

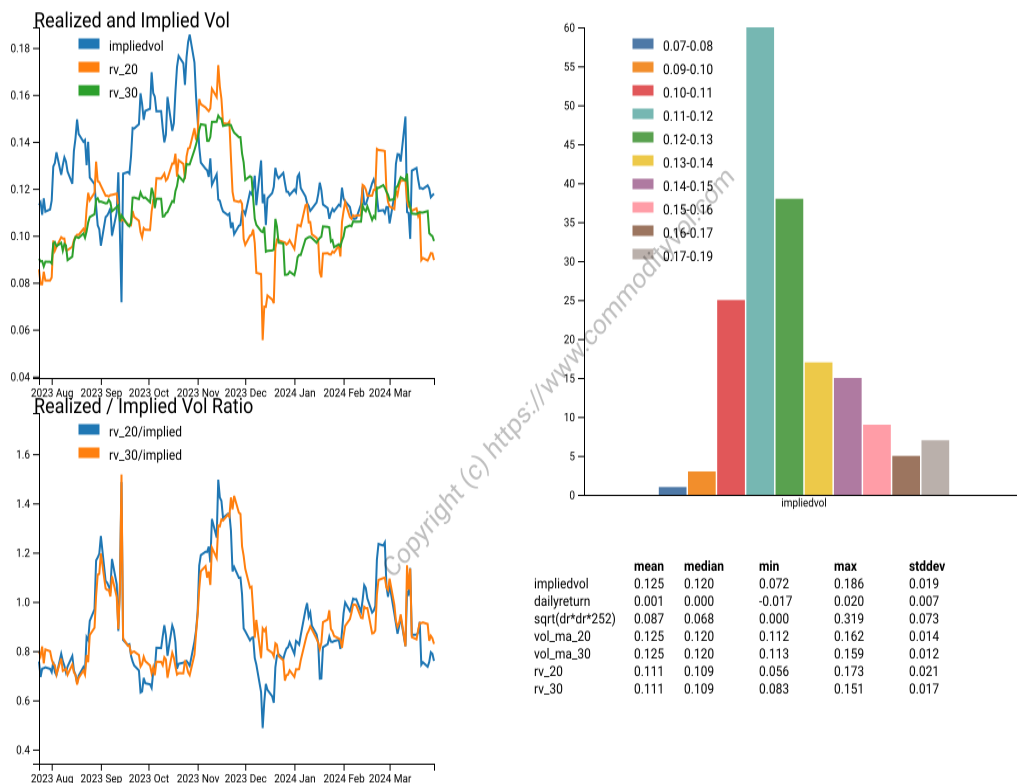


Welcome to our March 2024 Recap:

We are pleased to welcome you to our March 2024 month-end report. *unlike most months we stop March on the 28th to avoid the low volume and lack of trading on Good Friday.

The march of the equities continues higher this month. It feels like we've started with this line for the entirety of this letter. Through the first quarter of the year, the equity levitation has continued. The rate cuts expected yesterday haven't really materialized, and may not materialize for the foreseeable future, but the madness continues. It is all NVidia and all AI, all the time. It may work out, but we've seen this script and it ends in implosion, though that Fed seemed to have had more shackles, or maybe back then this would have raised someone's hackles. If it isn't AI, it is the new obesity drug. Again, the hoopla is reminiscent of the Viagra and Lipitor craze. In terms of broader market movement, vol markets seem to be moribund. Does it make sense to be long vol? We have implied vol pegged at 12.5% and realized vol at 11% (in SP500). Is vol forecasting rough times ahead, or has it gotten ahead of its skis? Heading into what is sure to be a contentious election, we lean long vol. However, again, the activist Fed can hammer down vol and paper over any price decline.

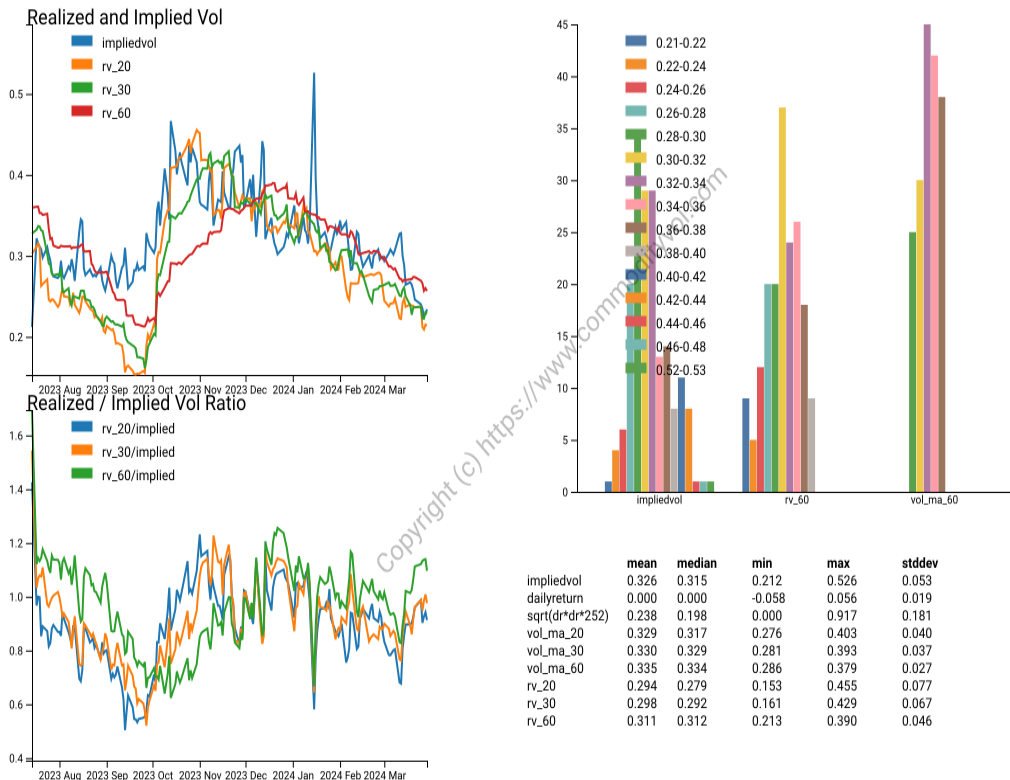
E-Mini S&P 500 Options Front Month 50Δ Last 180 days



Food was in the highlight most of last month. This month things are quieter. This is very much the March Madness pattern. In terms of prices, the soy complex was up, along with corn. The previous months' rocket ships, lean hogs, live cattle and feeder cattle took a break this month. Vol was up as dramatically on their declines.

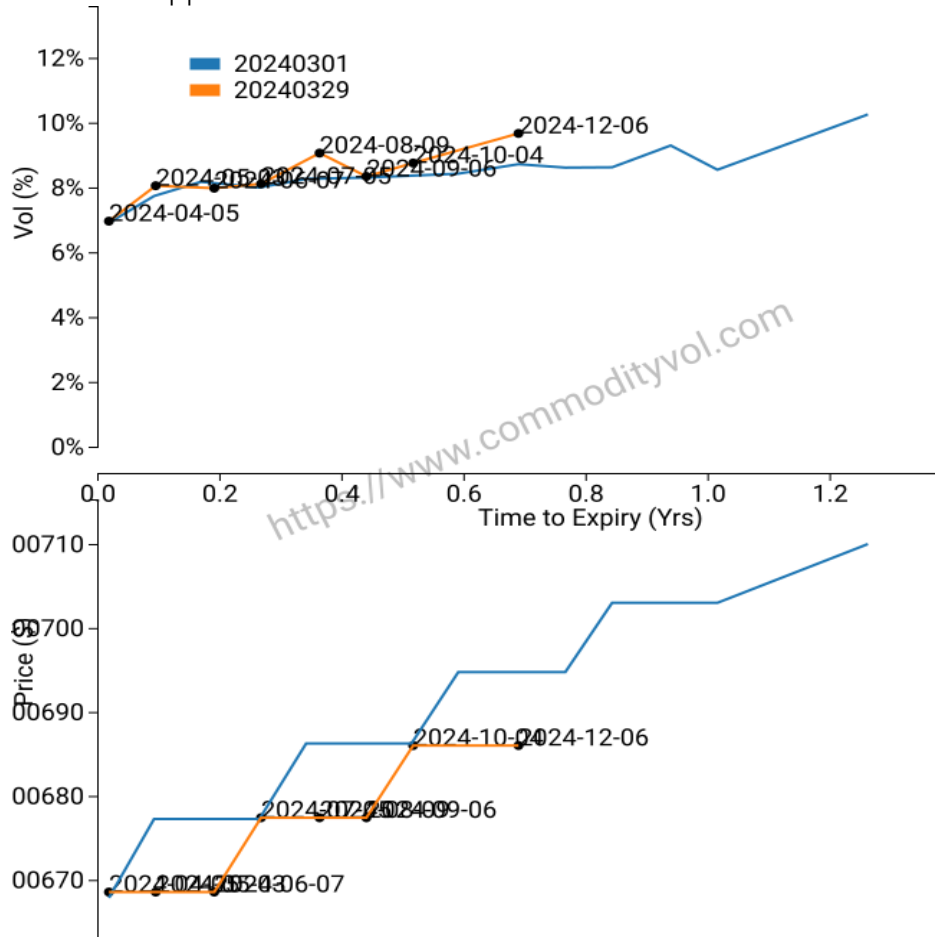
Energy markets are the biggest puzzles. There is a receding interest in trading the volatility products at exactly the time when risk shifting might be a good idea. The combined effects of two wars, sanctions on the Russians, drone attacks of the Ukrainians on Russian refineries, Russian Kinzhal attacks on natural gas storage in the Western Ukraine, a restriction in travel through the Bab el Mandeb should be a good time for financial musical chairs (of risk shifting). It doesn't look like the listed market is doing that. Both realized and implied vols are coming down over the last 180 days. Where this vol is going is anyone's guess. Markets, like children, do the darnedest things. Add this to the list of those things.

Crude Oil Options Front Month 50Δ Last 180 days



The Yen was the talk of the town this month. They have finally licked deflation... whatever that means. Based on this criterion, I would have to say Zimbabwe is the all time champion of licking deflation. A moribund economy with a rapidly declining birthrate is sure to be easier to fix, right? The move in the price curve was breathtaking (this is a conventional currency price curve after all). Oddly enough vol did show signs of life. There was a bid in vol 6 months out. Obviously, nothing is ringing alarm bells, but it is this

author's position that one of the fallout from the Fukushima disaster is an incredible coordination in central bank monetary policy. You don't see the Beggar Thy Neighbor devaluations or other facets of the market that were present in the 1980s and 1990s. One day the dam will break, but the gray hairs on our head may yield to a bald scalp before it happens.



The metals complex showed clear signs of life! Gold, copper, palladium and silver all were up dramatically. Vol was up significantly in copper and gold. Is this inflation rearing its head again? Have the Chinese gotten their house in order and started consuming more copper? Nothing is clear. There is a definite belief that inflation is probably here to stay. The Goldilocks case for the US Federal government is a holding of the line on spending (which has been a problem for 40 years) and allowing inflation to erode the debt. It is interesting that the move in metals corresponds to statements from Fed members, like Waller, who claim they are comfortable with higher rates for now. Perhaps this is all bluster.

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

Forex

Both ETH and BTC futures were up dramatically-again. This is not as dramatic as last month, but 3% and 12% moves are nothing to sneeze at. As you might expect, the vol for

the cryptos was up-both are up 1300bps. Peso vol is also screaming, at least in the front month. The moves in the Peso are interesting as they came out of thin air and most likely represent thin Good Friday trading. In the case of Ethereum is interesting that the Put skew is becoming more pronounced.

[Foreign Exchange ATM](#)

[Bitcoin Detail](#)

[Ethereum Detail](#)

[Yen Detail](#)

[Peso Detail](#)

Rates

Very interesting action presented itself in the fixed income and STIRS market. The front part of the market, SOFR, exhibited a selloff in vol and, in some cases, prices as well. As we move into the Two Year Note contract, both vol and prices were down relatively strongly. This persists in the 5, 10 and 30 Year contracts as well. Prices rose as vol was aggressively offered over the month. It looks like rates are headed up in the near term and down in the long term. The move in the near term seems to be with diminished uncertainty. It is, to our mind, a very mixed up picture.

[Interest Rates ATM](#)

[30 Year Detail](#)

[SOFR Detail](#)

Equity Indexes

Equity indexes are the place where good sense finds itself in foreign lands. All the major indexes saw their prices rise. Nasdaq and SP500 saw their vols rise a little, but in both cases, the skew flattened. Given the potentially cataclysmic election, continuing saga of antagonism with the Russians and Chinese, domestic instability, the moves reflect some sort of optimism that a non-believer may not comprehend. Perhaps this is an example of the market 'climbing over a wall of worry' or the work of massive momentum investing in the handful of performant names. Time will tell-seven months to be precise.

[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

At The Money Roundup of Products

Energy

| exch/prod | desc | futures chng [%] | vol chng [%] |
|-----------|---|------------------|-----------------|
| NYMEX/BZO | Brent Crude Oil Margin | +3.450 [+4.1%] | -0.044 [-17.1%] |
| NYMEX/CVR | Chicago Ethanol(platts) Average Price | +0.100 [+6.8%] | -0.091 [-63.6%] |
| NYMEX/LO | Crude Oil | +3.200 [+4.0%] | -0.066 [-22.4%] |
| NYMEX/LN | European Natural Gas | -0.072 [-3.9%] | -0.085 [-13.0%] |
| NYMEX/E7 | Henry Hub Financial Last Day | -0.072 [-3.9%] | -0.054 [-8.2%] |
| NYMEX/ON | Natural Gas | -0.072 [-3.9%] | -0.083 [-12.8%] |
| NYMEX/OH | NY Harbor ULSD | -0.082 [-3.0%] | -0.039 [-11.8%] |
| NYMEX/OB | RBOB | +0.106 [+4.1%] | -0.043 [-13.0%] |

InterestRates

| exch/prod | desc | futures chng [%] | vol chng [%] |
|-----------|---------------------------------------|------------------|-----------------|
| CBT/26 | 2 YR US Treasury Note | -0.348 [-0.3%] | -0.007 [-28.6%] |
| CBT/25 | 5 YR US Treasury Note | -0.352 [-0.3%] | -0.012 [-23.1%] |
| CBT/21 | 10 YR US Treasury Note | -0.234 [-0.2%] | -0.015 [-21.1%] |
| CBT/17 | 30 YR US Treasury Bond | +0.406 [+0.3%] | -0.020 [-17.2%] |
| CBT/UBE | Long Term US Treasury Bond | +0.125 [+0.1%] | -0.023 [-15.4%] |
| CME/S0 | One-year Mid-curve Three-month SOFR | +0.040 [+0.0%] | -0.004 [-22.6%] |
| CME/SR3 | Three-month SOFR | +0.160 [+0.2%] | +0.002 [+61.2%] |
| CME/S3 | Three-year Mid-curve Three-month SOFR | -0.010 [-0.0%] | -0.002 [-13.8%] |
| CME/S2 | Two-year Mid-curve Three-month SOFR | -0.060 [-0.1%] | -0.003 [-20.4%] |

Forex

| exch/prod | desc | futures chng [%] | vol chng [%] |
|-----------|----------------|-----------------------|-----------------|
| CME/ADU | AUDUSD 2pmpfix | -0.000 [-0.0%] | -0.002 [-3.0%] |
| CME/BTC | Bitcoin | +7705.000 [+12.1%] | +0.121 [+19.3%] |
| CME/CAU | CADUSD 2pmpfix | +0.002 [+0.2%] | -0.006 [-11.7%] |
| CME/CHU | CHFUSD 2pmpfix | -0.016 [-1.4%] | -0.016 [-20.6%] |
| CME/ETH | Ethereum | +107.000 [+3.1%] | +0.125 [+19.5%] |
| CME/EUU | EURUSD 2pmpfix | -0.003 [-0.2%] | -0.012 [-18.8%] |
| CME/GBU | GBPUSD 2pmpfix | -0.004 [-0.3%] | -0.006 [-10.1%] |
| CME/JPU | JPYUSD 2pmpfix | +0.000 [+0.1%] | -0.004 [-5.8%] |
| CME/MP | Mexican Peso | +0.001 [+1.4%] | +0.004 [+6.8%] |
| CME/NE | New Zealand | -0.003 [-0.5%] | -0.004 [-5.4%] |

| exch/prod | desc | futures chng [%] | vol chng [%] |
|-----------|-----------------|------------------|-----------------|
| CME/DK | Class IV Milk | +0.100 [+0.5%] | -0.061 [-61.1%] |
| CBT/C | Corn | +0.173 [+4.1%] | -0.012 [-5.3%] |
| CME/62 | Feeder Cattle | -5.850 [-2.3%] | +0.056 [+56.9%] |
| CBT/KW | KC HRW Wheat | +0.208 [+3.7%] | -0.002 [-0.8%] |
| CME/LN | Lean Hog | -1.450 [-1.6%] | -0.061 [-34.2%] |
| CME/48 | Live Cattle | -3.450 [-1.8%] | -0.000 [-0.1%] |
| CME/NF | Nonfat Dry Milk | -1.425 [-1.2%] | -0.033 [-47.2%] |
| CBT/O | Oats | -0.147 [-4.0%] | -0.054 [-10.4%] |
| CBT/14 | Rough Rice | -2.250 [-12.1%] | -0.019 [-11.4%] |
| CBT/S | Soybean | +0.402 [+3.5%] | -0.037 [-20.2%] |
| CBT/06 | Soybean Meal | +5.400 [+1.6%] | +0.008 [+3.6%] |
| CBT/07 | Soybean Oil | +2.790 [+6.2%] | +0.032 [+12.9%] |
| CBT/W | Wheat | +0.025 [+0.4%] | +0.002 [+0.5%] |

EquityIndex

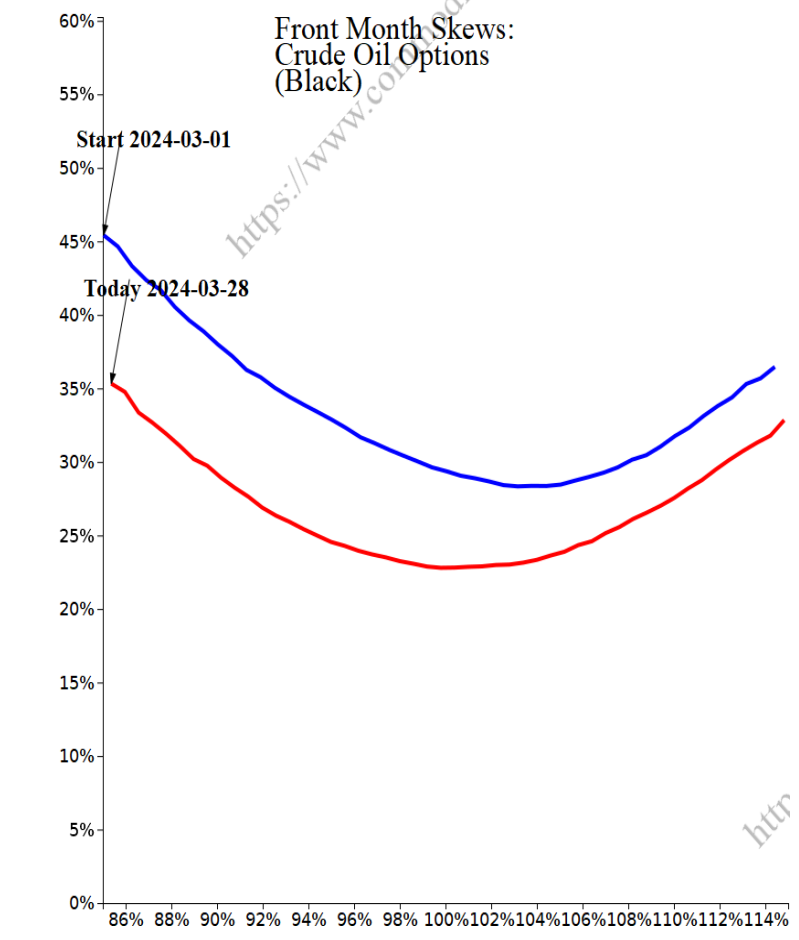
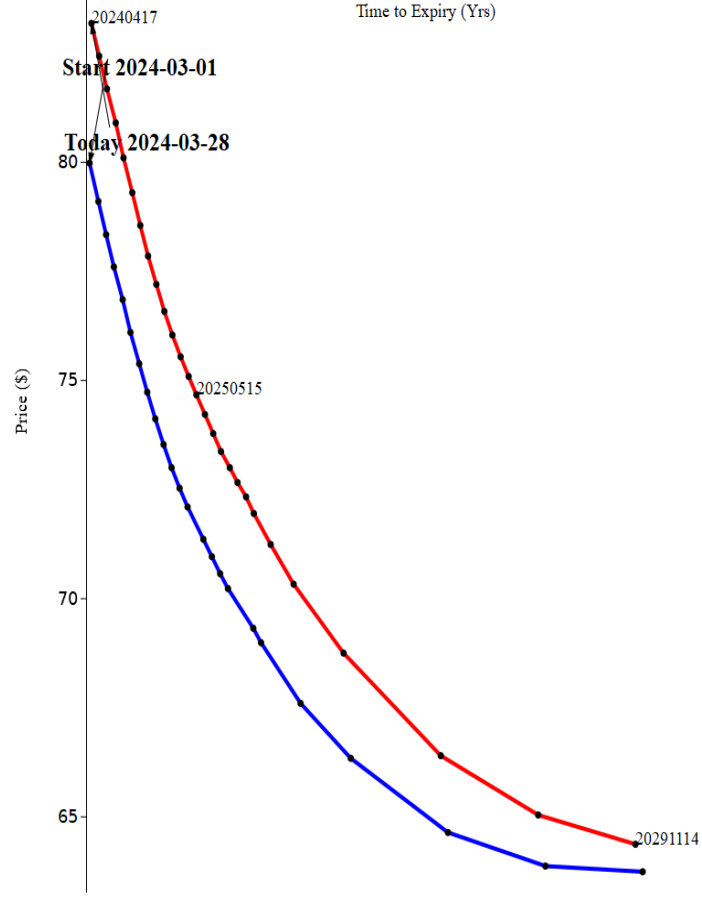
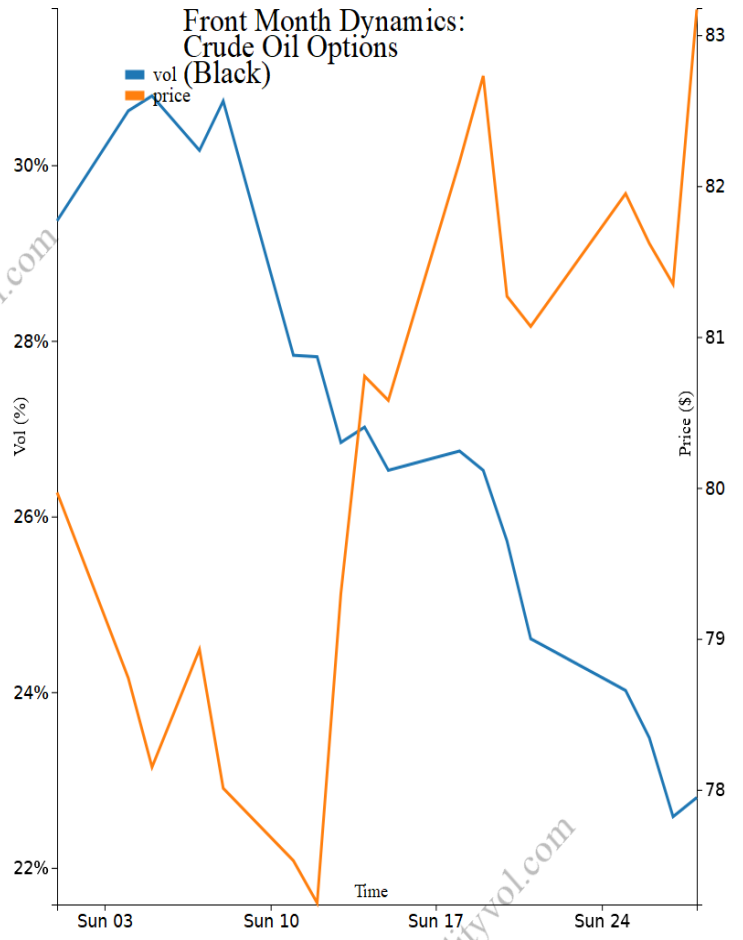
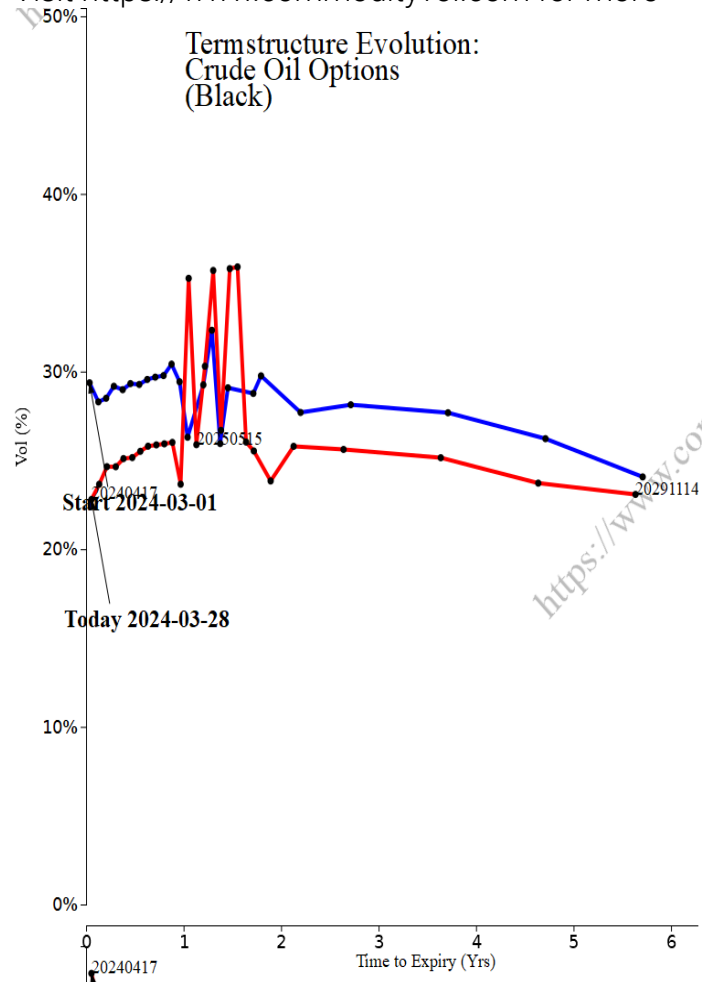
| exch/prod | desc | futures chng [%] | vol chng [%] |
|-----------|------------------------|-------------------|-----------------|
| CBT/YM | E-Mini Dow | +1034.000 [+2.6%] | +0.031 [+33.3%] |
| CME/NQ | E-Mini Nasdaq | +136.750 [+0.7%] | +0.016 [+10.6%] |
| CME/RTO | E-Mini Russell 2000 | +67.700 [+3.3%] | -0.040 [-17.8%] |
| CME/RTM | E-Mini Russell EOM | +43.700 [+2.1%] | -0.050 [-22.5%] |
| CME/ES | E-Mini S&P 500 | +162.500 [+3.2%] | +0.013 [+12.6%] |
| CBOE/VIX | VIX Volatility Index | -0.100 [-0.8%] | -0.057 [-10.4%] |

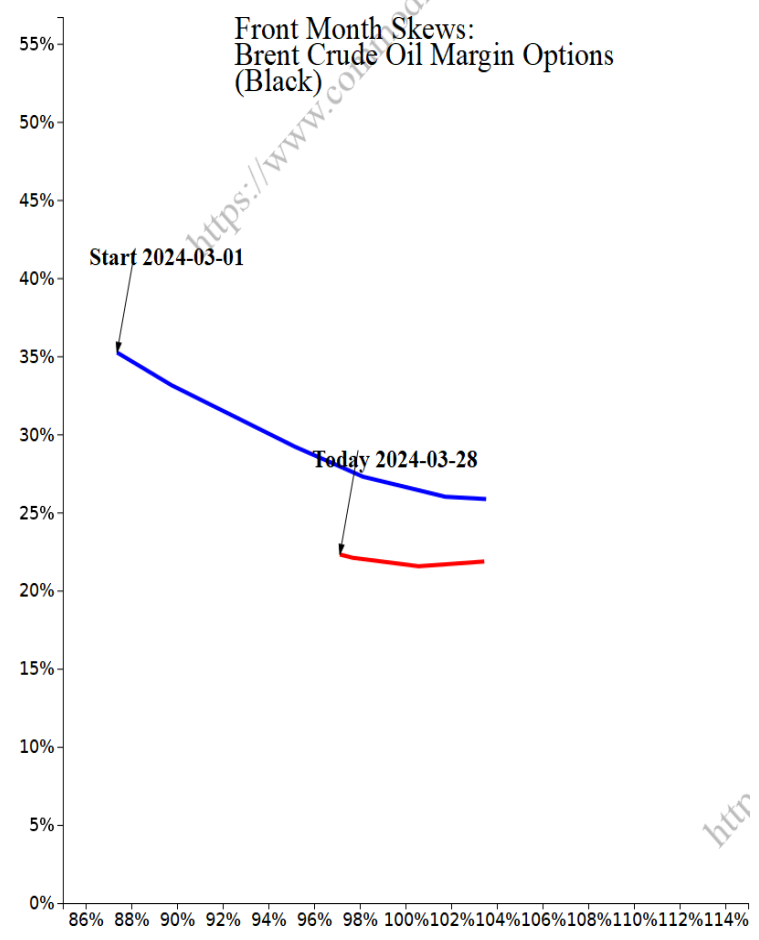
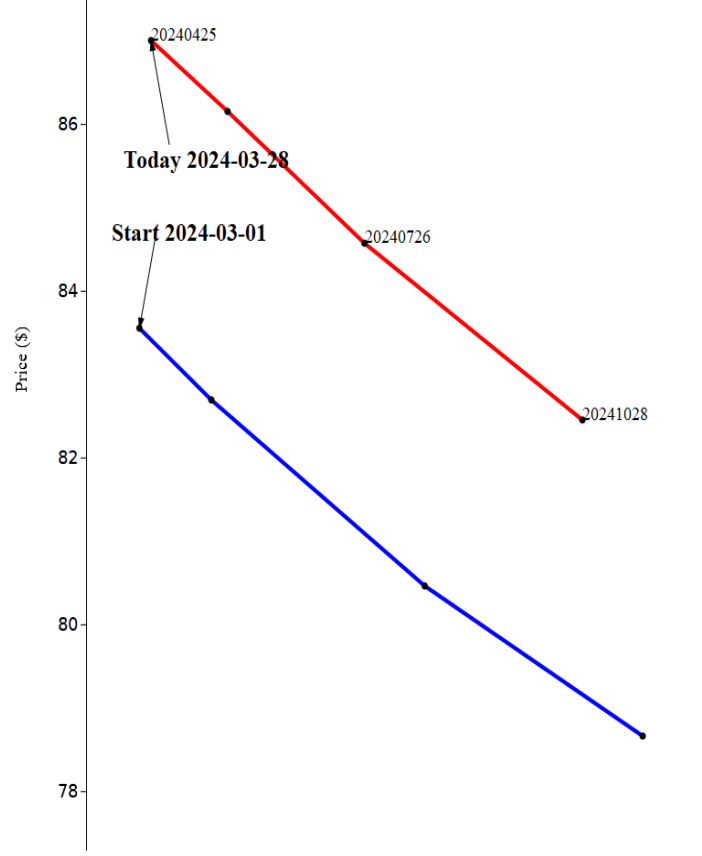
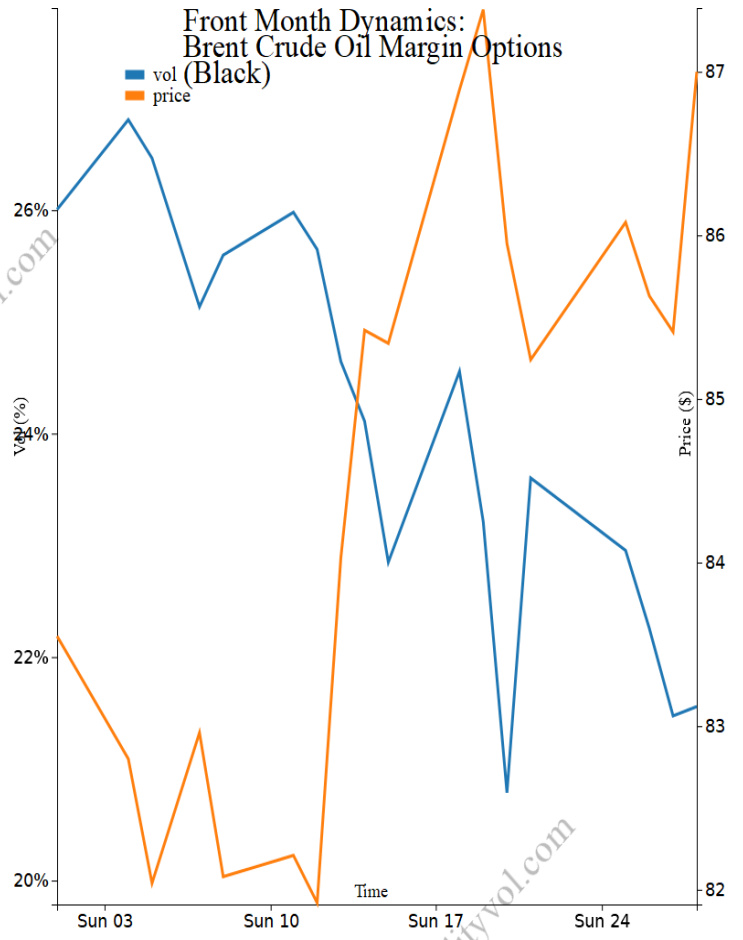
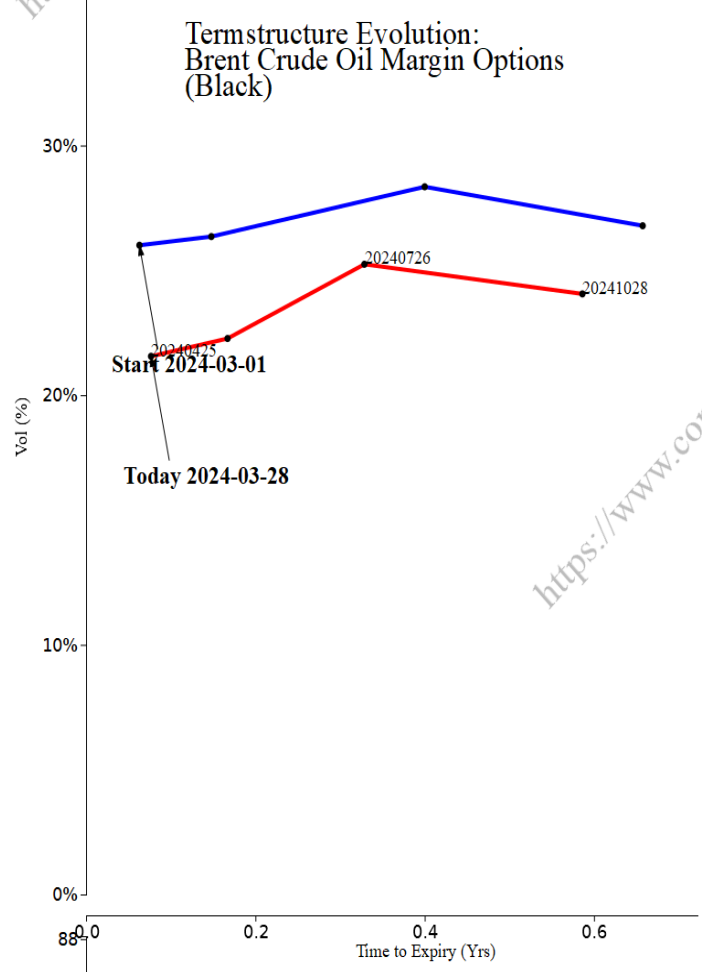
Metals

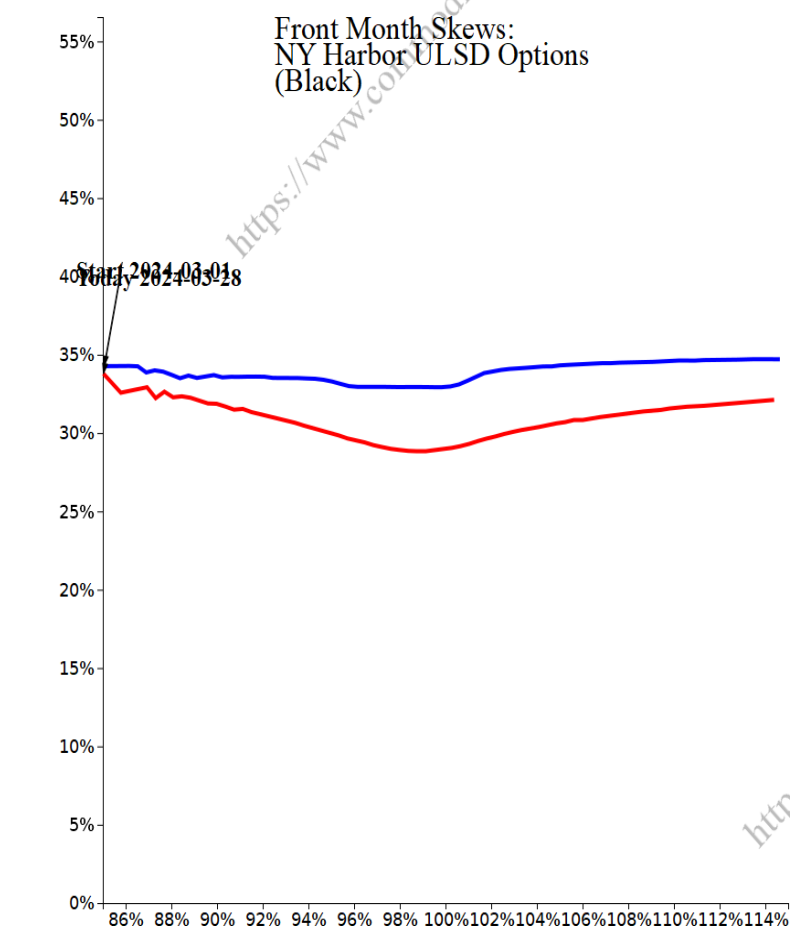
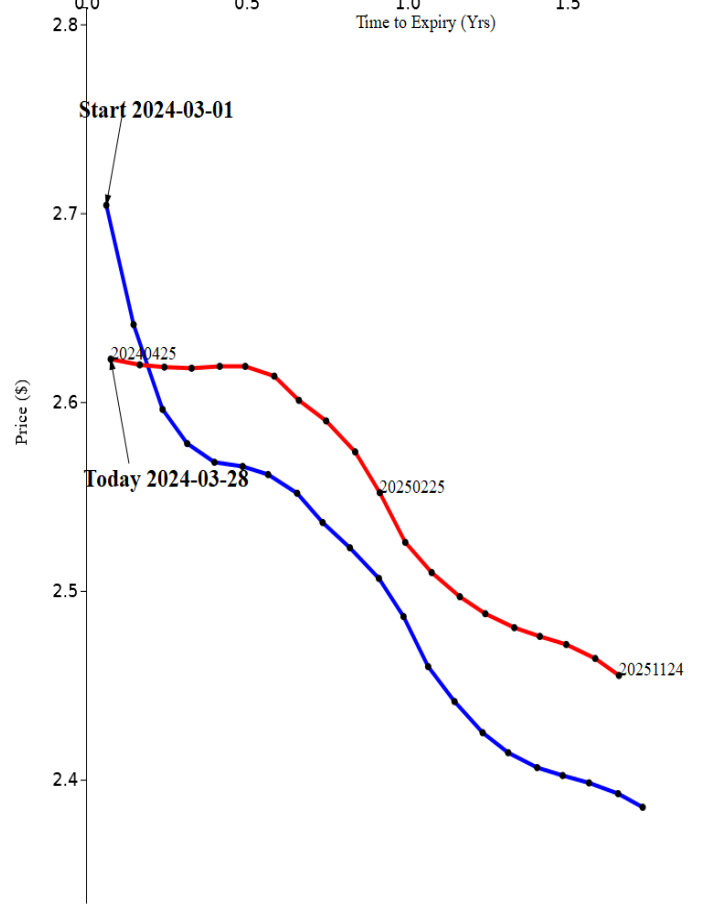
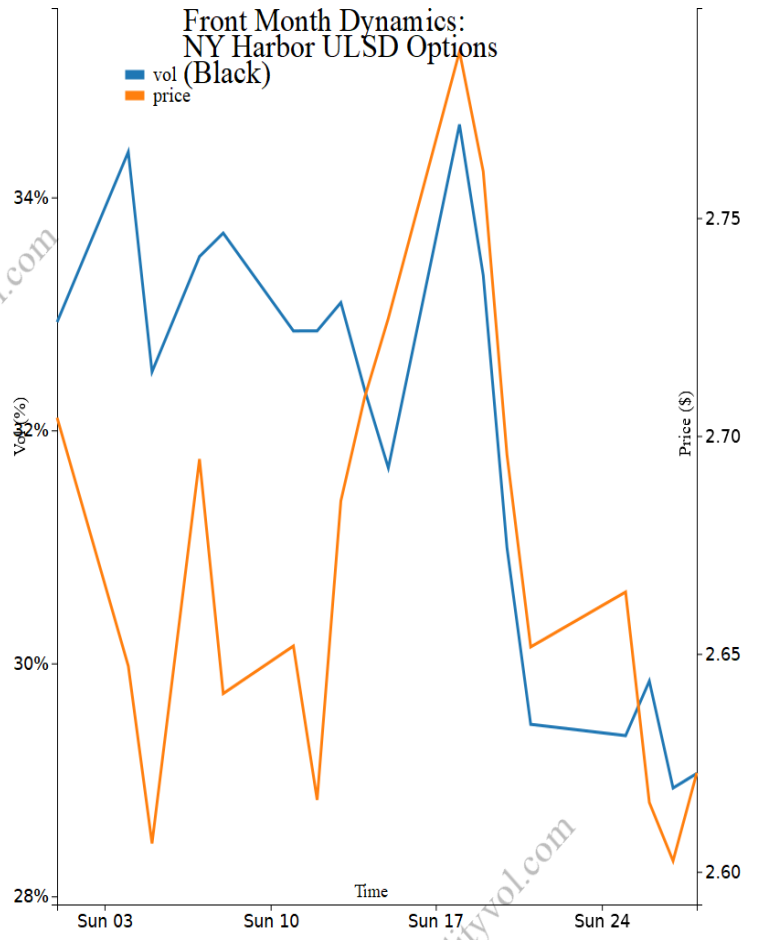
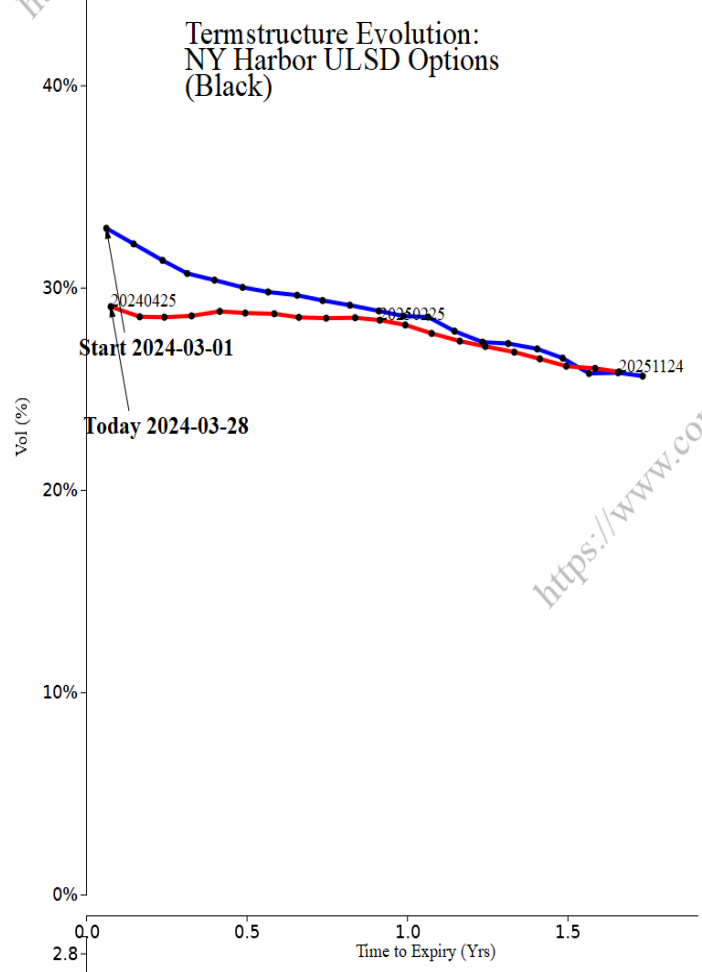
| exch/prod | desc | futures chng [%] | vol chng [%] |
|-----------|-----------|------------------|-----------------|
| COMEX/HX | Copper | +0.145 [+3.8%] | +0.032 [+23.0%] |
| COMEX/OG | Gold | +142.700 [+6.8%] | +0.018 [+15.6%] |
| NYMEX/PAO | Palladium | +59.000 [+6.1%] | -0.032 [-8.0%] |
| NYMEX/PO | Platinum | +33.100 [+3.7%] | +0.001 [+0.4%] |
| COMEX/SO | Silver | +1.552 [+6.6%] | +0.020 [+9.1%] |

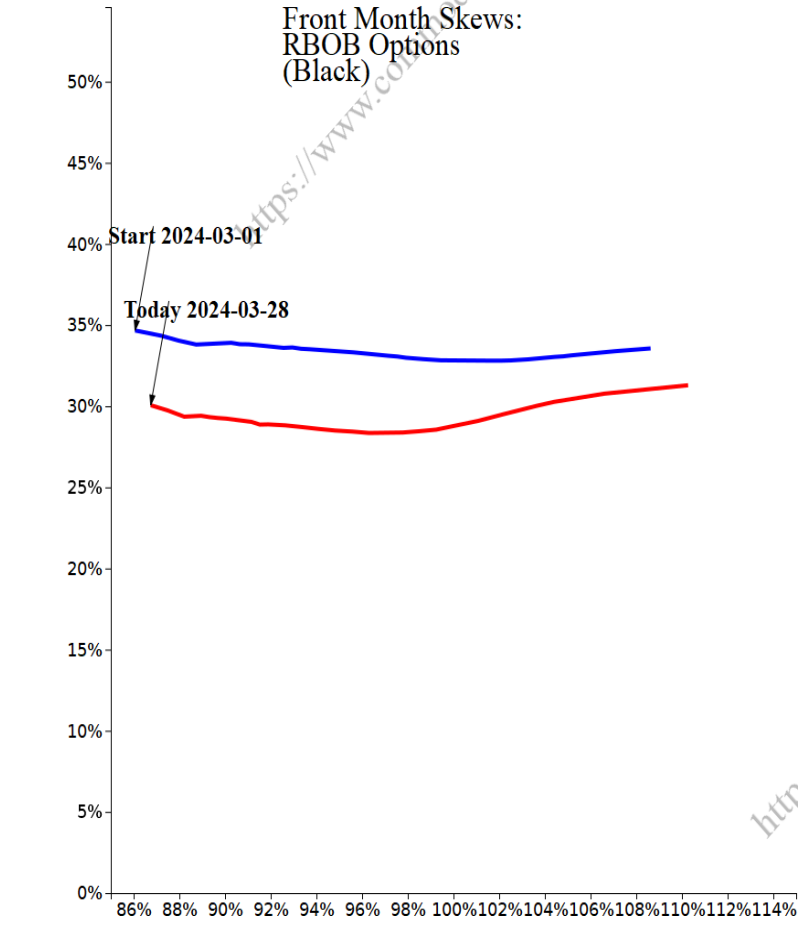
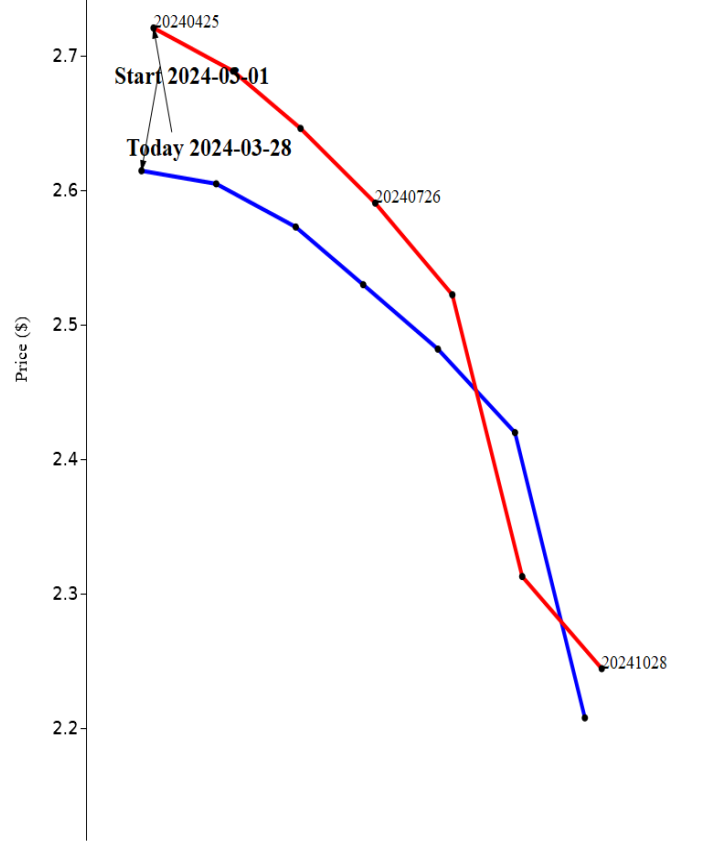
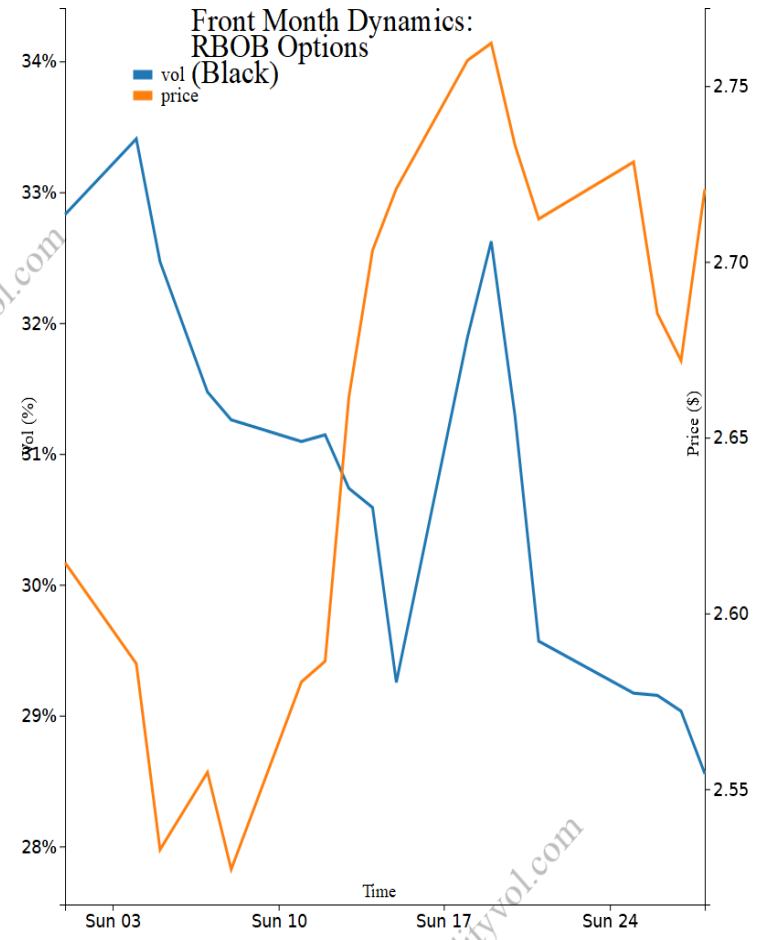
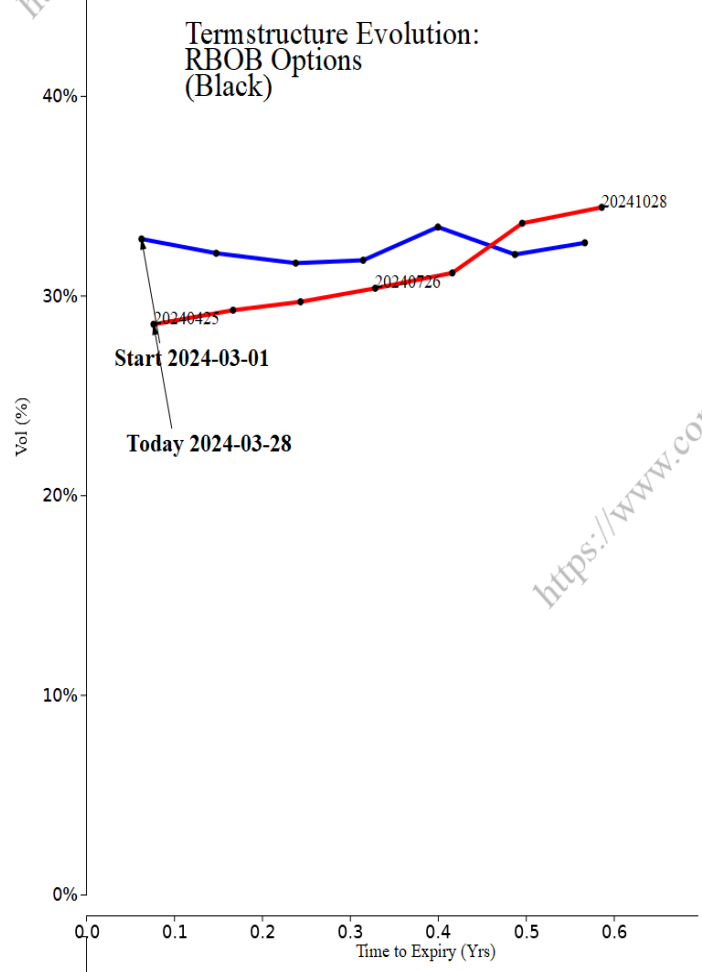
Skews, Termstructures and more

Energy: Crude and Derivatives

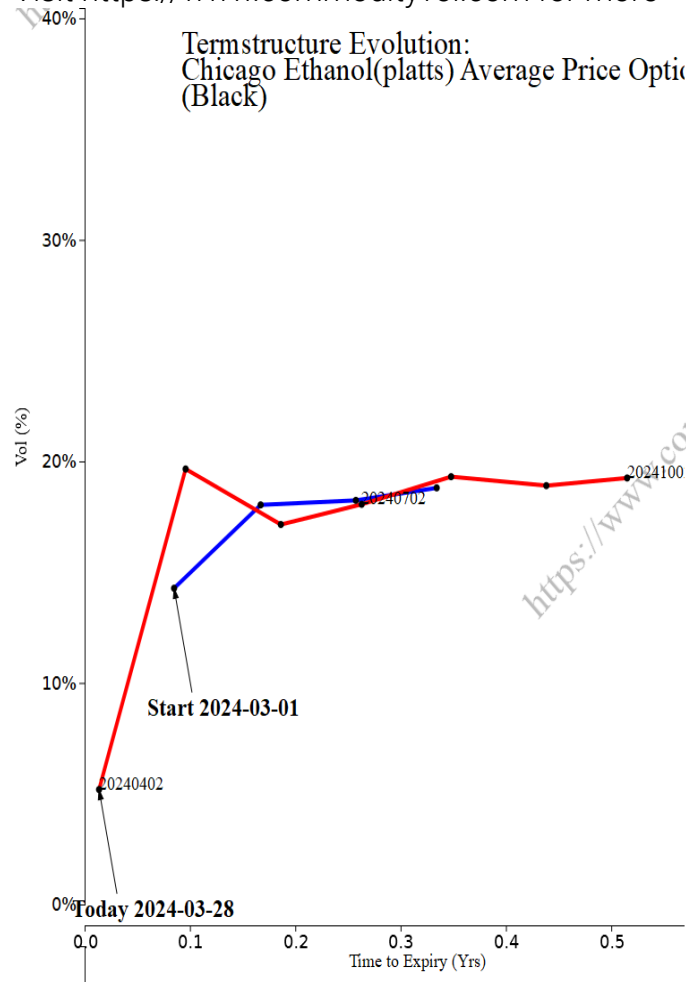




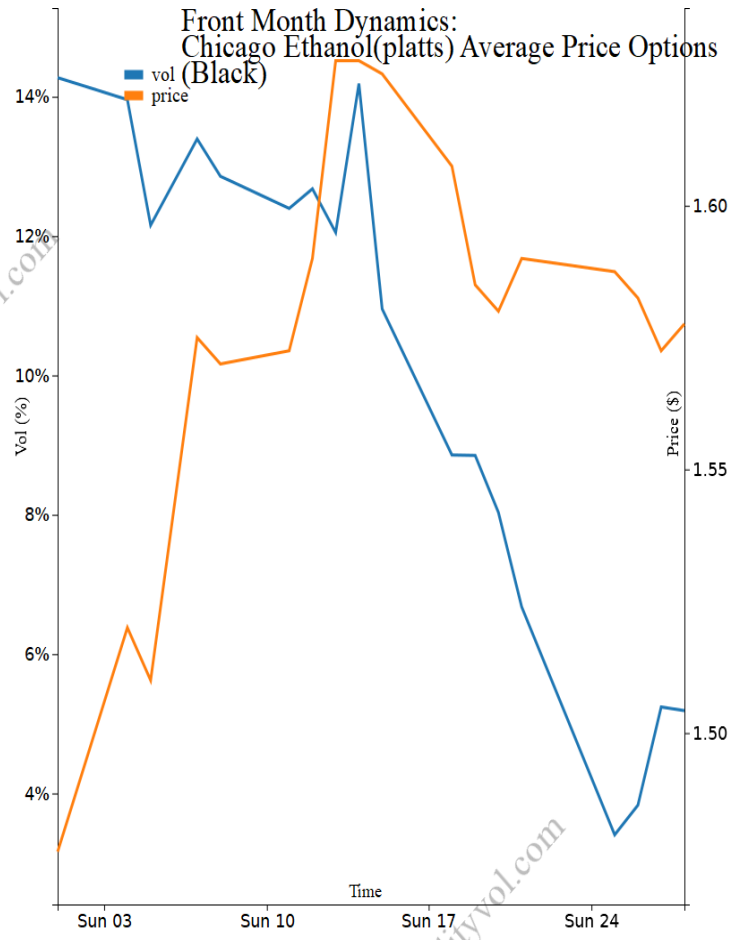




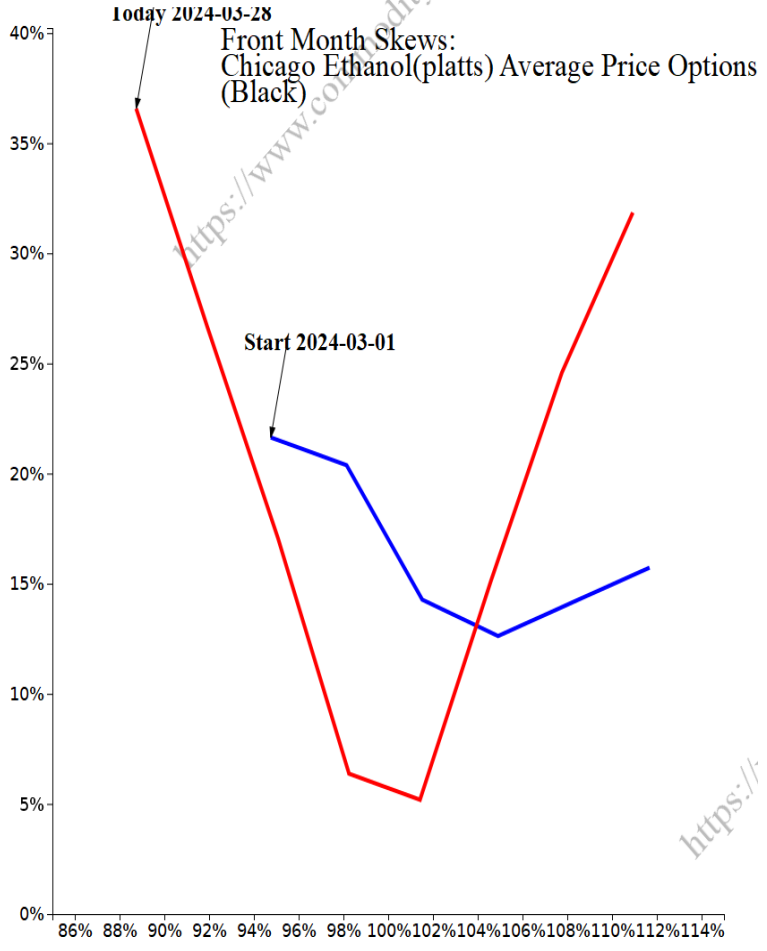
Termstructure Evolution:
Chicago Ethanol(platts) Average Price Optic
(Black)



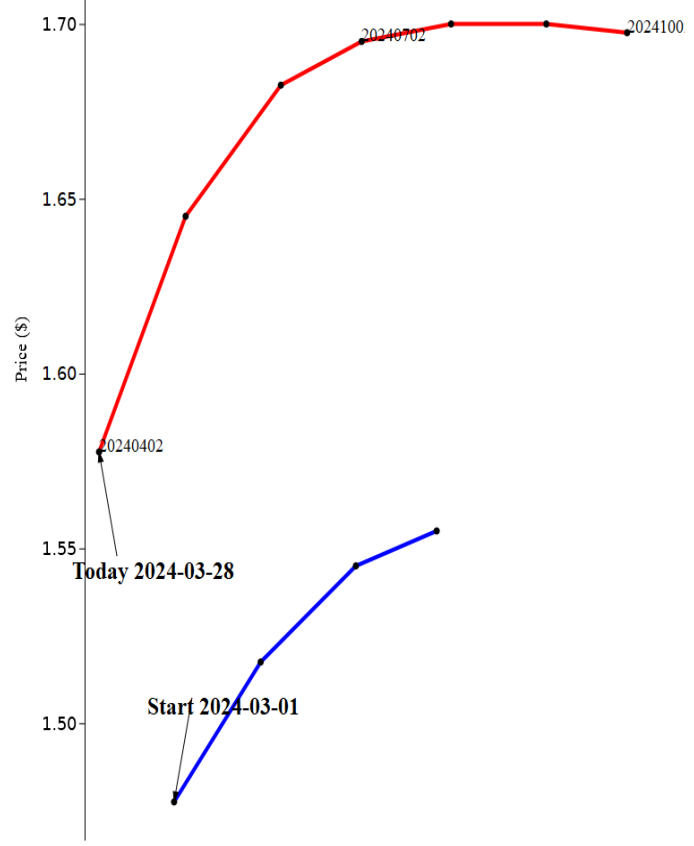
Front Month Dynamics:
Chicago Ethanol(platts) Average Price Options
(Black)



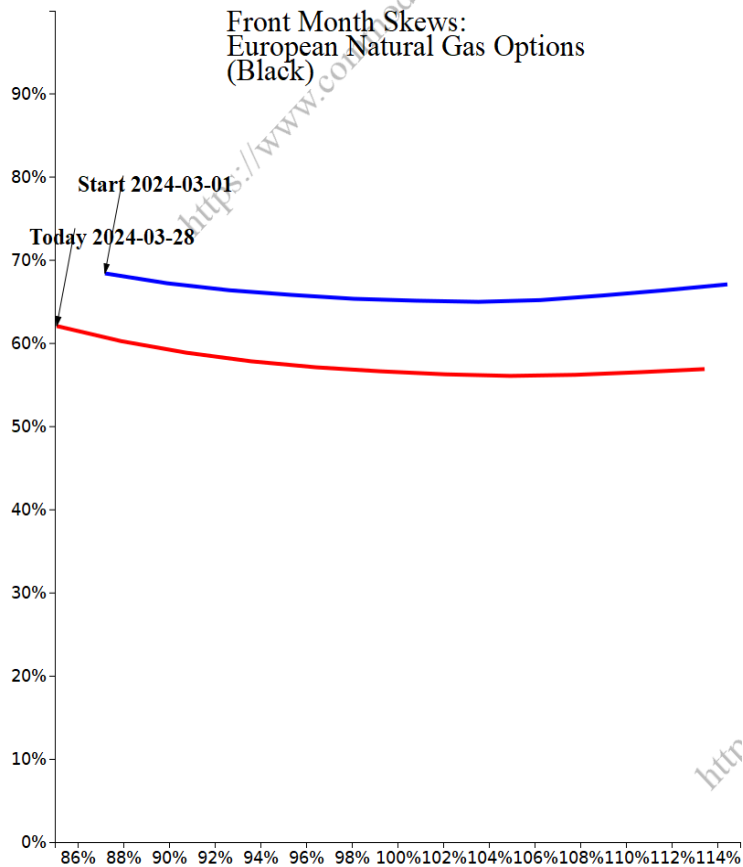
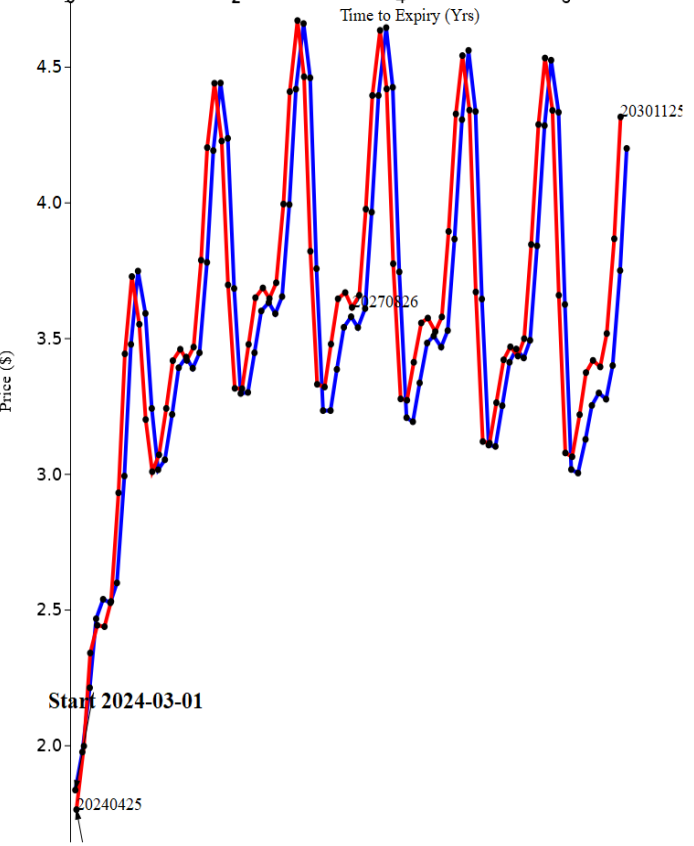
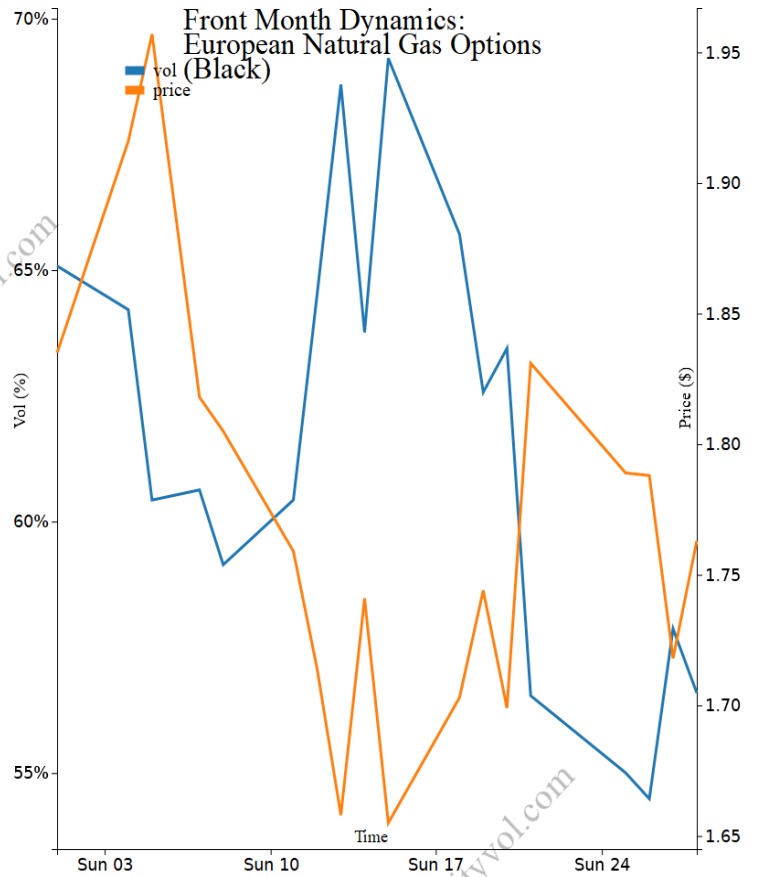
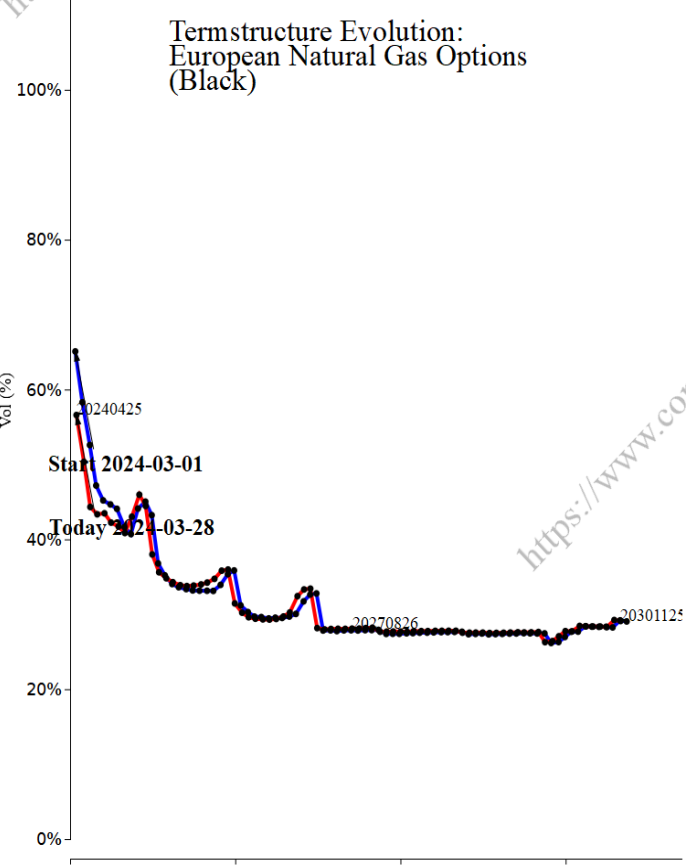
Front Month Skews:
Chicago Ethanol(platts) Average Price Options
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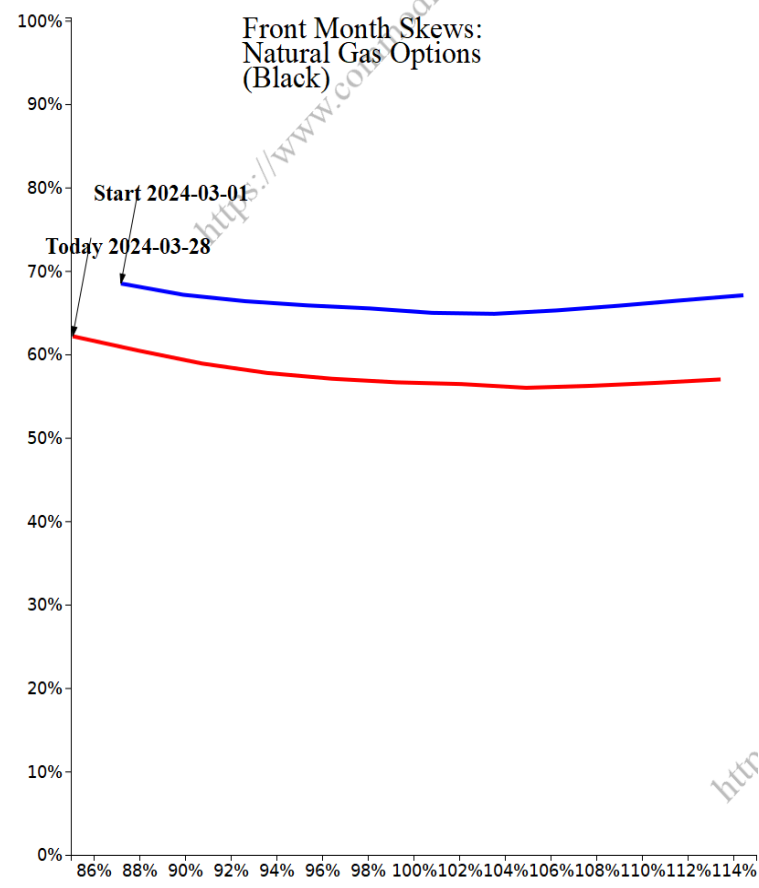
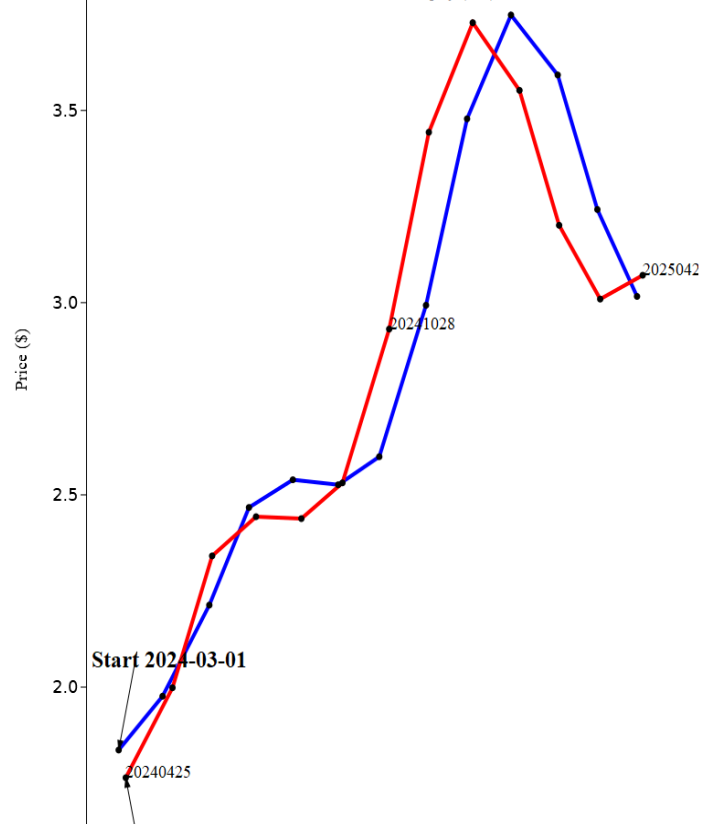
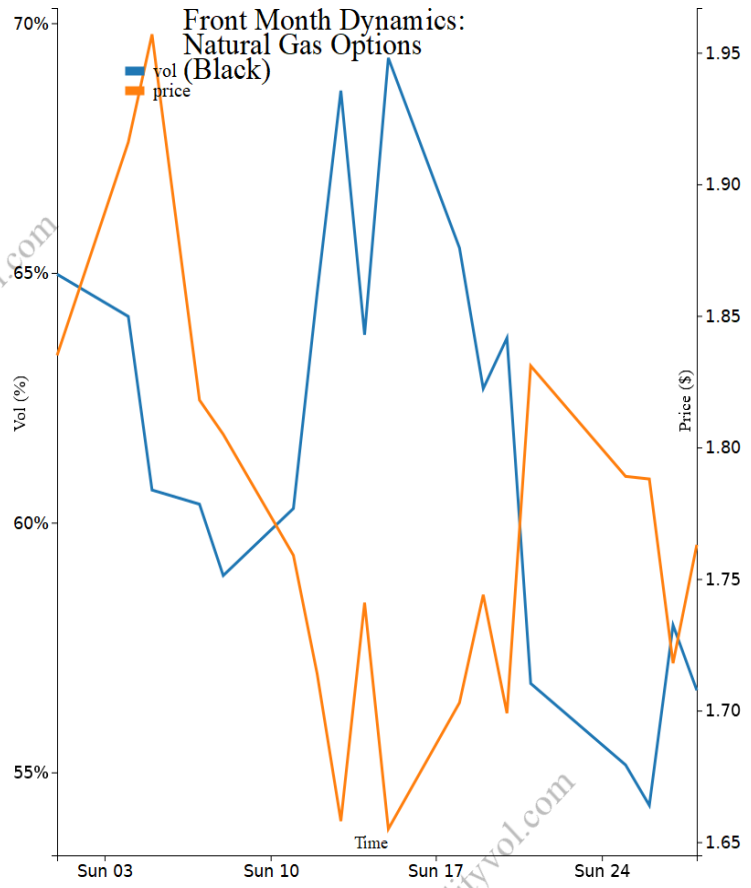
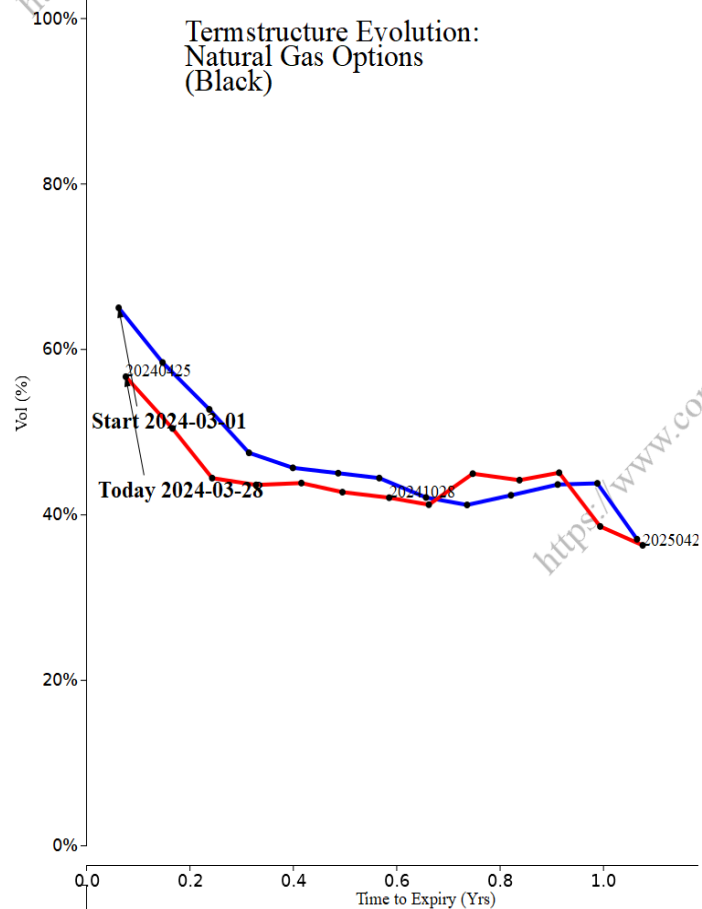


Termstructure Evolution:
Chicago Ethanol(platts) Average Price Options
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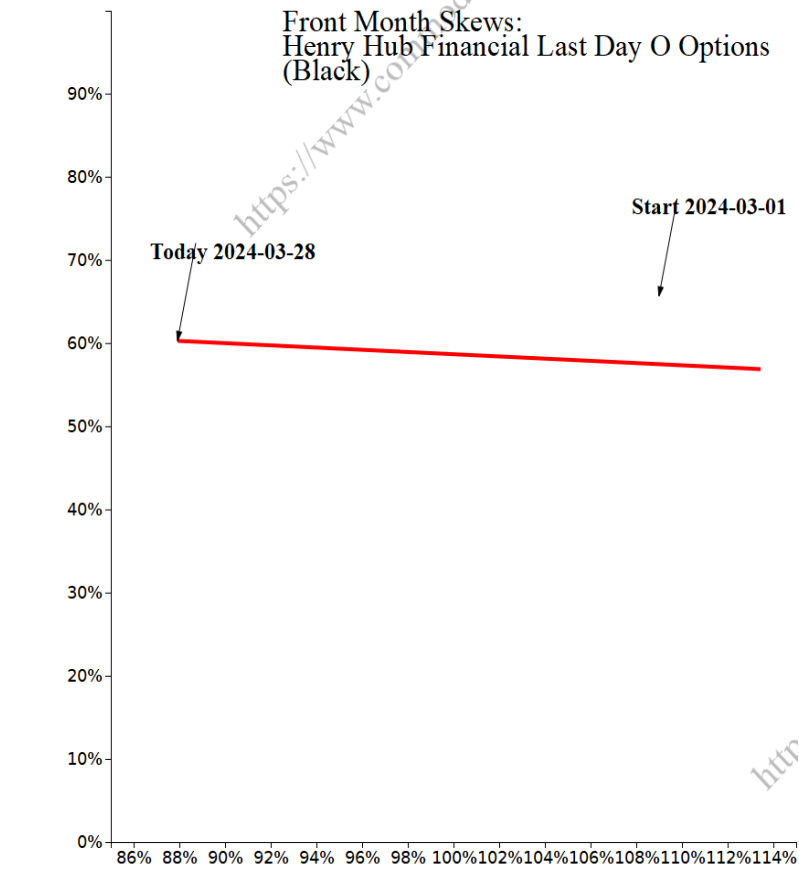
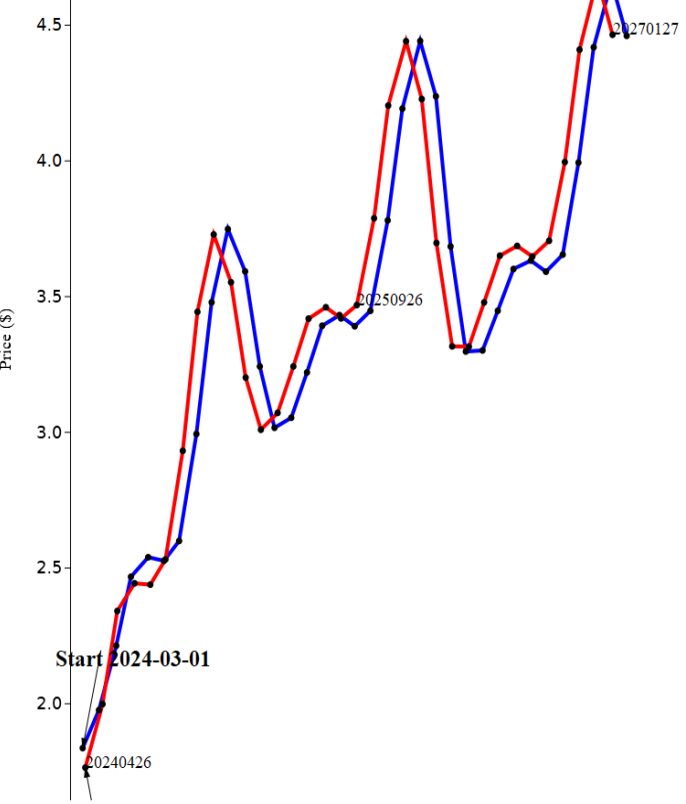
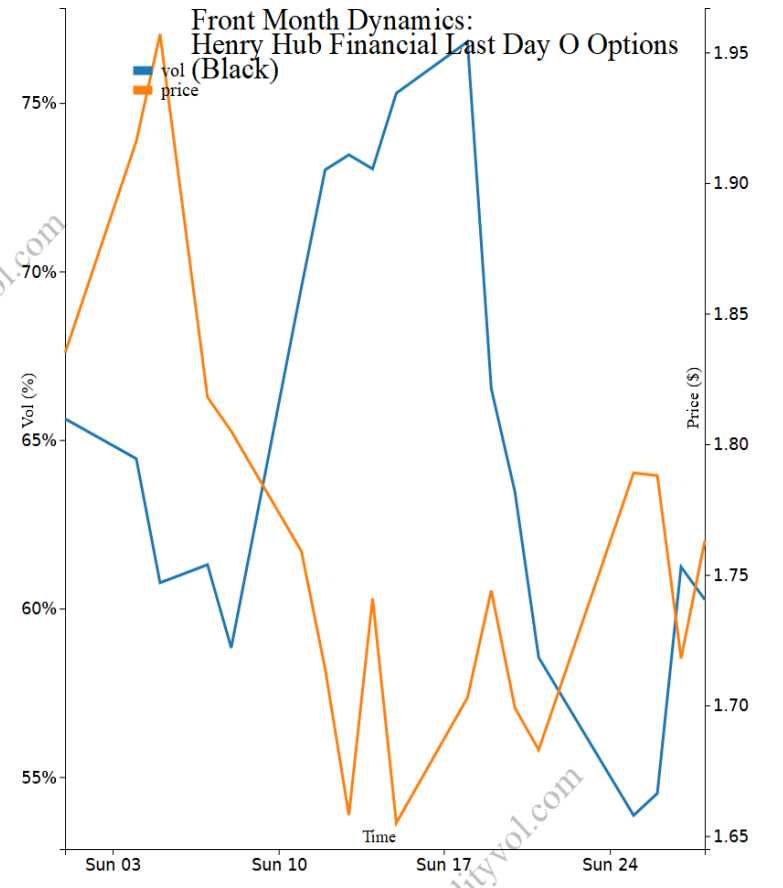
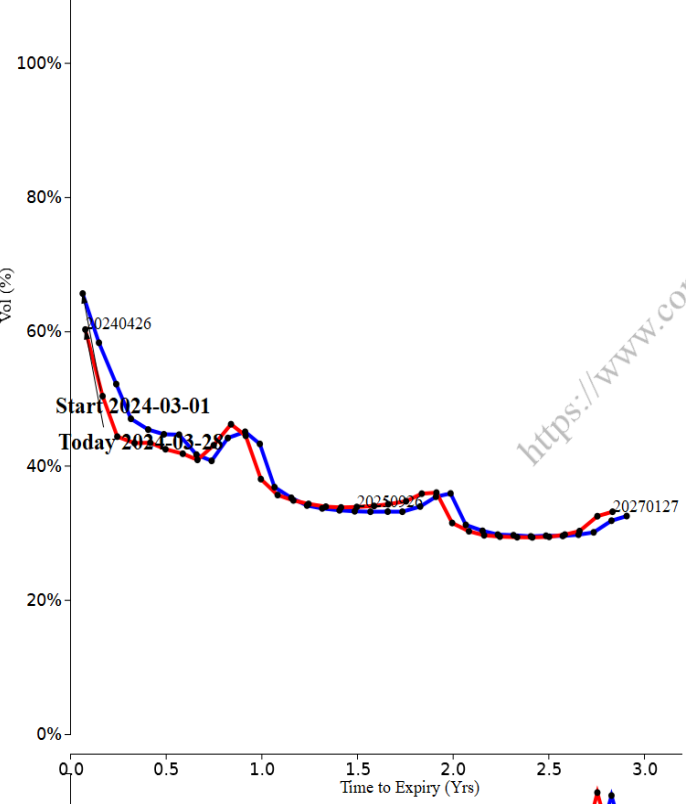


Energy: Natural Gas

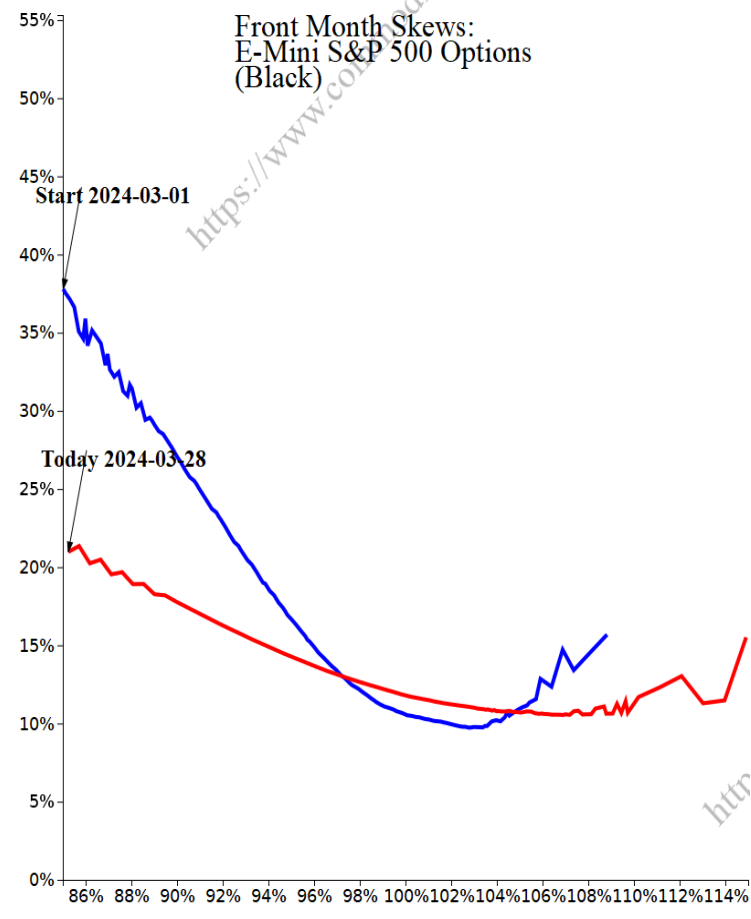
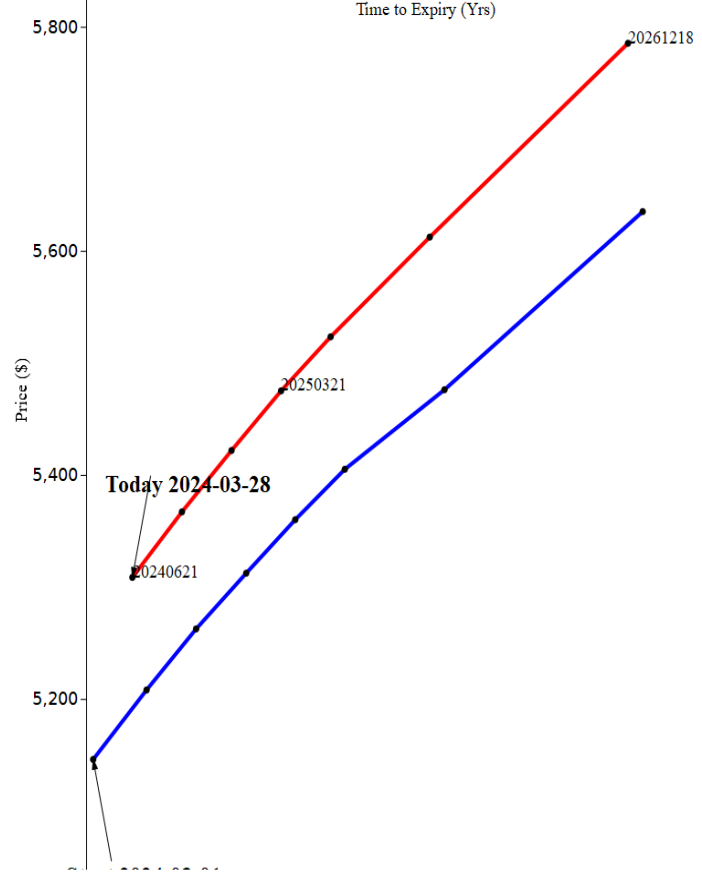
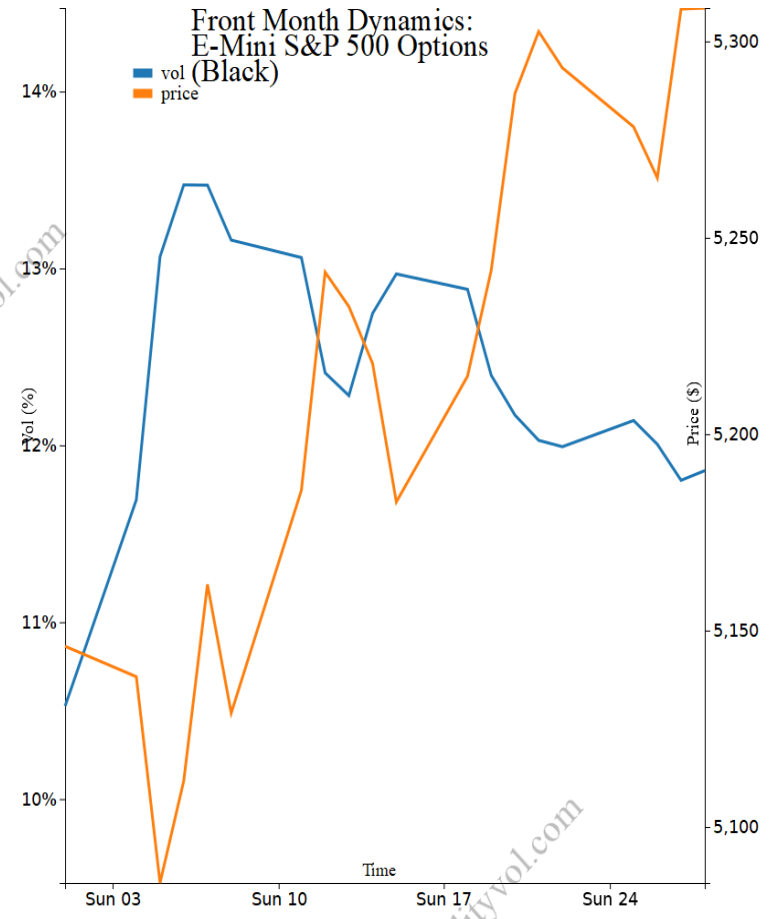
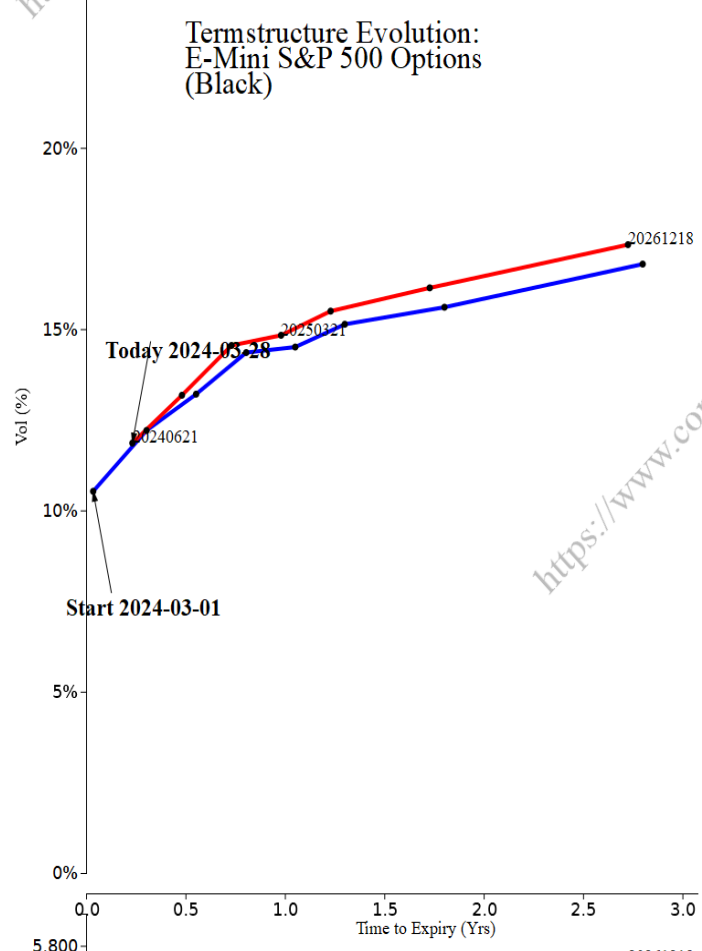


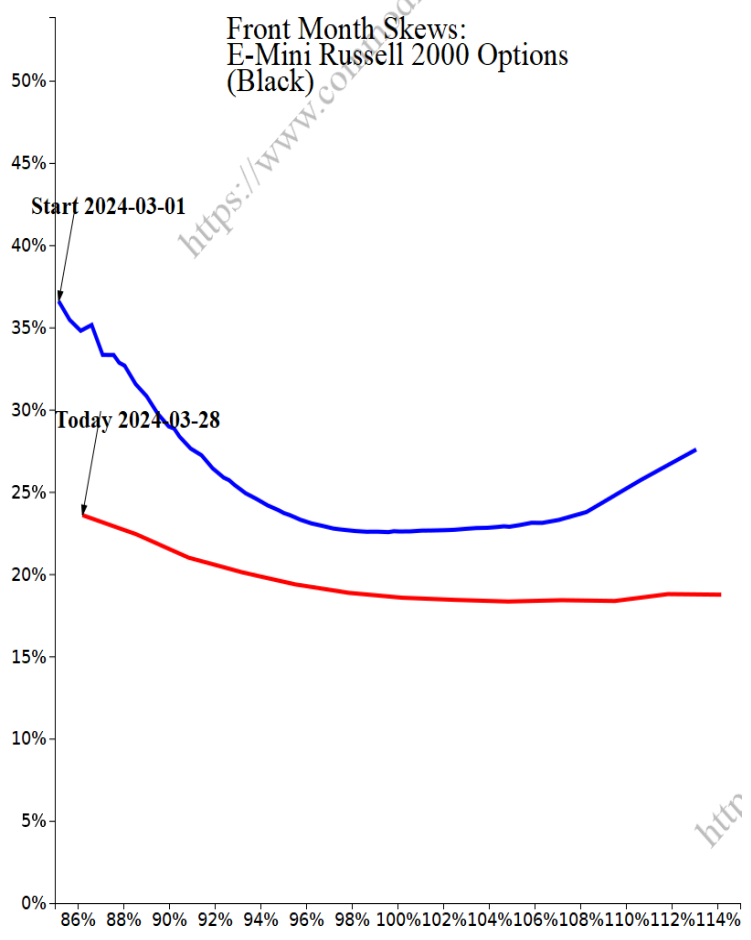
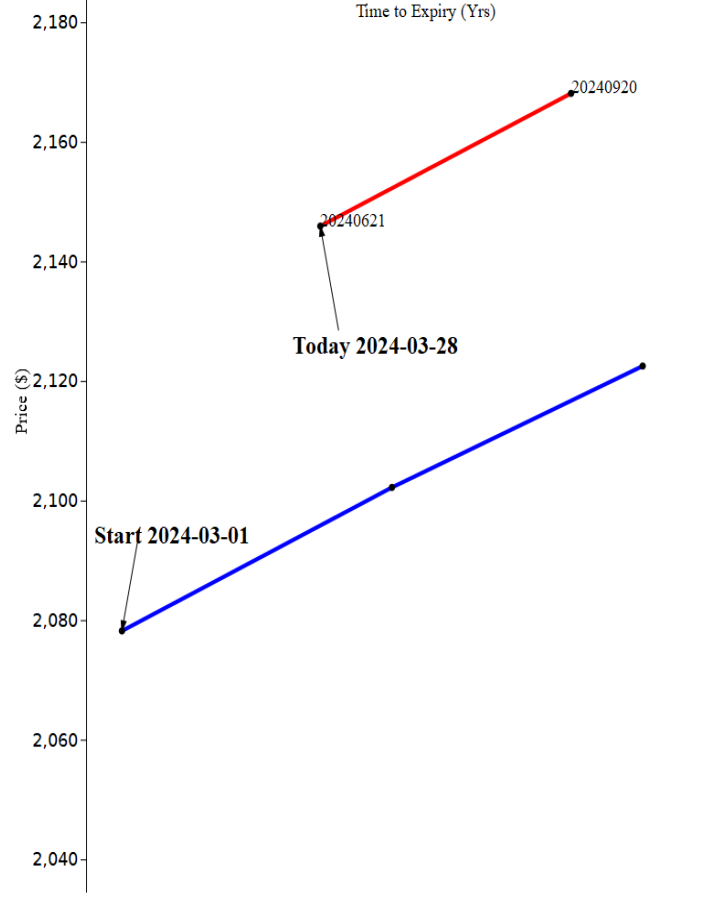
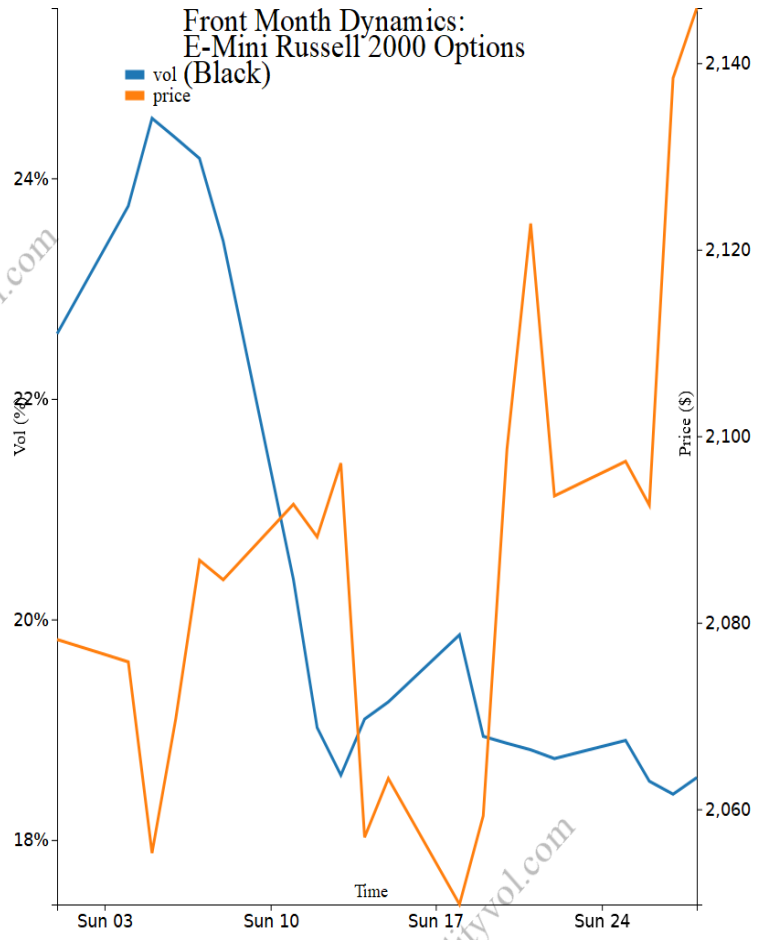
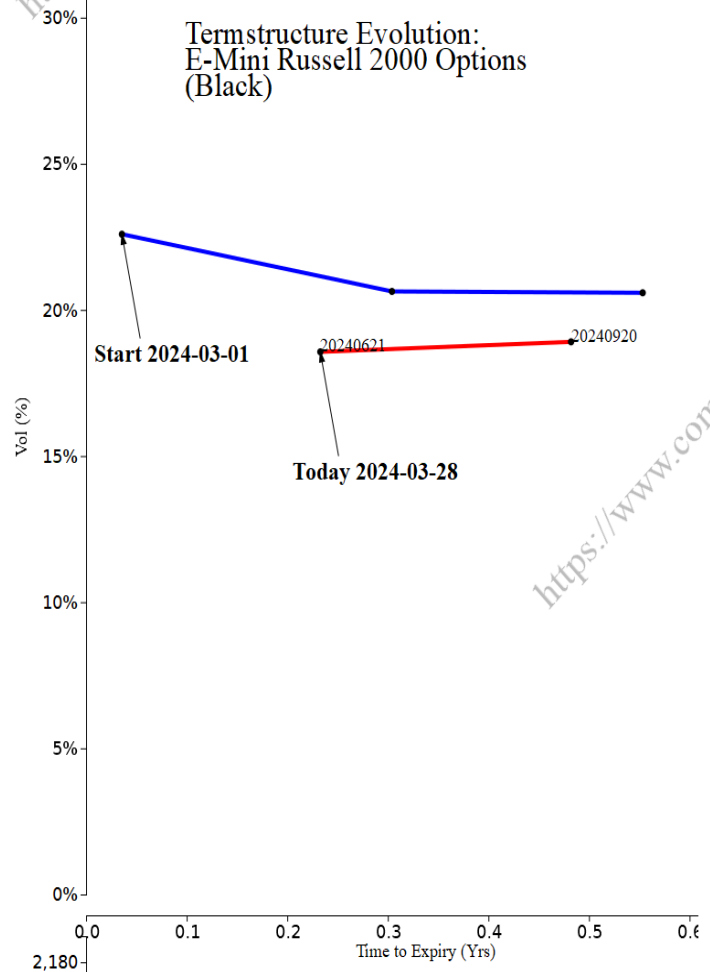


**Termstructure Evolution:
Henry Hub Financial Last Day O Options
(Black)**

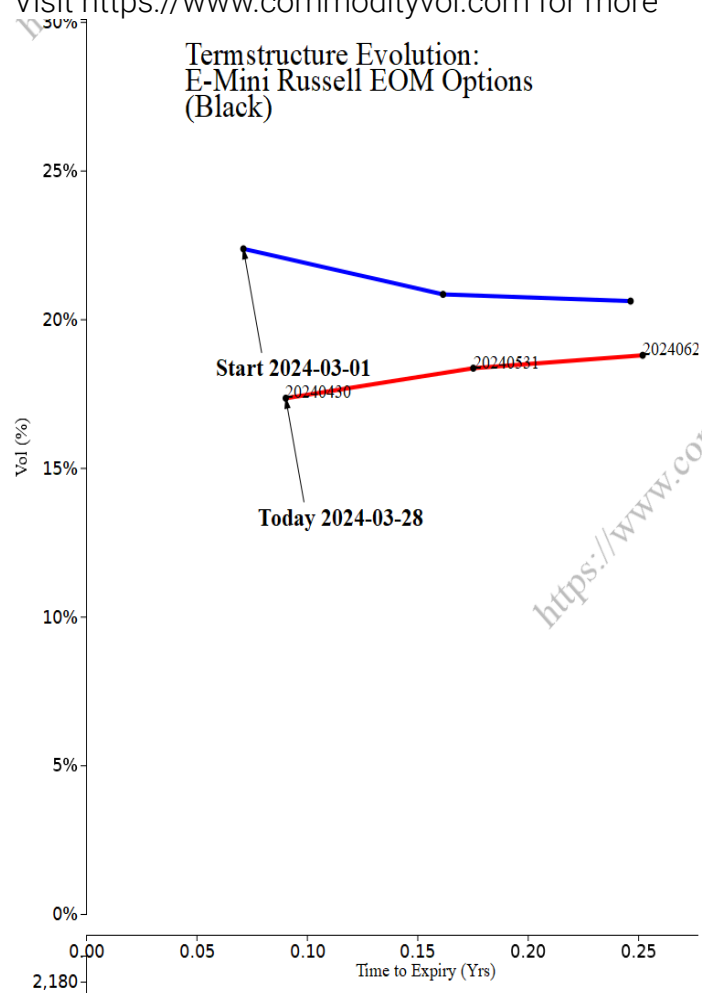


EquityIndex

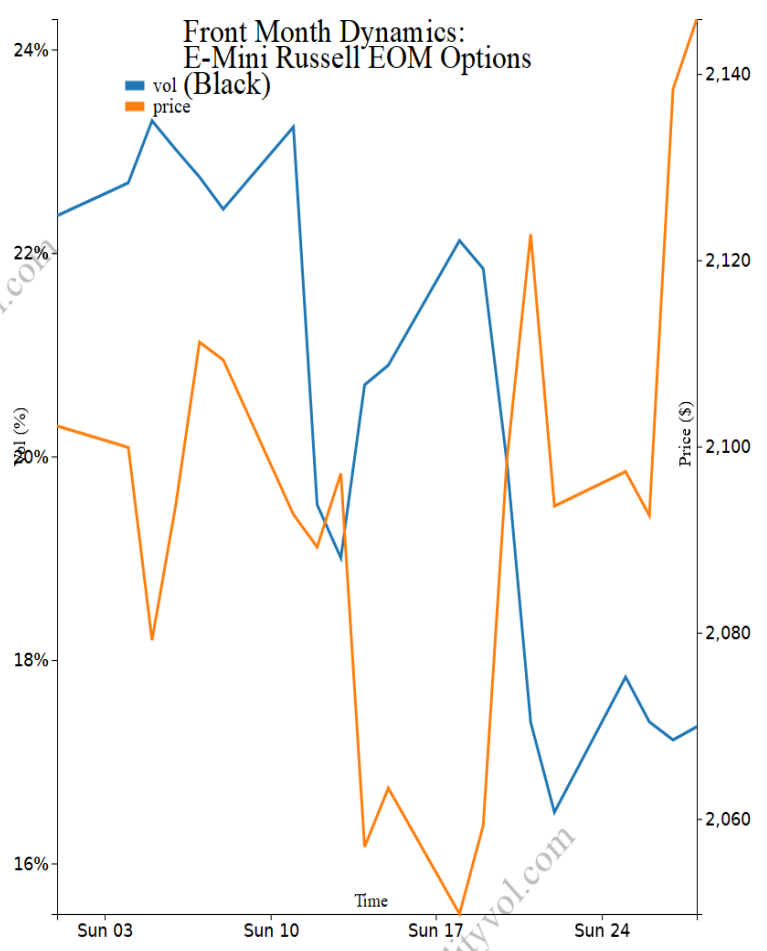




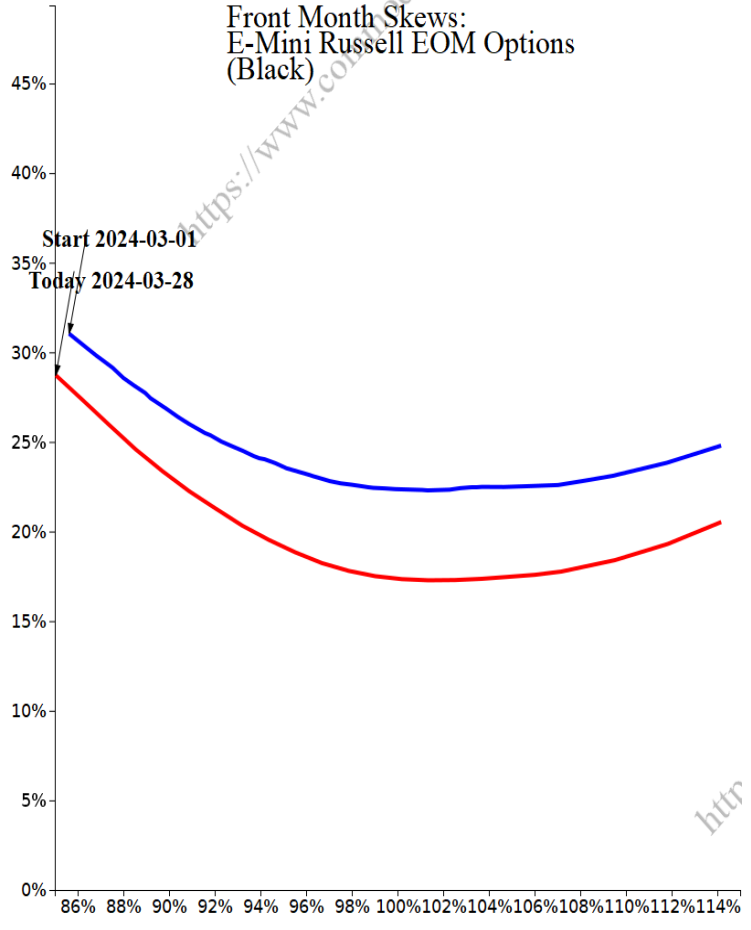
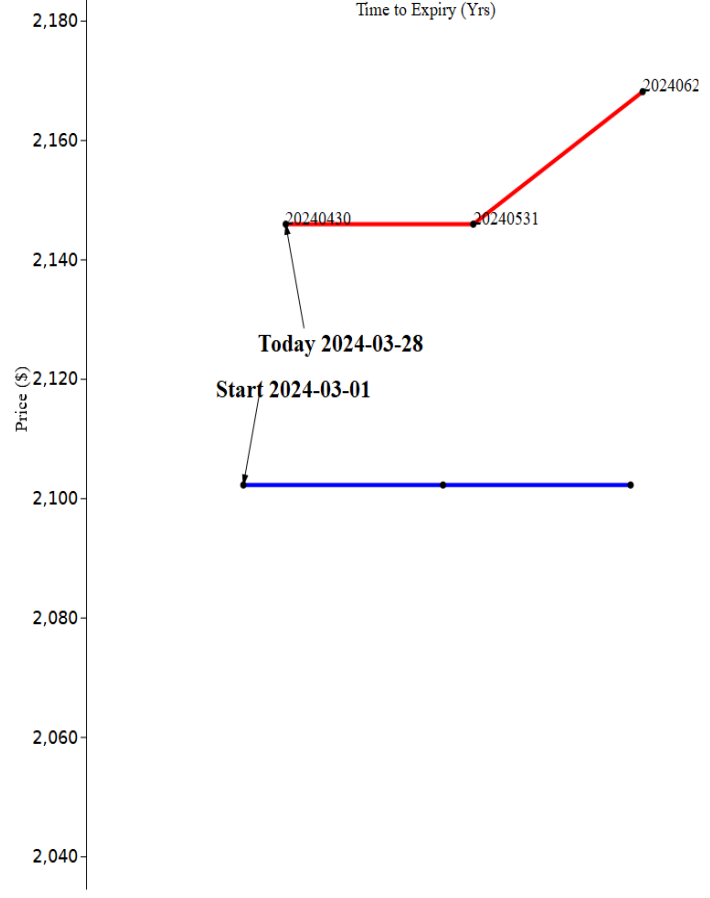
**Termstructure Evolution:
E-Mini Russell EOM Options
(Black)**

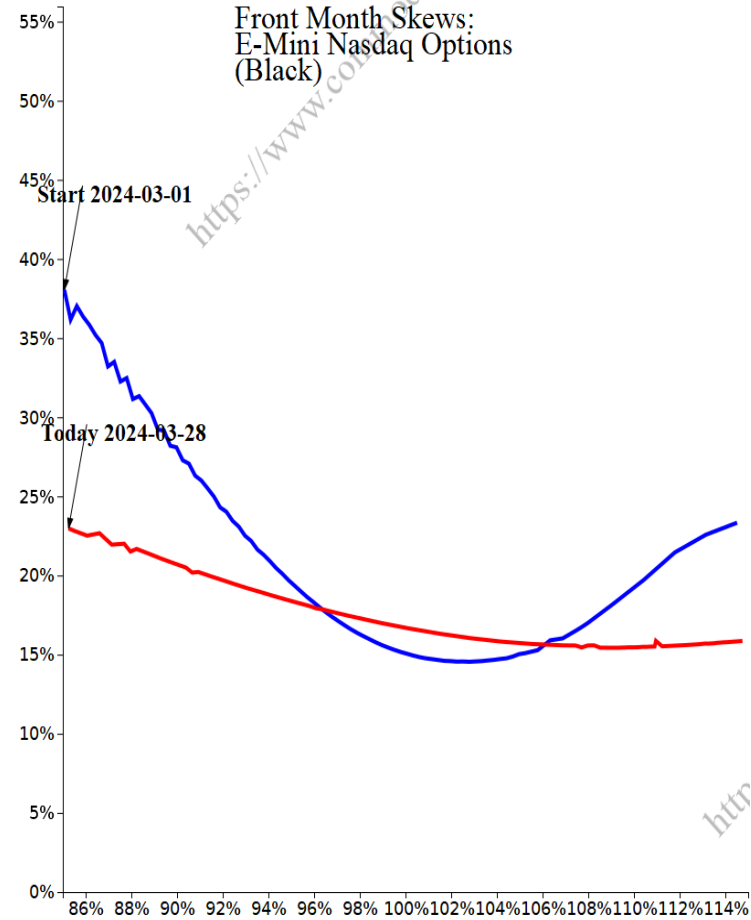
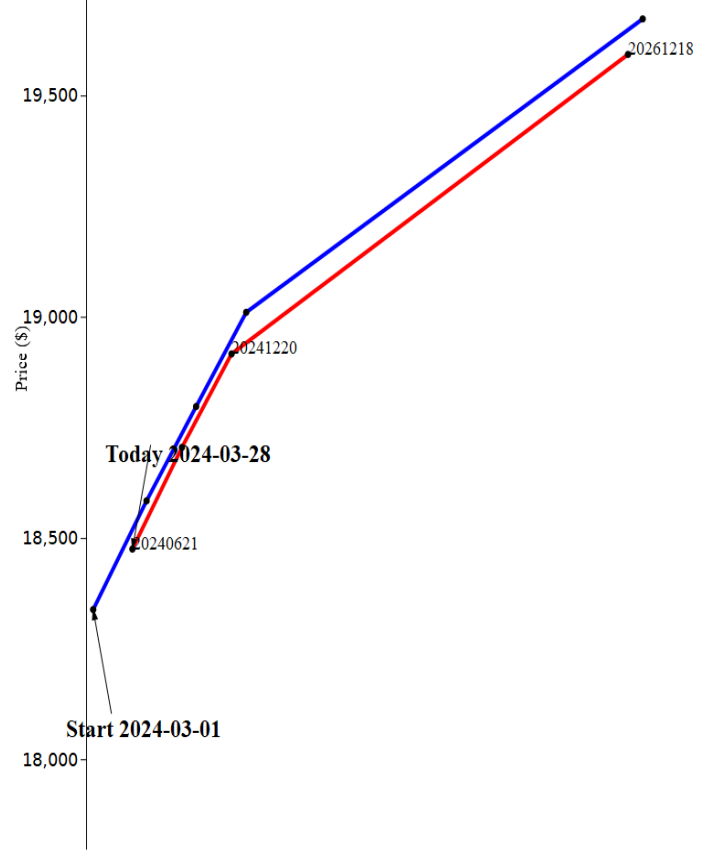
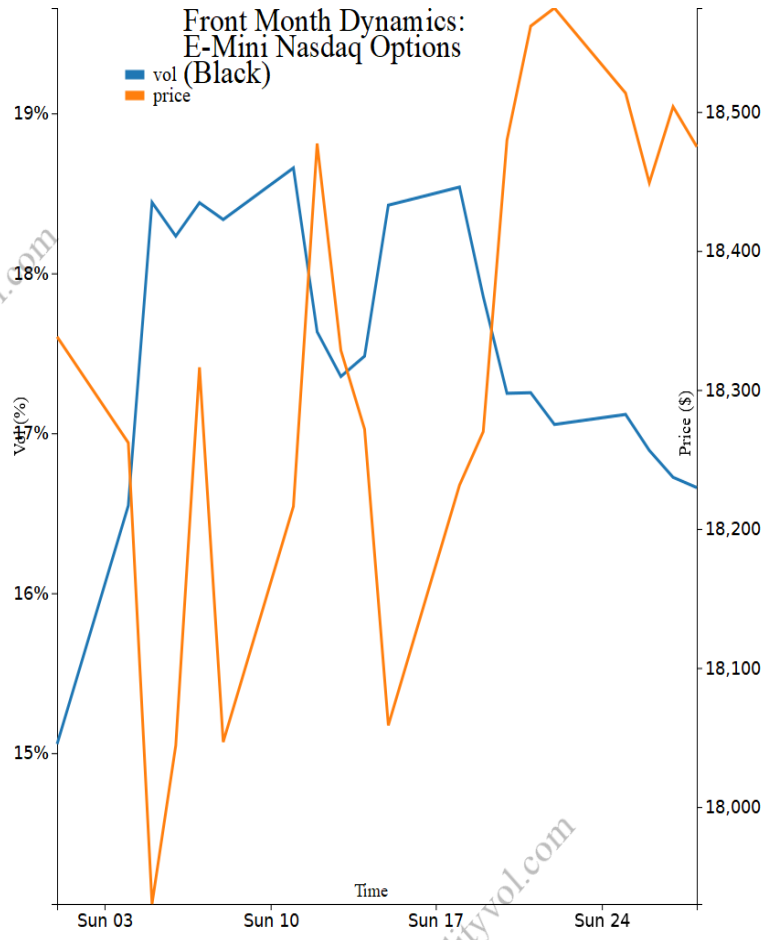
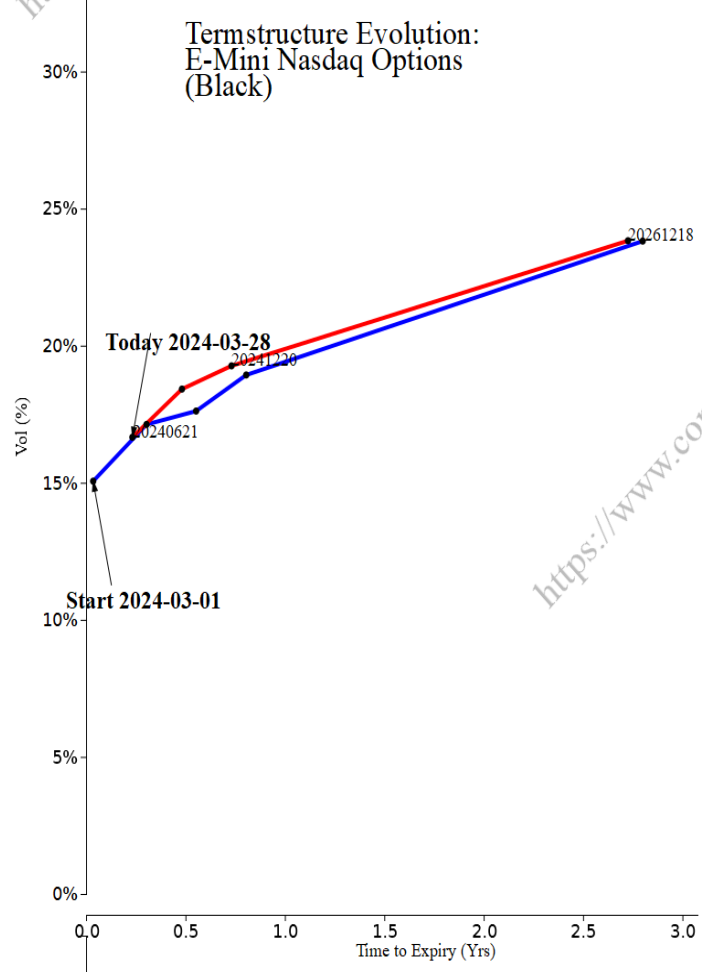


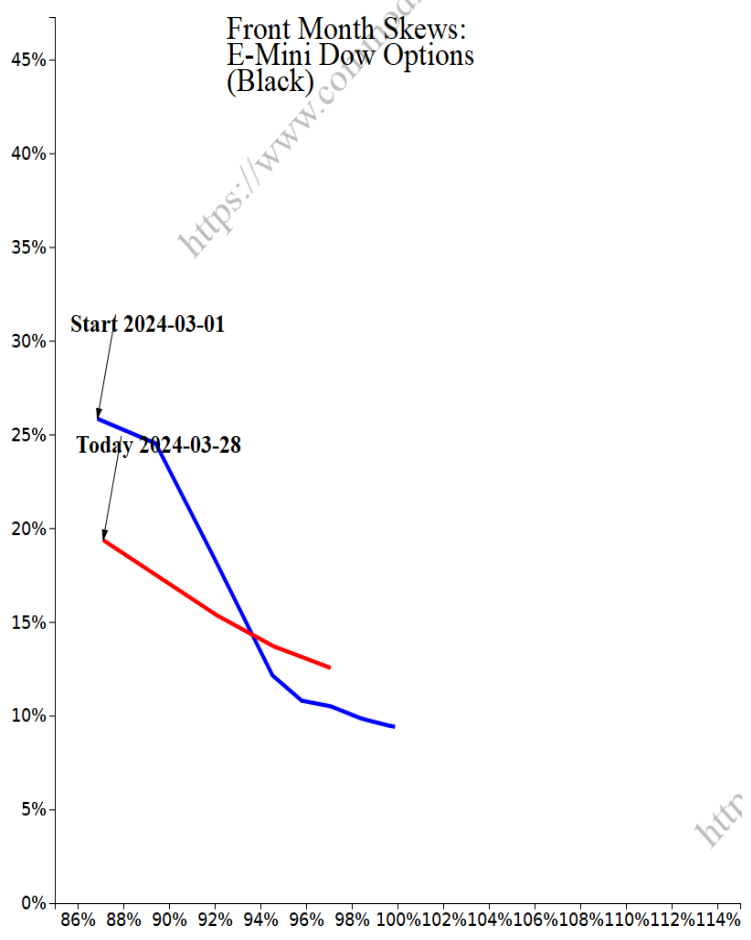
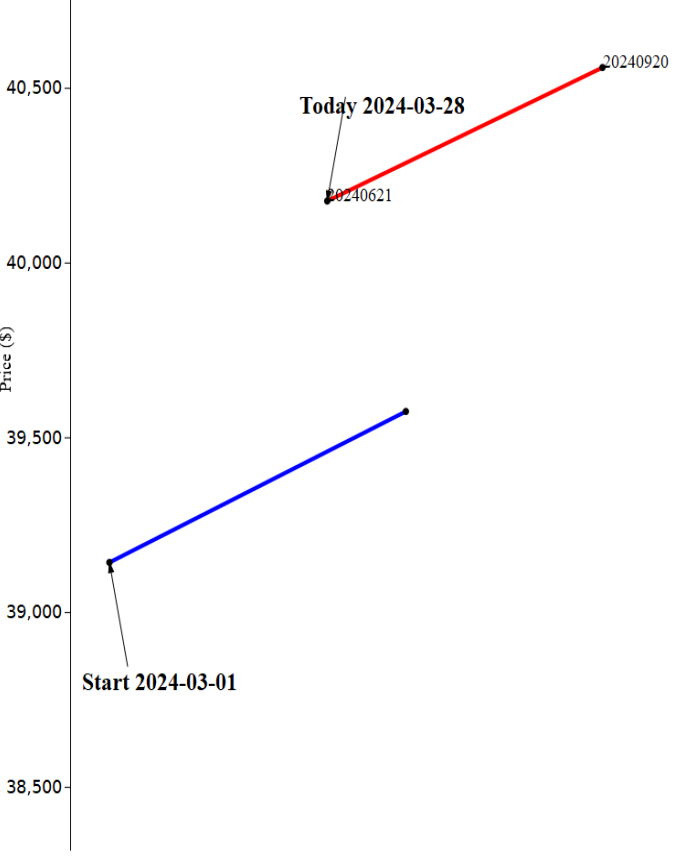
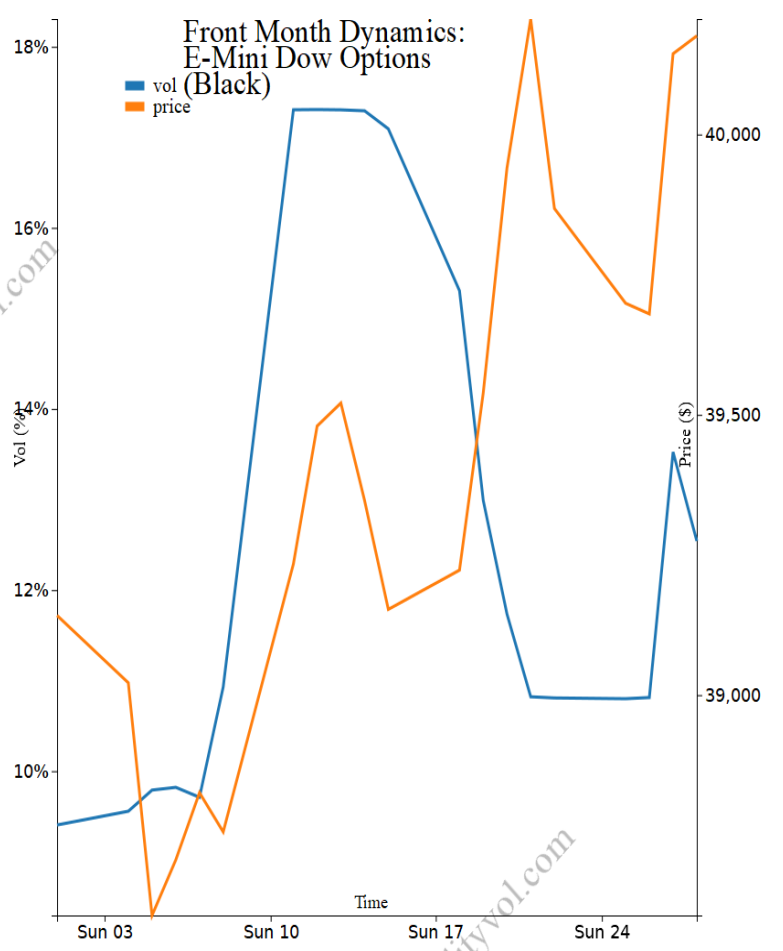
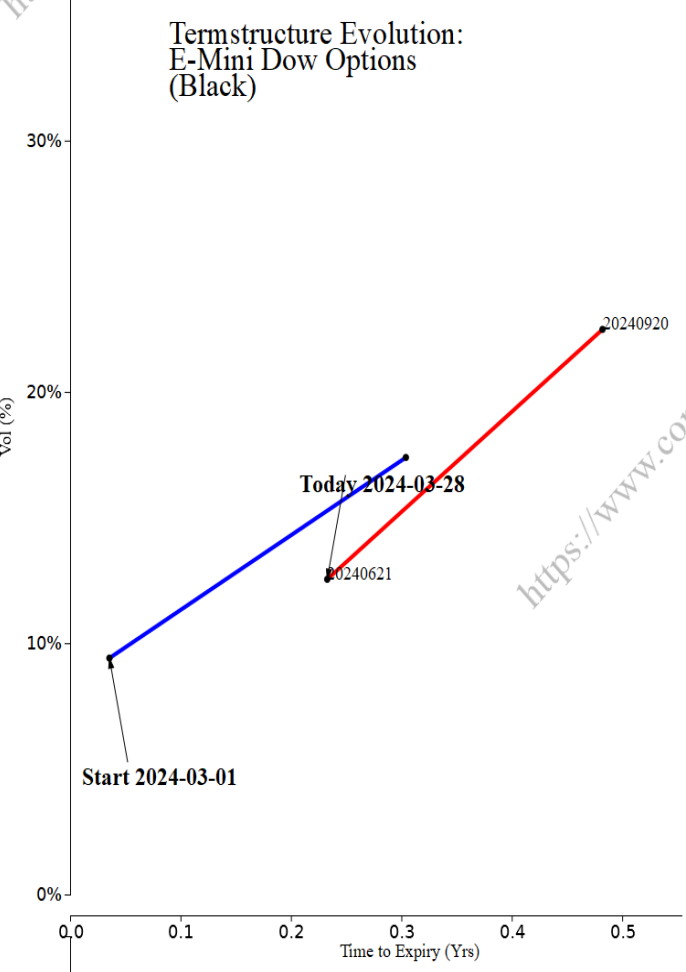
**Front Month Dynamics:
E-Mini Russell EOM Options
(Black)**

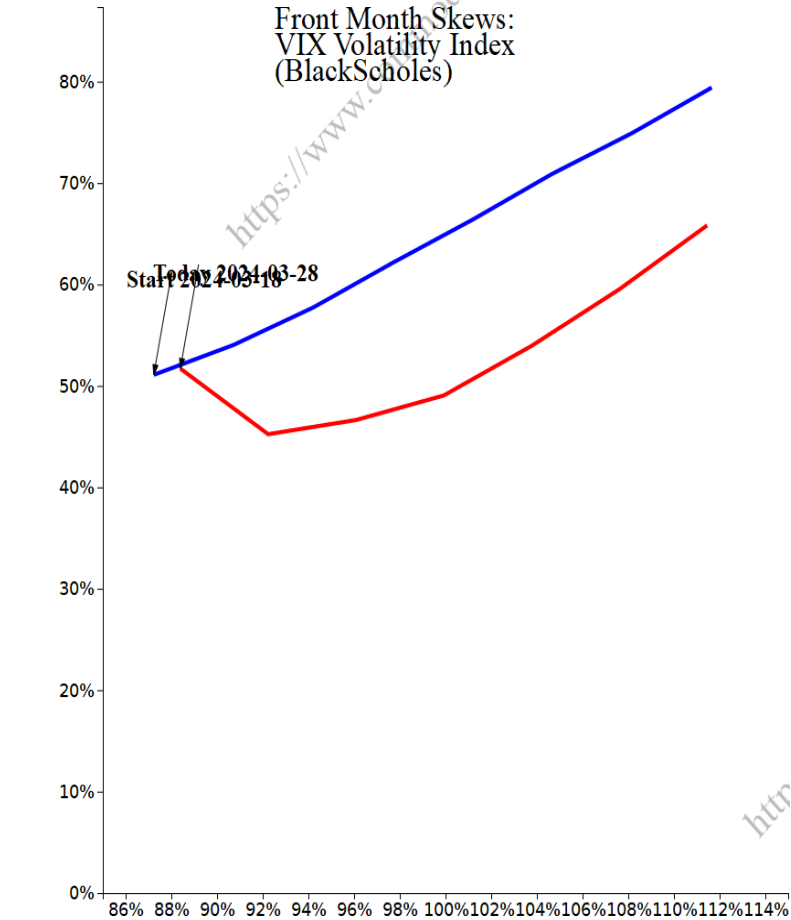
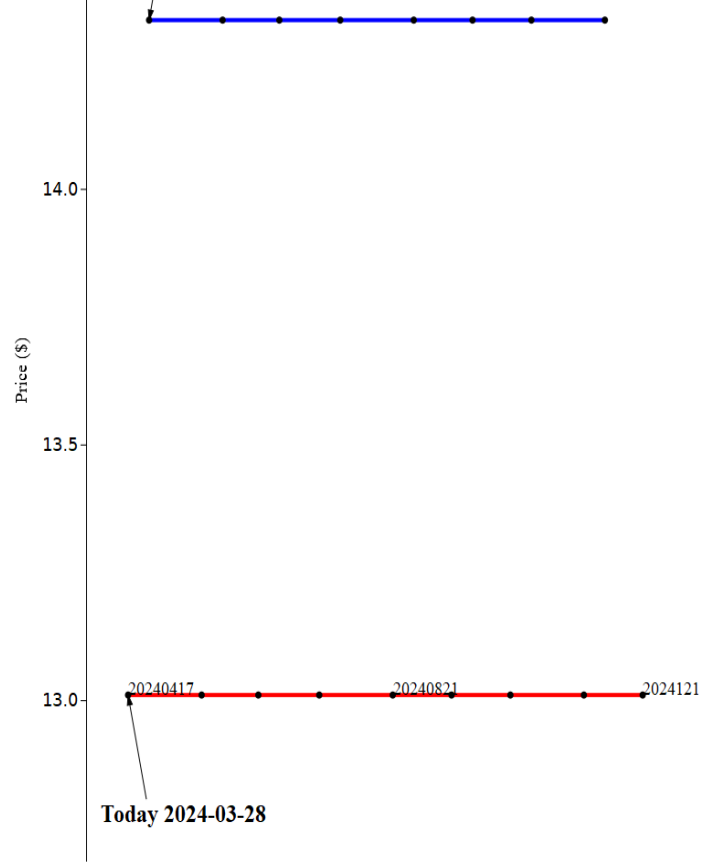
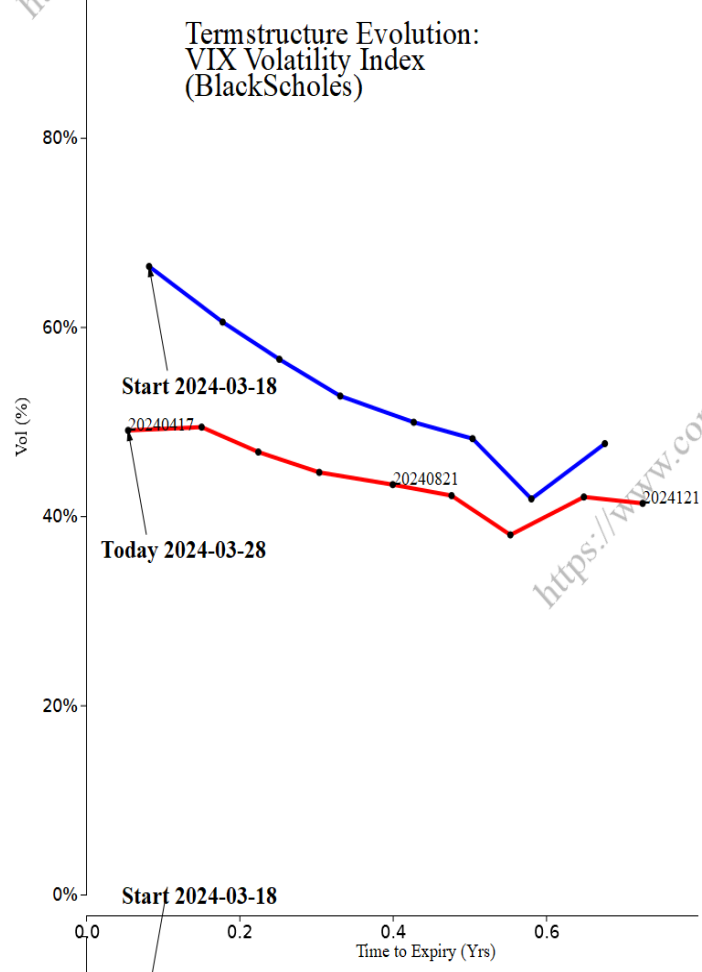


**Front Month Skews:
E-Mini Russell EOM Options
(Black)**



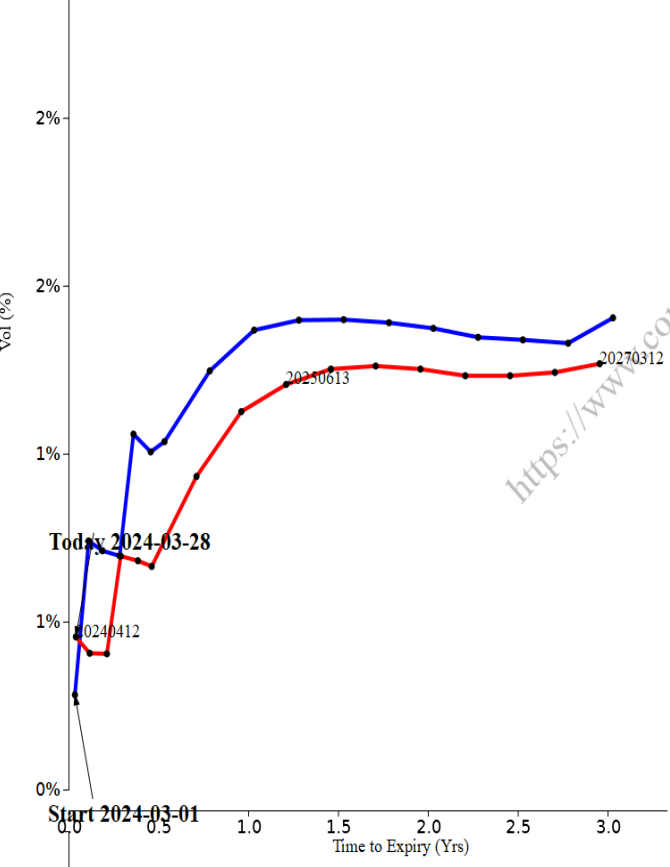




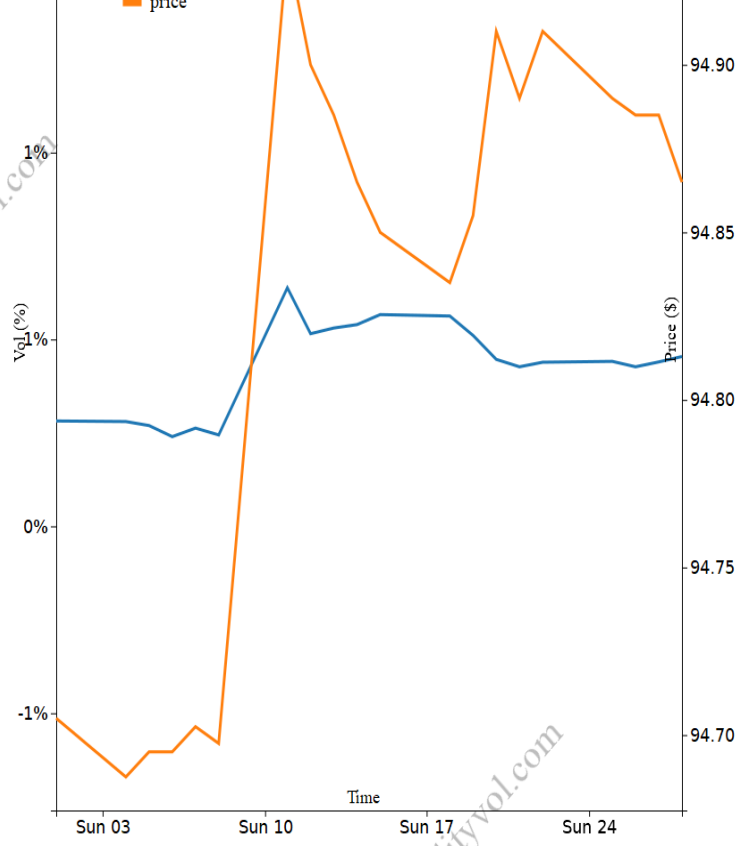


InterestRates: Fixed Income and STIRS

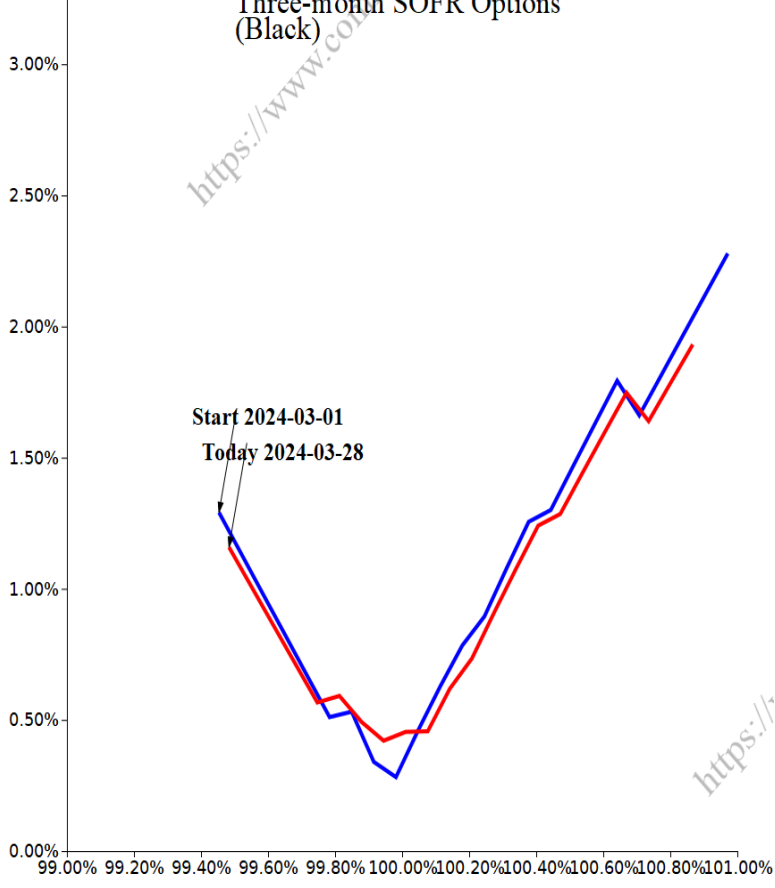
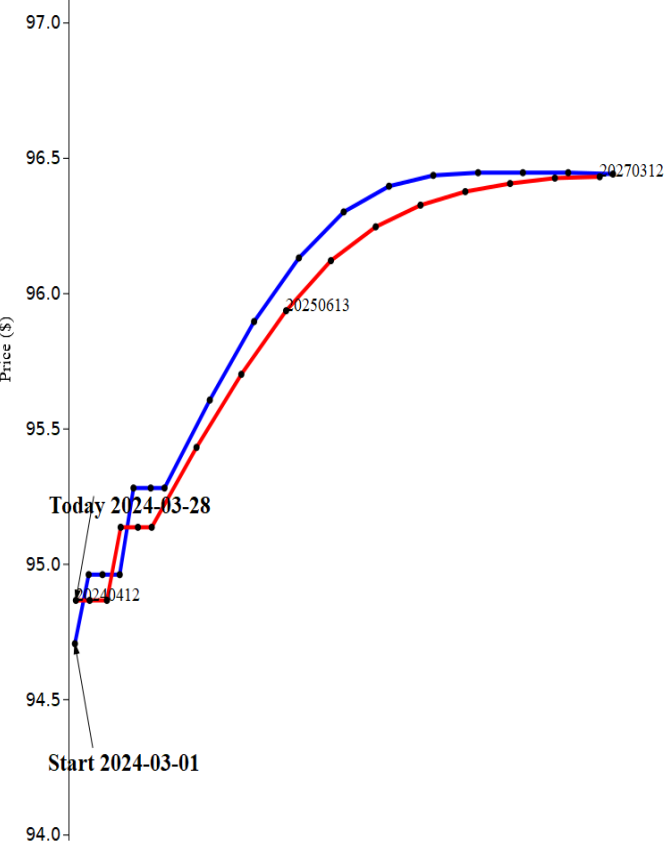
Termstructure Evolution:
Three-month SOFR Options
(Black)



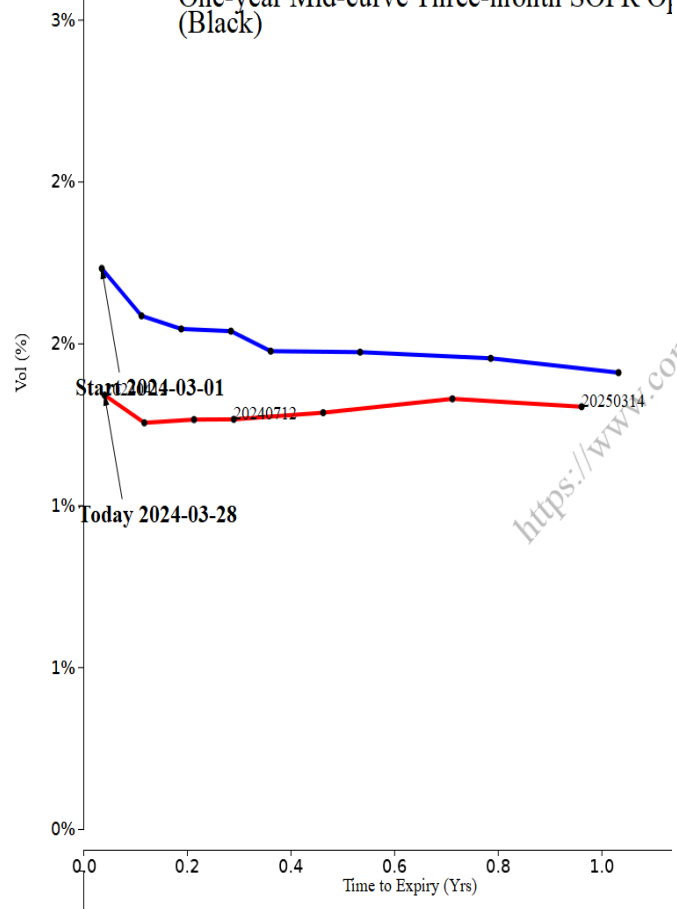
Front Month Dynamics:
Three-month SOFR Options
(Black)



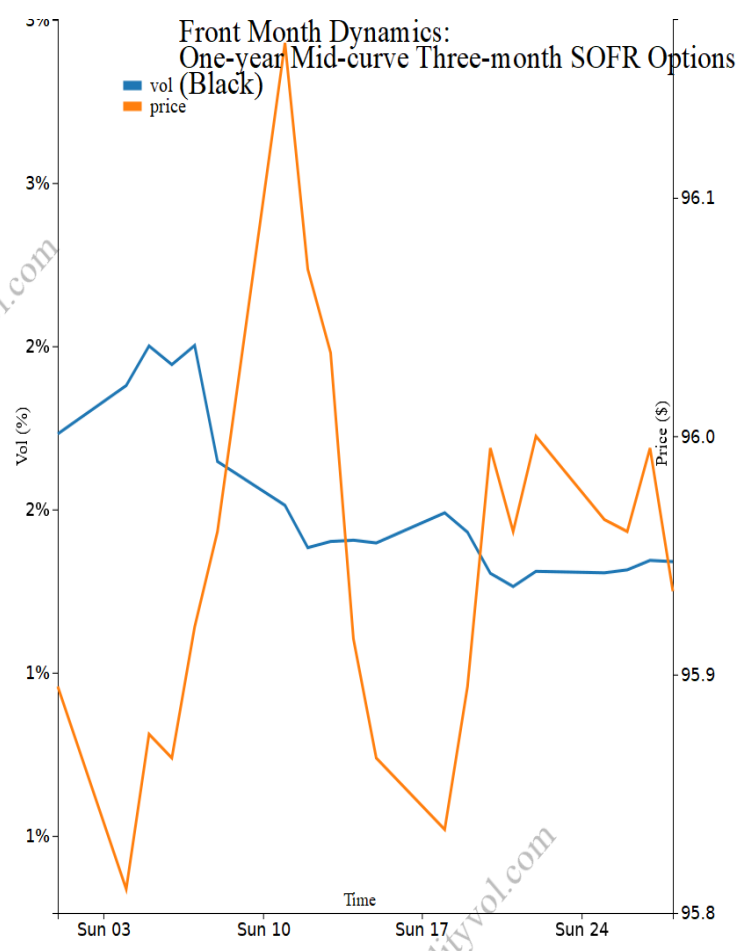
Front Month Skews:
Three-month SOFR Options
(Black)



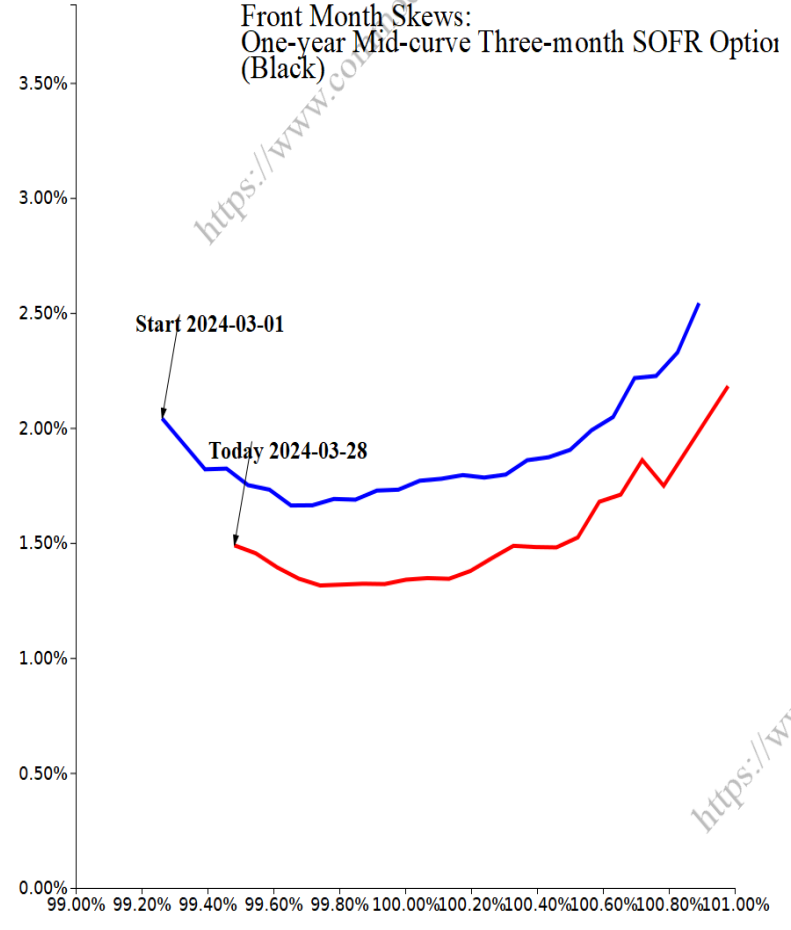
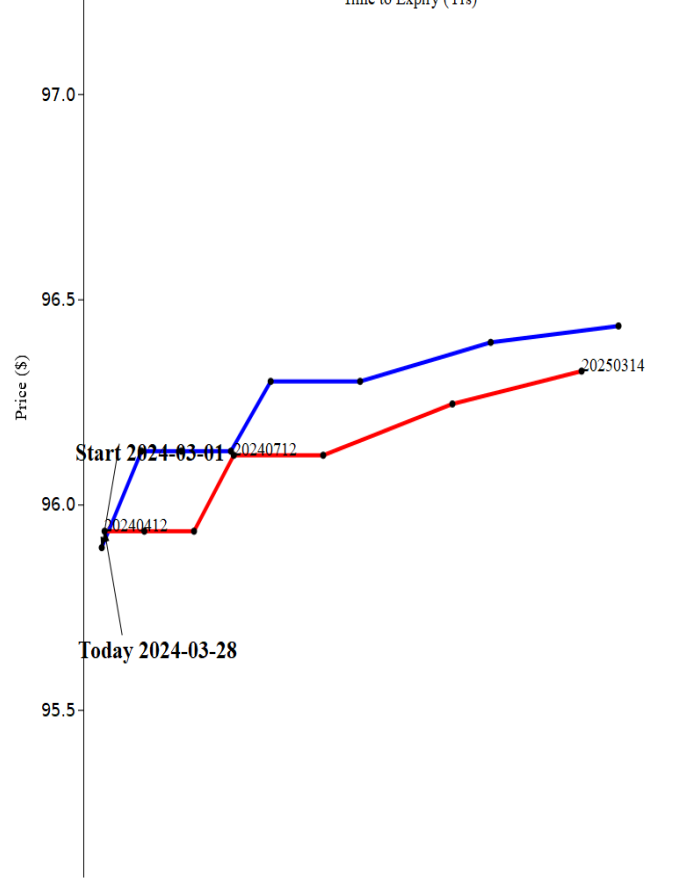
Termstructure Evolution:
One-year Mid-curve Three-month SOFR O₁
(Black)



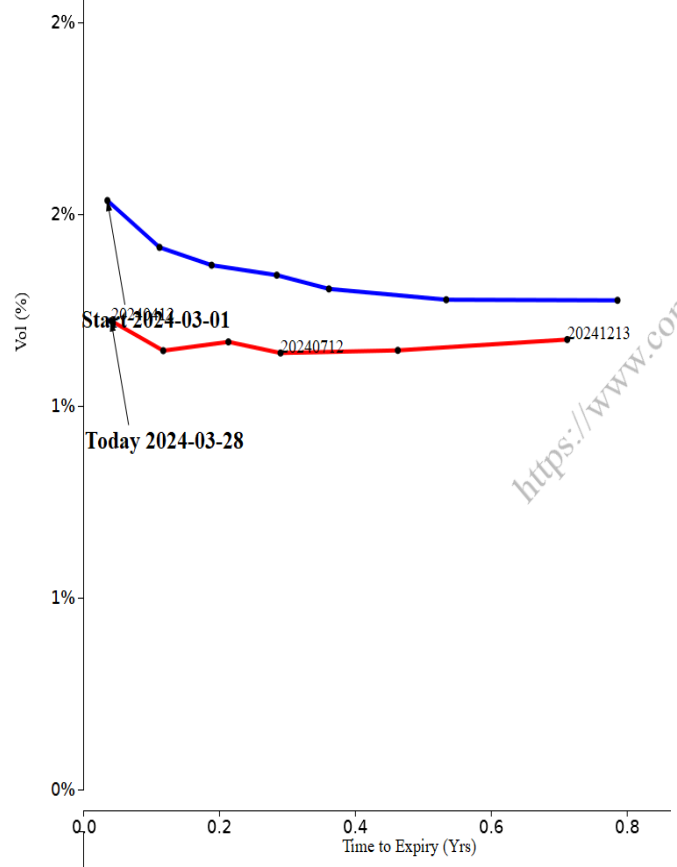
Front Month Dynamics:
One-year Mid-curve Three-month SOFR Options
(Black)



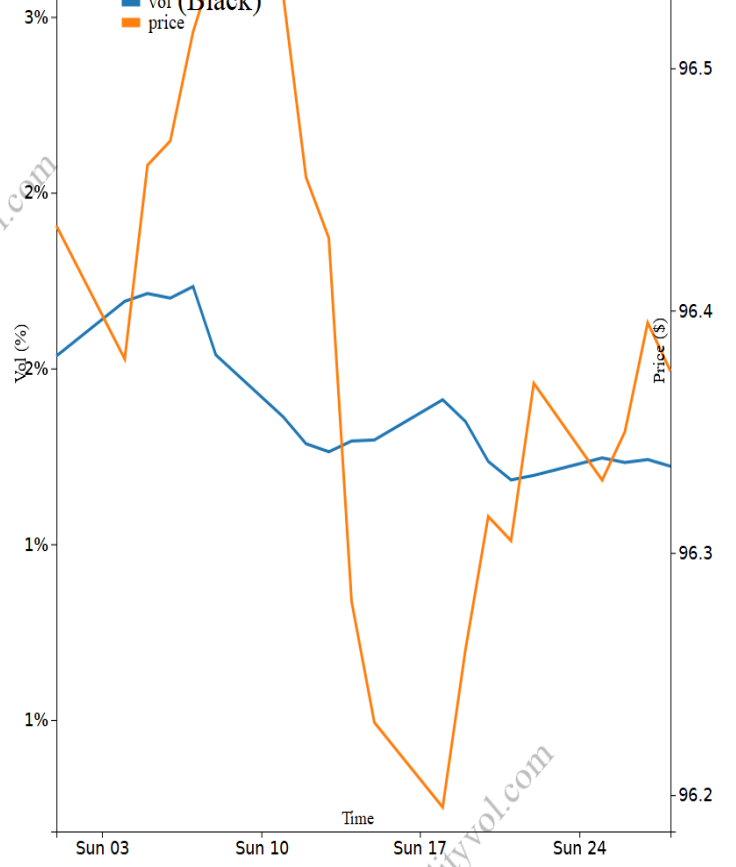
Front Month Skews:
One-year Mid-curve Three-month SOFR Option
(Black)



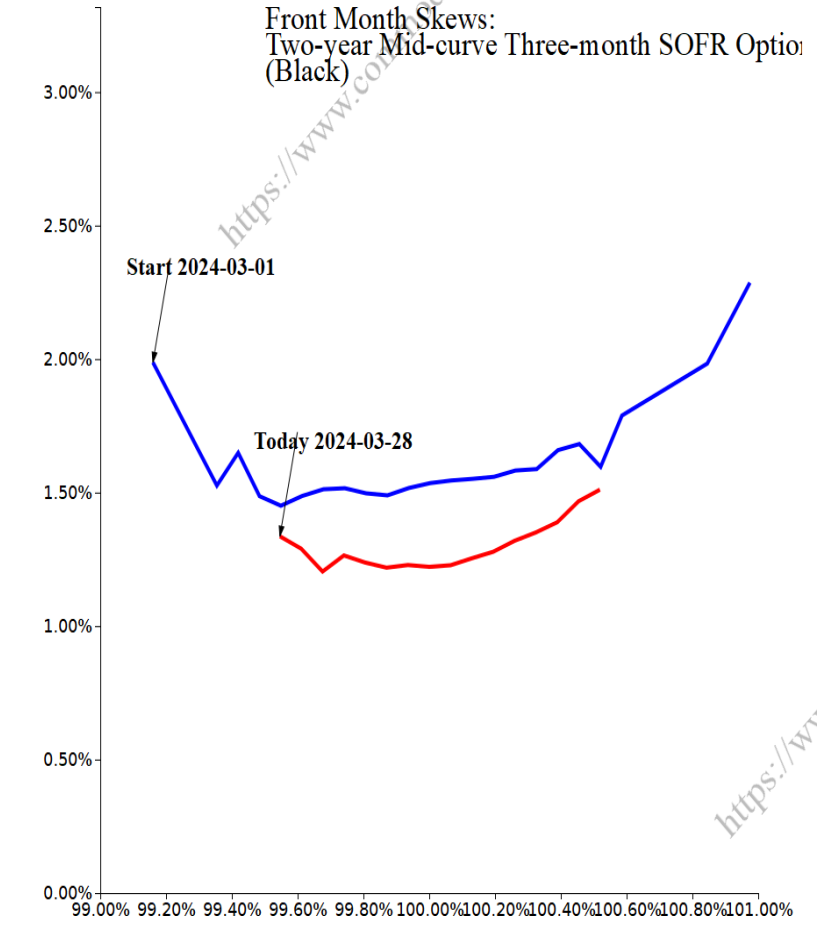
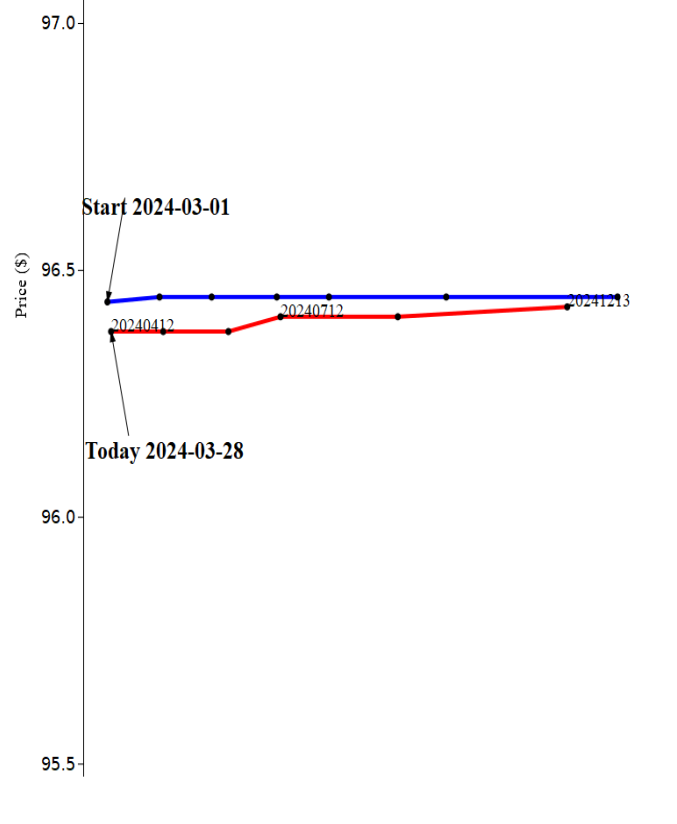
Termstructure Evolution:
Two-year Mid-curve Three-month SOFR O_t
(Black)

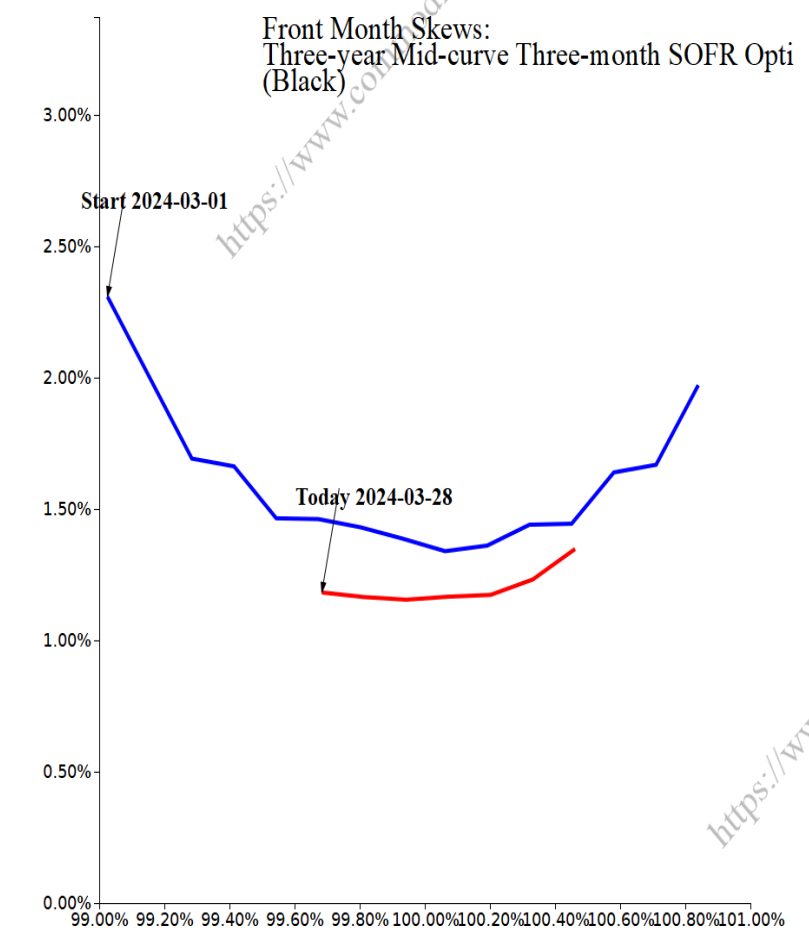
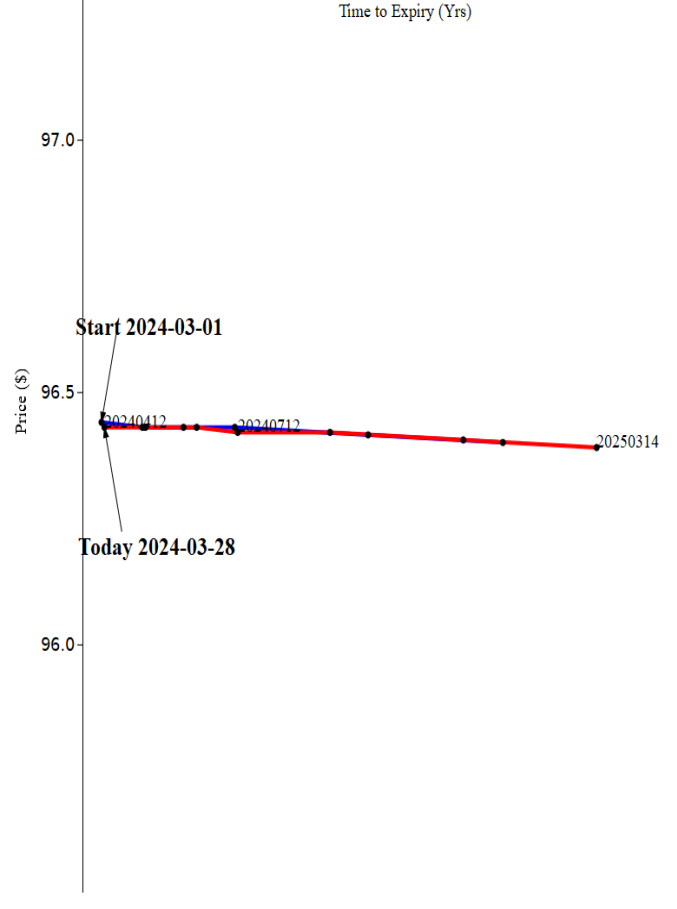
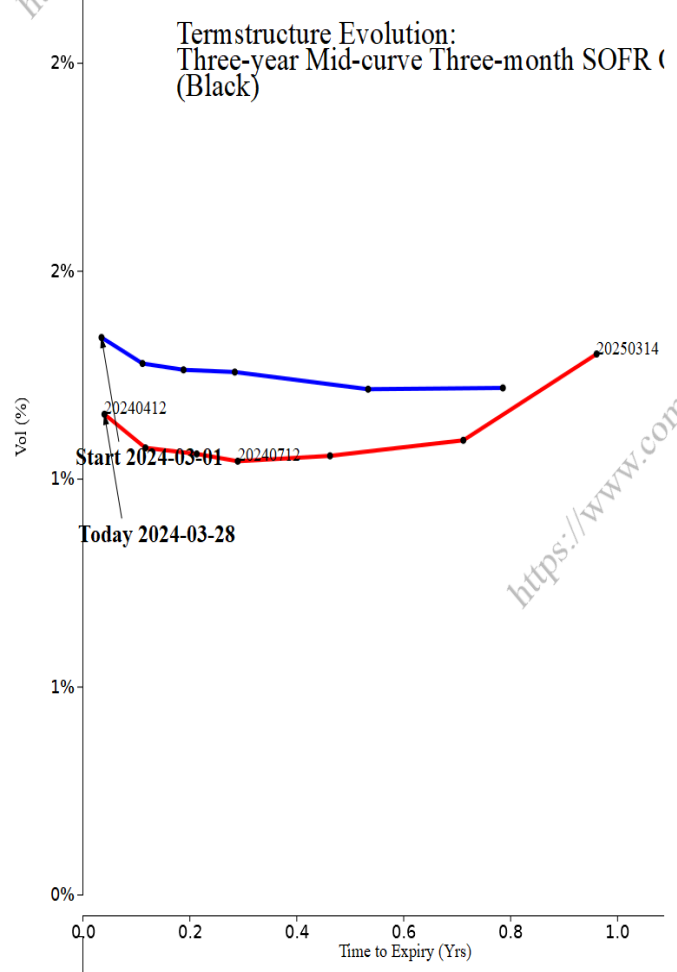


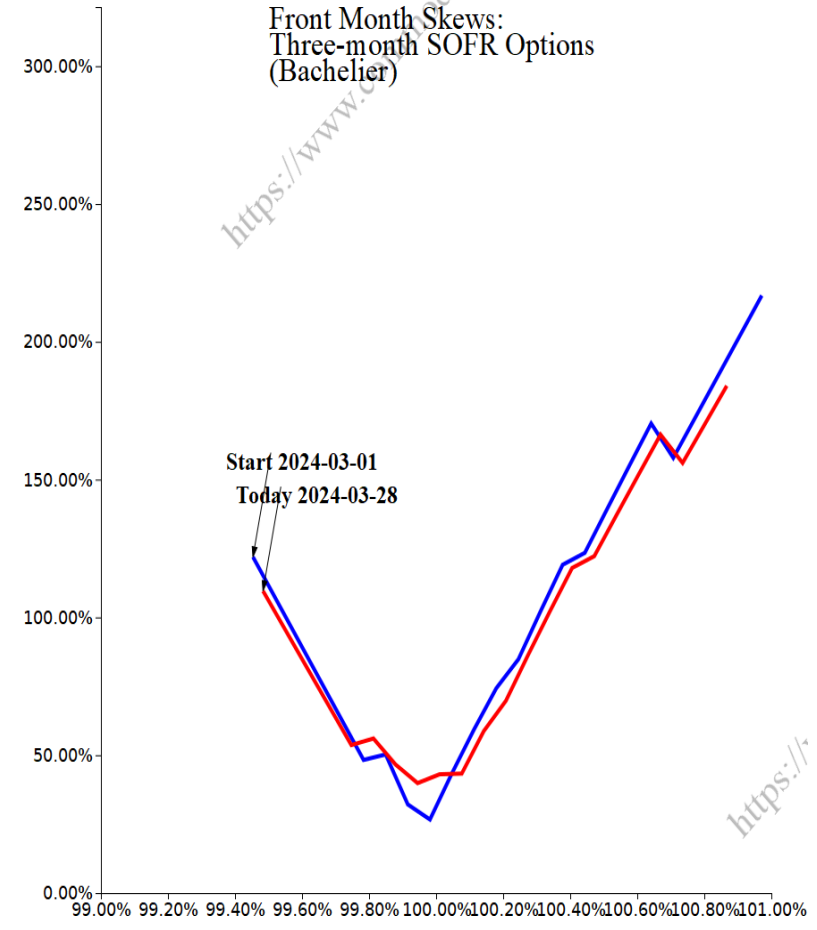
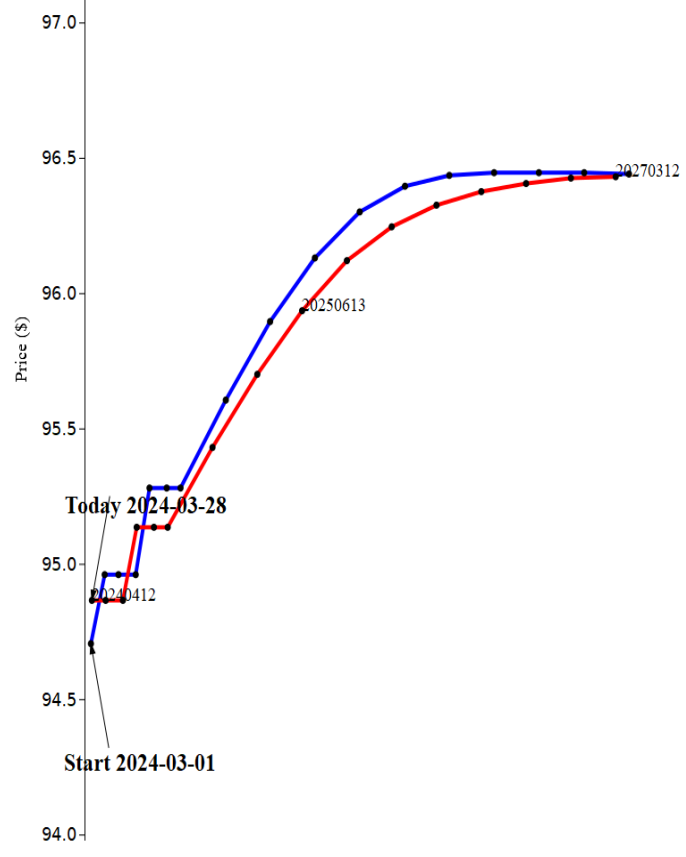
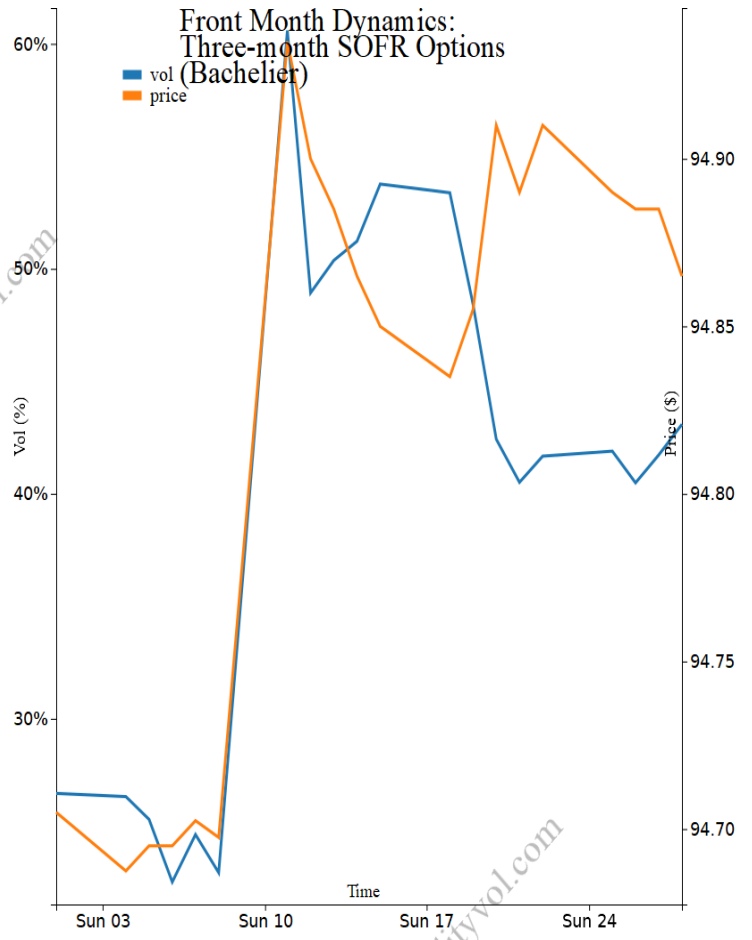
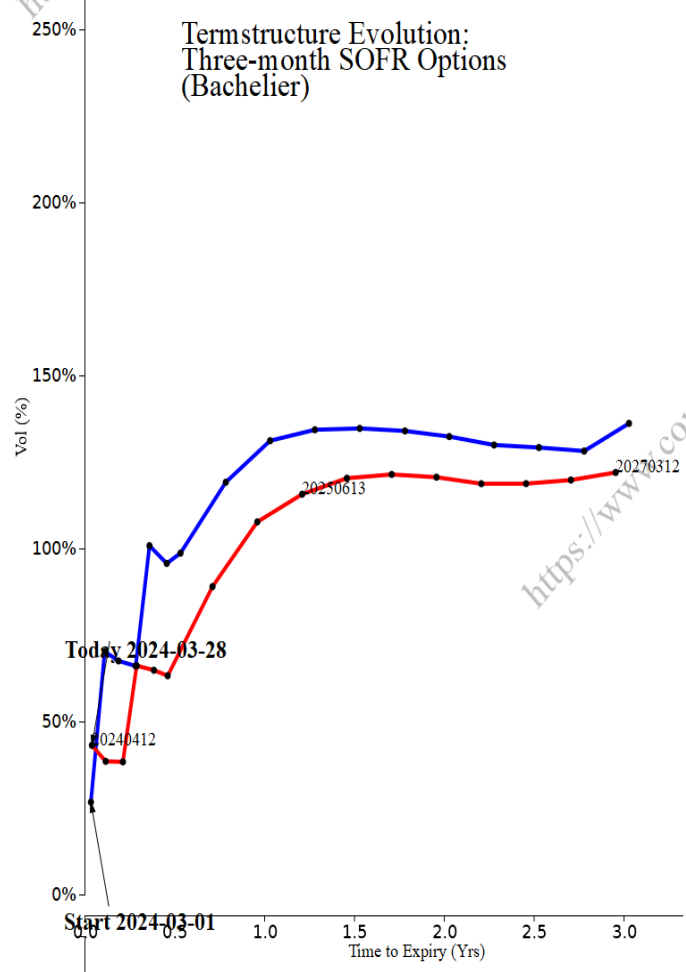
Front Month Dynamics:
Two-year Mid-curve Three-month SOFR Options
(Black)



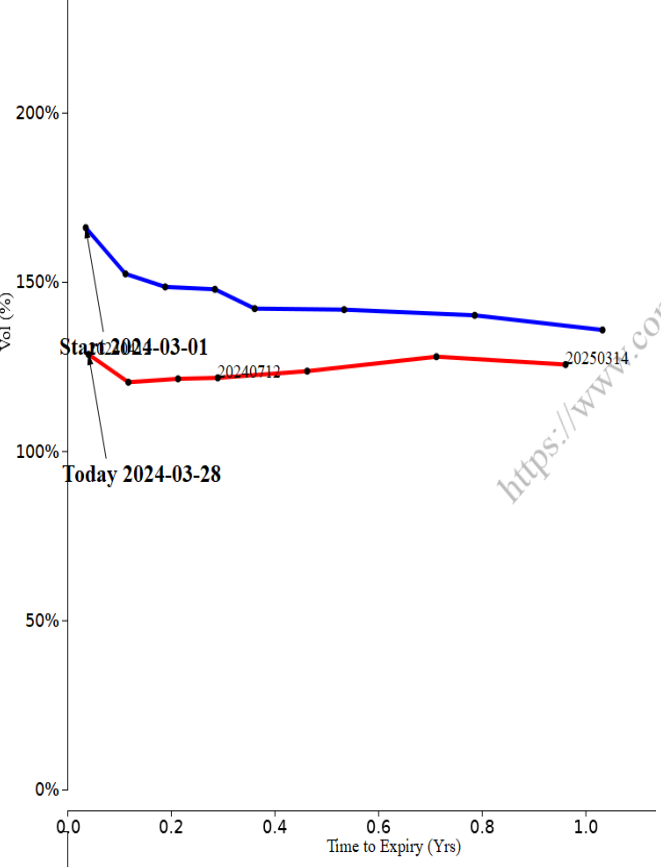
Front Month Skews:
Two-year Mid-curve Three-month SOFR Option
(Black)



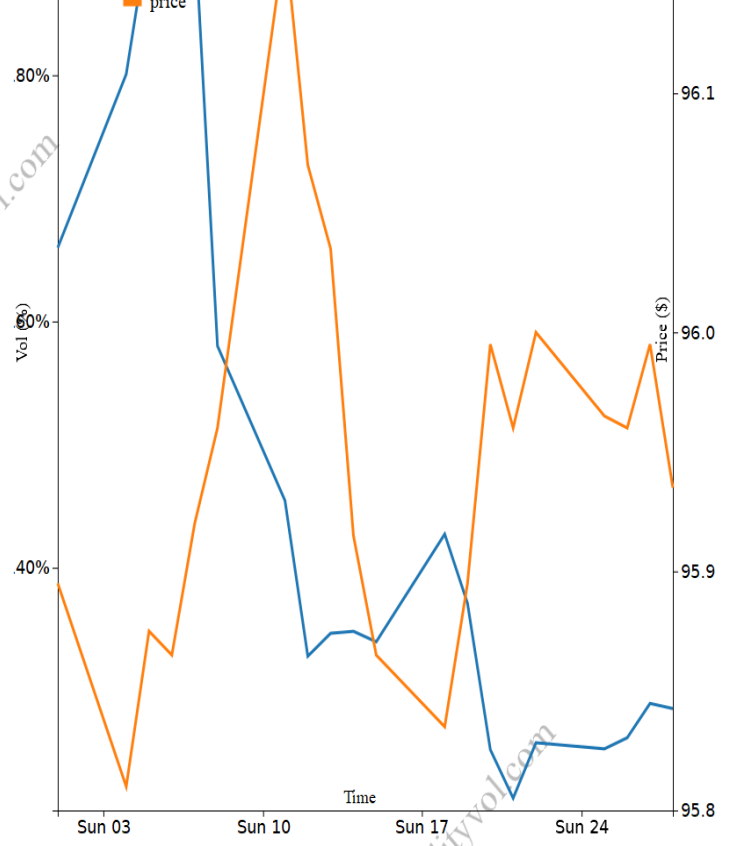




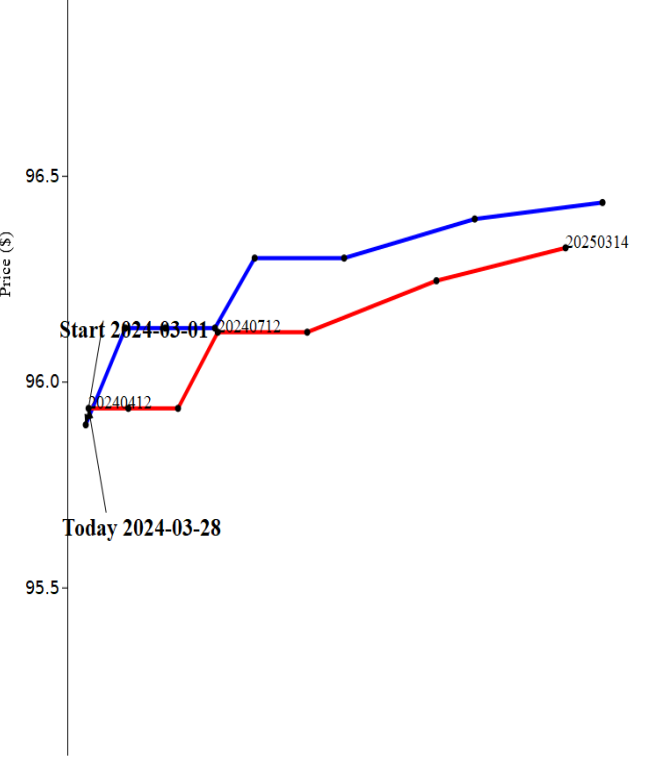
**Termstructure Evolution:
One-year Mid-curve Three-month SOFR O₁
(Bachelier)**



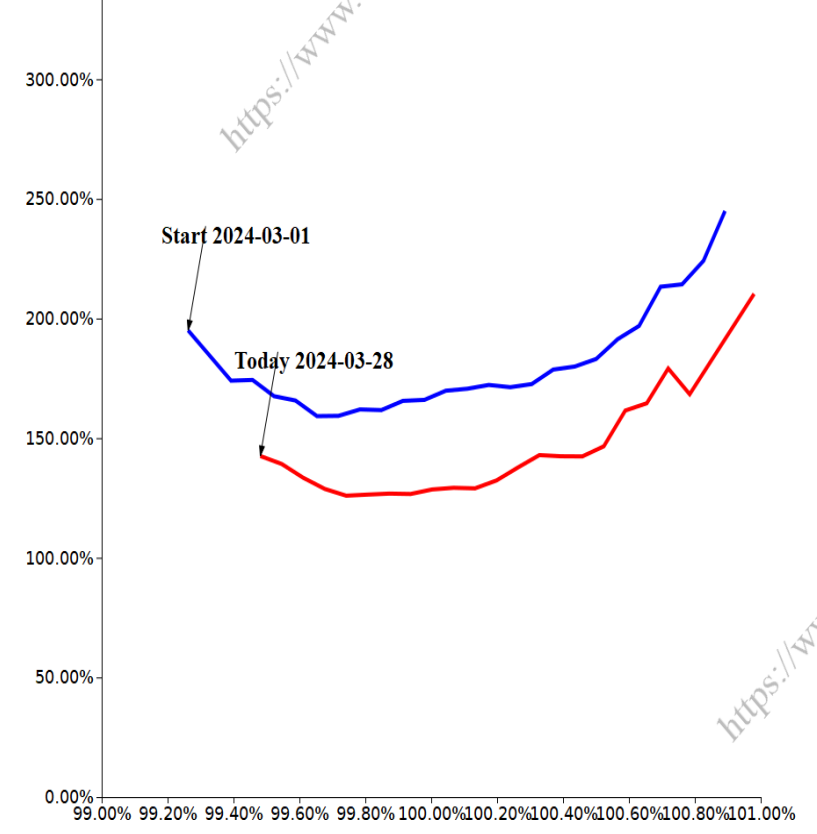
**Front Month Dynamics:
One-year Mid-curve Three-month SOFR Options
(Bachelier)**

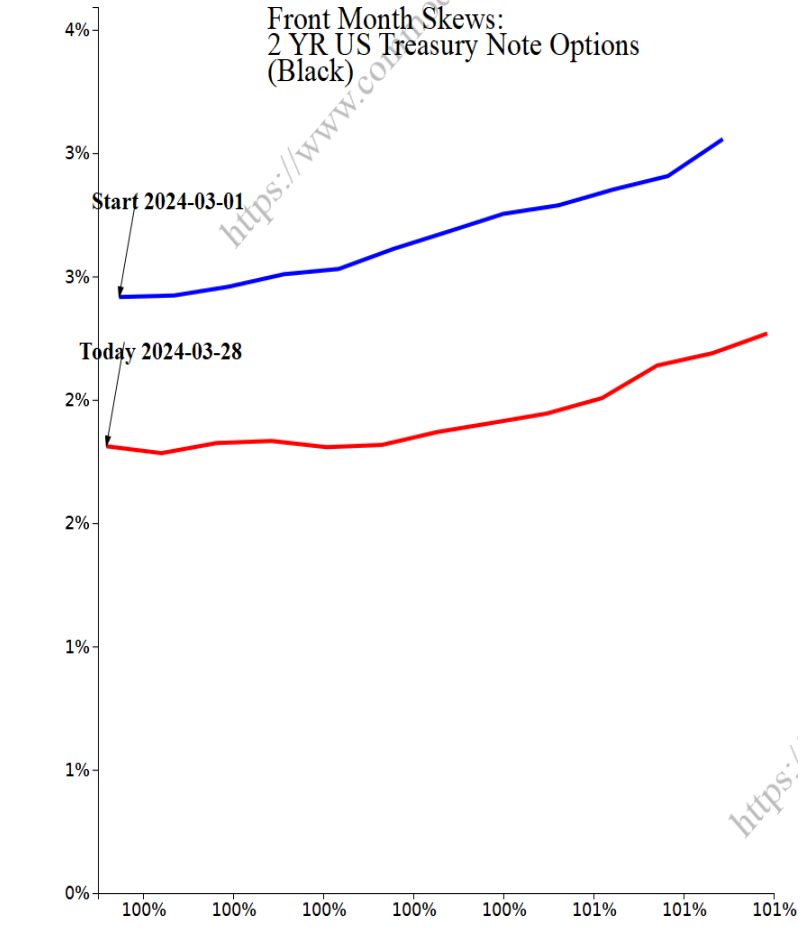
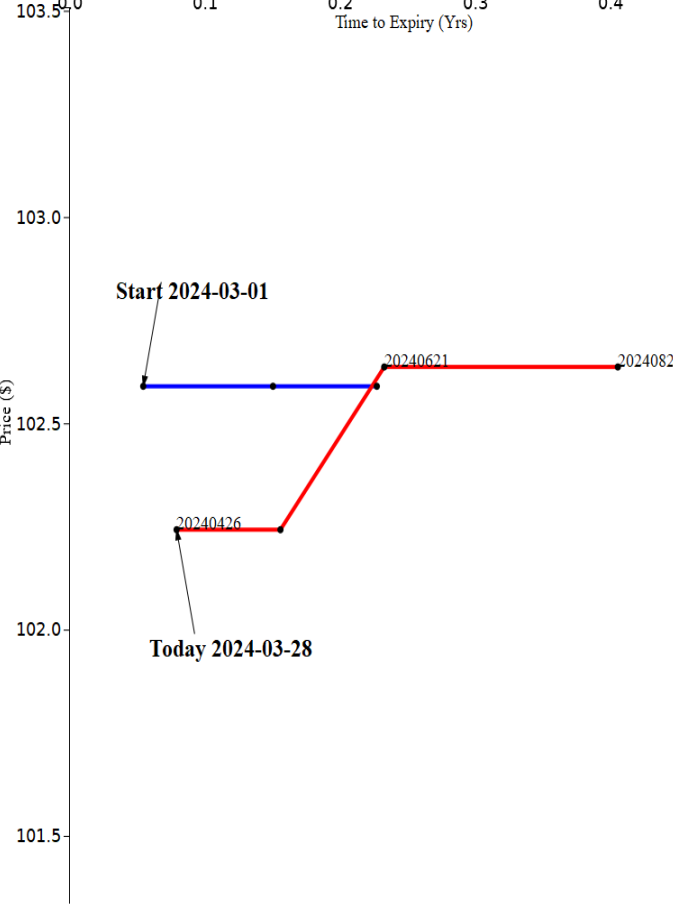
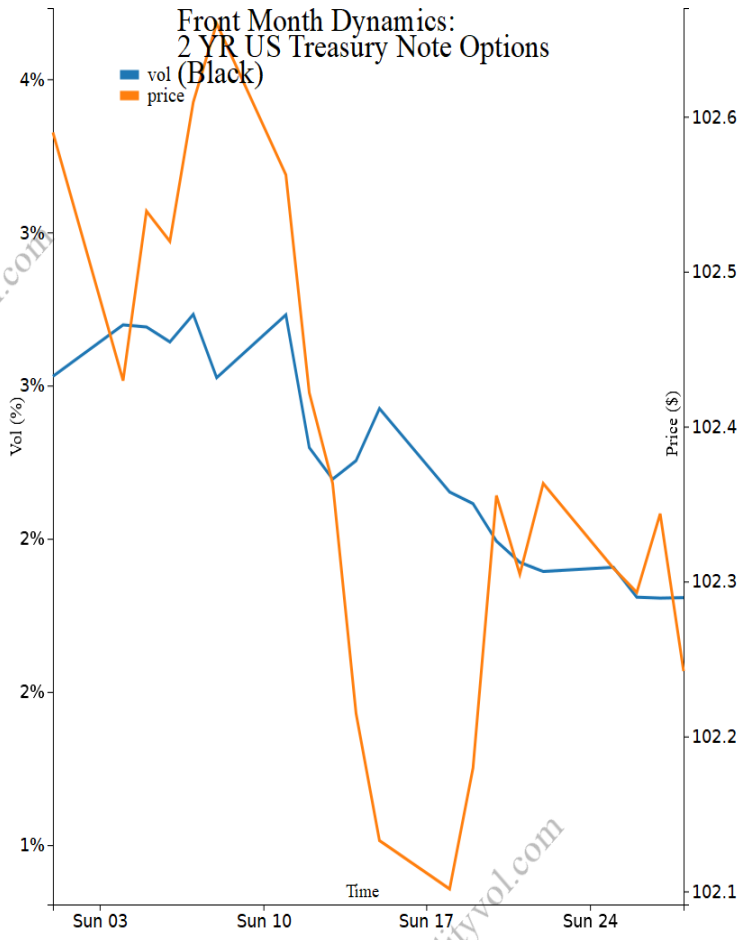
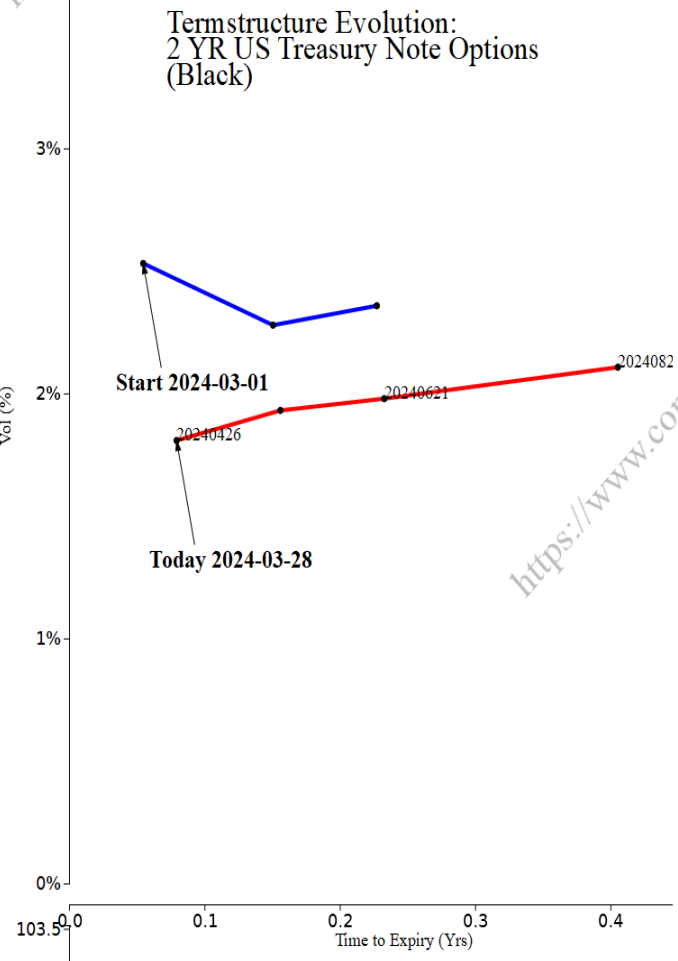


**Front Month Skews:
One-year Mid-curve Three-month SOFR Option
(Bachelier)**

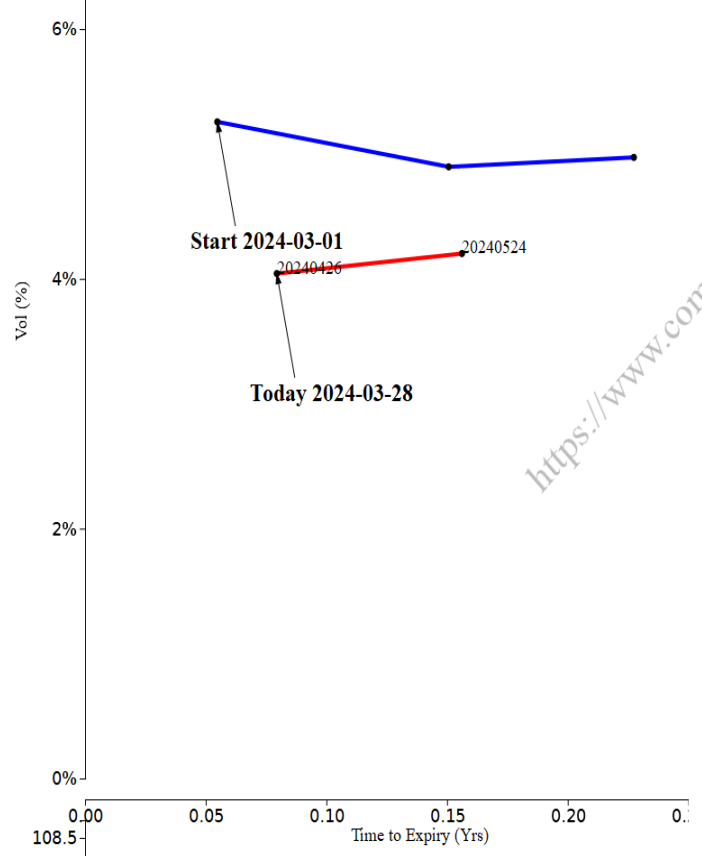


**Front Month Skews:
One-year Mid-curve Three-month SOFR Option
(Bachelier)**

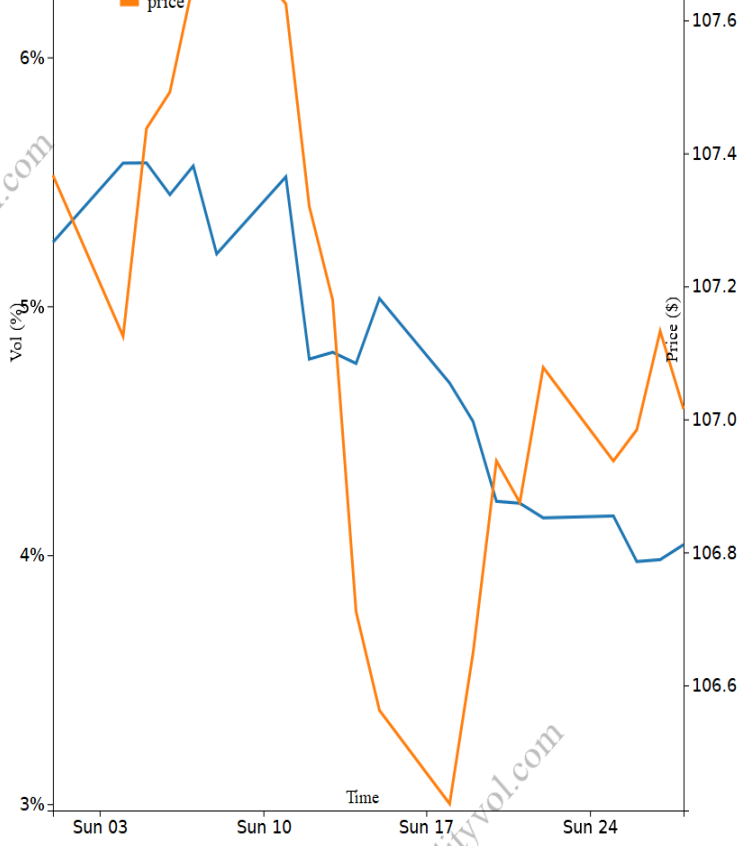




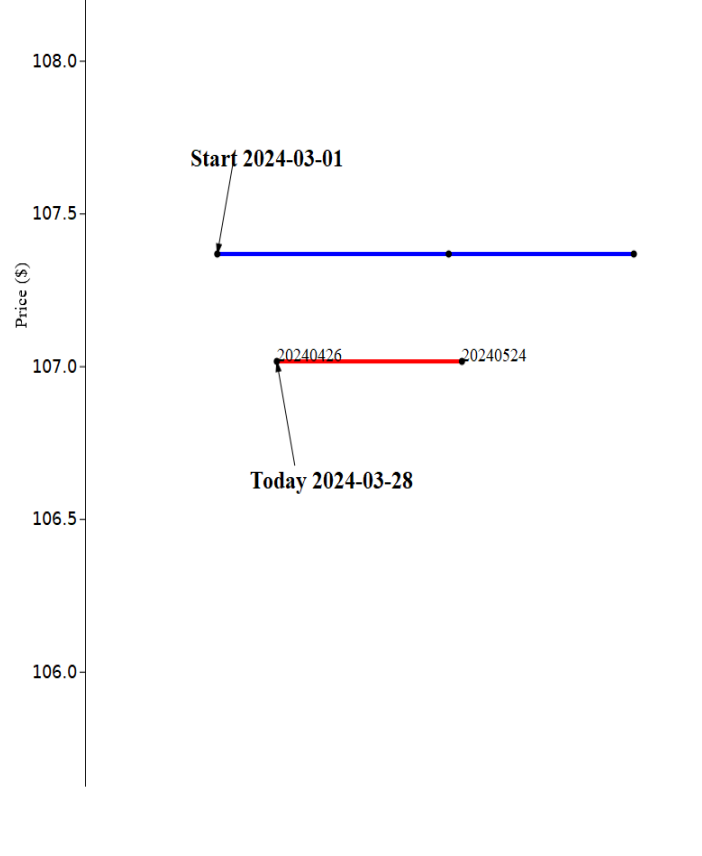
Termstructure Evolution: 5 YR US Treasury Note Options (Black)



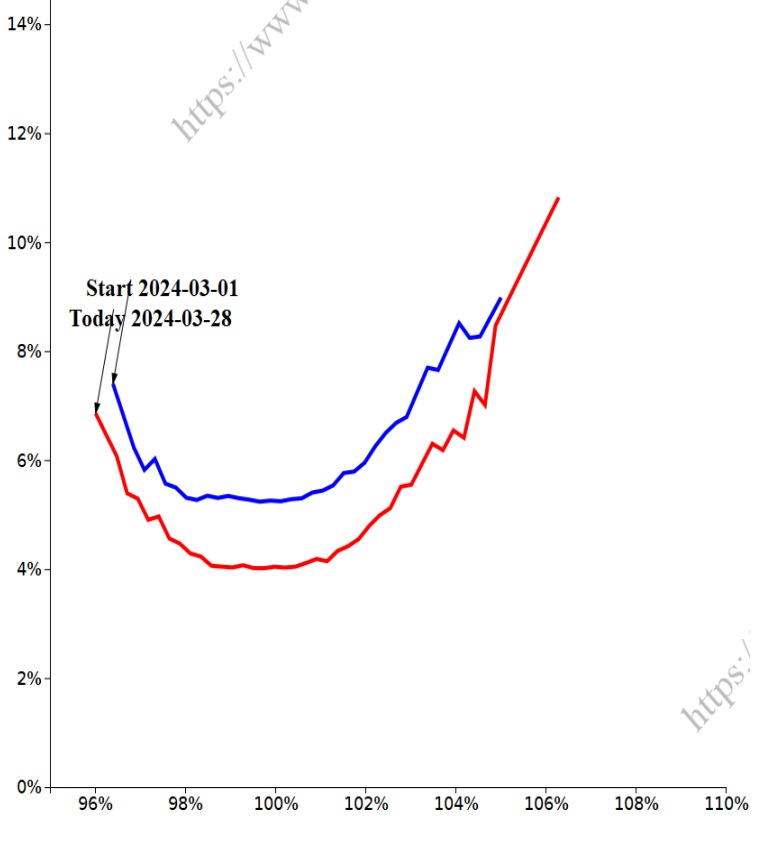
Front Month Dynamics: 5 YR US Treasury Note Options (Black)



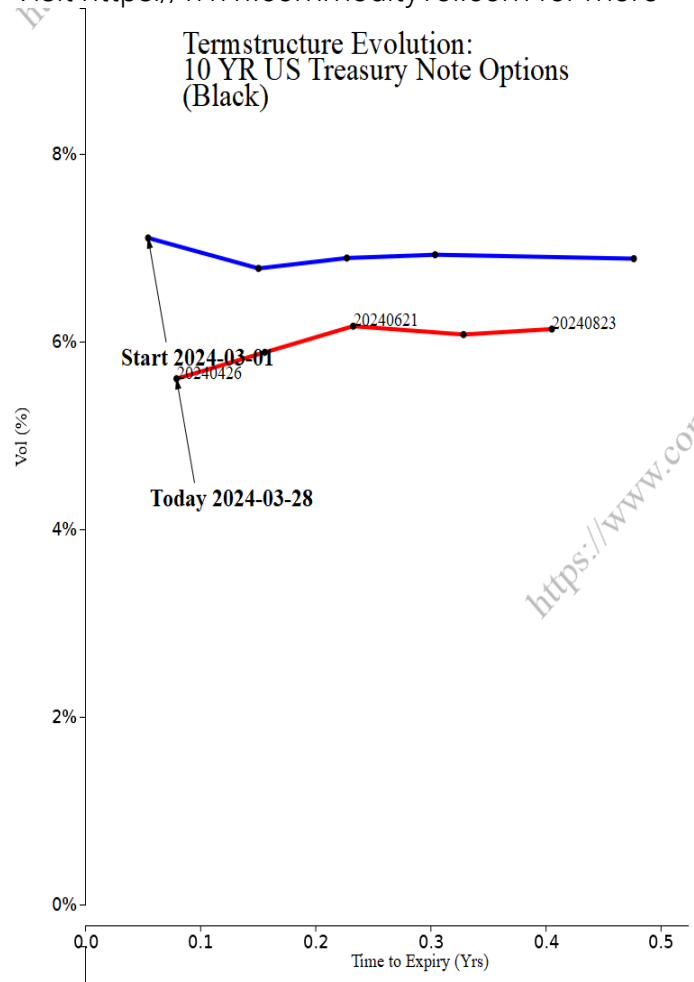
Termstructure Skews: 5 YR US Treasury Note Options (Black)



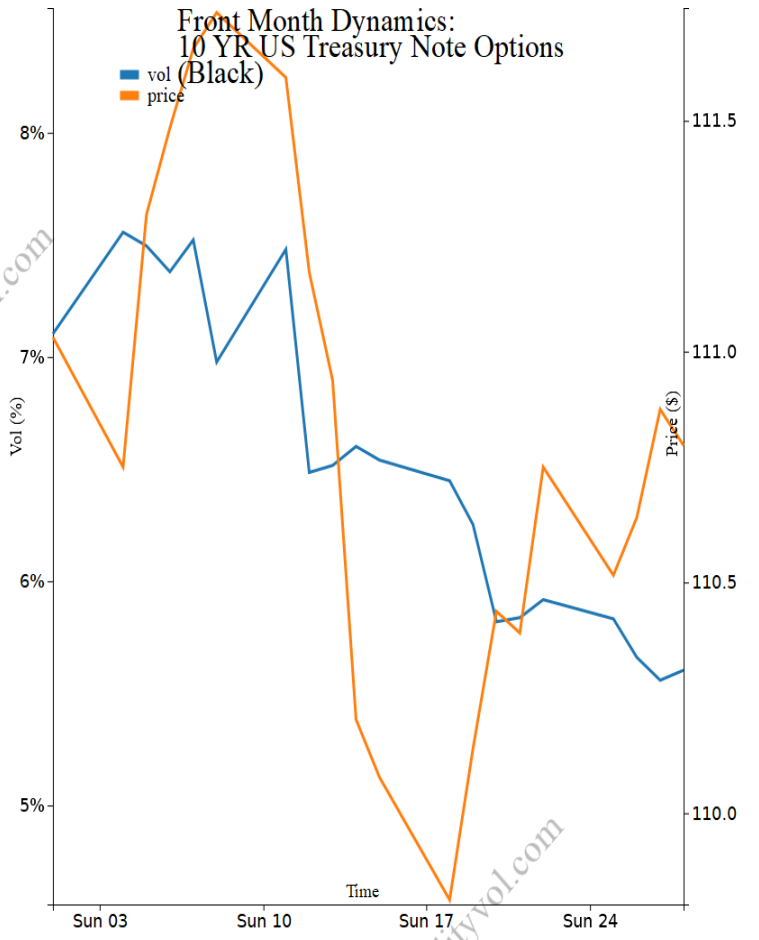
Front Month Skews: 5 YR US Treasury Note Options (Black)



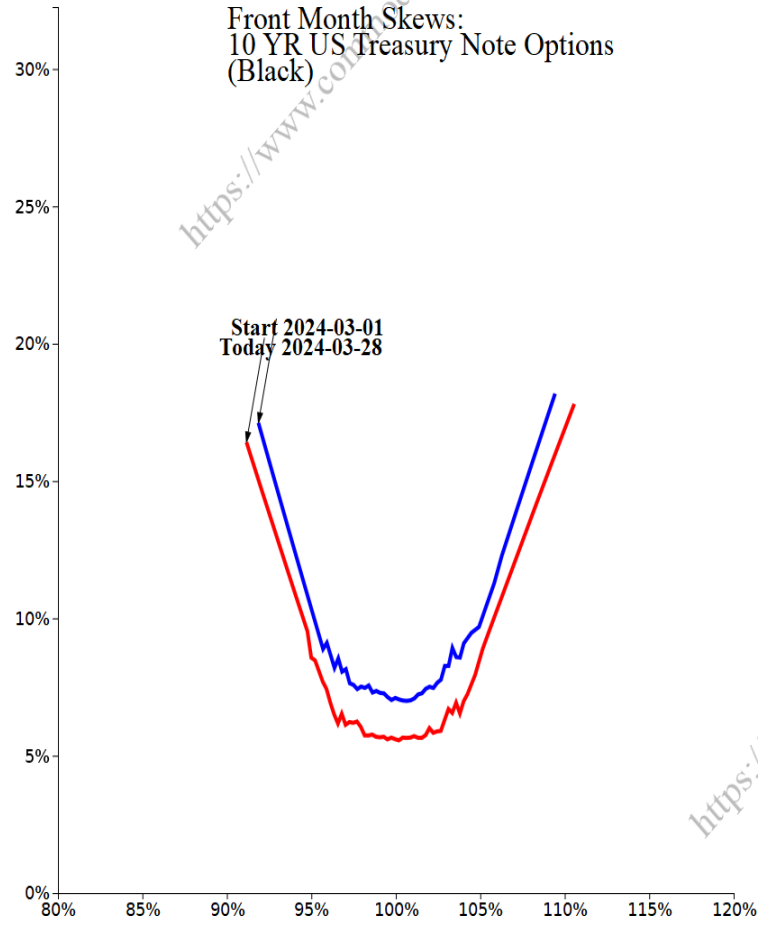
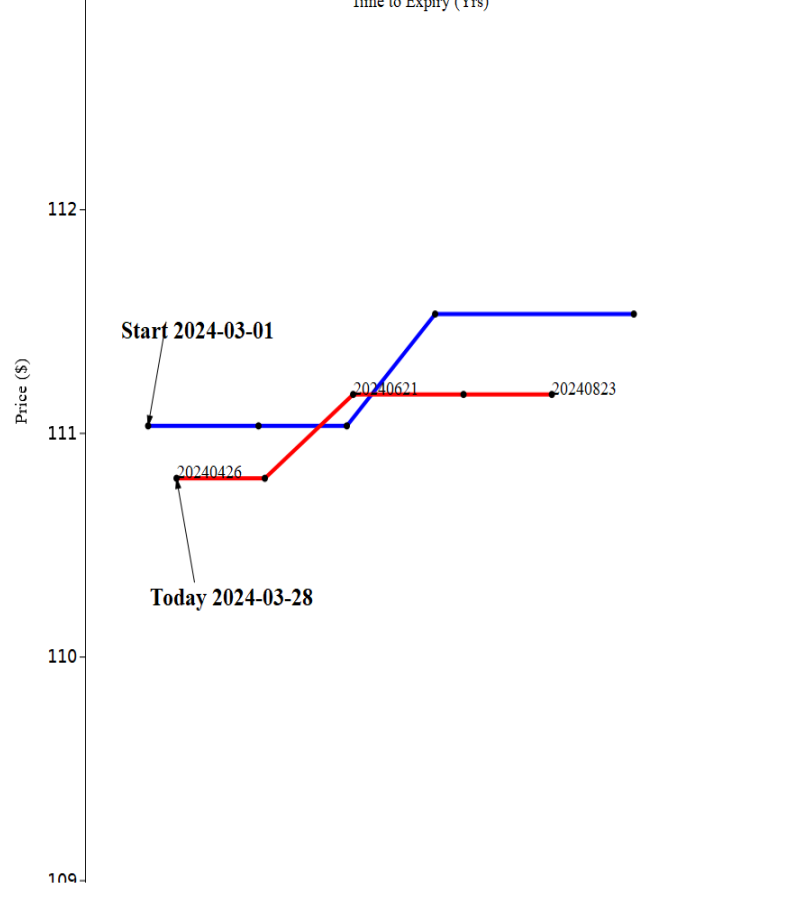
**Termstructure Evolution:
10 YR US Treasury Note Options
(Black)**

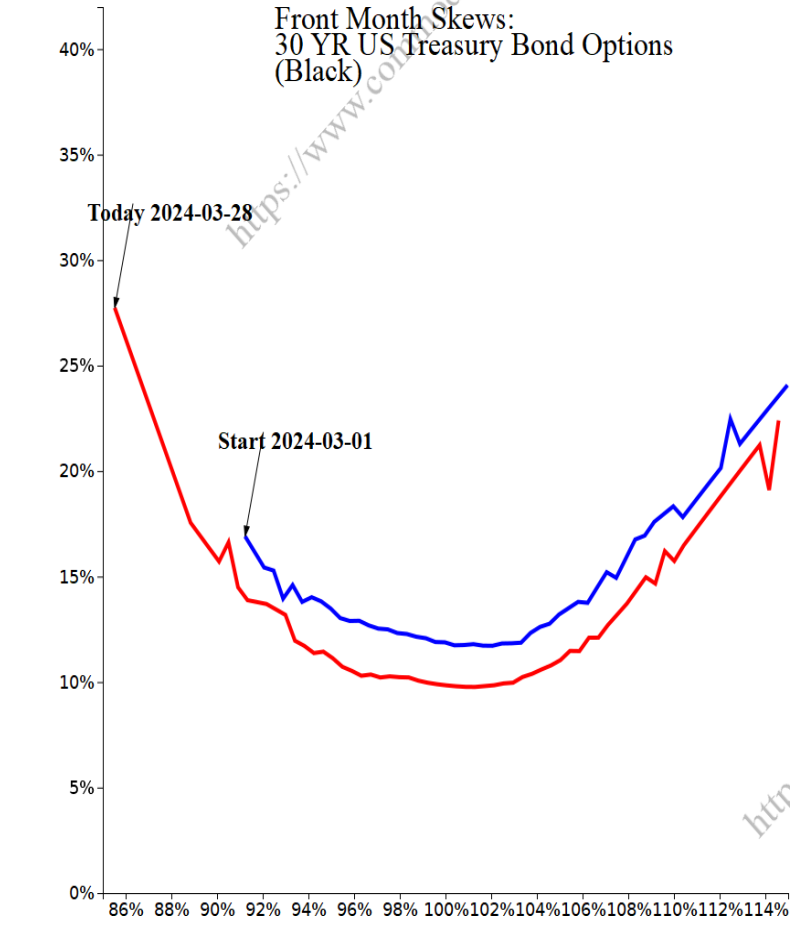
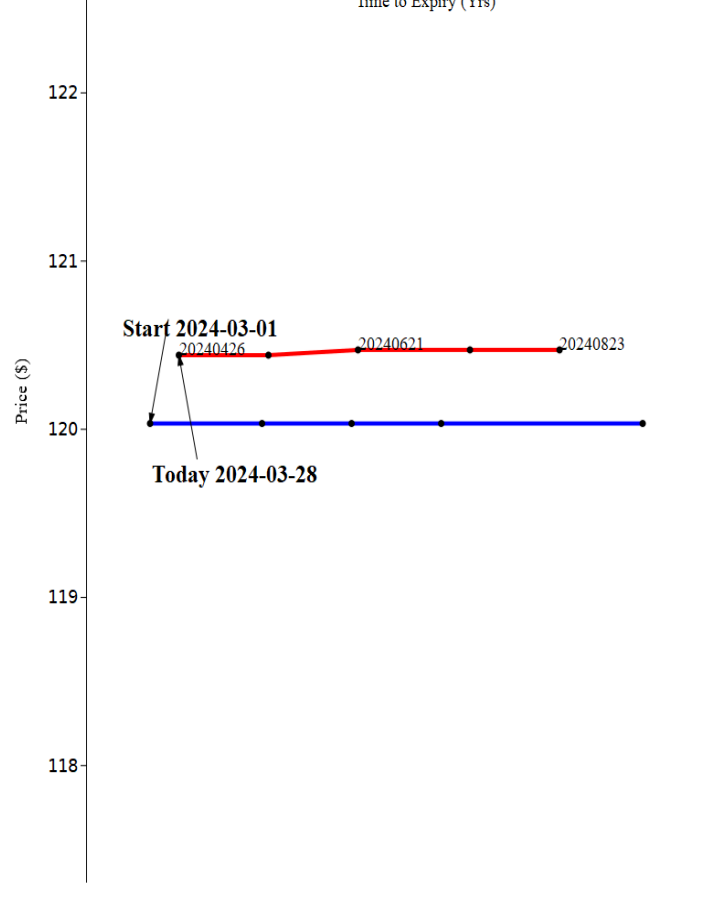
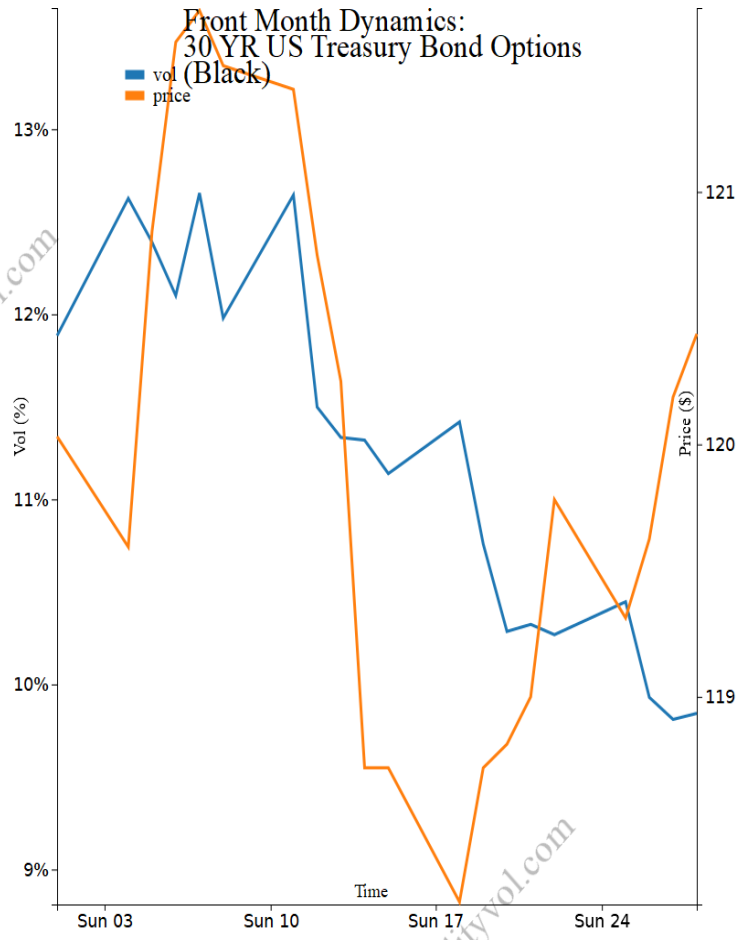
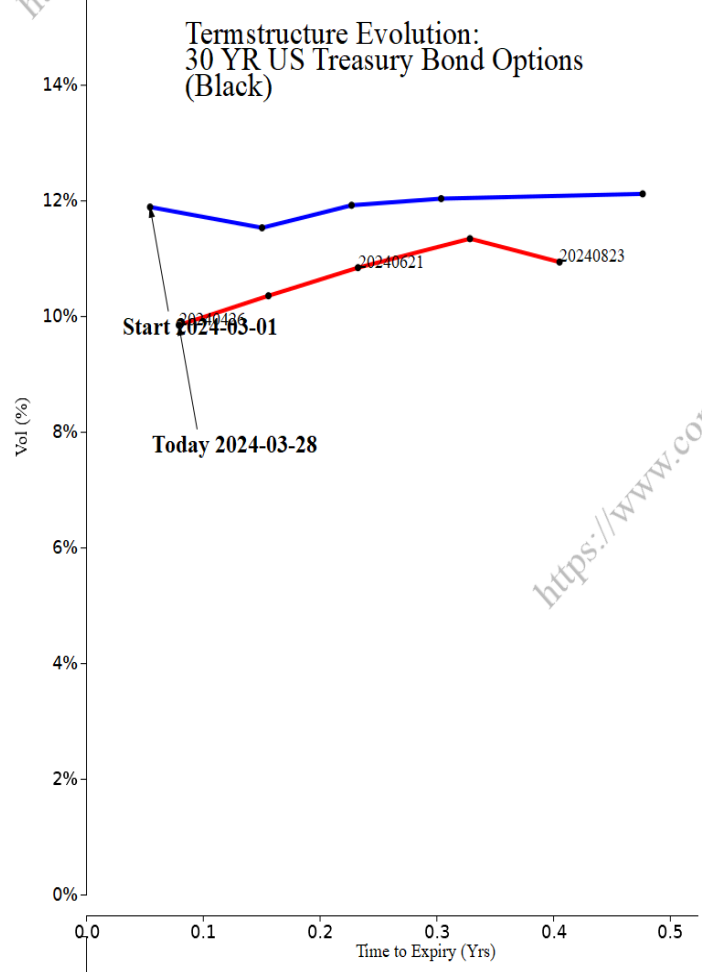


**Front Month Dynamics:
10 YR US Treasury Note Options
(Black)**

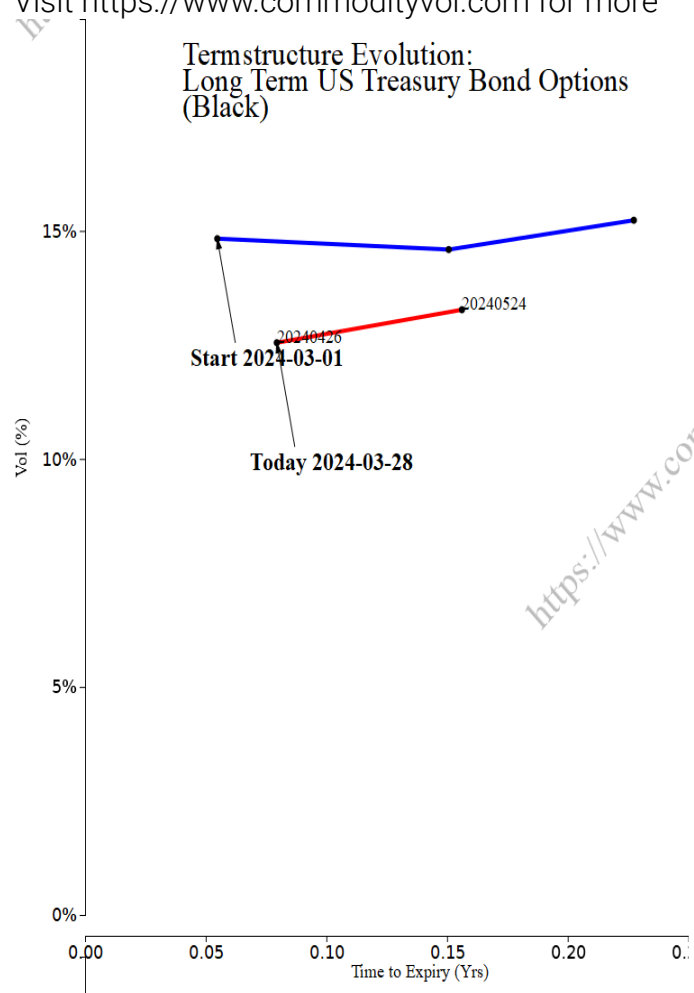


**Front Month Skews:
10 YR US Treasury Note Options
(Black)**

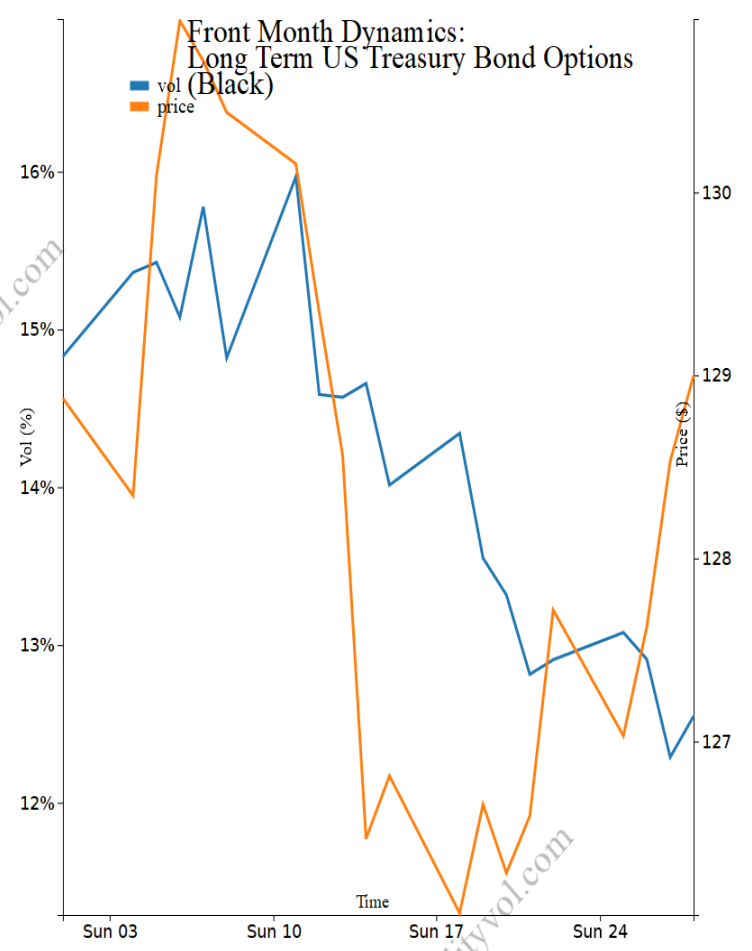




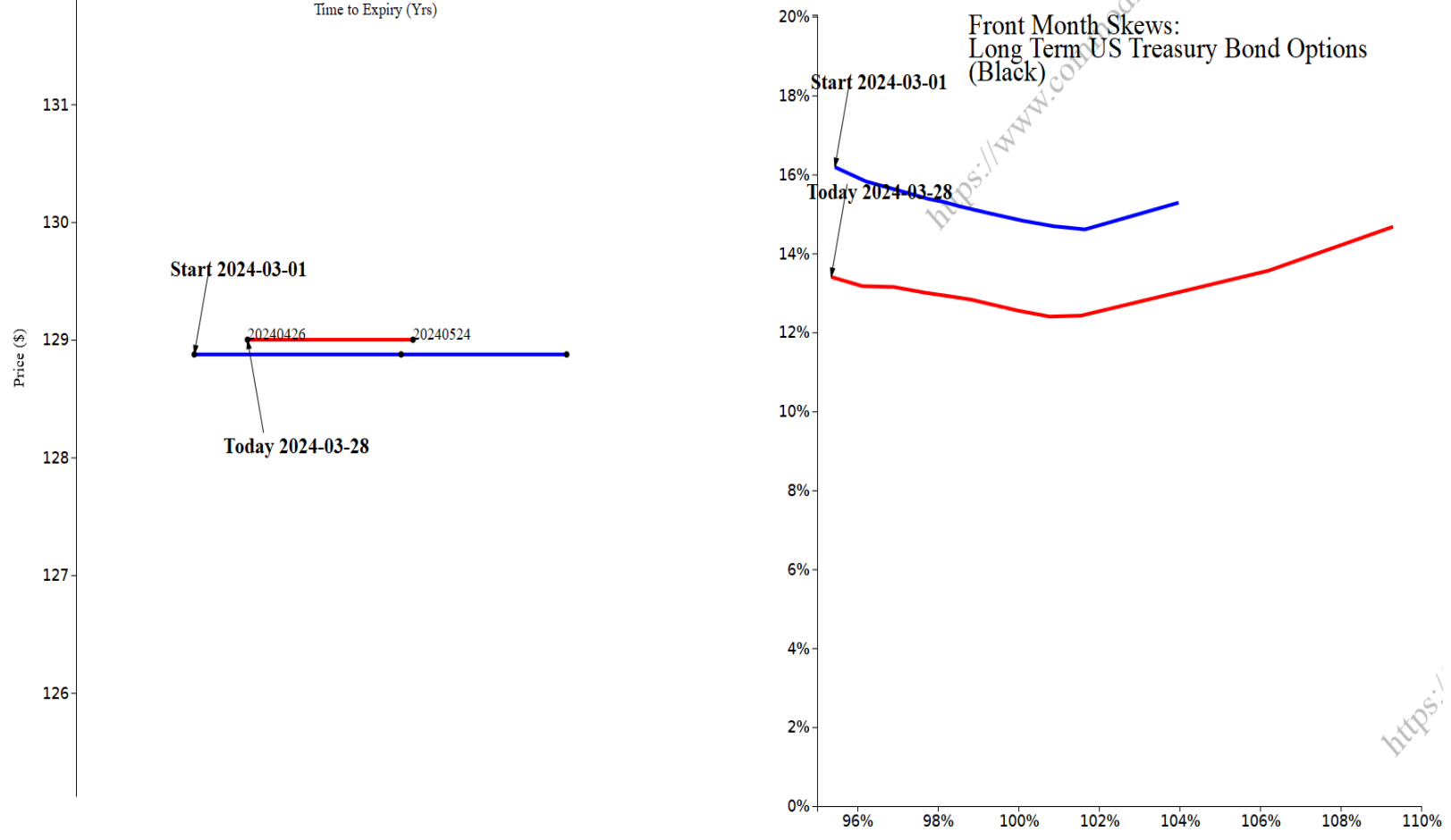
Termstructure Evolution:
Long Term US Treasury Bond Options
(Black)



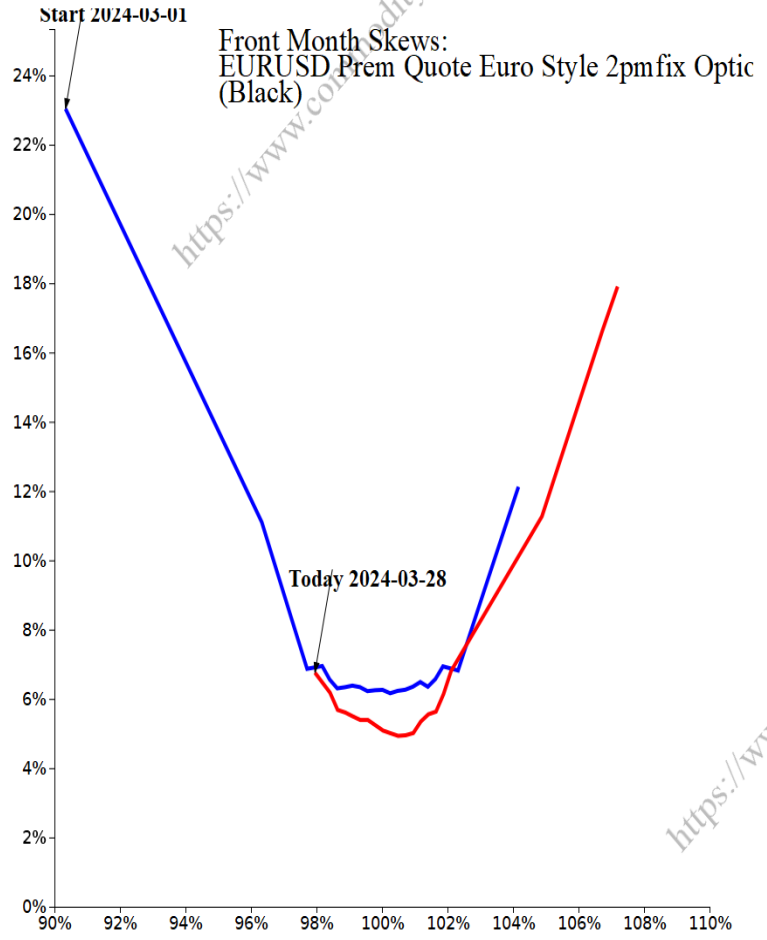
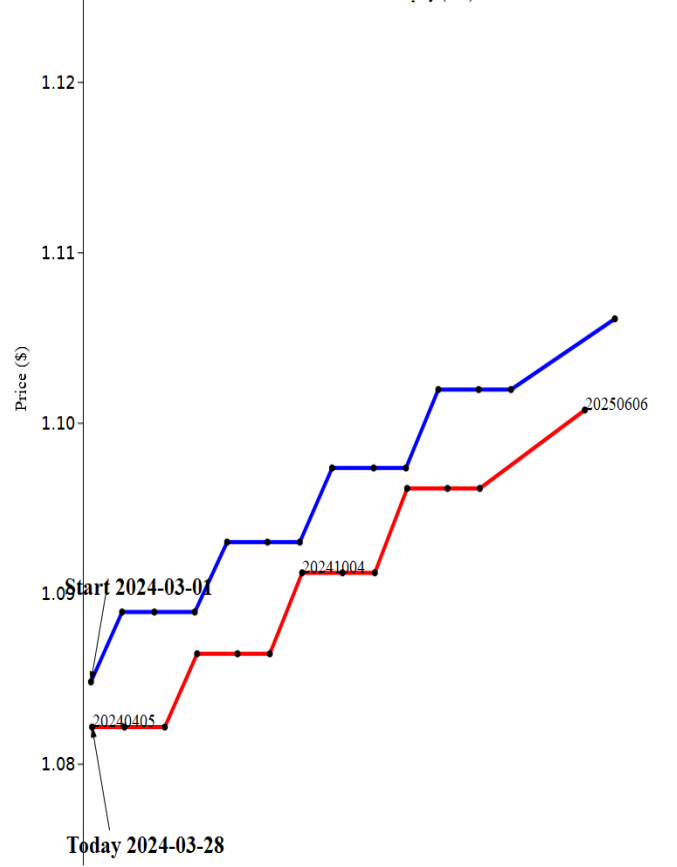
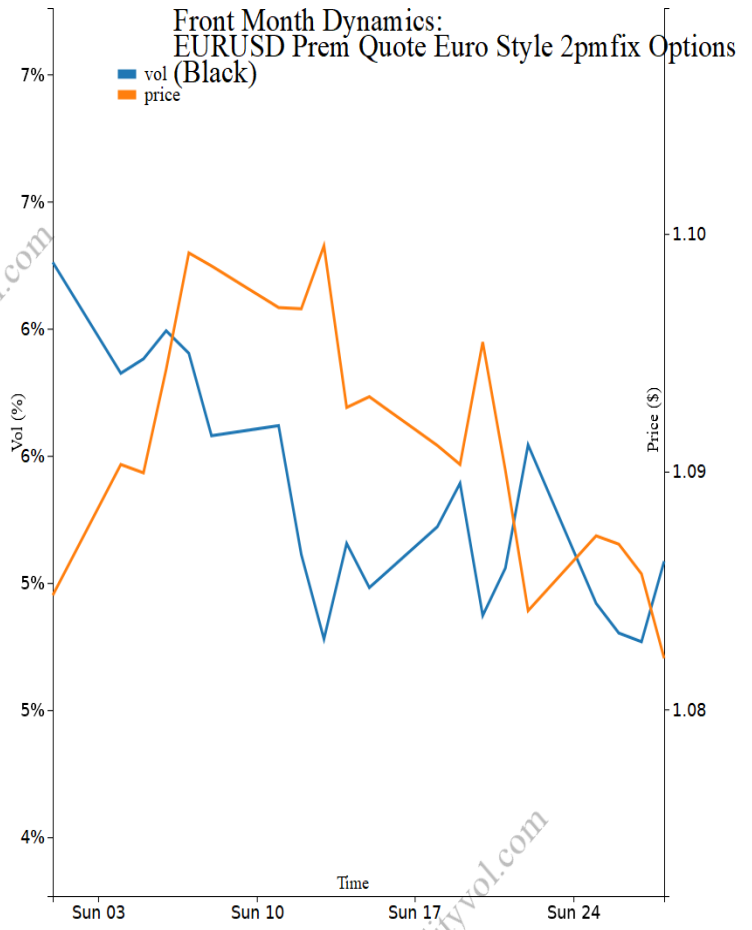
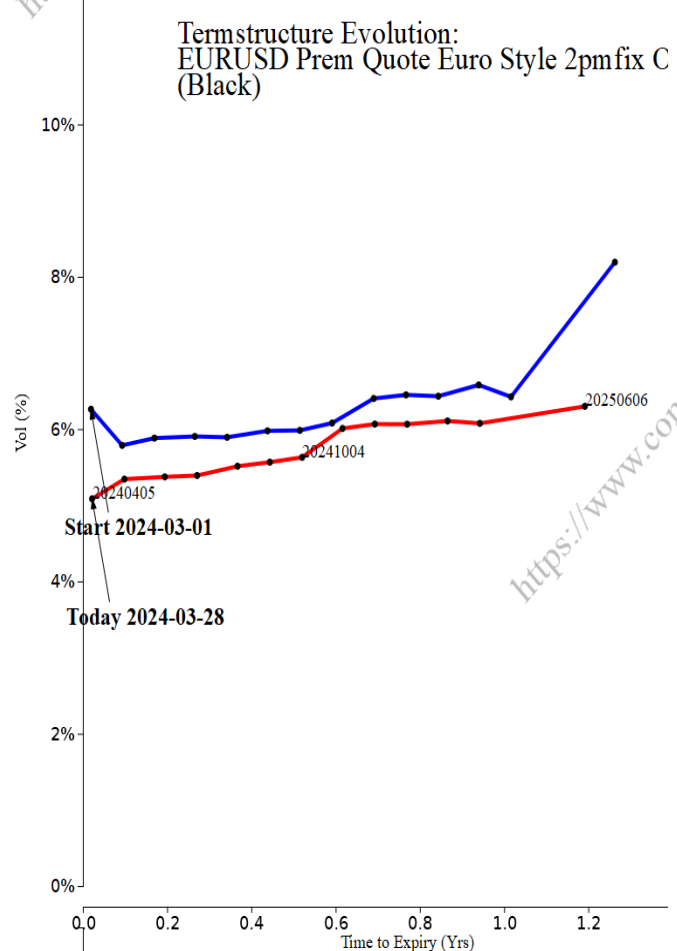
Front Month Dynamics:
Long Term US Treasury Bond Options
(Black)



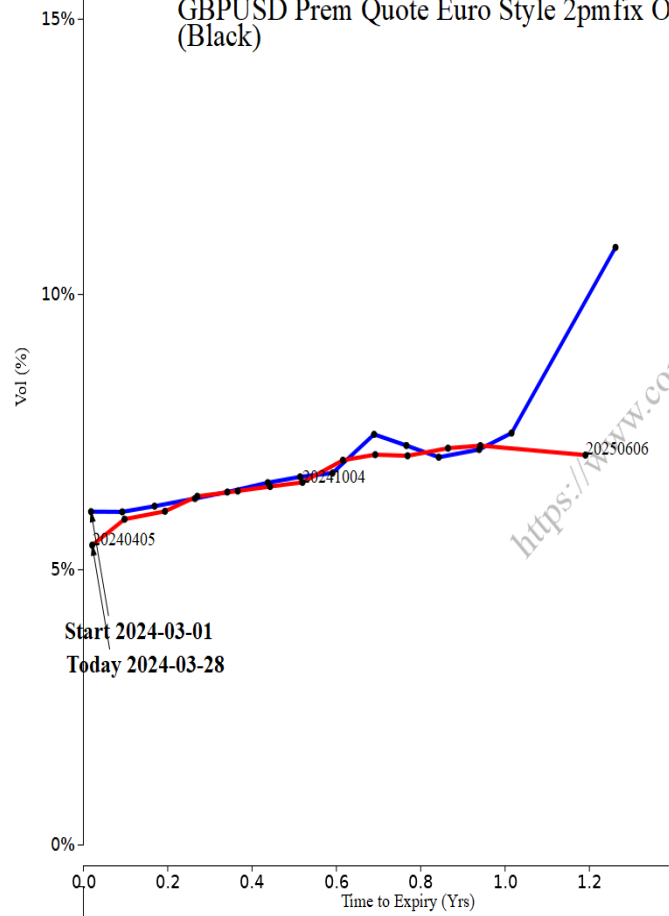
Front Month Skews:
Long Term US Treasury Bond Options
(Black)



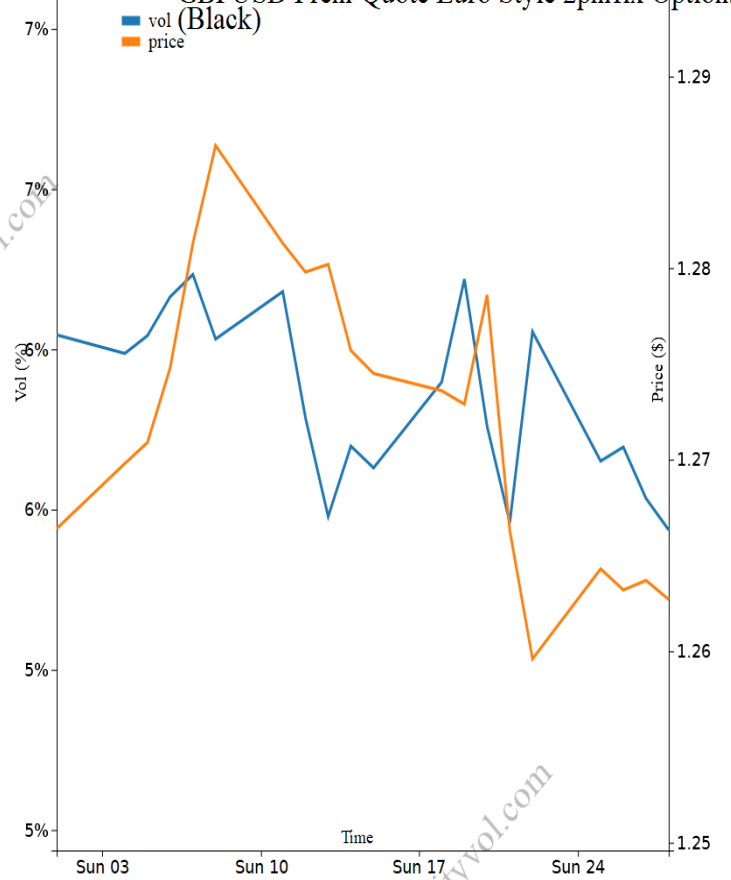
Forex



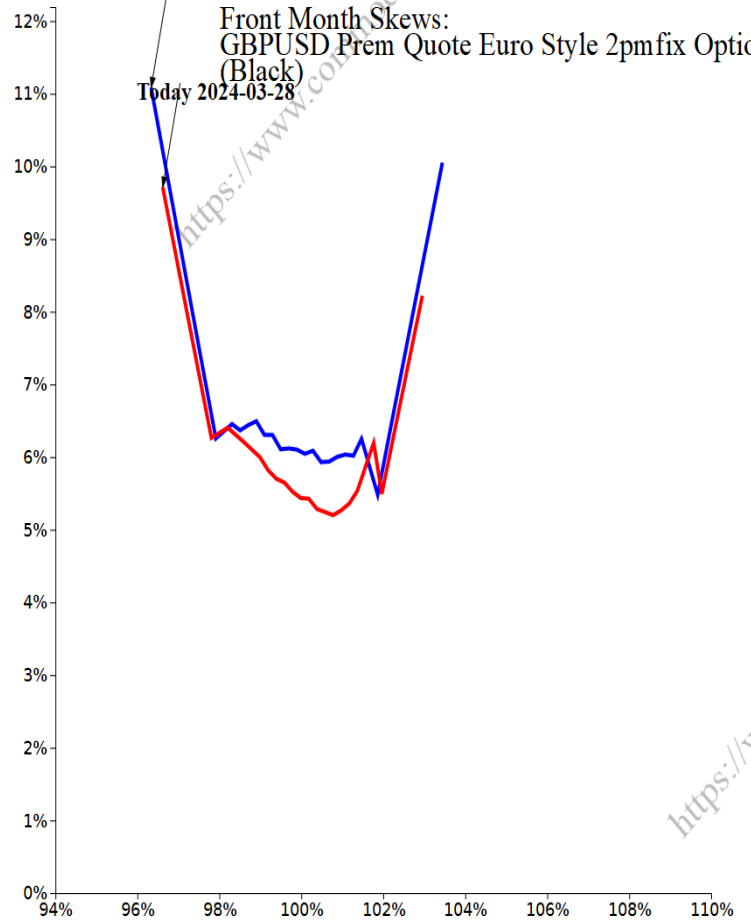
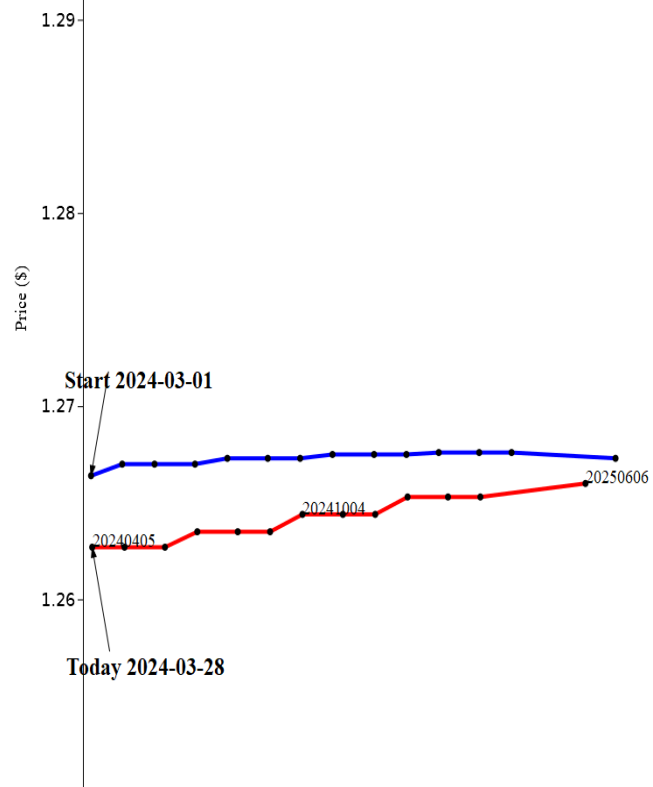
Termstructure Evolution:
GBPUSD Prem Quote Euro Style 2pmfix O
(Black)

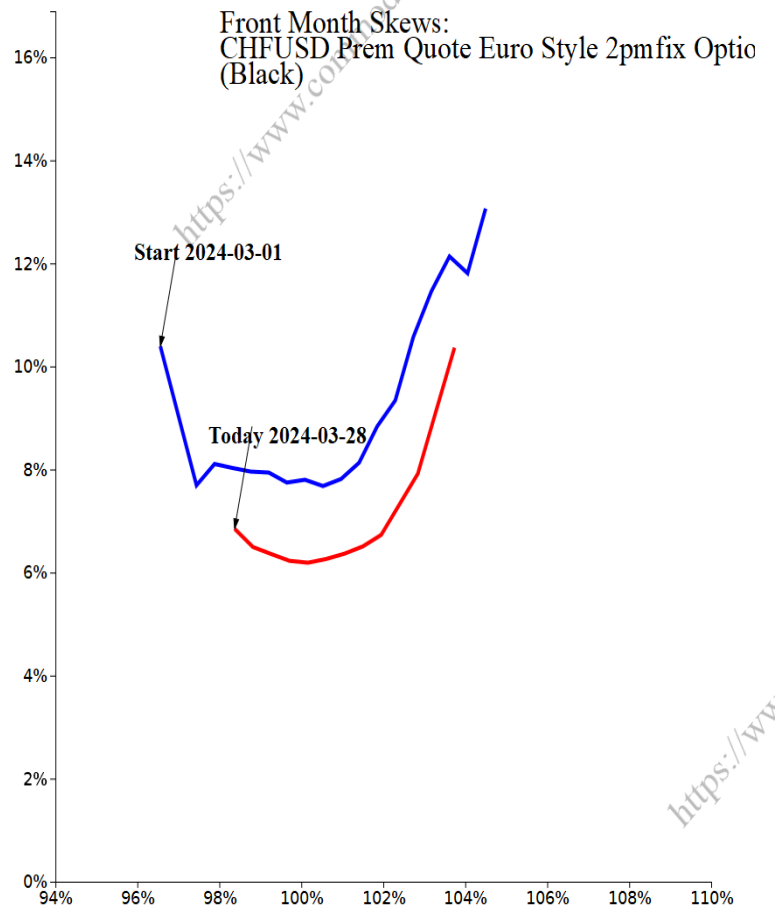
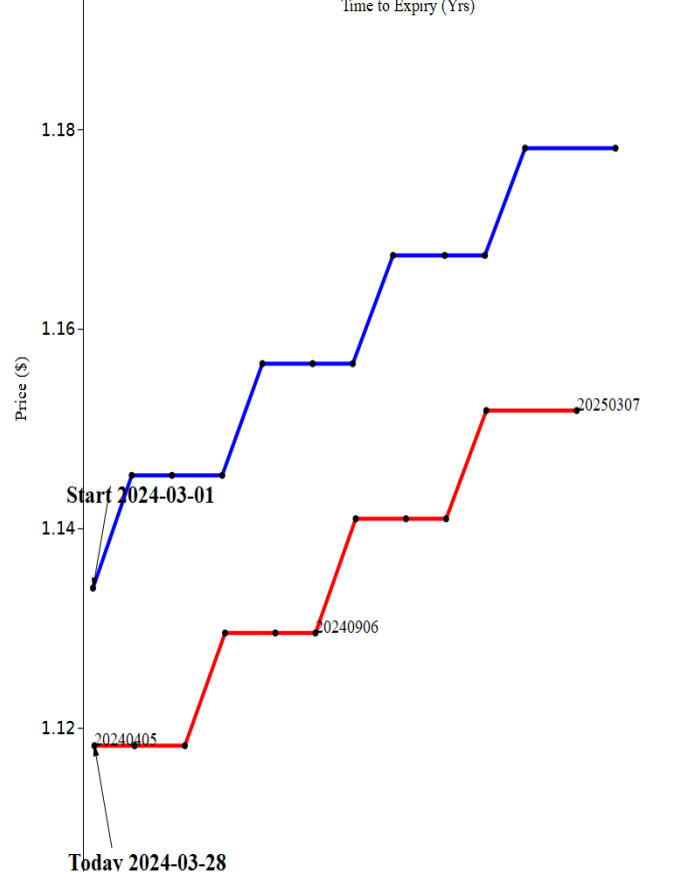
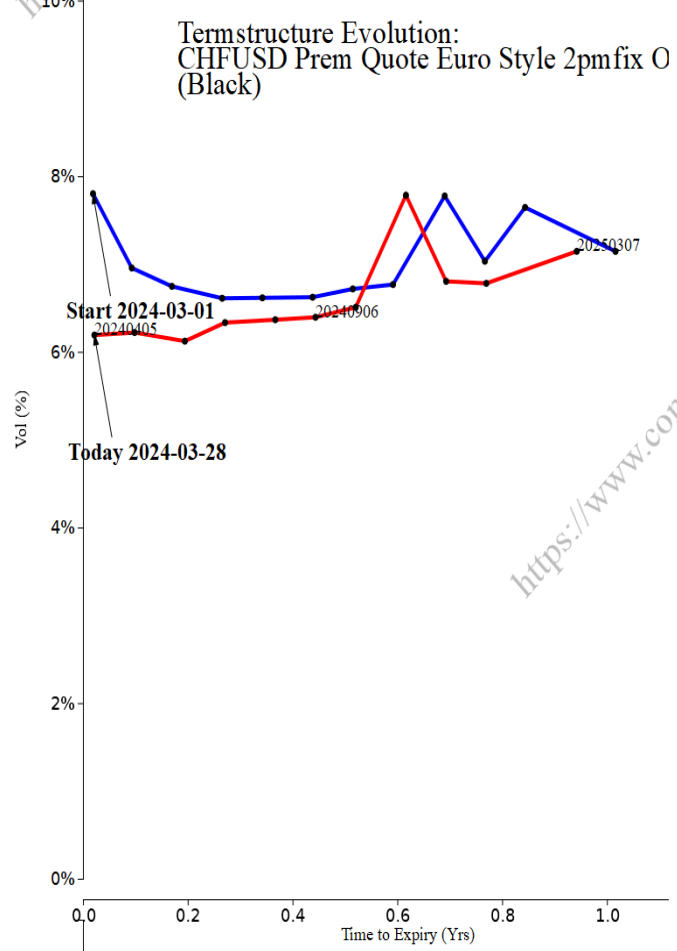


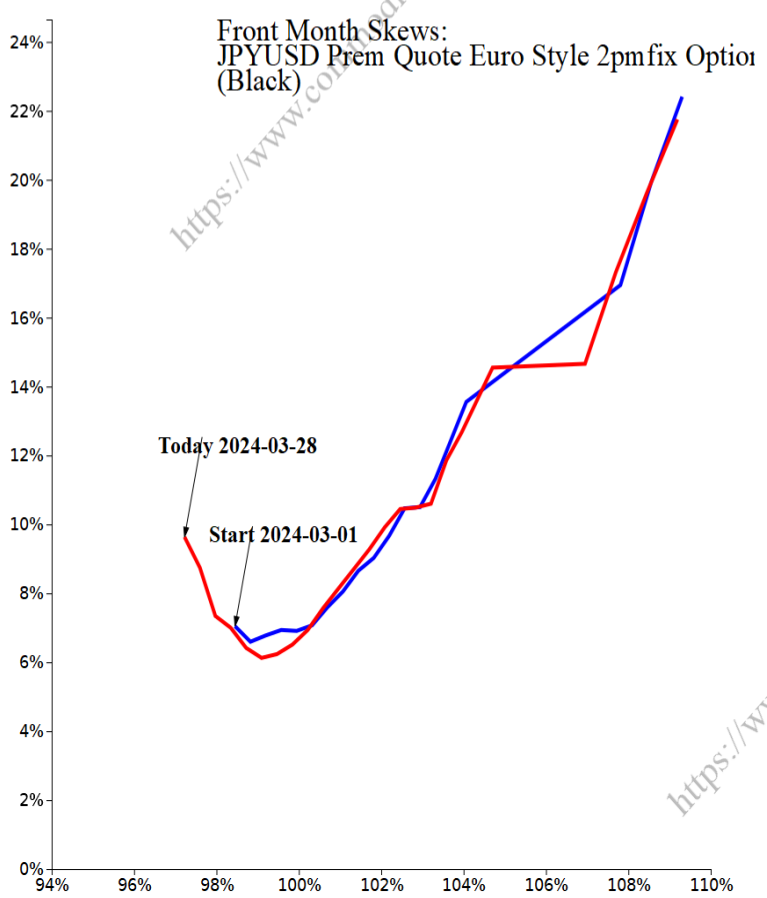
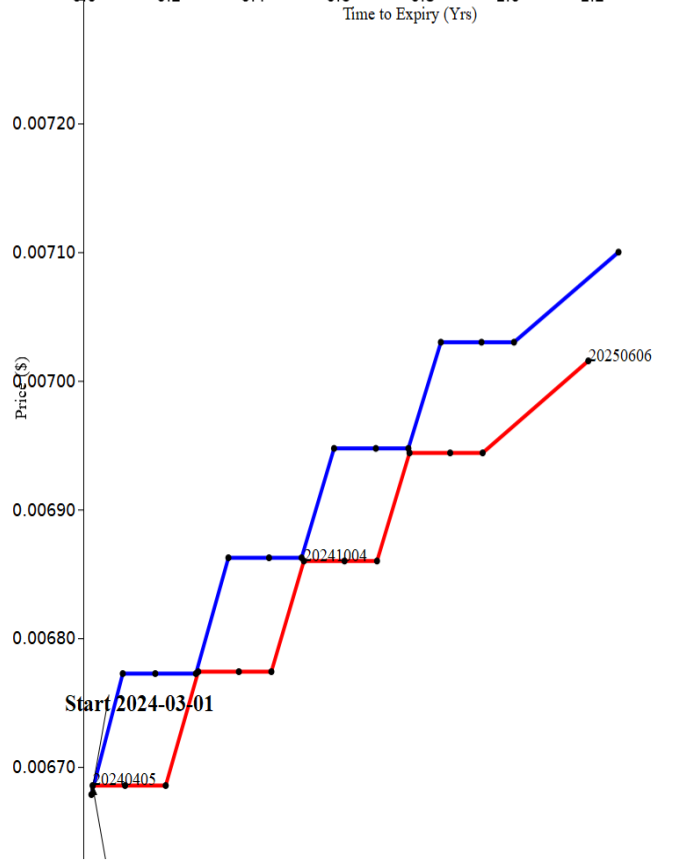
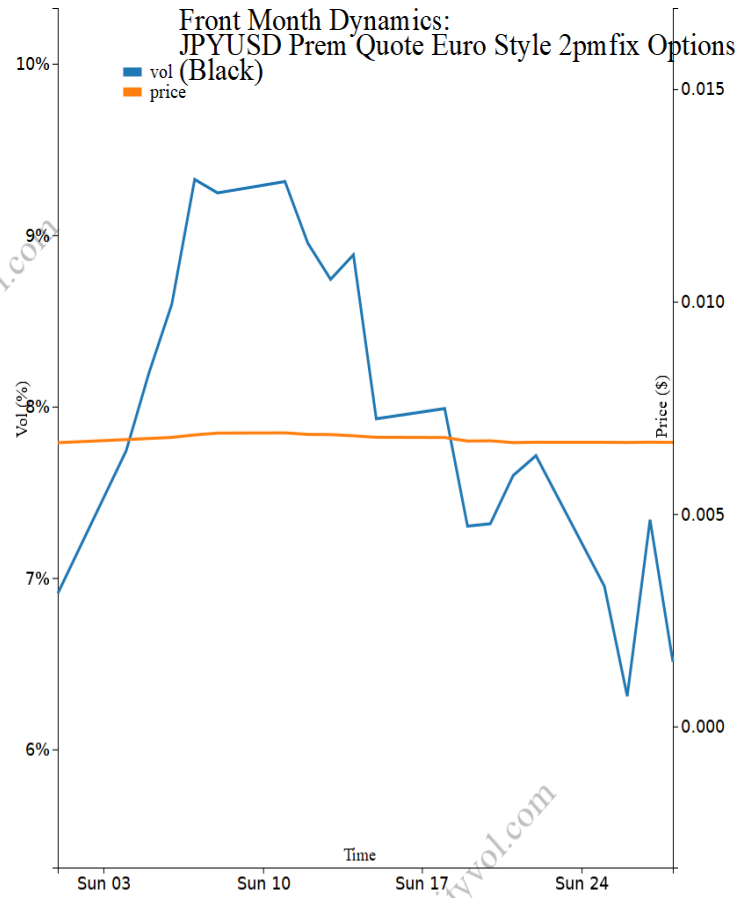
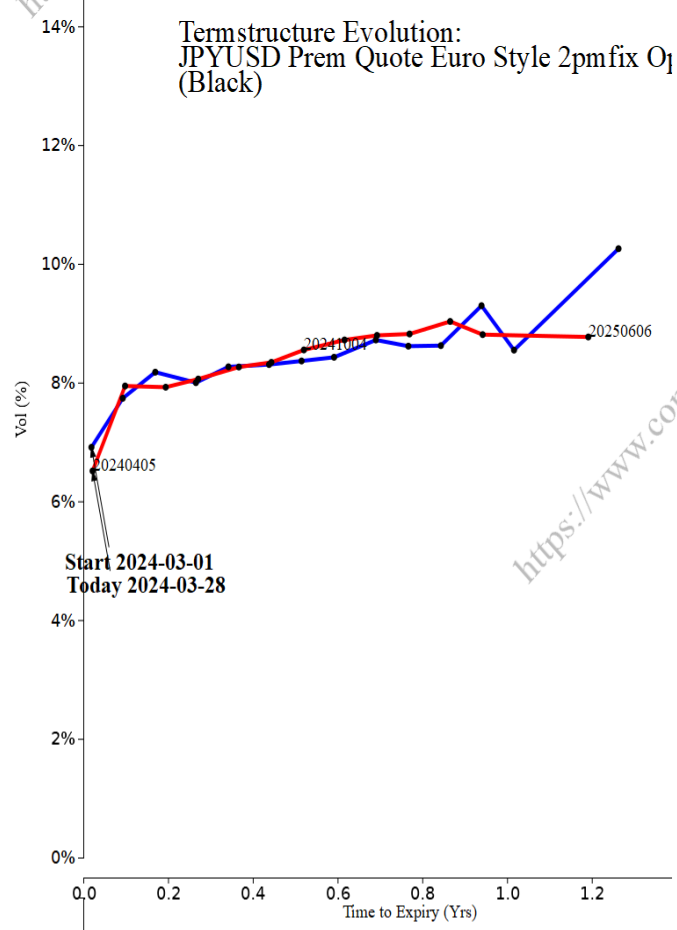
Front Month Dynamics:
GBPUSD Prem Quote Euro Style 2pmfix Options

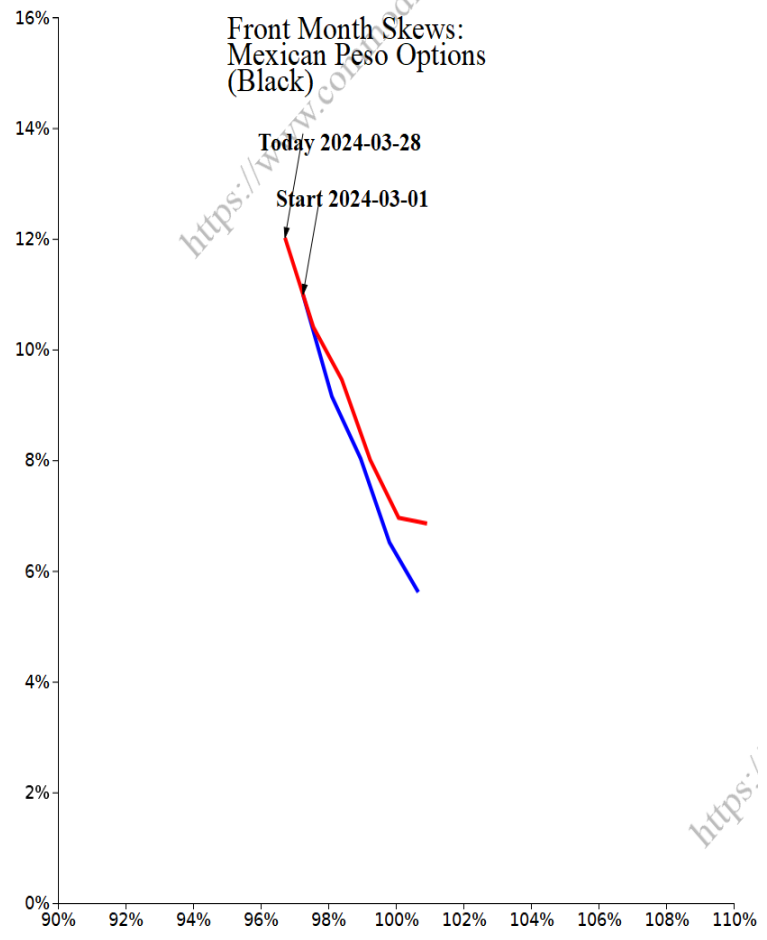
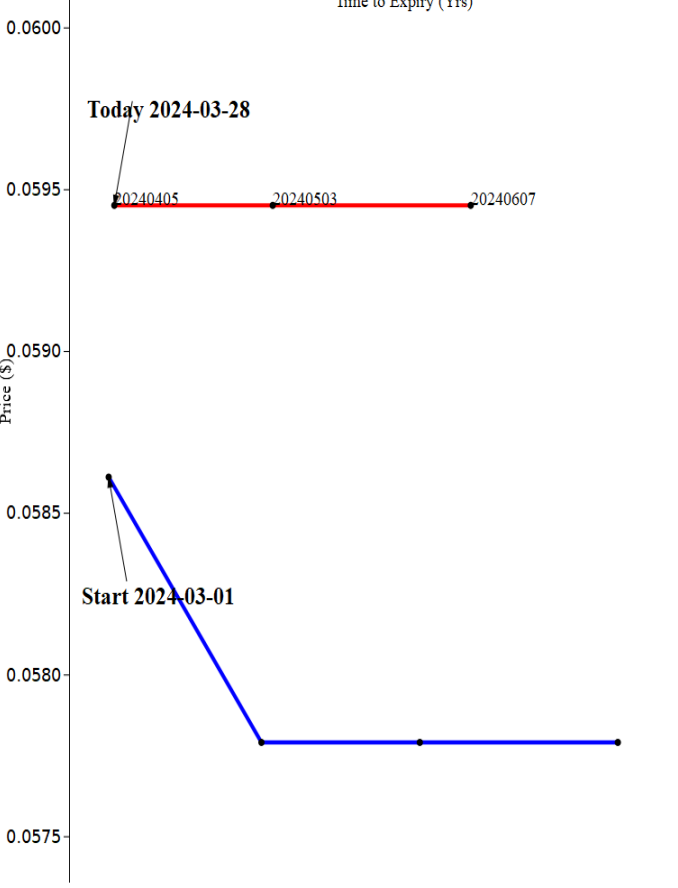
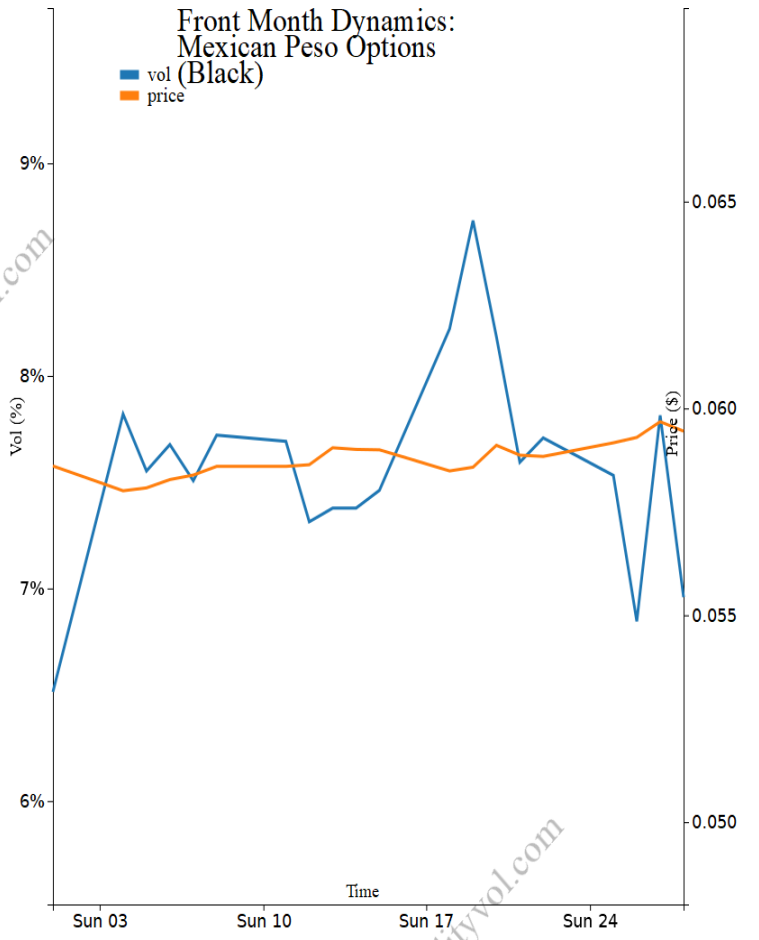
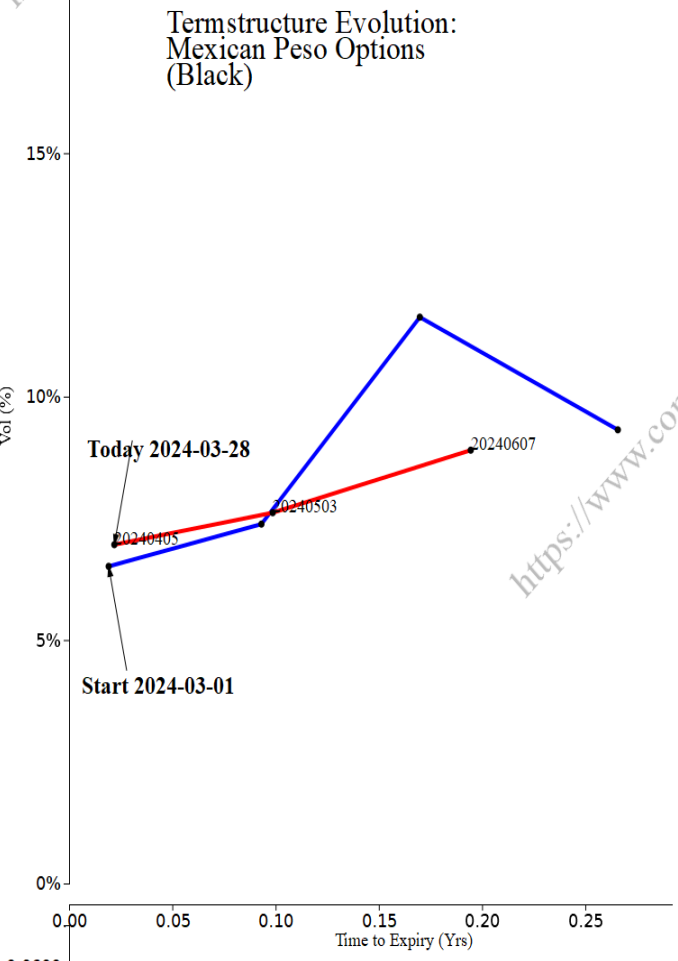


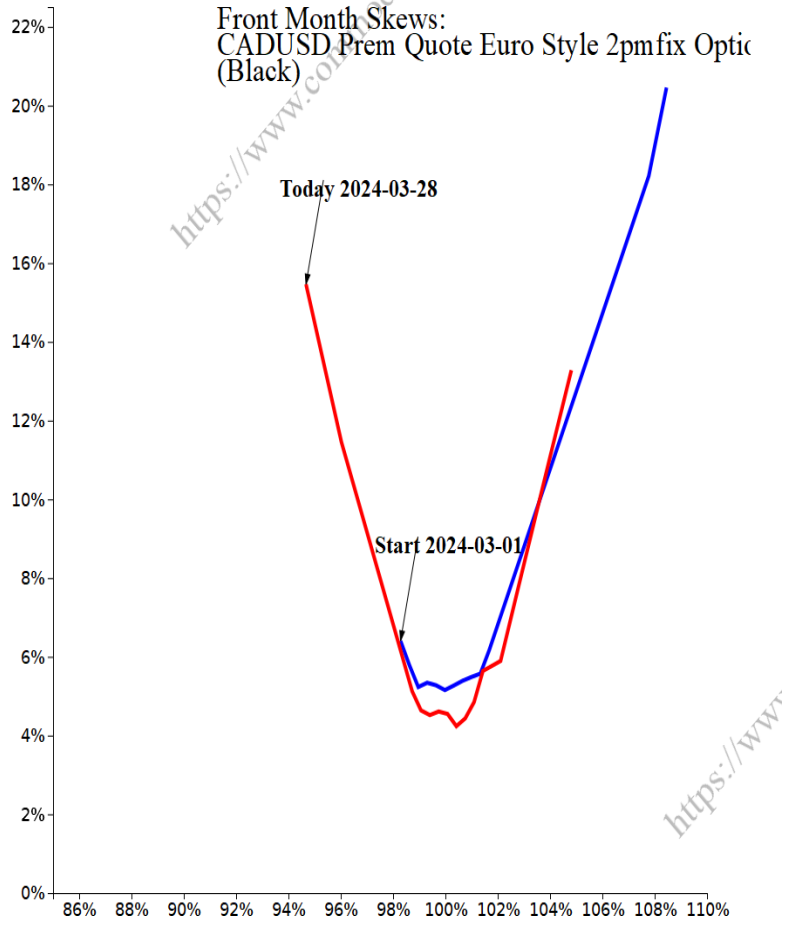
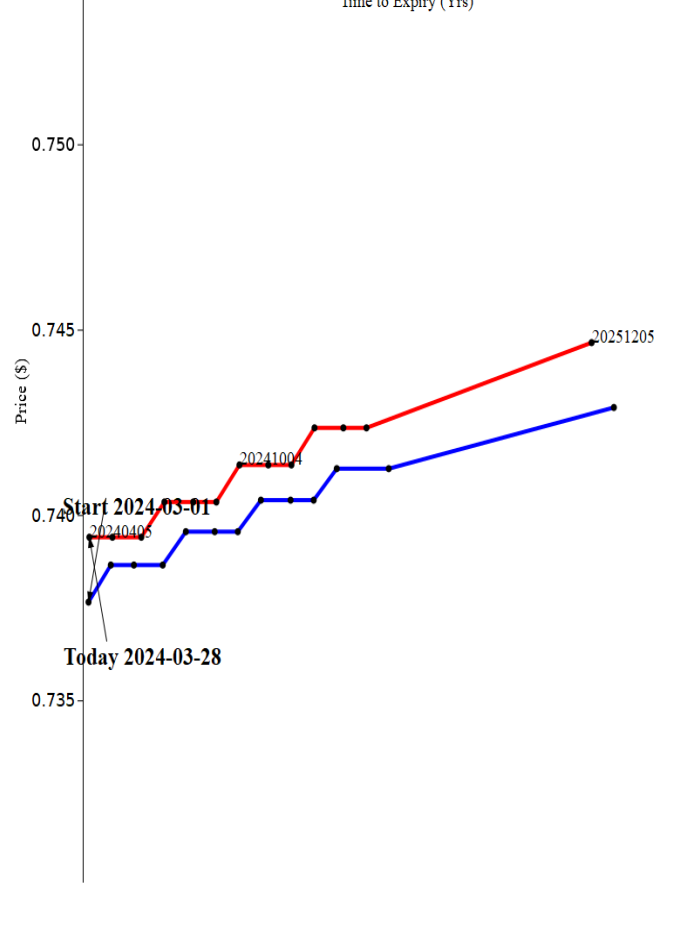
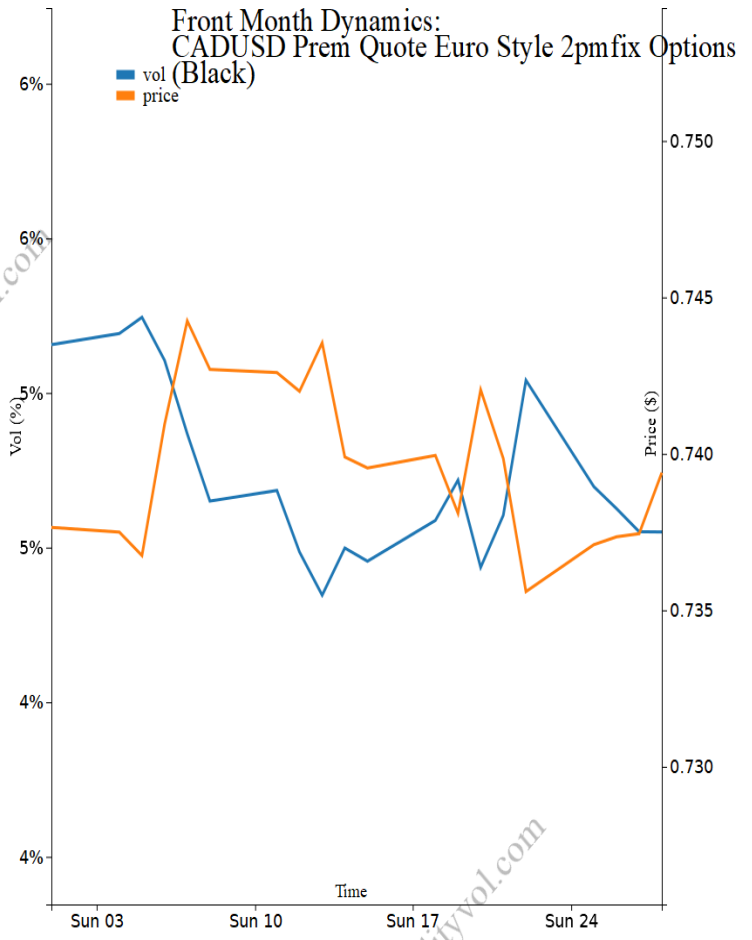
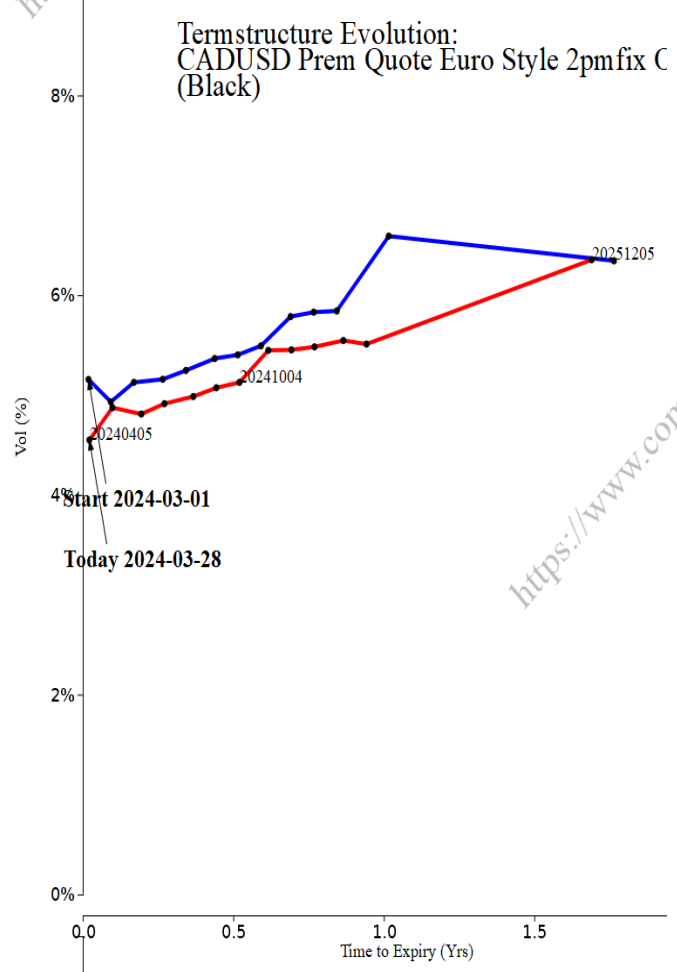
Front Month Skews:
GBPUSD Prem Quote Euro Style 2pmfix Optio
(Black)



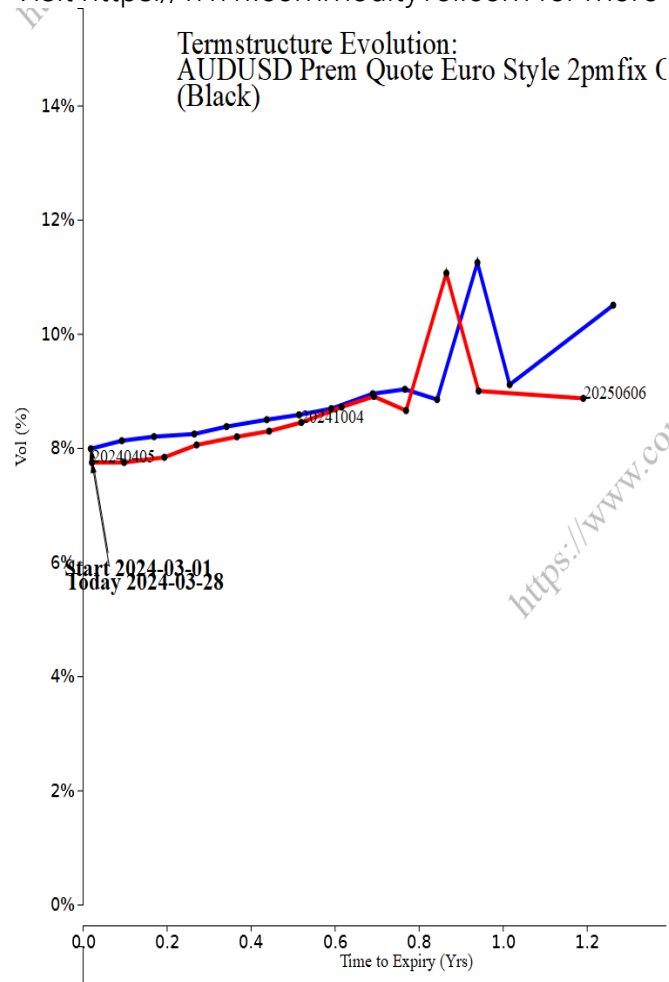




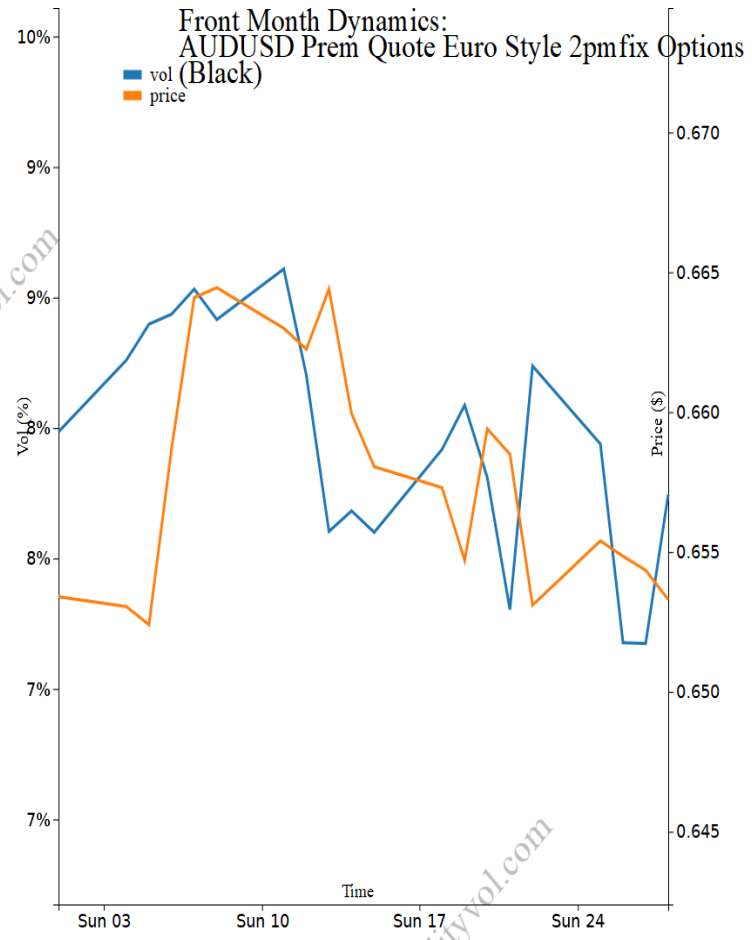




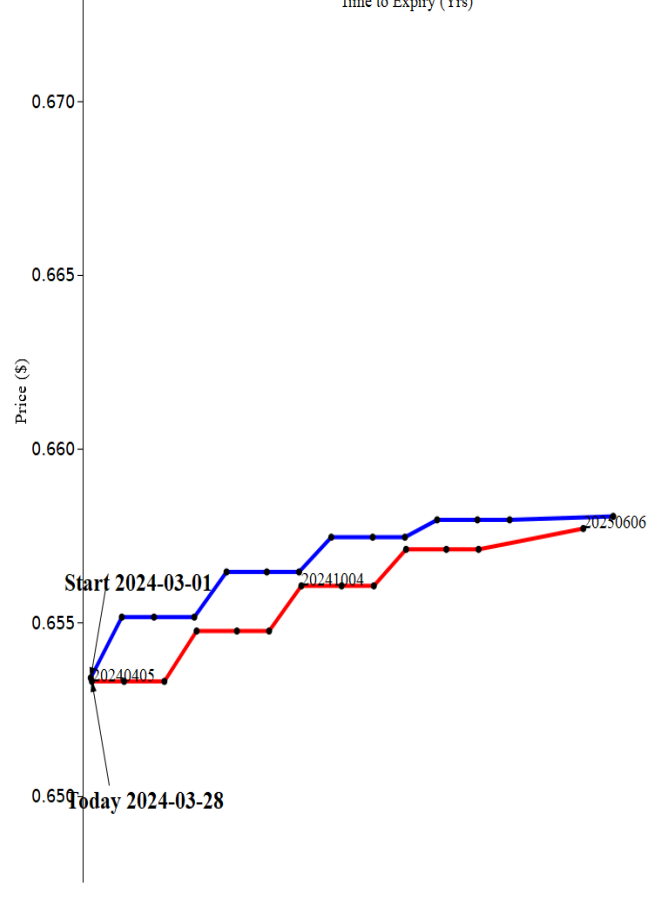
Termstructure Evolution:
AUDUSD Prem Quote Euro Style 2pmfix C (Black)



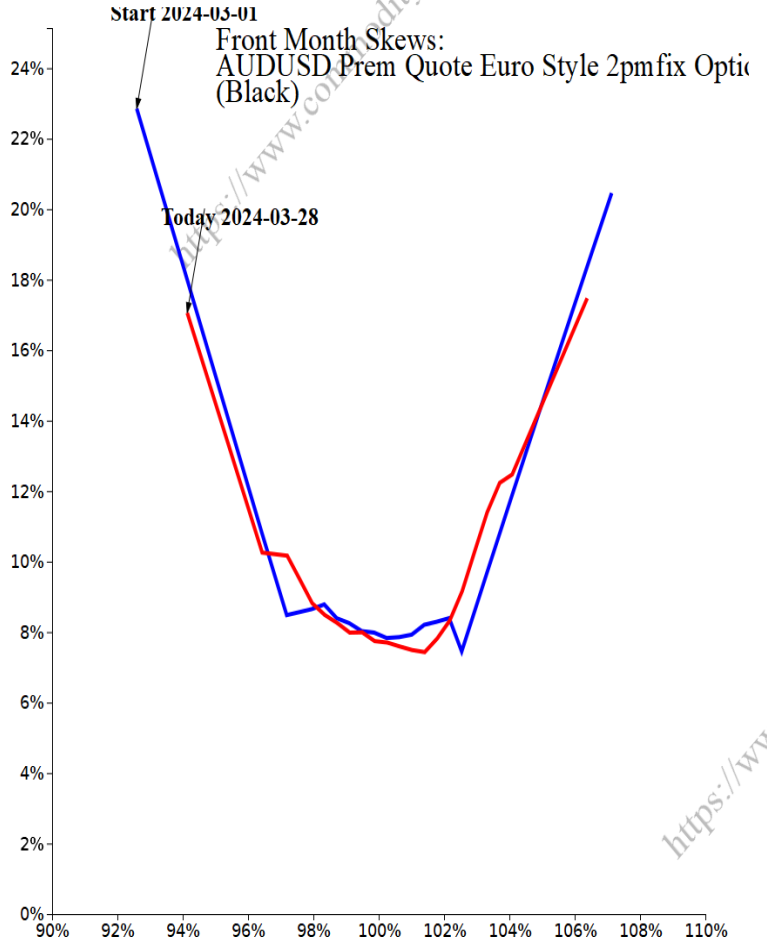
Front Month Dynamics:
AUDUSD Prem Quote Euro Style 2pmfix Options

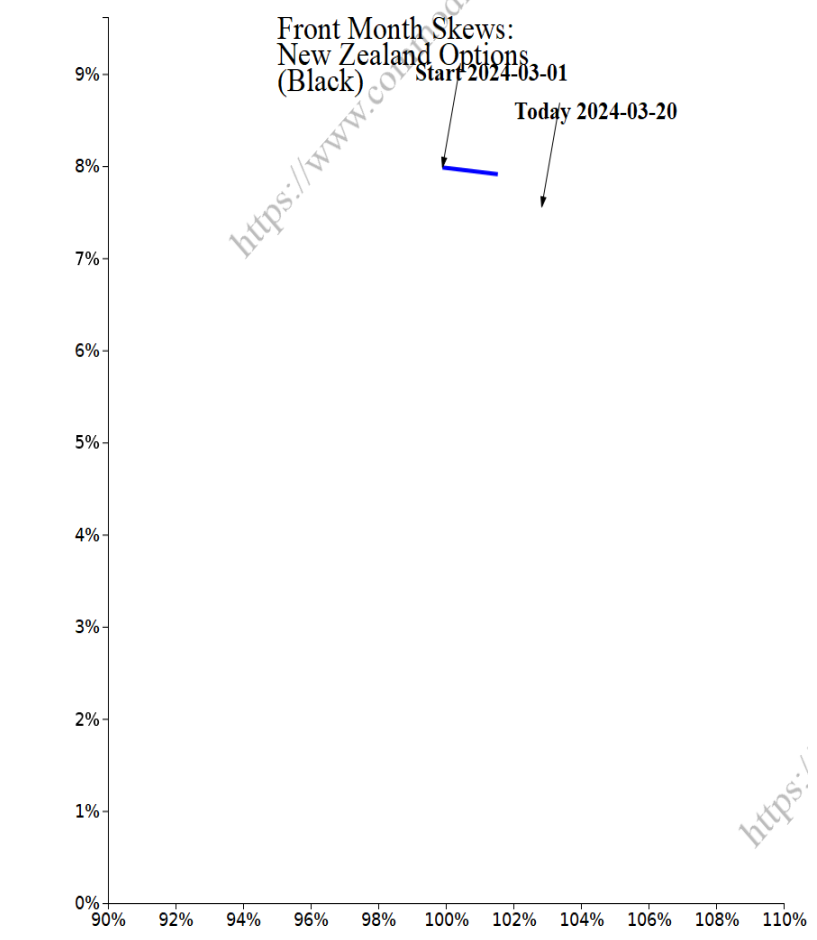
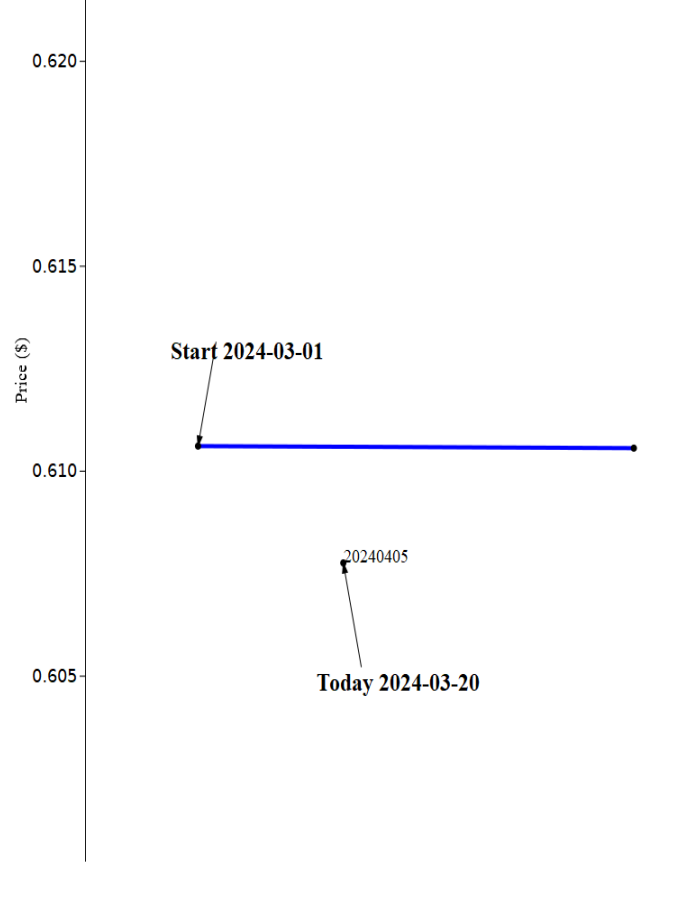
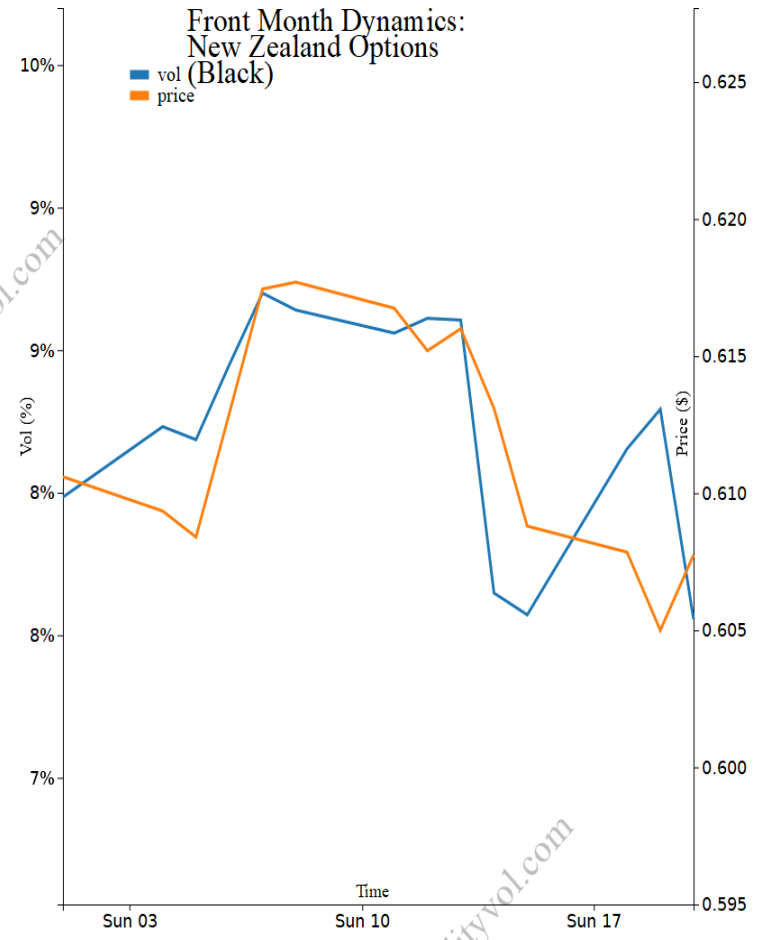
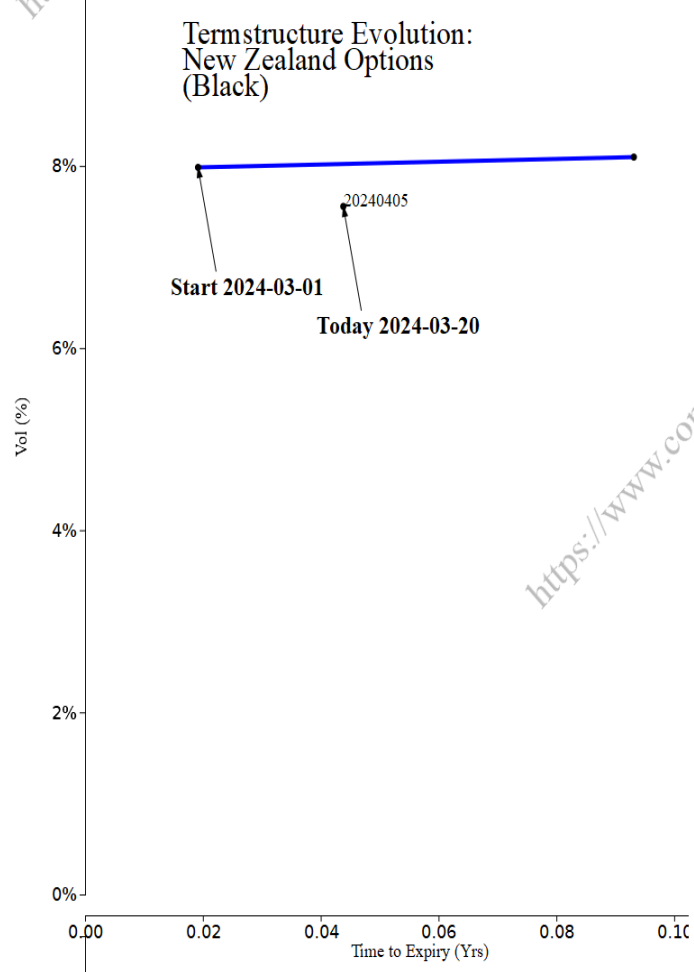


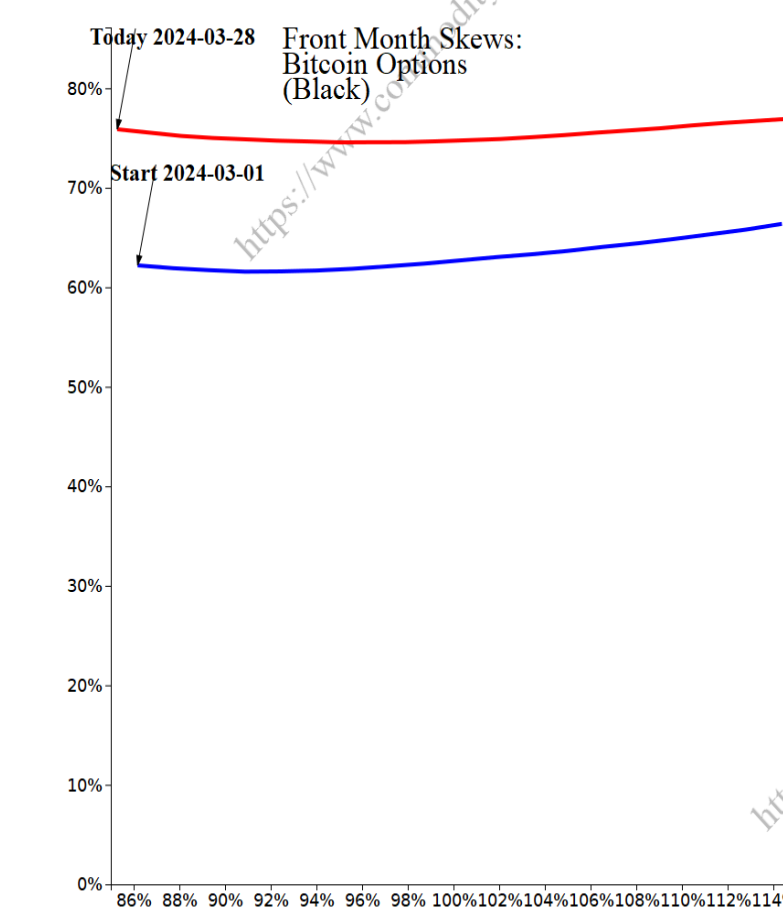
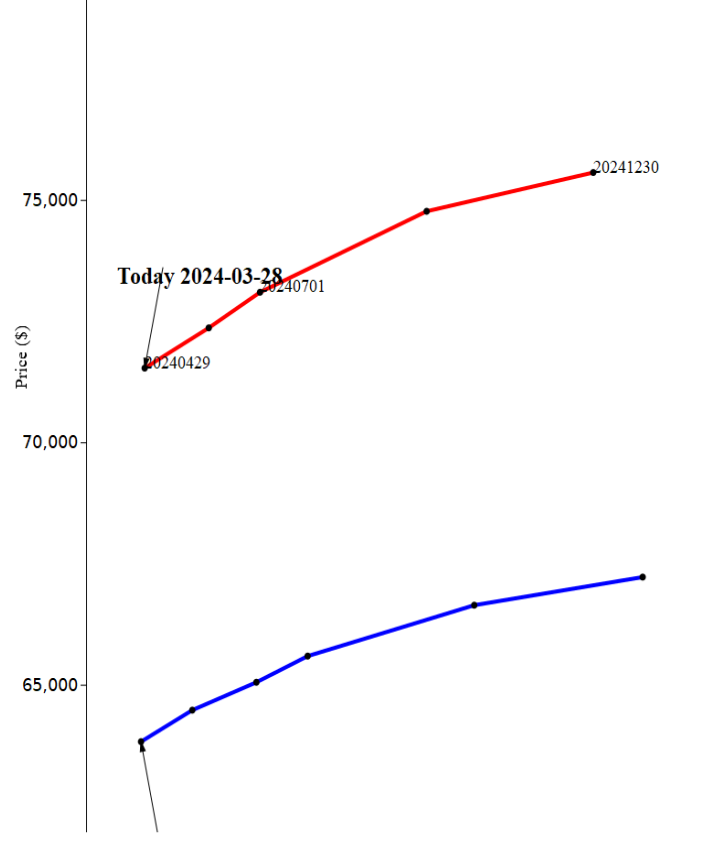
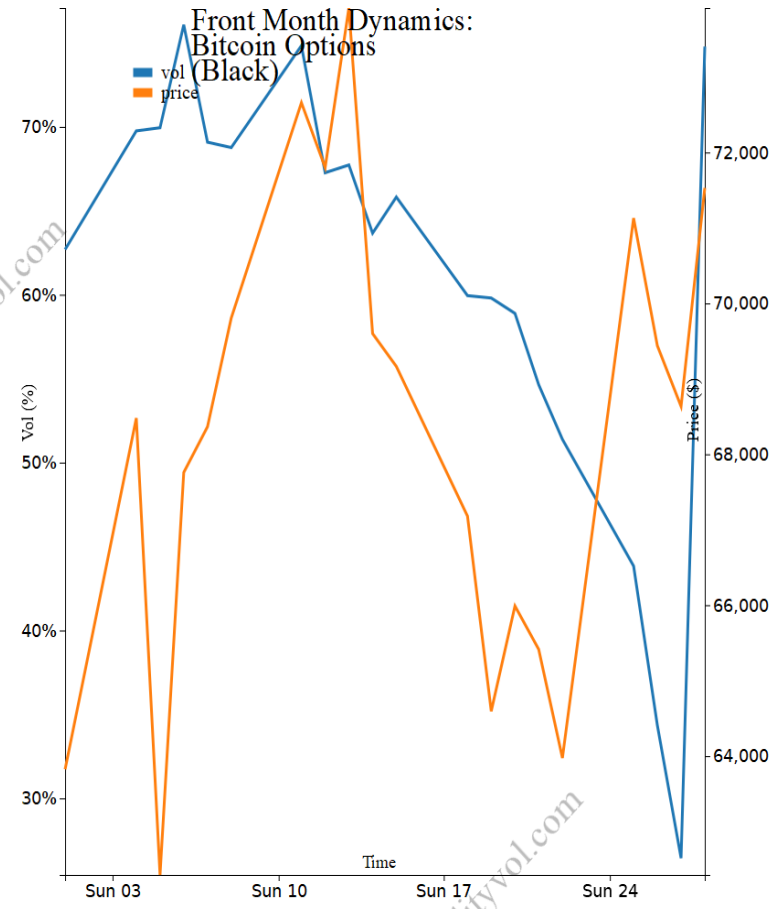
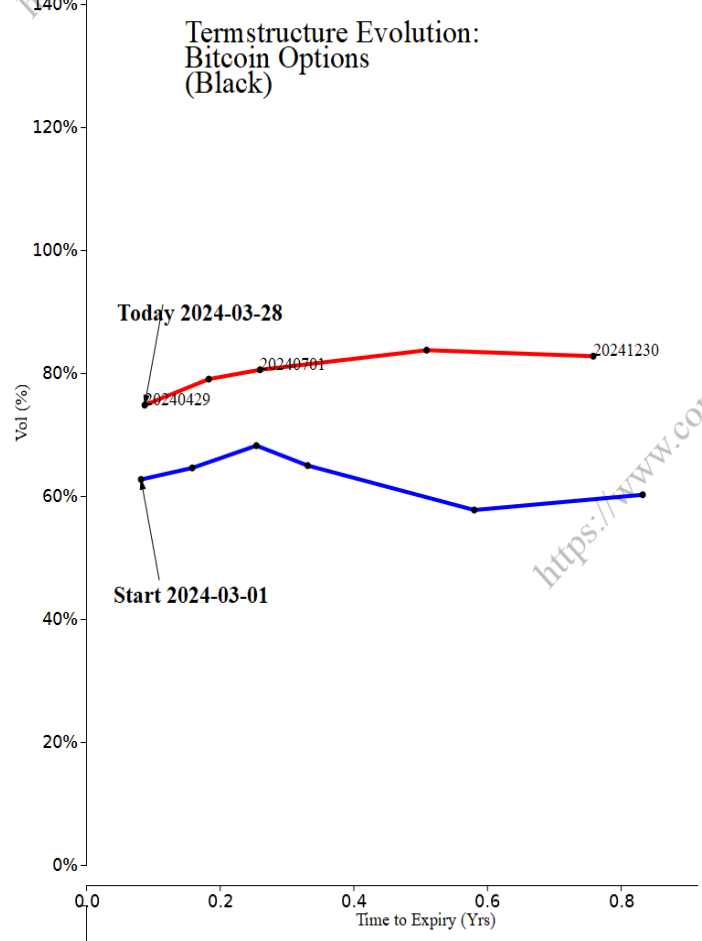
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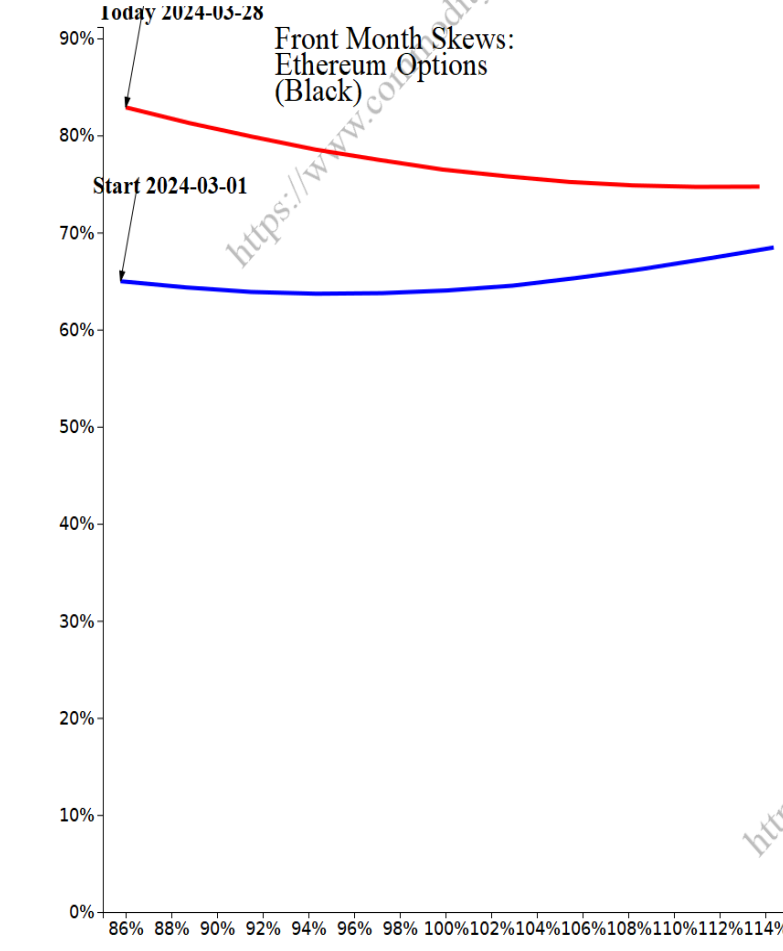
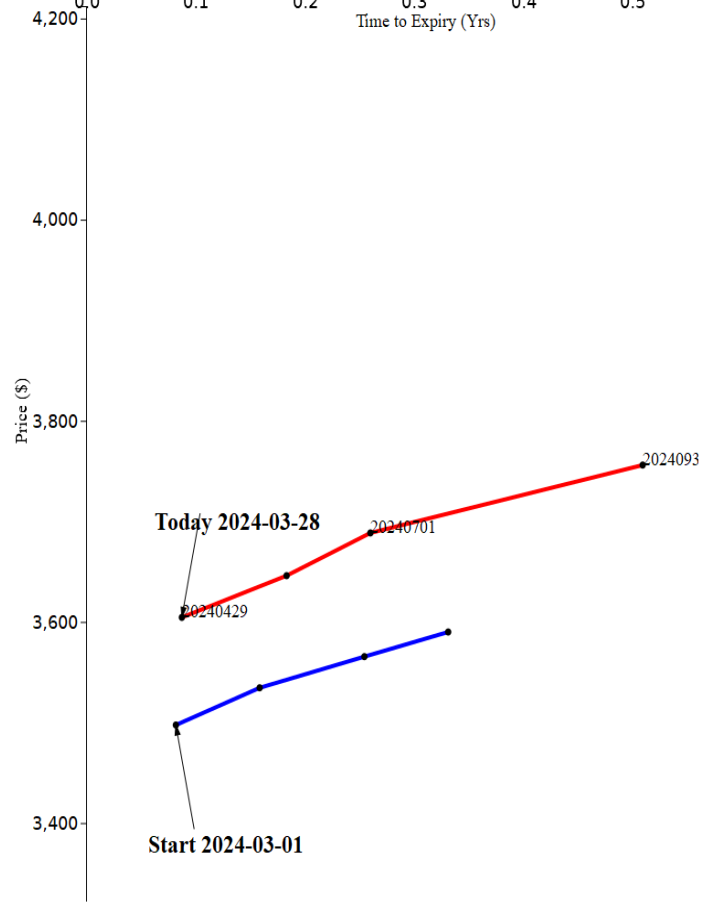
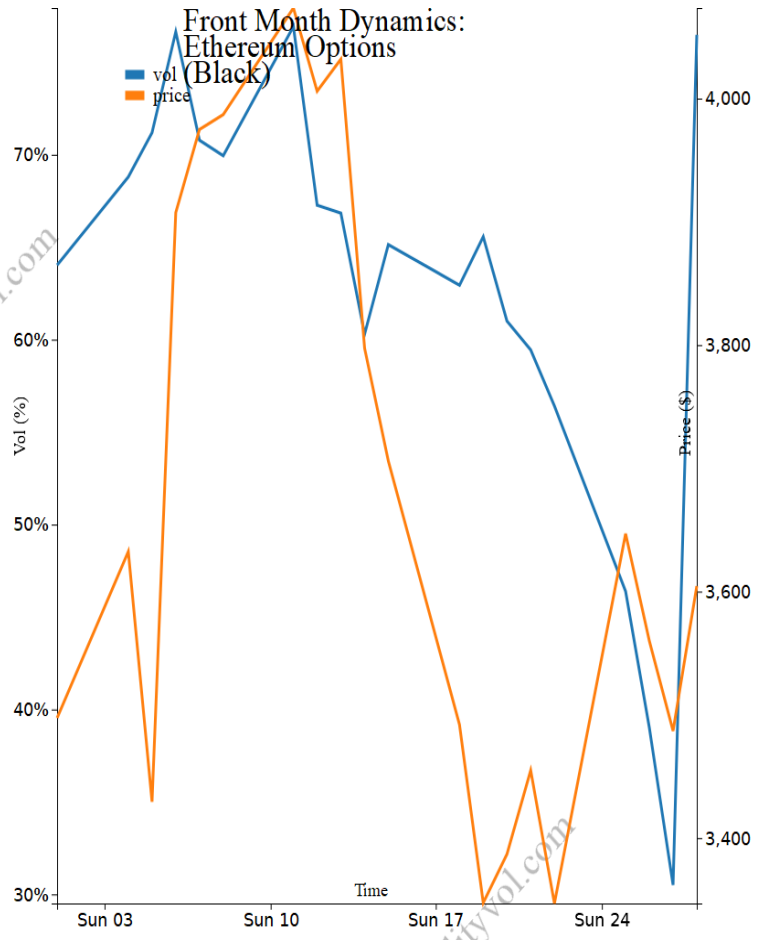
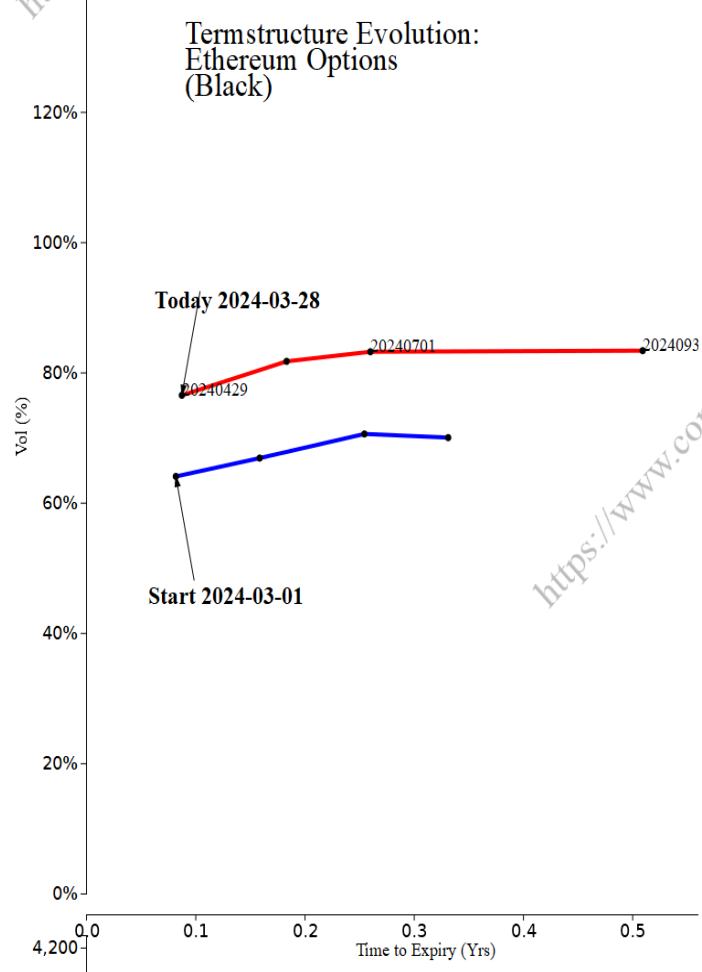


Front Month Skews:
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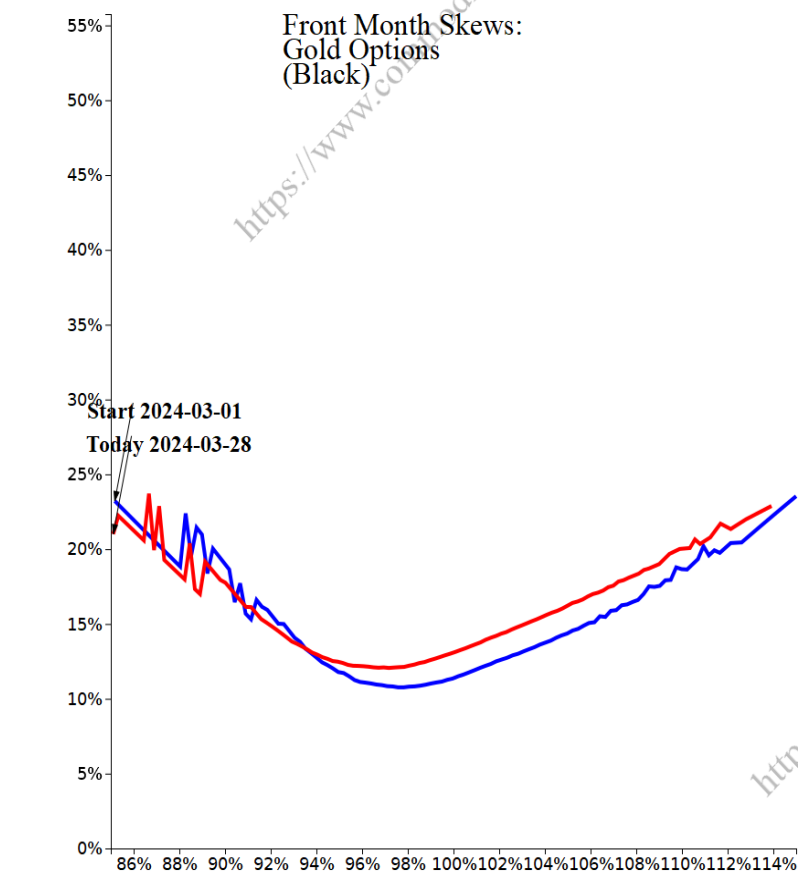
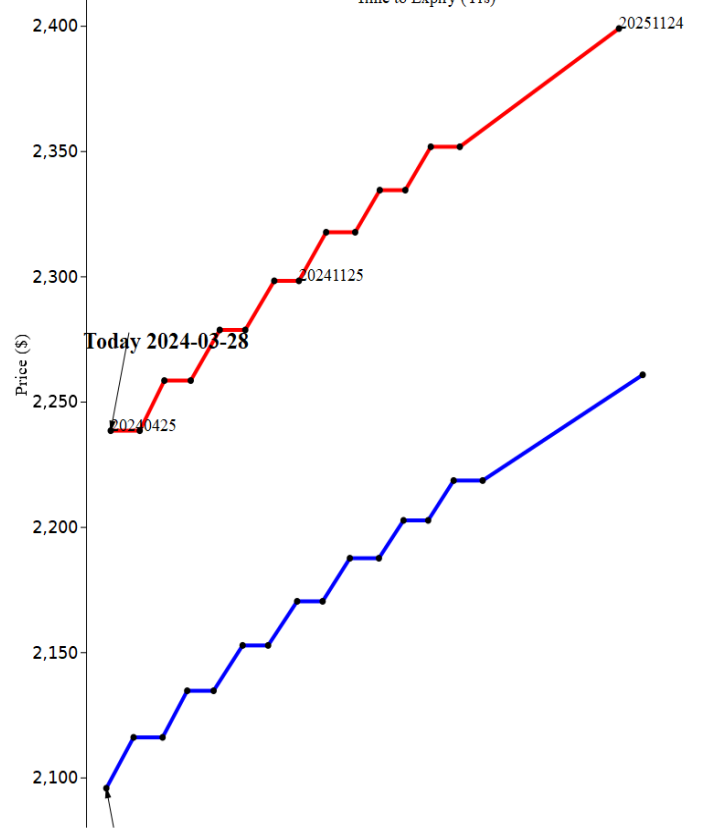
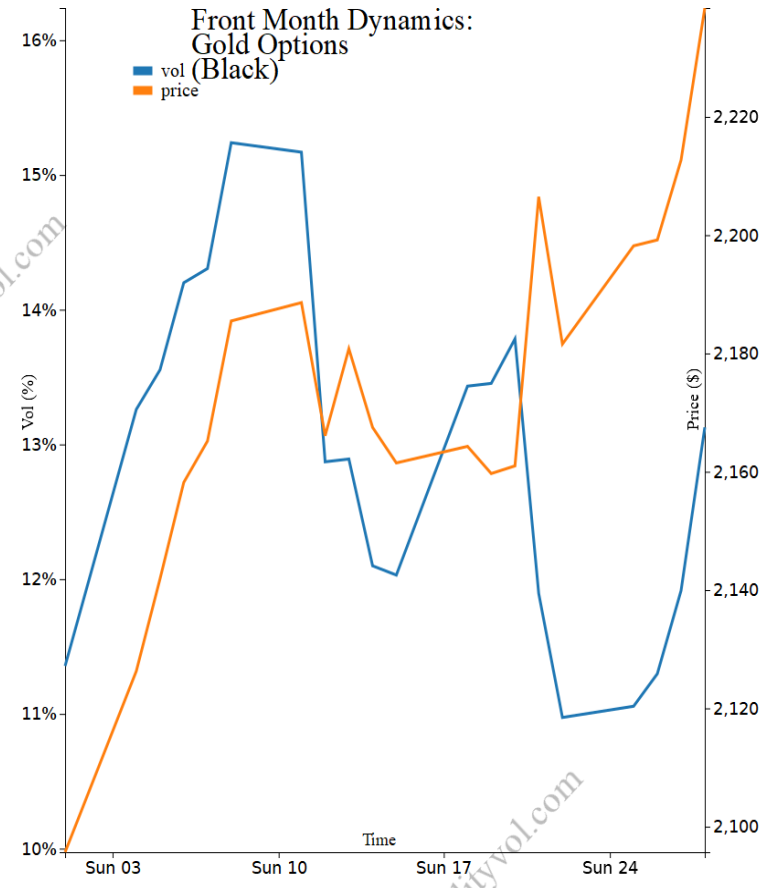
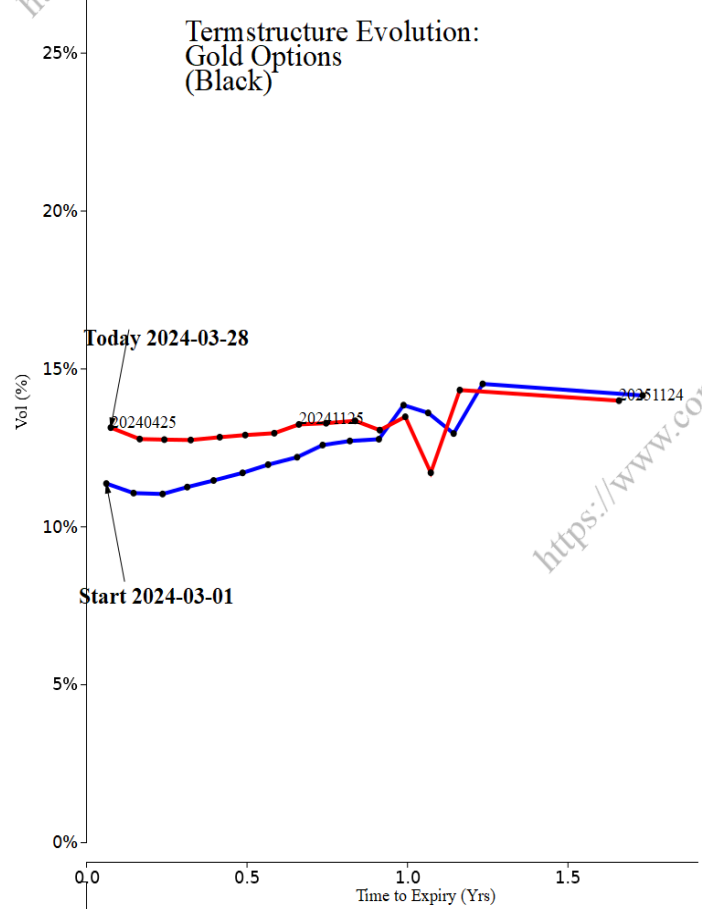


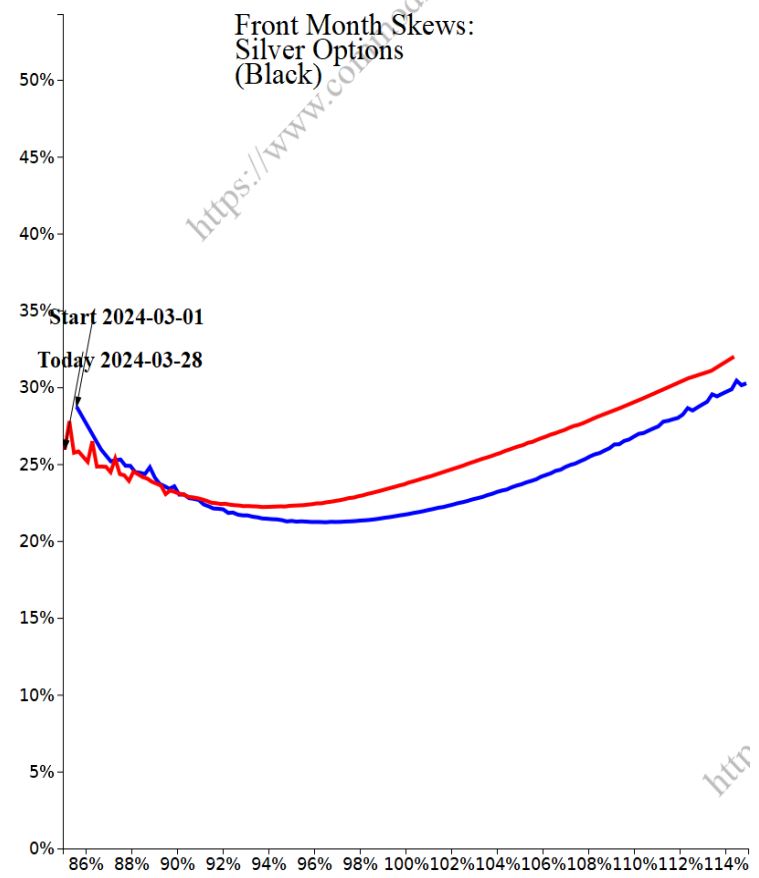
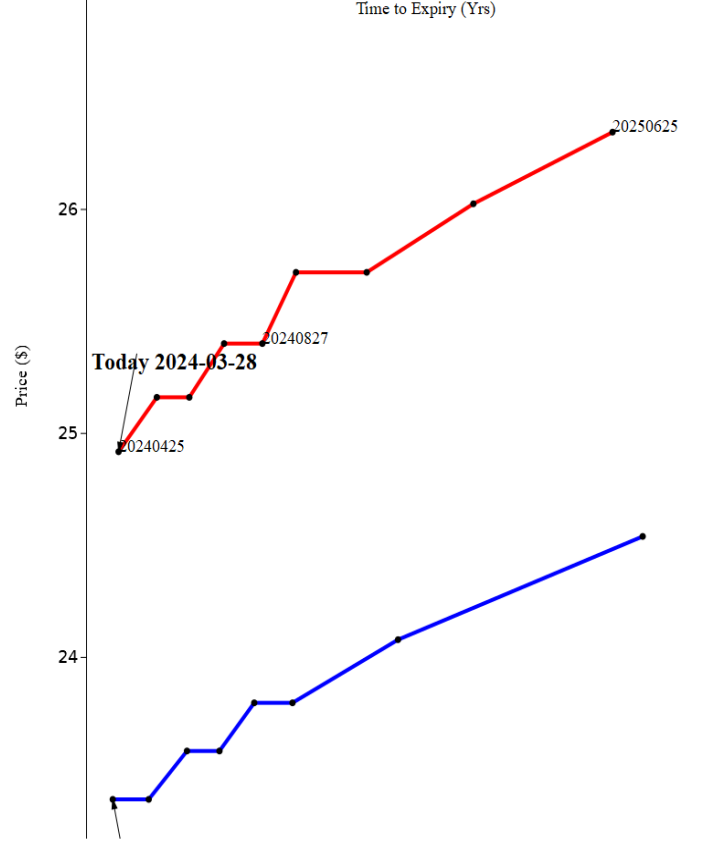
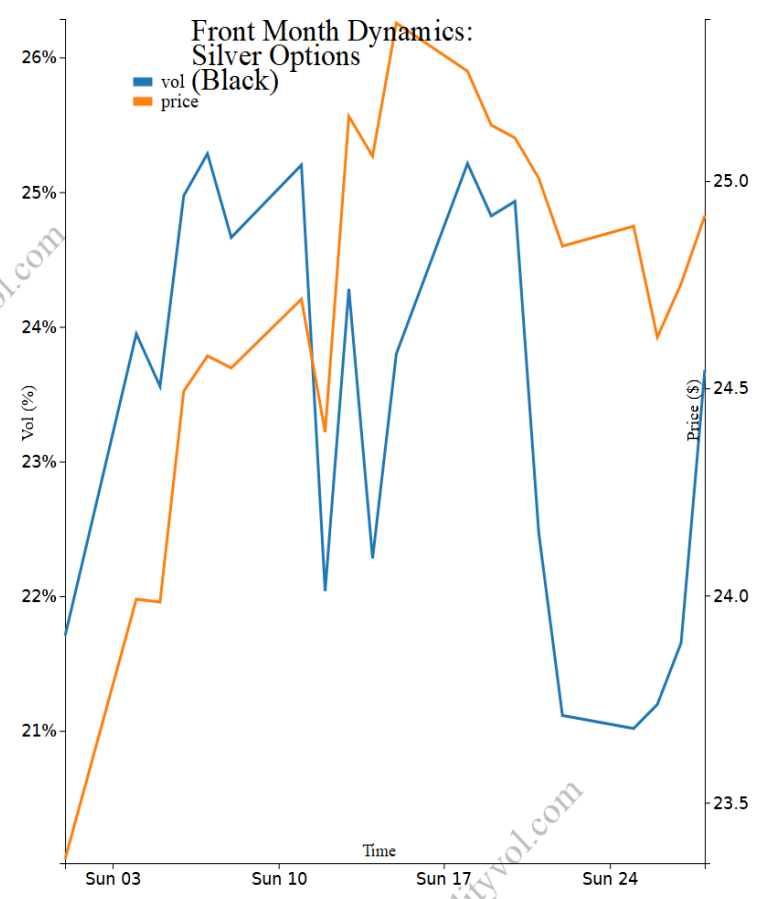
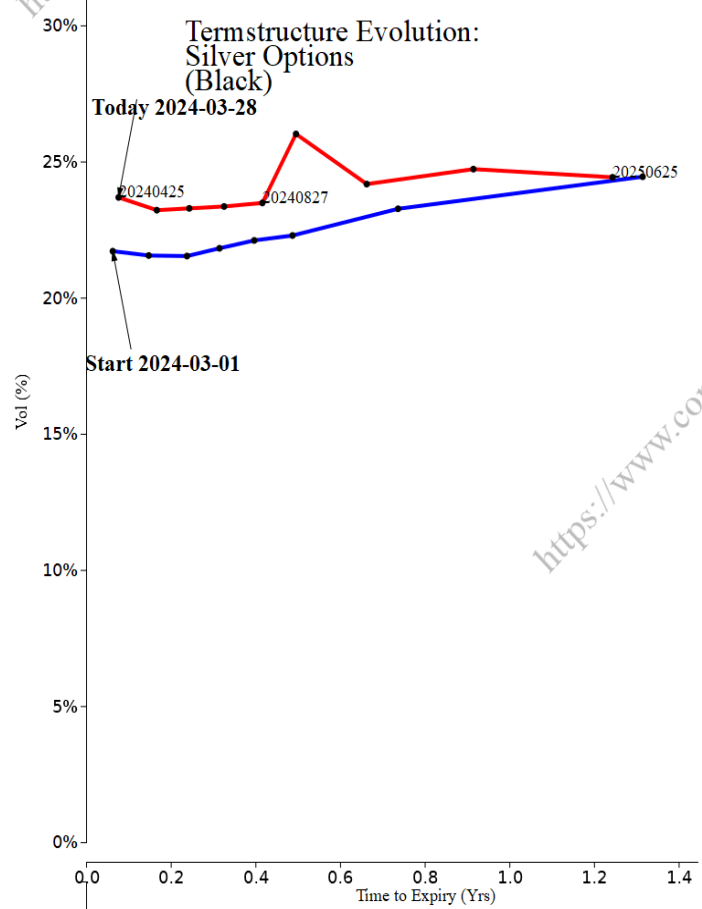


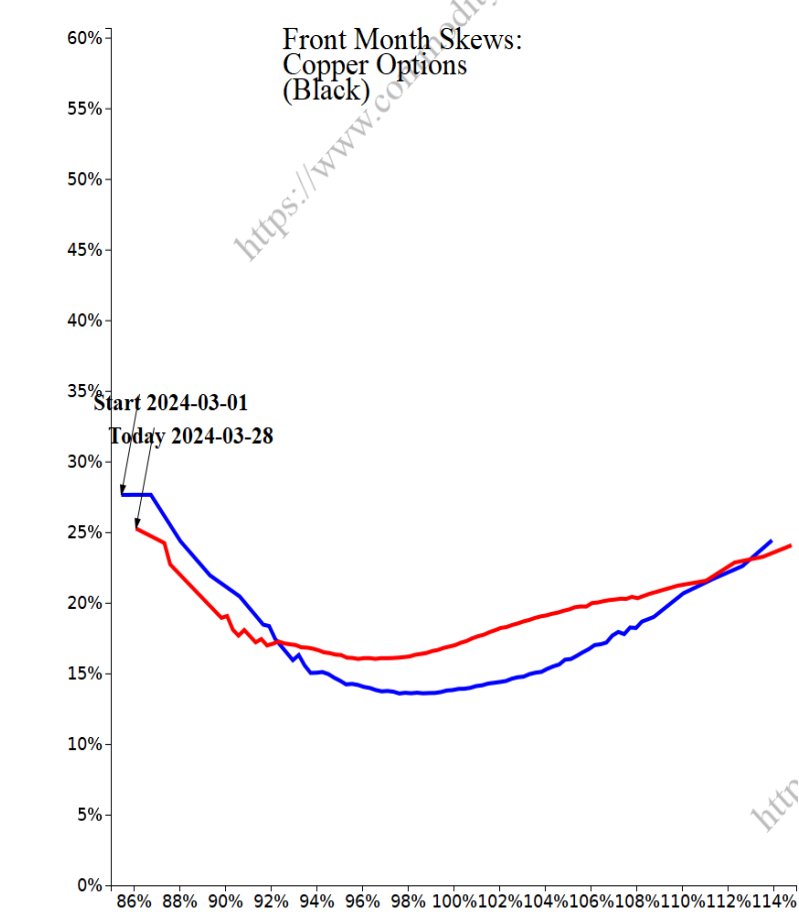
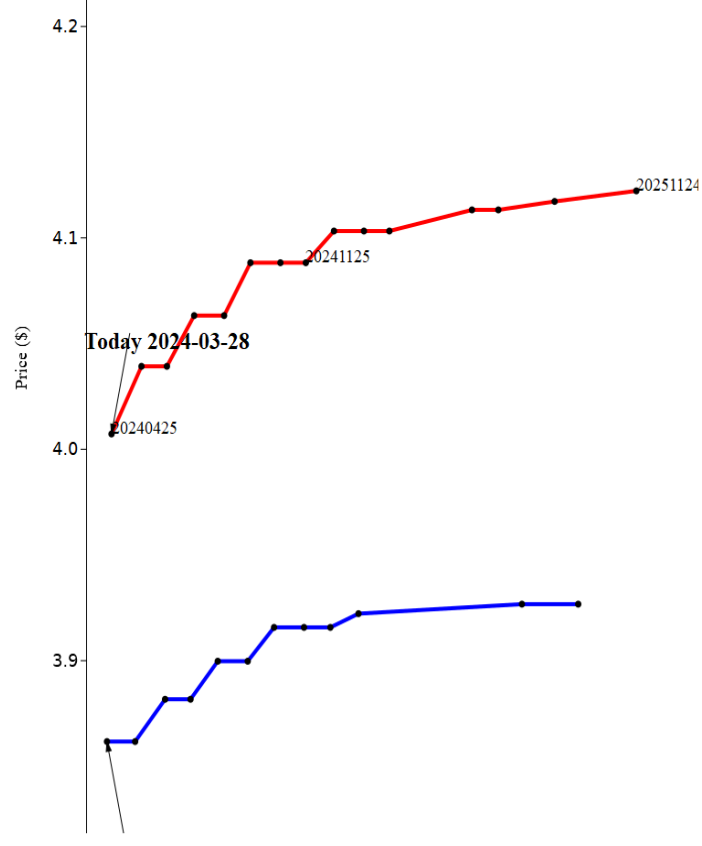
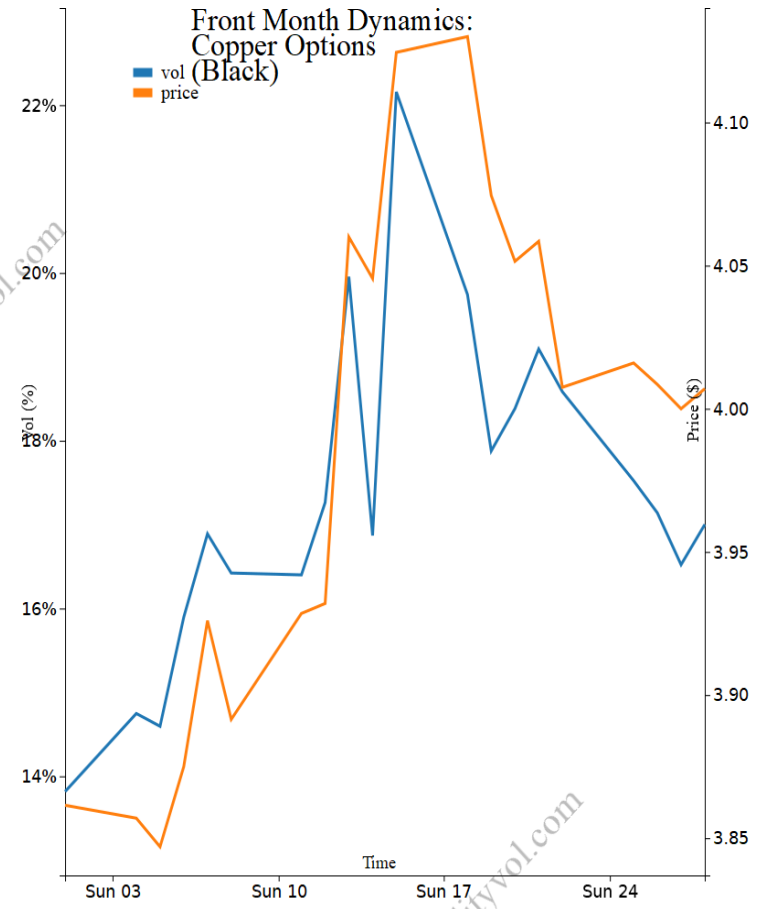
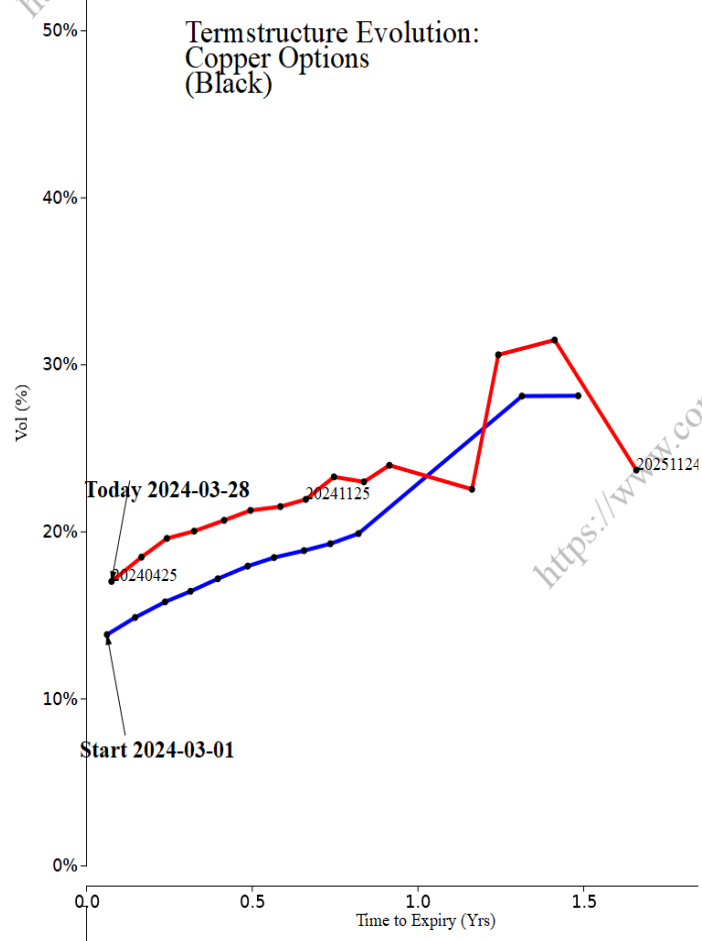


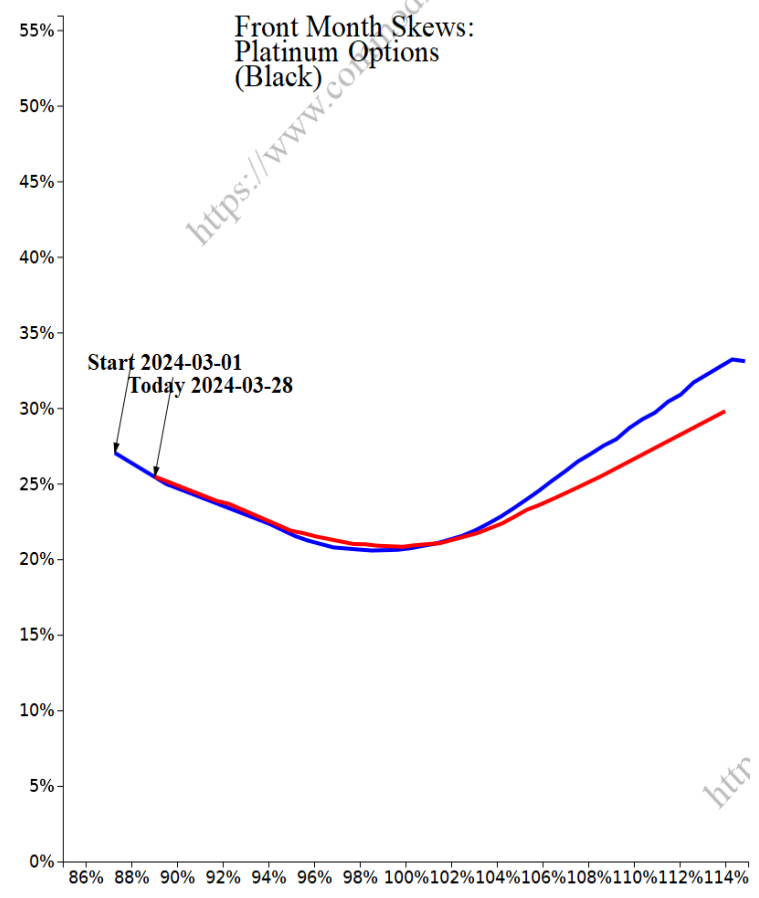
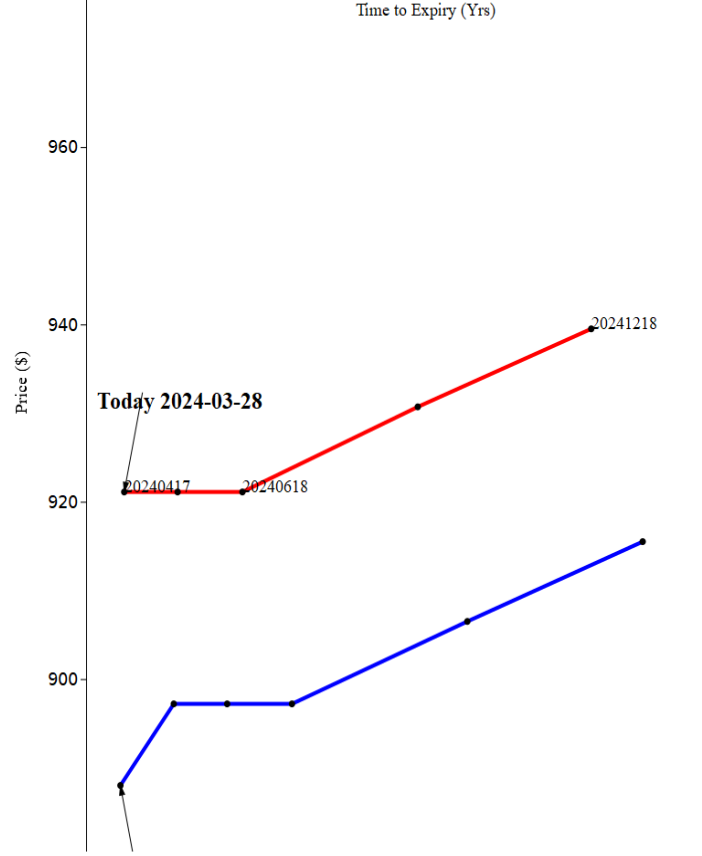
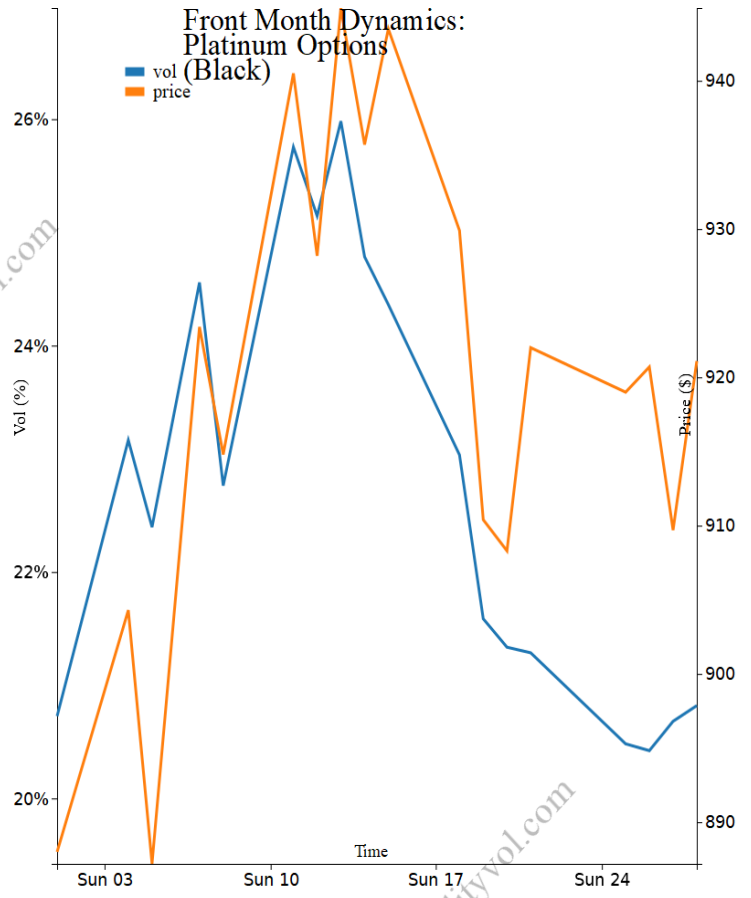
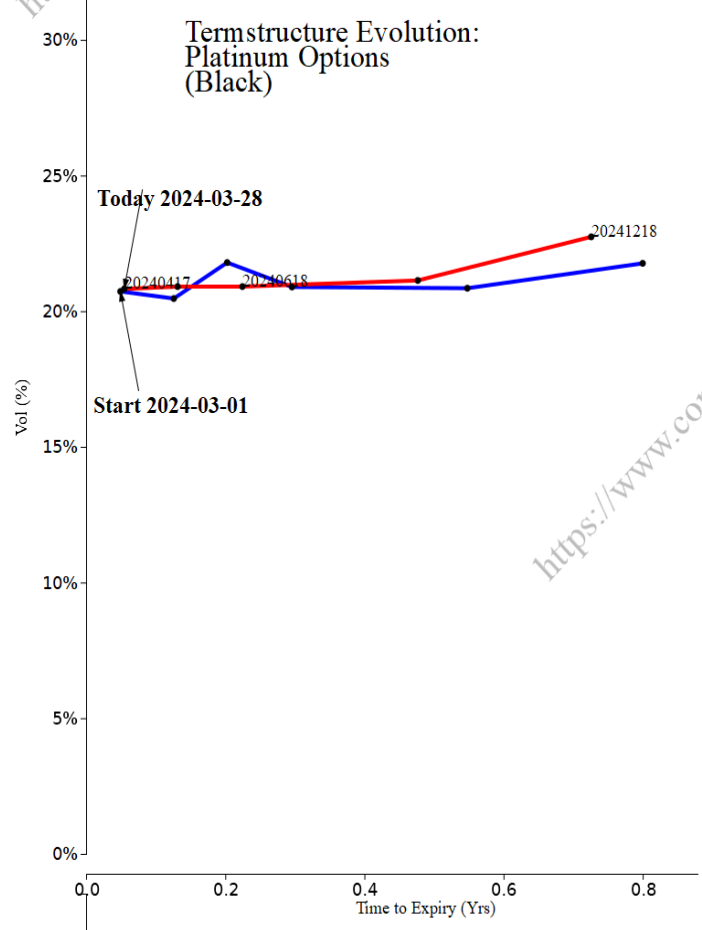


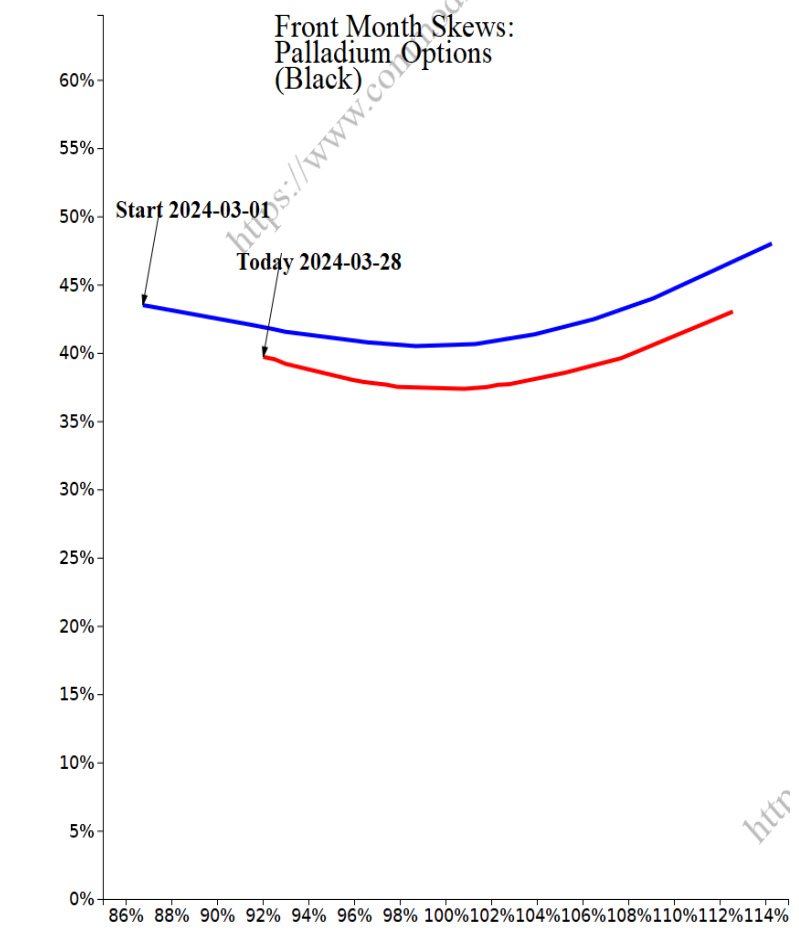
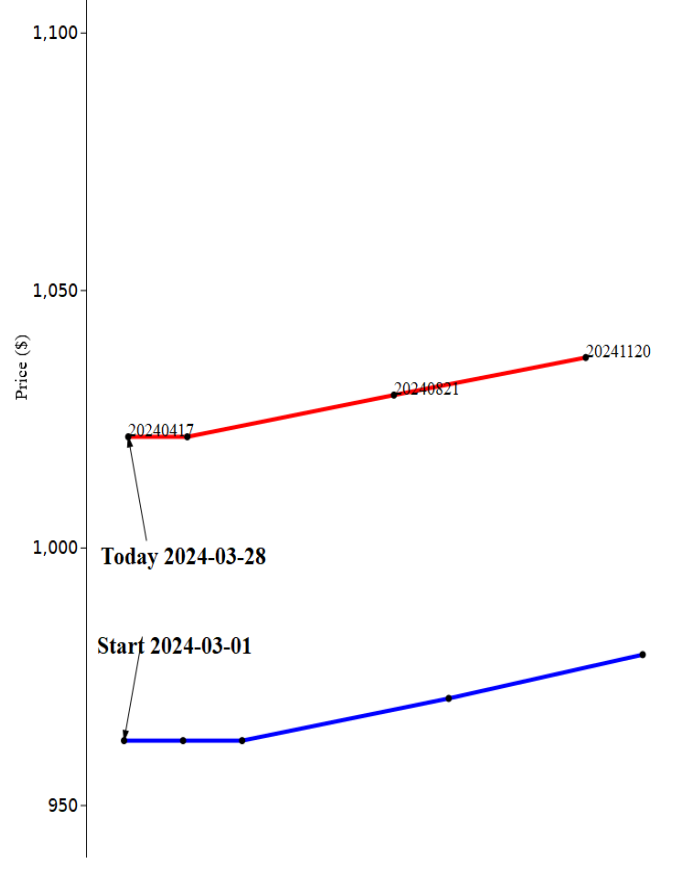
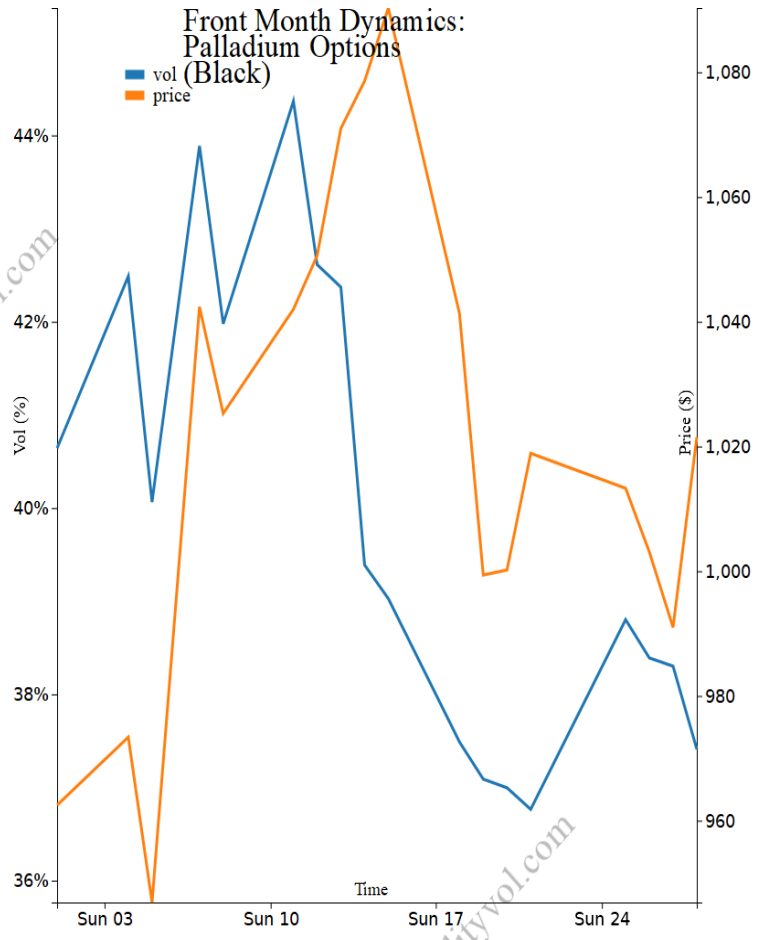
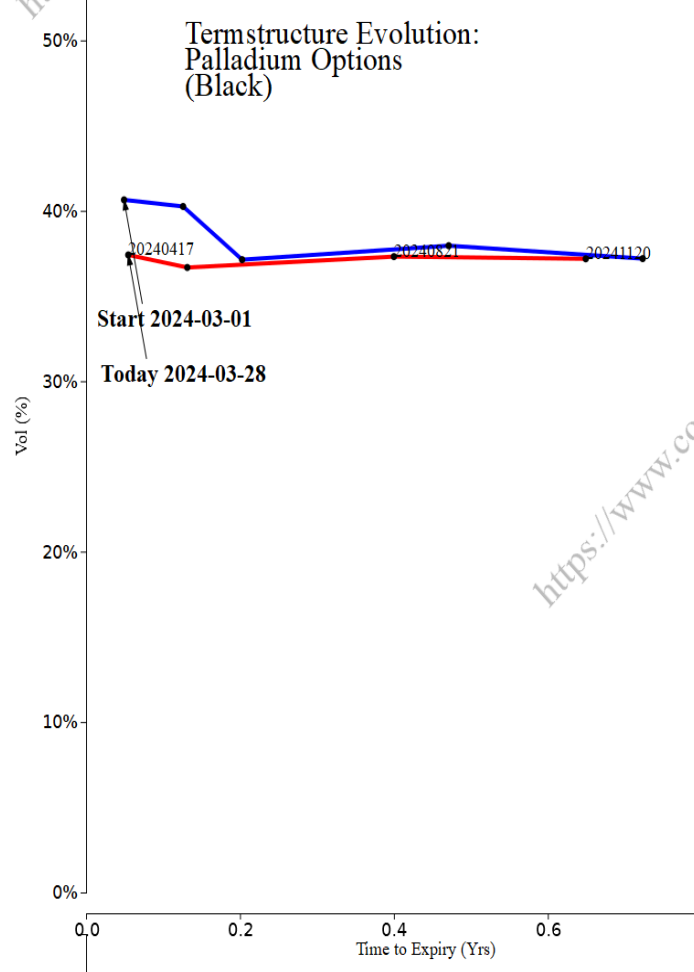
Metals



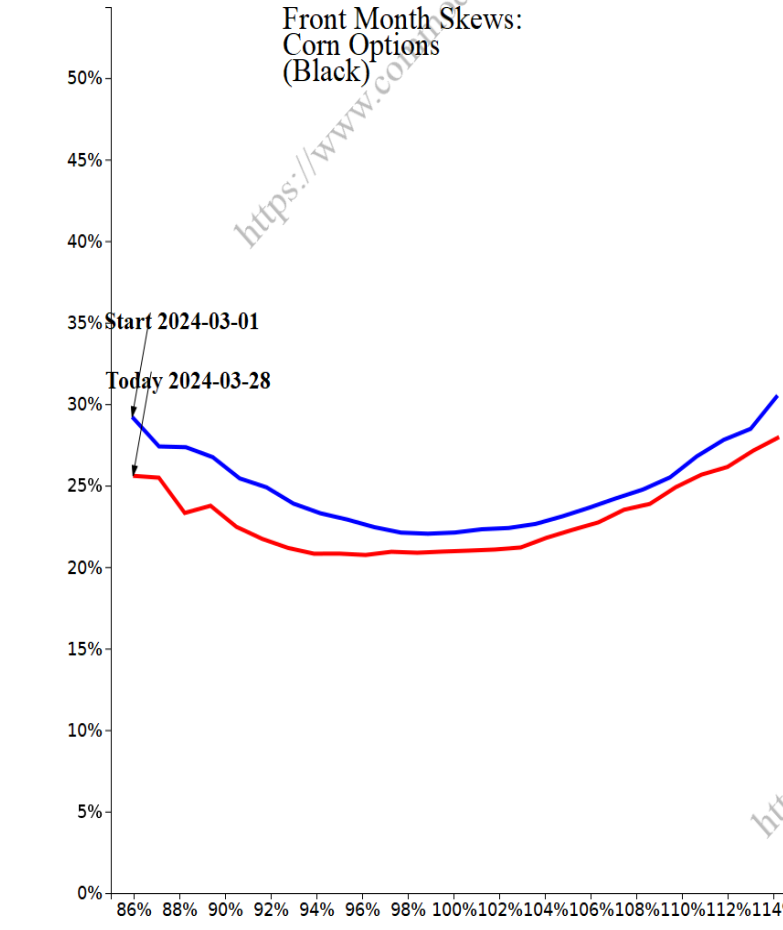
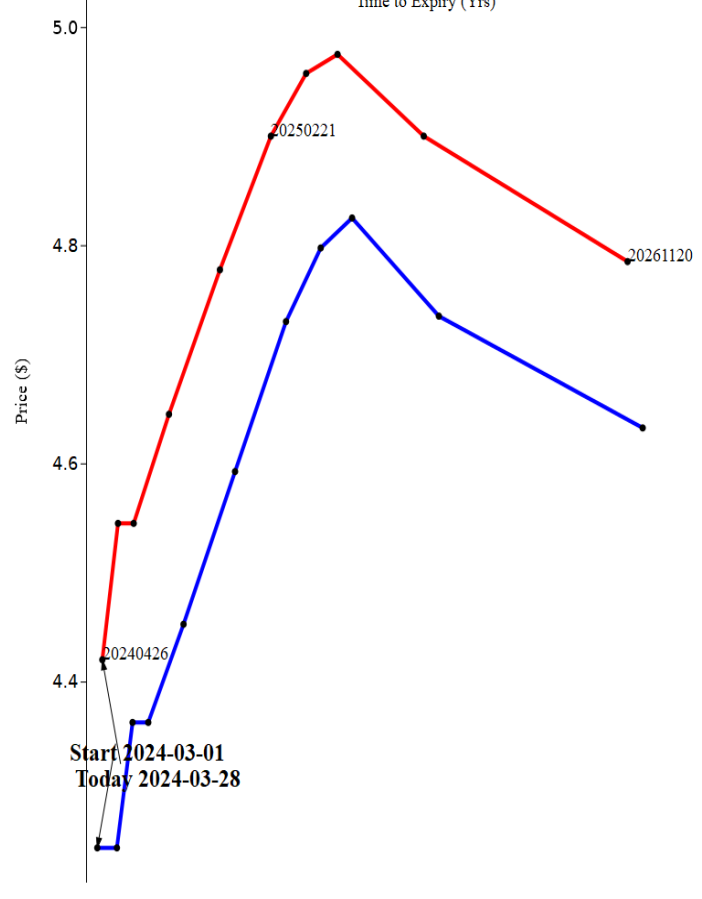
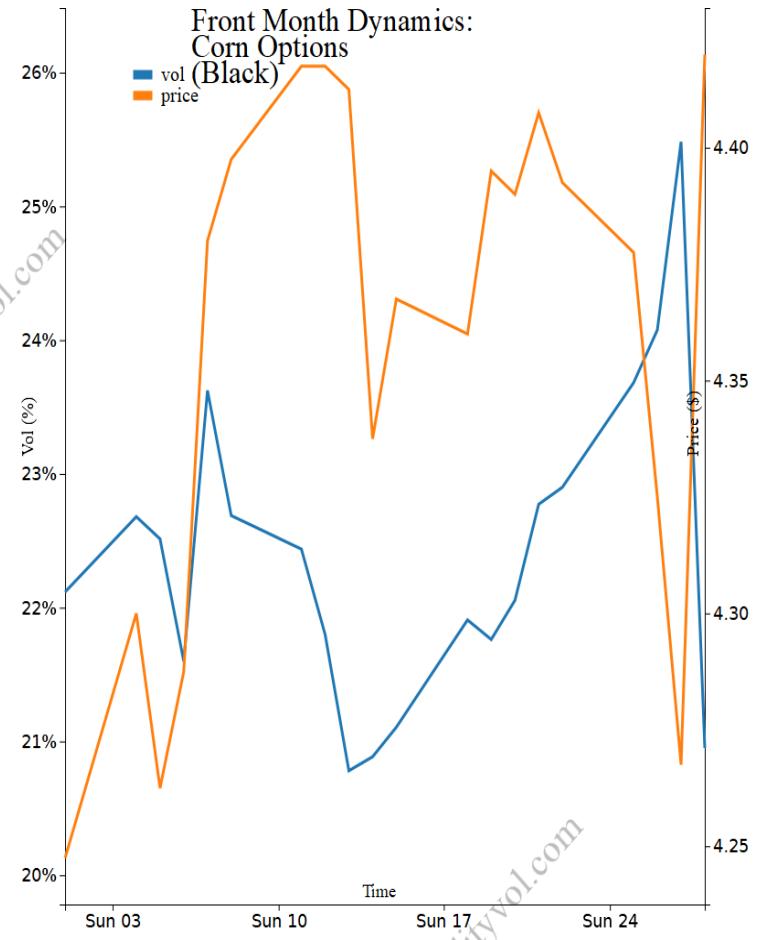
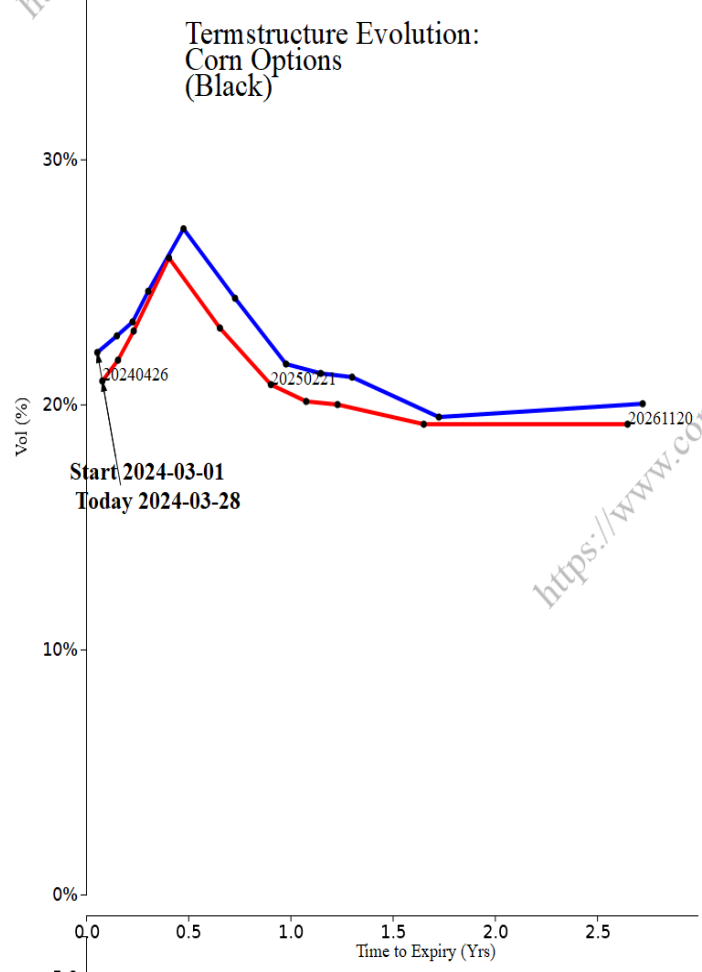


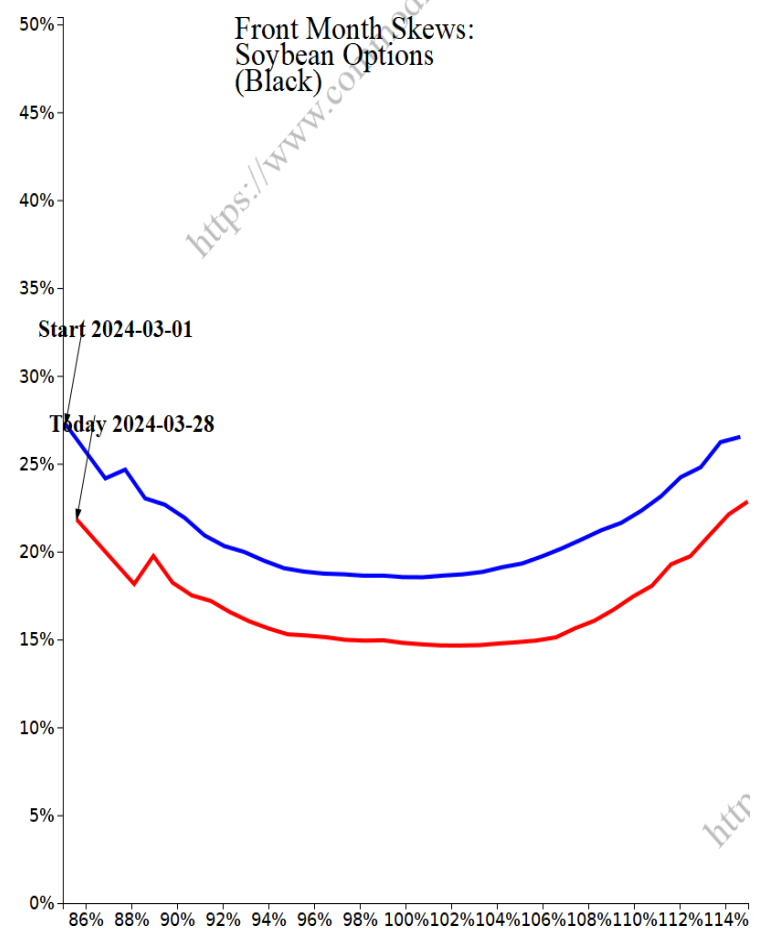
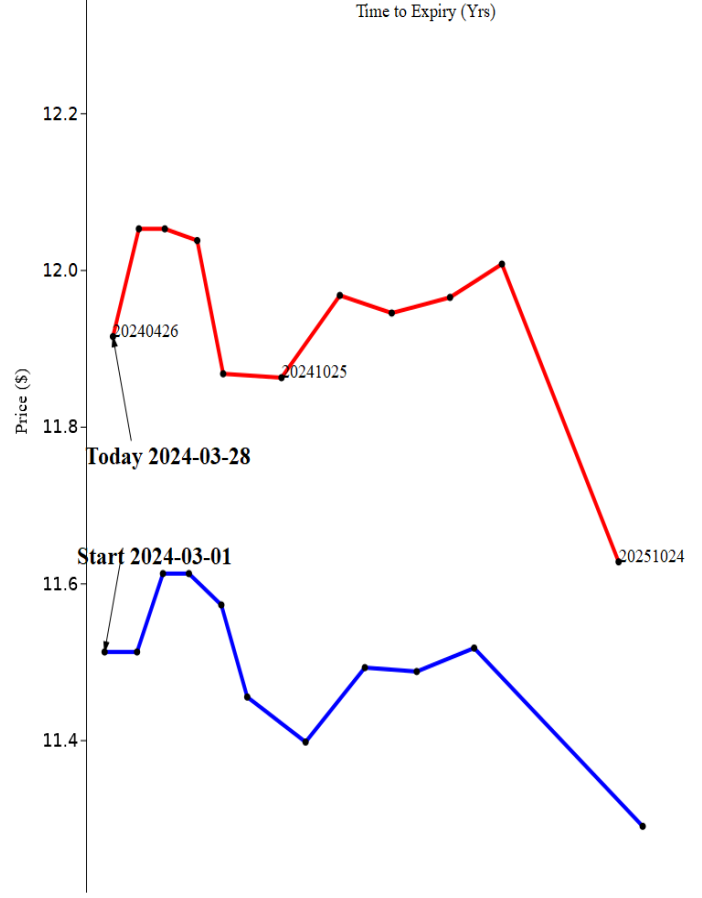
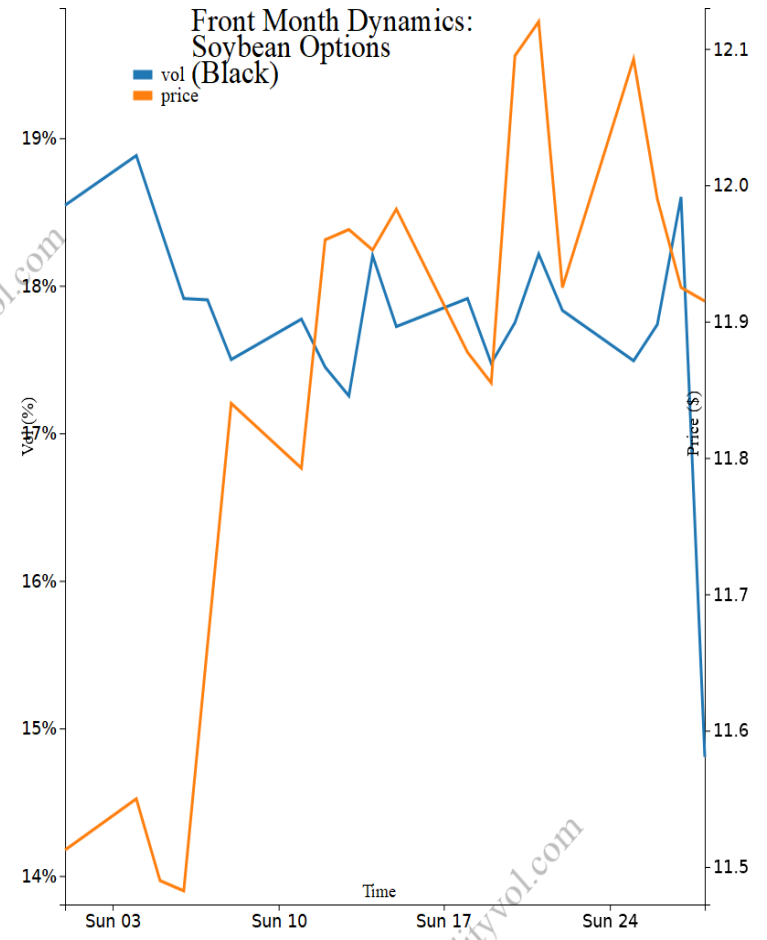
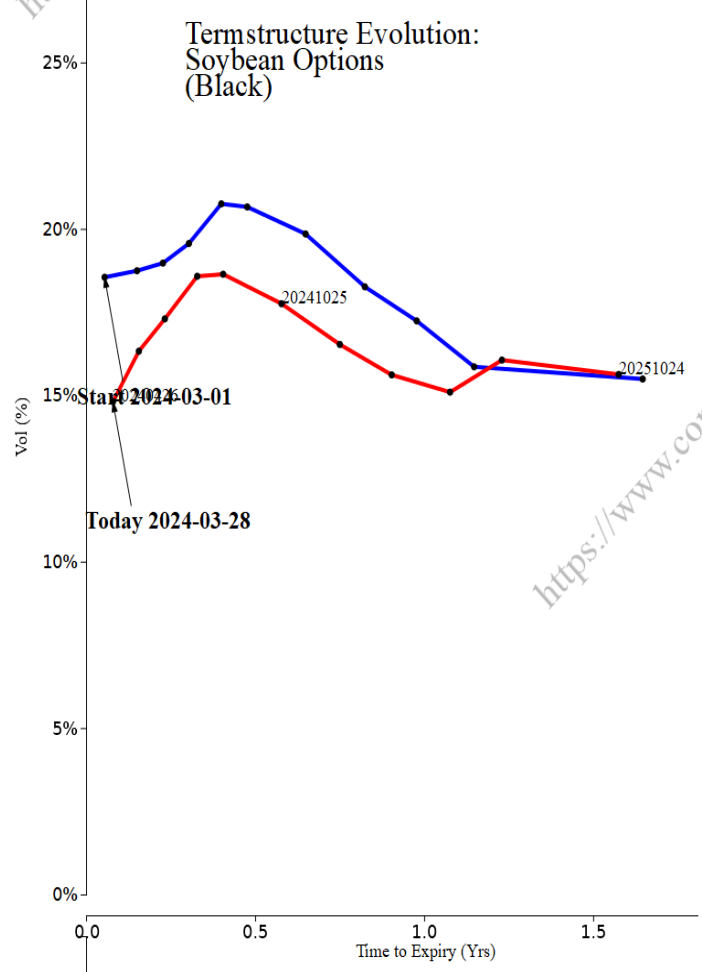


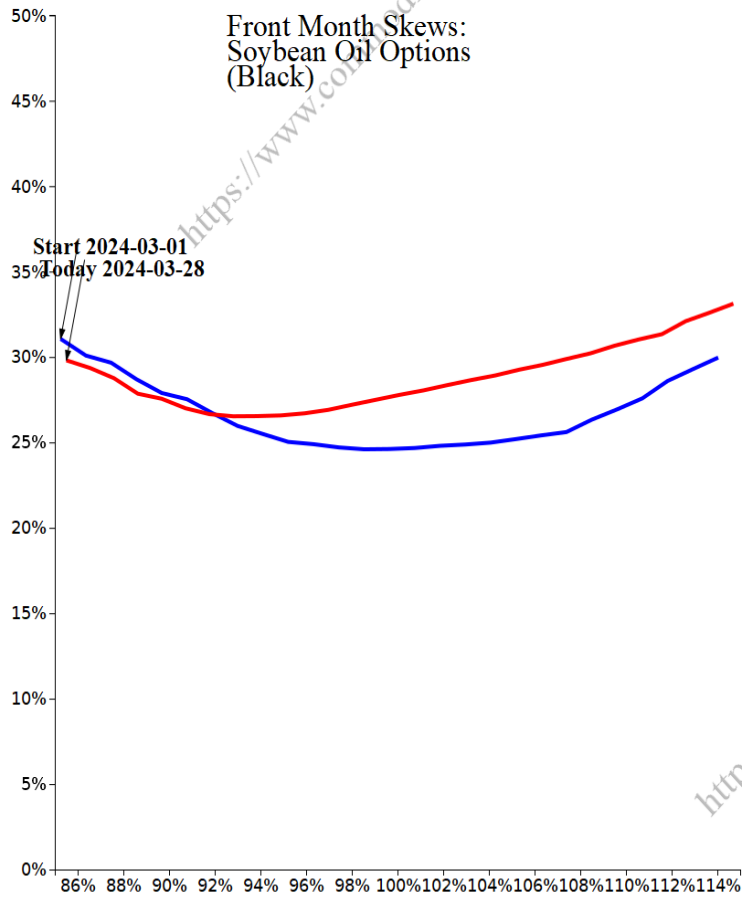
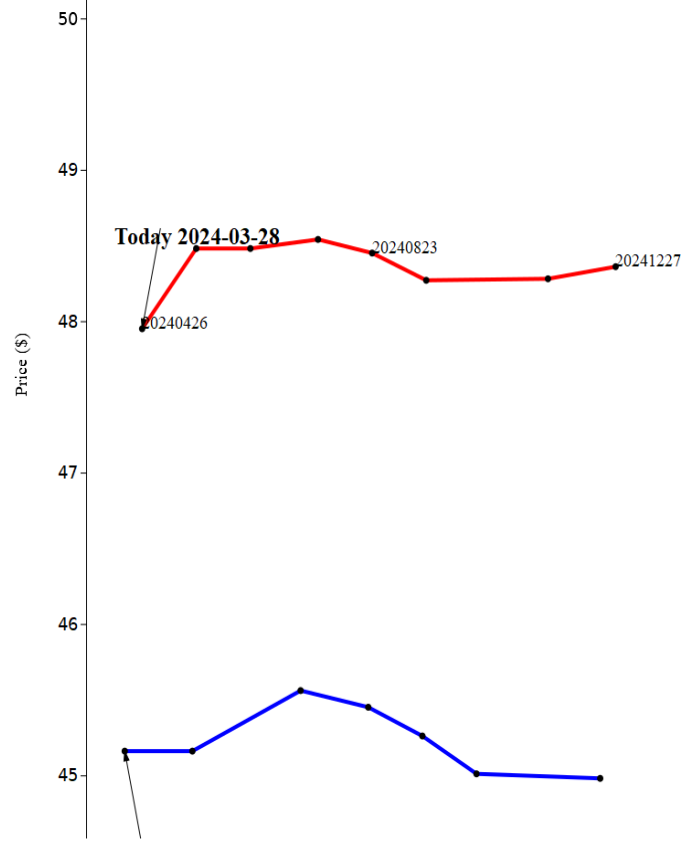
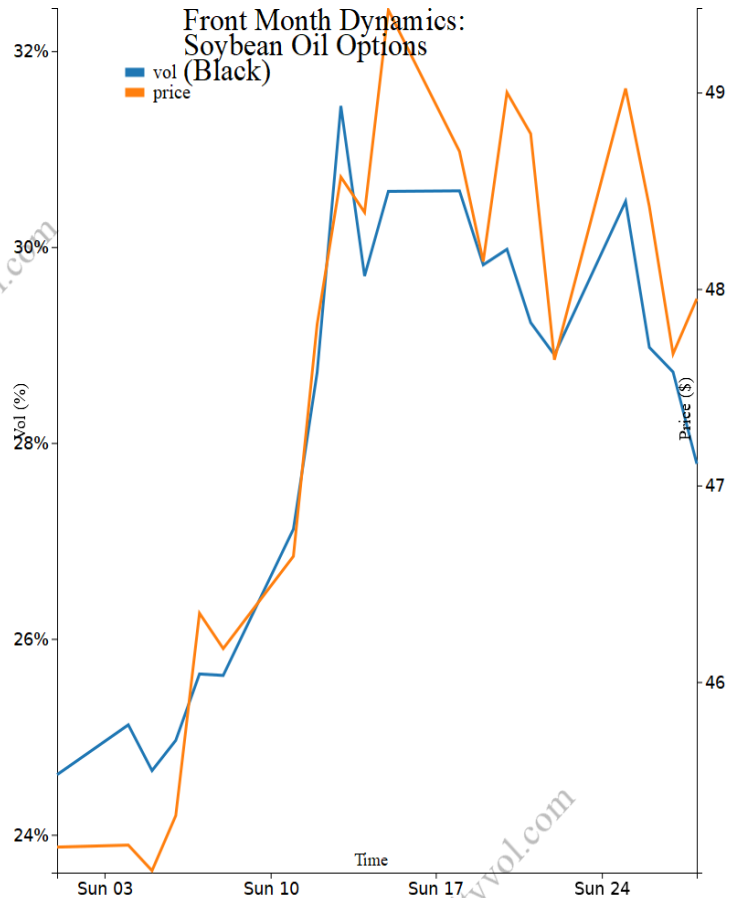
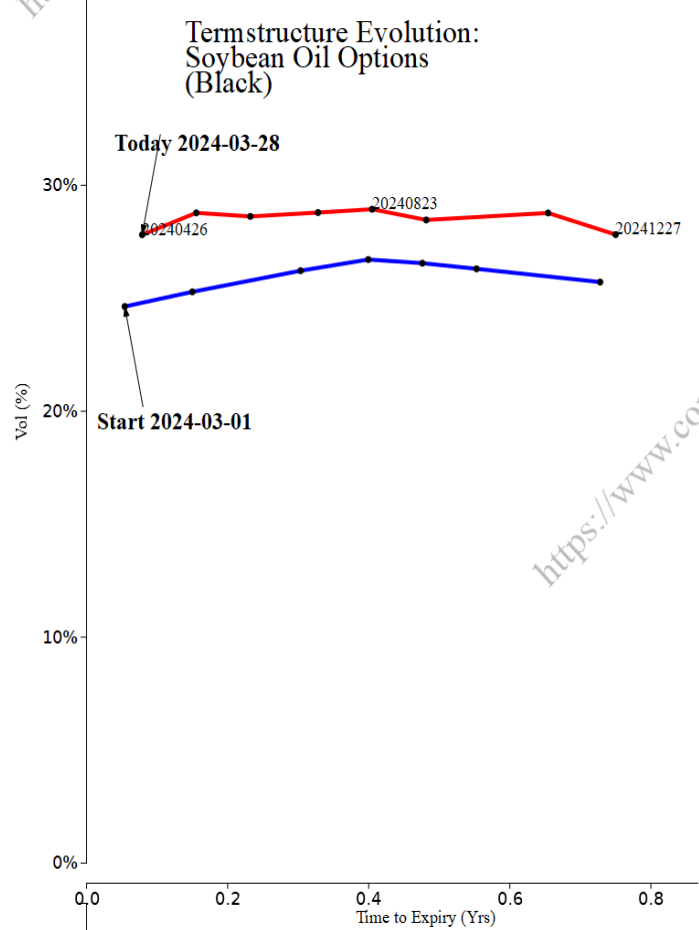


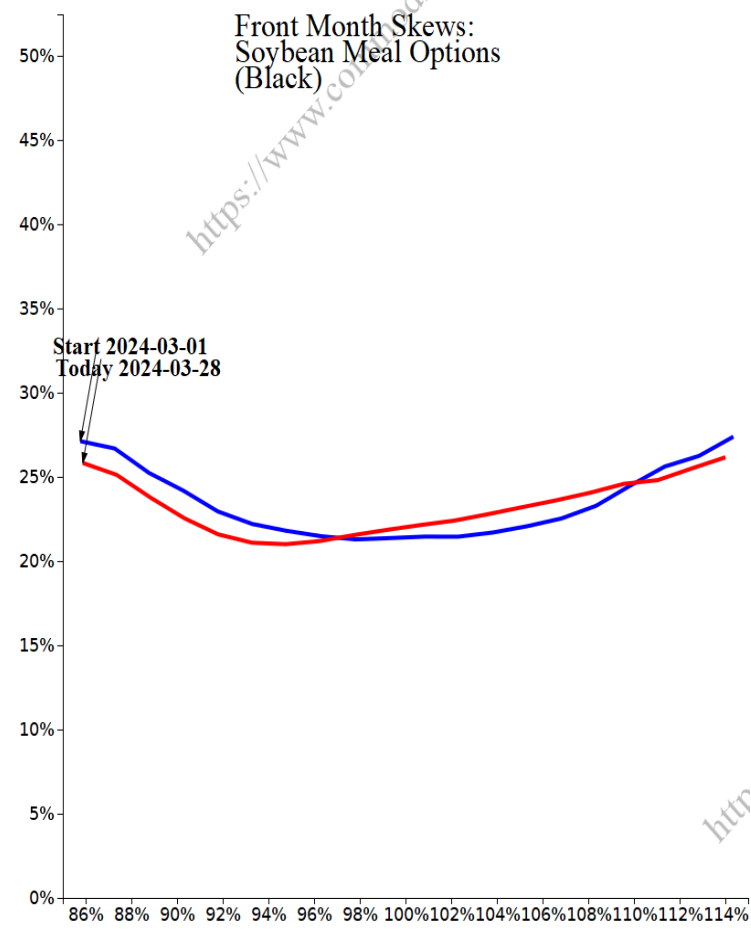
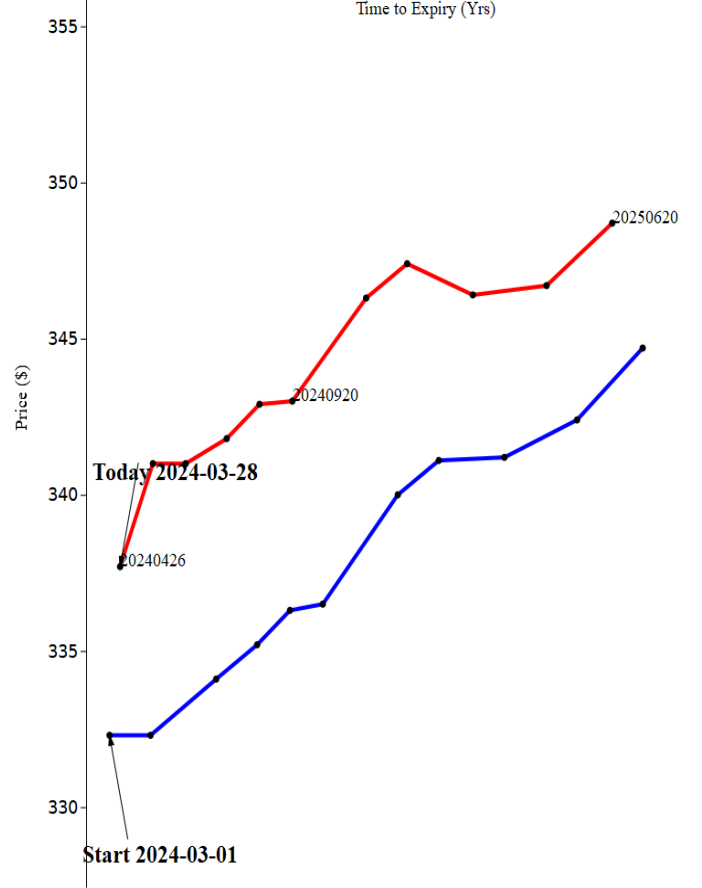
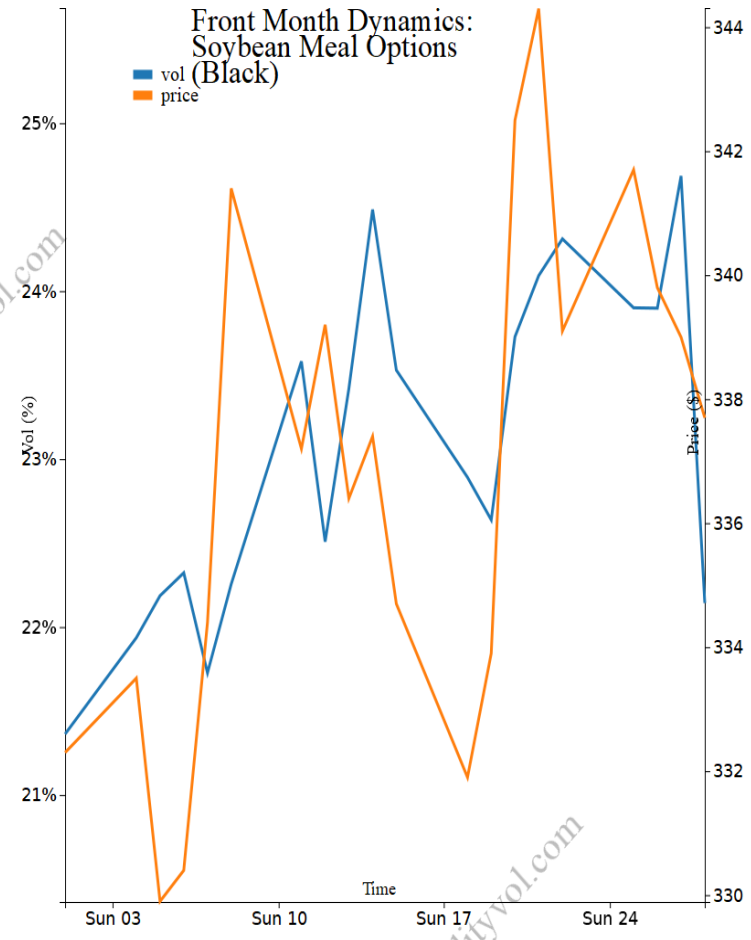
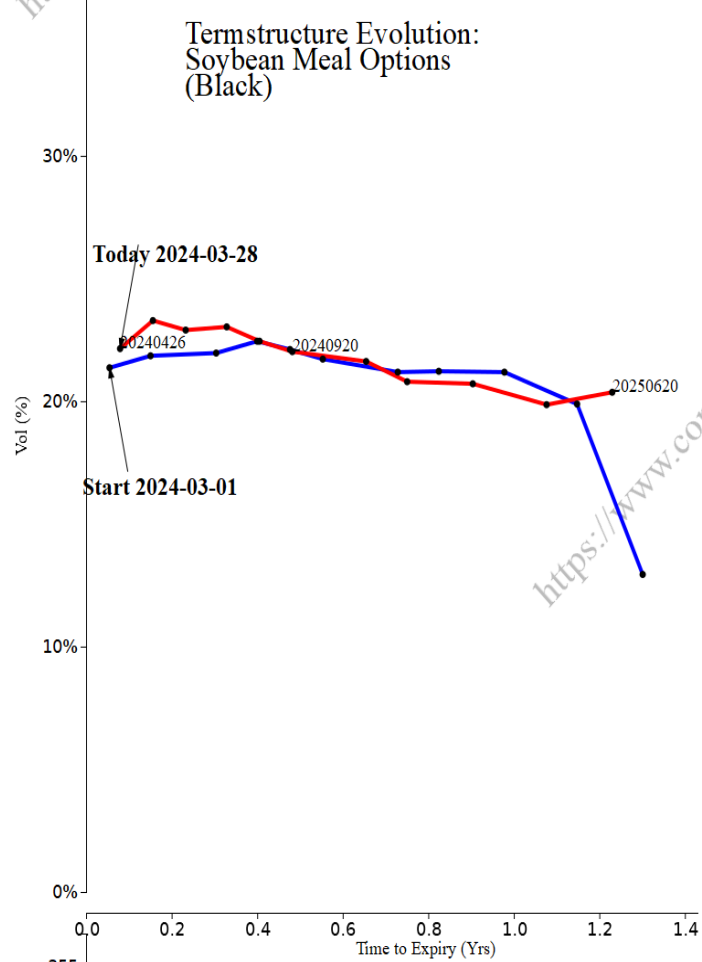


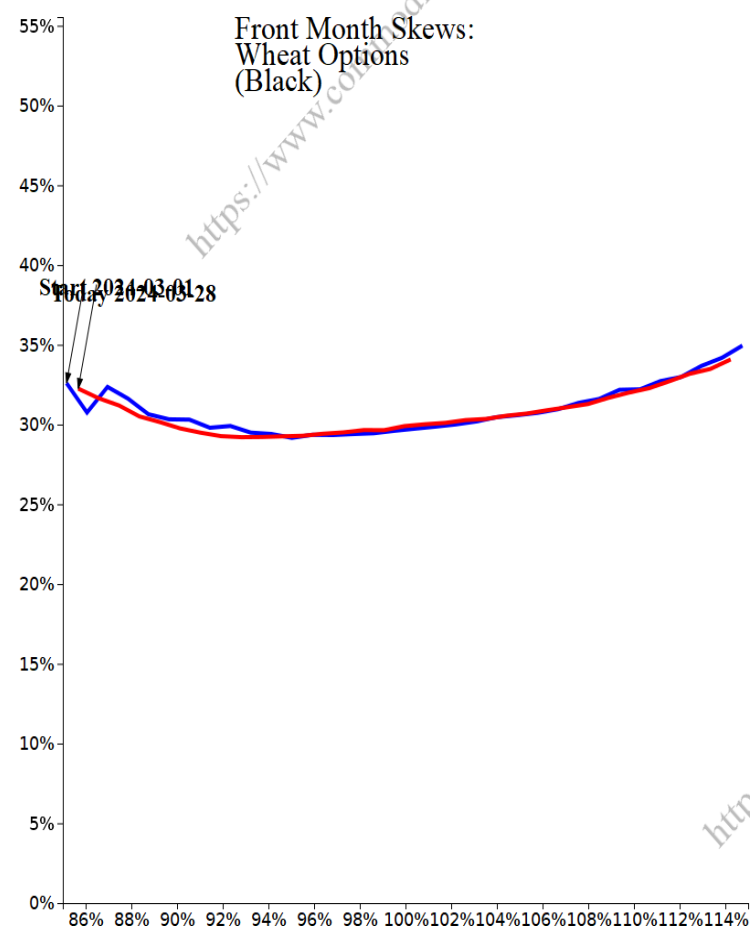
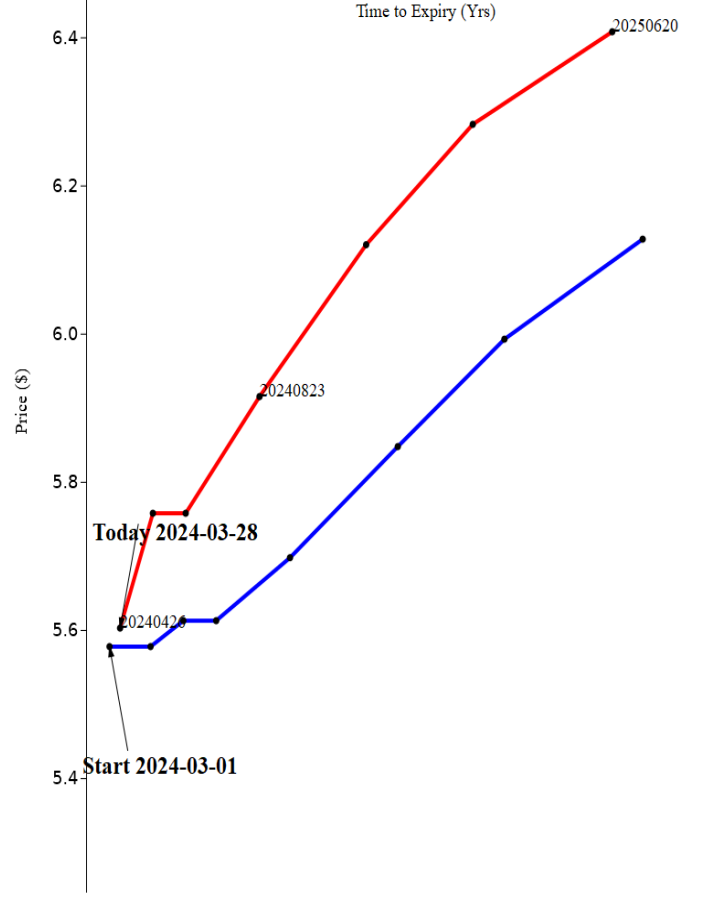
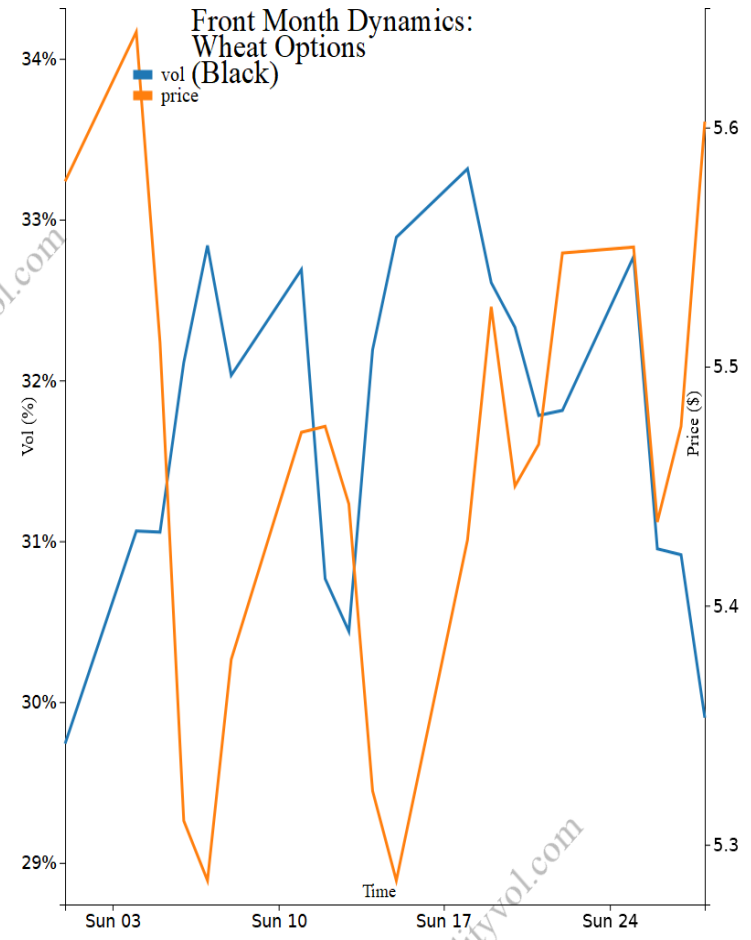
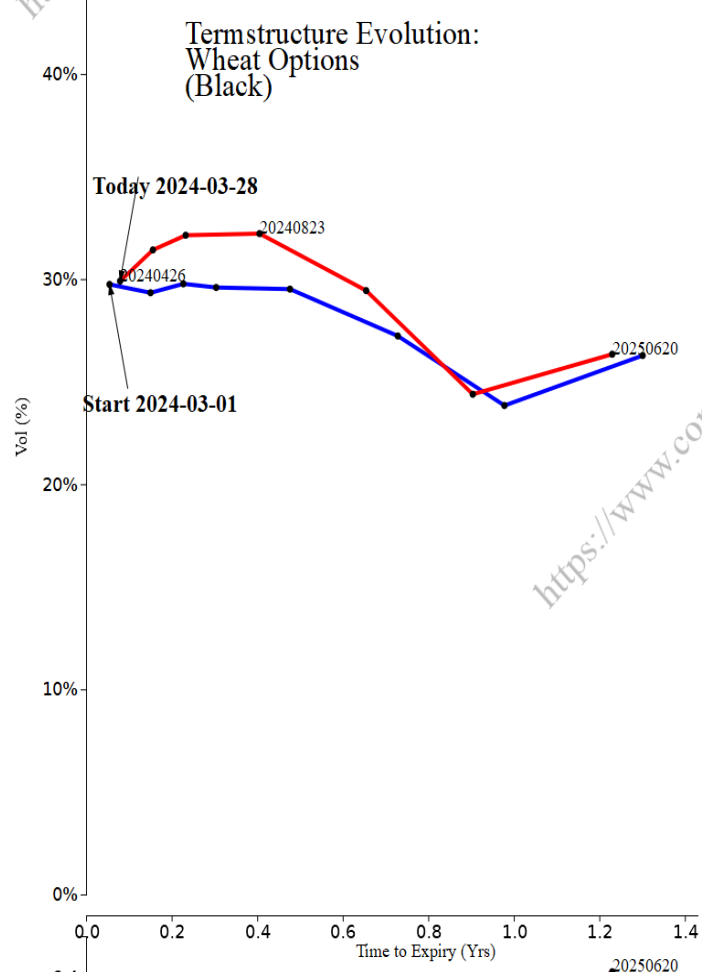
Ags: Grains, Oilseeds, and so forth

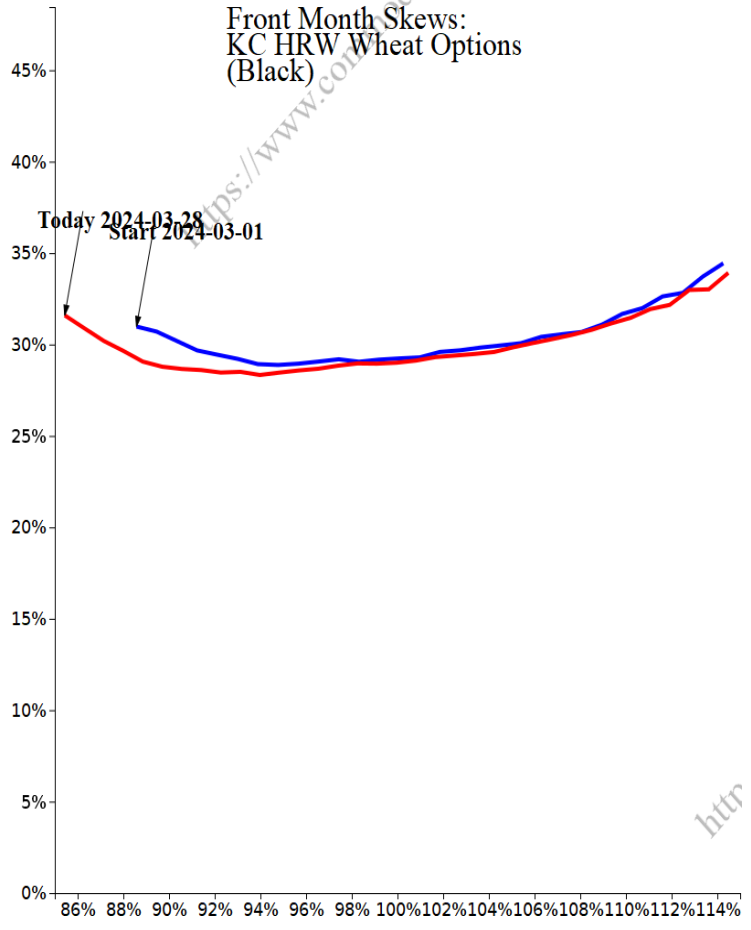
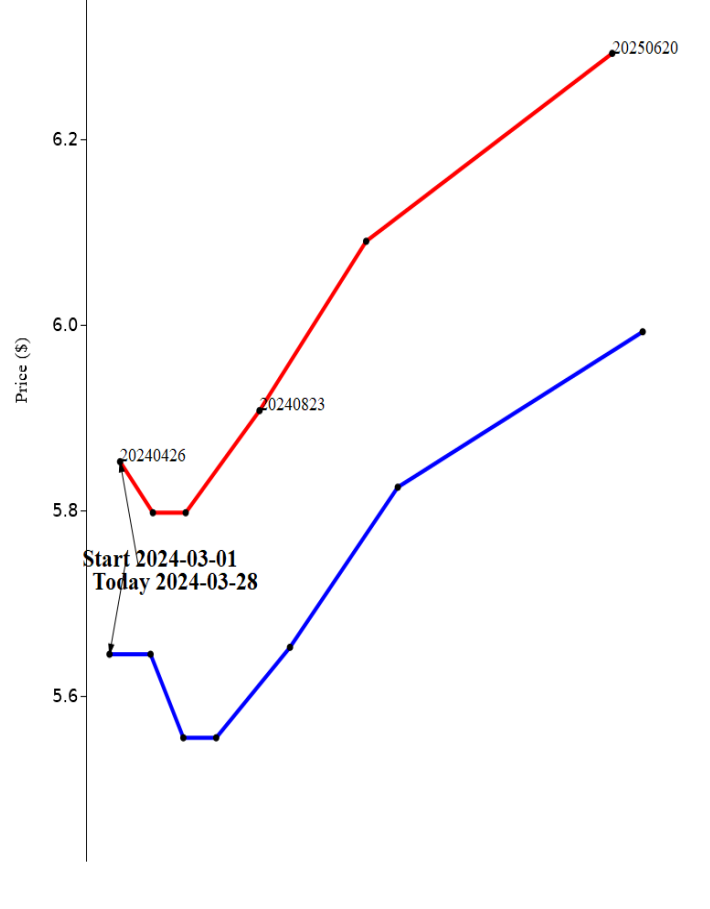
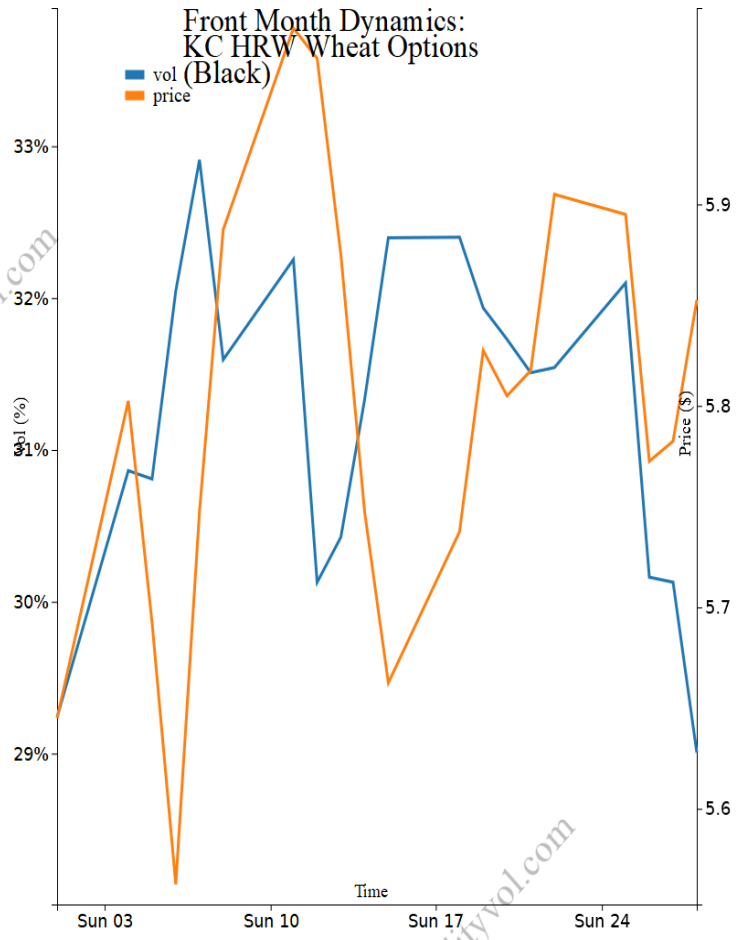
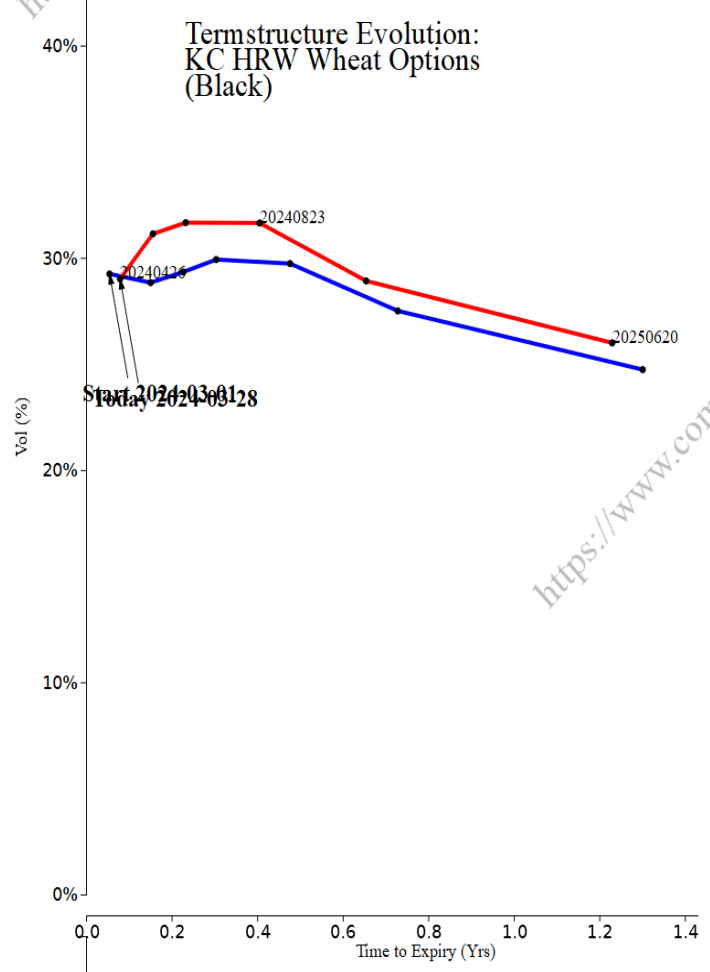


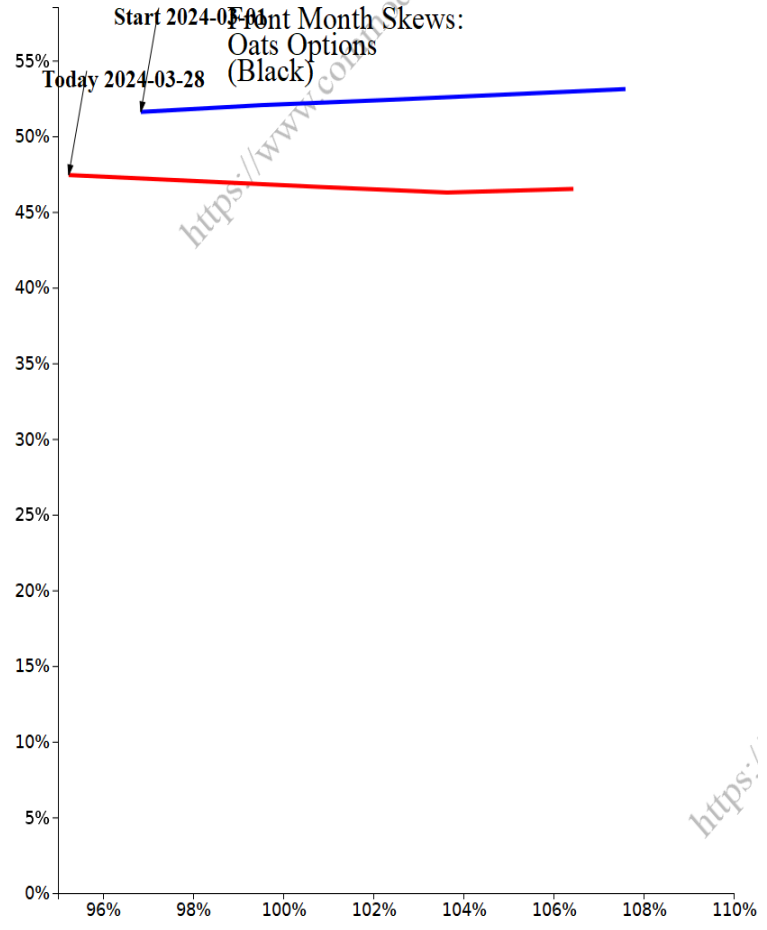
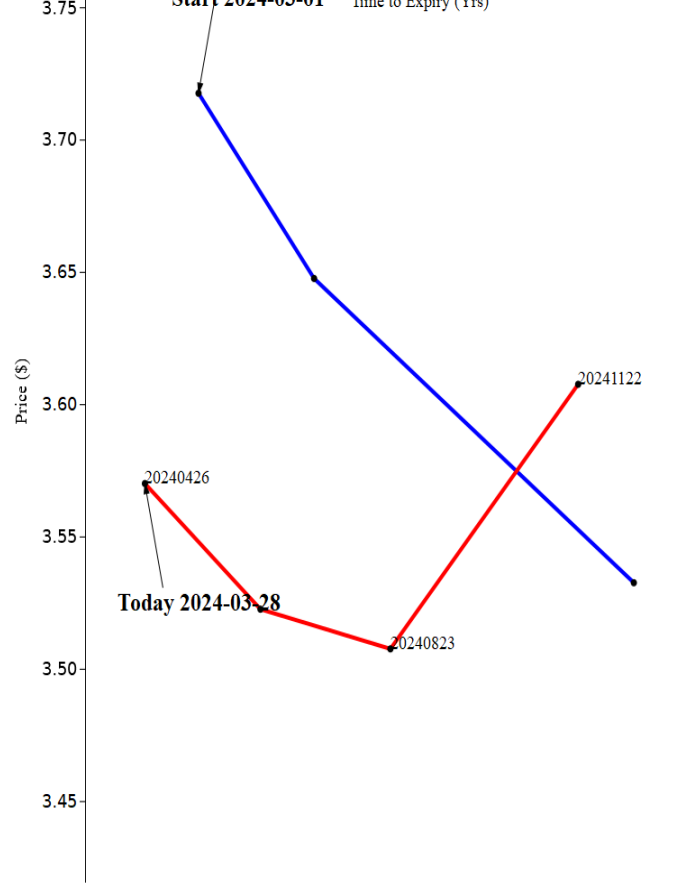
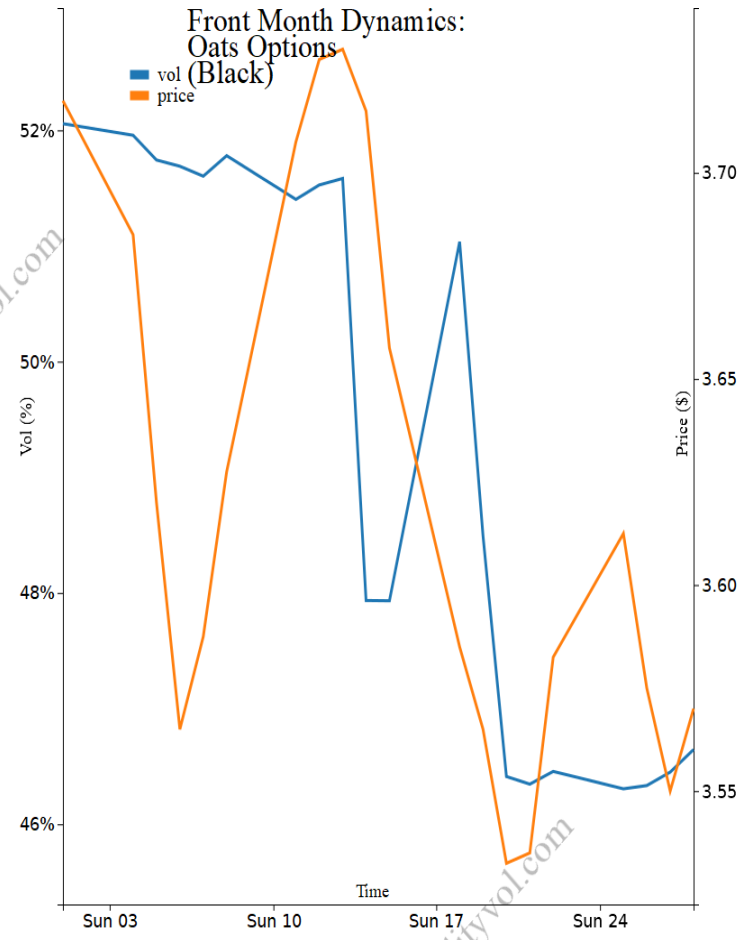
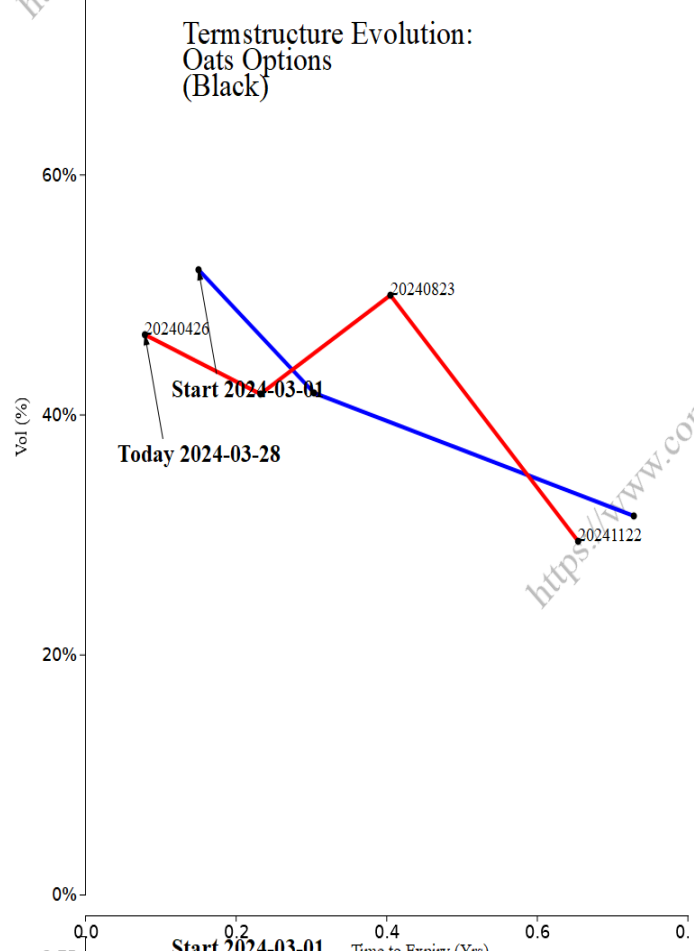


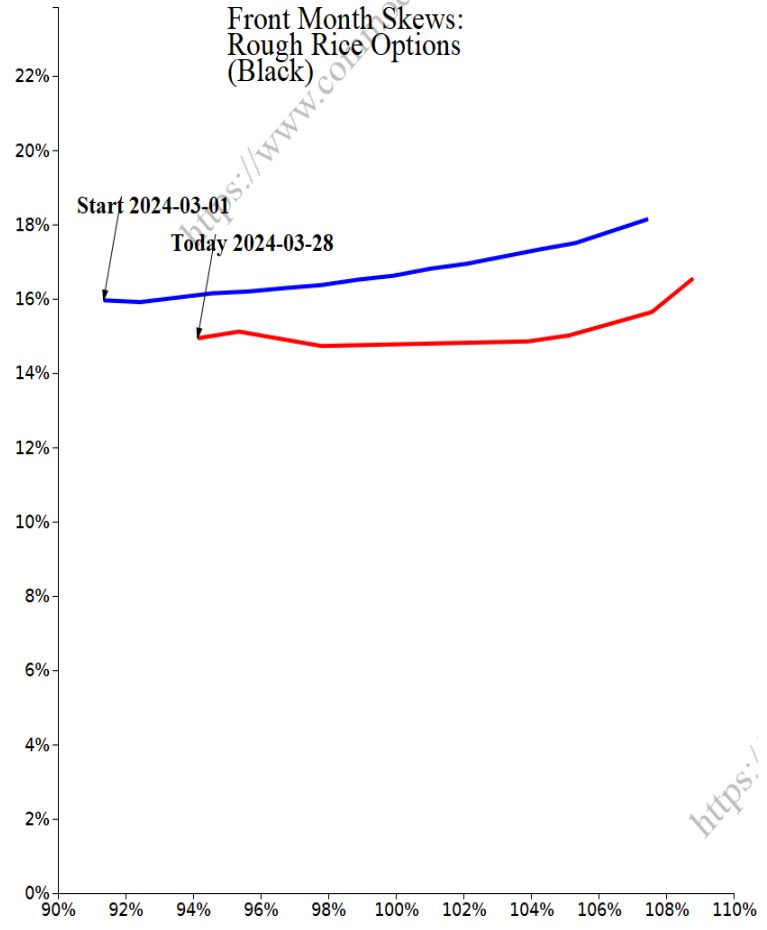
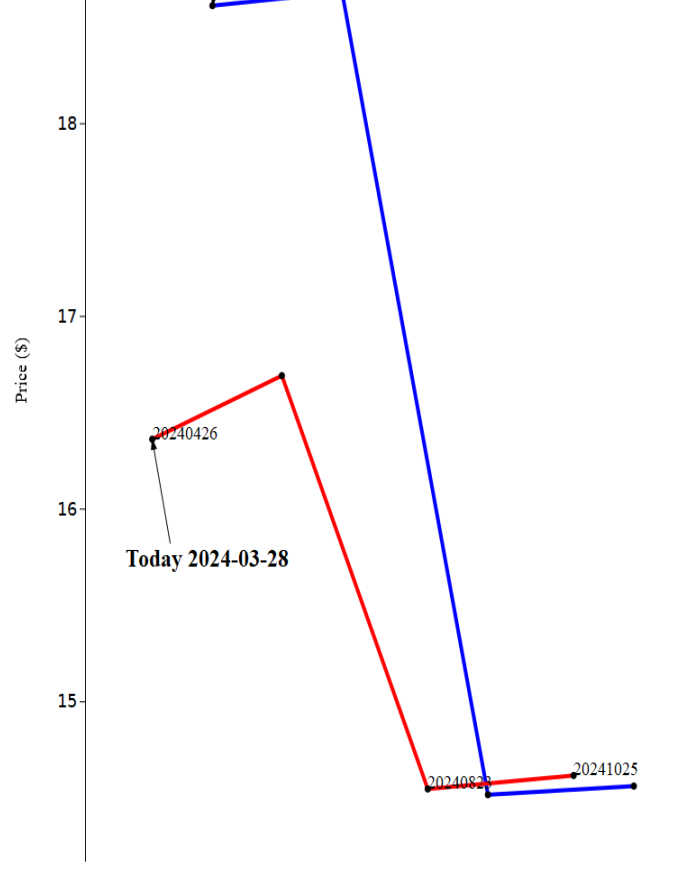
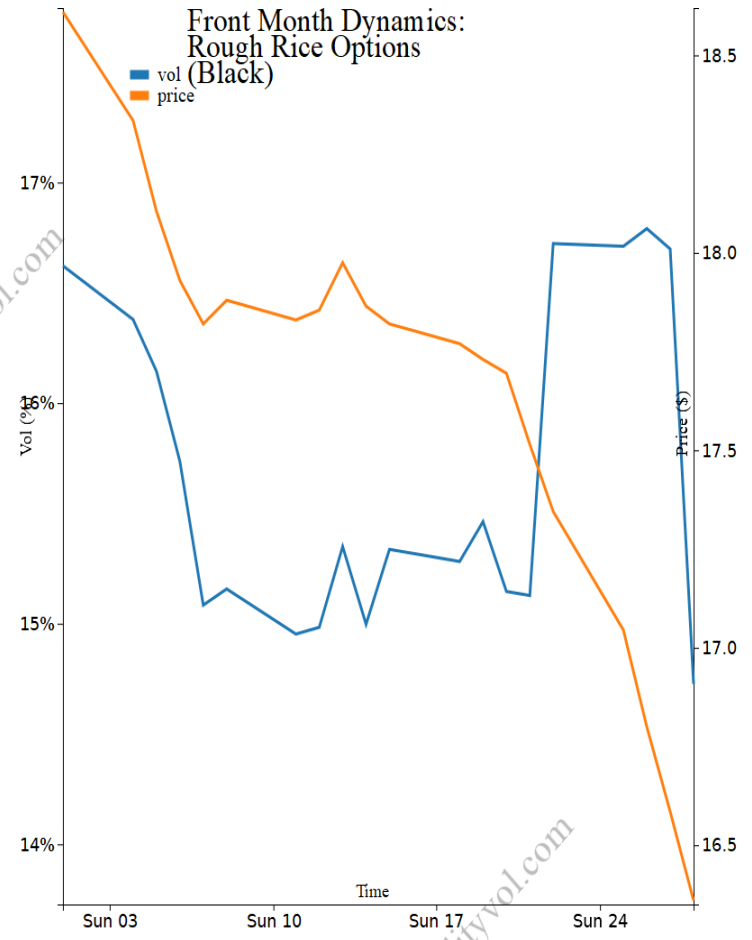
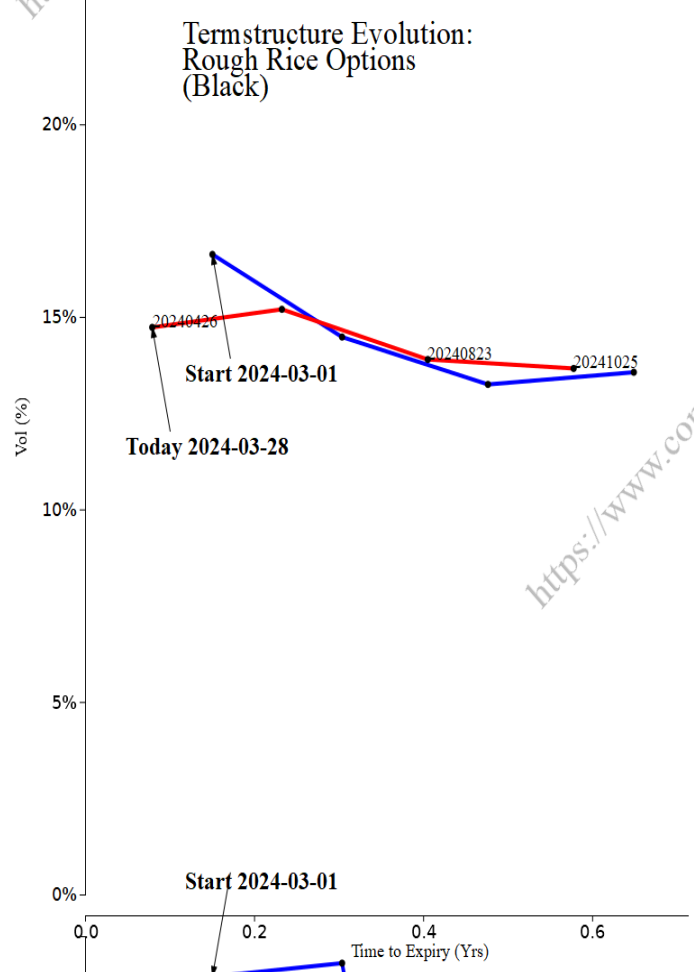




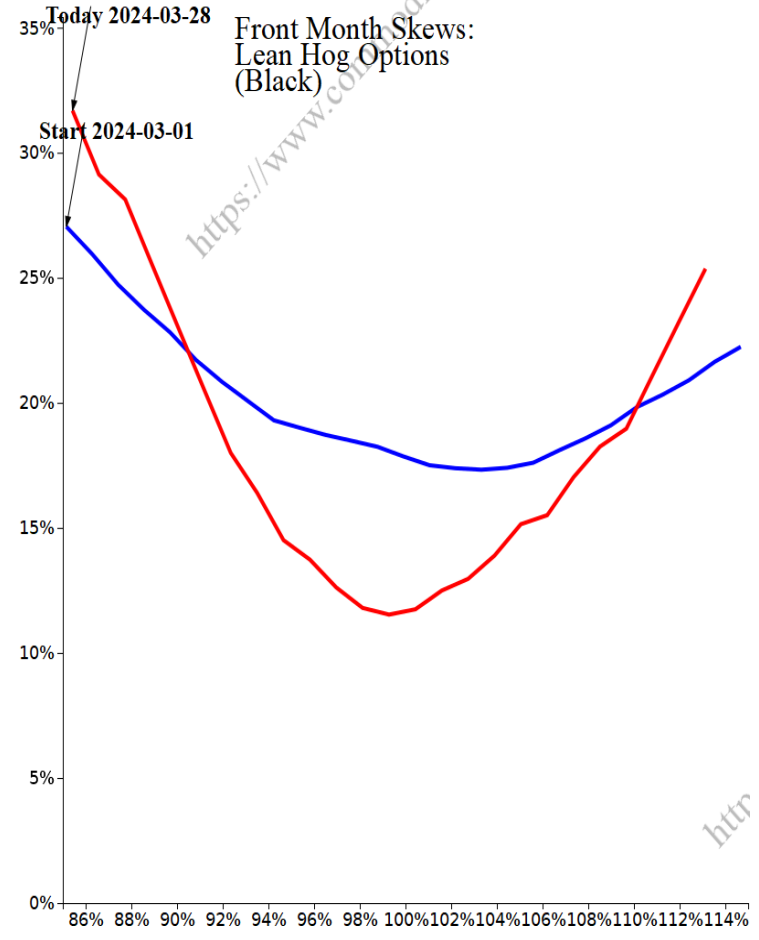
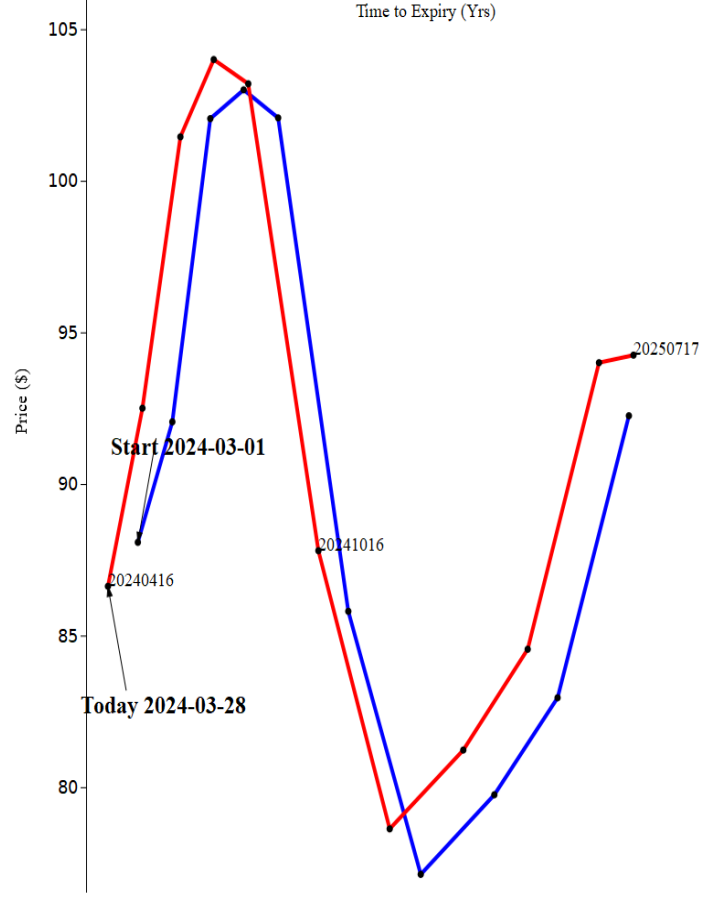
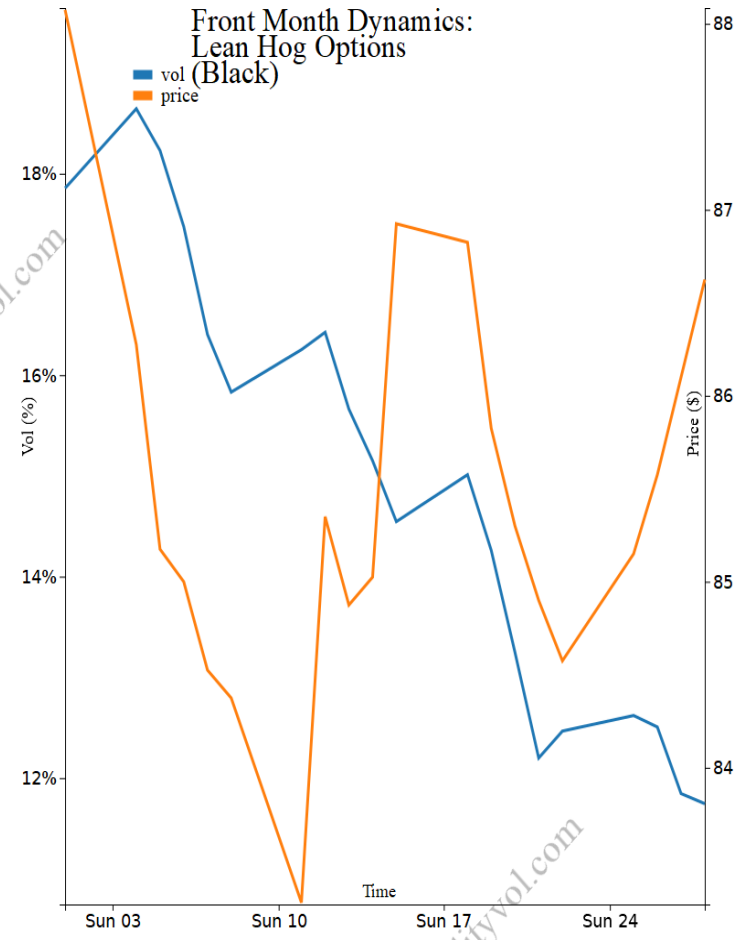
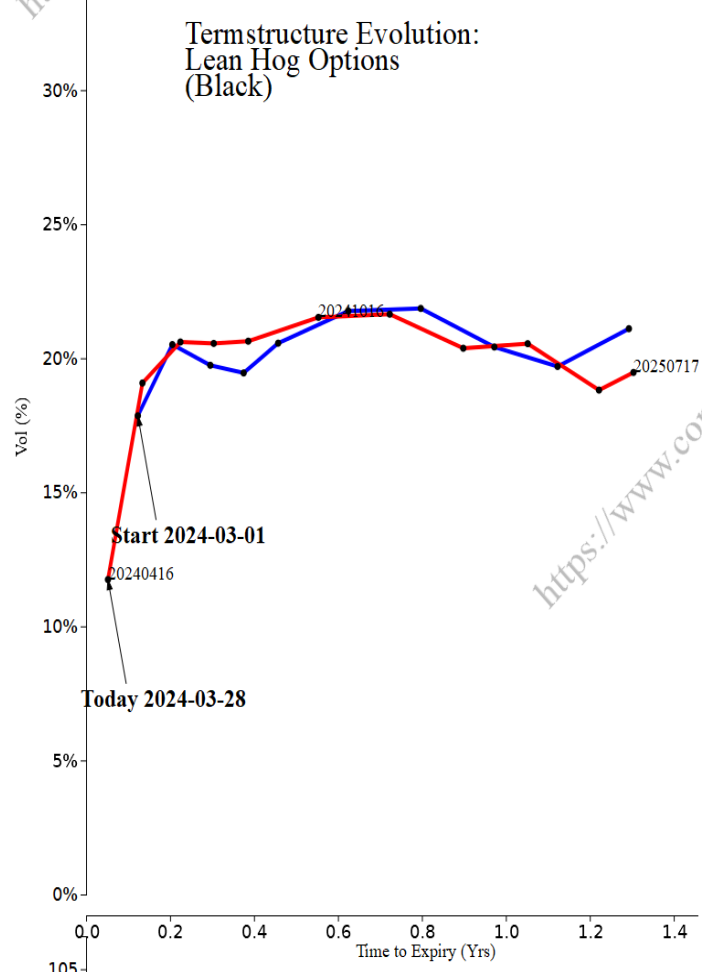


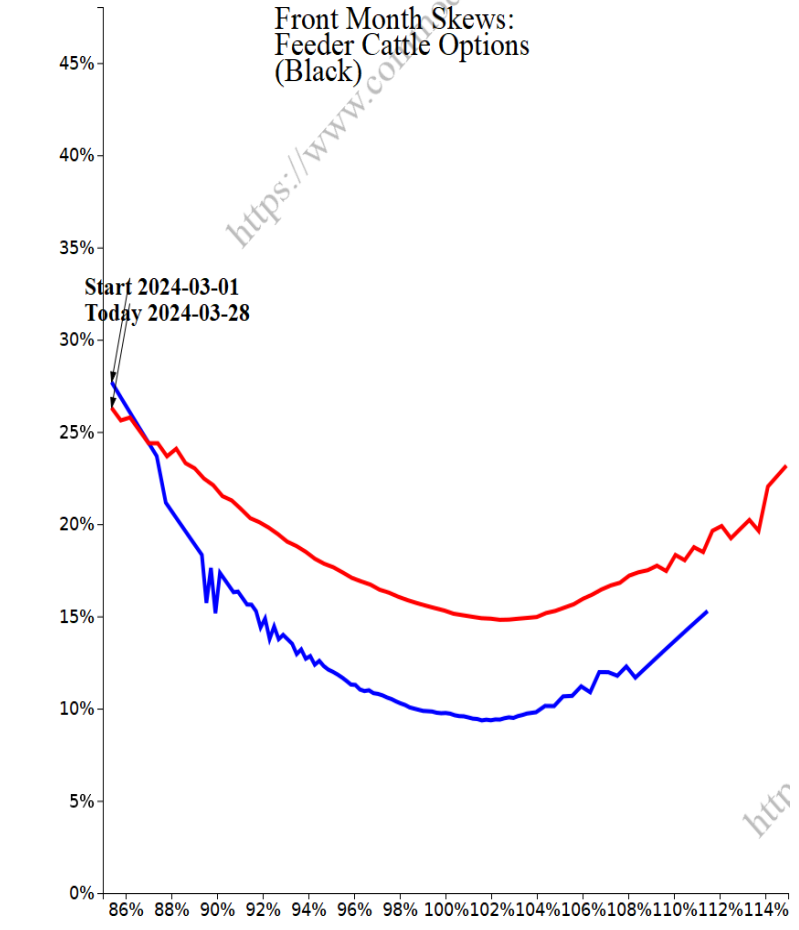
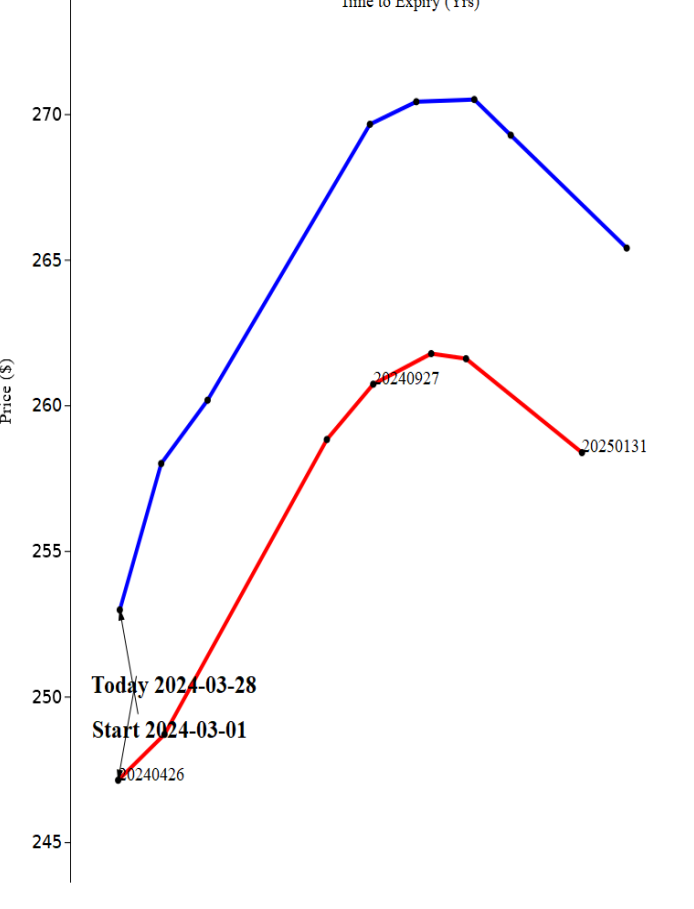
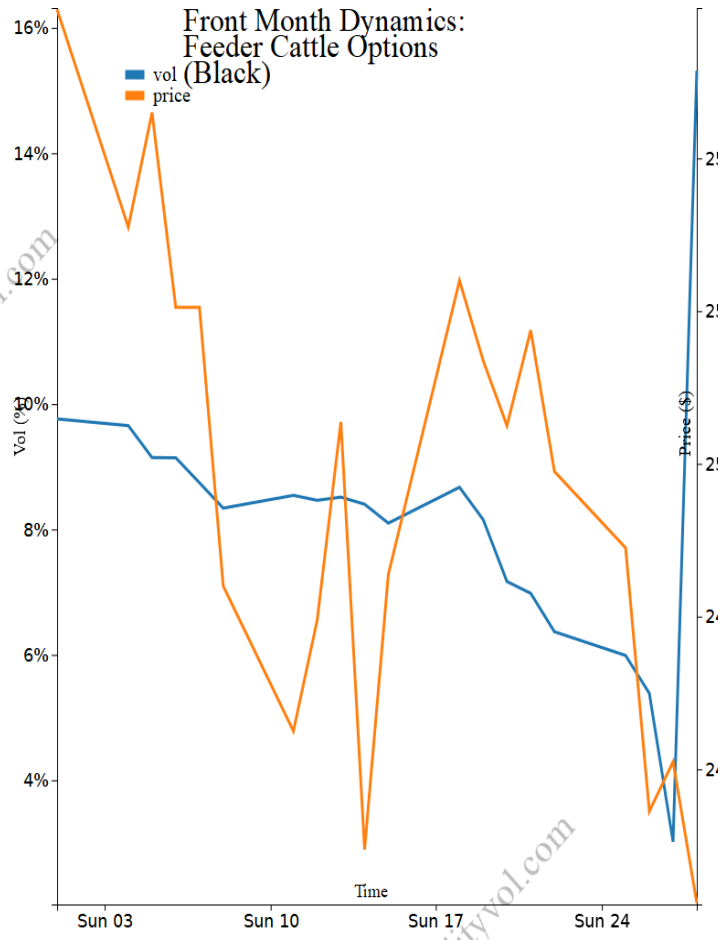
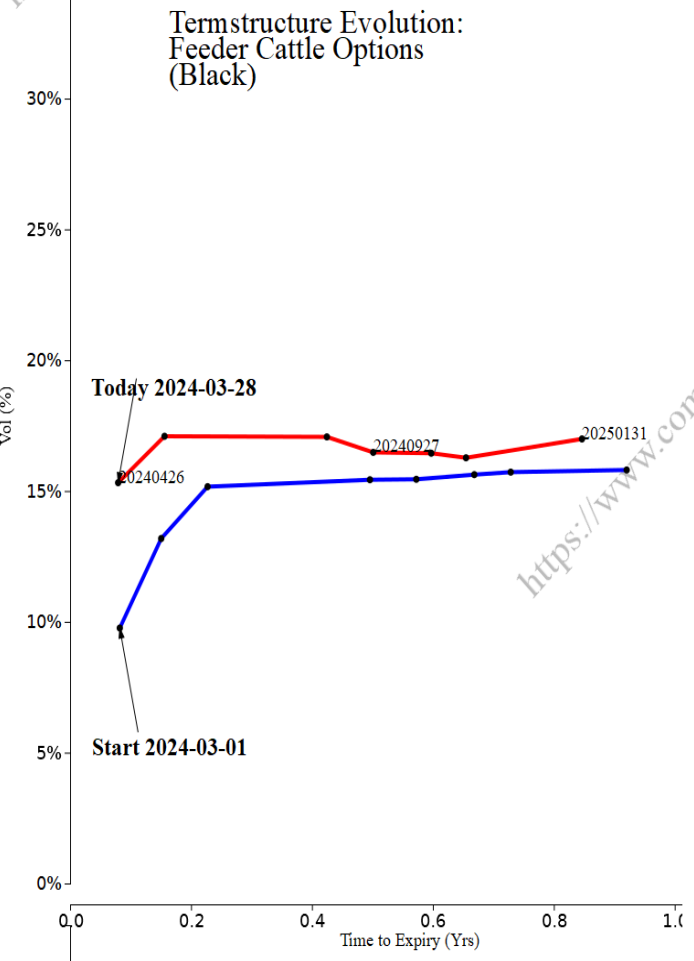


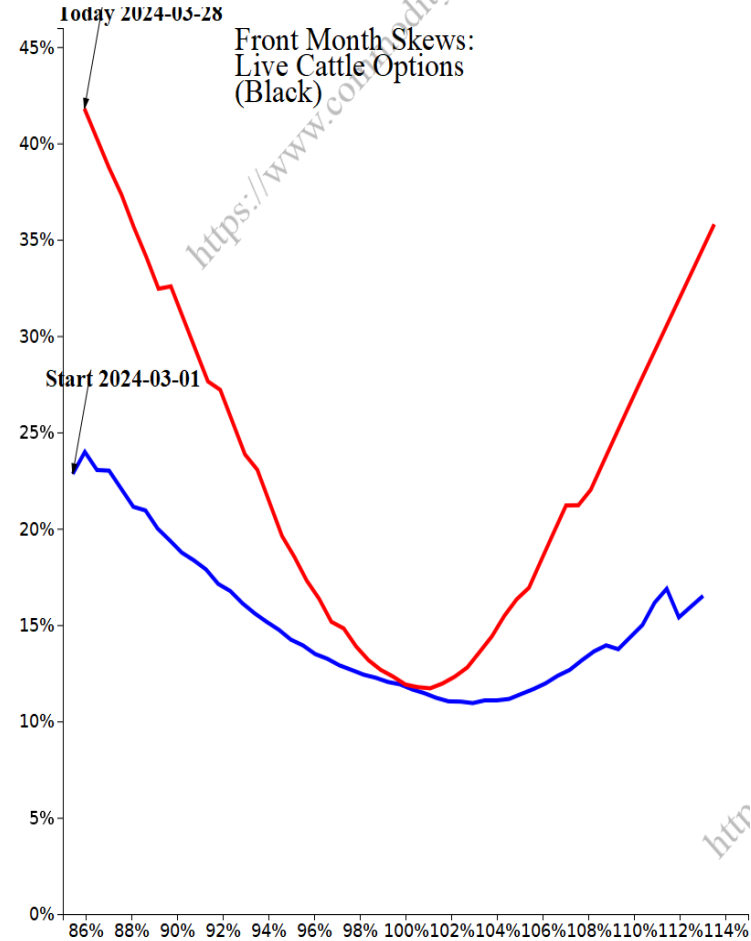
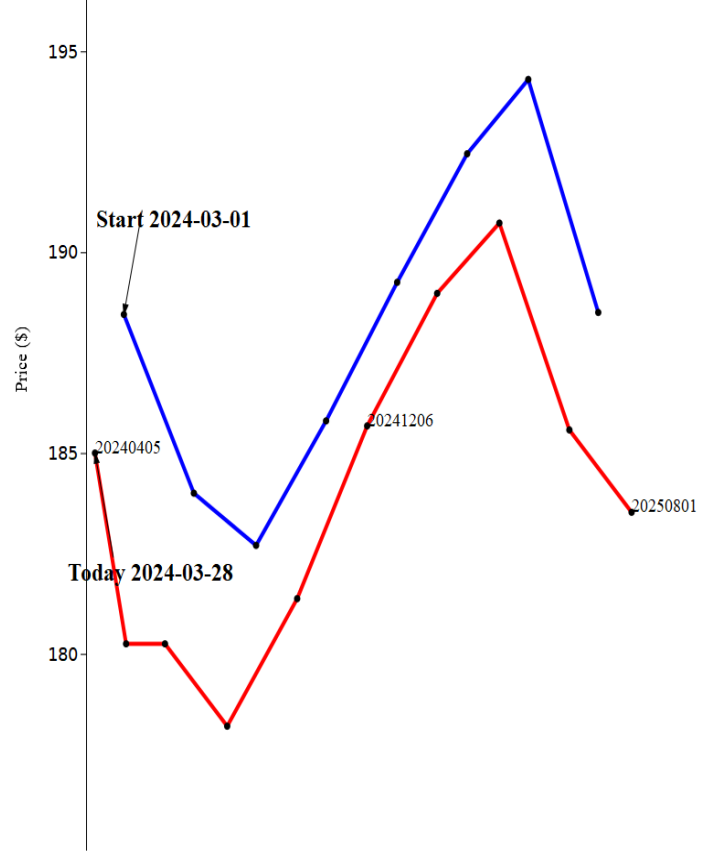
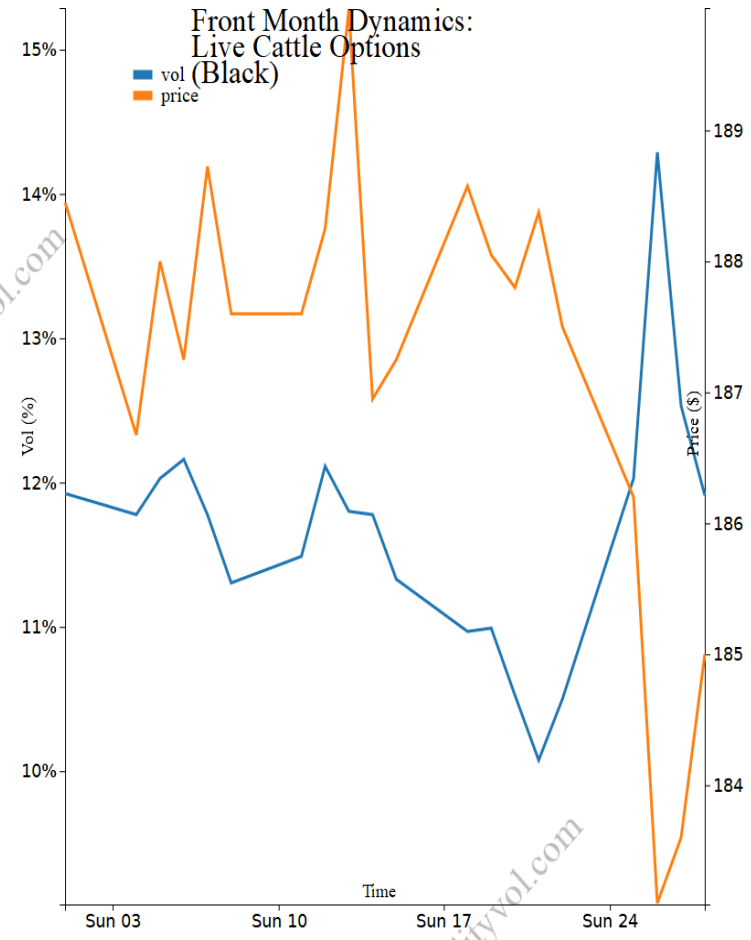
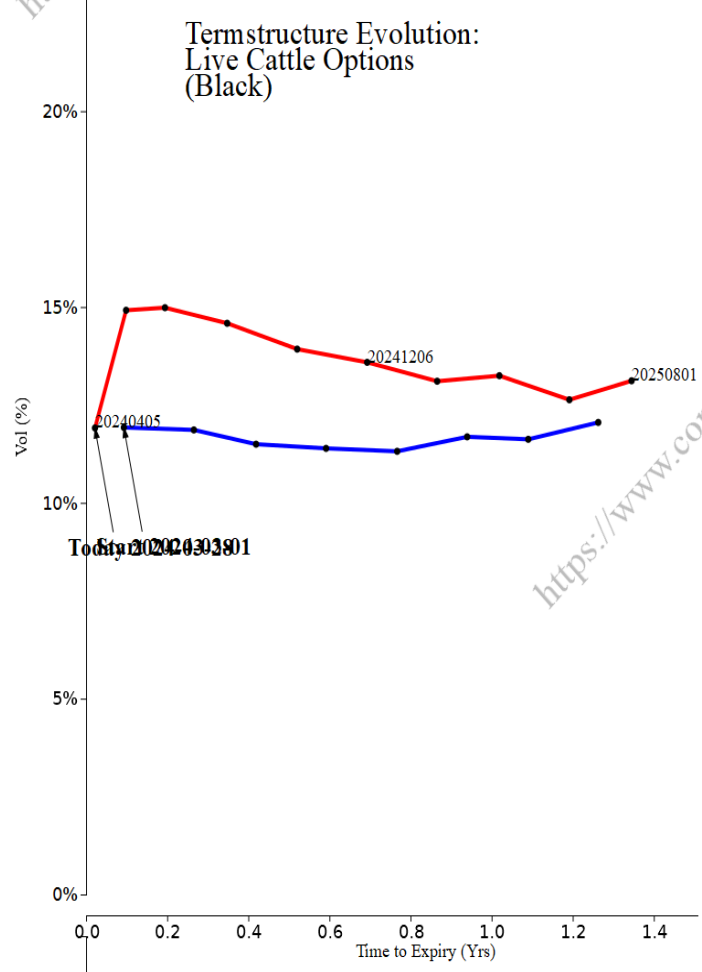


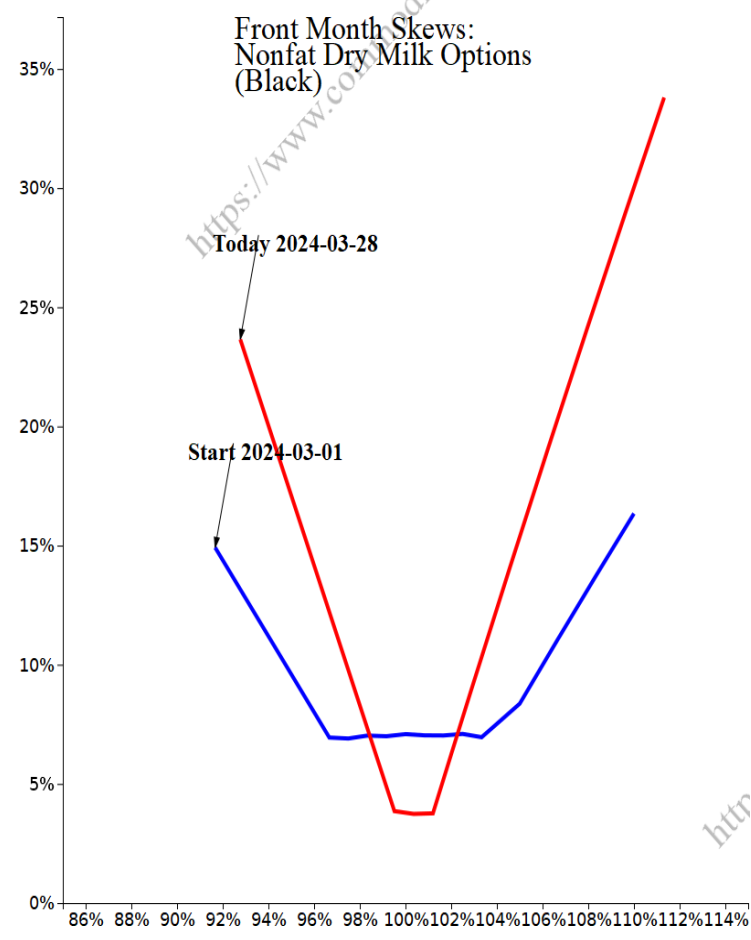
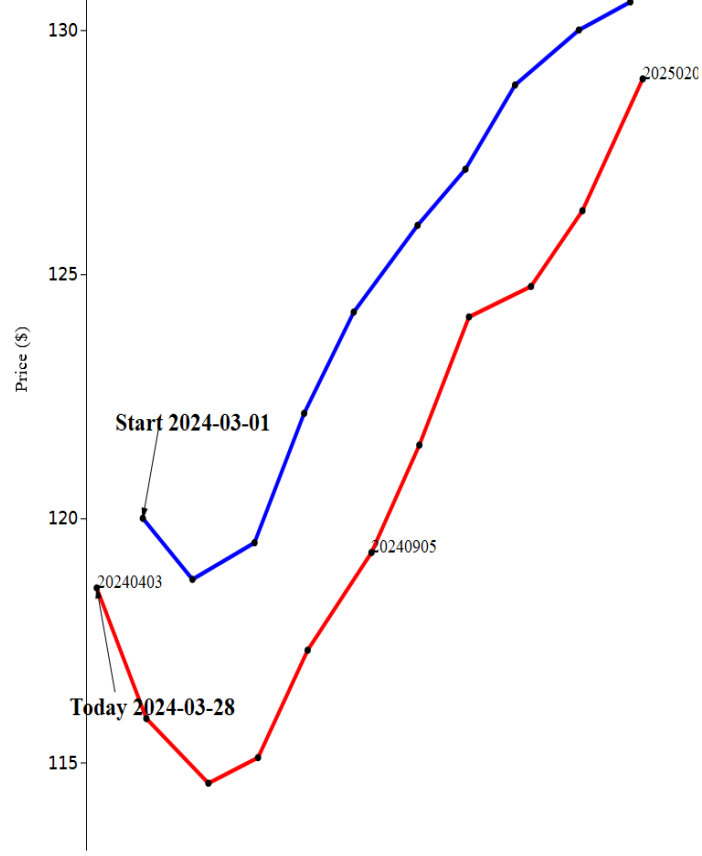
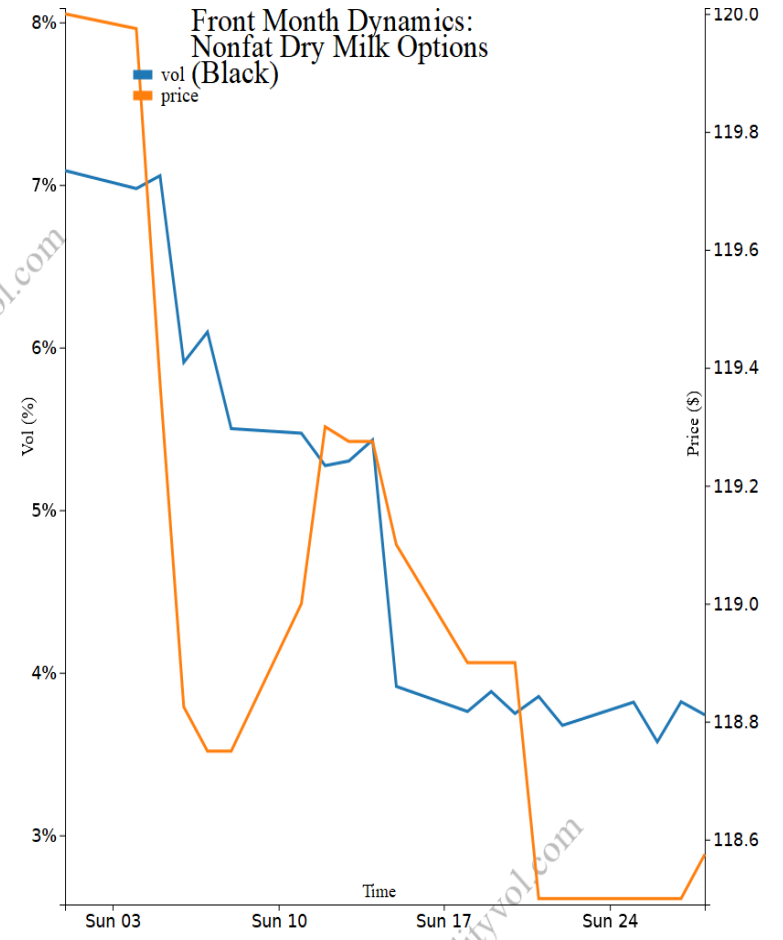
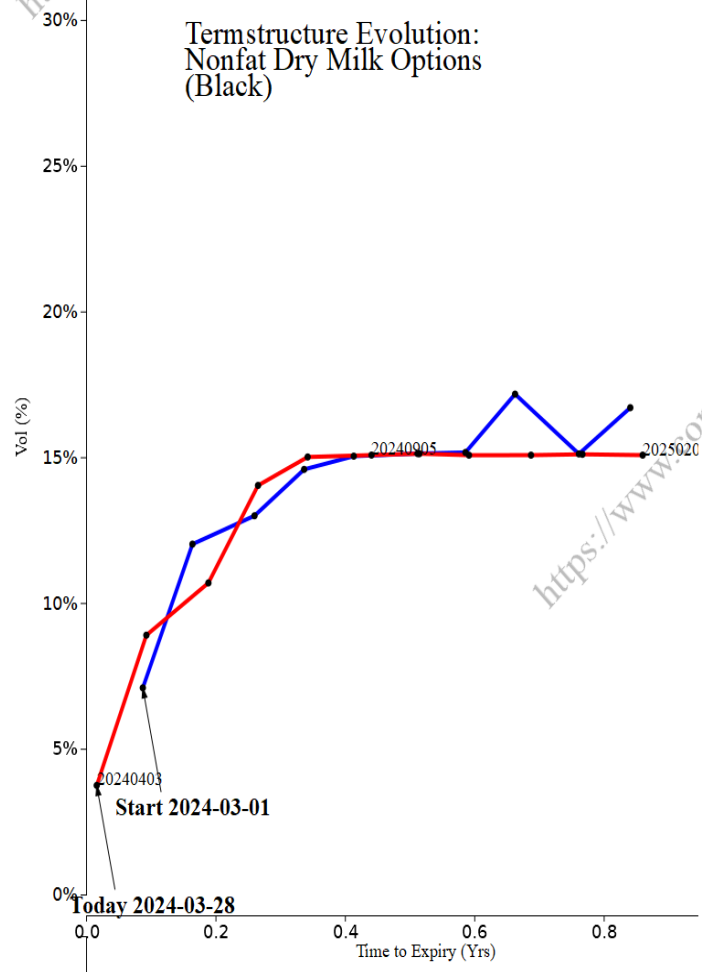


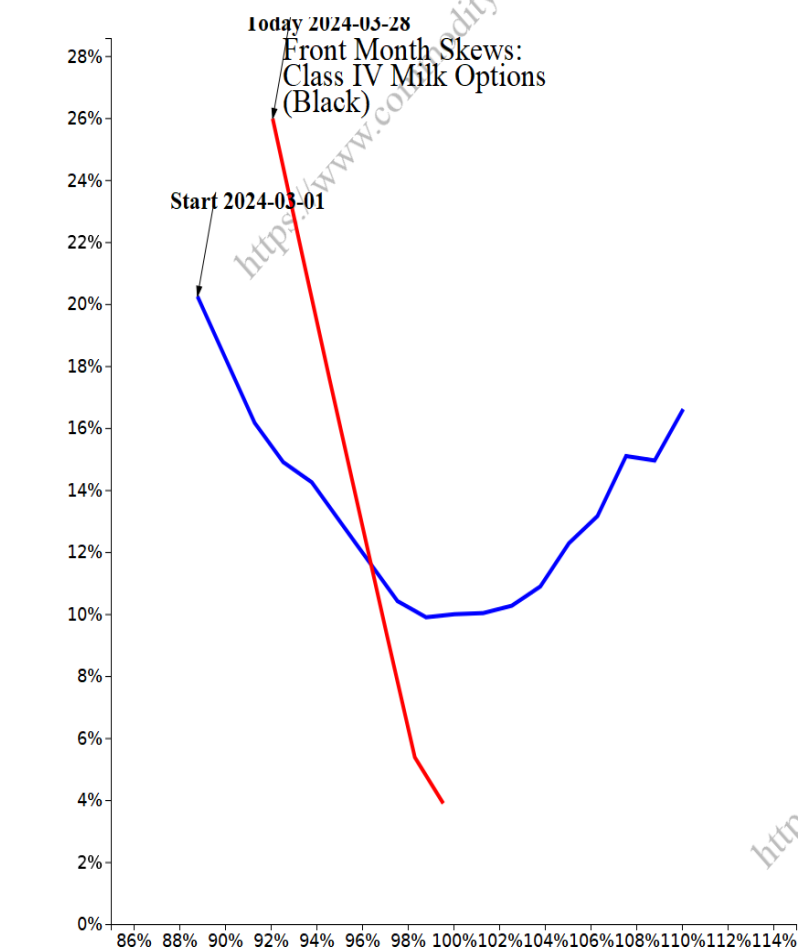
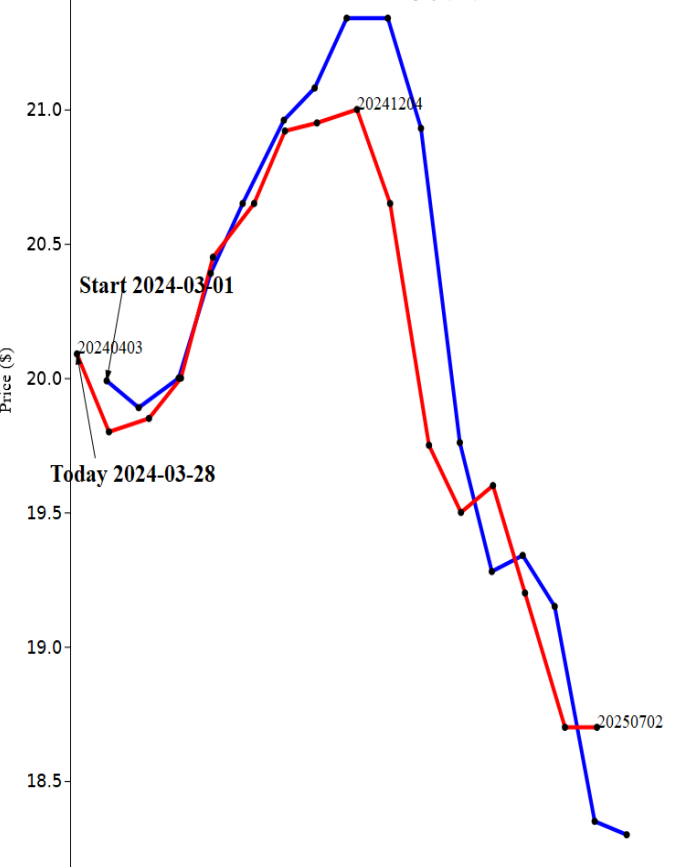
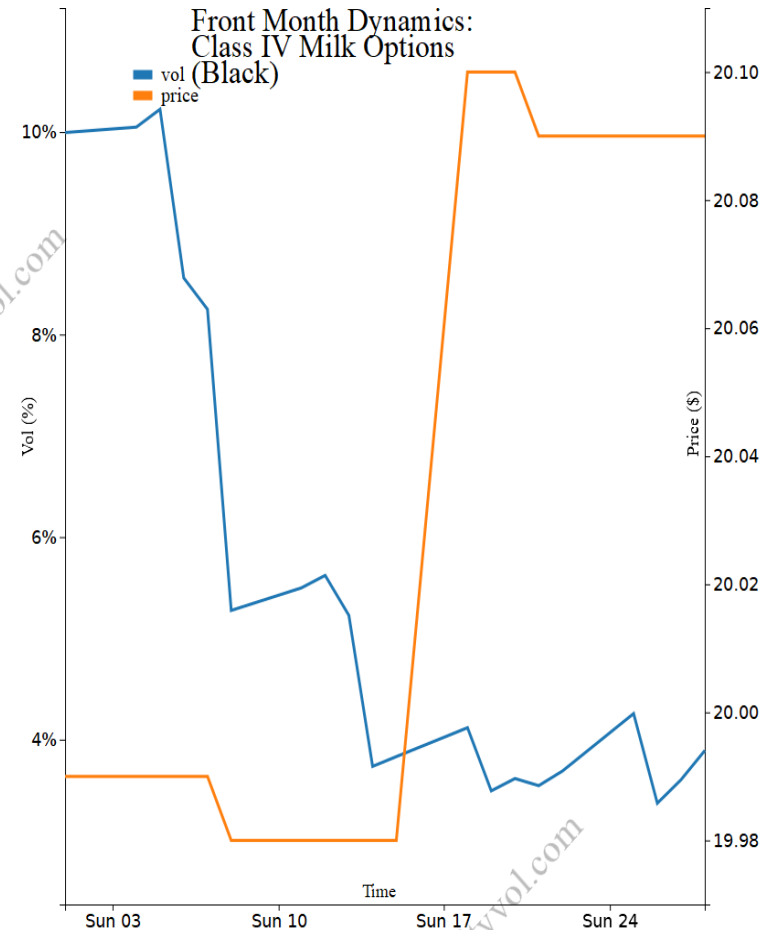
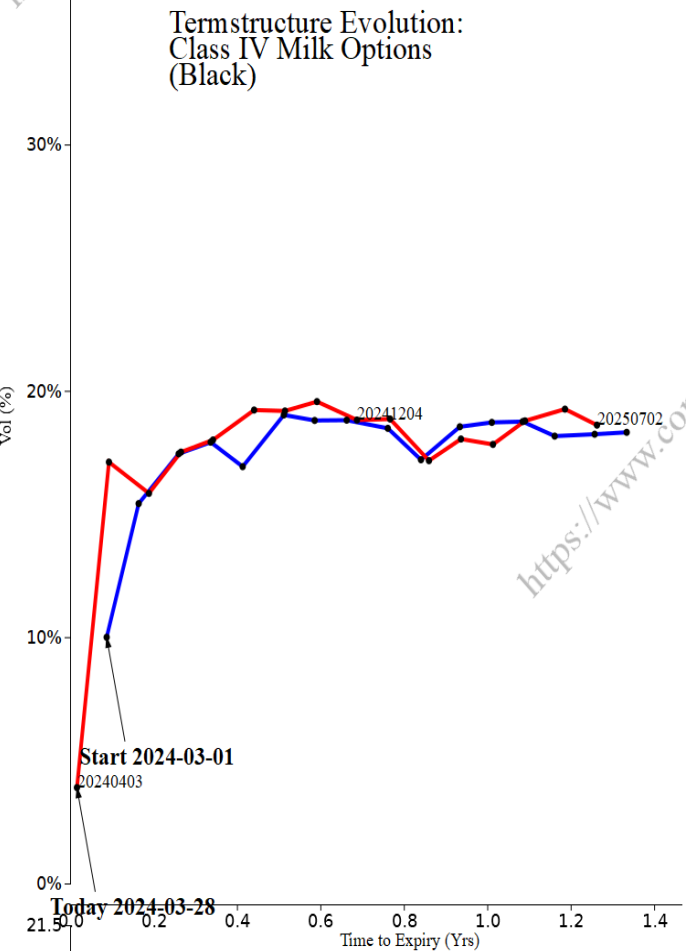
Ags: Proteins, Meats and so forth









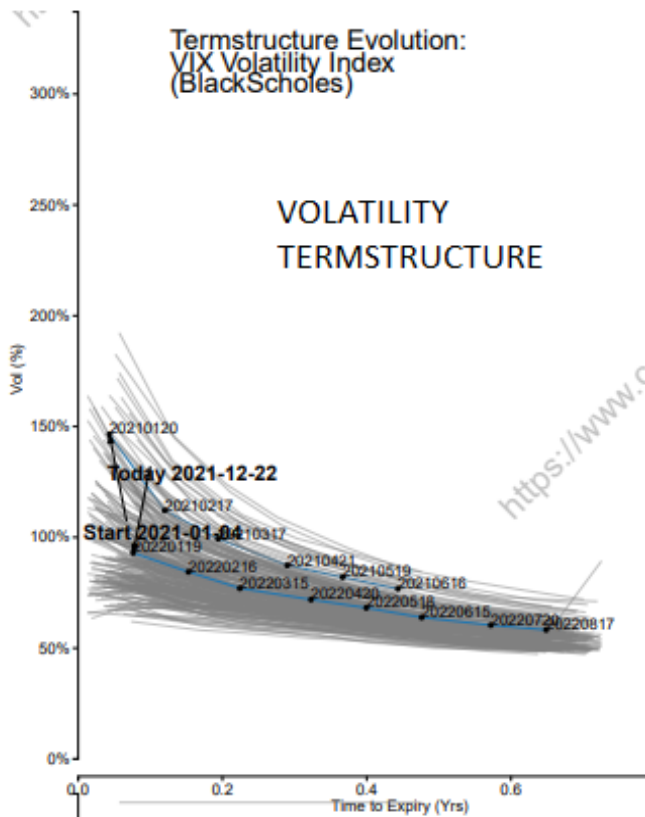


Explanation:

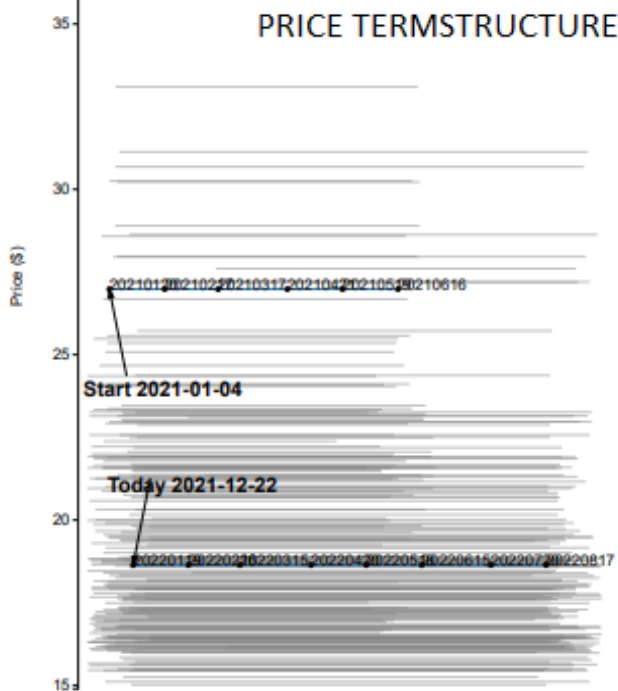
The document is composed of two parts. There is a tabular portion which summarizes the changes in front month futures prices and the changes in the at the money front month implied volatility. The results are presented as raw differences and percentage changes. The plots in this document try to give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

At the Money Volatility and Price Term Structures:

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

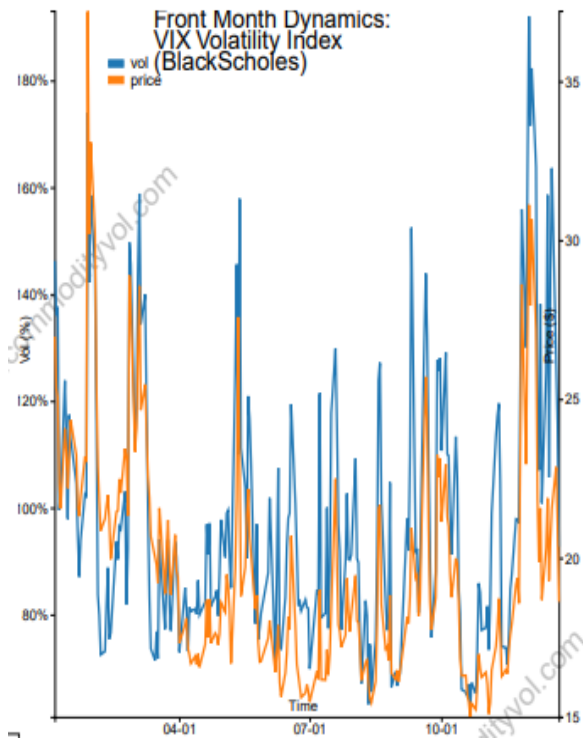


The starting curve is the termstructure at the beginning of the period. This curve is labelled start and is typically colored blue. The ending curve is typically colored red and denoted by the text: Today. The greyed out lines are the termstructures for each day of the period. The hope is that the range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



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

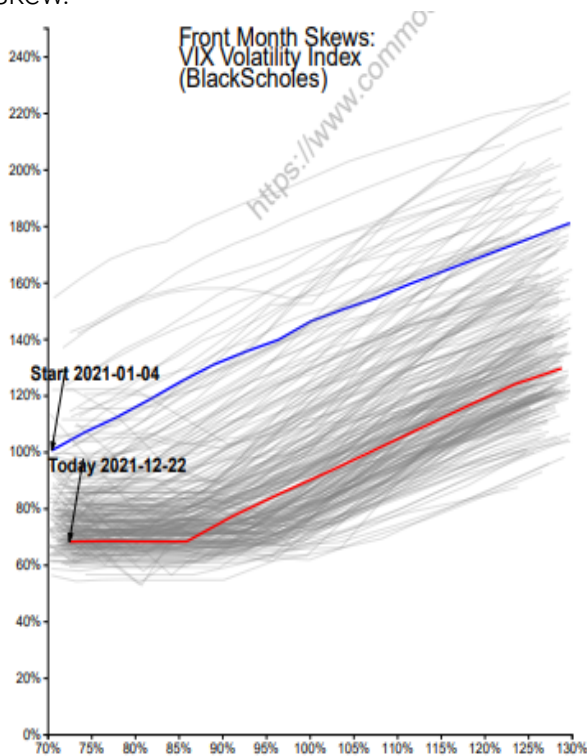
On the right hand panel we have the price and implied volatility of the front month contract.



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

Front Month Skew:

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



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

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