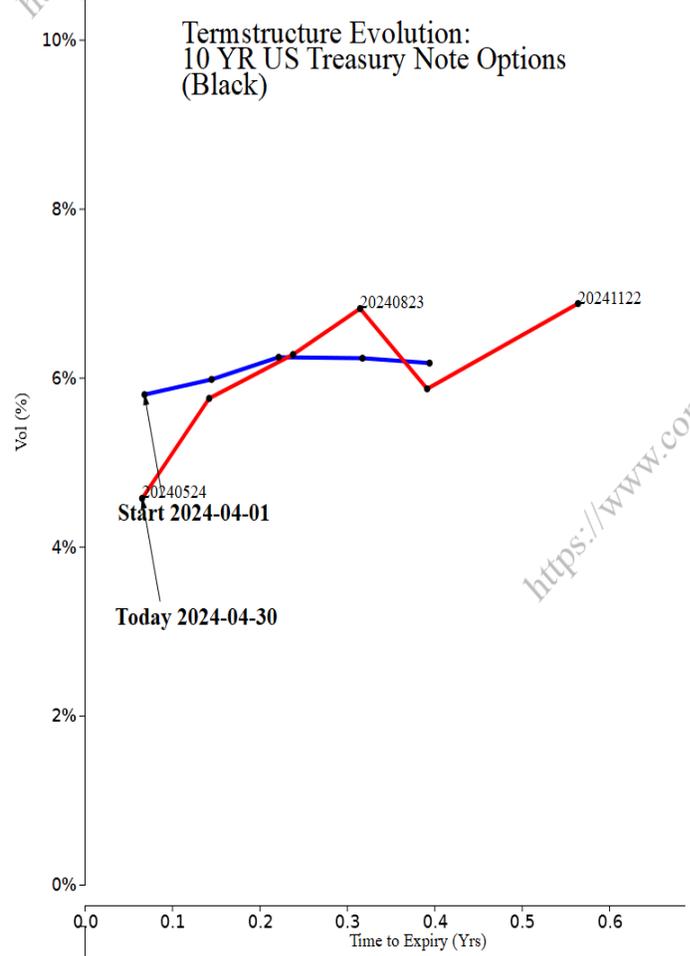


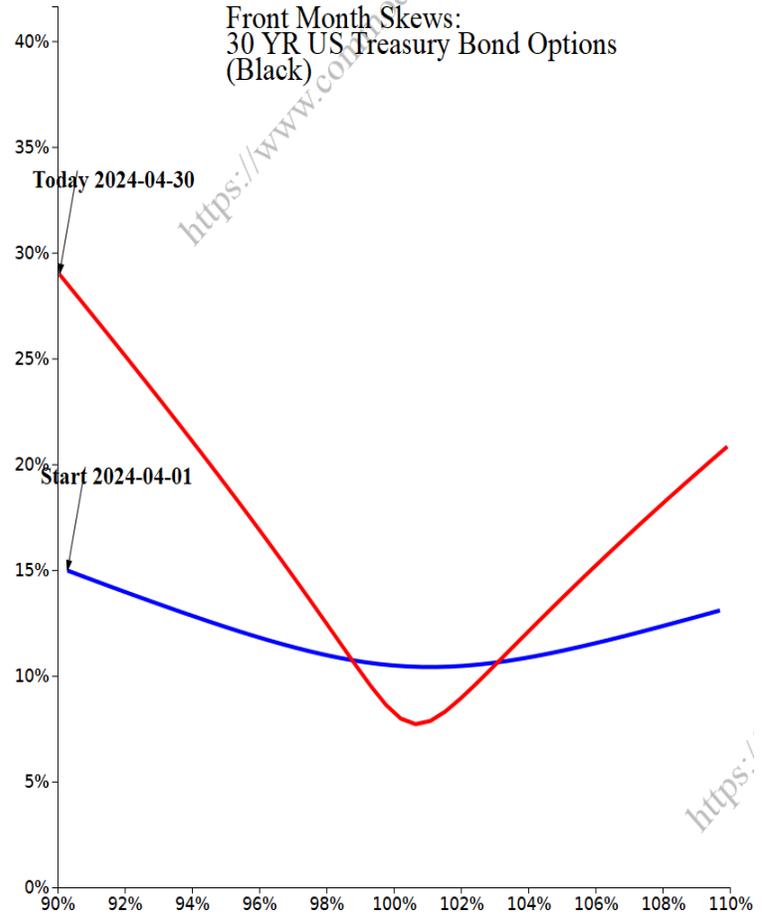
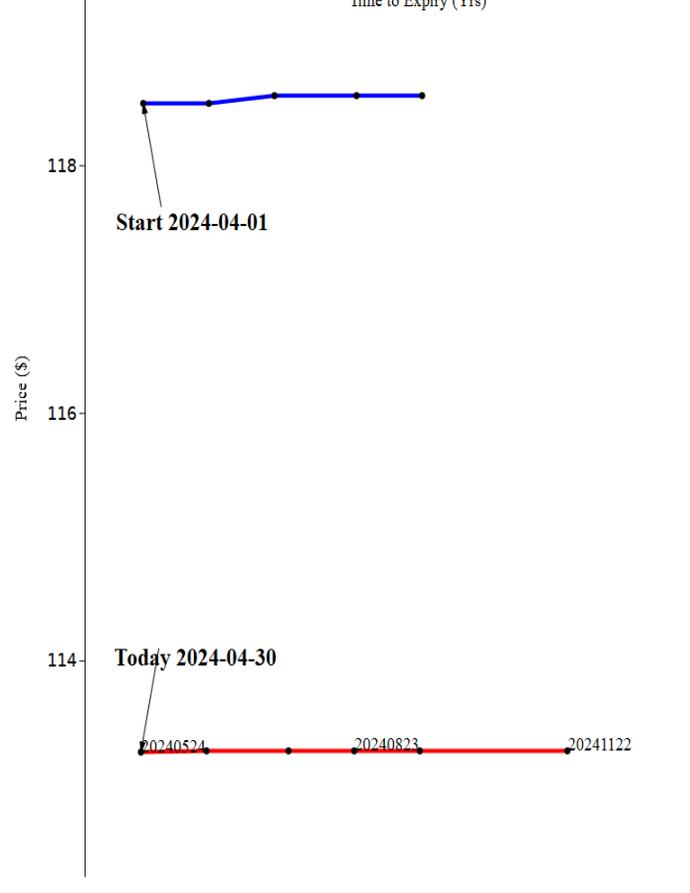
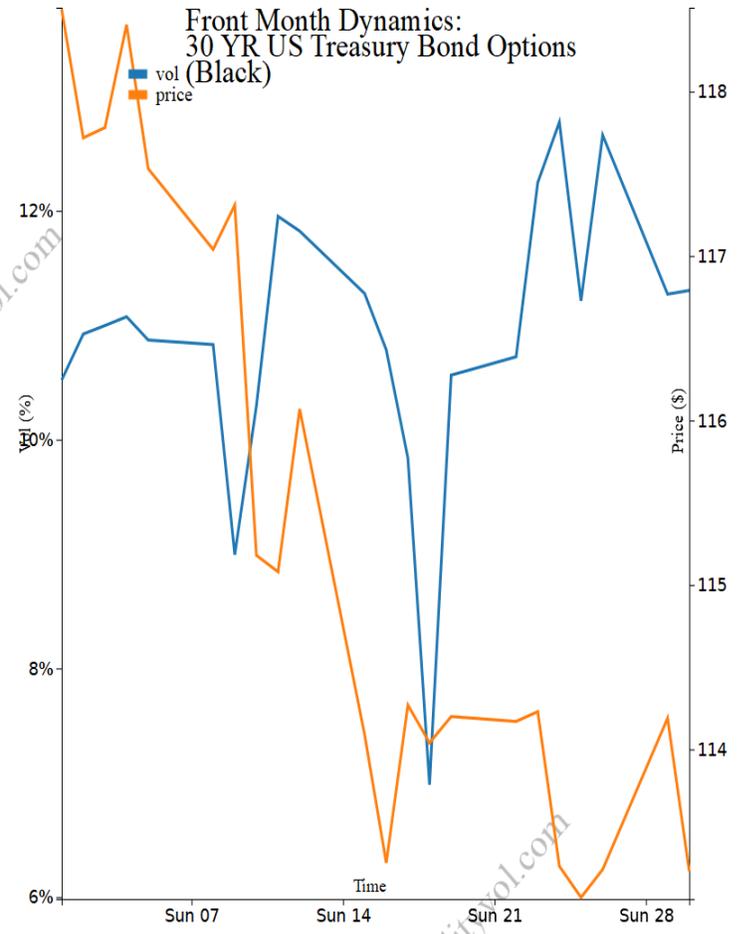
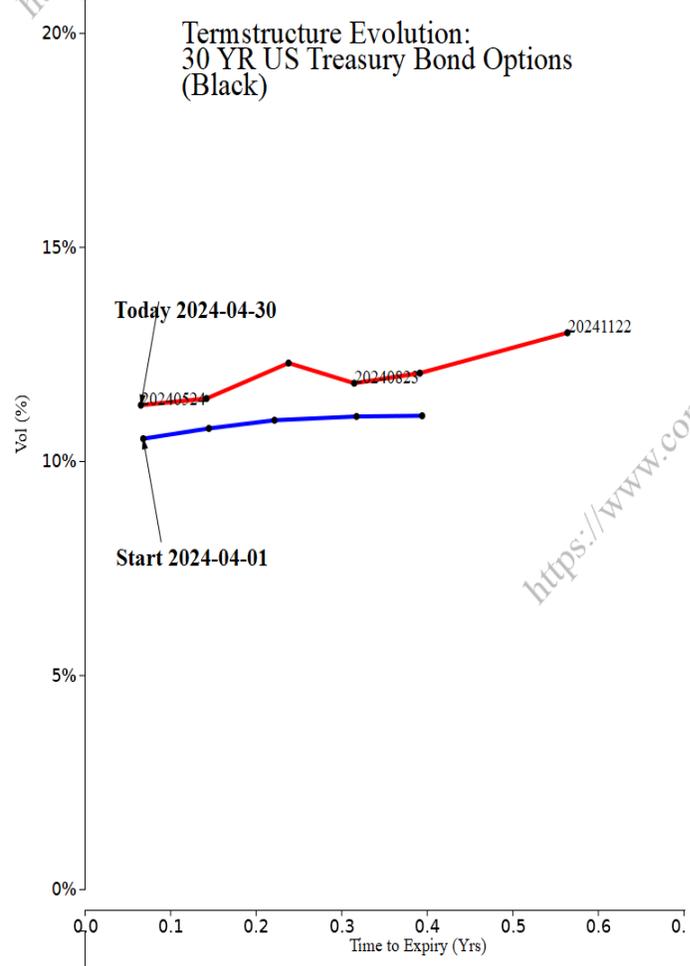
Start 2024-04-01

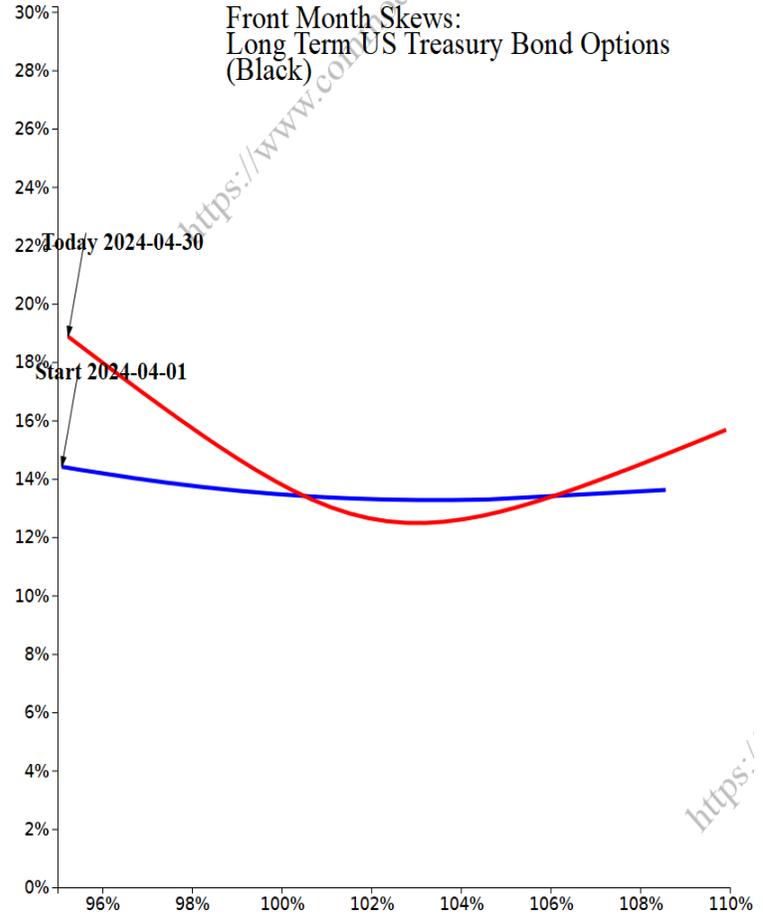
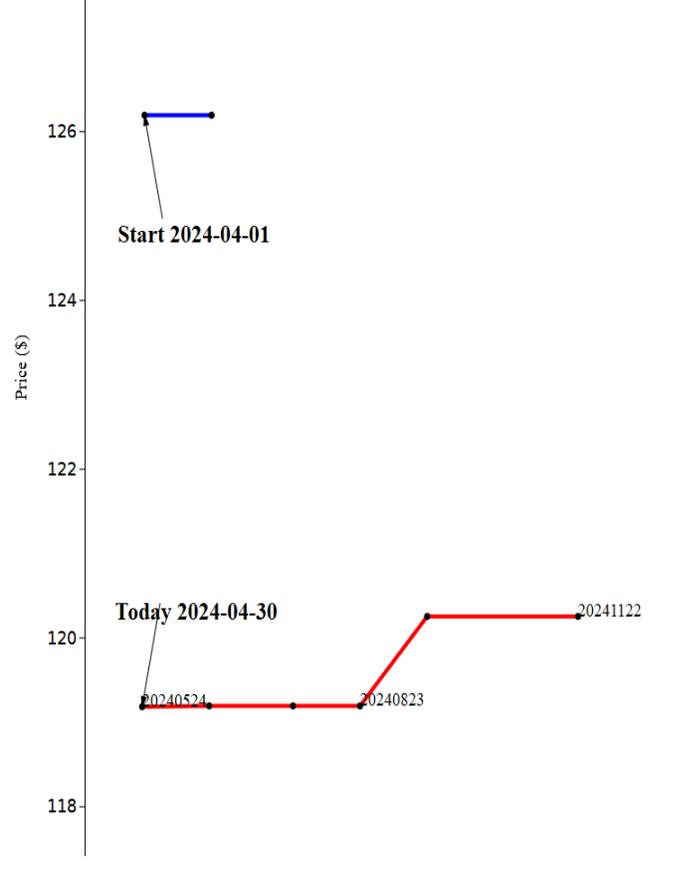
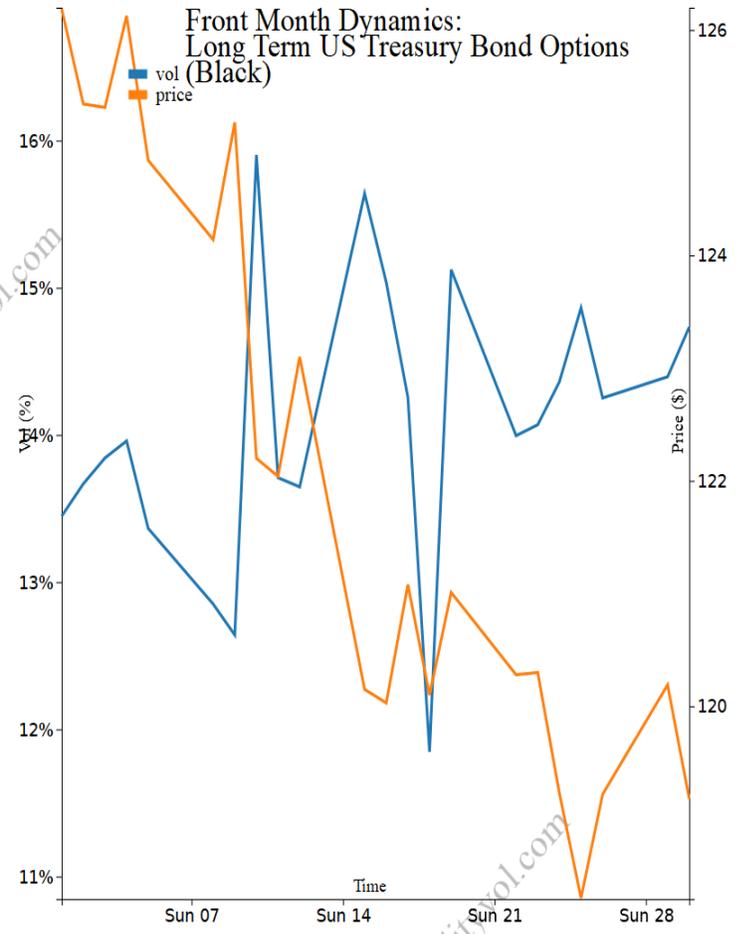
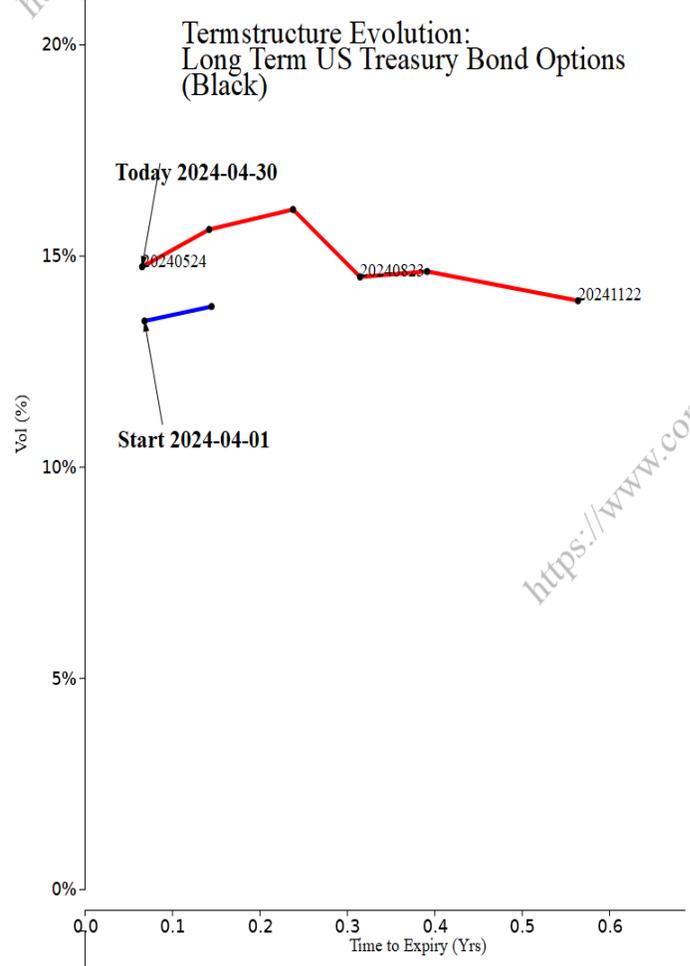
Today 2024-04-30

Today 2024-04-30

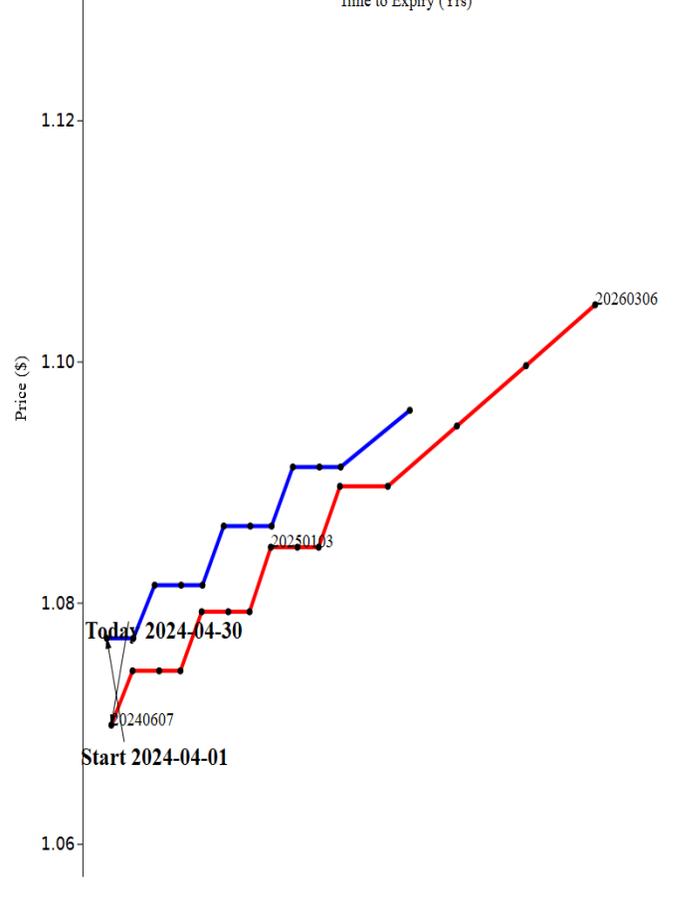
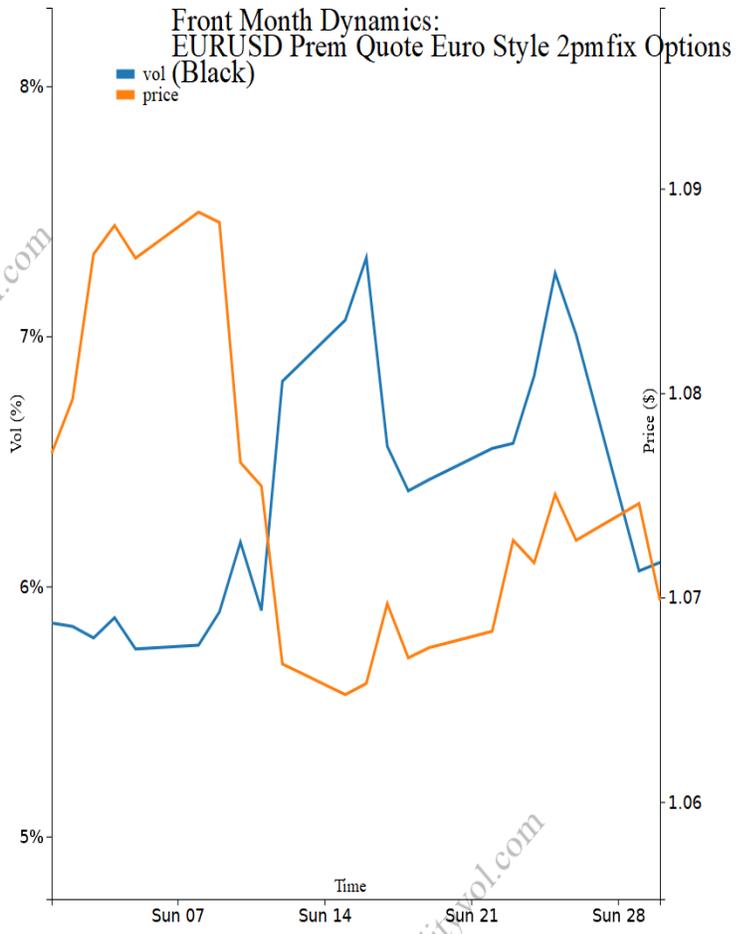
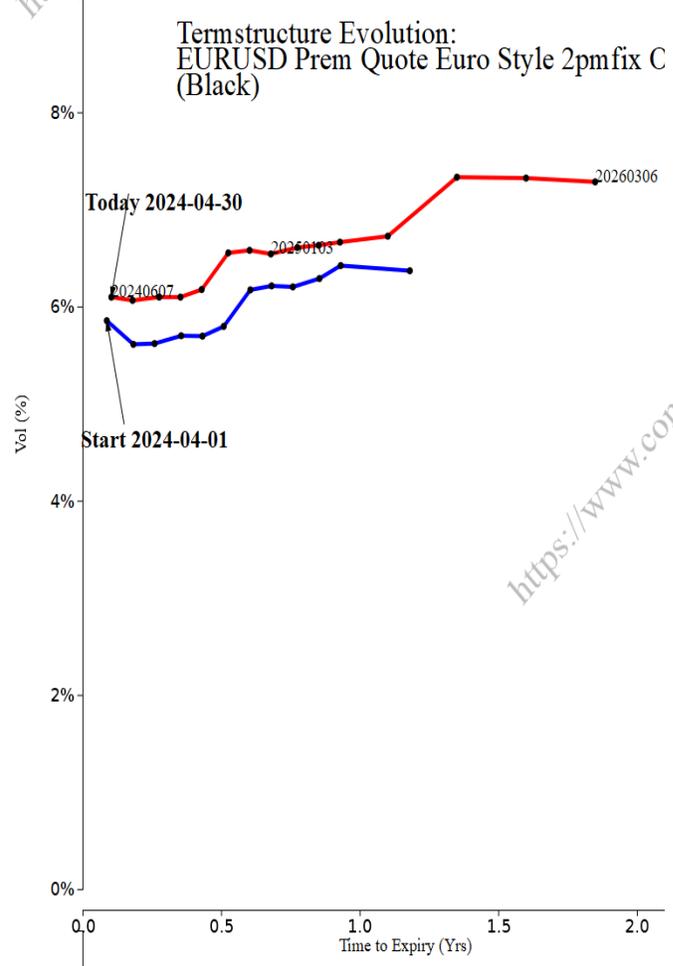
Start 2024-04-01



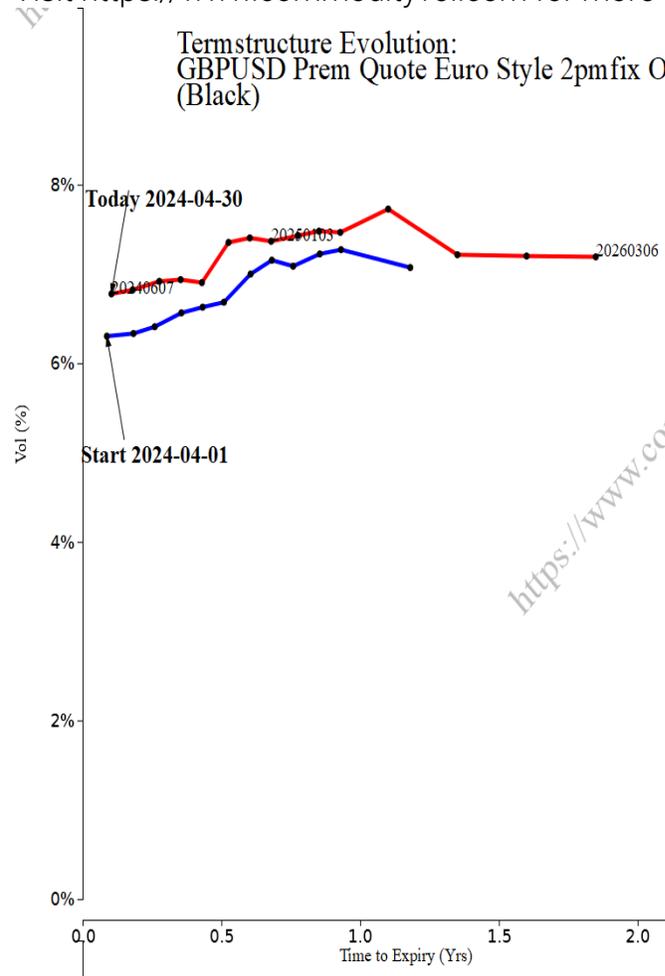




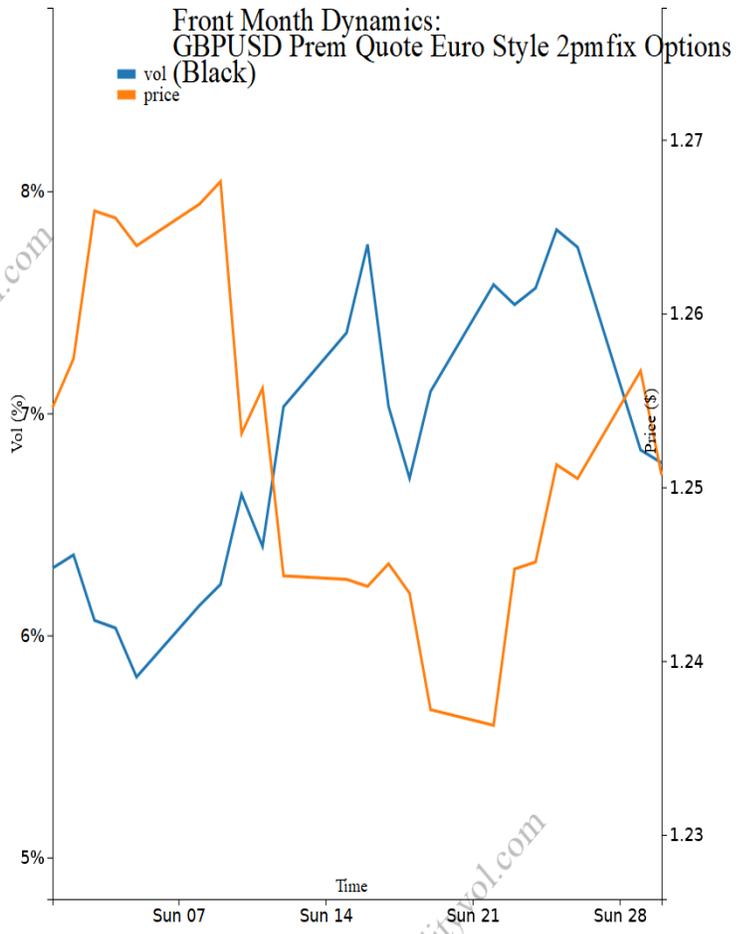
**Forex**



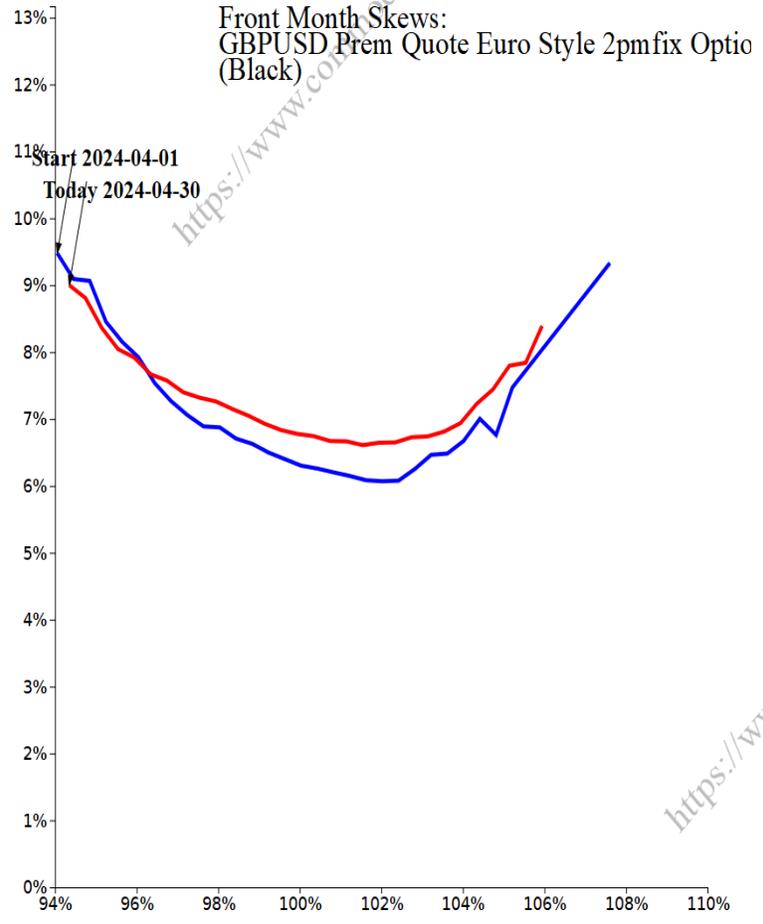
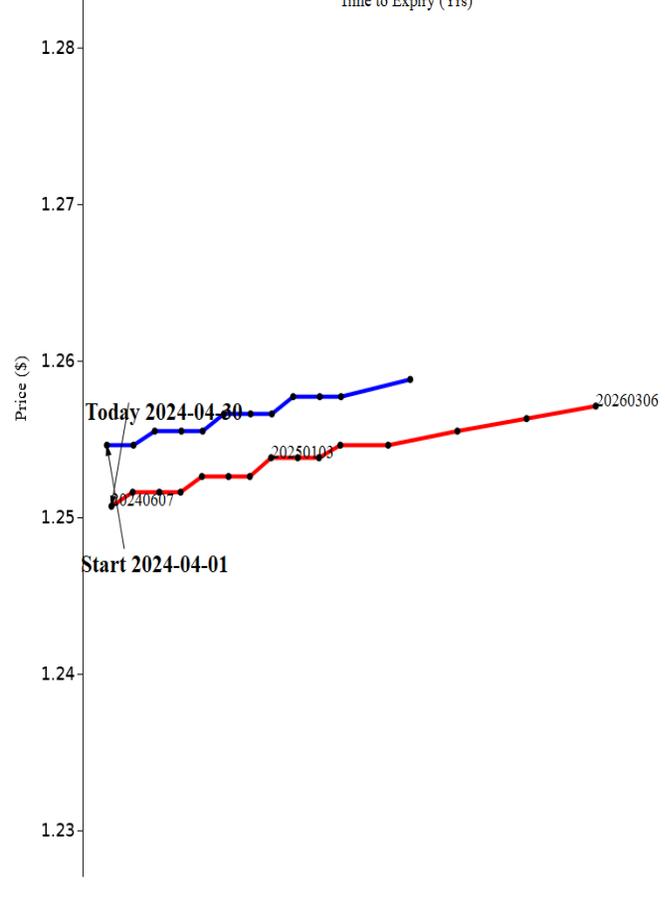
Termstructure Evolution:  
GBPUSD Prem Quote Euro Style 2pmfix O  
(Black)

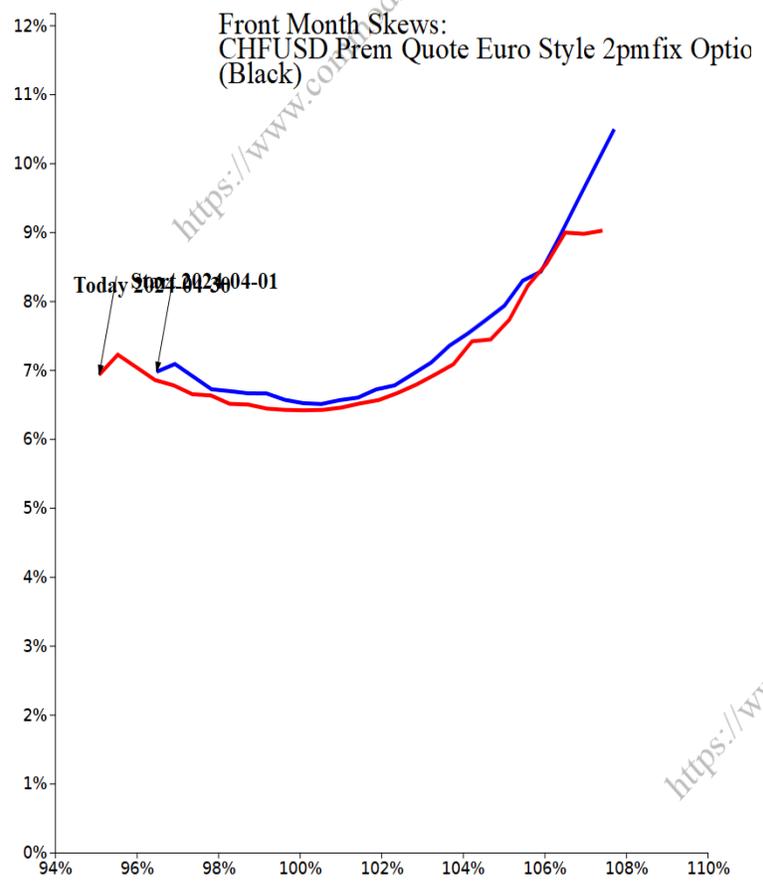
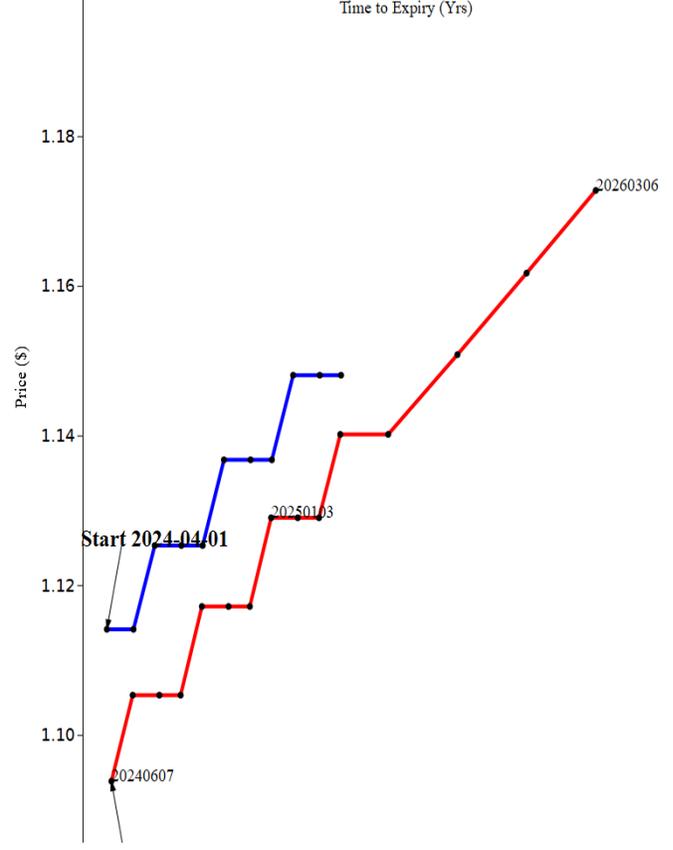
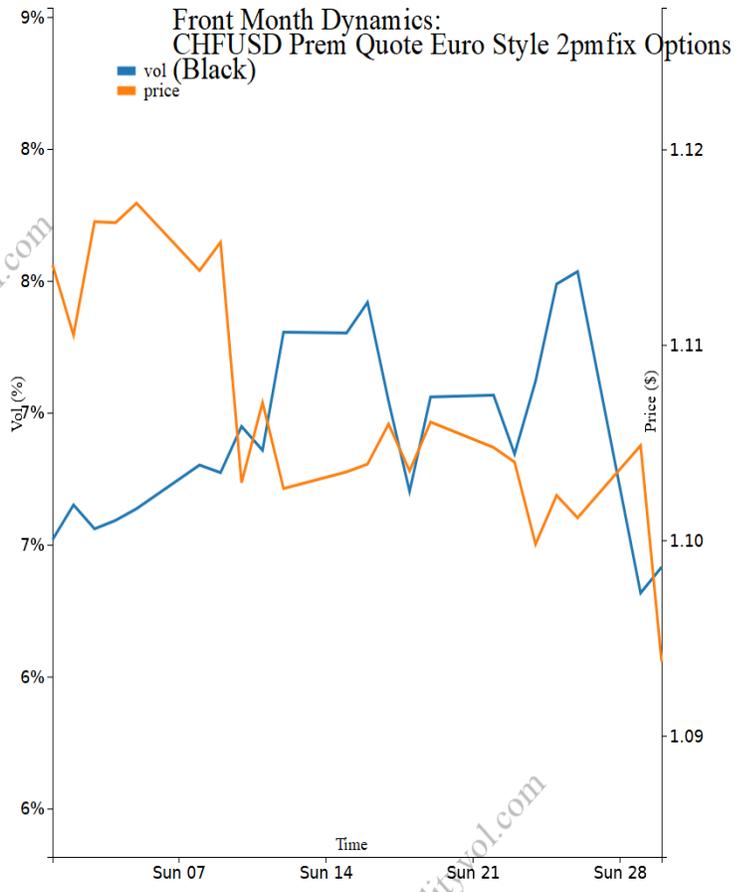
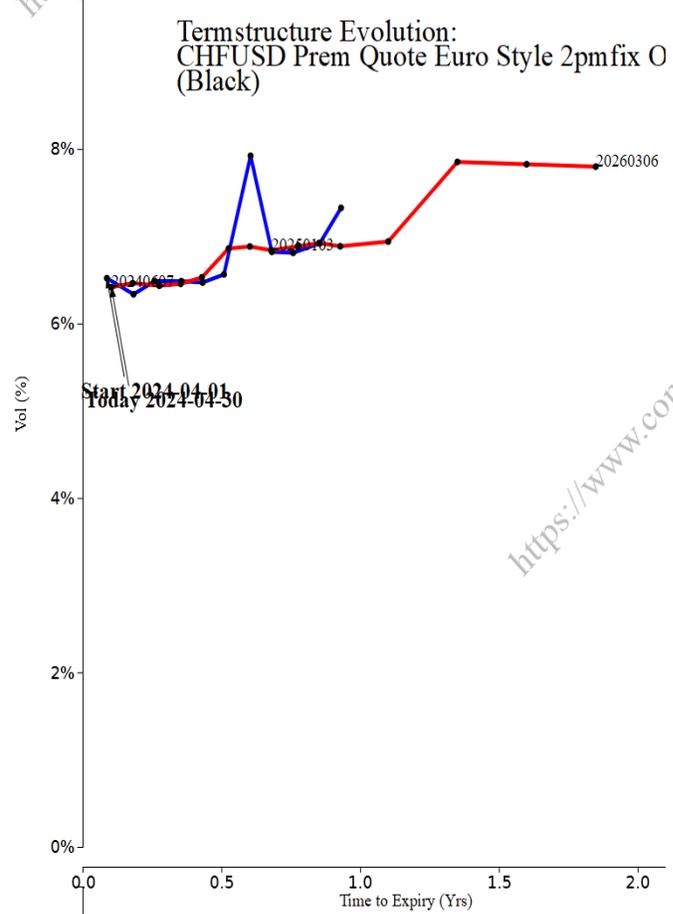


Front Month Dynamics:  
GBPUSD Prem Quote Euro Style 2pmfix Options

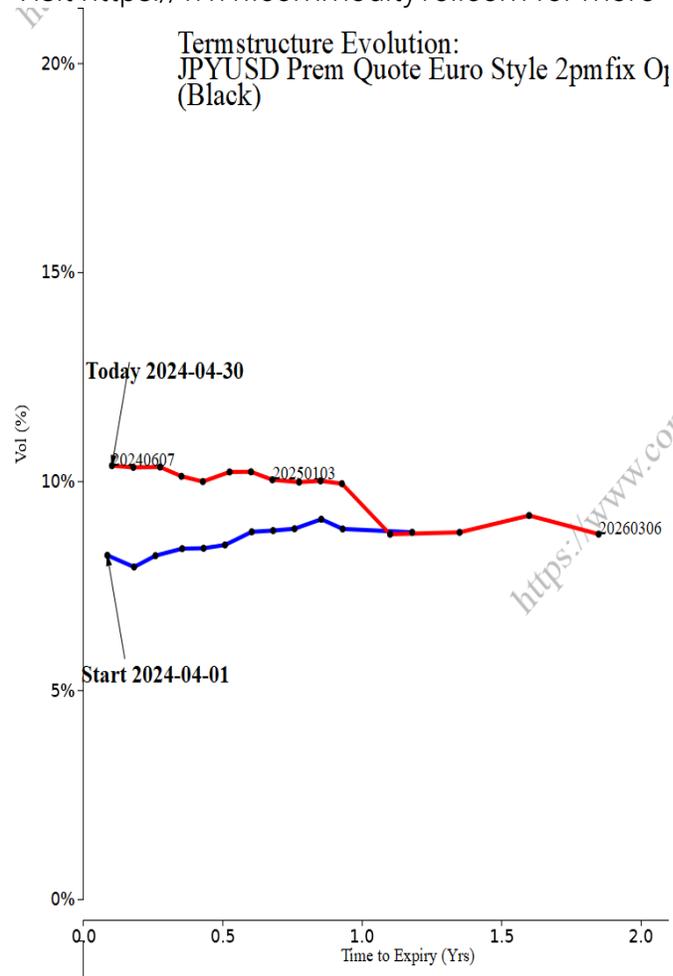


Front Month Skews:  
GBPUSD Prem Quote Euro Style 2pmfix Optio  
(Black)

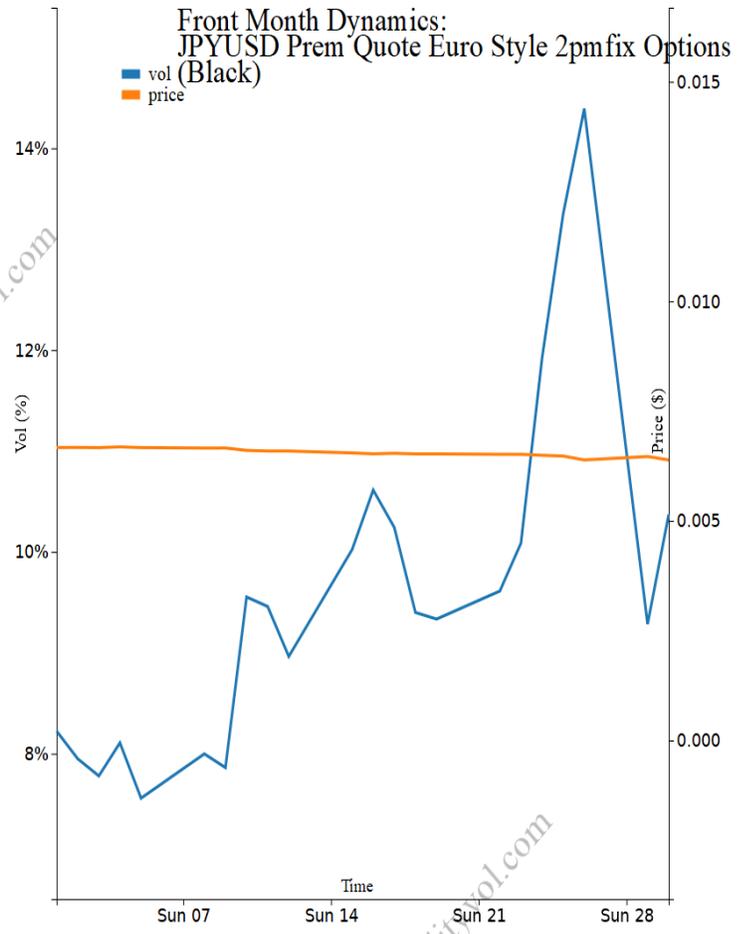




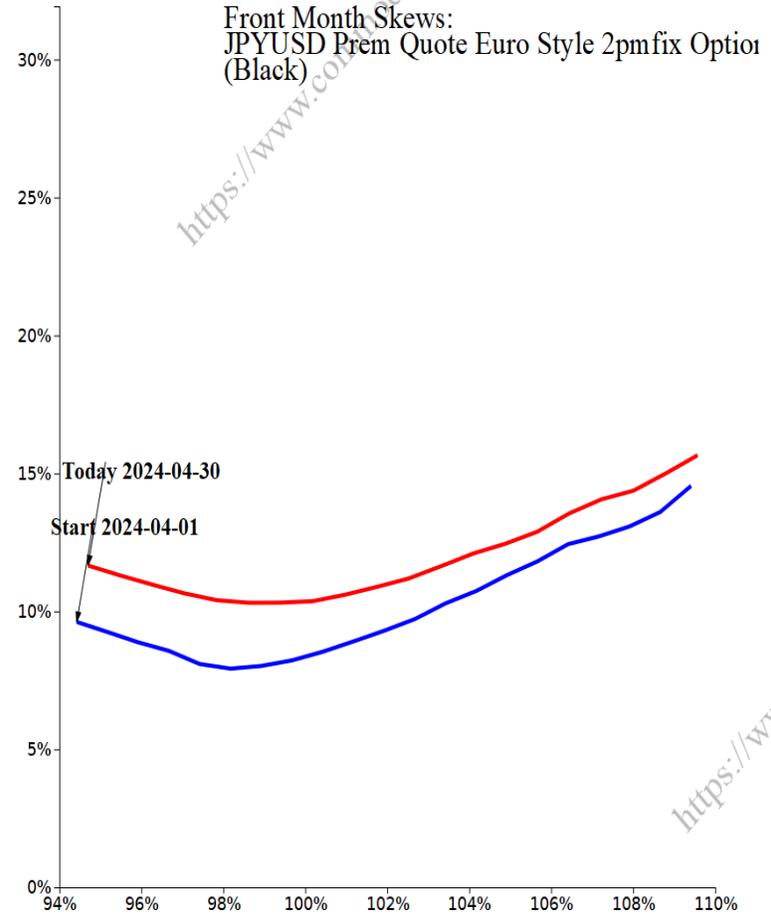
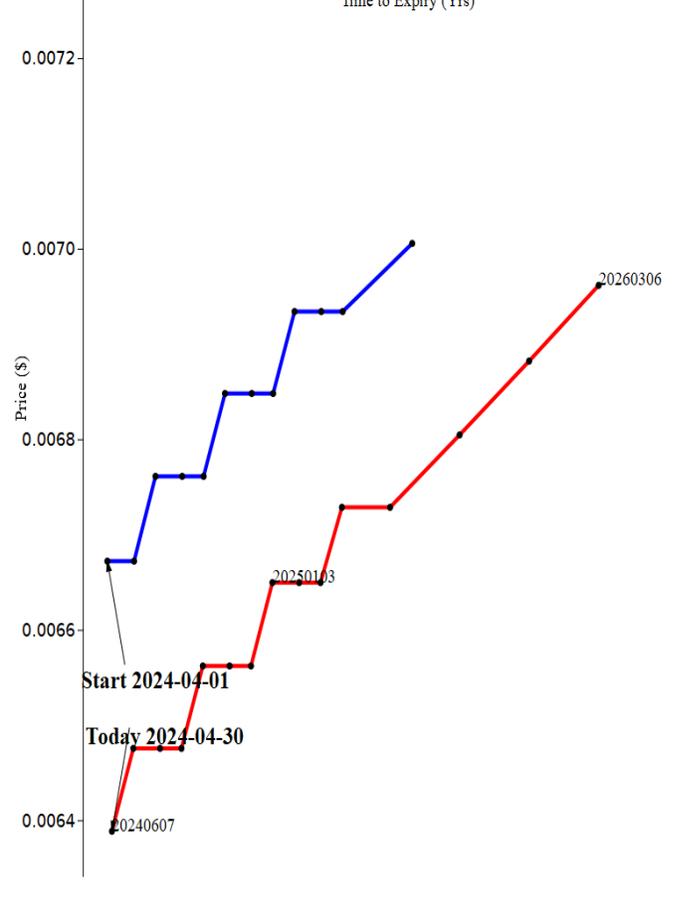
Termstructure Evolution:  
JPYUSD Prem Quote Euro Style 2pmfix O1  
(Black)

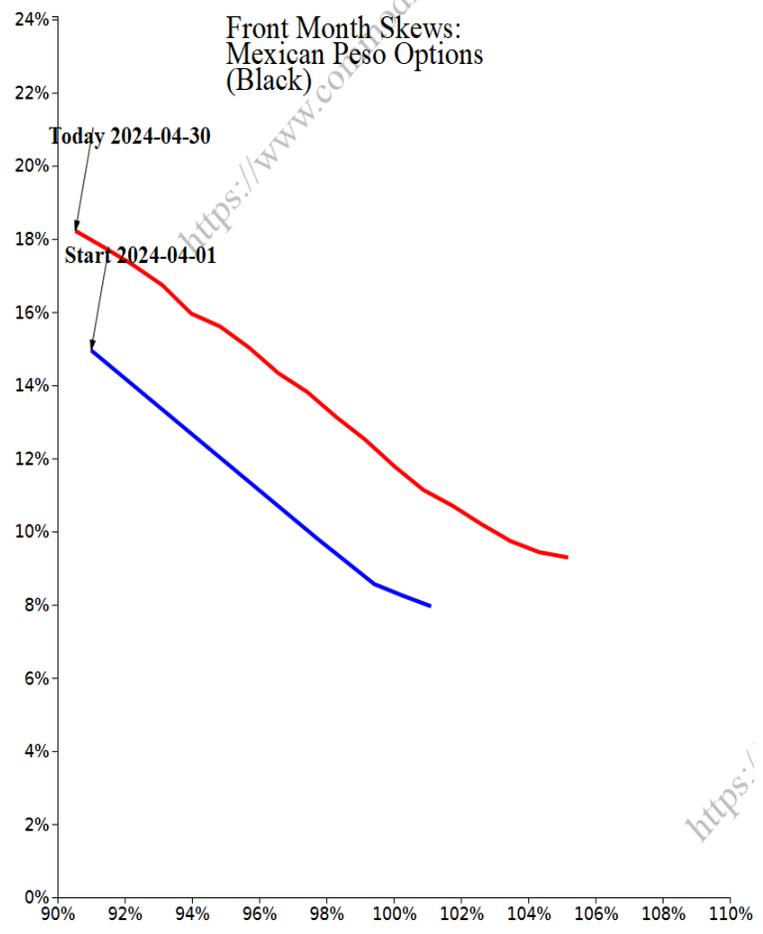
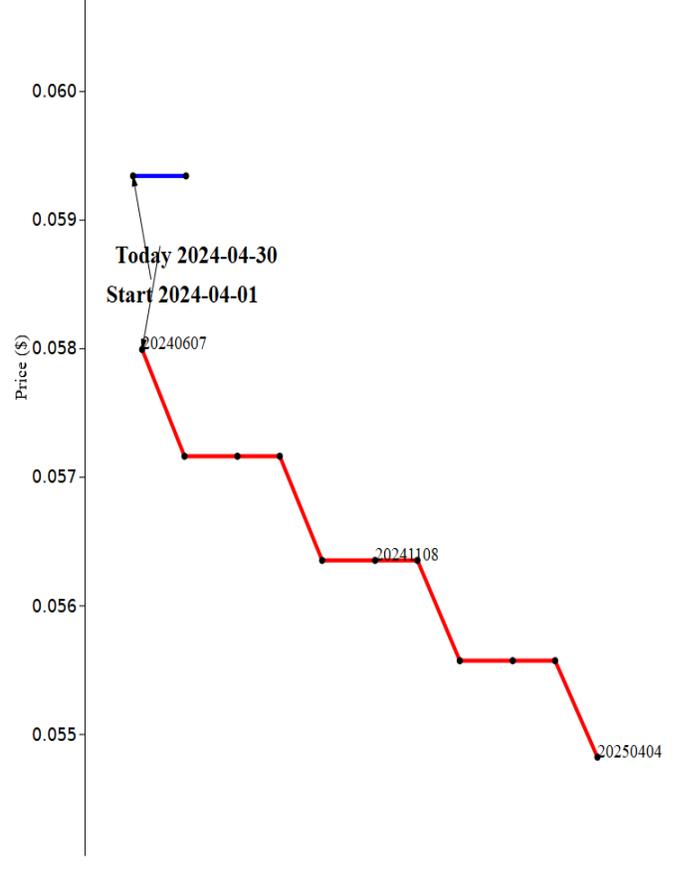
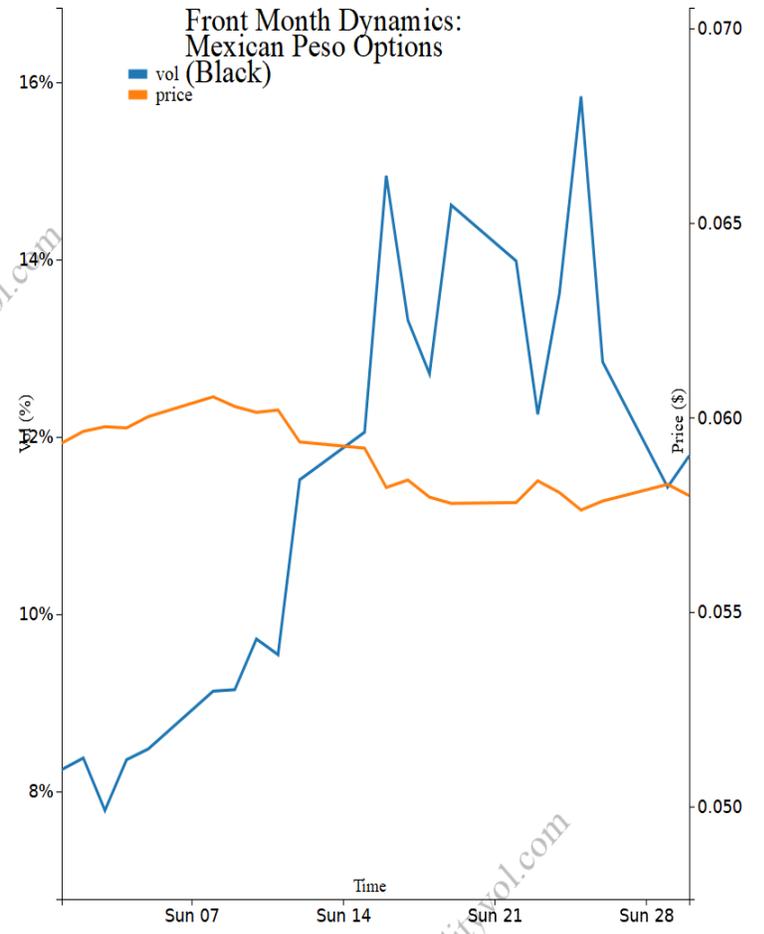
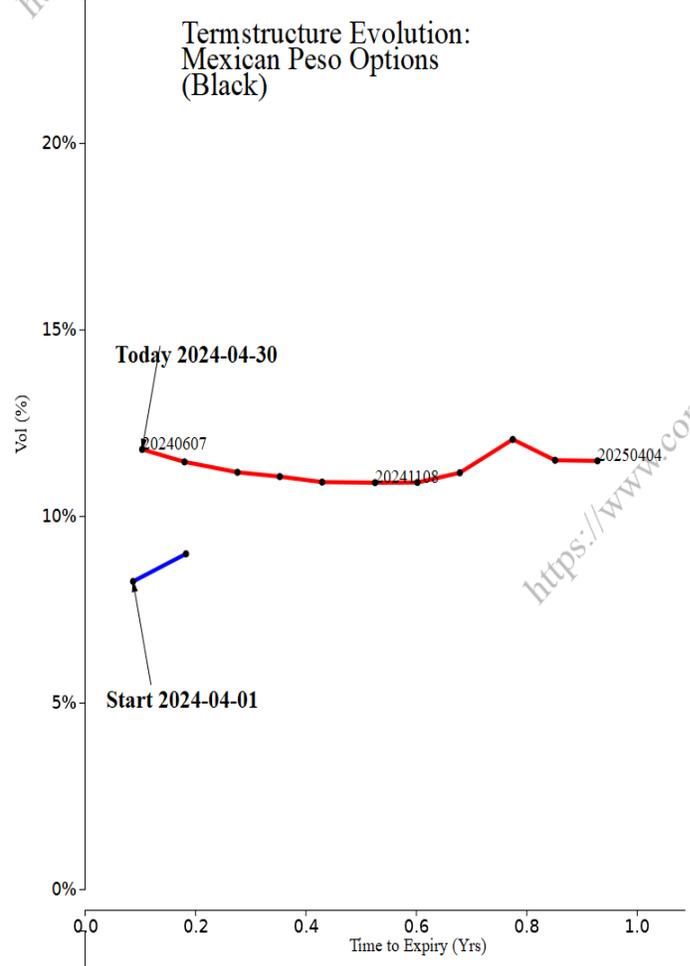


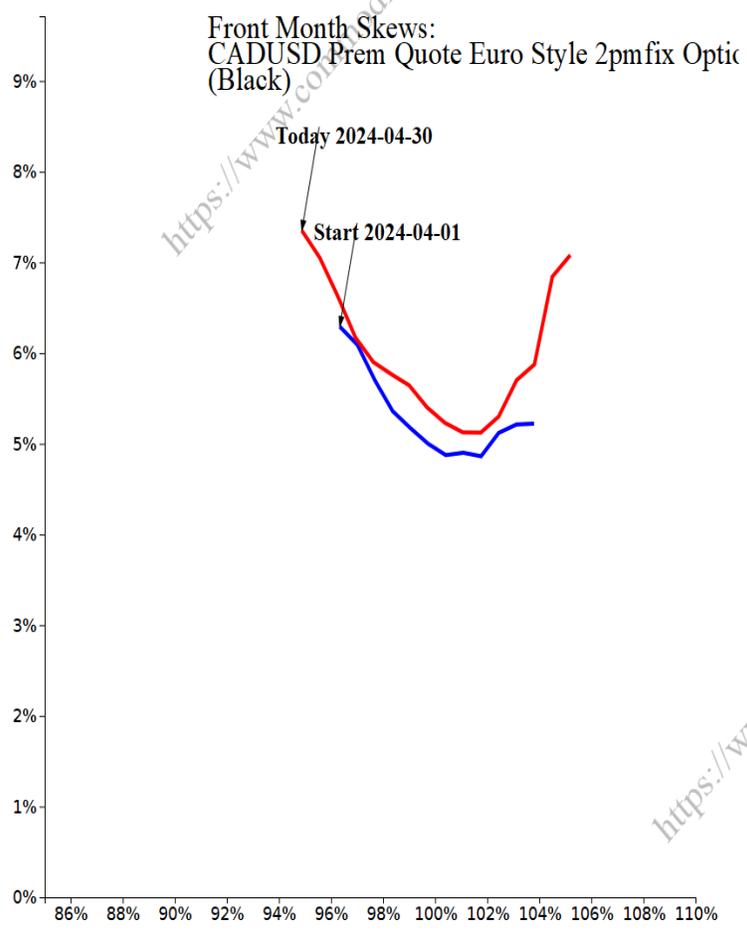
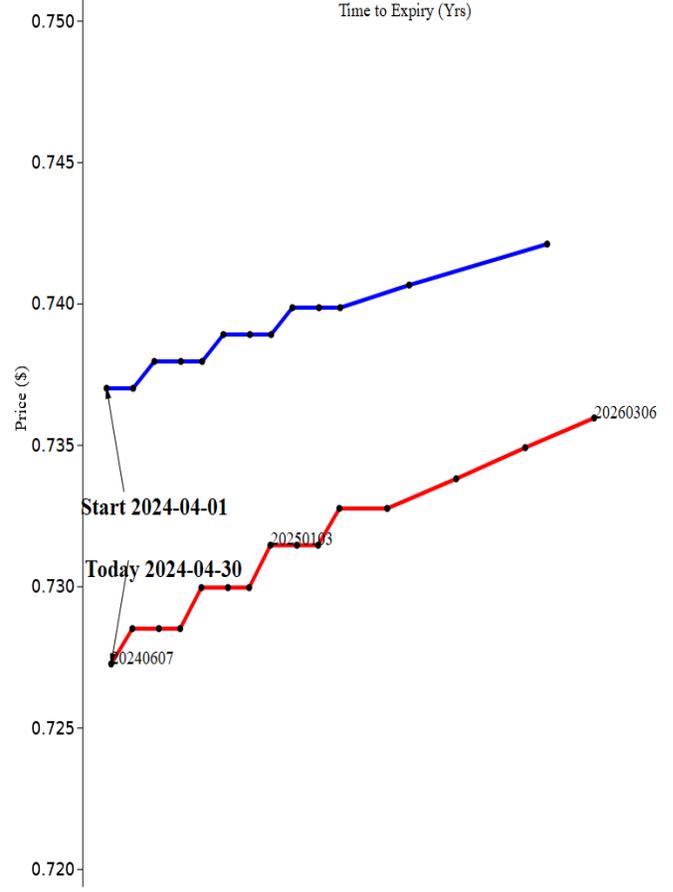
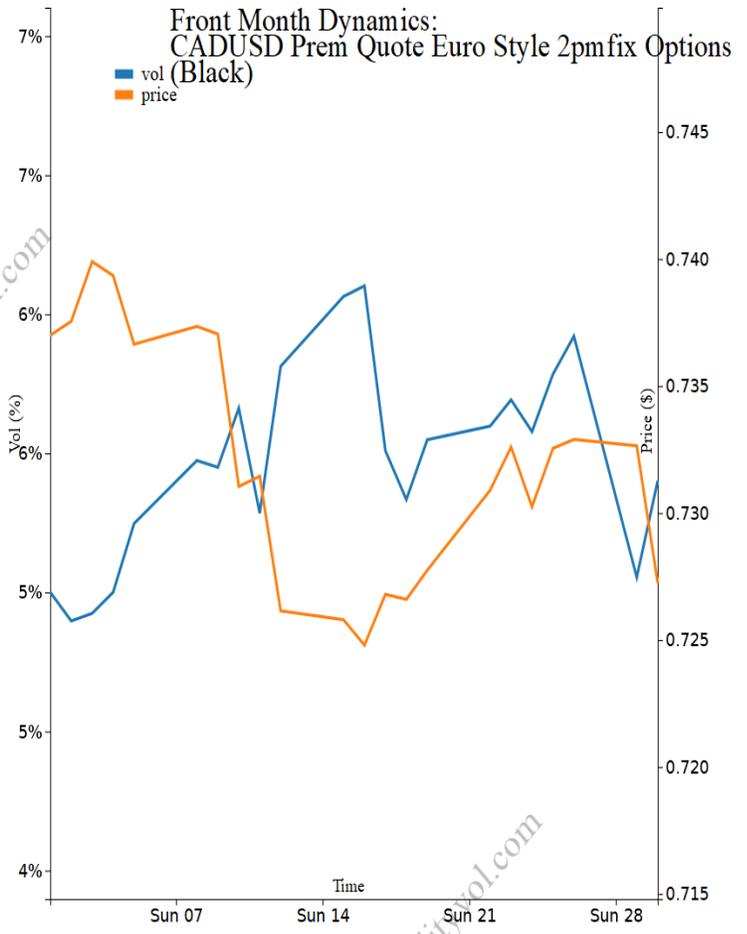
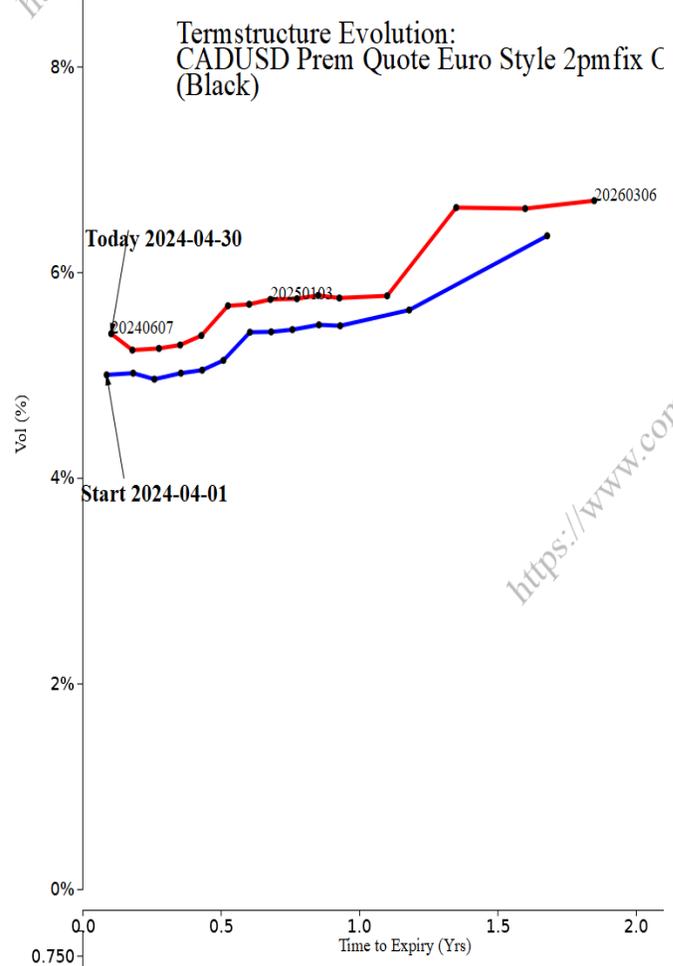
Front Month Dynamics:  
JPYUSD Prem Quote Euro Style 2pmfix Options

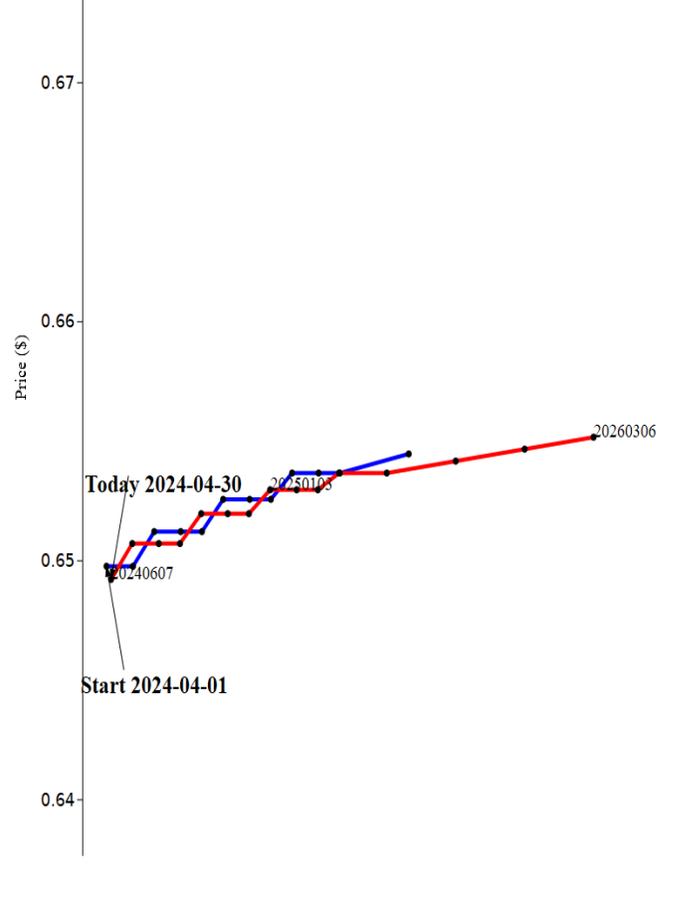
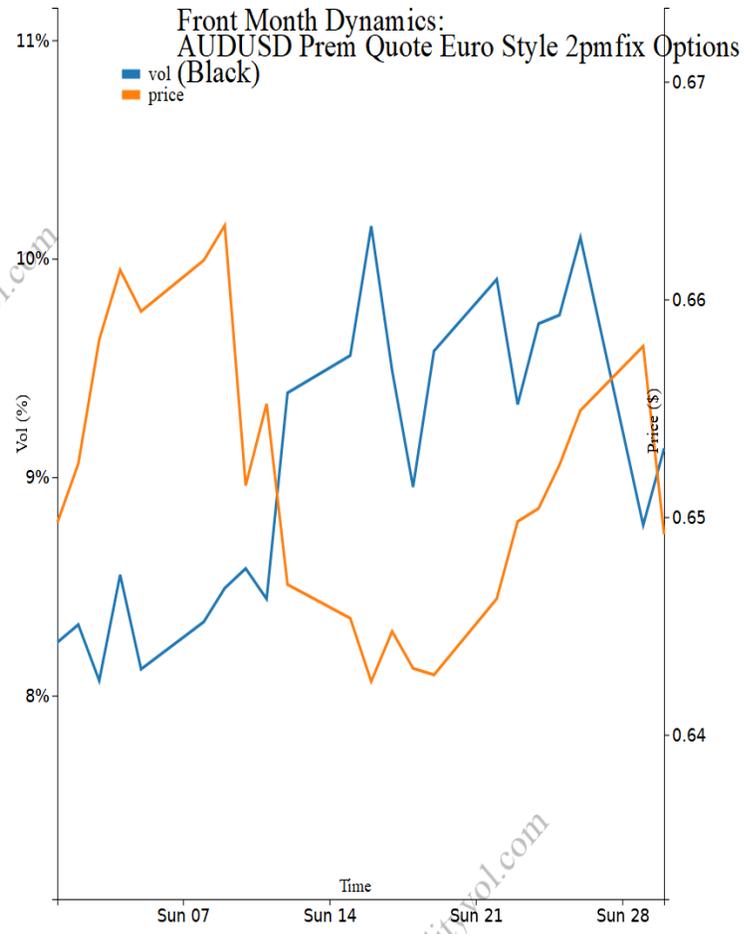
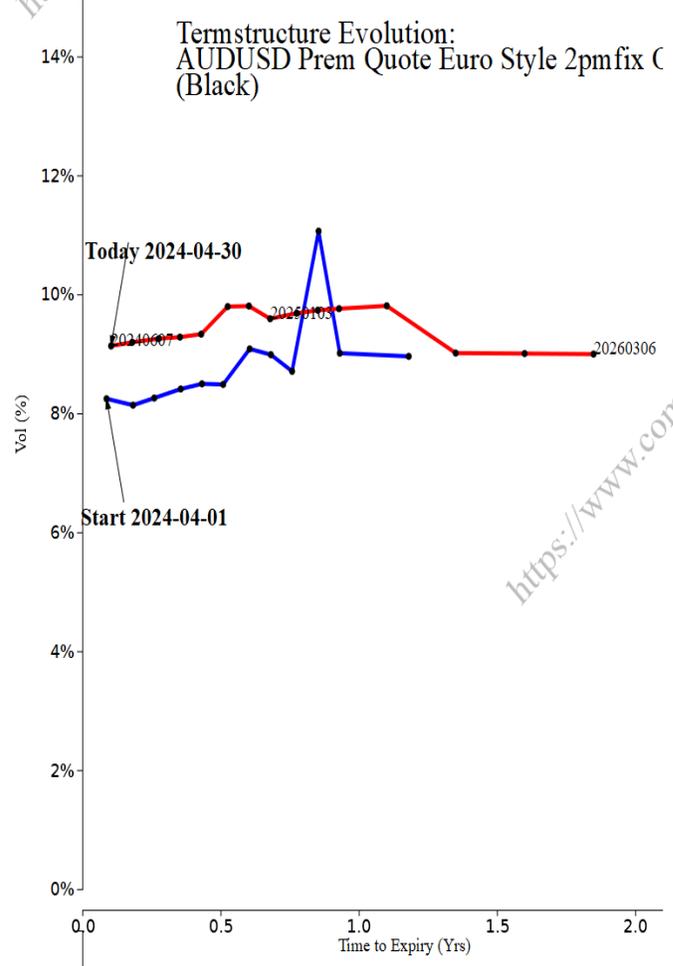


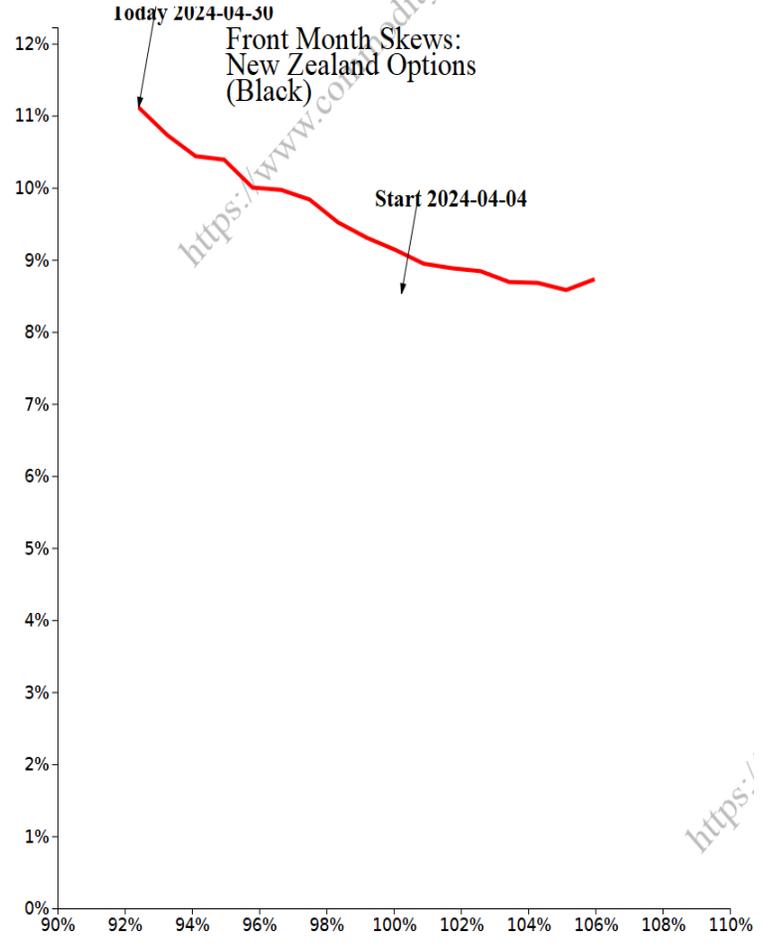
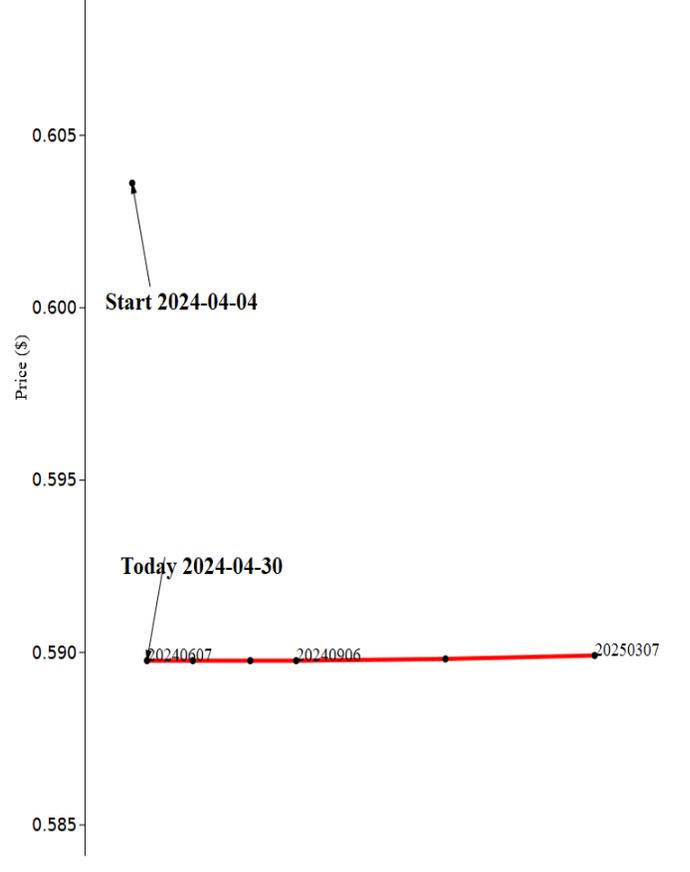
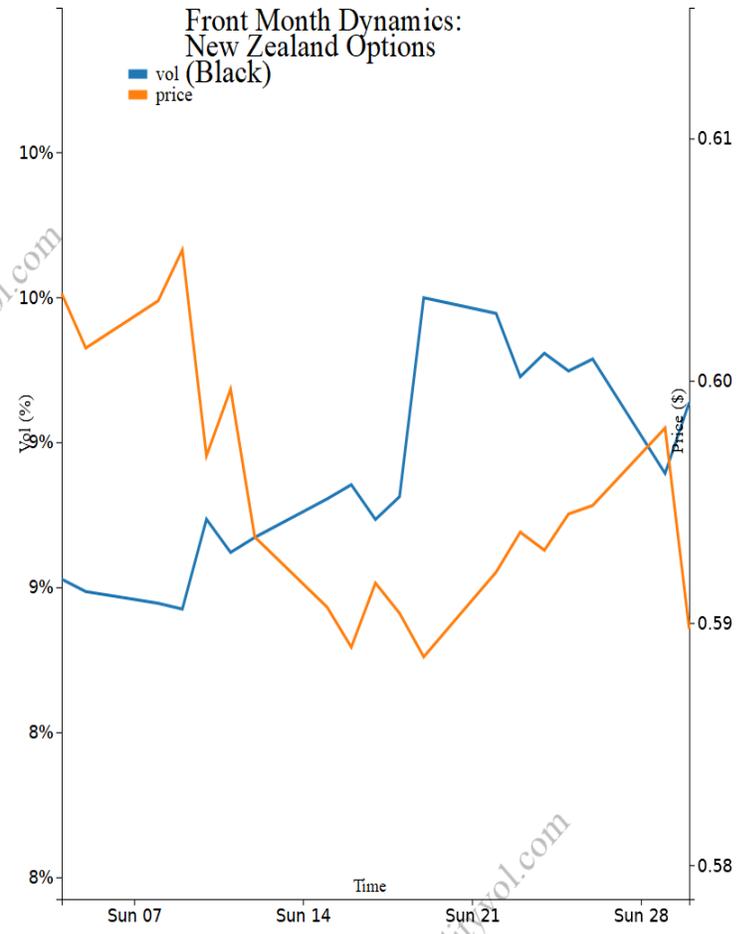
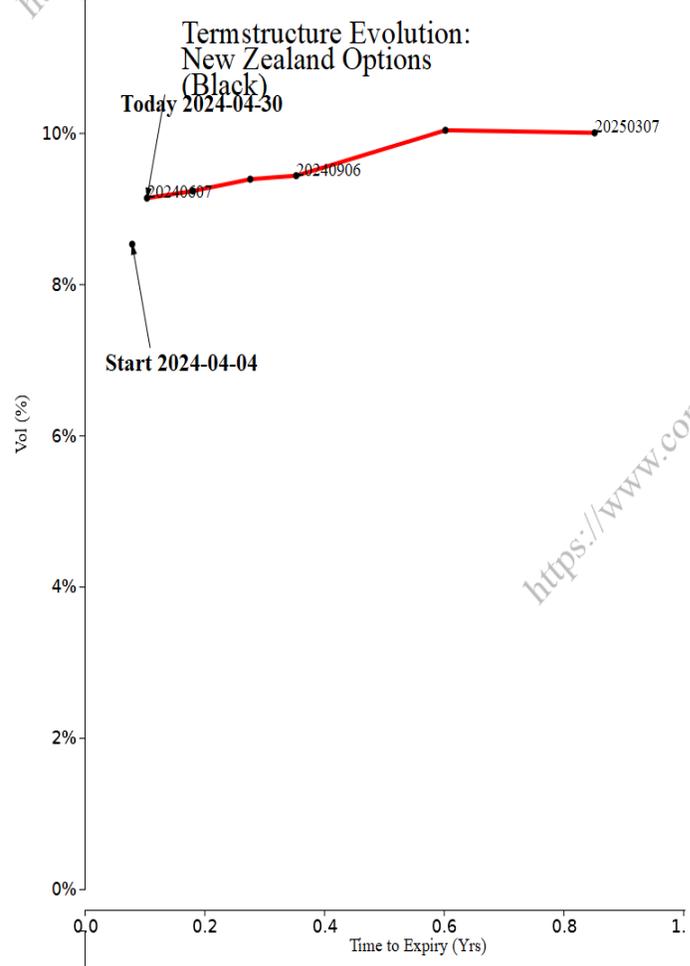
Front Month Skews:  
JPYUSD Prem Quote Euro Style 2pmfix Option  
(Black)

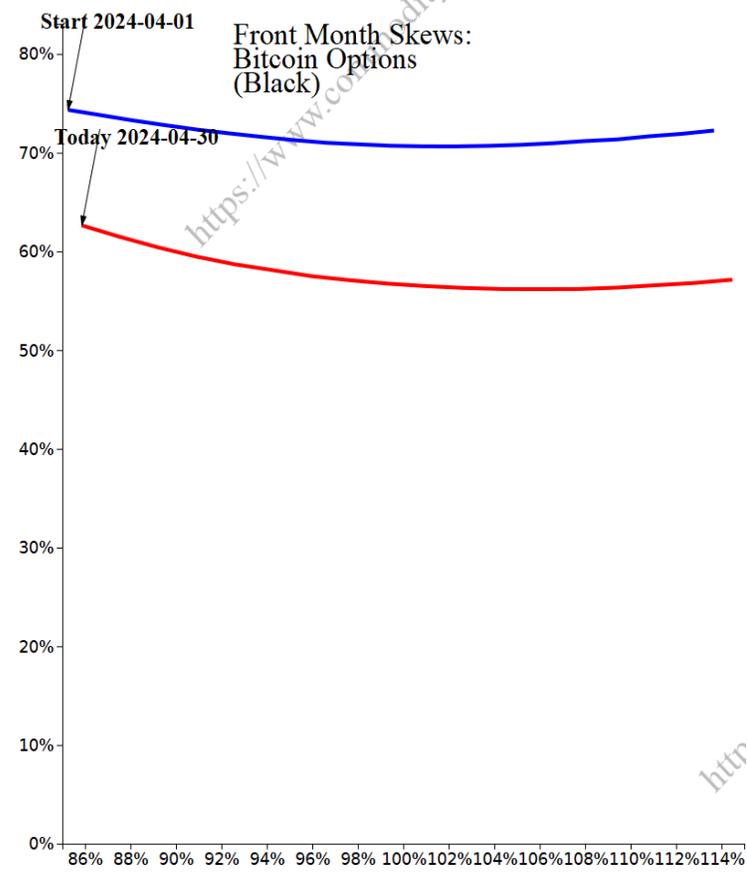
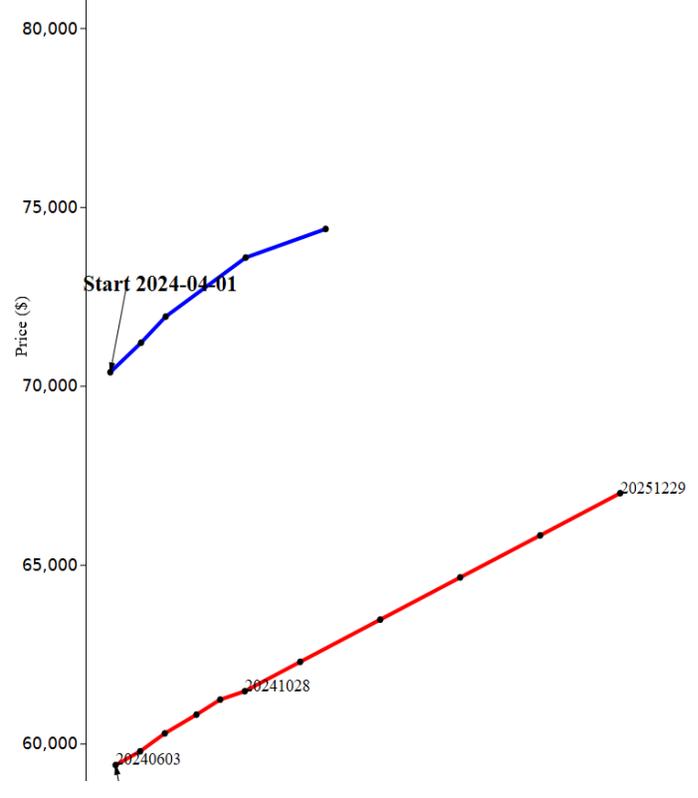
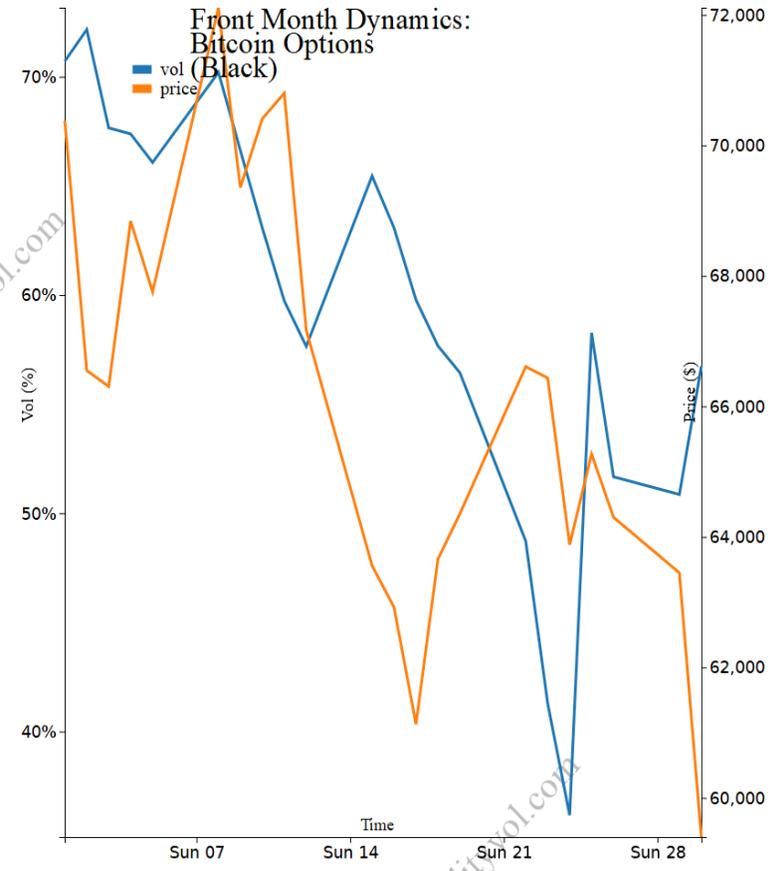
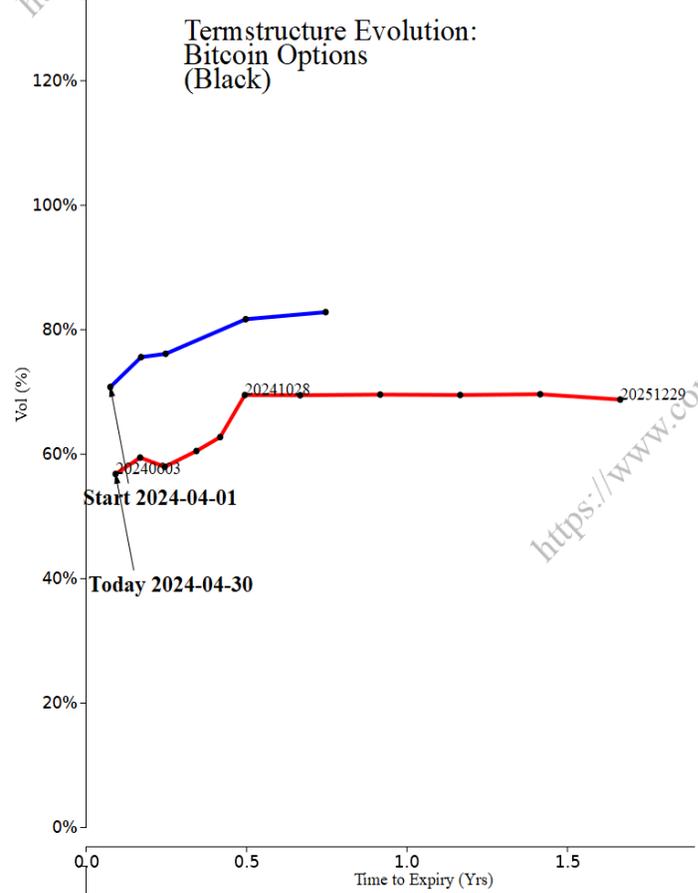


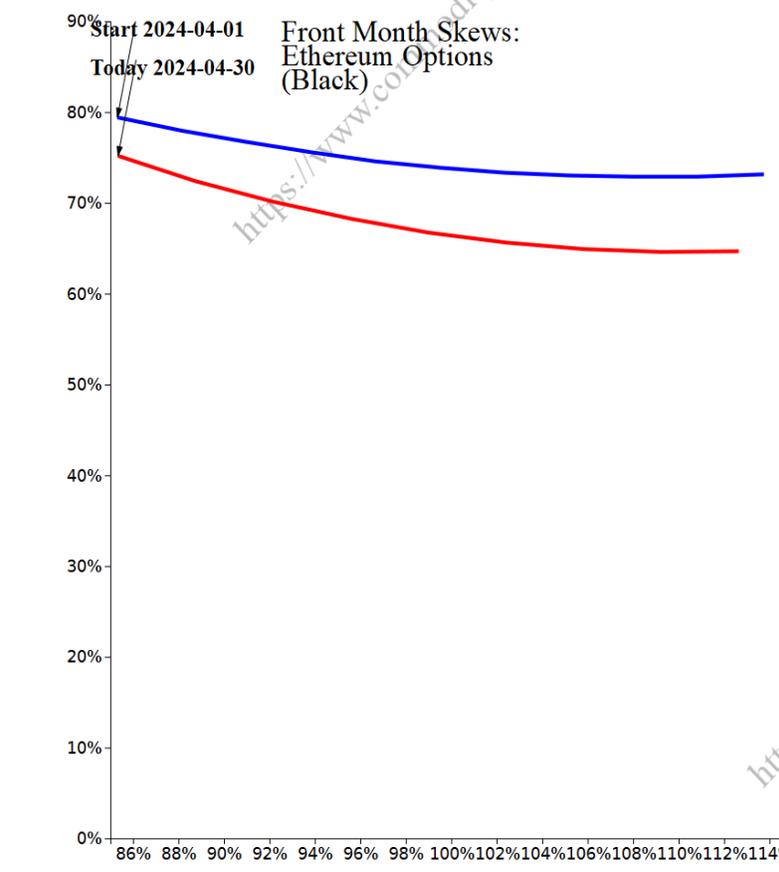
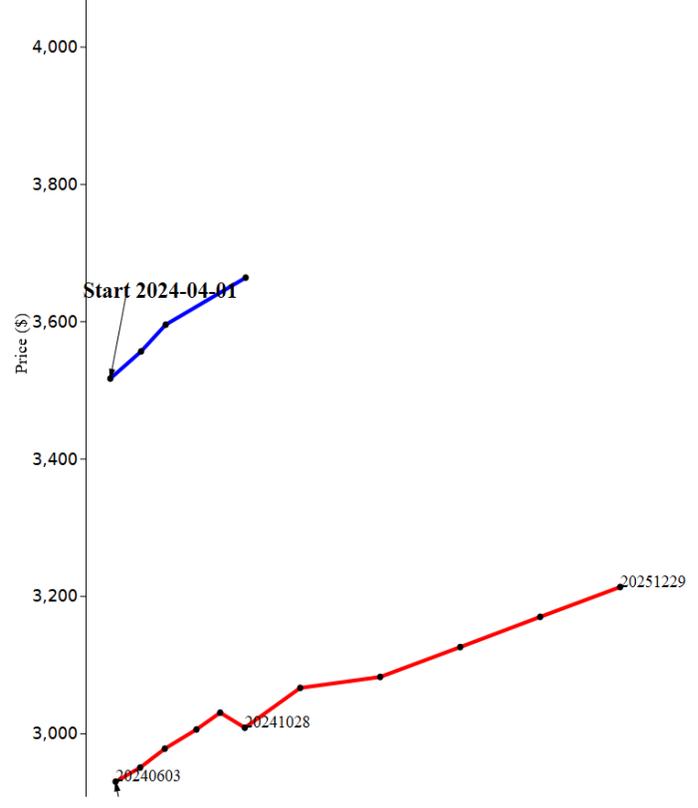
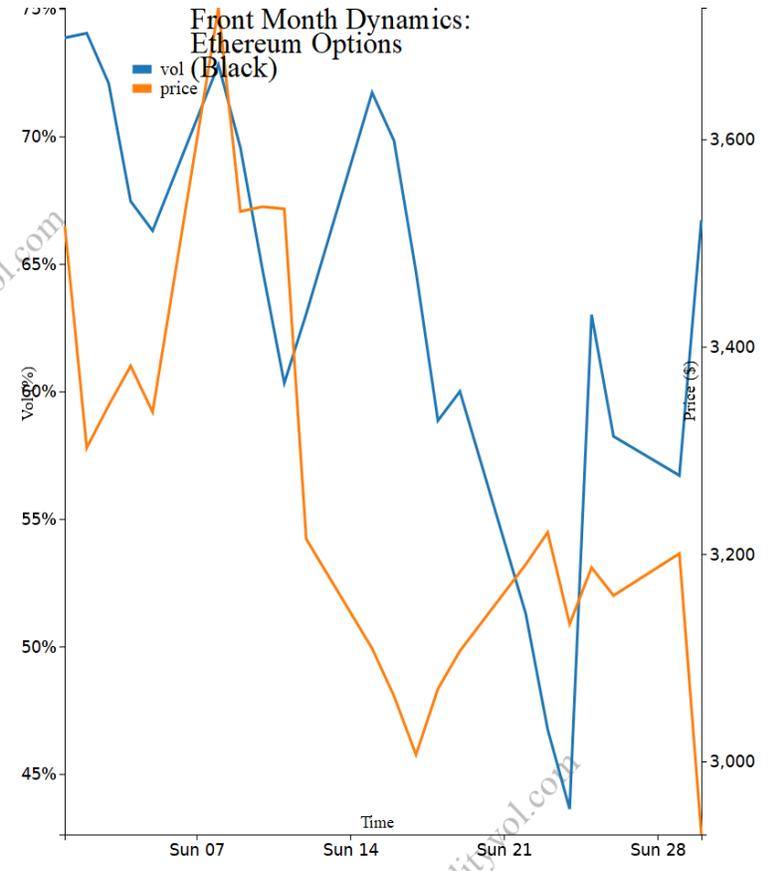
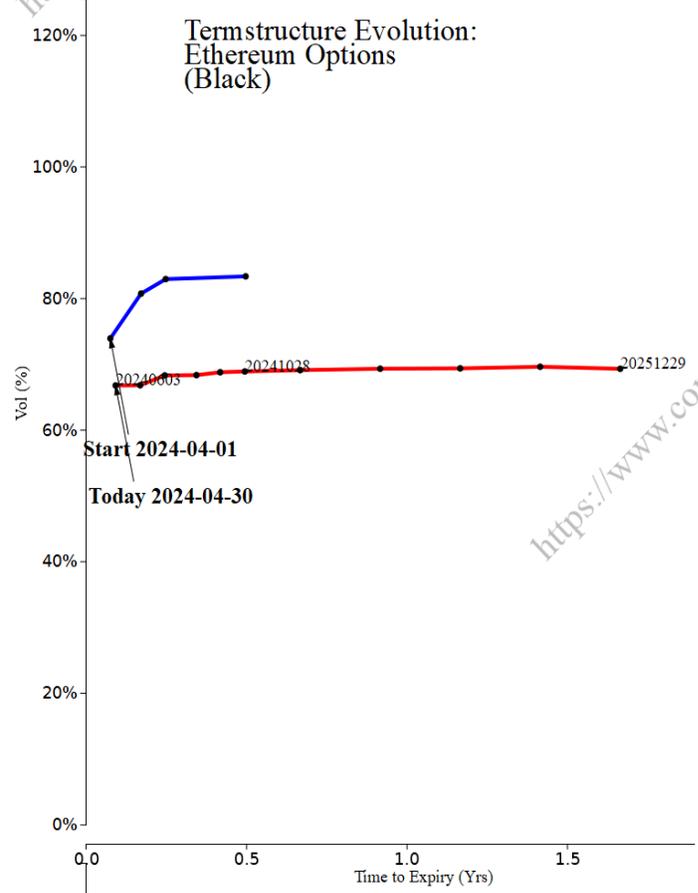




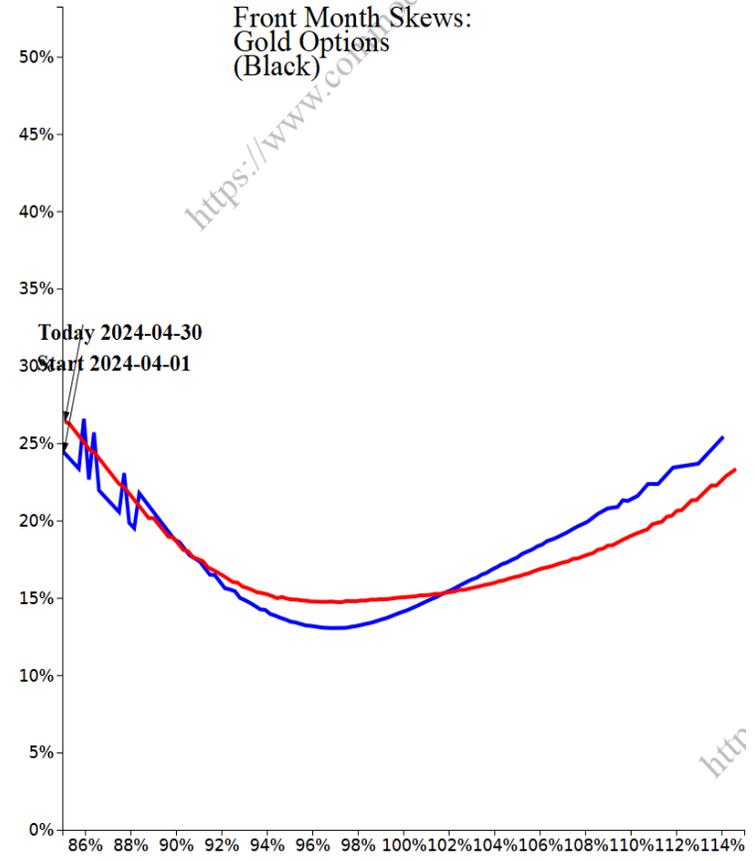
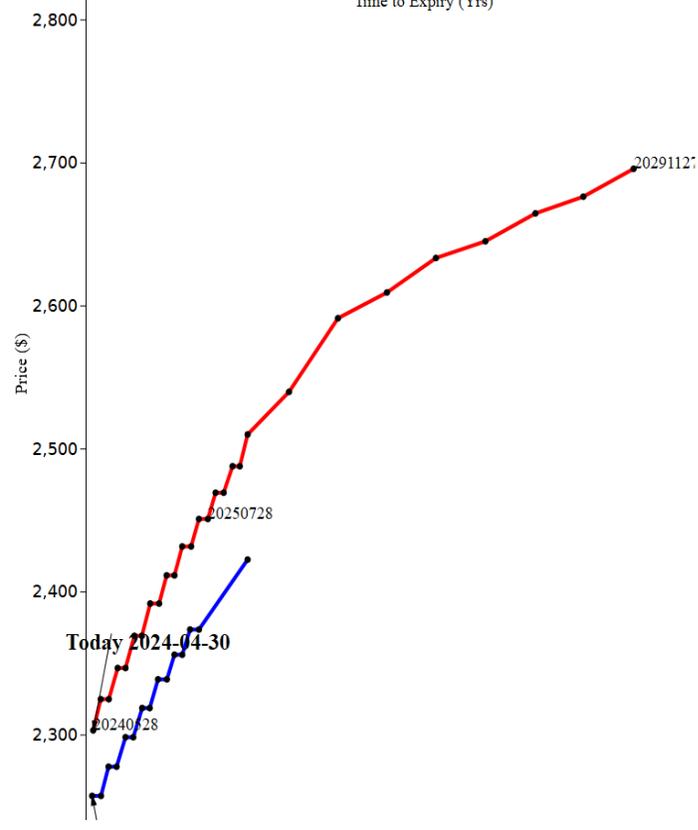
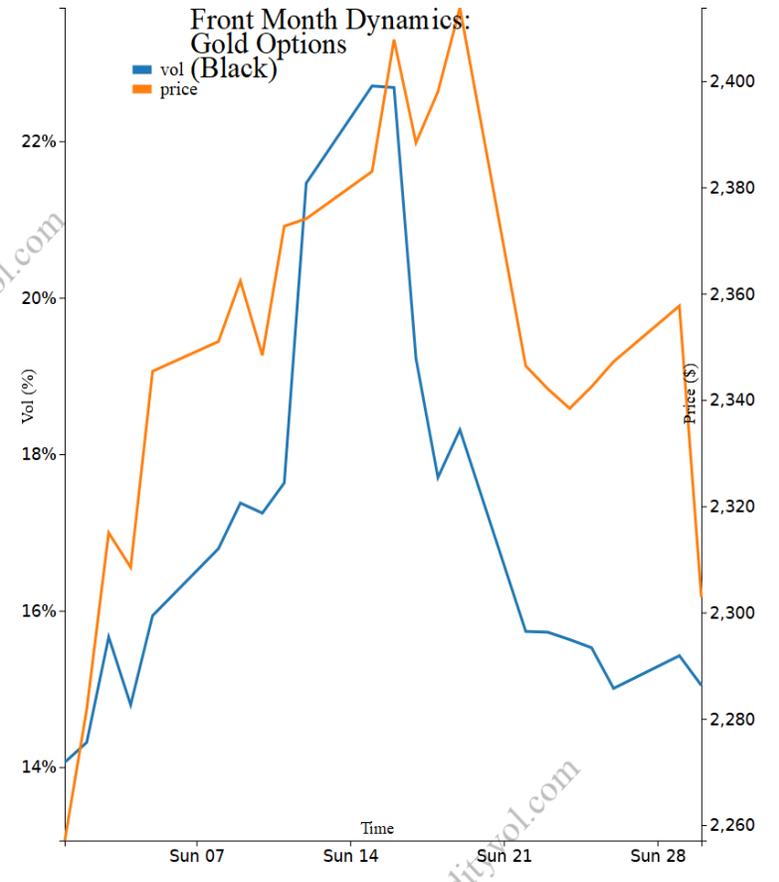
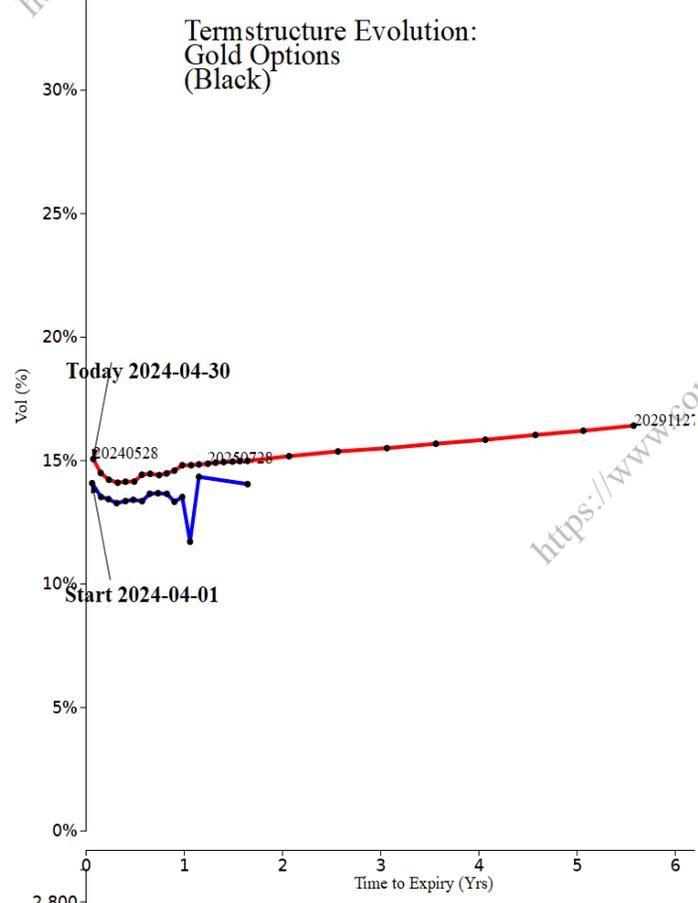


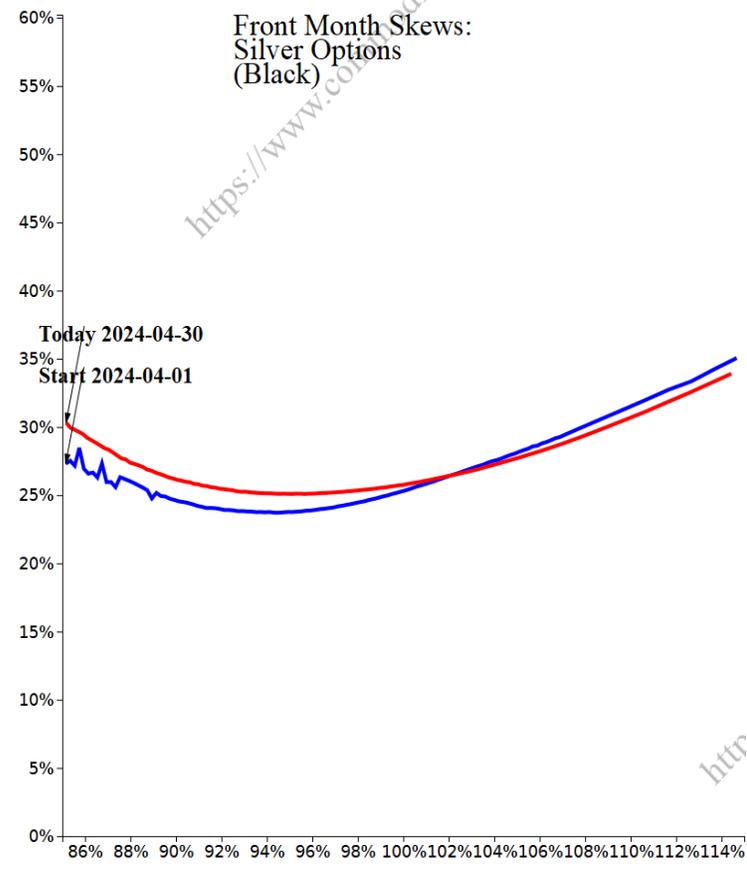
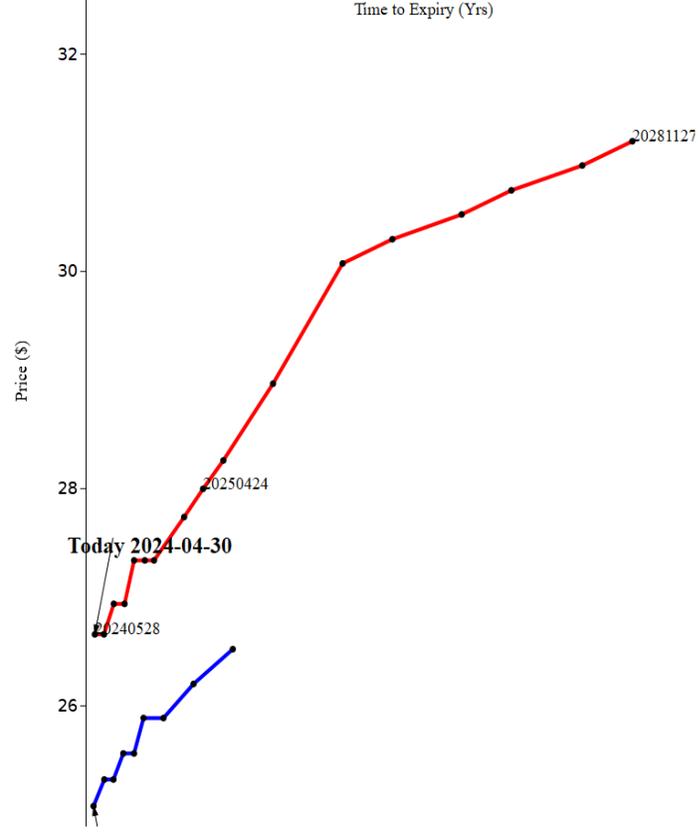
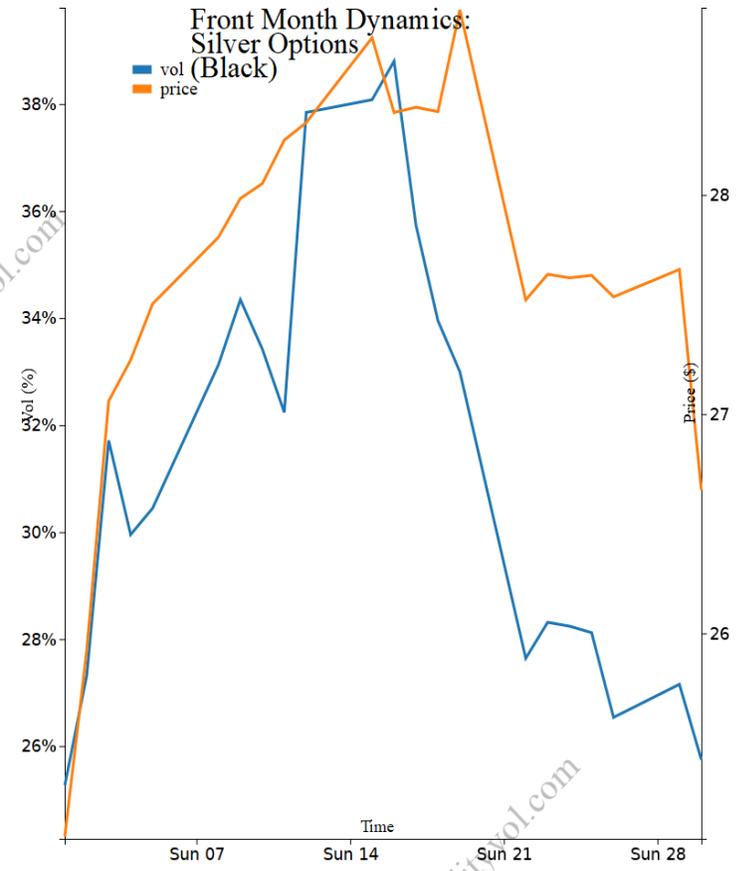
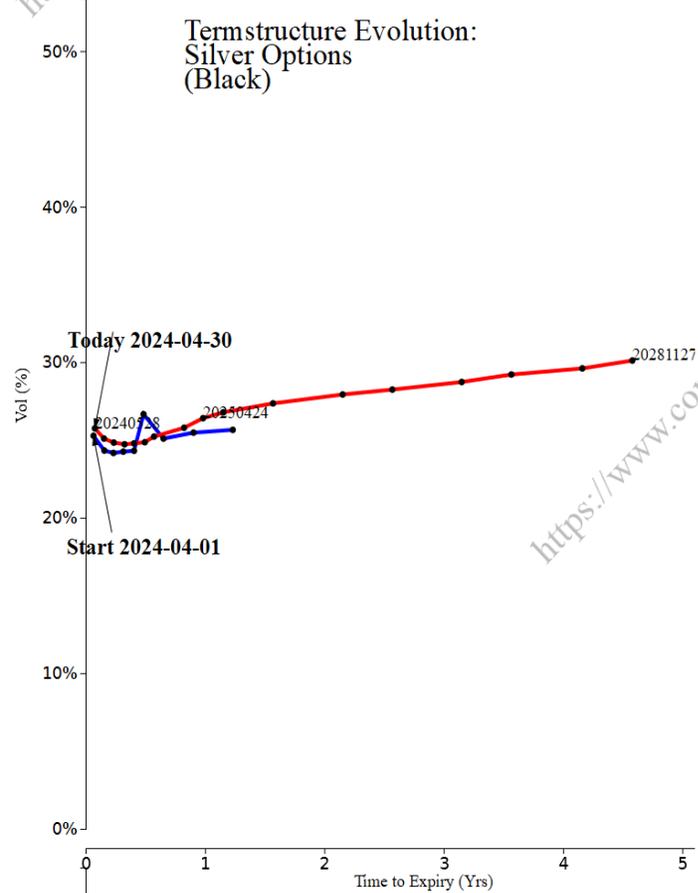


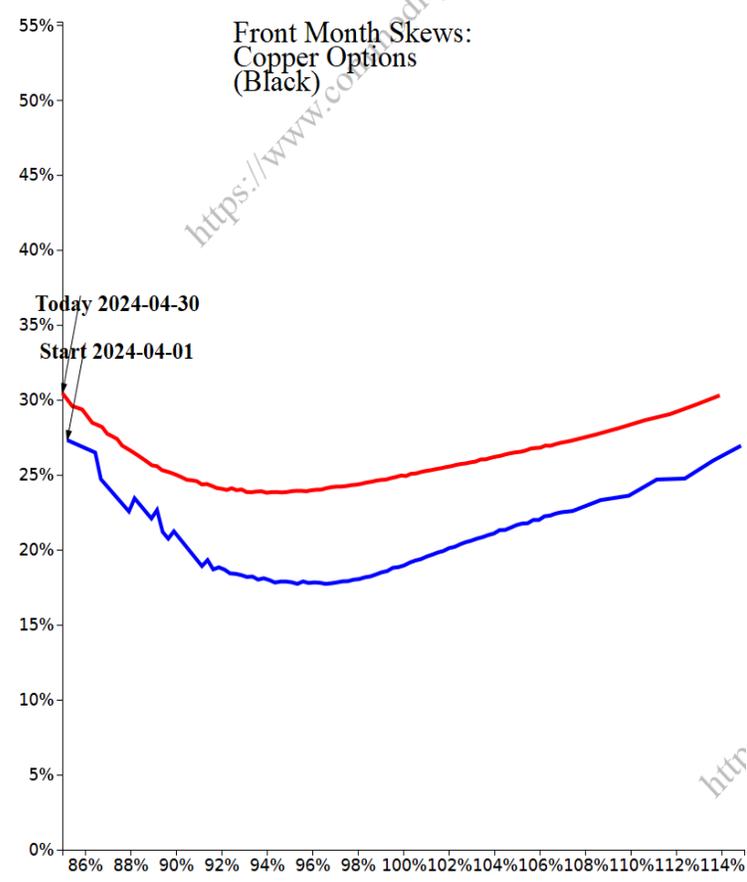
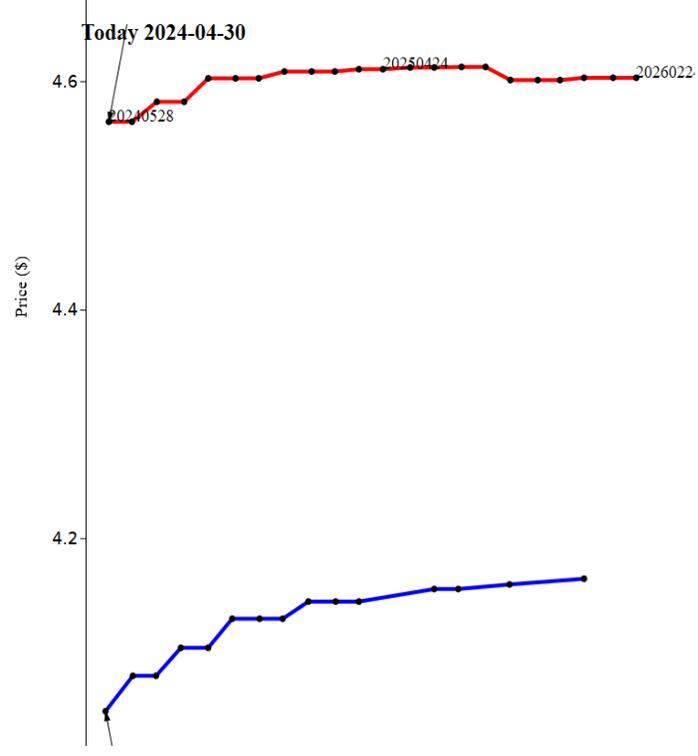
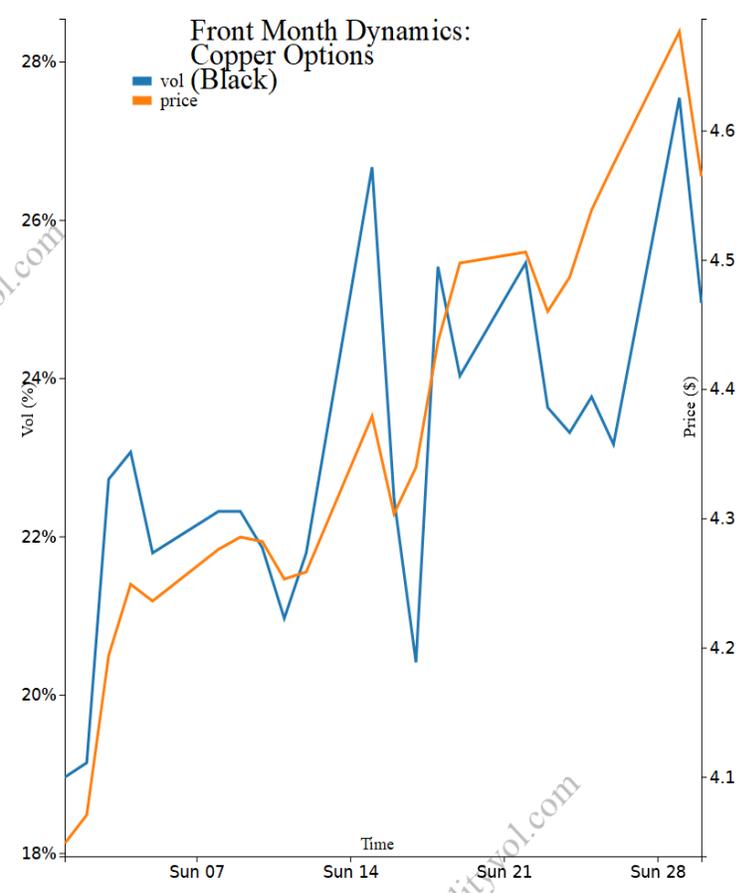
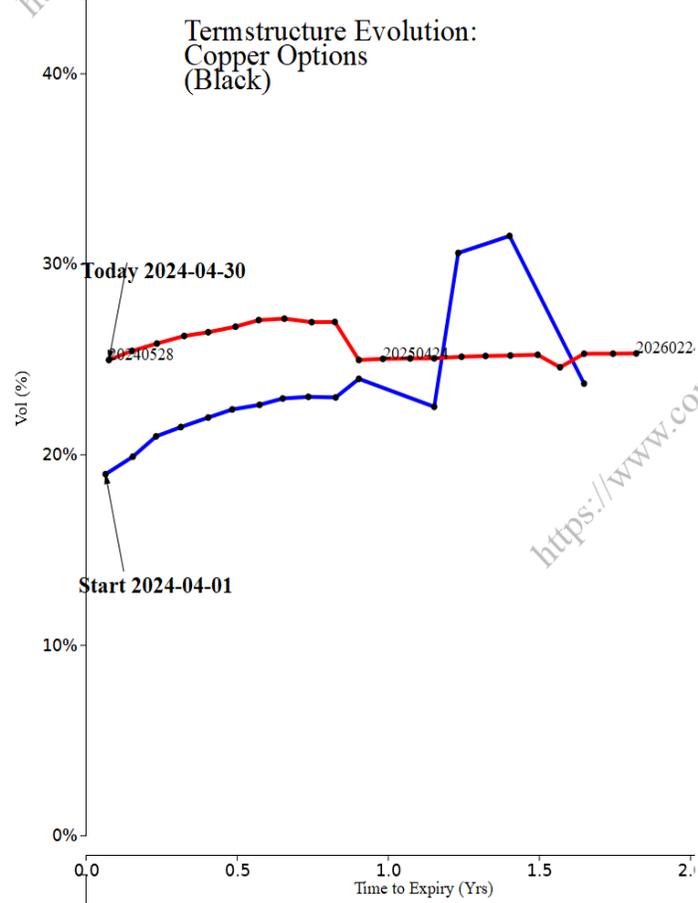


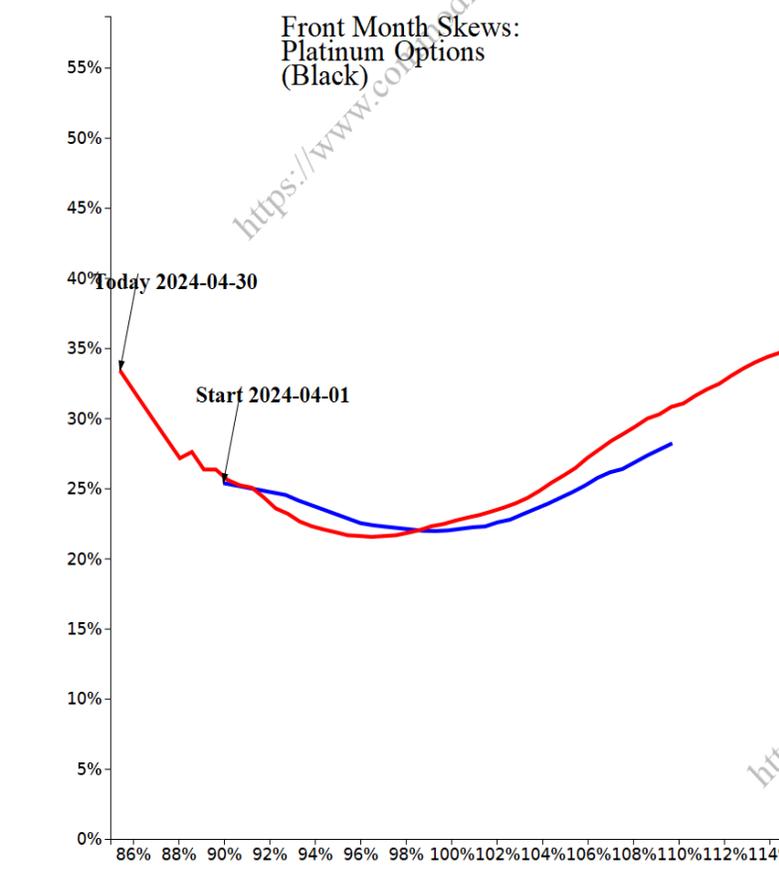
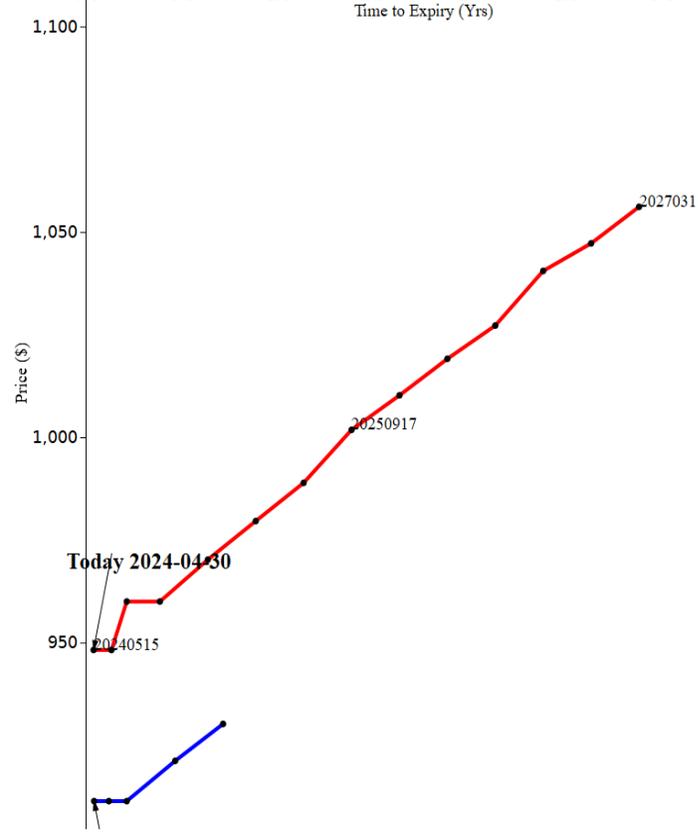
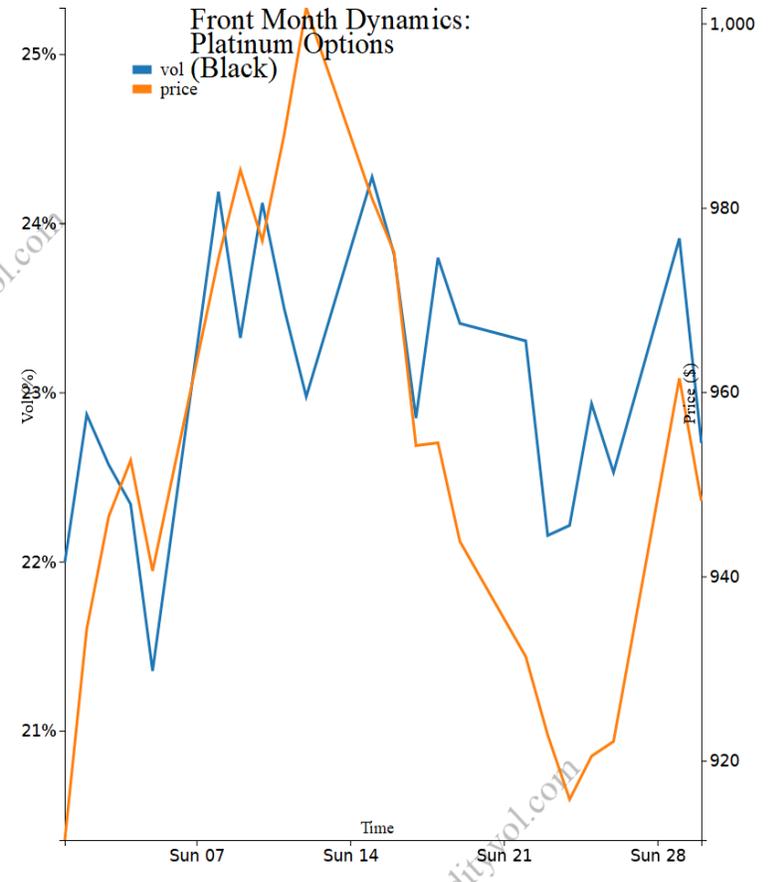
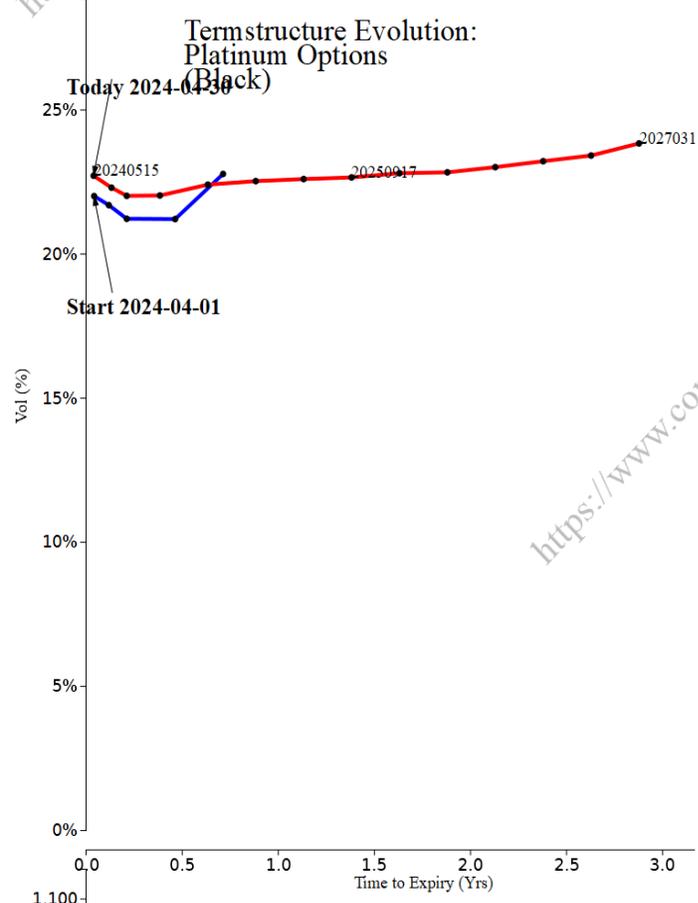


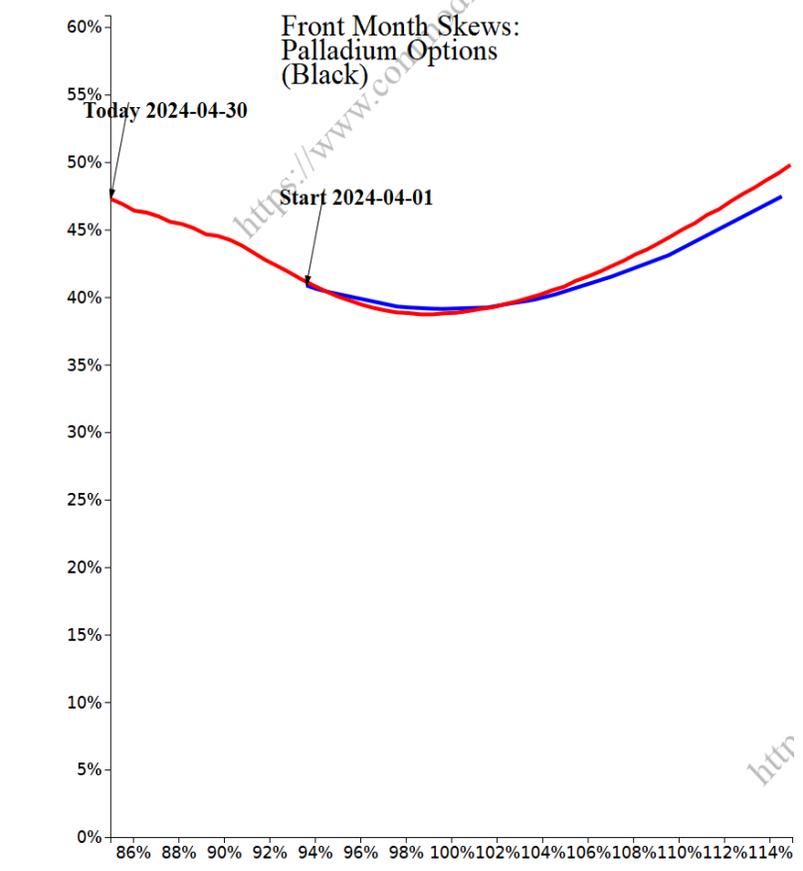
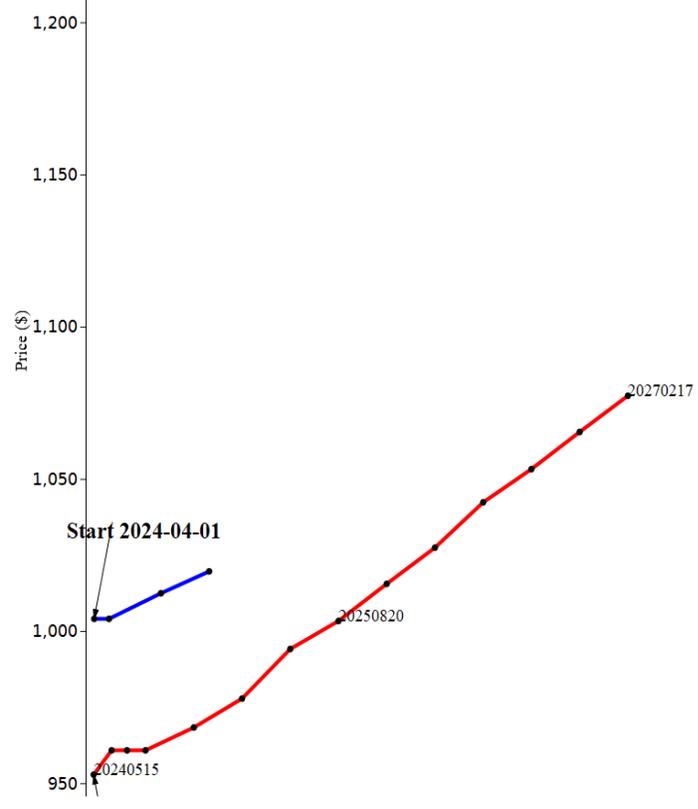
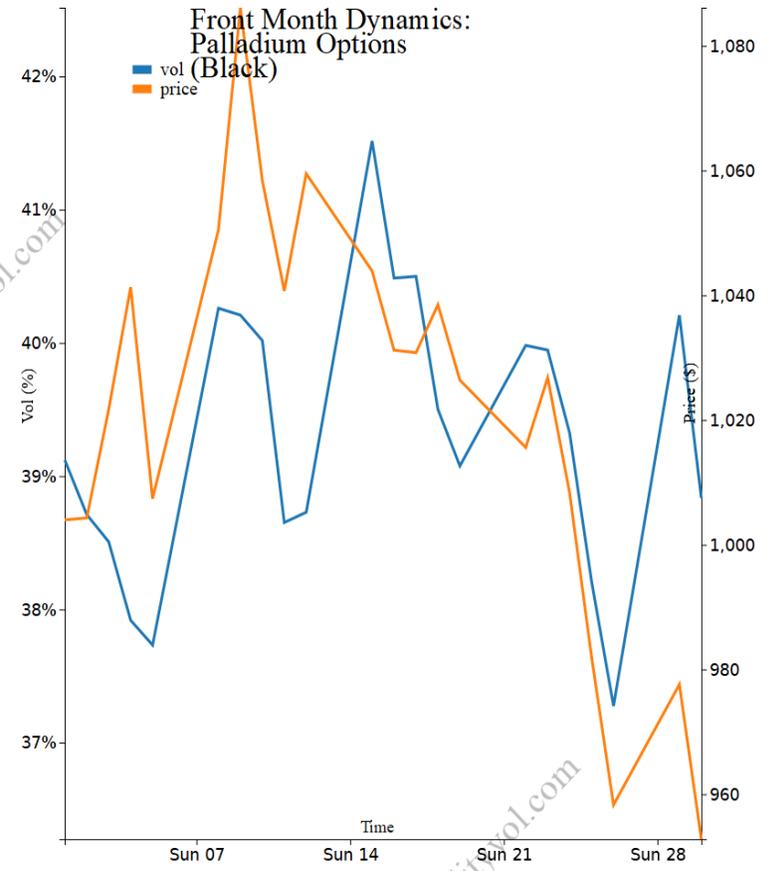
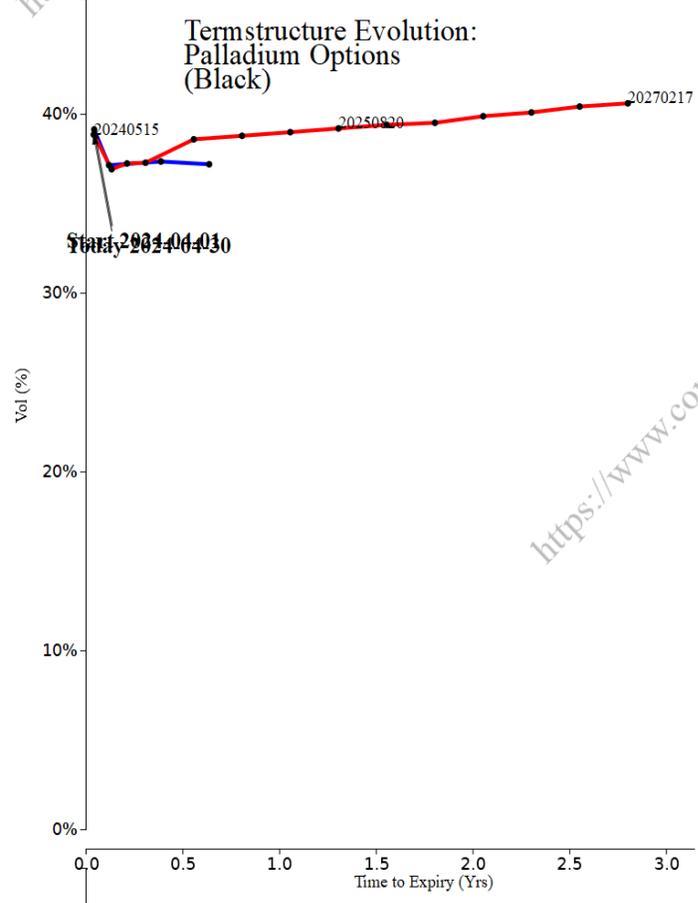
## **Metals**



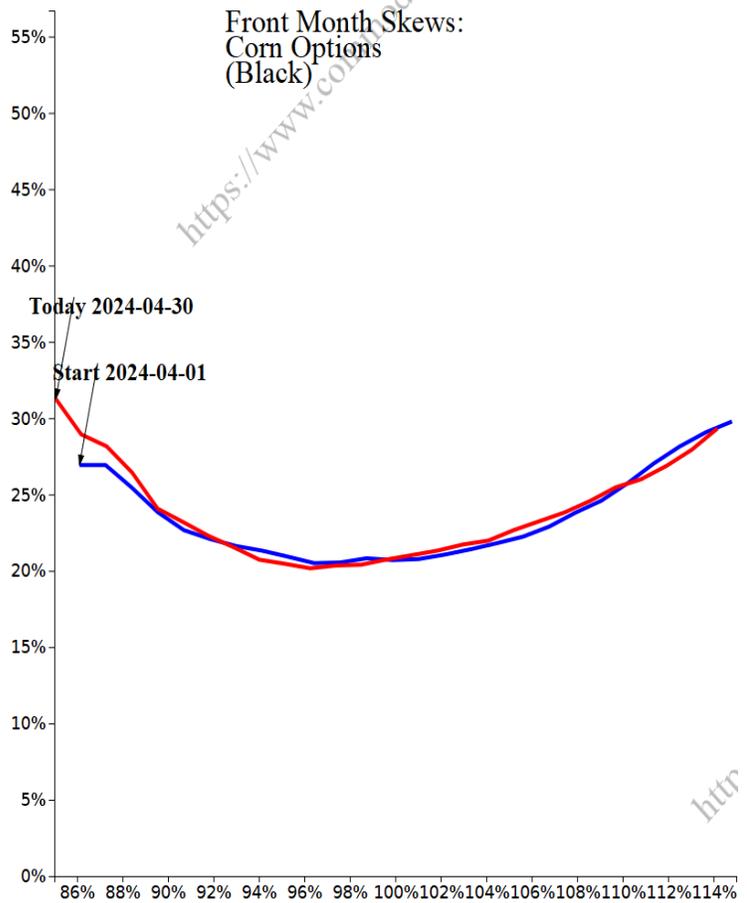
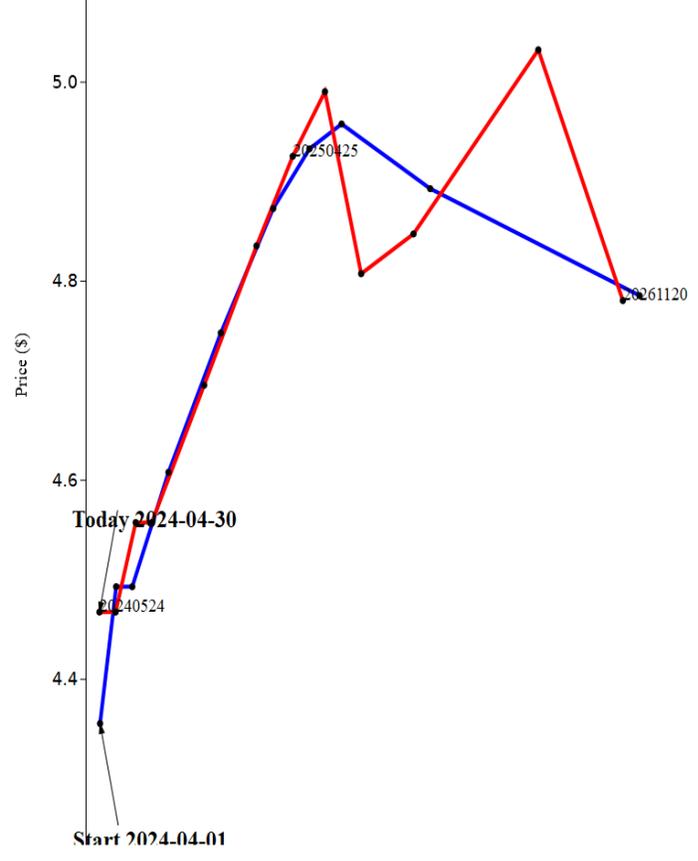
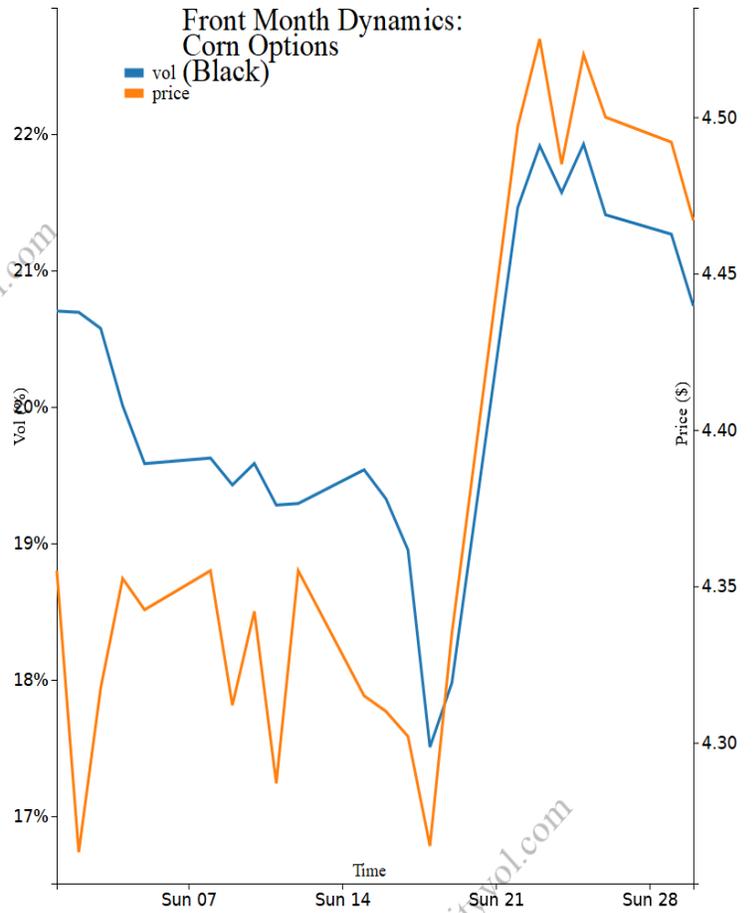
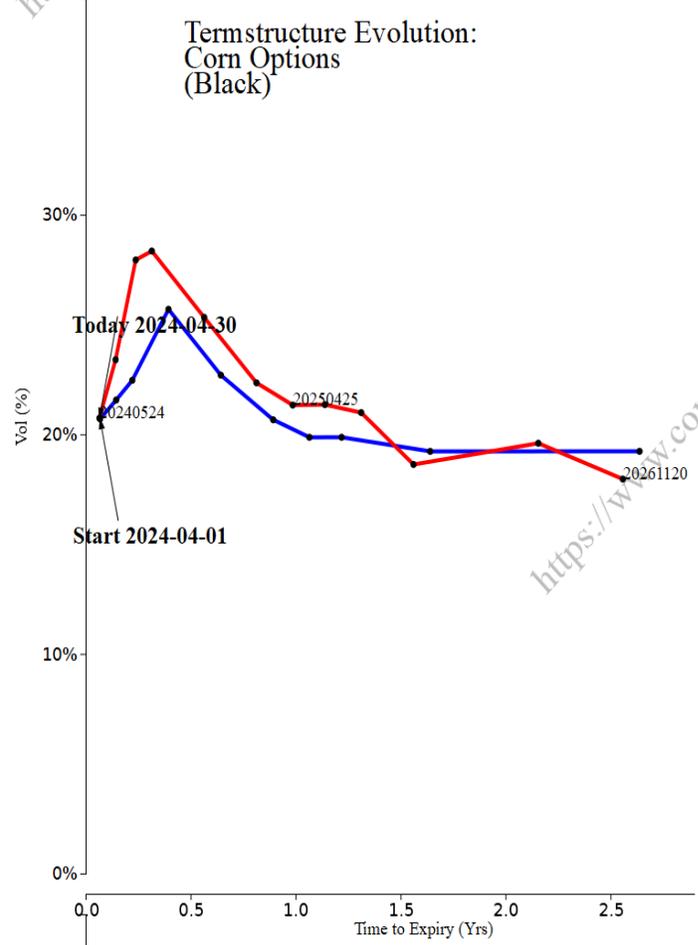


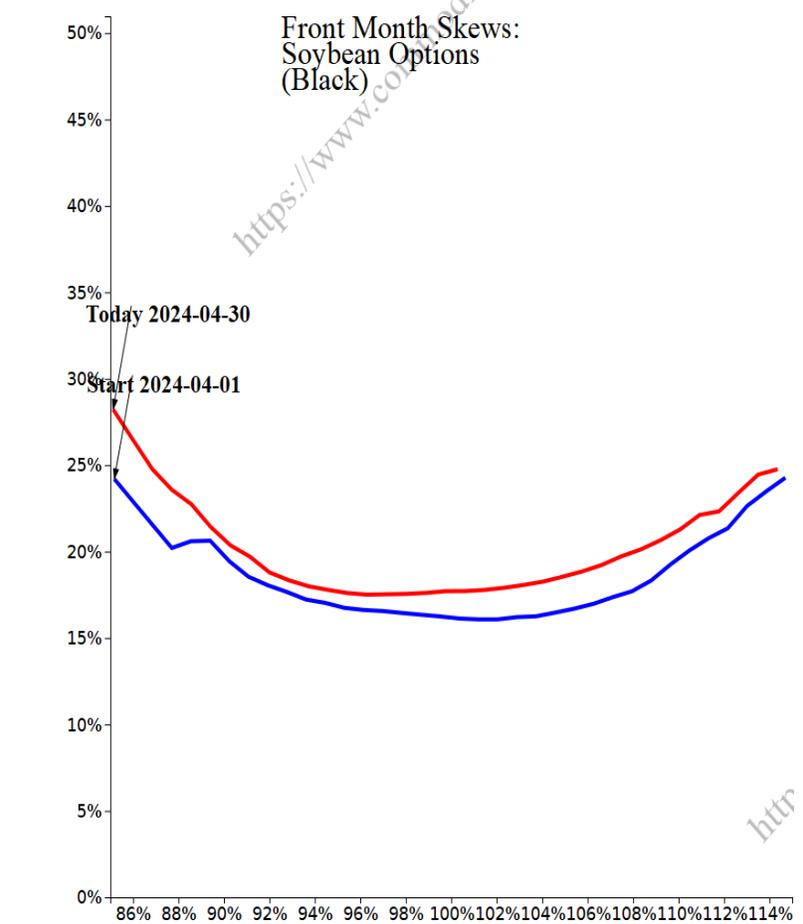
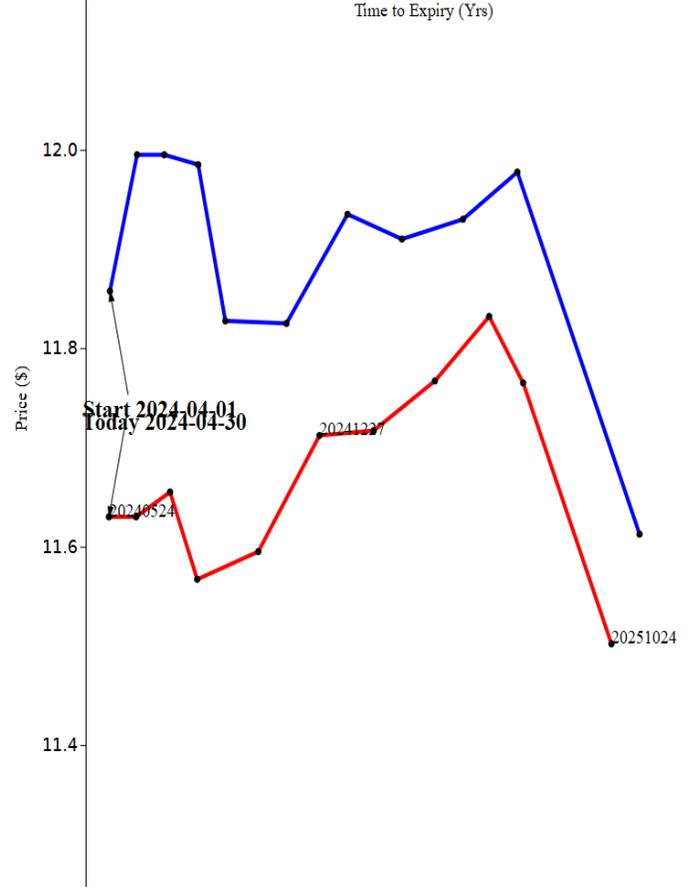
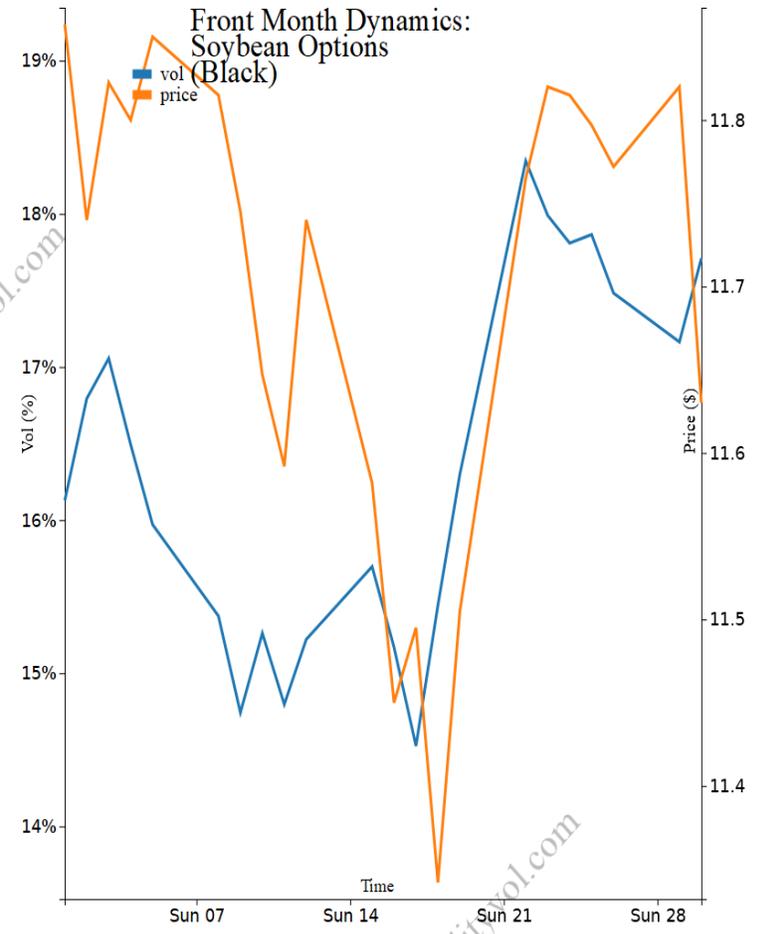
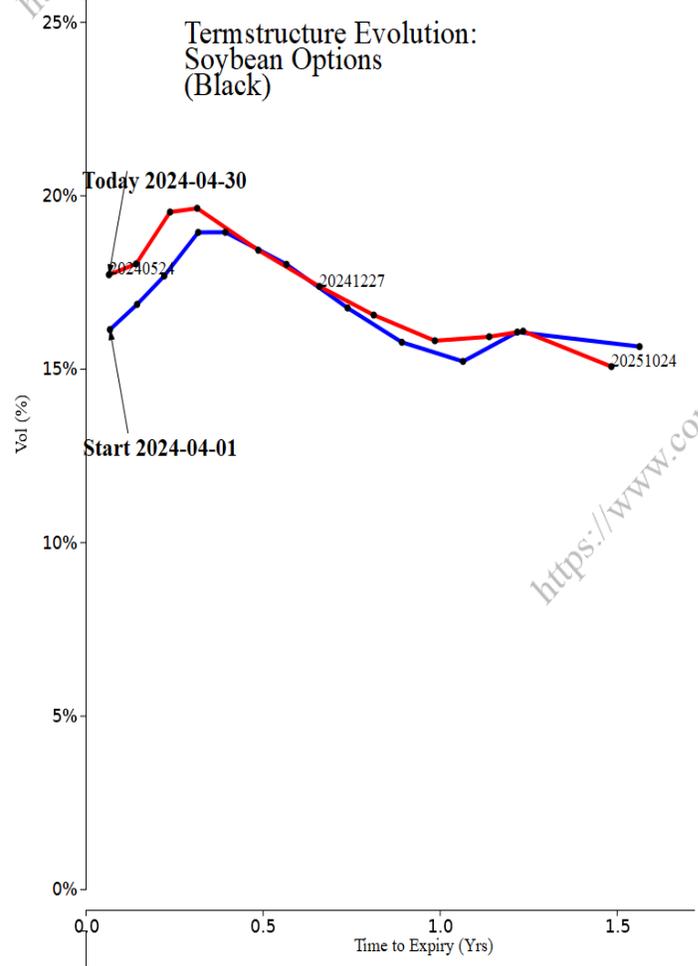


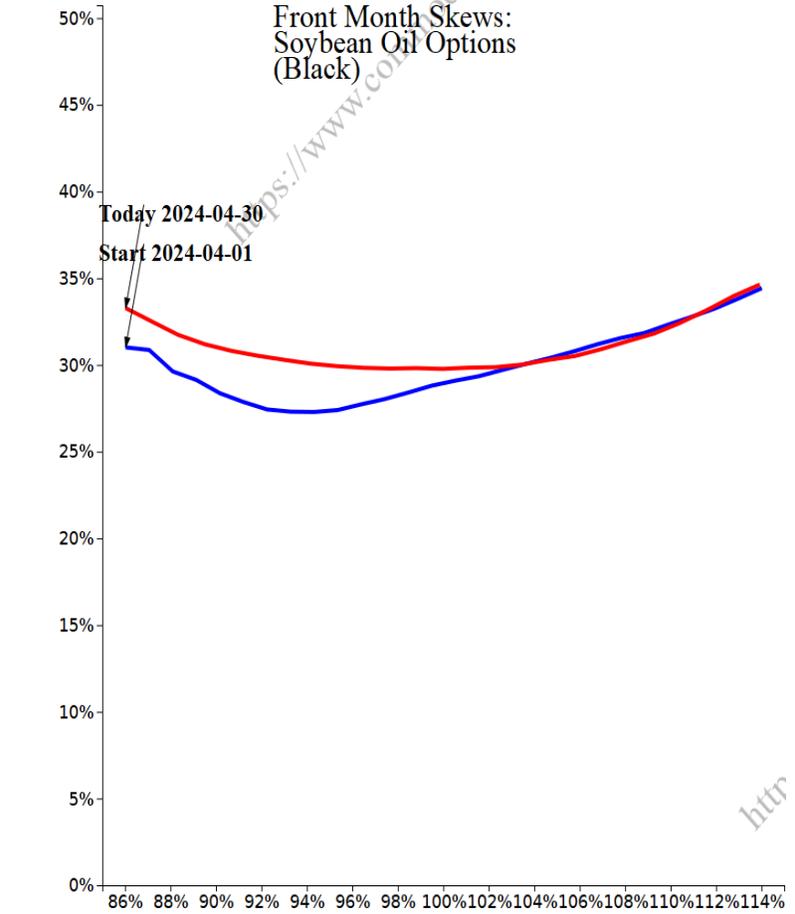
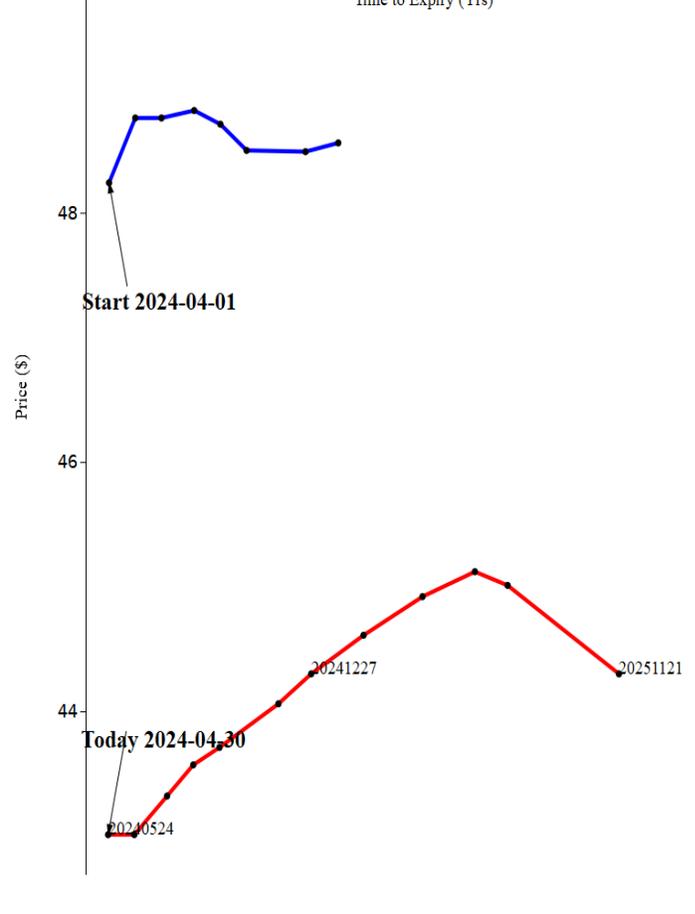
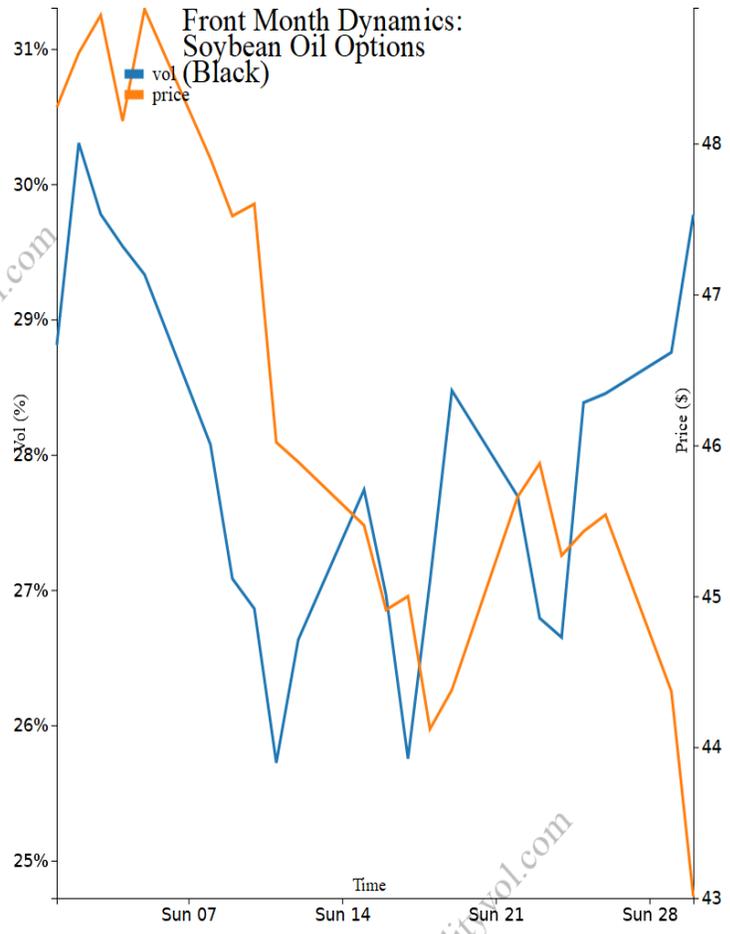
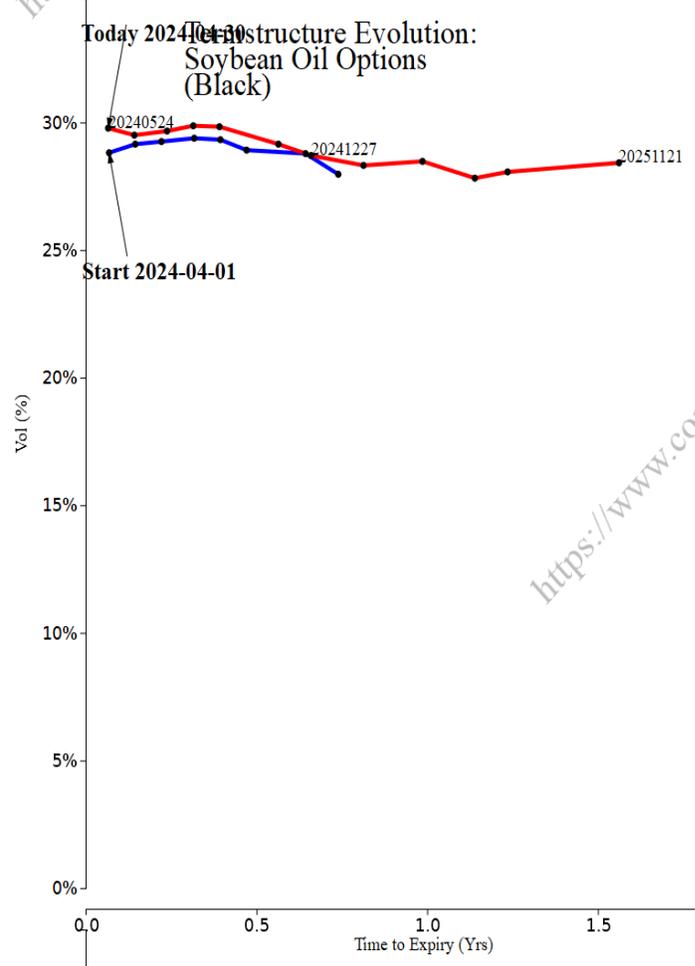


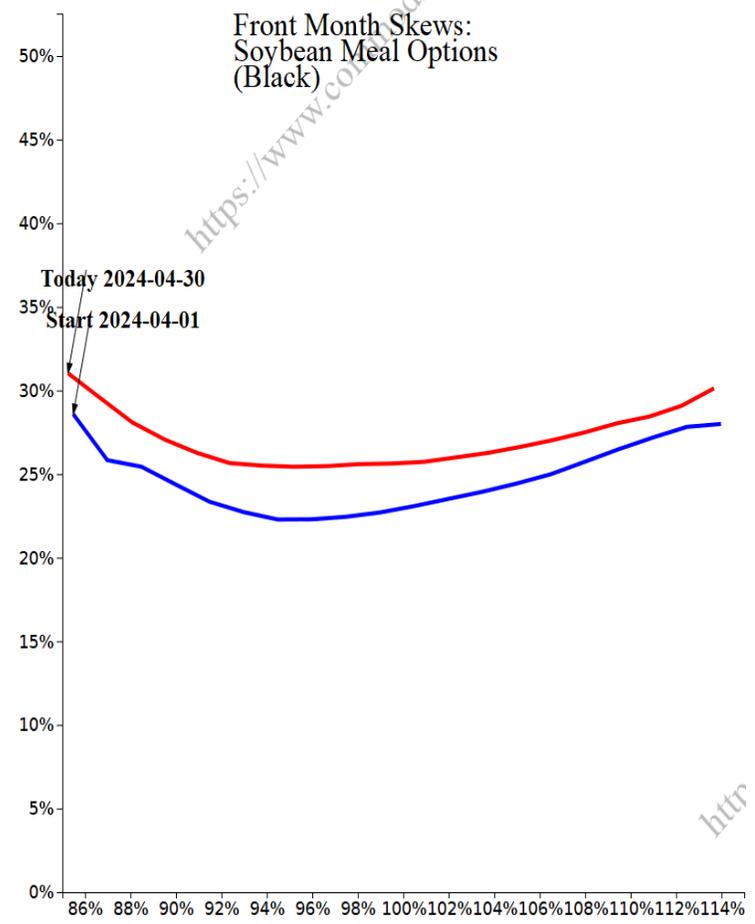
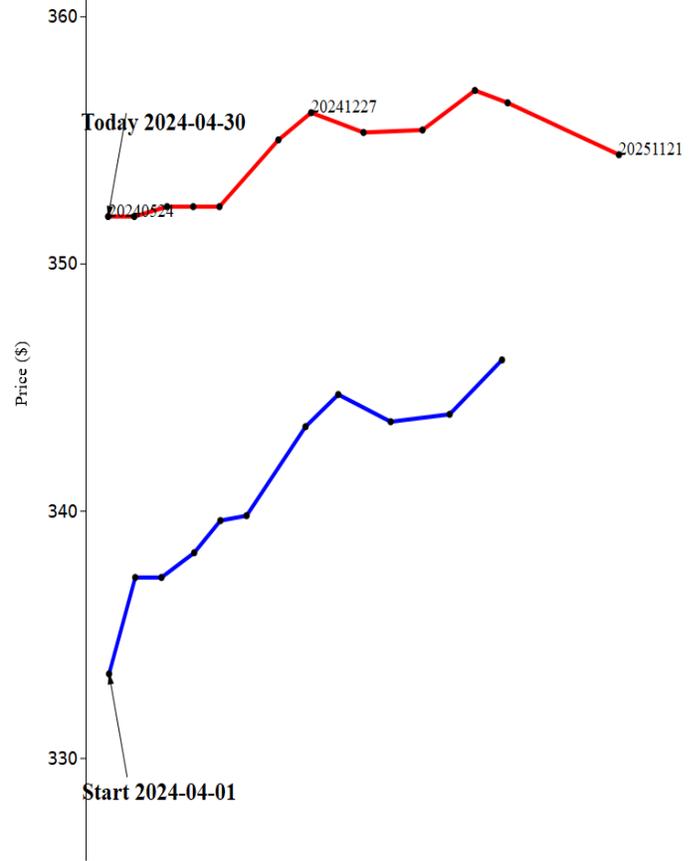
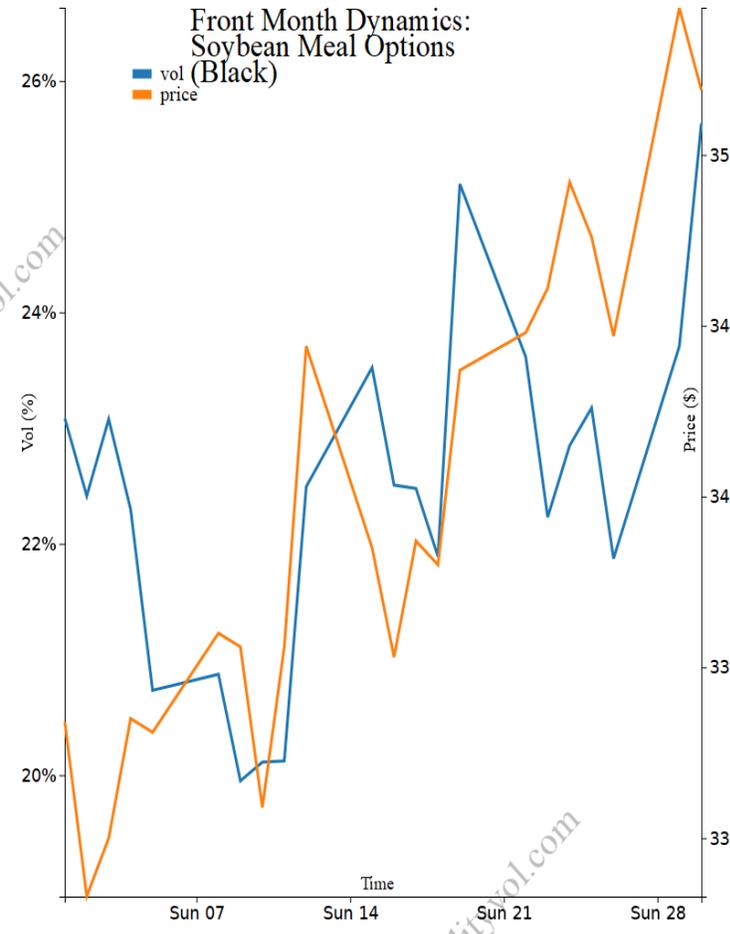
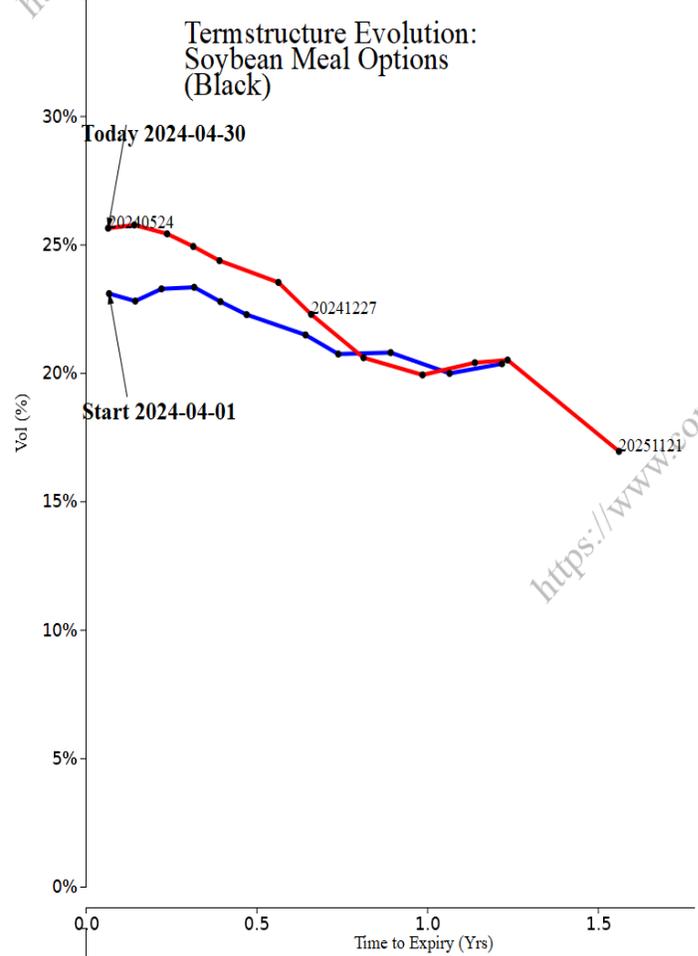


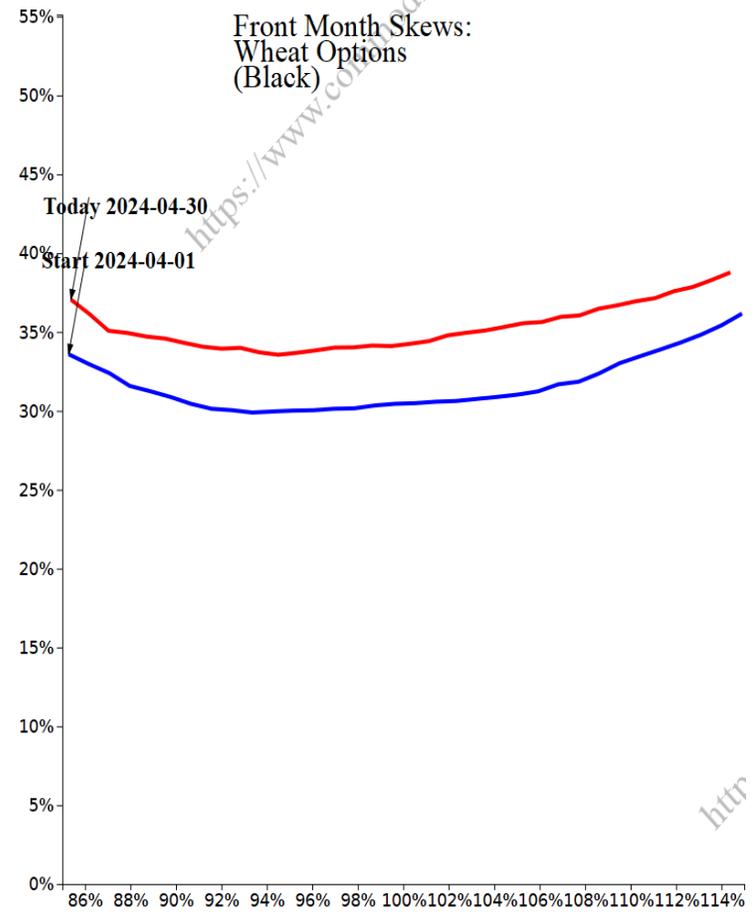
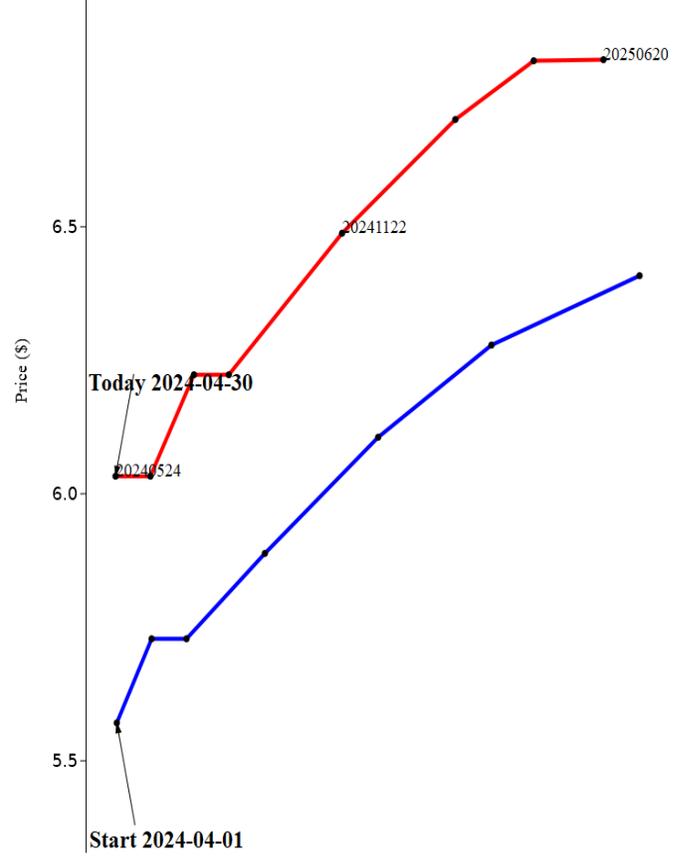
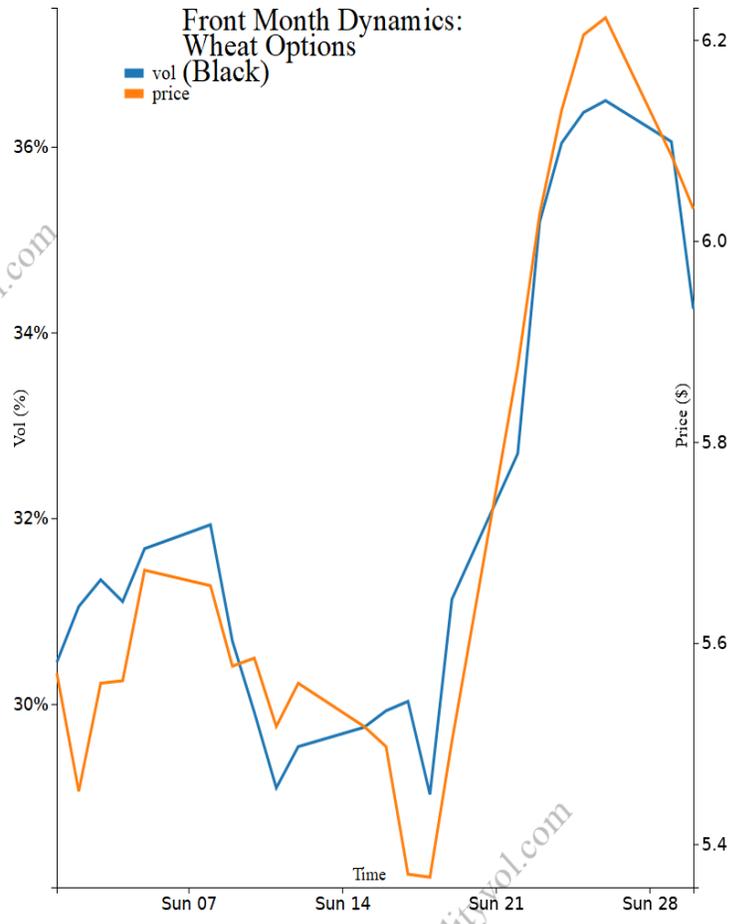
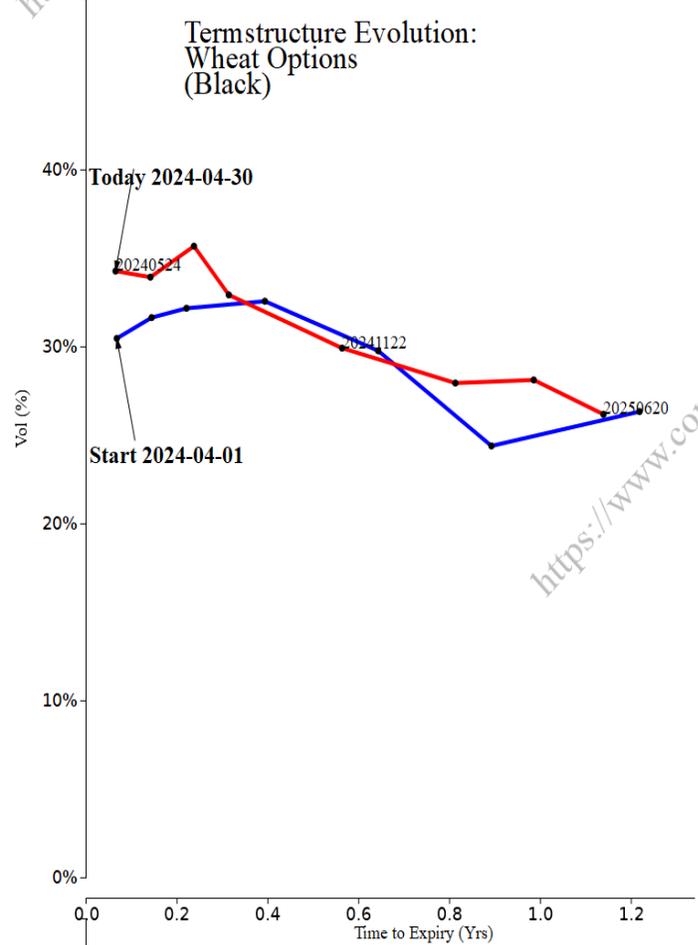
**Ags: Grains, Oilseeds, and so forth**

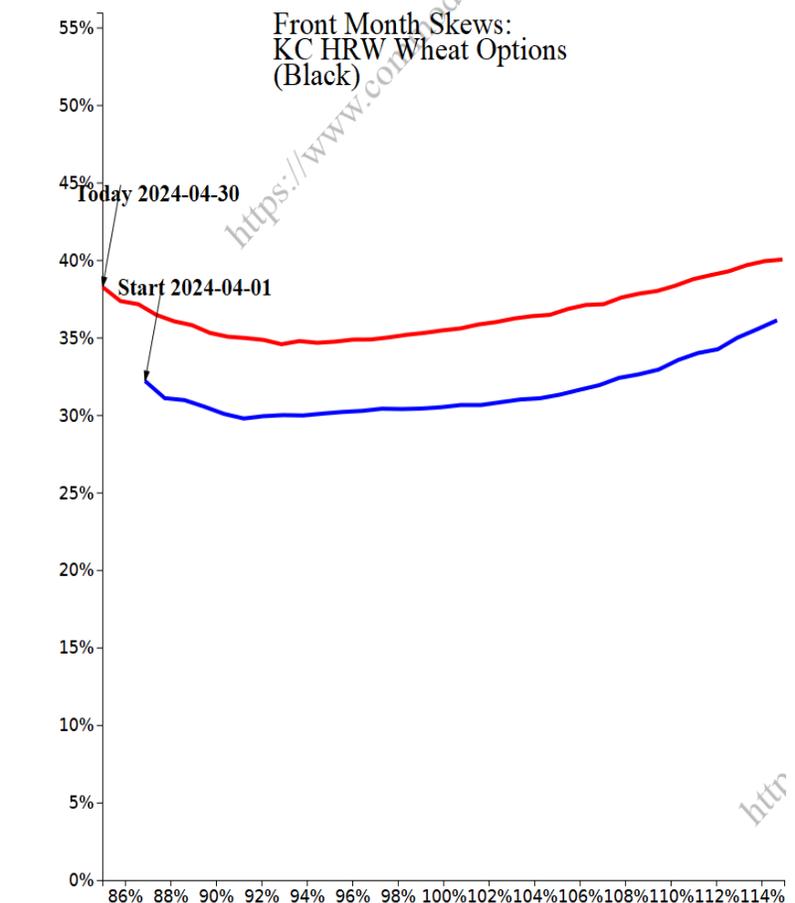
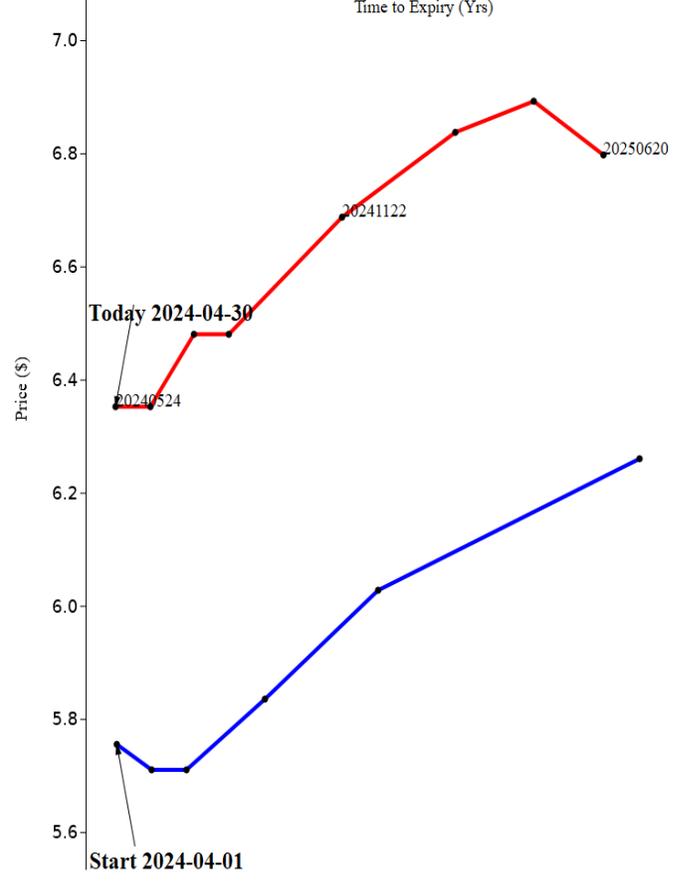
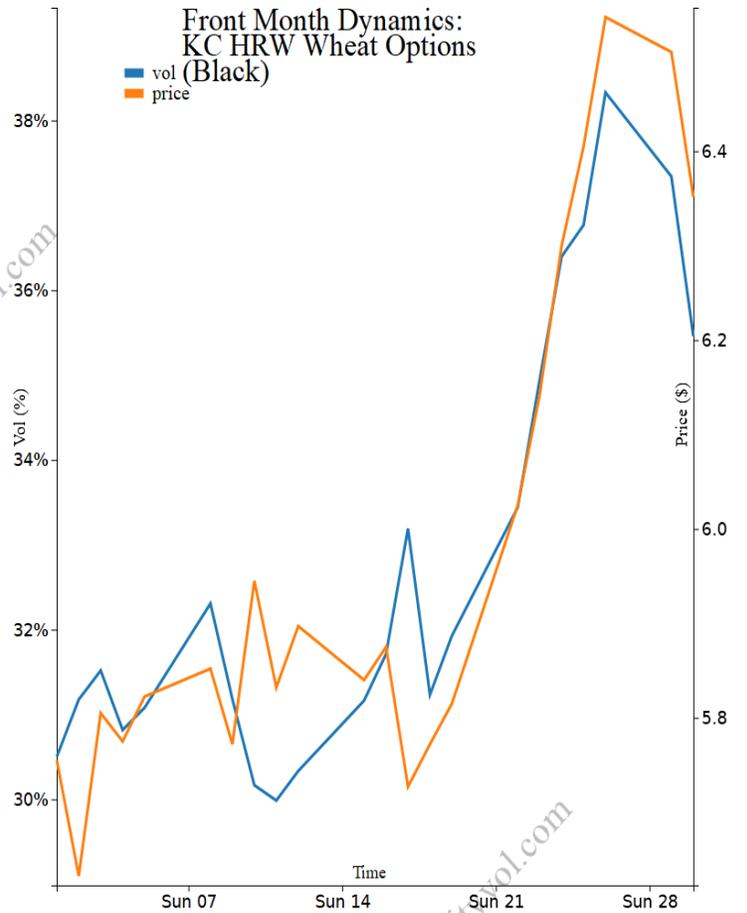
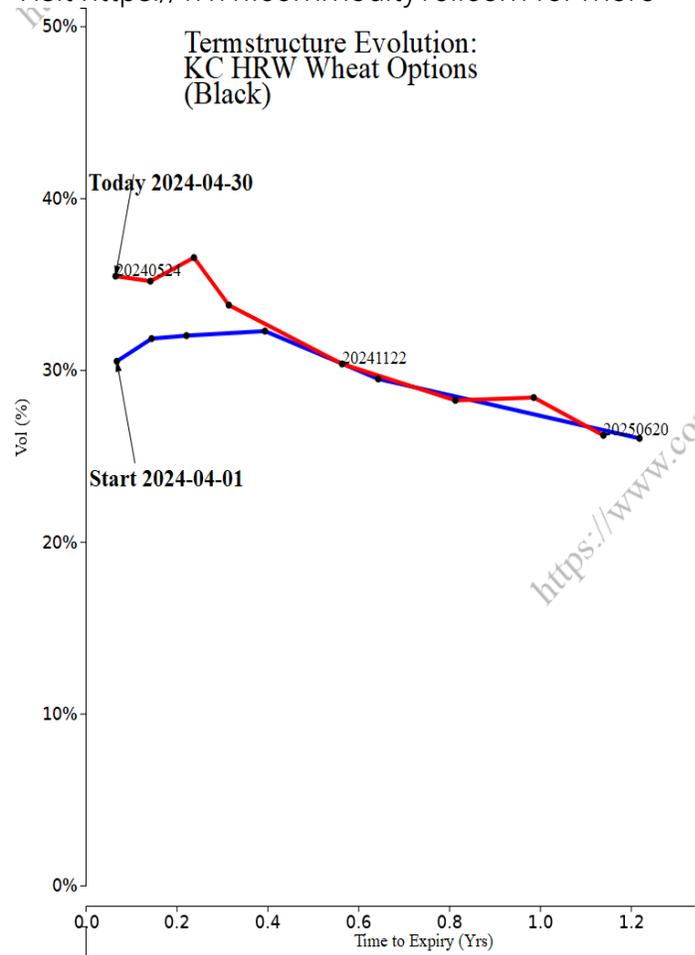


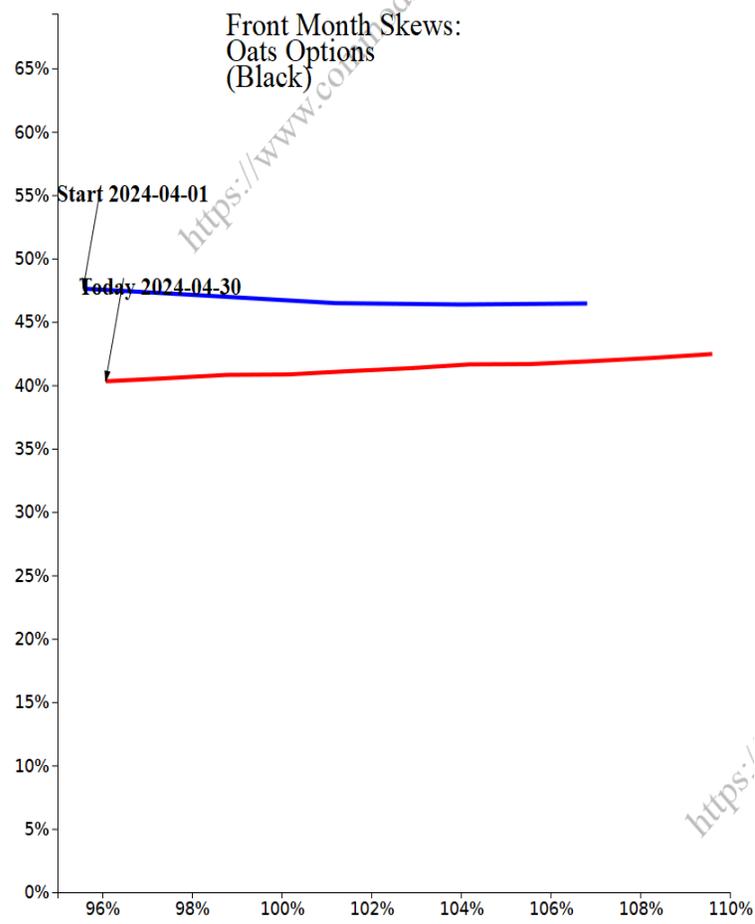
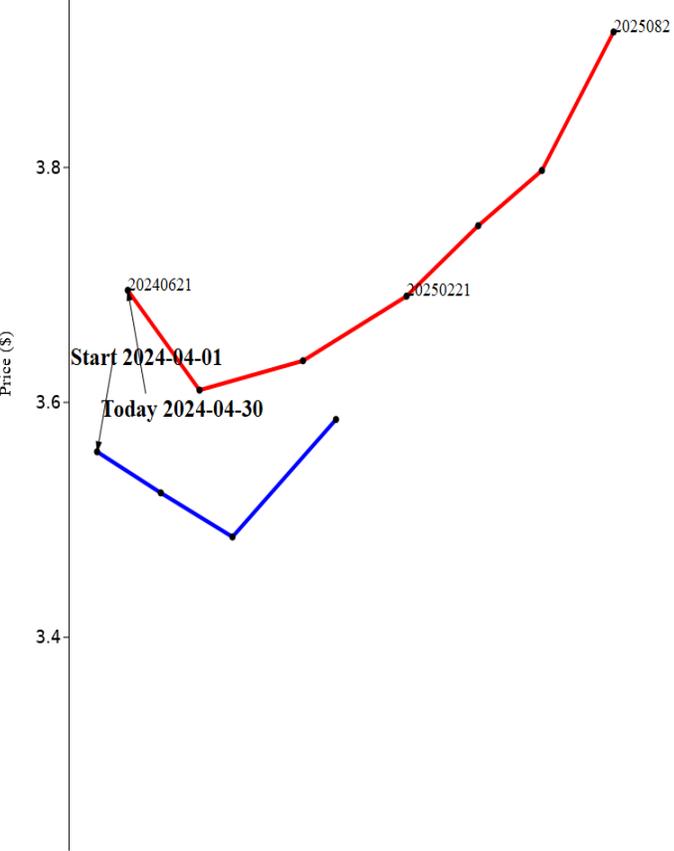
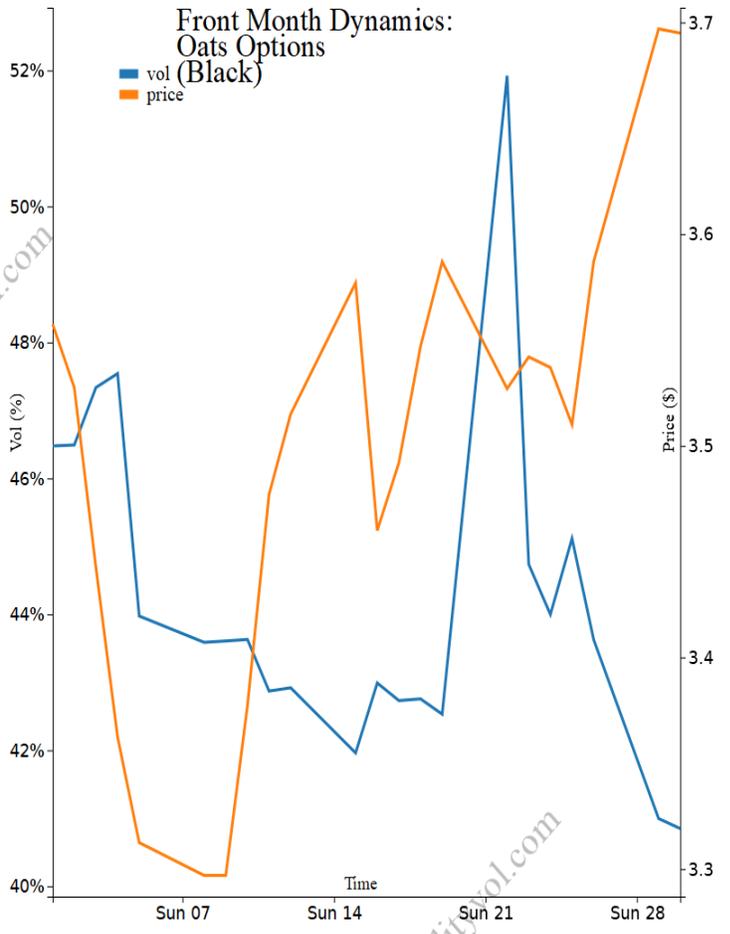
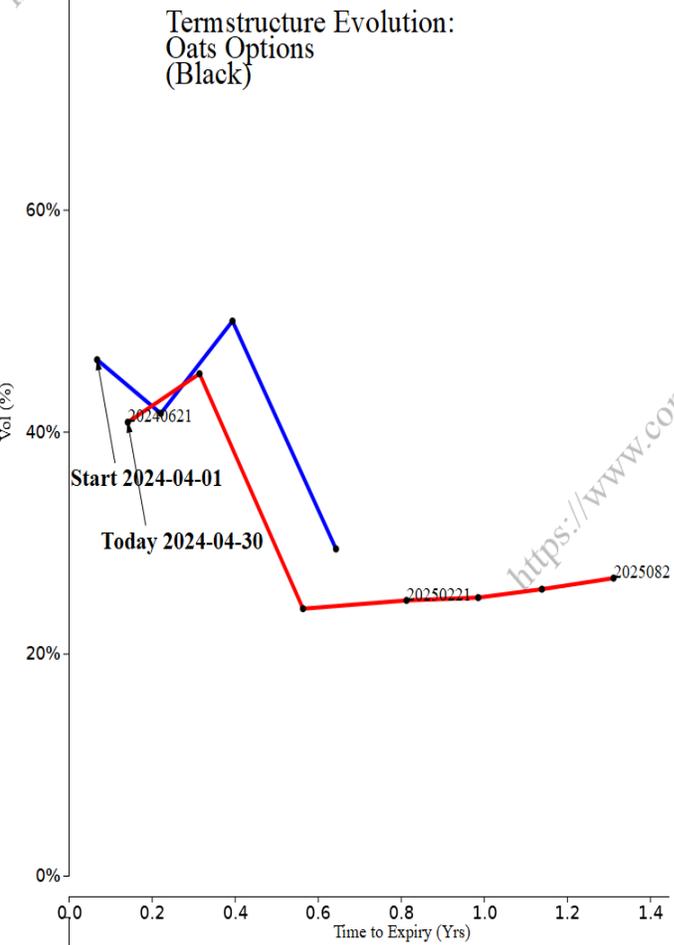


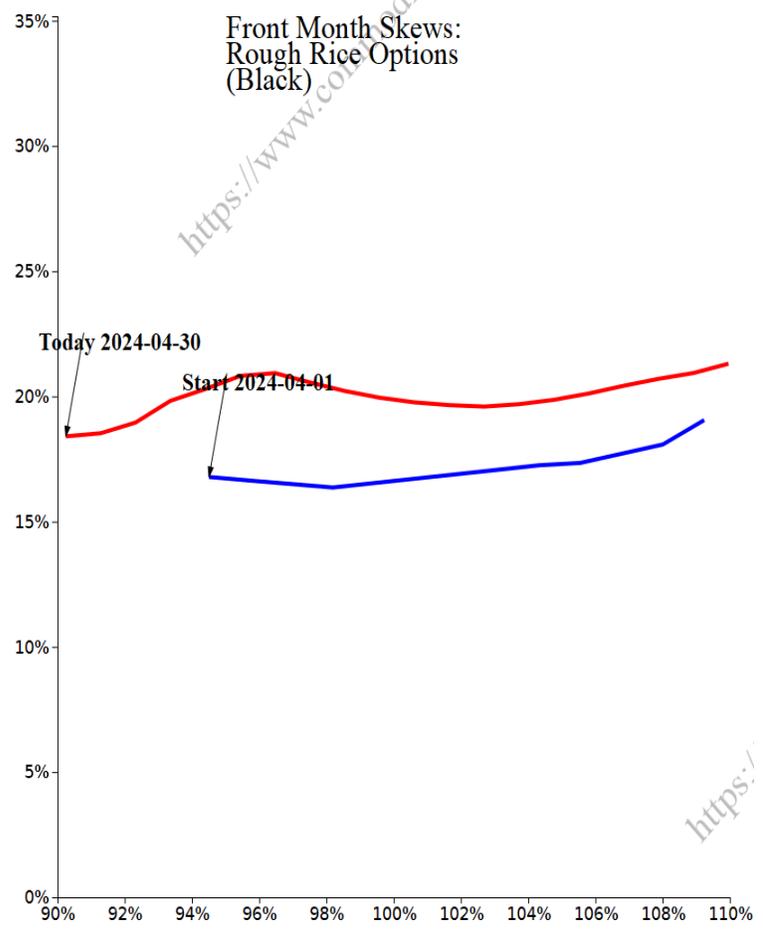
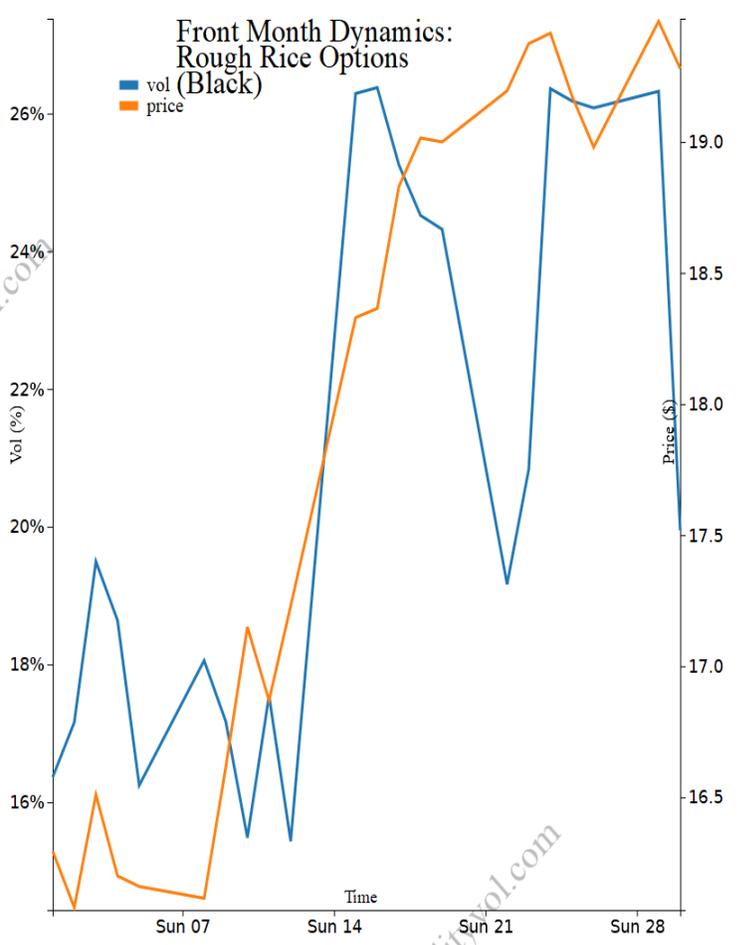
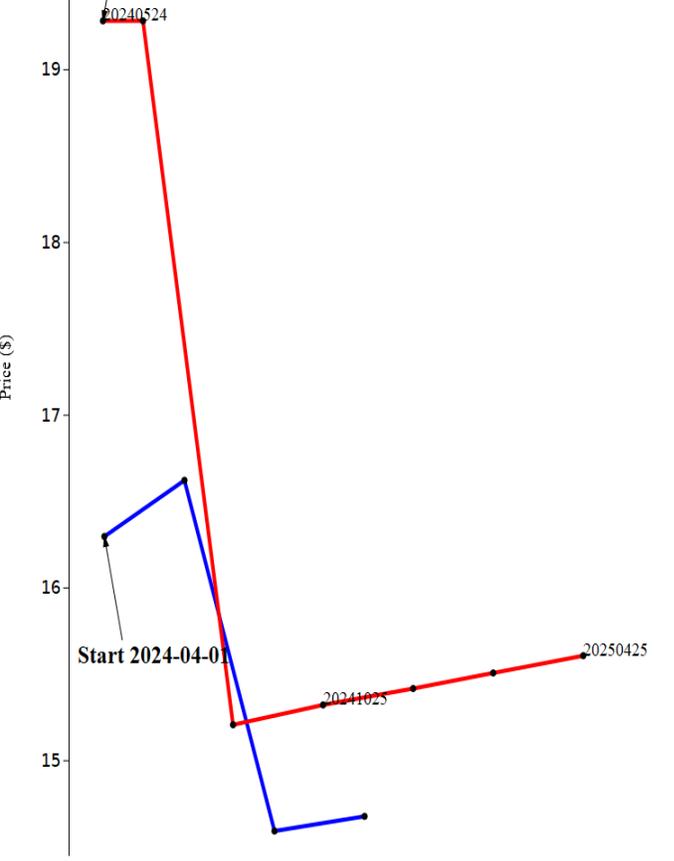
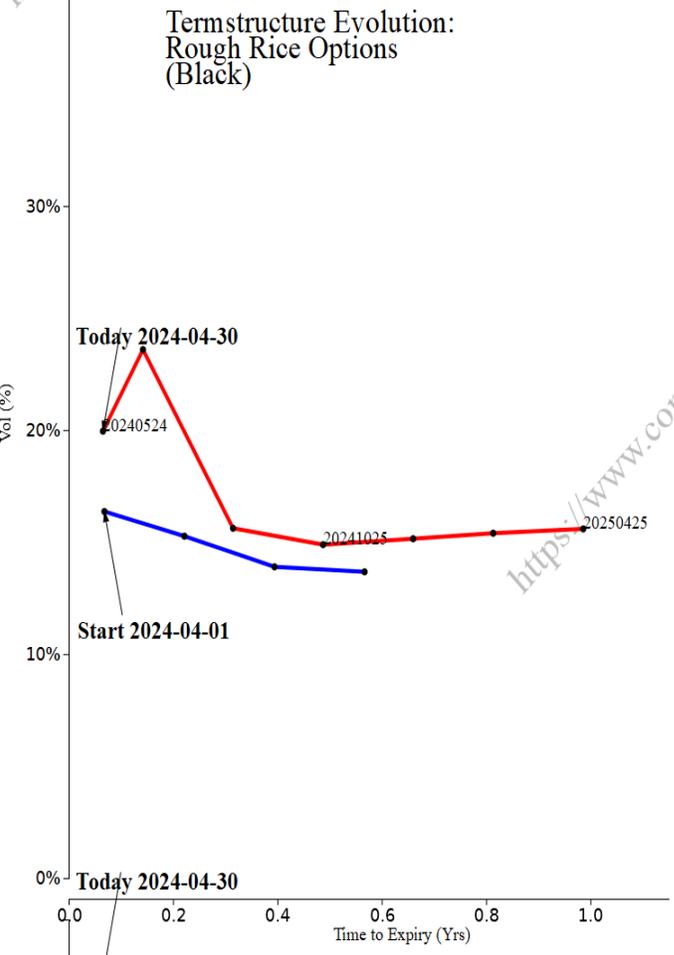


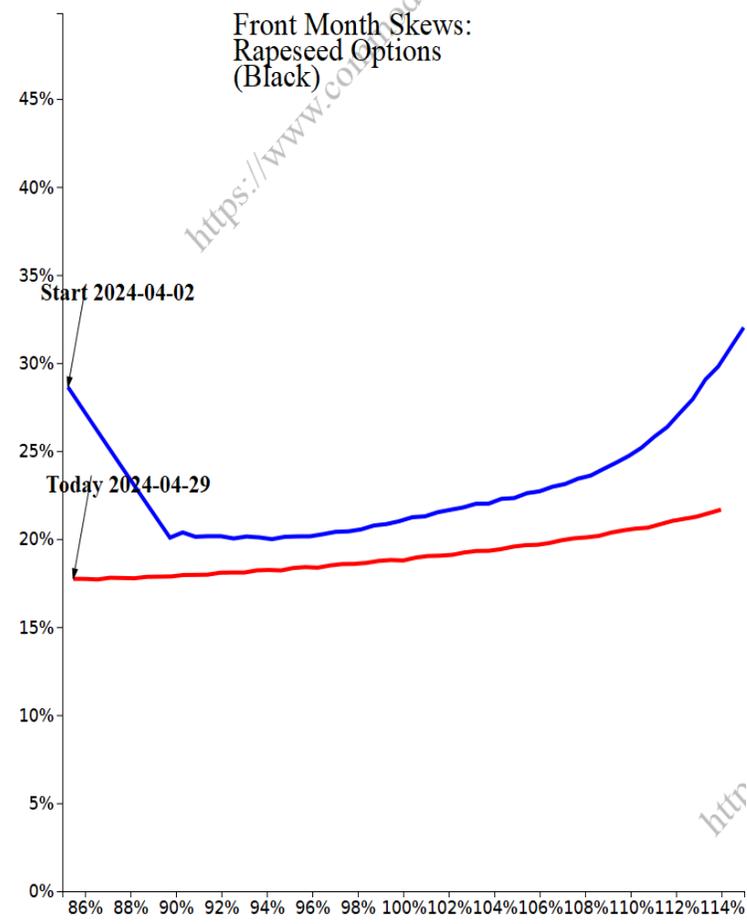
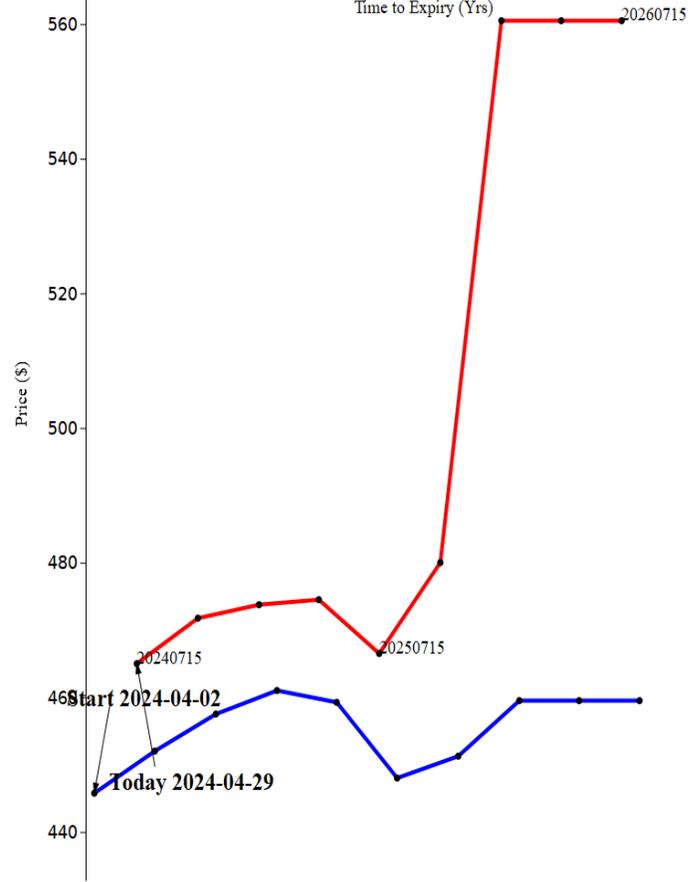
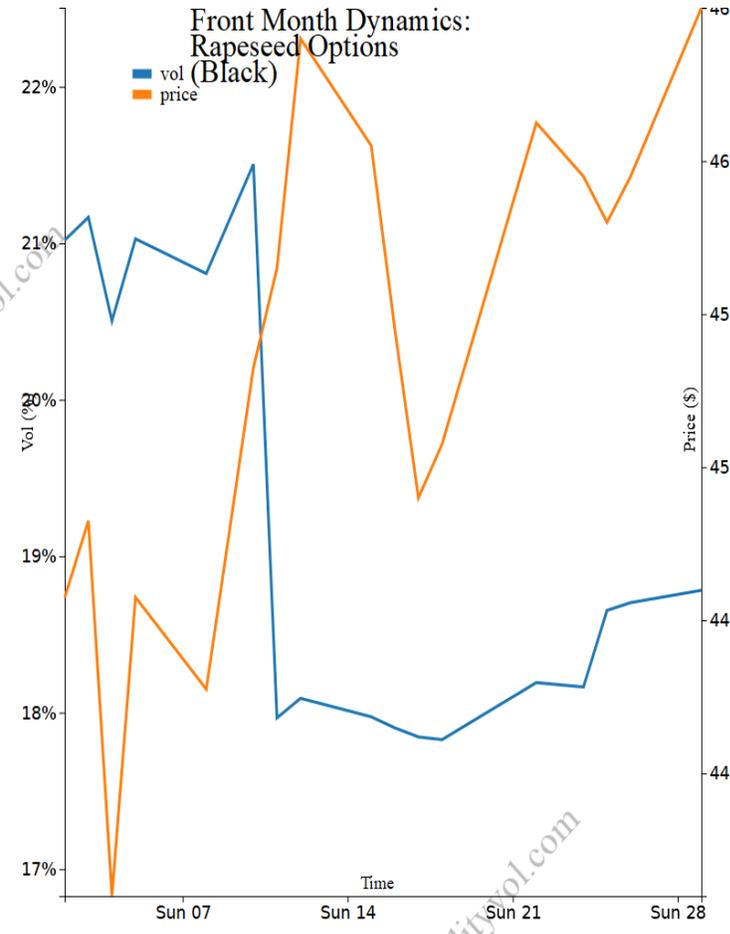
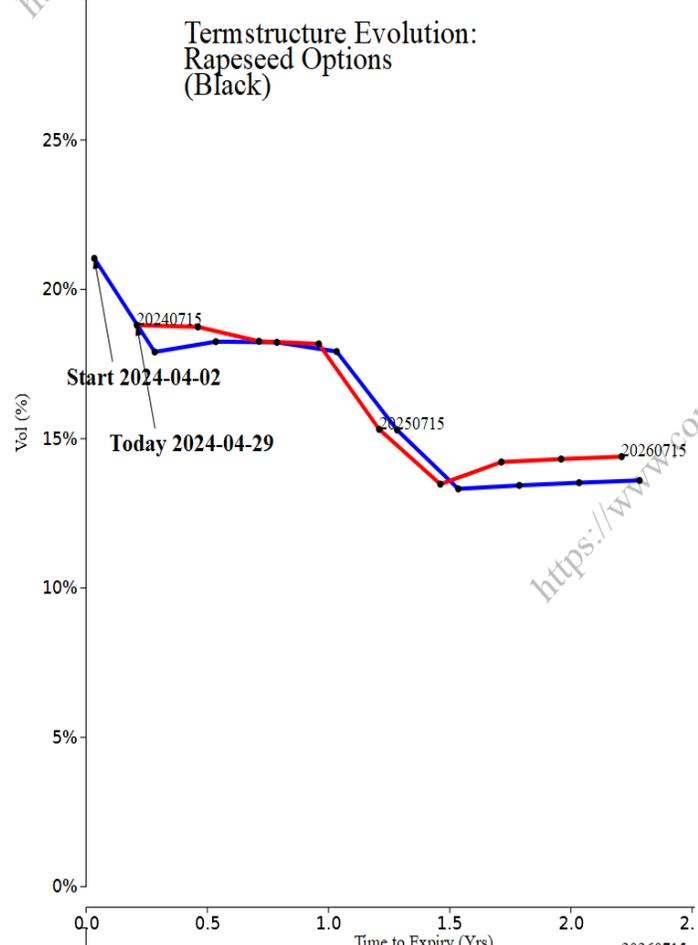


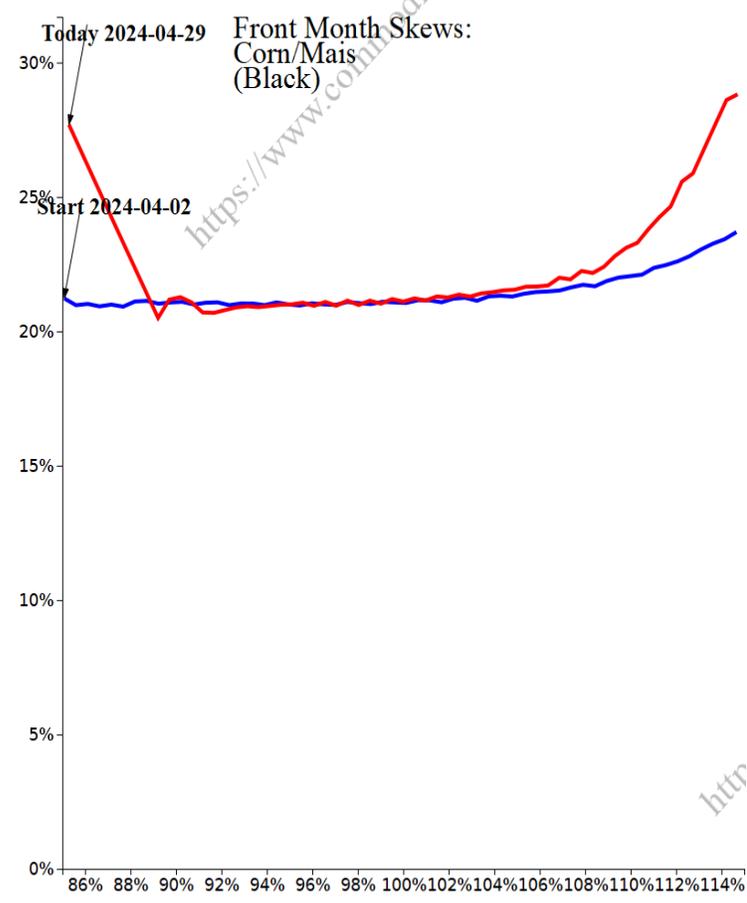
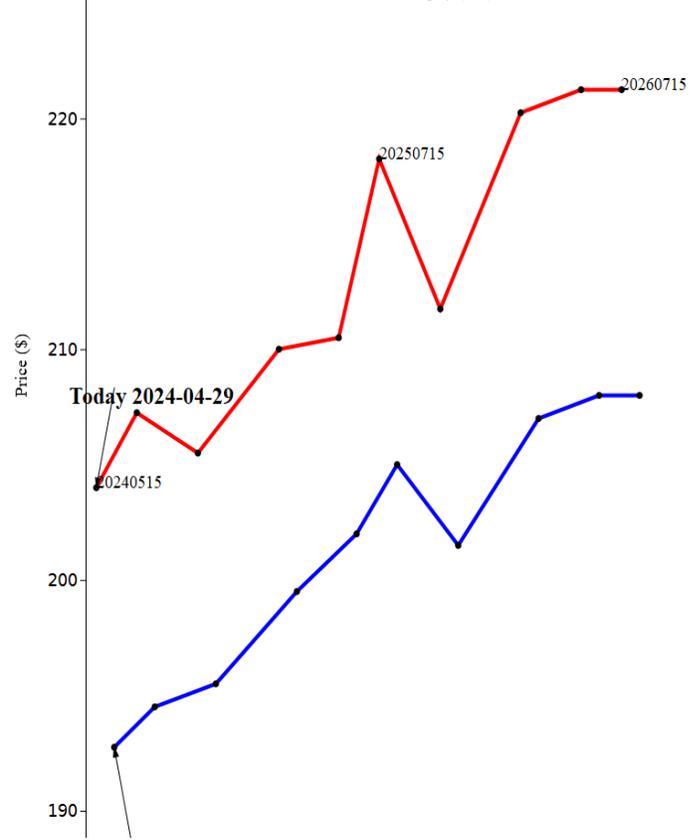
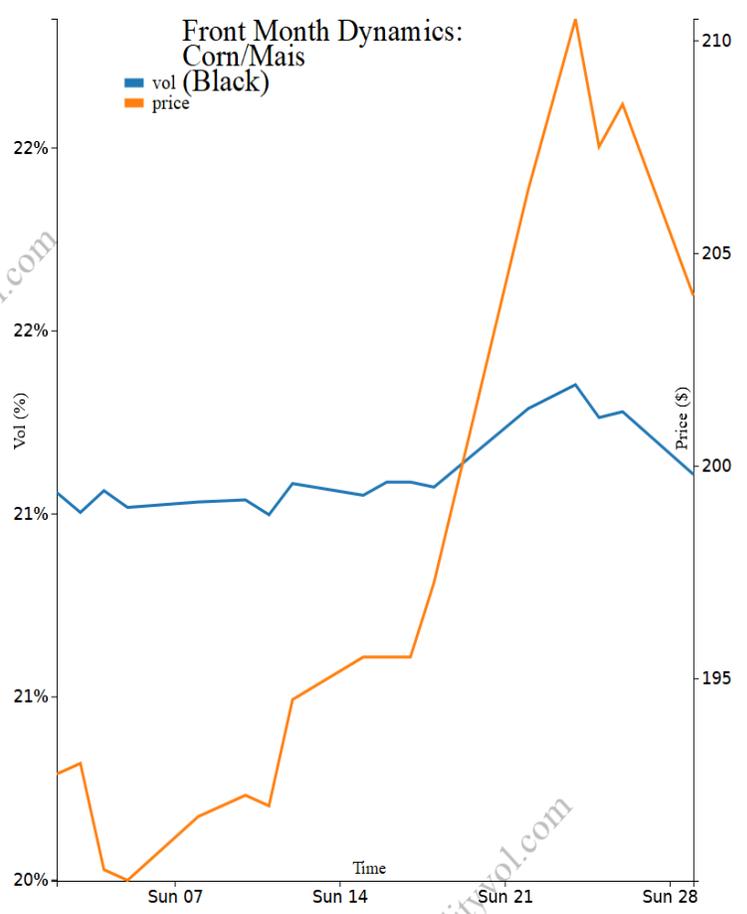
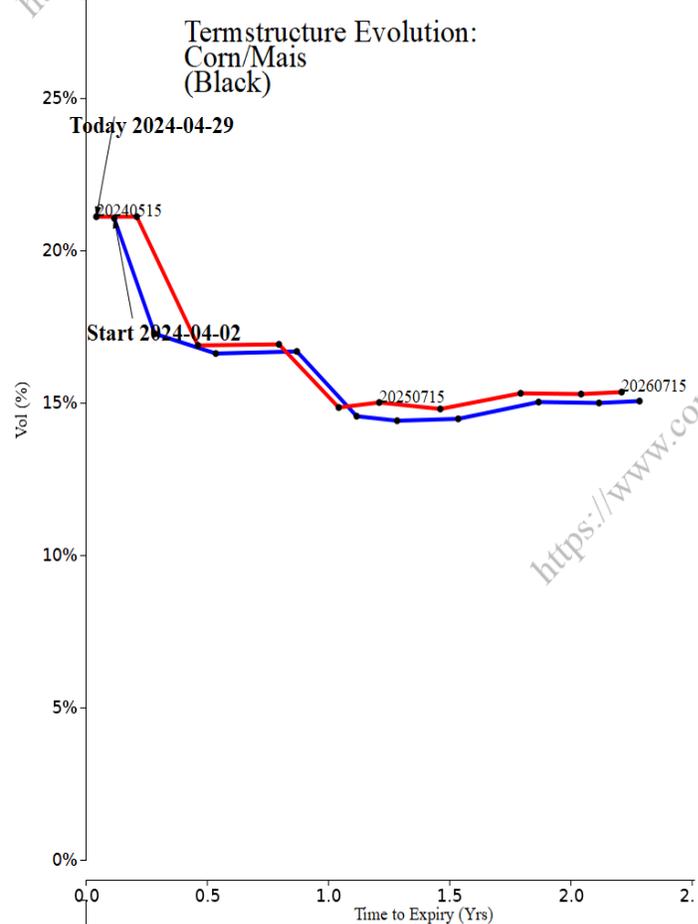


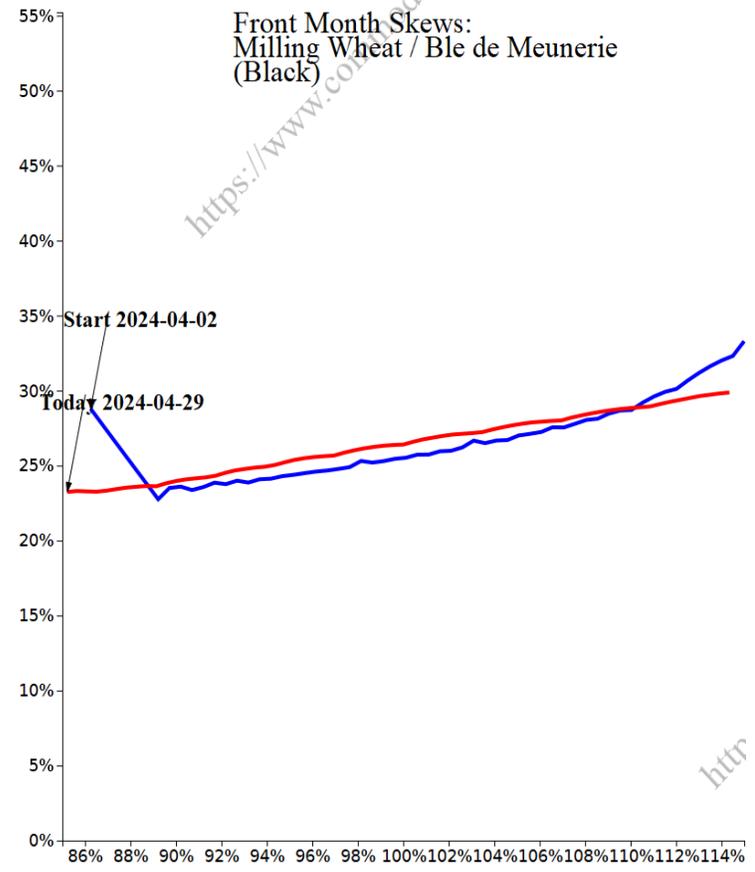
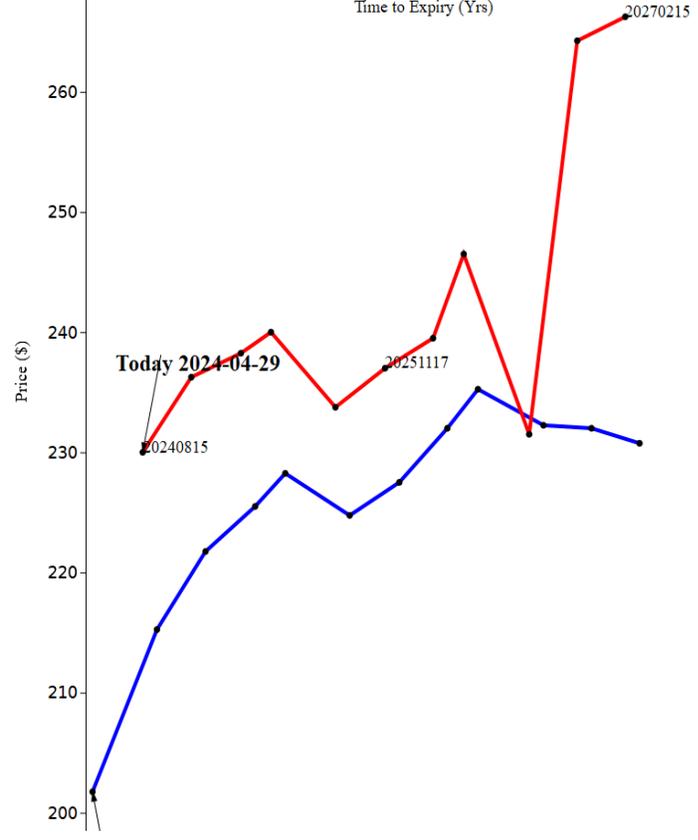
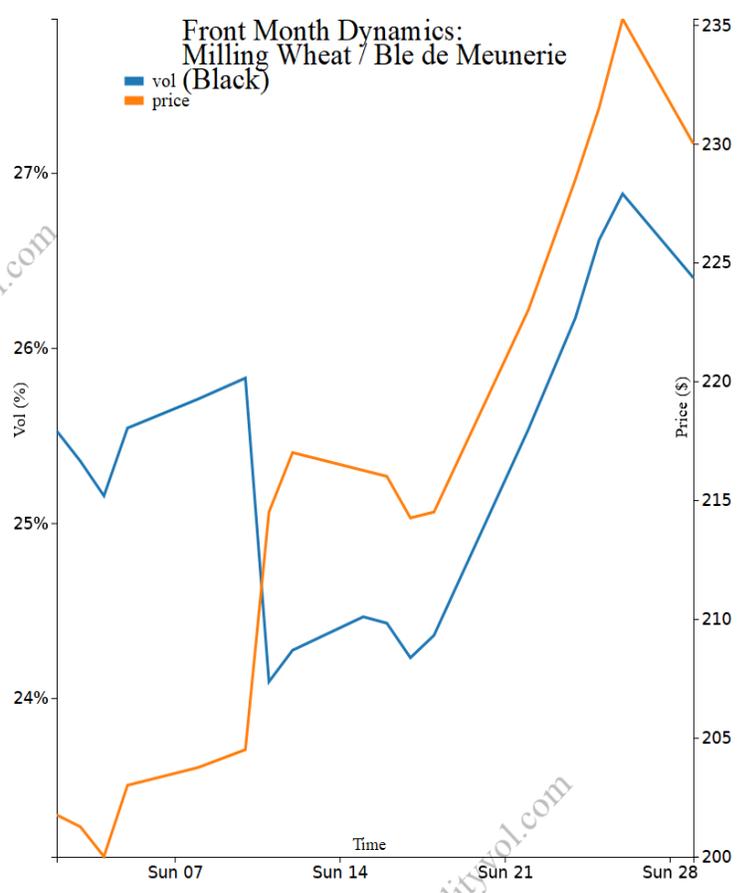
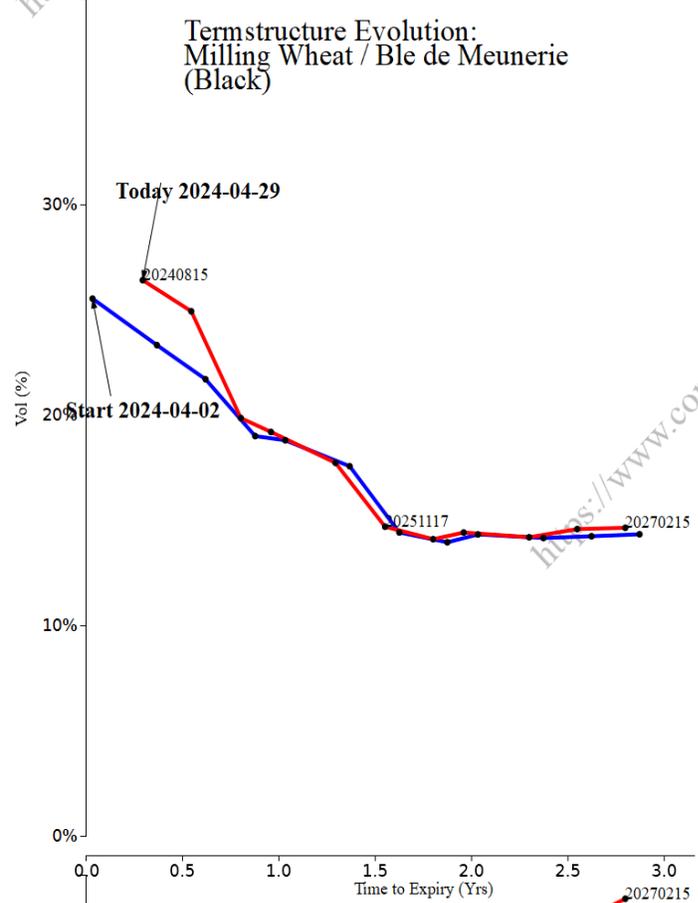




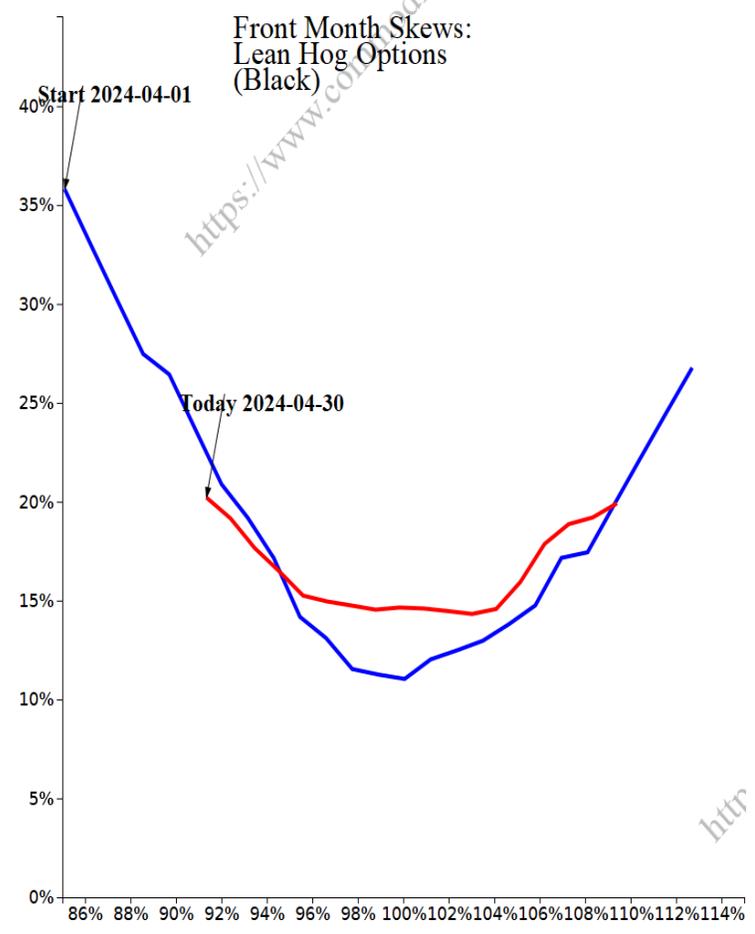
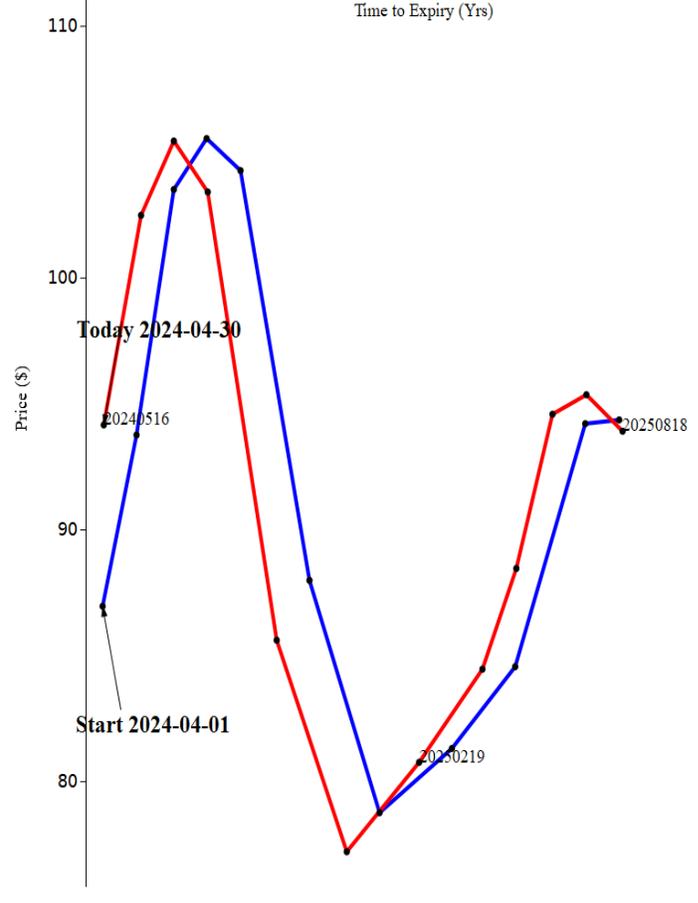
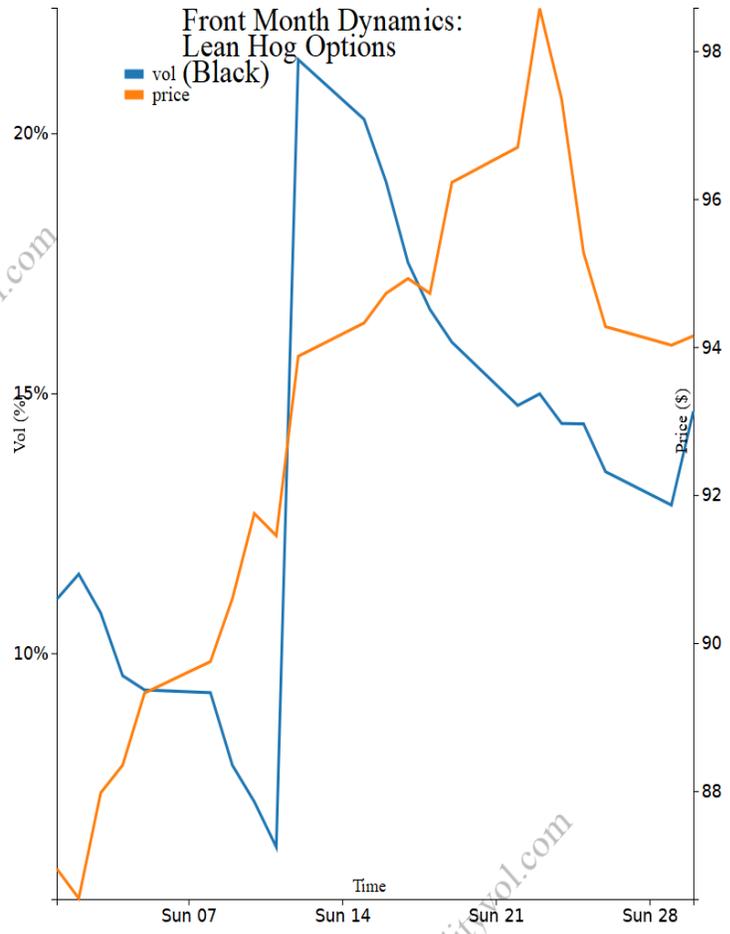
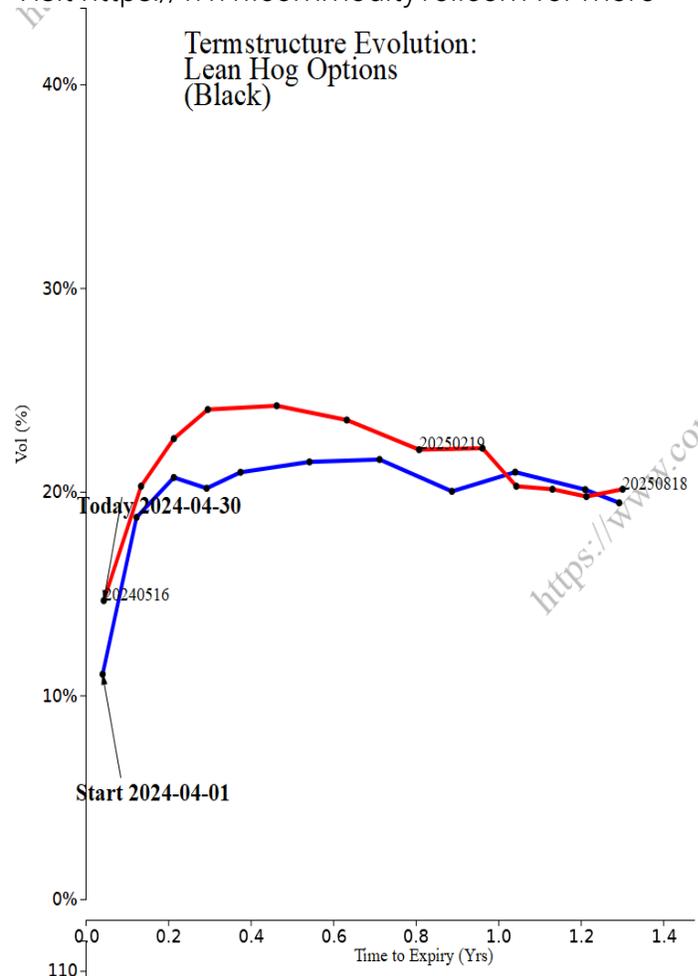


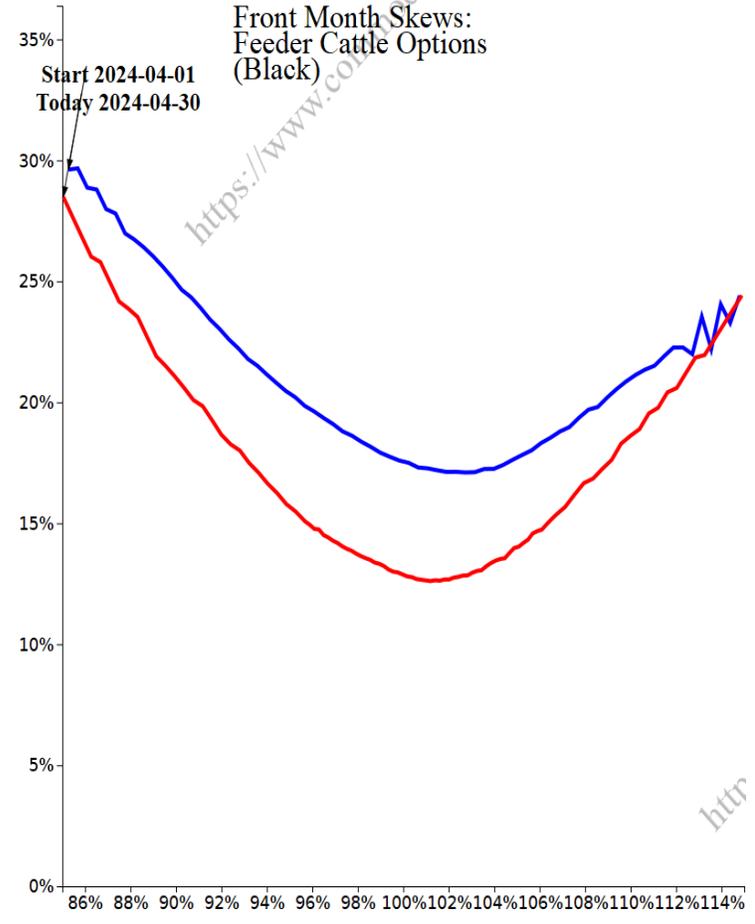
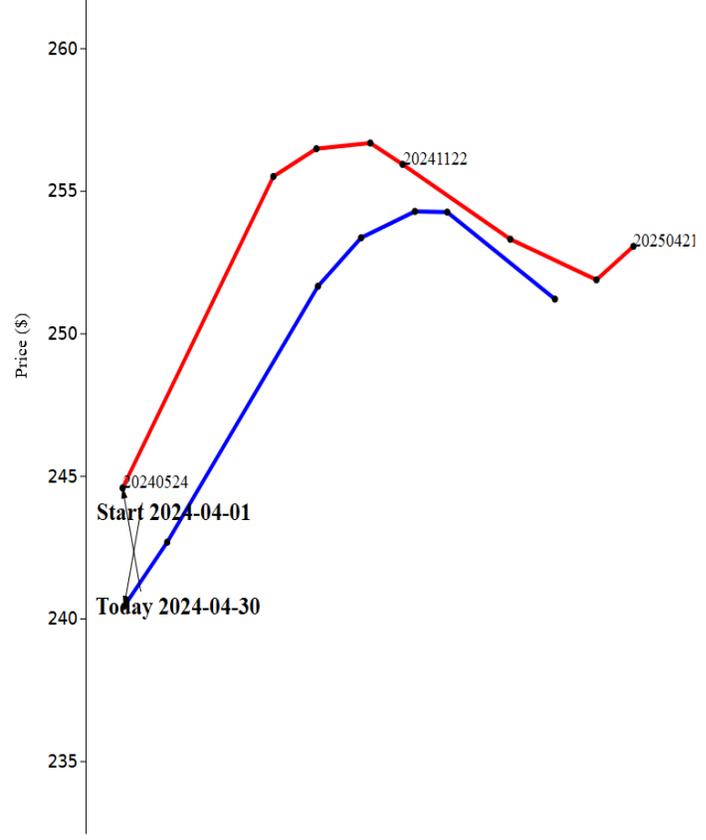
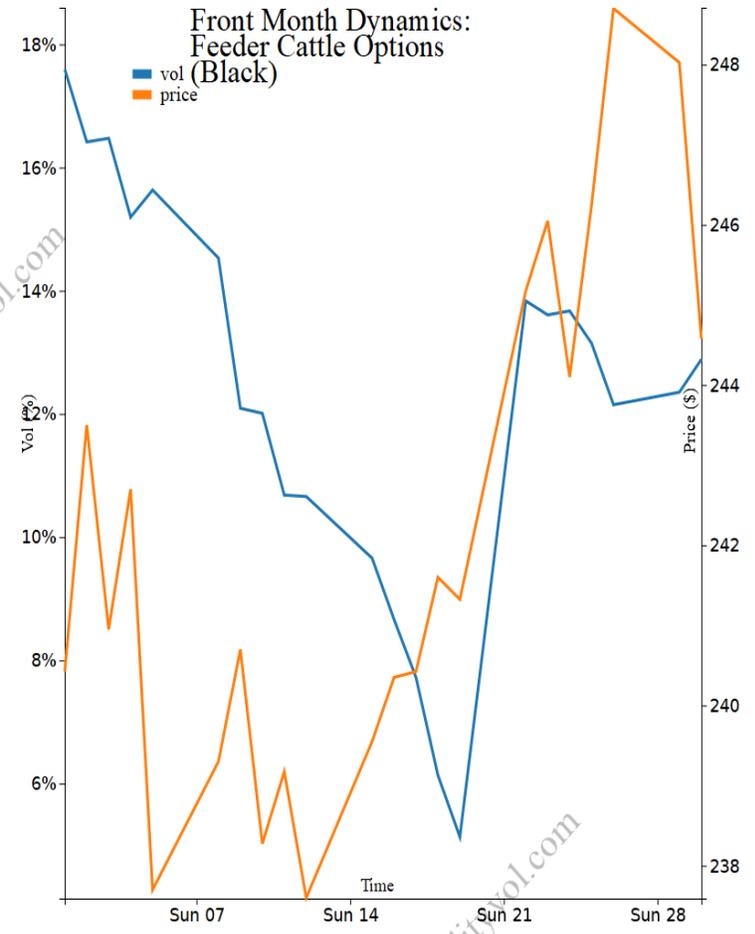
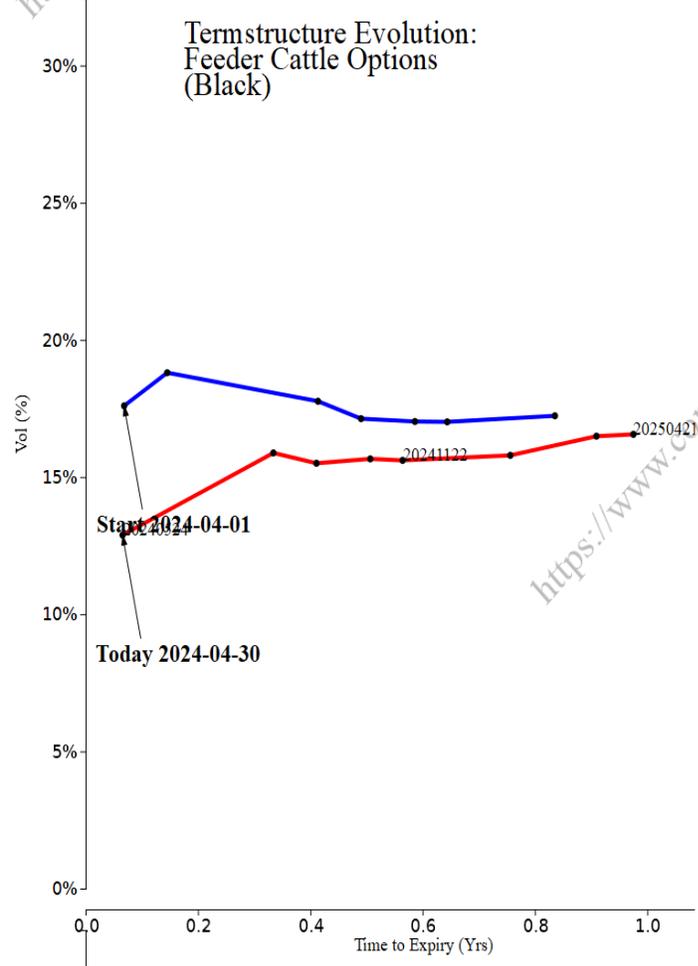


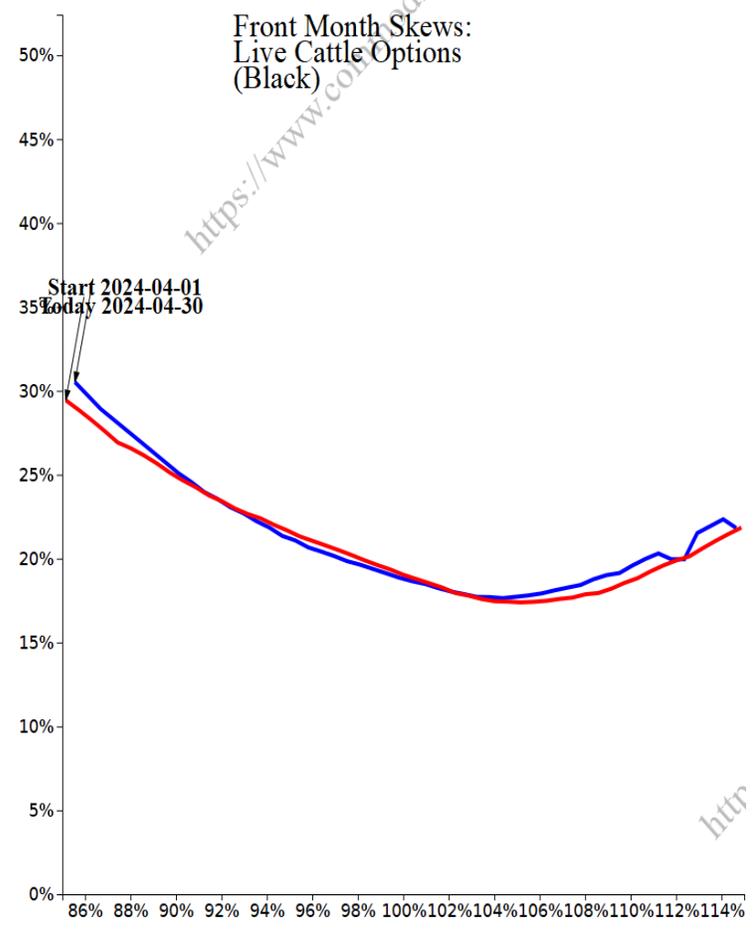
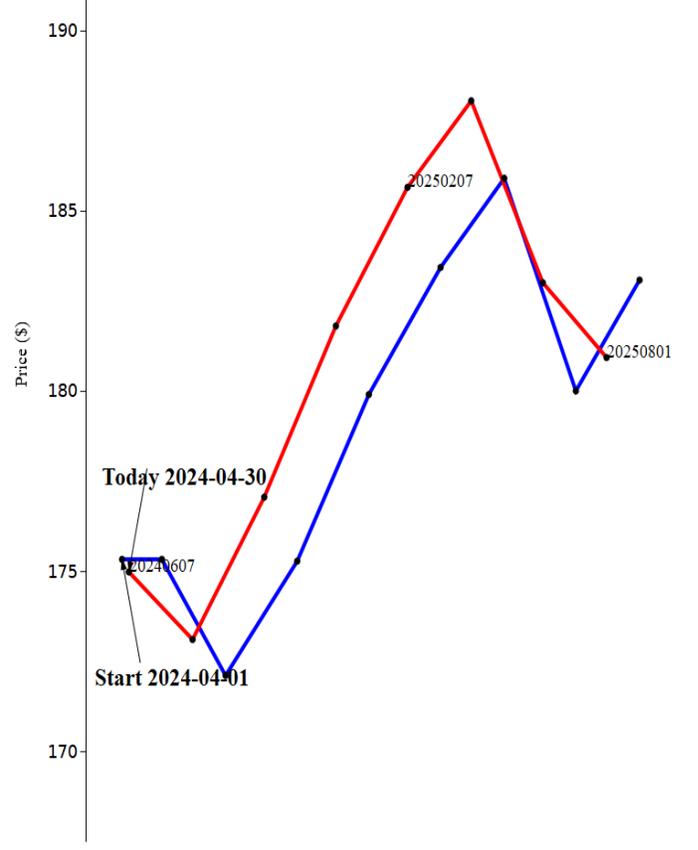
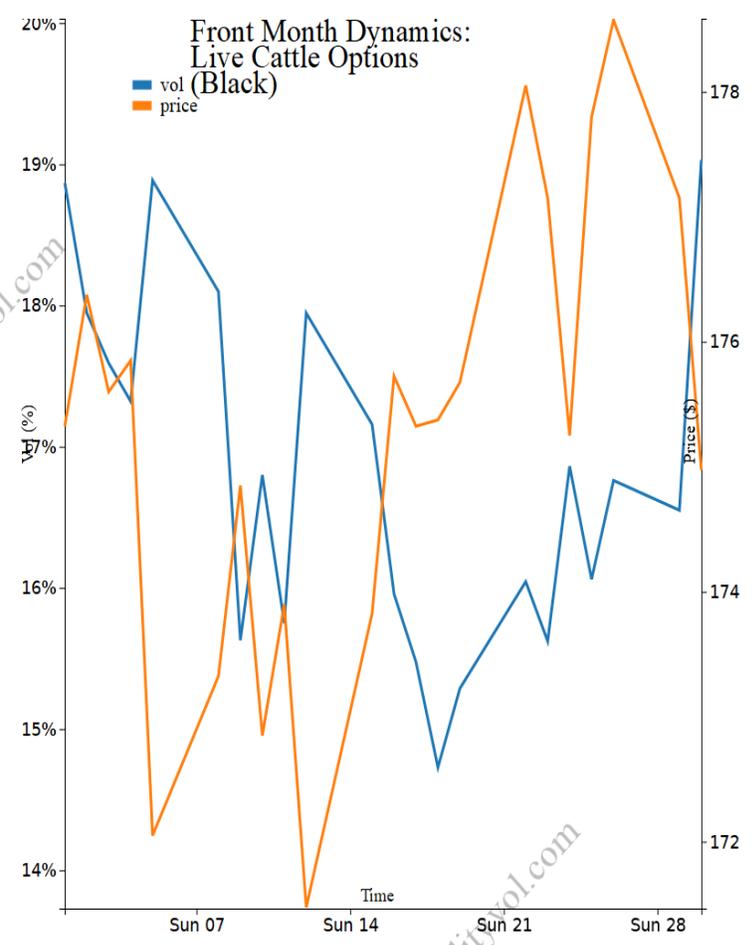
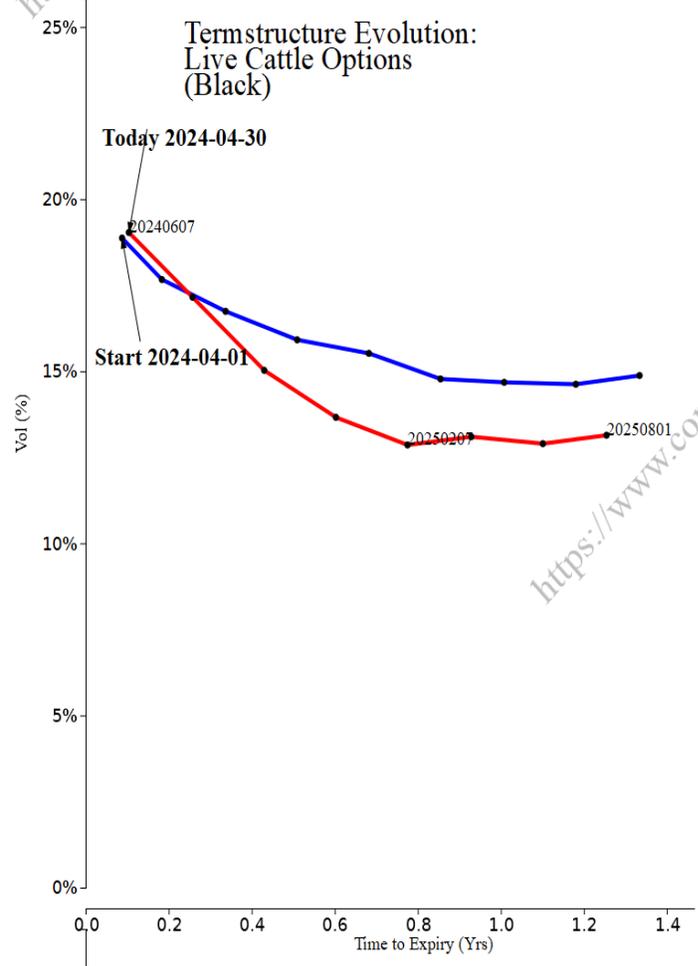


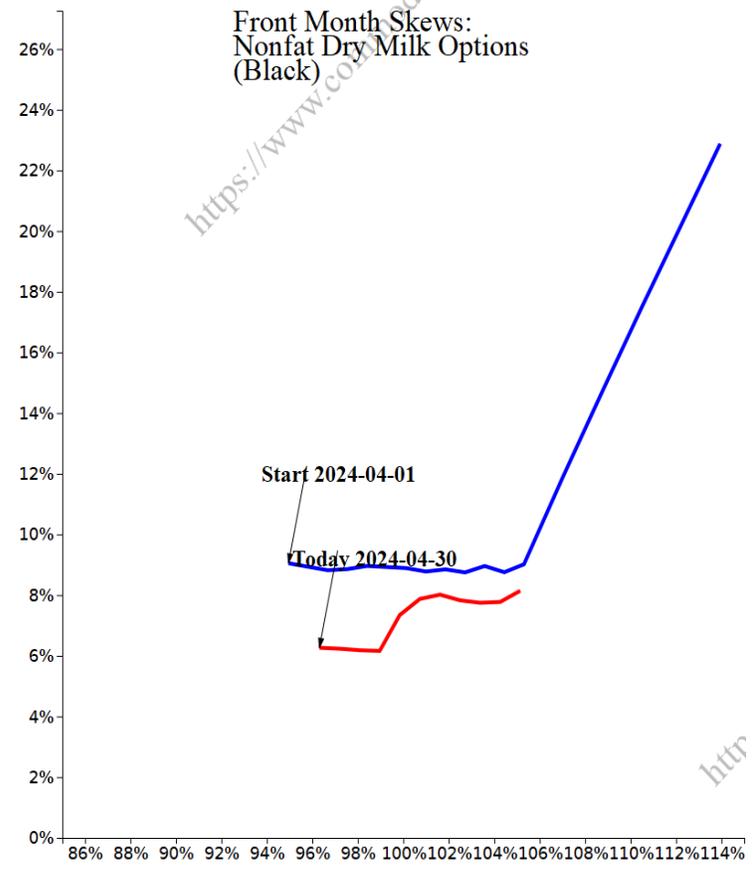
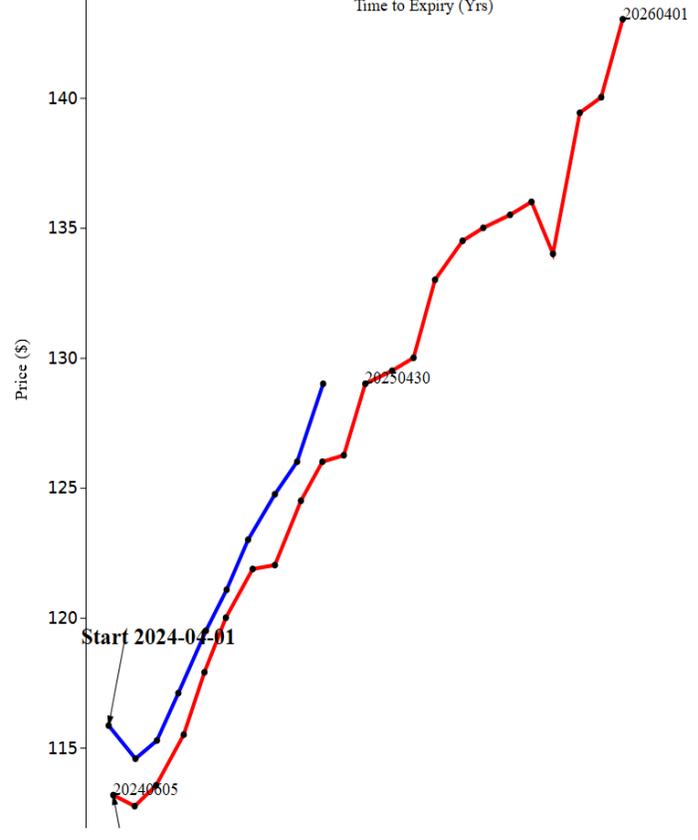
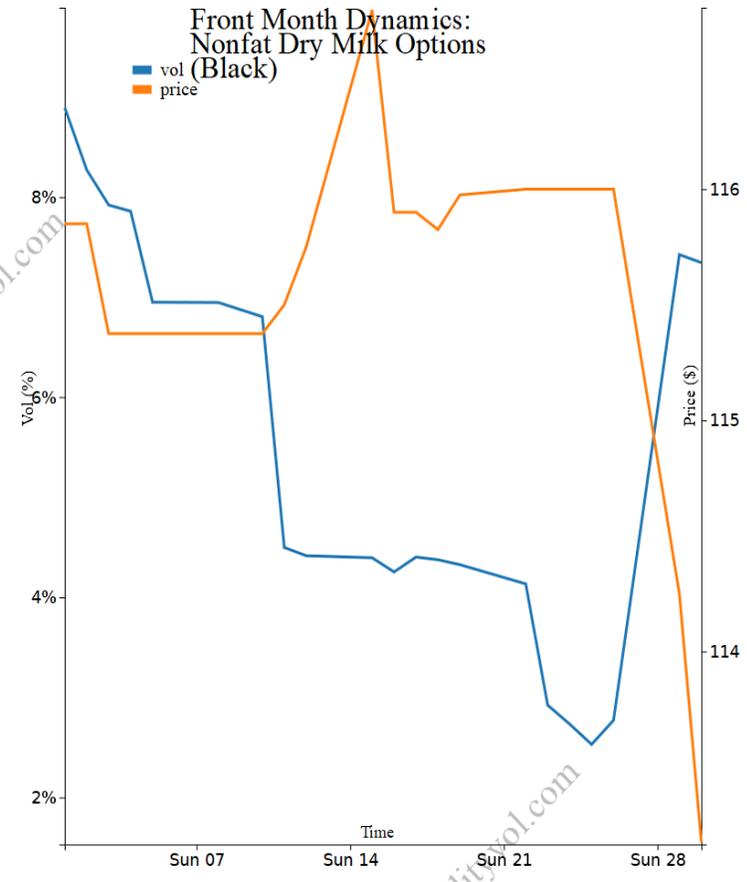
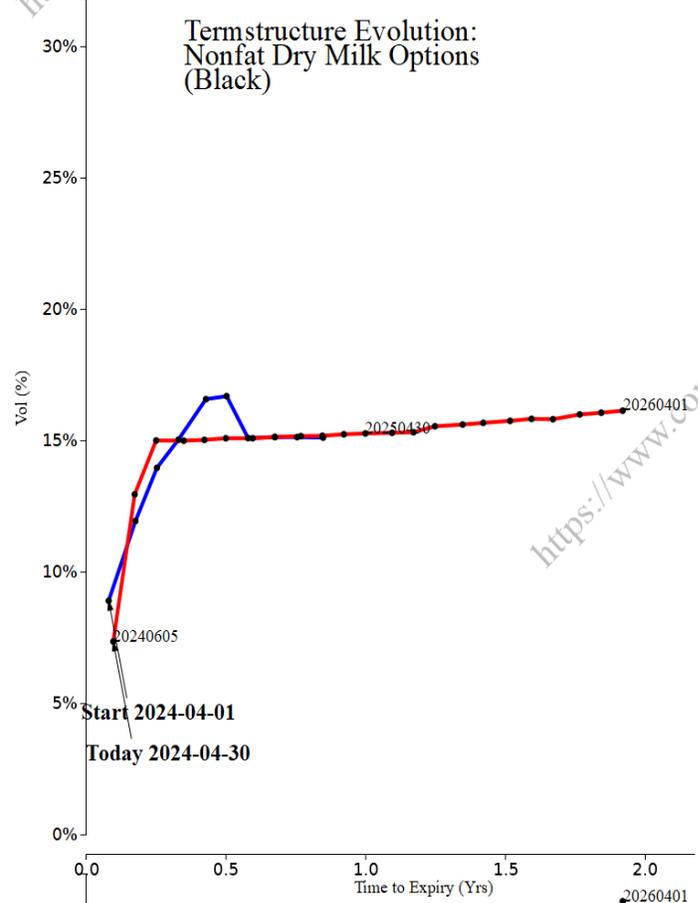


**Ags: Proteins, Meats and so forth**

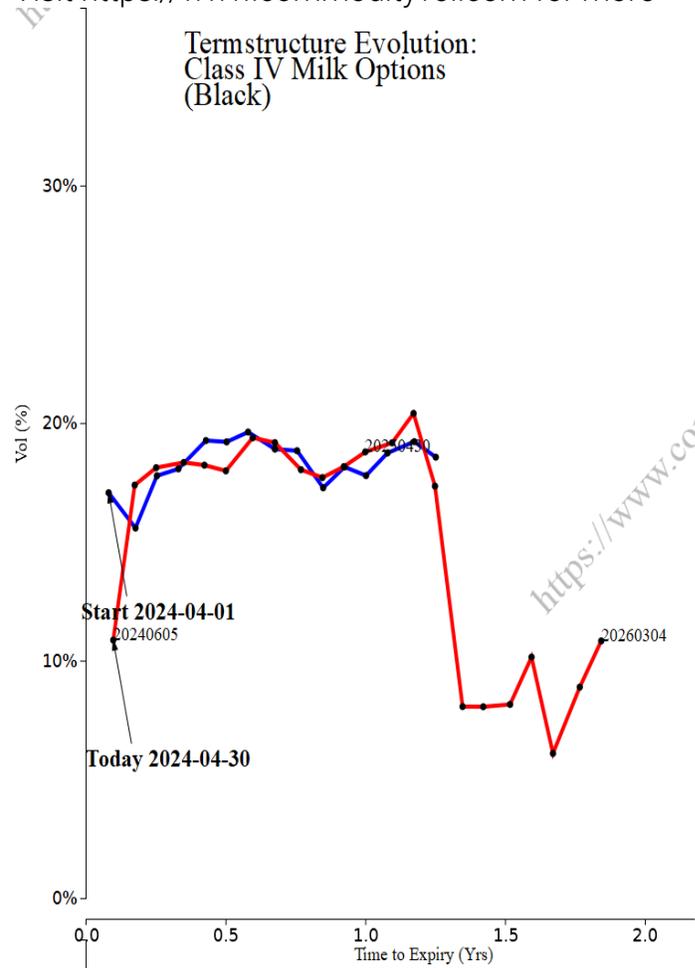




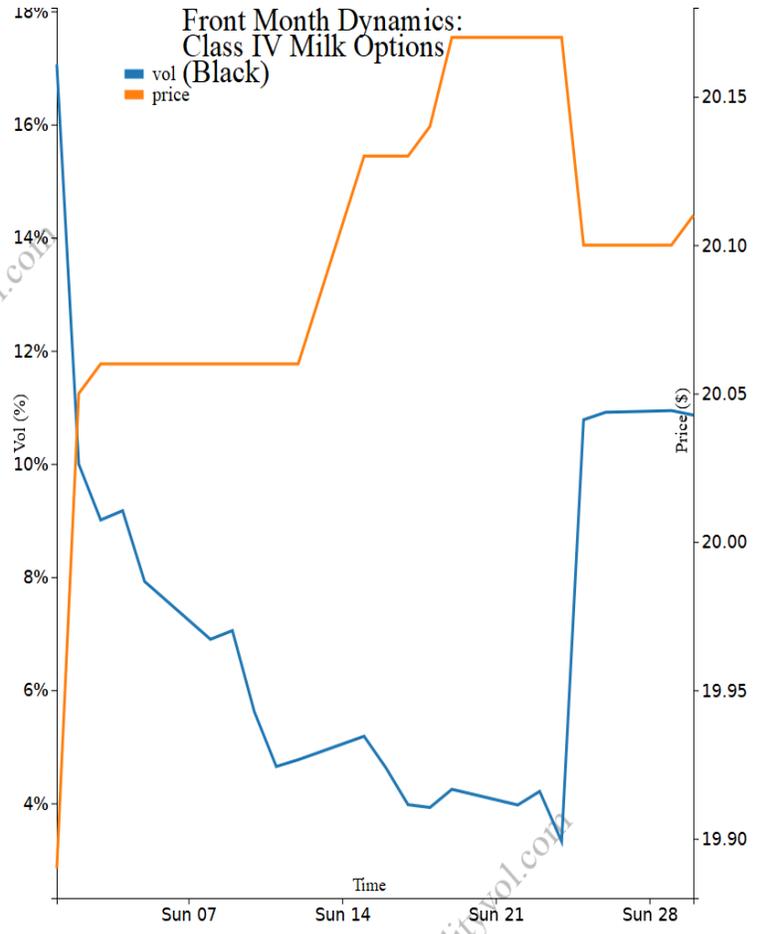




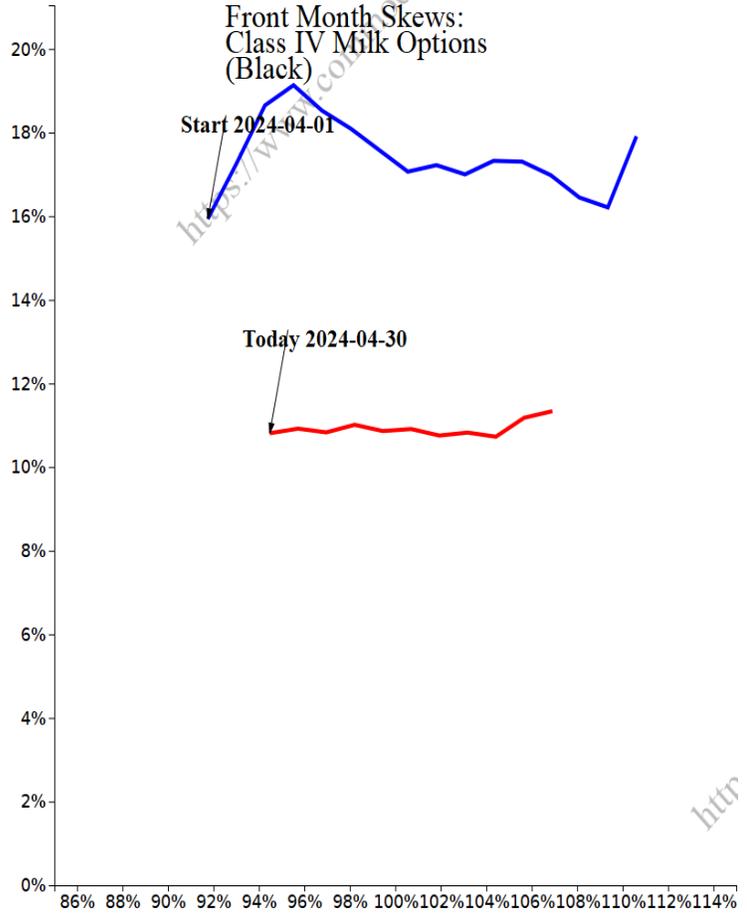
**Termstructure Evolution:  
Class IV Milk Options  
(Black)**



**Front Month Dynamics:  
Class IV Milk Options**



**Front Month Skews:  
Class IV Milk Options  
(Black)**

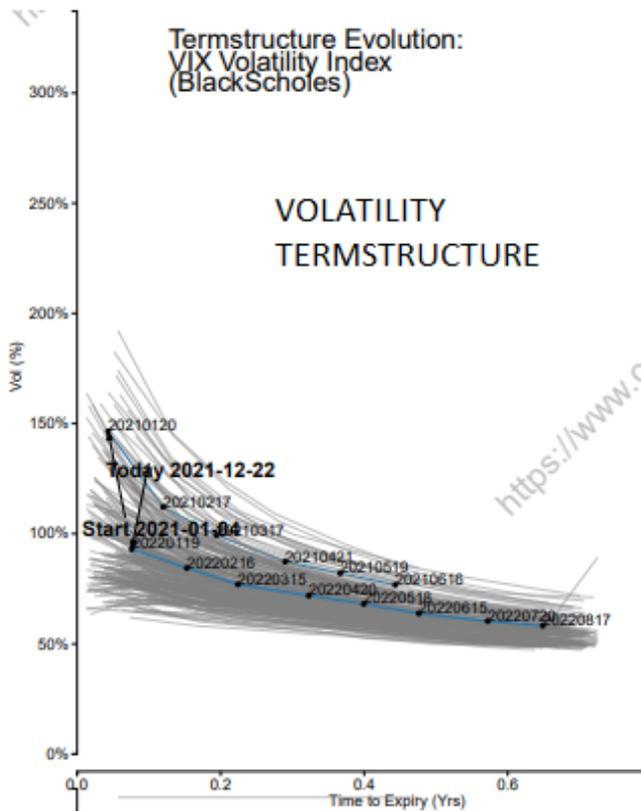


**Explanation:**

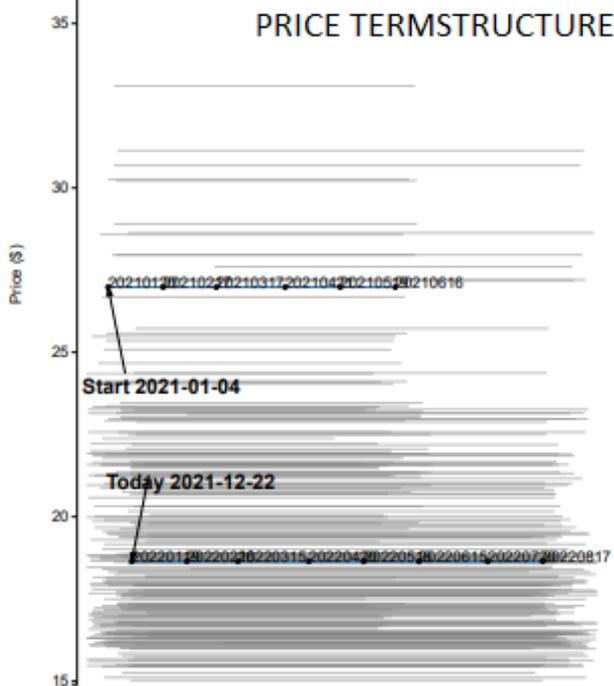
The document is composed of two parts. There is a tabular portion which summarizes the changes in front month futures prices and the changes in the at the money front month implied volatility. The results are presented as raw differences and percentage changes. The plots in this document try to give 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.

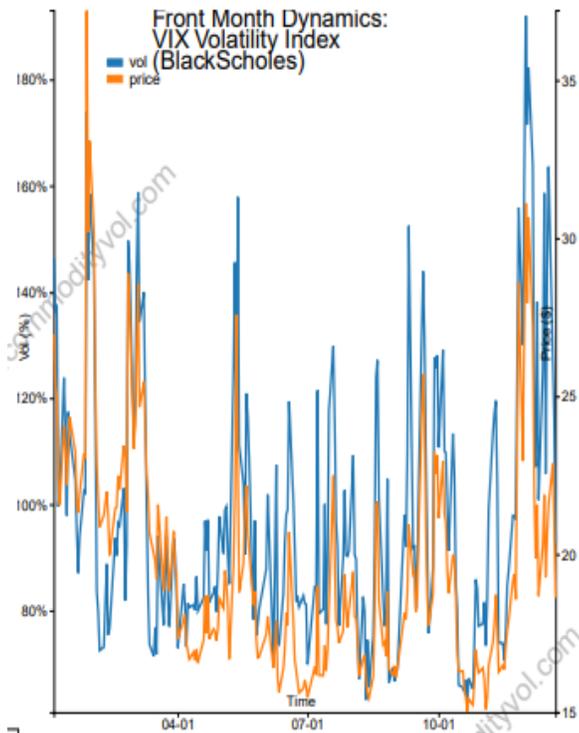


The starting curve is the termstructure at the beginning of the period. This curve is labelled start and is typically colored blue. The ending curve is typically colored red and denoted by the text: Today. The greyed out lines are the termstructures for each day of the period. The hope is that the range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



## Front Month At the Money Volatility and Front Month Price Over the Year:

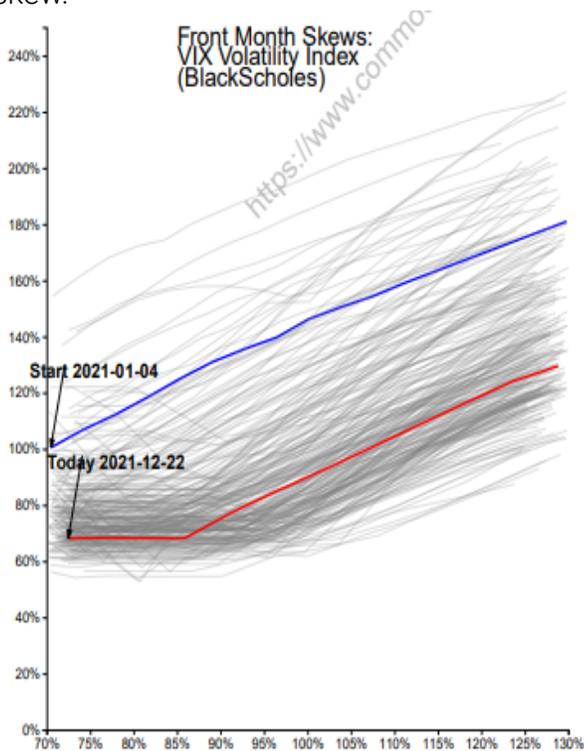
On the right hand panel we have the price and implied volatility of the front month contract.



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.

**About CommodityVol.com:**

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

**General Disclaimer:**

*CommodityVol.com (c) is an analytics and research entity which prepares analysis of options markets based on well known and commonly used models, including variations thereof. CommodityVol.com (c) uses data which ultimately originates with the exchanges. There is limited ability to verify or dispute the accuracy of this data. Exchange settles are treated as a given-irrespective of their economic applicability or likelihood of being correct. CommodityVol.com (c) is not a broker/dealer, commodity merchant broker, advisor, pool operator or registered advisor of any sort. Always consult with trusted and licensed advisors before making any financial decisions. Any information presented in this document, on the the company website, through email communication or phone is intended to be understood in an academic sense. We specifically make no claims as to fitness for purpose of any of the techniques employed to calculate our statistics, data or presentation. The user should verify all information and employ advisors to ascertain fitness for purpose of any presentation generated by us. Nothing in any presentation of CommodityVol.com, its principals, employees or contractors should be construed as an encouragement, inducement, incitement or advice to trade or engage in any transaction. Any use of estimates, statistics, forecasts, best guess and so on, are just that-best guesses. Please treat them accordingly*