PromiseLand's Daily Market Commentaries

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20 August 2021

Contents

1 Introduction

Option positions in the options markets on indices and equities can be used to infer market movements and sentiments. The participants of an options trade are the investor, and the dealer. Investors who establish positions in options are generally likely to have a view on the underlying investment. In contrast, dealers generally do not adopt a view on the underlying investment. Dealers must therefore protect, or employ hedges against their options positions, and this entails buying and selling of the underlying investment. Such large hedging activity by dealers is able to influence the prices and volatility of the underlying. By knowing the expected activity taken by the dealers, we are able to infer price movement direction, to gather volatility expectations, and to assess market sentiment.

Notes and commentaries will be periodically provided.

The appendix contain explanatory notes on how to utilize price levels.

Today is an important day, as it is Options Expiry (OPEX) day for the majority of the market indices and stocks. We anticipate that there could be huge market shifts next week, as these options are set to expire today (Friday).

2 Concise Summary

2.1 S&P500

The S&P500 closed with a return of 0.13%. Fresh economic data was mostly supportive of stocks. US weekly initial unemployment claims fell by 29,000, reaching a 17 month low of 348,000. The subdued performance can be attributed to fresh concerns over the increased transmissibility of the COVID-19 Delta strain in the US, leading to a rise in the number of cases. The 7-day average of new US COVID-19 infections rose to a 6.5 month high of 138,082. In addition, talks about a tapering of Fed stimulus did not help the situation.

As per the market profile map, there is increased put option buying activity by market participants, which signals that investors are positioned for significant market drawdowns. Also, the Put Wall has shifted upwards drastically, from 4200 to 4400. This indicates a bearish sentiment whereby more market participants are seeking greater downside protection. Most crucially, the S&P500 is now in negative gamma exposure territory, which means that we can expect heightened market volatility in the days to come.

We do not expect the S&P500 to cross over the 4425 price level, due to the significant presence of dealer long gamma from the 4425 strike level and above, unless there is a fundamental positive change, or sudden huge positive investor sentiment in the markets.

The Key Gamma Strike of 4400 will continue to be significant level, whereby there is significant long gamma exposure, which should provide some support for the S&P500 to remain buoyant. The level whereby investors are targeting a top upside potential remains at 4500.

29.9% of gamma exposure and 8.14% of delta exposure are set to expire today. With the relatively high percentage of gamma expiration, we expect that prices should shift away from current levels. With a relatively low percentage of delta expiration, there should be a small price impact. Taken together, there should be a slight upward tendency for price levels next Monday, as dealers unwind their short positions.

Expected price range: 4400 - 4425.

2.2 NASDAQ100

The NASDAQ100 closed with a return of 0.51%. Strength in Technology stocks on Thursday was supportive for the index.

As per the market profile map, there is increased put option buying activity by market participants, which signals that investors are positioned for significant market drawdowns. Most crucially, the NASDAQ100 is now in negative gamma exposure territory, which means that we can expect heightened market volatility in the days to come.

The level whereby investors are targeting a top upside potential remains at 15300. The level whereby investors are targeting a top downside potential is at 14500.

48.8% of gamma exposure and 21.9% of delta exposure are set to expire today. With the relatively high percentage of gamma expiration, we expect that prices should shift away from current levels. With a relatively high percentage of delta expiration, there should be a huge price impact. Taken together, there should be a huge upward tendency for price levels next Monday, as dealers unwind their short positions.

Expected price range: 14900 - 15000.

2.3 STOXX50

The STOXX50 closed lower with a return of -1.54%, as investors digest the latest talks about Fed tapering. The Fed discussed starting to remove some of the monetary stimulus, likely before the end of the year as the US economy gathers momentum. All sectors were down, with the exception of Utilities.

The STOXX50 is also now in negative gamma exposure territory. Accordingly, we can expected heightened volatility.

The level whereby investors are targeting a top upside potential remains at 4300.

27.4% of gamma exposure and 4.14% of delta exposure are set to expire today. With the relatively high percentage of gamma expiration, we expect that prices should shift away from current levels. With a relatively low percentage of delta expiration, there should be a huge price impact. Taken together, there should be a slight upward tendency for price levels next Monday, as dealers unwind their short positions.

Expected price range: 4100 - 4200.

2.4 DAX

The DAX closed with a return of -1.25%. Similar to the STOXX50, the performance was due to investors digesting the latest talks about Fed tapering.

The DAX is also now in negative gamma exposure territory. Accordingly, we can expected heightened volatility.

The level whereby investors are targeting a top upside potential remains at 15800.

42.1% of gamma exposure and 12.6% of delta exposure are set to expire today. With the relatively high percentage of gamma expiration, we expect that prices should shift away from current levels. With a relatively medium-high percentage of delta expiration, there should be a huge price impact. Taken together, there should be a medium upward tendency for price levels next Monday, as dealers unwind their short positions.

Expected price range: 15700 - 15800.

2.5 Gold

Gold traded flatly. The rally in the USD to a 9.5 month high on Thursday undercut metals prices. Losses in gold were limited by the increased safe-haven demand with the sell-off in stocks

Gold remains sandwiched between a slew of gamma strikes between the 1750 and 1800 levels. This indicates that Gold can be expected to be volatile around this range, with price movements accentuated by dealer activity. Such volatile momentum needs to be triggered by a spark, which in this case, a sudden rush by investors to buy or sell Gold in significant amounts. The Zero Delta level of 1750 should act as a support, as this is the level whereby impact of dealer hedging activity on the market is minimized,

8.10% of gamma exposure and 0.08% of delta exposure are set to expire today. With the relatively low percentage of gamma expiration, we expect that prices should not shift away from current levels. With a relatively low percentage of delta expiration, there should be a slight price impact. Taken together, we do not expect any material shift in Gold prices.

Expected price range: 1750 - 1800.

2.6 Silver

Silver was also under pressure on industrial-metal demand concerns after China took steps to curb steel production. Given that Silver is now below the Lower Hedge Wall, we expect a decrease in downside volatility for Silver.

5.13% of gamma exposure and 12% of delta exposure are set to expire today. With the relatively low percentage of gamma expiration, we expect that prices should not shift away from current levels. With a relatively low percentage of delta expiration, there should be a slight price impact. Taken together, we do not expect any material shift in Silver prices.

Expected price range: 23 - 25.

2.7 Crude Oil

The rally in the USD depressed Crude Oil prices. Crude Oil has been on a downward trend, as the Fed has signalled that it may start to reduce the level of stimulus activities. It also does not help that demand for such energy is on a downtrend, as air travel, both domestic and international, is poised to decrease in light of fresh COVID-19 lockdowns and movement restrictions.

With regards to WTI Crude, 3.45% of gamma exposure and -1.74% of delta exposure are set to expire today. With the relatively low percentage of gamma expiration, we expect that prices should not shift away from current levels. With a relatively low absolute percentage of delta expiration, there should be a slight price impact. Taken together, we do not expect any material shift in WTI Crude prices.

Expected price range: 62.5 - 70.

3 Market Price Levels

Table 1: Key Price Levels for Market Indices

	S&P500	NASDAQ100	STOXX50	DAX
Current Price	4405.80	14933.94	4124.71	15765.81
Previous Price	4400.27	14857.92	4189.42	15965.97
Return	0.00126	0.00510	-0.01560	-0.01260
Call Wall	4500	15300	4300	15800
Key Delta Strike	4000	14500	4100	15600
Key Gamma Strike	4400	14500	4100	15900
Max Gamma Vanna	4435	15040	4150	15850
Max Gamma	4505	15300	4300	16250
Max Vanna	4430	15030	4150	15850
Put Wall	4400	14500	3900	15000
Zero Gamma Vanna	3654.10	13313.13	3456.67	13860.84
Zero Gamma	4424.98	15004.41	4137.05	15779.72

Table 2: Key Dates for Market Indices

	S&P500	NASDAQ100	STOXX50	DAX
Largest Gamma Strike Date	2021-08-20	2021-08-20	2021-08-20	2021-08-20
Largest Gamma Strike	0.299	0.488	0.274	0.421
Largest Delta Strike Date	2021-09-17	2021-09-17	2021-12-17	2021-12-17
Largest Delta Strike	0.269	0.308	0.417	0.503
Next Expiration Date	2021-08-20	2021-08-20	2021-08-20	2021-08-20
Next Expiration Gamma	0.299	0.488	0.274	0.421
Next Expiration Delta	0.0814	0.2190	0.0414	0.1260

Table 3: Key Price Levels for Single-name Indices

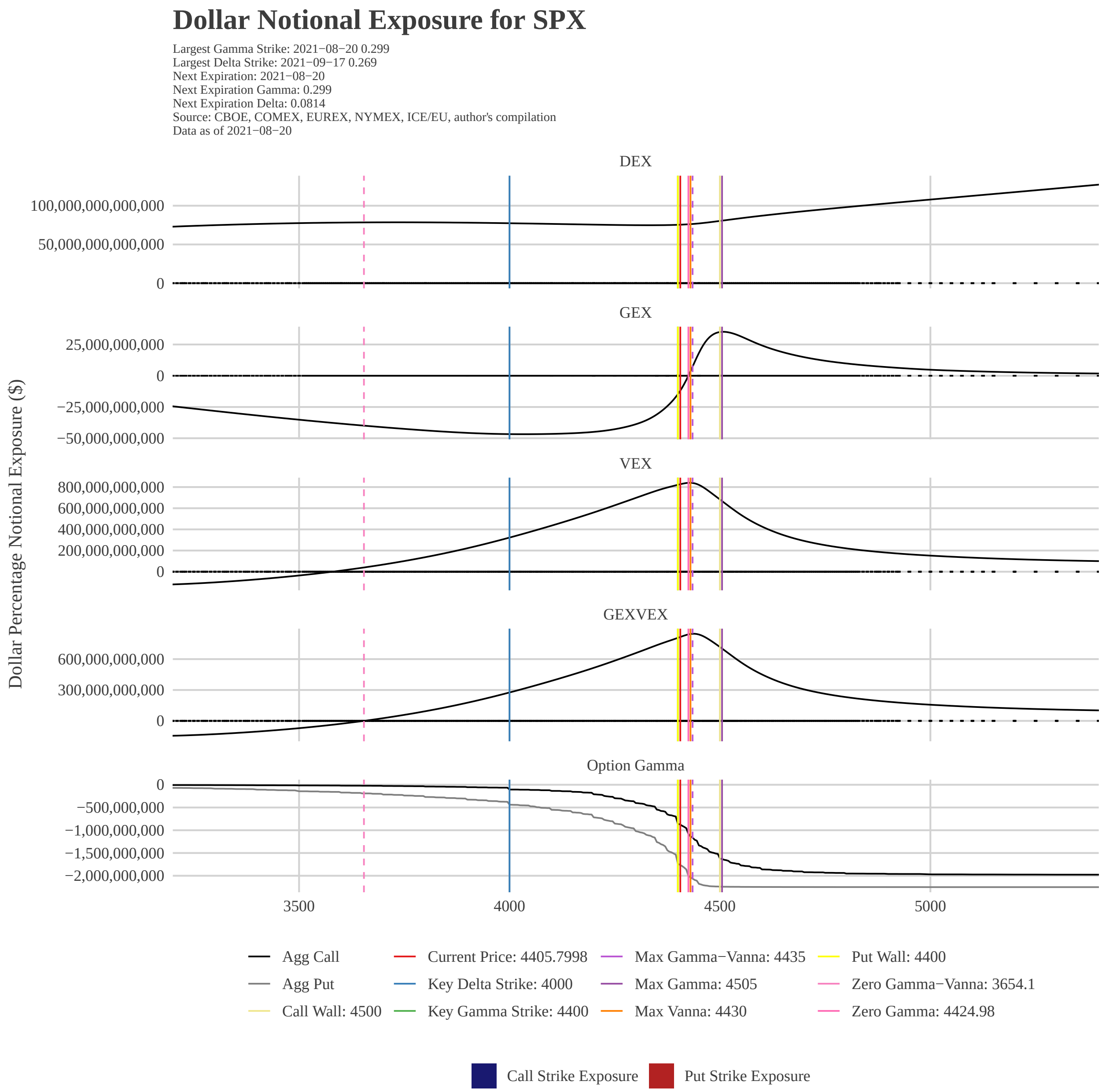
	Gold Futures	Silver Futures	ICE Crude Oil Brent	Crude Oil WTI
Current Price	1782.3500	23.2276	66.4500	63.6900
Previous Price	1779.79	23.23	68.23	65.46
Return	1.44e-03	-3.01e-05	-2.64e-02	-2.74e-02
Hedge Wall (Lower)	1737.500	23.625	65.750	61.500
Hedge Wall (Upper)	1847.500	24.175	84.500	84.750
Key Delta Strike (Call)	1850.00	18.25	80.00	50.00
Key Delta Strike (Put)	1650	24	72	110
Key Gamma Strike	1800	24	70	65
Min Gamma Vanna	1737.500	23.775	70.500	67.500
Min Gamma	1787.500	23.775	72.000	70.500
Min Vanna	1720.00	23.00	53.50	58.25
Zero Delta	1749.79	23.82	61.70	58.49

Table 4: Key Dates for Single-name Indices

	Gold Futures	Silver Futures	ICE Crude Oil Brent	Crude Oil WTI
Largest Gamma Strike Date	2021-08-26	2021-08-26	2021-10-26	2021-11-16
Largest Gamma Strike	0.344	0.428	0.372	0.386
Largest Delta Strike Date (Put)	2021-09-27	2021-08-26	2021-08-25	2021-09-16
Largest Delta Strike (Put)	-0.035	1.040	-0.204	-0.156
Largest Delta Strike Date (Call)	2022-05-26	2022-06-27	2021-10-26	2021-11-16
Largest Delta Strike (Call)	0.375	-0.299	0.871	0.912
Next Expiration Date	2021-08-20	2021-08-20	2021-08-25	2021-08-20
Next Expiration Gamma	0.0810	0.0513	0.2720	0.0345
Next Expiration Delta	0.00839	0.12000	-0.20400	-0.01740

4 Market Indices

4.1 S&P500



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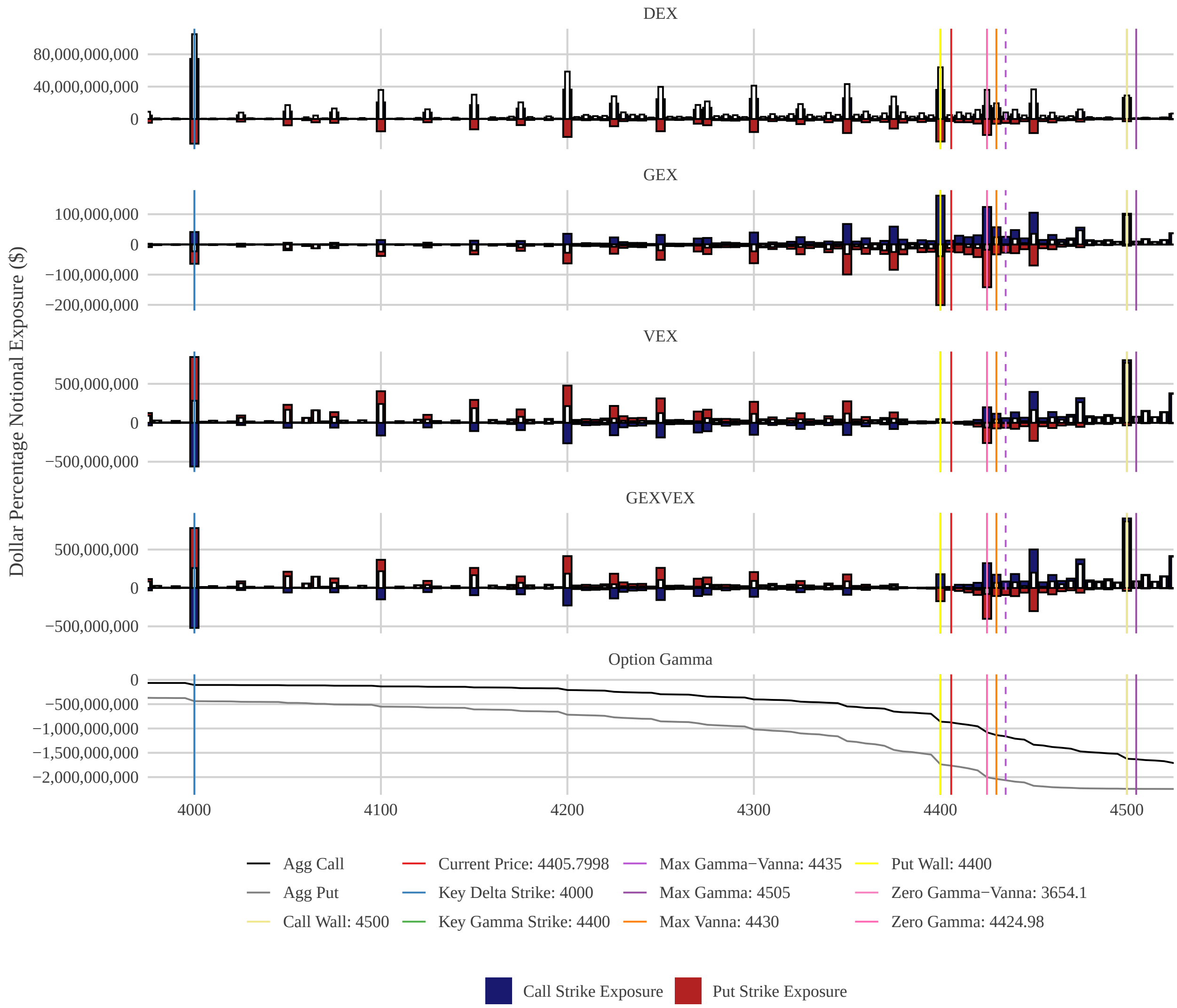
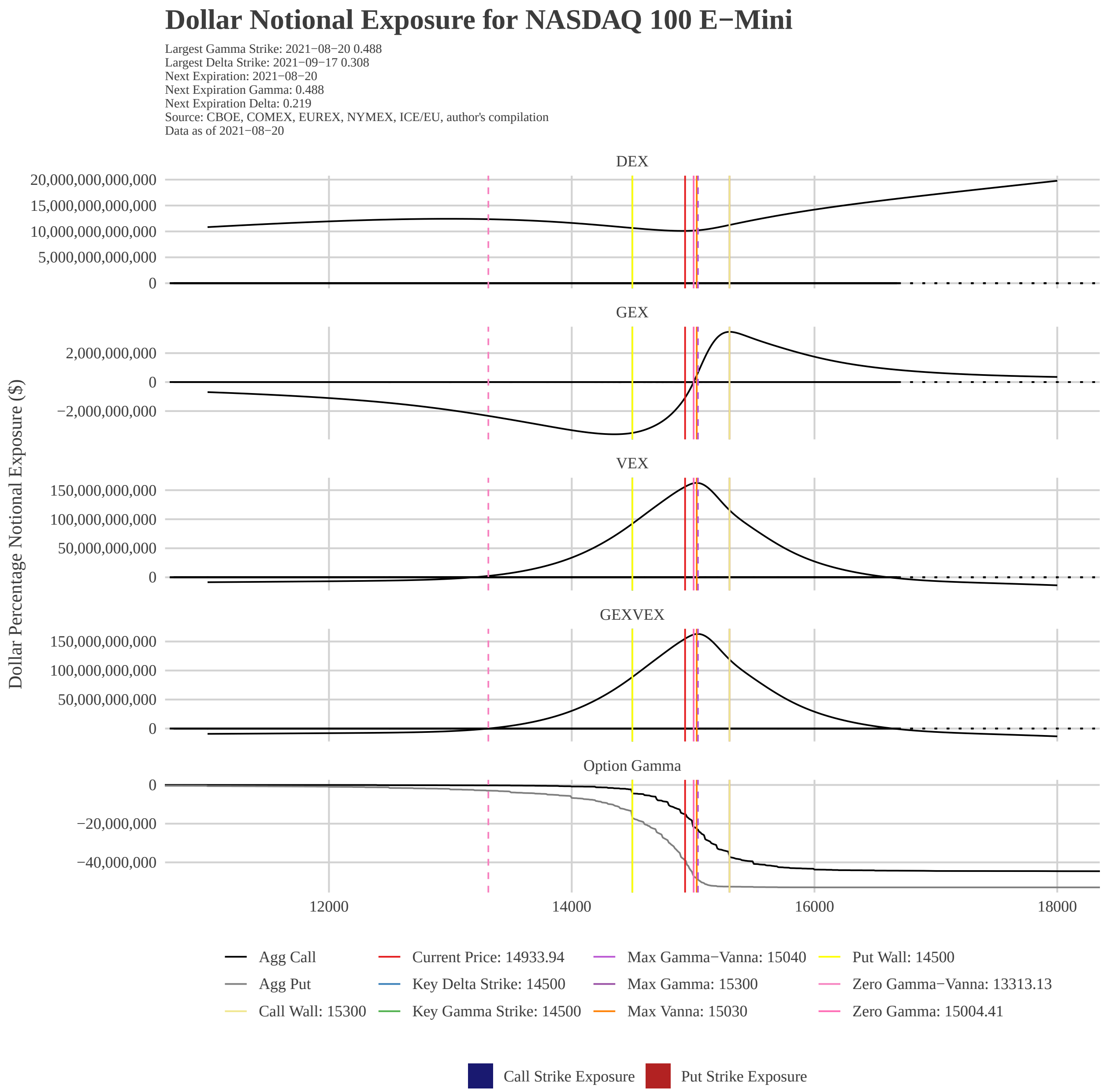
Expected price range: 4400 - 4425.

Strike Notional Exposure for SPX

Largest Gamma Strike: 2021−08−20 0.299
Largest Delta Strike: 2021−09−17 0.269
Next Expiration: 2021−08−20
Next Expiration Gamma: 0.299
Next Expiration Delta: 0.0814
Source: CBOE, COMEX, EUREX, NYMEX, ICE/EU, author's compilation
Data as of 2021−08−20



4.2 NASDAQ100



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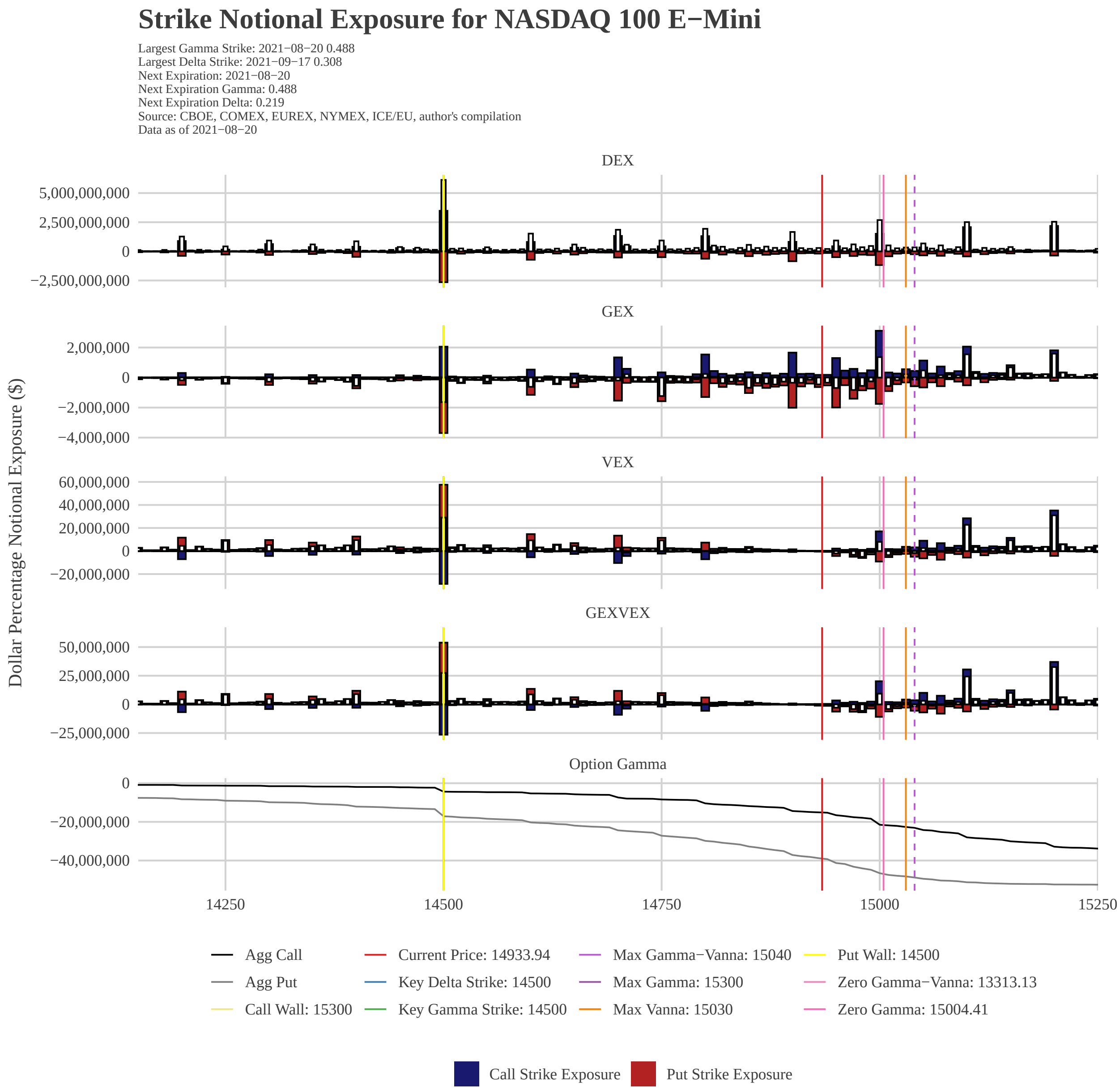
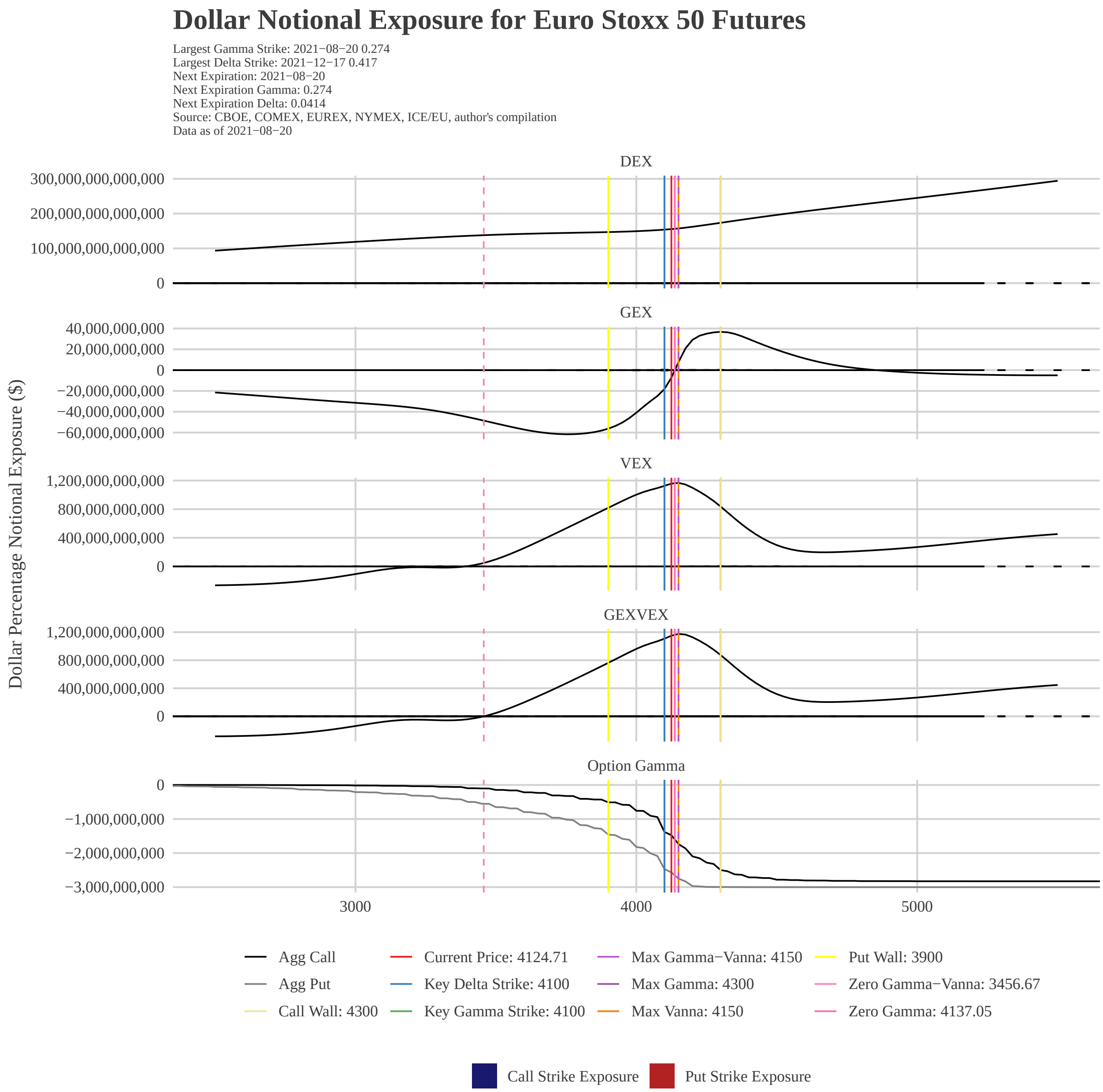


4.3 STOXX50



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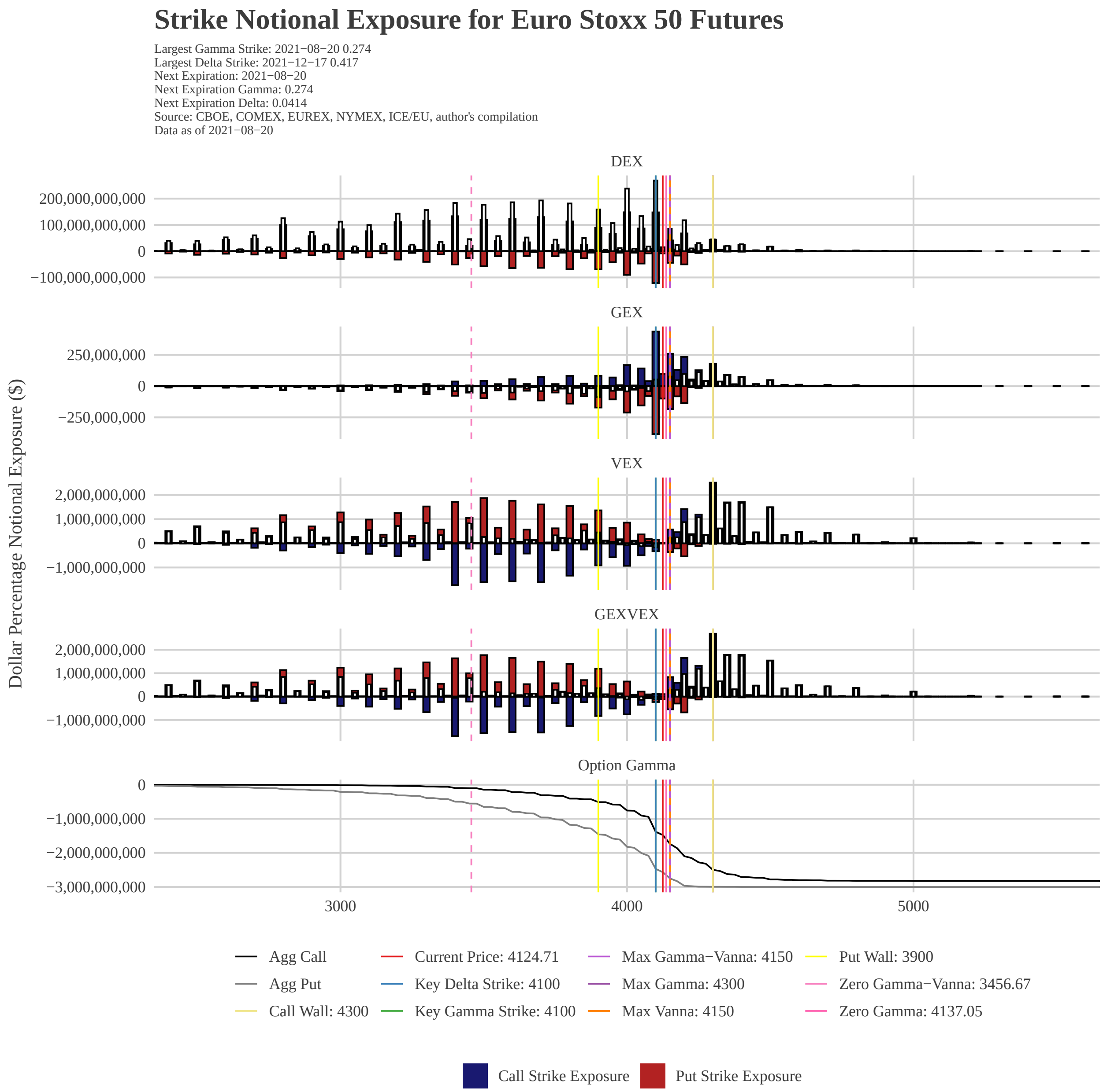
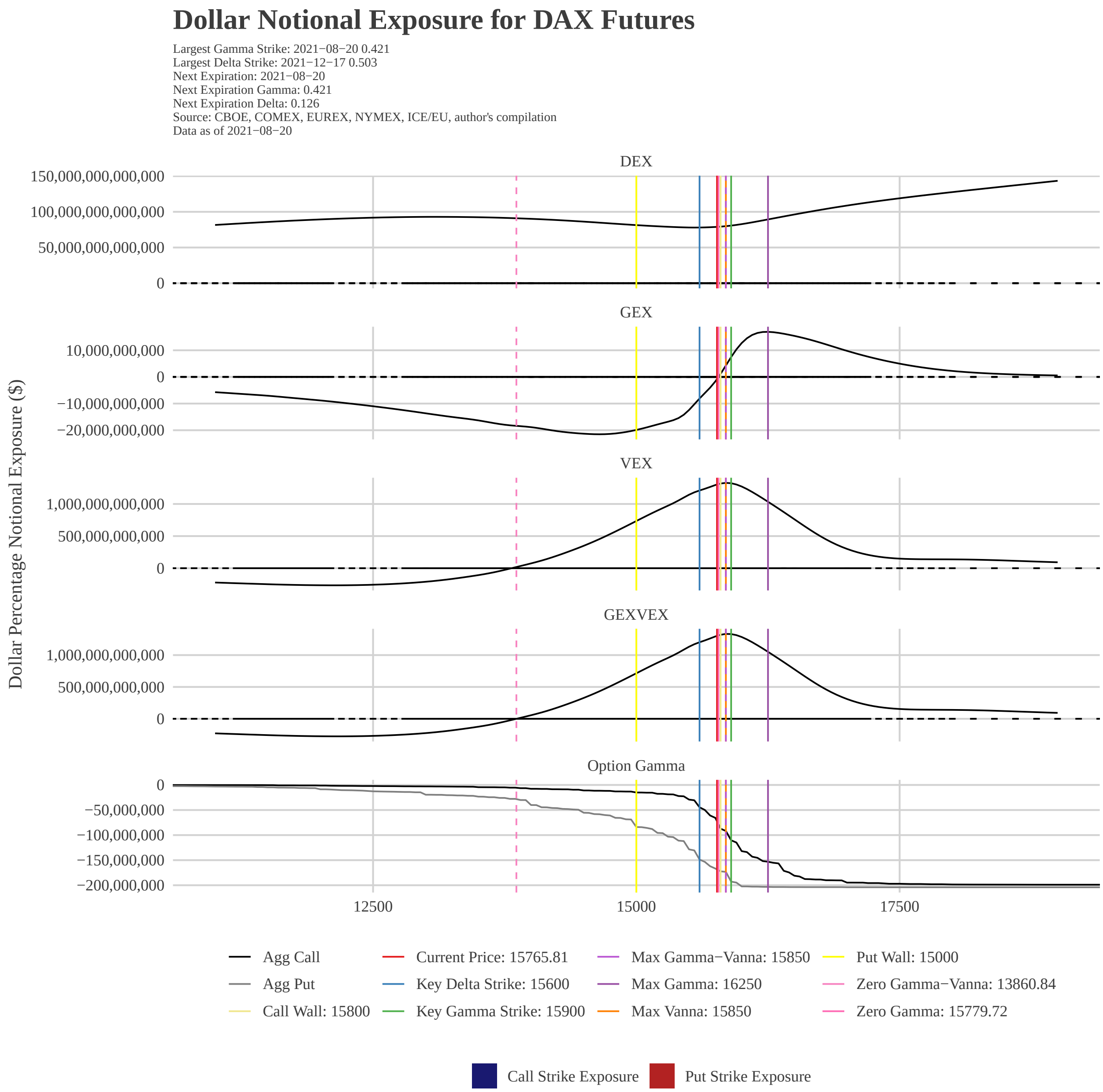
Expected price range: 4100 - 4200.



4.4 DAX



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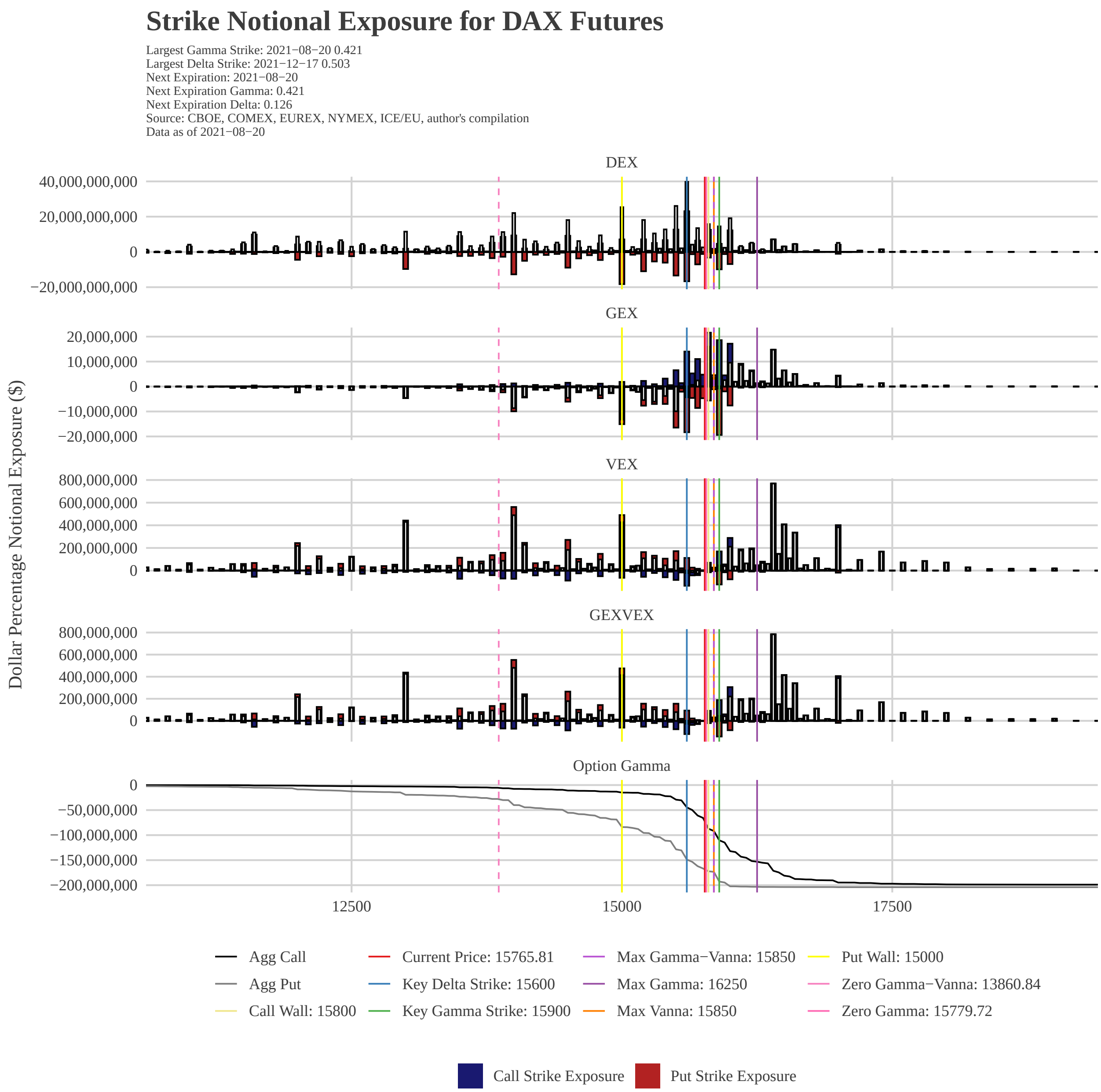
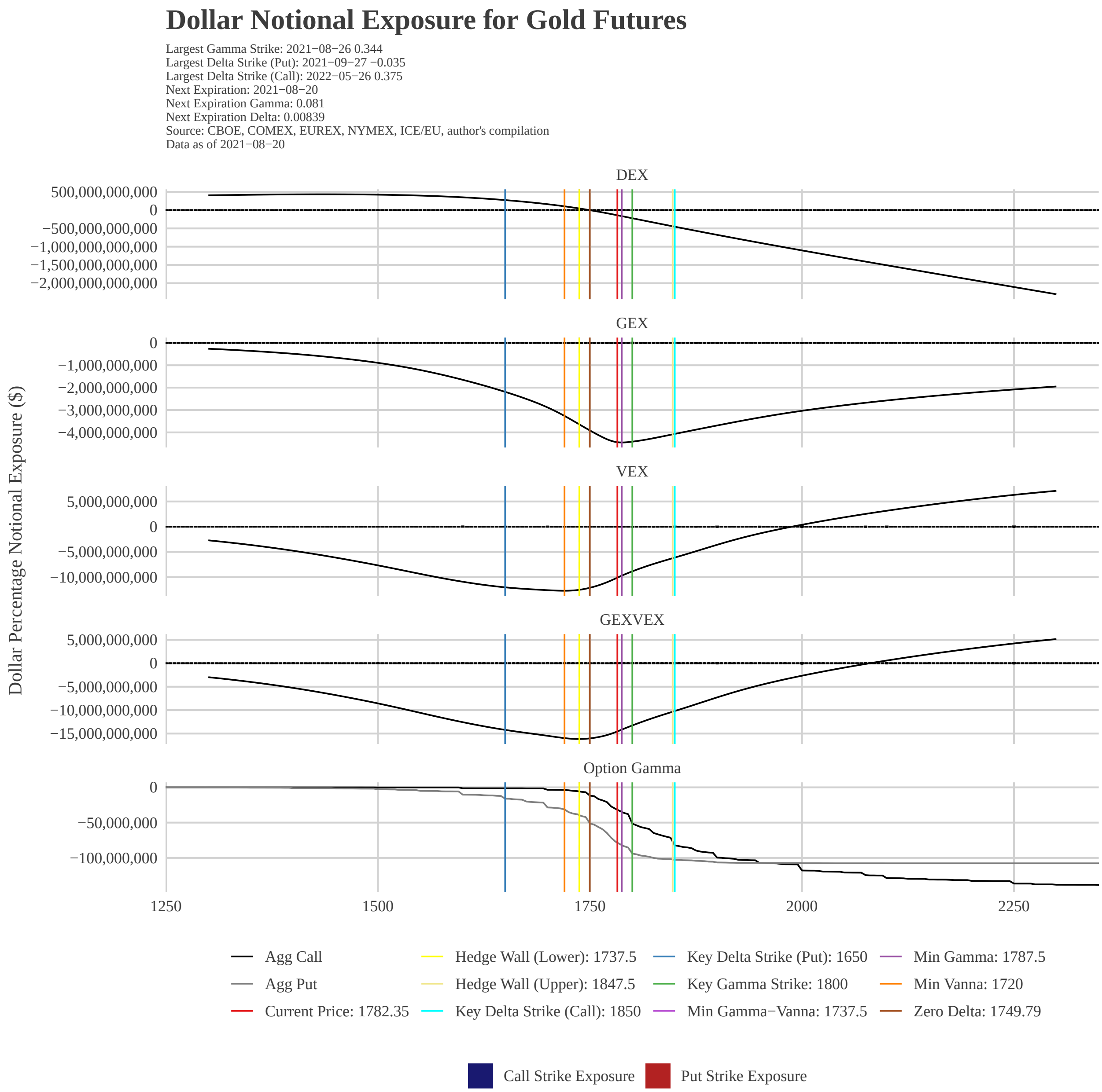
Expected price range: 15700 - 15800.



5 Commodities

5.1 Gold



Gold traded flatly. The rally in the USD to a 9.5 month high on Thursday undercut metals prices. Losses in gold were limited by the increased safe-haven demand with the sell-off in stocks

Gold remains sandwiched between a slew of gamma strikes between the 1750 and 1800 levels. This indicates that Gold can be expected to be volatile around this range, with price movements accentuated by dealer activity. Such volatile momentum needs to be triggered by a spark, which in this case, a sudden rush by investors to buy or sell Gold in significant amounts. The Zero Delta level of 1750 should act as a support, as this is the level whereby impact of dealer hedging activity on the market is minimized,

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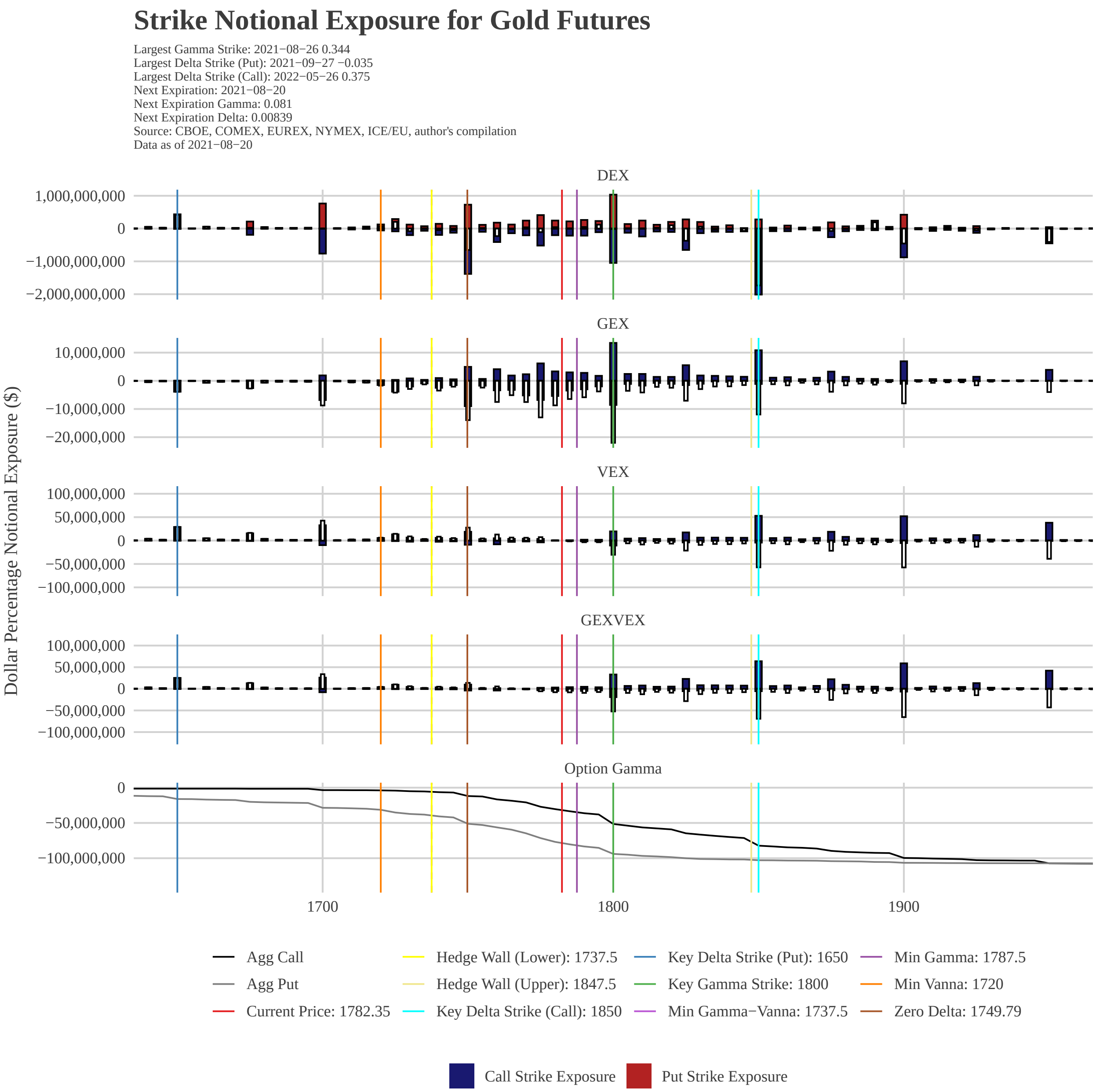
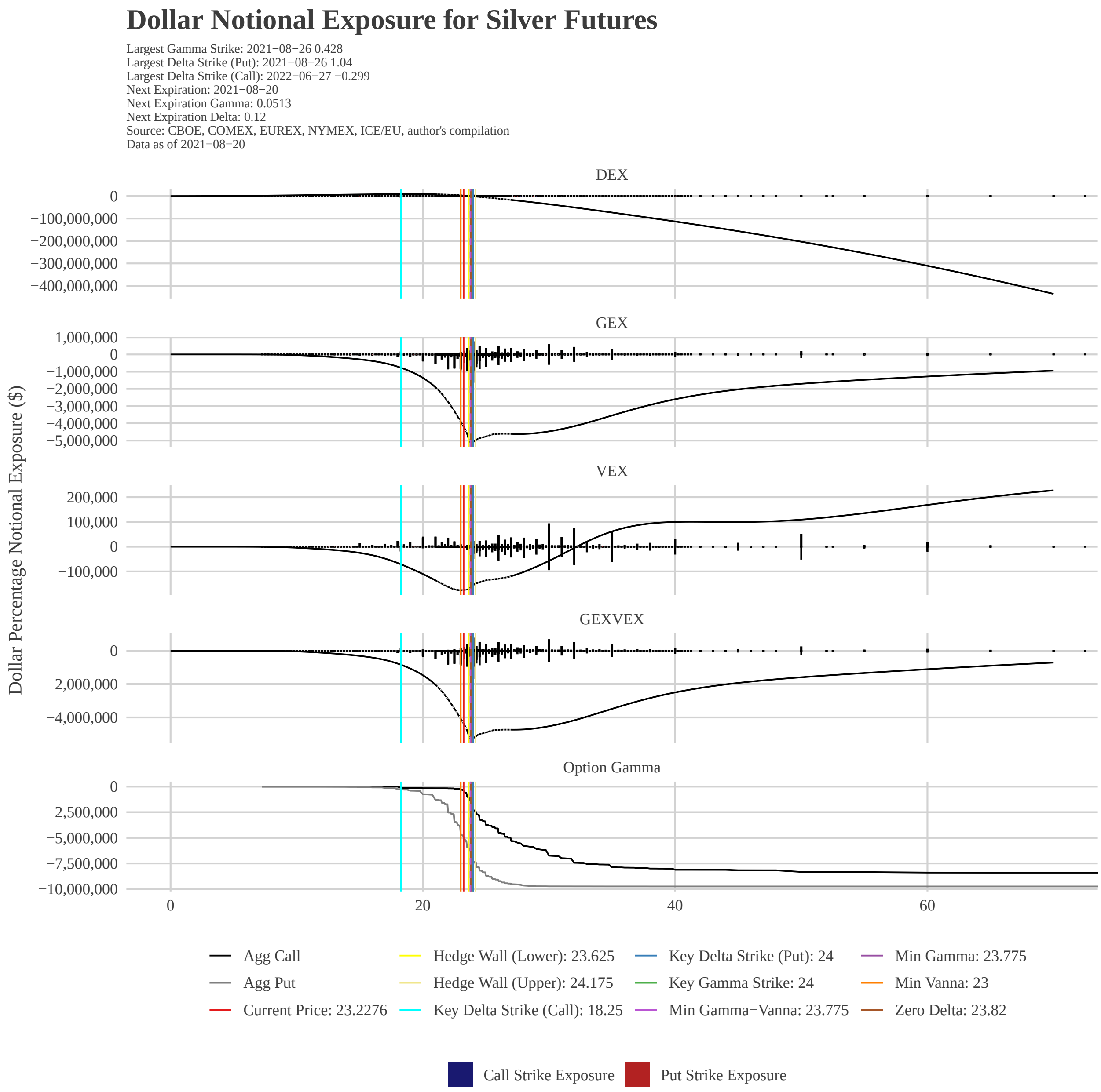
Expected price range: 1750 - 1800.



5.2 Silver



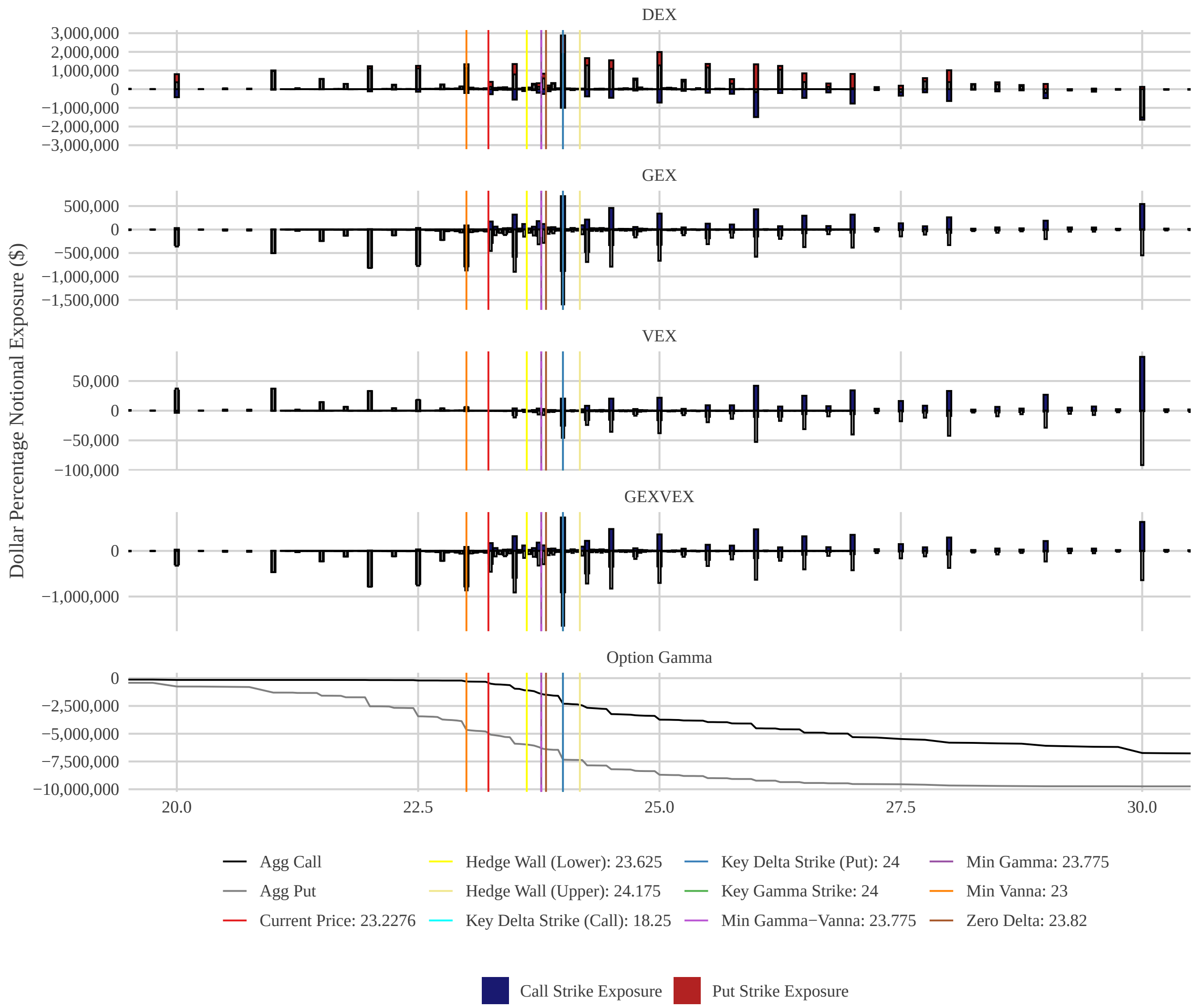
Silver was also under pressure on industrial-metal demand concerns after China took steps to curb steel production. Given that Silver is now below the Lower Hedge Wall, we expect a decrease in downside volatility for Silver.

5.13% of gamma exposure and 12% of delta exposure are set to expire today. With the relatively low percentage of gamma expiration, we expect that prices should not shift away from current levels. With a relatively low percentage of delta expiration, there should be a slight price impact. Taken together, we do not expect any material shift in Silver prices.

Expected price range: 23 - 25.

Strike Notional Exposure for Silver Futures

Largest Gamma Strike: 2021−08−26 0.428
Largest Delta Strike (Put): 2021−08−26 1.04
Largest Delta Strike (Call): 2022−06−27 −0.299
Next Expiration: 2021−08−20
Next Expiration Gamma: 0.0513
Next Expiration Delta: 0.12
Source: CBOE, COMEX, EUREX, NYMEX, ICE/EU, author's compilation
Data as of 2021−08−20



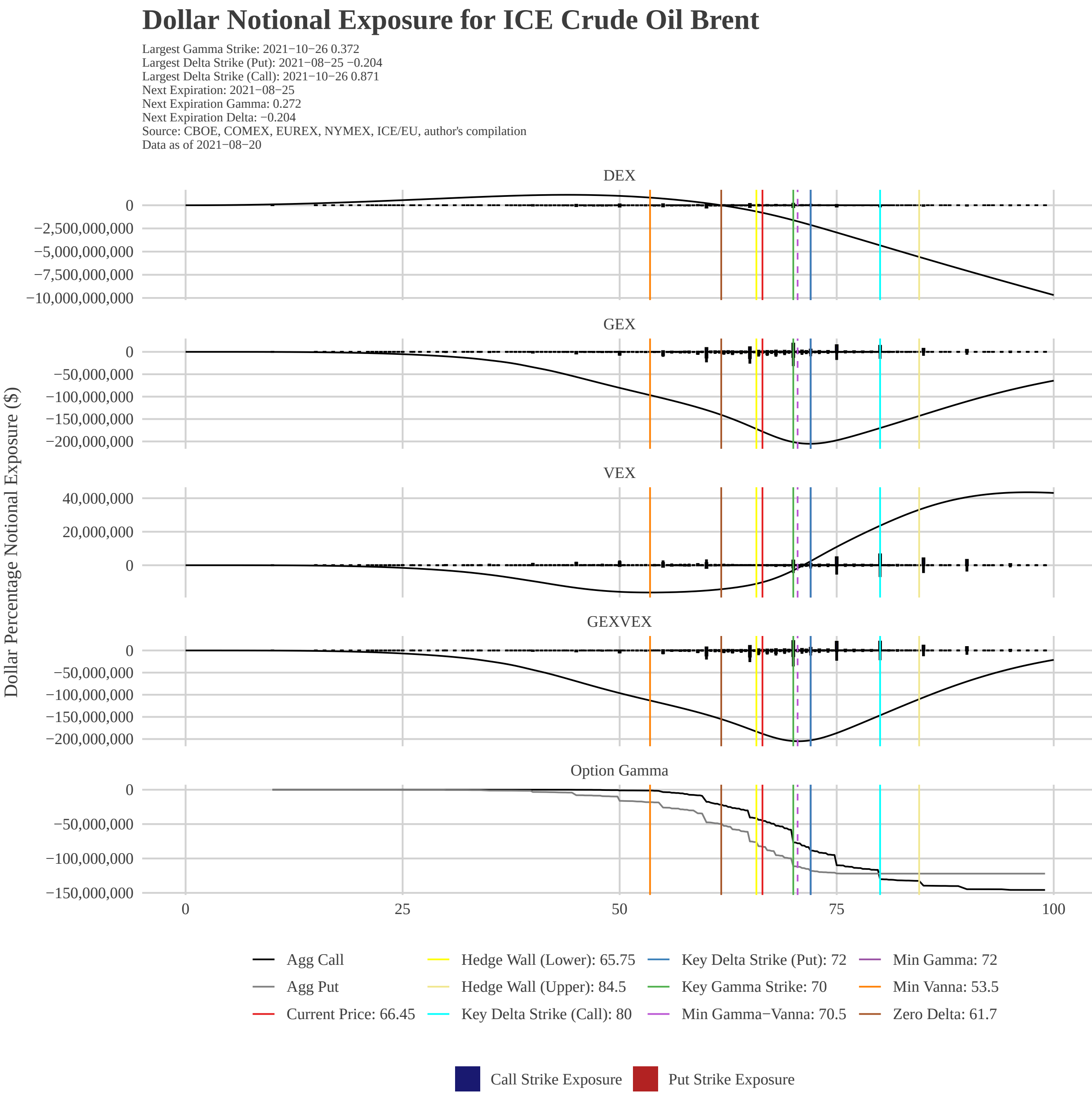
5.3 Crude Oil

The rally in the USD depressed Crude Oil prices. Crude Oil has been on a downward trend, as the Fed has signalled that it may start to reduce the level of stimulus activities. It also does not help that demand for such energy is on a downtrend, as air travel, both domestic and international, is poised to decrease in light of fresh COVID-19 lockdowns and movement restrictions.

With regards to WTI Crude, 3.45% of gamma exposure and -1.74% of delta exposure are set to expire today. With the relatively low percentage of gamma expiration, we expect that prices should not shift away from current levels. With a relatively low absolute percentage of delta expiration, there should be a slight price impact. Taken together, we do not expect any material shift in WTI Crude prices.

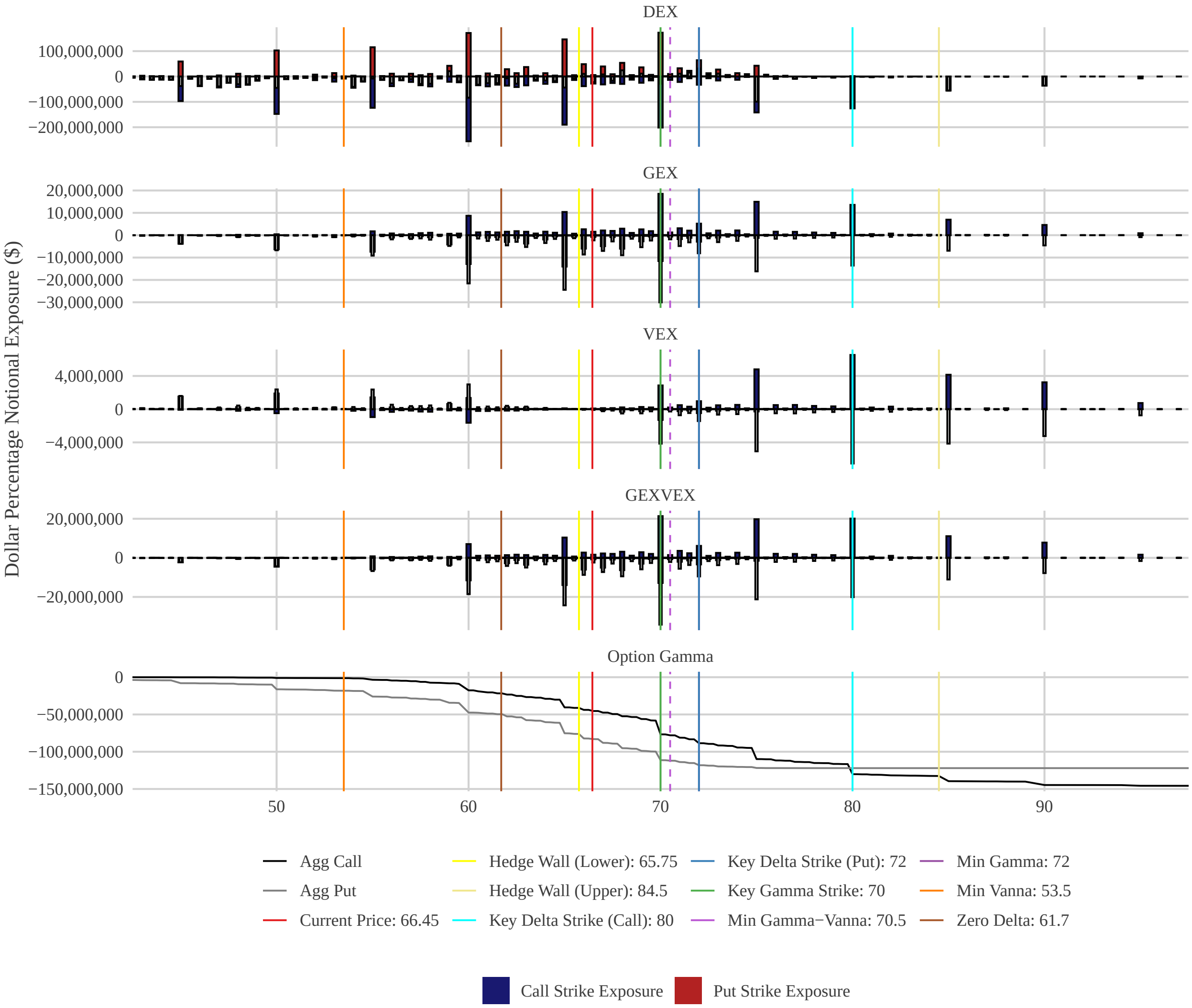
Expected price range: 62.5 - 70.

5.3.1 Brent

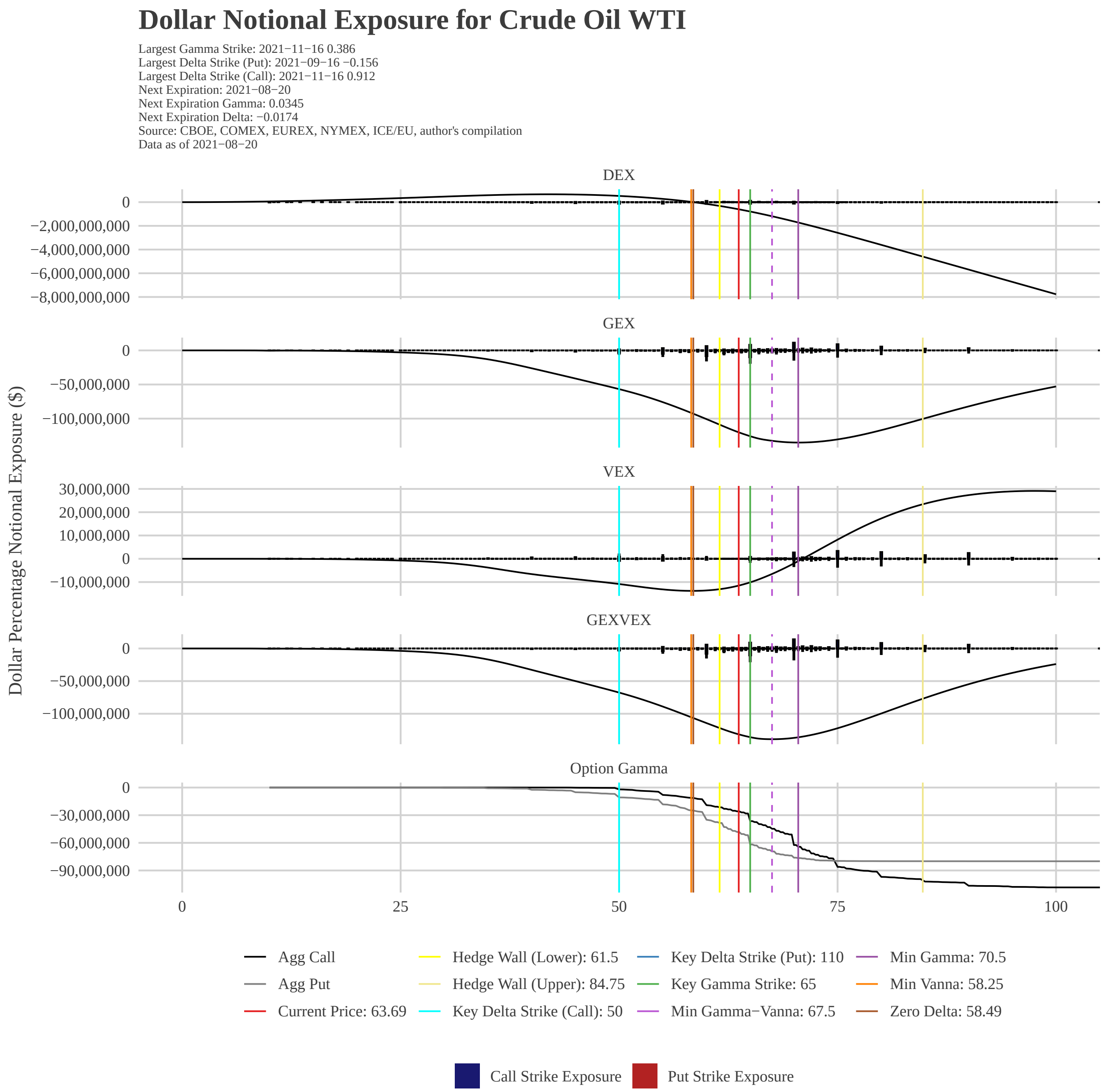

Dollar Notional Exposure for ICE Crude Oil Brent
Largest Gamma Strike: 2021−10−26 0.372
Largest Delta Strike (Put): 2021−08−25 −0.204
Largest Delta Strike (Call): 2021−10−26 0.871
Next Expiration: 2021−08−25
Next Expiration Gamma: 0.272
Next Expiration Delta: −0.204
Source: CBOE, COMEX, EUREX, NYMEX, ICE/EU, author's compilation
Data as of 2021−08−20
DEX
GEX
VEX
GEXVEX
Option Gamma
Dollar Percentage Notional Exposure ($)
Agg Call
Agg Put
Current Price: 66.45
Hedge Wall (Lower): 65.75
Hedge Wall (Upper): 84.5
Key Delta Strike (Call): 80
Key Delta Strike (Put): 72
Key Gamma Strike: 70
Min Gamma−Vanna: 70.5
Min Gamma: 72
Min Vanna: 53.5
Zero Delta: 61.7
Call Strike Exposure
Put Strike Exposure

Strike Notional Exposure for ICE Crude Oil Brent

Largest Gamma Strike: 2021−10−26 0.372
Largest Delta Strike (Put): 2021−08−25 −0.204
Largest Delta Strike (Call): 2021−10−26 0.871
Next Expiration: 2021−08−25
Next Expiration Gamma: 0.272
Next Expiration Delta: −0.204
Source: CBOE, COMEX, EUREX, NYMEX, ICE/EU, author's compilation
Data as of 2021−08−20

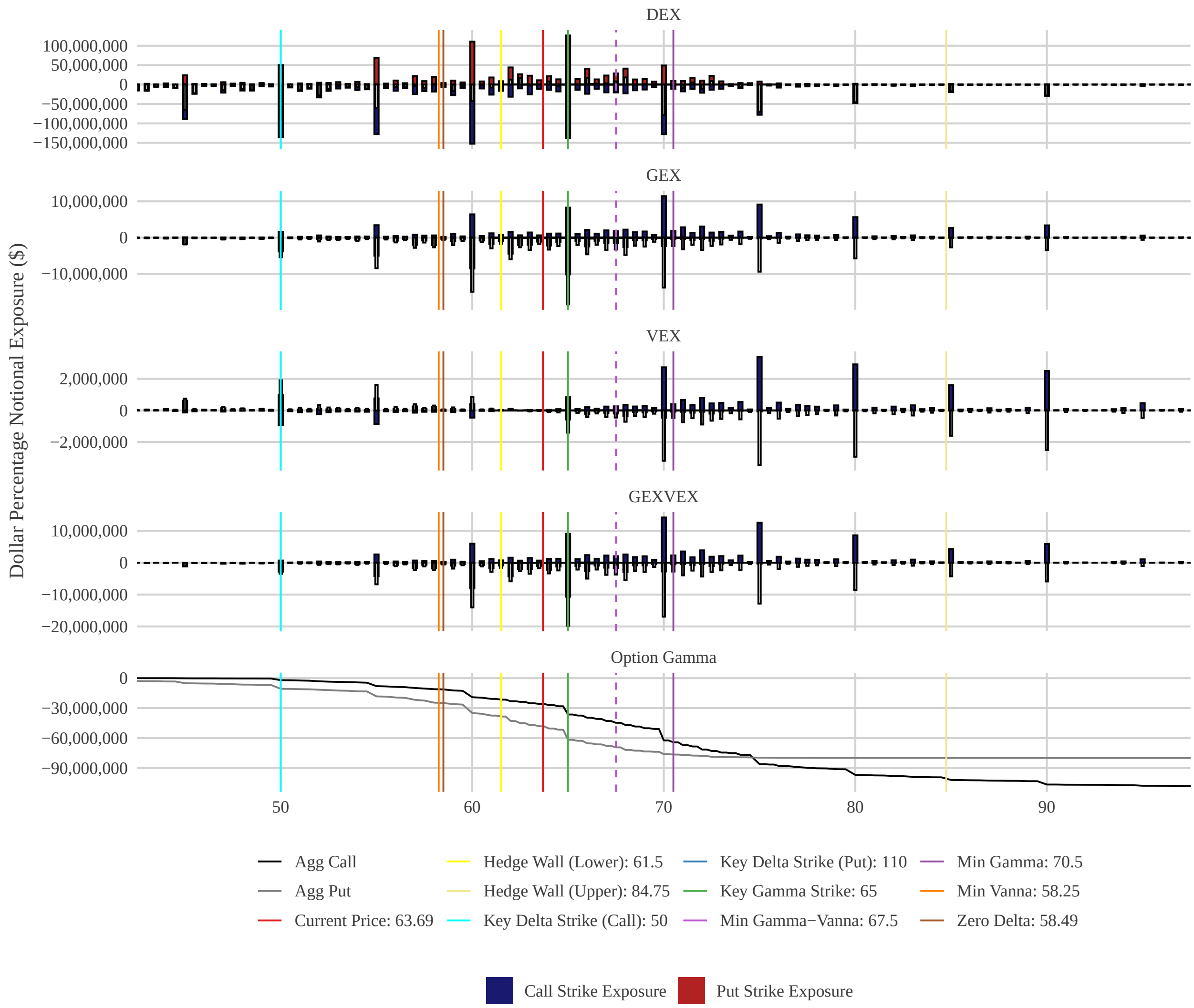


5.3.2 West Texas Intermediate (WTI)



Strike Notional Exposure for Crude Oil WTI

Largest Gamma Strike: 2021−11−16 0.386
Largest Delta Strike (Put): 2021−09−16 −0.156
Largest Delta Strike (Call): 2021−11−16 0.912
Next Expiration: 2021−08−20
Next Expiration Gamma: 0.0345
Next Expiration Delta: −0.0174
Source: CBOE, COMEX, EUREX, NYMEX, ICE/EU, author's compilation
Data as of 2021−08−20



6 Appendix

6.1 Introduction to Options

A derivative is an investment instrument whose investment value is dependent on an underlying investment. Options are a form of derivative instrument that allows investors to engage in investing, speculating, and risk management activities. Options give market participants the right to purchase and sell the underlying security, or to deliver and receive the underlying security, at a predetermined price, which is also known as the Strike price. Each option has an expiration date, by which the holder of the option must decide whether to exercise the option.

A Call Option gives the holder the right to buy the underlying at the strike price, while a Put Option gives the holder the right to sell the underlying at the strike price. Accordingly, the seller of a Call Option has the obligation to deliver the underlying at the strike price, while the seller of a Put option has the obligation to receive the underlying at the strike price. Whether the holders of the options would exercise their rights, and whether the sellers of the options would be obligated, depends on the moneyness of the option.

An Out-of-the-Money (OTM) option would not be exercised by options holders, as they would be better off by transacting in the underlying directly. For instance, if a Call Option has a Strike of 100, and the underlying is at 90, it would be better for the investor to directly purchase the underlying at 90, rather than to exercise the right to purchase the underlying at 100. If a Put Option has a Strike of 100, and the underlying is at 110, it would be better for the investor to directly sell the underlying at 110, rather than to exercise the right to sell the underlying at 100. Accordingly, such options would have little value.

An In-the-Money (ITM) option would generally be exercised by options holders, as they would not be better off by transacting in the underlying directly. For instance, if a Call Option has a Strike of 100, and the underlying is at 110, it would be better for the investor to exercise the right to purchase the underlying at 100, rather than to directly purchase the underlying at 11. If a Put Option has a Strike of 100, and the underlying is at 90, it would be better for the investor to exercise the right to sell the underlying at 100, rather than to directly sell the underlying at 90. Accordingly, ITM options would have greater value than an OTM option.

The value of an option is influenced by many factors. The more pertinent factors are the price of the underlying, the strike price, the volatility of the underlying, and the time to expiration.

6.2 Quantifying Dealer Market Exposure

For market indices, dealers are assumed to be long call options, and short put options. For single-name indices, dealers are assumed to be short call options, and short put options.

For single-name indices, call gamma strike exposure and vanna strike exposure are assigned positive numbers, and put gamma strike exposure and vanna strike exposure are assigned negative numbers.

Dealers are generally exposed to three kinds of exposures: Delta, Gamma, and Vanna. Delta exposure refers to the value of the hedge that dealers are notionally exposed to, at a particular strike price. It is the dollar notional amount that dealers are holding or selling in order to remain protected (against small price movements).

What is of greater interest are the gamma and vanna exposures. Gamma exposure refers to the rate of change of the value of the hedge that dealers are notionally exposed to, with respect to changes in the underlying price. It measures the sensitivity of the delta notional exposure to changes in the underlying price. The metric utilized to assess dealer gamma exposure is known as Total Gamma Exposure (GEX). The rate of change of GEX can be denominated in per unit points, or percentage points.

Vanna exposure refers to the rate of change of the value of the hedge that dealers are notionally exposed to, with respect to changes in the volatility of the underlying. It measures the sensitivity of the delta notional exposure to changes in the volatility of the underlying. The metric utilized to assess dealer gamma exposure is known as Total Vanna Exposure (VEX). The rate of change of VEX can be denominated in per unit points, or percentage points.

6.3 Making Inferences

A high GEX indicates heightened dealer hedging activity, whereas a low GEX indicates subdued dealer hedging activity. A high GEX implies that dealers must purchase or sell a greater amount of the underlying in order to be protected against small price movements, while a low GEX implies that dealers must purchase or sell a lesser amount of the underlying in order to be protected against small price movements.

A positive GEX indicates that dealers would have to sell the underlying as the underlying price increases, and to buy the underlying as the underlying price decreases. Accordingly, a positive GEX indicates relative market calmness and tempered volatility, as dealer selling activity would put downward pressure on market highs, and dealer buying activity would put upward pressure on market lows. Expected market trading ranges can then be inferred.

A negative GEX indicates that dealers would have to sell the underlying as the underlying price decreases, and to buy the underlying as the underlying price increases. Accordingly, a negative GEX indicates relative market aggressiveness and heightened volatility, as dealer selling activity would put further downward pressure on market lows, and dealer buying activity would put further upward pressure on market highs. Expected market momentum and volatility can then be inferred. A high VEX indicates a heightened additional adjustment to the delta notional exposure for a given change in volatility, while a low VEX indicates a subdued additional adjustment to the delta notional exposure for a given change in volatility.

A positive VEX indicates that dealers would have to sell the underlying as the volatility of the underlying price increases, and to buy the underlying as the volatility of the underlying price decreases.

A negative VEX indicates that dealers would have to buy the underlying as the volatility of the underlying price increases, and to sell the underlying as the volatility of the underlying price decreases.

If GEX is positive, and if markets are experiencing decreasing volatility, a positive VEX, which induces buying activity of the underlying, tempers and subdues the selling activity of a positive GEX. This is usually the case for a market uptrend. If markets are experiencing increasing volatility, a positive VEX, which induces selling activity of the underlying, tempers and subdues the buying activity of a positive GEX. This is usually the case for a market downtrend. Expected market trading ranges can then be inferred.

If GEX is negative, and if markets are experiencing decreasing volatility, a positive VEX, which induces buying activity of the underlying, amplifies the buying activity of a negative GEX. This is usually the case for a sharp upward rebound in the market. If markets are experiencing increasing volatility, a positive VEX, which induces selling activity of the underlying, amplifies the selling activity of a negative GEX. This is usually the case for large downward spirals in the market, until the volatility of the underlying can no longer increase further. Expected market momentum and volatility can then be inferred.

The charts show the calculated distributions of DEX, GEX, VEX, and GEXVEX across different underlying prices, and the distributions of call and put gamma at each strike level (for plotting purposes, calls are given positive gamma, puts are given negative gamma). The net effect is also shown. The aggregated option gamma exposure for calls and puts indicates the volatility profile, and market sentiment of the underlying. Key price levels are indicated, and those serve as important price levels to be wary of.

For market indices, call delta strike exposure are assigned positive numbers, put delta strike exposure are assigned negative numbers, and call option gamma are assigned negative numbers for plotting purposes.

For single-name indices, call gamma strike exposure and vanna strike exposure are assigned positive numbers, and put gamma strike exposure and vanna strike exposure are assigned negative numbers for plotting purposes.

6.4 Key Price Levels

6.4.1 Market Indices

Zero Gamma: The Zero Gamma level is the price whereby there is zero dealer gamma notional exposure. At this level, expected dealer hedging activity is zero. This is a crucial level whereby dealer hedging activity may swing from suppressing volatility to exacerbating volatility, and it therefore acts as a major pivot point; large underlying price drawdowns may be observed if the underlying price crosses below this level, and it acts as a support level if the underlying price approaches this level.

Max Gamma: The Max Gamma level is the price at which dealer hedging activity due to changes in the underlying price is at the maximum. It serves as a major pinning point if the underlying is trading near that level.

Max Vanna: The Max Vanna level is the price at which dealer hedging activity due to changes in the volatility of the underlying is at the maximum. It serves as a major pivot point for the underlying, whereby the price movement of the underlying is most affected, and contingent on the volatility trend of the underlying.

Key Delta Strike: The Key Delta Strike level is the strike price whereby there is the largest positive delta notional position. It is the level whereby there is the highest level of dealer call and put delta. Downward price trends may be reversed upon expiration of this delta notional position. It serves as a support or resistance level for the underlying.

Key Gamma Strike: The Key Gamma Strike level is the strike price whereby there is the largest total gamma notional position. It is the strike price whereby there is heightened dealer hedging activity, and hence there should be heightened dealer influence in the underlying. It serves as a support or resistance level for the underlying.

Call Wall: The Call Wall level is the strike price whereby there is the largest net positive gamma notional position. It indicates the market sentiment and expectation of the upper limit of the underlying, should the underlying trend upwards. It serves as a major resistance point. If this level moves higher, it indicates a bullish sentiment whereby the upward run is not overextended. If this level moves lower, it indicates a bearish sentiment whereby the upward run is overextended.

Put Wall: The Call Wall level is the strike price whereby there is the largest net negative gamma notional position. It indicates the market sentiment and expectation of the lower limit of the underlying, should the underlying trend downwards. It serves as a major pivot point. If this level moves higher, it indicates a bearish sentiment whereby more market participants are seeking greater downside protection. If this level moves lower, it indicates a bullish sentiment whereby more market participants are seeking lower downside protection

6.4.2 Single-name Indices

Key Delta Strike (Put): The Key Delta Strike (Put) level is the strike price whereby there is the largest positive net delta notional position. If the strike is above the price of the underlying, downward price trends may be reversed upon expiration of this delta notional position. It serves as a support or resistance level for the underlying.

Key Delta Strike (Call): The Key Delta Strike (Call) level is the strike price whereby there is the largest negative net delta notional position. If the strike is below the price of the underlying, upward price trends may be reversed upon expiration of this delta notional position. It serves as a support or resistance level for the underlying.

Key Gamma Strike: The Key Gamma Strike level is the strike price whereby there is the largest total gamma notional position. It is the strike price whereby there is heightened dealer hedging activity, and hence there should be heightened dealer influence in the underlying. It serves as a support or resistance level for the underlying.

Zero Delta: The Zero Delta level is the price whereby there is zero dealer delta notional exposure. It serves as a pivot point for the underlying, whereby the impact of dealer hedging activity on the market is minimized.

Lower Hedge Wall: The Lower Hedge Wall level is the price whereby downside gamma exposure starts to decrease. It serves as a price level whereby downside market volatility may reduce.

Upper Hedge Wall: The Lower Hedge Wall level is the price whereby upside gamma exposure starts to decrease. It serves as a price level whereby upside market volatility may reduce.

Min Vanna: The Min Vanna level is the price at which dealer hedging activity due to changes in the volatility of the underlying is at the maximum. It serves as a major pivot point for the underlying, whereby the price movement of the underlying is most affected, and contingent on the volatility trend of the underlying.

GEXVEX aggregates the effects of Gamma and Vanna.