

# PromiseLand



## PromiseLand's Market Commentaries

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## Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Concise Summary</b>	<b>4</b>
2.1	S&P500 . . . . .	4
2.2	NASDAQ . . . . .	4
2.3	STOXX50 . . . . .	4
2.4	DAX . . . . .	4
2.5	Gold . . . . .	4
2.6	Silver . . . . .	5
2.7	Crude Oil . . . . .	5
<b>3</b>	<b>Market Price Levels</b>	<b>6</b>
<b>4</b>	<b>Market Indices</b>	<b>8</b>
4.1	S&P500 . . . . .	8
4.2	NASDAQ . . . . .	10
4.3	STOXX50 . . . . .	12
4.4	DAX . . . . .	14
<b>5</b>	<b>Commodities</b>	<b>16</b>
5.1	Gold . . . . .	16
5.2	Silver . . . . .	18
5.3	Crude Oil . . . . .	20
<b>6</b>	<b>Appendix</b>	<b>25</b>
6.1	Introduction to Options . . . . .	25
6.2	Quantifying Dealer Market Exposure . . . . .	26
6.3	Making Inferences . . . . .	27
6.4	Key Price Levels . . . . .	28



# 1 Introduction

Option positions in the options markets on indices and equities can be used to infer market movements and sentiments. The counterparties 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.



## 2 Concise Summary

### 2.1 S&P500

The performance of US stock indices on Thursday was a modest one, with the S&P500 Index, NASDAQ100, and Dow Jones registering positive returns.

The S&P500 Index closed with a return of 0.6%. Fresh economic data in the form of continuing jobless claims hitting a new COVID-19 pandemic era low of below three million has been viewed as a positive sign of longer-term labour conditions. Initial jobless claims for the week ending 31 July stands at 385,000. This level is in line with estimates.

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 4450.

**Expected trading range: 4400 - 4450.**

### 2.2 NASDAQ

The NASDAQ registered a return of 0.65%. Price levels attained their all time highs on Thursday, as a result of generally strong second quarter corporate earnings.

The Key Gamma Strike has shifted from 15000 to 15200, which indicates general bullish sentiment. Going into Friday, we expect price levels to remain pinned to the 15200 level.

**Expected trading range: 15150 - 15200.**

### 2.3 STOXX50

The STOXX50 registered a return of 0.39%. The STOXX50 has done admittedly well for the week, as a result of strong corporate earnings from big name companies, such as Siemens. This materialized in the backdrop of rising cases of the COVID-19 Delta variant (yet again).

**Expected trading range: 4100 - 4200.**

### 2.4 DAX

The DAX concluded the Thursday trading day with a return of 0.33%. The performance can be attributed to gains in the Software, Industrials, and Insurance sectors.

The DAX has crossed over into positive gamma territory, which indicates subdued volatility. There is still a great deal of protection bought by investors, as indicated by the massive put option gamma. This may signal that we are not out of the woods yet.

**Expected trading range: 15710 - 15800.**

### 2.5 Gold

The mild rally of stocks has crimped the return for Gold, in the form of waning appeal for Gold as a safe-haven. The 10-Year Treasury note also crept upwards, which weighed in on Gold Prices. Nevertheless, Gold still remains as a reliable safe-haven support from uncertainties stemming from the more COVID-19 Delta variant.



We anticipate the Lower Hedge Wall and Key Gamma Strike of 1800 to be a reliable support for Gold. If Gold breaches this support, any further downside volatility should be reduced.

**Expected trading range: 1800 - 1810.**

## 2.6 Silver

Silver is still trading within a range. There has been no material news thus far. The price level of 25 should act as a support.

**Expected trading range: 25 - 25.5.**

## 2.7 Crude Oil

Both WTI and Brent closed higher, as the rally in stocks may be indicative of a brighter economic outlook, which is positive for energy demand.

Other positive news include signs of US fuel demand returning to normalcy, with the US Department of Transport reporting that distance driven on US highways in the seven days ending August 1 was 17 billion miles. Such levels are close to the similar week in 2019, before the existence of COVID-19.

There is also an increase in Middle-East tensions whereby Israeli Defense Minister Gantz on Thursday said that Israel is prepared to attack Iran for a drone attack on an Israeli oil tanker last week in the Gulf of Oman, which helped buoy the price of oil upwards.

**Expected trading range: Above 70.**



### 3 Market Price Levels

Table 1: Key Price Levels for Market Indices

	S&P500	NASDAQ	STOXX50	DAX
Current Price	4429.10	15181.64	4161.08	15744.67
Previous Price	4402.66	15083.39	4144.90	15692.13
Return	0.00599	0.00649	0.00390	0.00334
Call Wall	4450	15200	4200	16100
Key Delta Strike	4000	14500	4100	15600
Key Gamma Strike	4400	15200	4100	15600
Max Gamma Vanna	4390	15050	4125	15750
Max Gamma	4475	15350	4275	16400
Max Vanna	4380	15040	4100	15750
Put Wall	4100	14000	3900	15000
Zero Gamma Vanna	3627.05	13107.45	3303.54	13870.43
Zero Gamma	4384.10	15025.20	4086.67	15713.72

Table 2: Key Dates for Market Indices

	S&P500	NASDAQ	STOXX50	DAX
Largest Gamma Strike Date	2021-09-17	2021-08-06	2021-12-17	2021-08-20
Largest Gamma Strike	0.220	0.293	0.276	0.362
Largest Delta Strike Date	2021-09-17	2021-09-17	2021-12-17	2021-12-17
Largest Delta Strike	0.266	0.280	0.426	0.526
Next Expiration Date	2021-08-06	2021-08-06	2021-08-20	2021-08-20
Next Expiration Gamma	0.151	0.293	0.231	0.362
Next Expiration Delta	0.0196	0.0762	0.0480	0.1380



Table 3: Key Price Levels for Single-name Indices

	Gold Futures	Silver Futures	ICE Crude Oil Brent	Crude Oil WTI
Current Price	1799.5600	25.1045	71.2900	69.1000
Previous Price	1811.59	25.37	70.38	68.15
Return	-0.00666	-0.00925	0.01280	0.01380
Hedge Wall (Lower)	1800.000	24.775	51.250	63.750
Hedge Wall (Upper)	1812.500	25.475	86.250	81.500
Key Delta Strike (Call)	1850.00	18.25	75.00	50.00
Key Delta Strike (Put)	1650	24	35	110
Key Gamma Strike	1800	25	70	70
Min Gamma Vanna	1742.500	25.325	71.000	70.250
Min Gamma	1805.000	25.325	74.250	71.750
Min Vanna	1737.50	24.75	53.75	58.75
Zero Delta	1755.37	24.67	61.29	59.82

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	2021-08-17
Largest Gamma Strike	0.313	0.416	0.366	0.394
Largest Delta Strike Date (Put)	2021-08-06	2021-08-26	2021-11-24	2021-08-06
Largest Delta Strike (Put)	-0.02300	-0.43700	-0.00247	-0.00519
Largest Delta Strike Date (Call)	2022-05-26	2021-11-25	2021-10-26	2021-11-16
Largest Delta Strike (Call)	0.294	0.670	0.633	0.582
Next Expiration Date	2021-08-06	2021-08-06	2021-08-25	2021-08-06
Next Expiration Gamma	0.1340	0.1790	0.2920	0.0282
Next Expiration Delta	-0.02300	-0.12800	0.03360	-0.00519

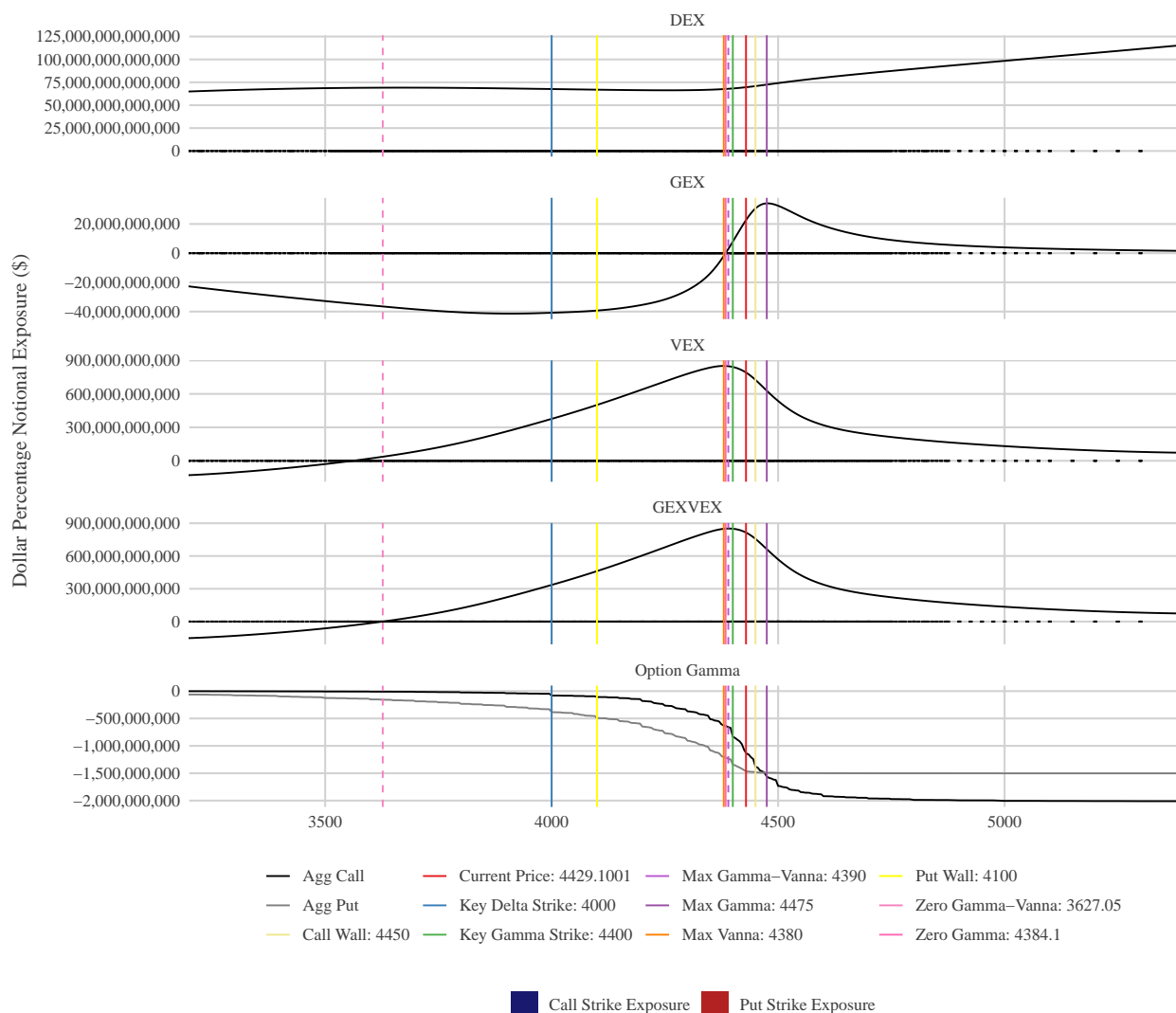


## 4 Market Indices

### 4.1 S&P500

#### Dollar Notional Exposure for SPX

Largest Gamma Strike: 2021-09-17 0.22  
Largest Delta Strike: 2021-09-17 0.266  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.151  
Next Expiration Delta: 0.0196  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06



The performance of US stock indices on Thursday was a modest one, with the S&P500 Index, NASDAQ100, and Dow Jones registering positive returns.

The S&P500 Index closed with a return of 0.6%. Fresh economic data in the form of continuing jobless claims hitting a new COVID-19 pandemic era low of below three million has been viewed as a positive sign of longer-term labour conditions. Initial jobless claims for the week ending 31 July stands at 385,000. This level is in line with estimates.

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 in-



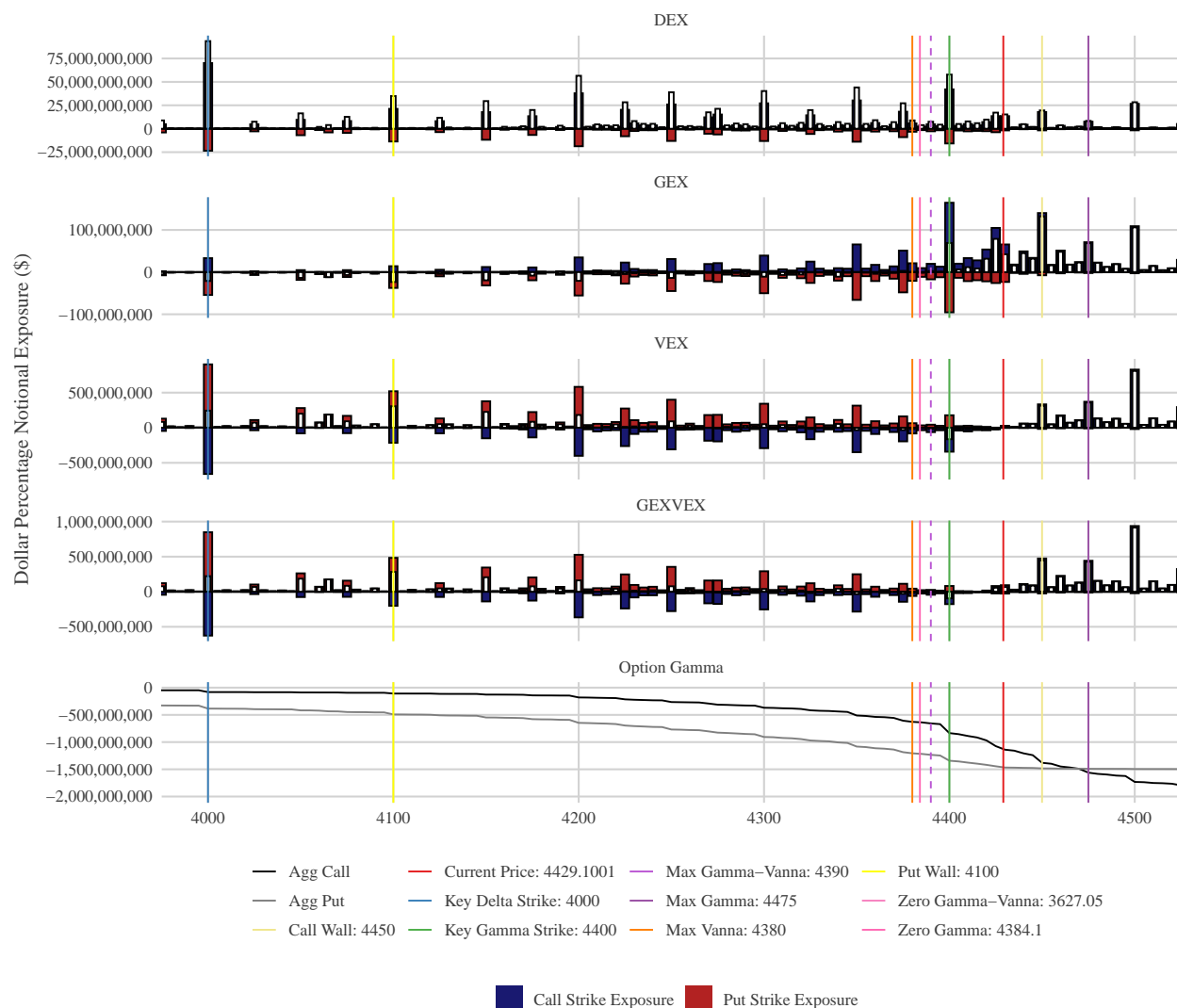


vestors are targeting a top upside potential remains at 4450.

**Expected trading range: 4400 - 4450.**

### Strike Notional Exposure for SPX

Largest Gamma Strike: 2021-09-17 0.22  
Largest Delta Strike: 2021-09-17 0.266  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.151  
Next Expiration Delta: 0.0196  
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Data as of 2021-08-06

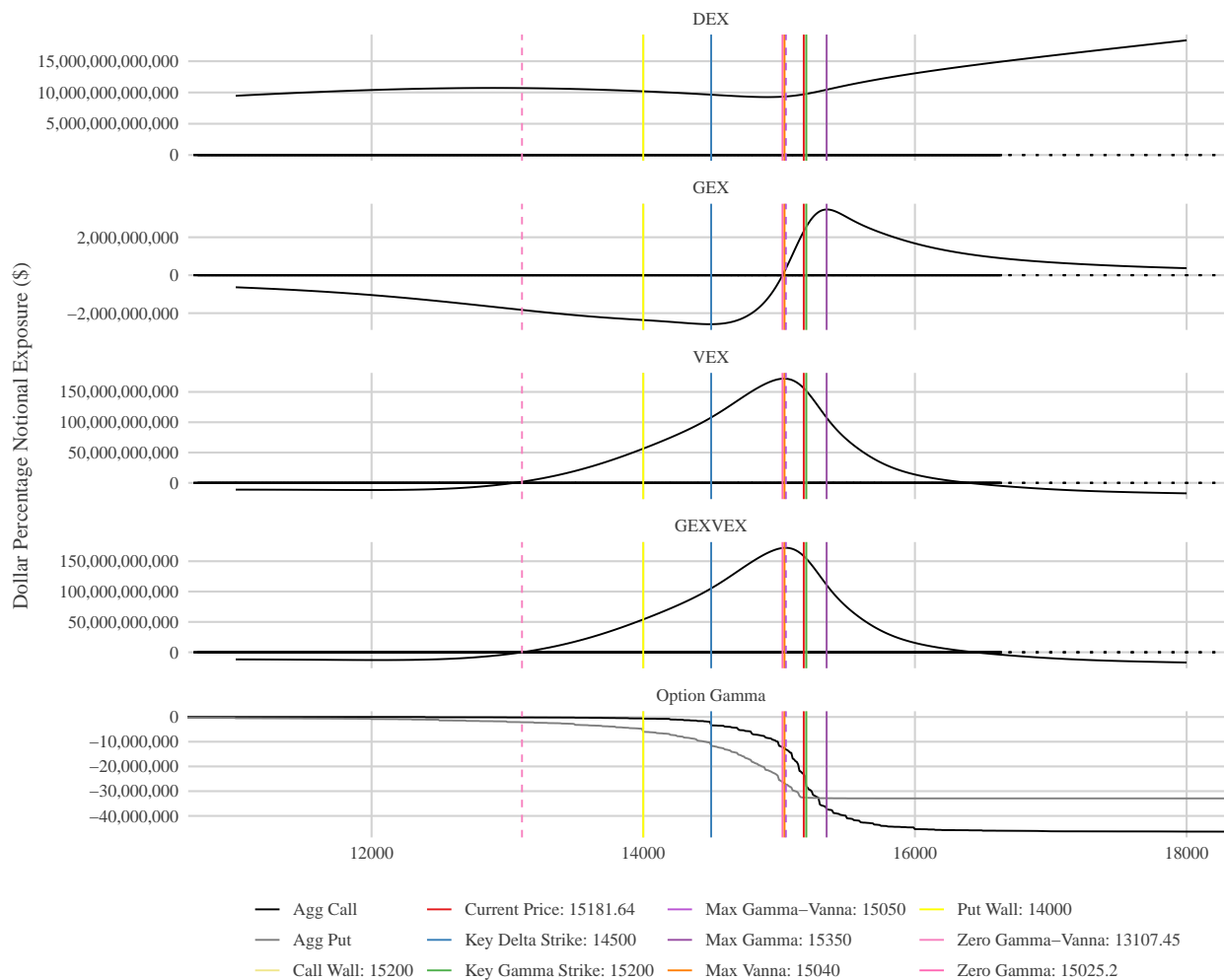




## 4.2 NASDAQ

### Dollar Notional Exposure for NASDAQ 100 E-Mini

Largest Gamma Strike: 2021-08-06 0.293  
 Largest Delta Strike: 2021-09-17 0.28  
 Next Expiration: 2021-08-06  
 Next Expiration Gamma: 0.293  
 Next Expiration Delta: 0.0762  
 Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
 Data as of 2021-08-06



Call Strike Exposure Put Strike Exposure

The NASDAQ registered a return of 0.65%. Price levels attained their all time highs on Thursday, as a result of generally strong second quarter corporate earnings.

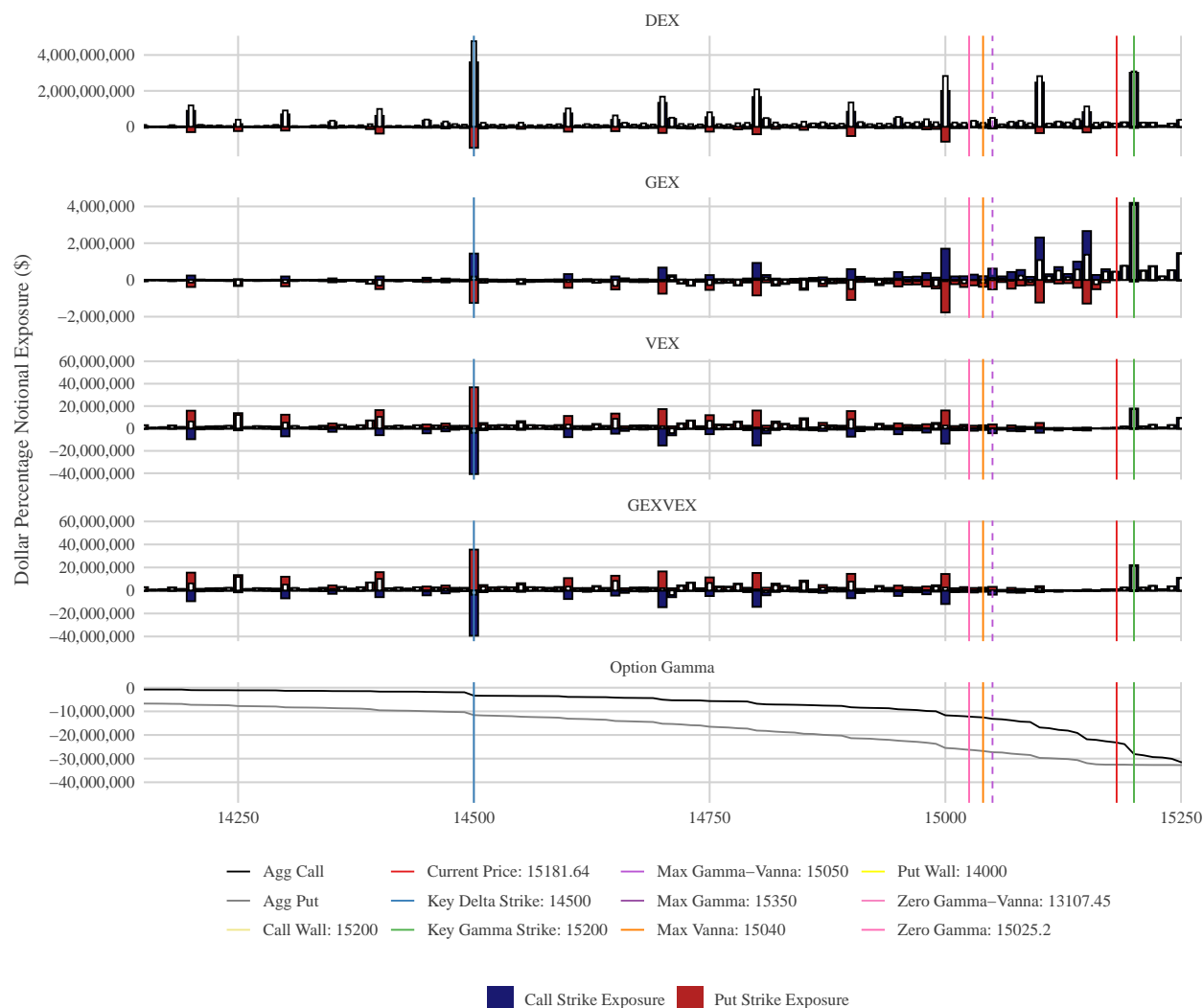
The Key Gamma Strike has shifted from 15000 to 15200, which indicates general bullish sentiment. Going into Friday, we expect price levels to remain pinned to the 15200 level.

**Expected trading range: 15150 - 15200.**



## Strike Notional Exposure for NASDAQ 100 E-Mini

Largest Gamma Strike: 2021-08-06 0.293  
Largest Delta Strike: 2021-09-17 0.28  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.293  
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Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06

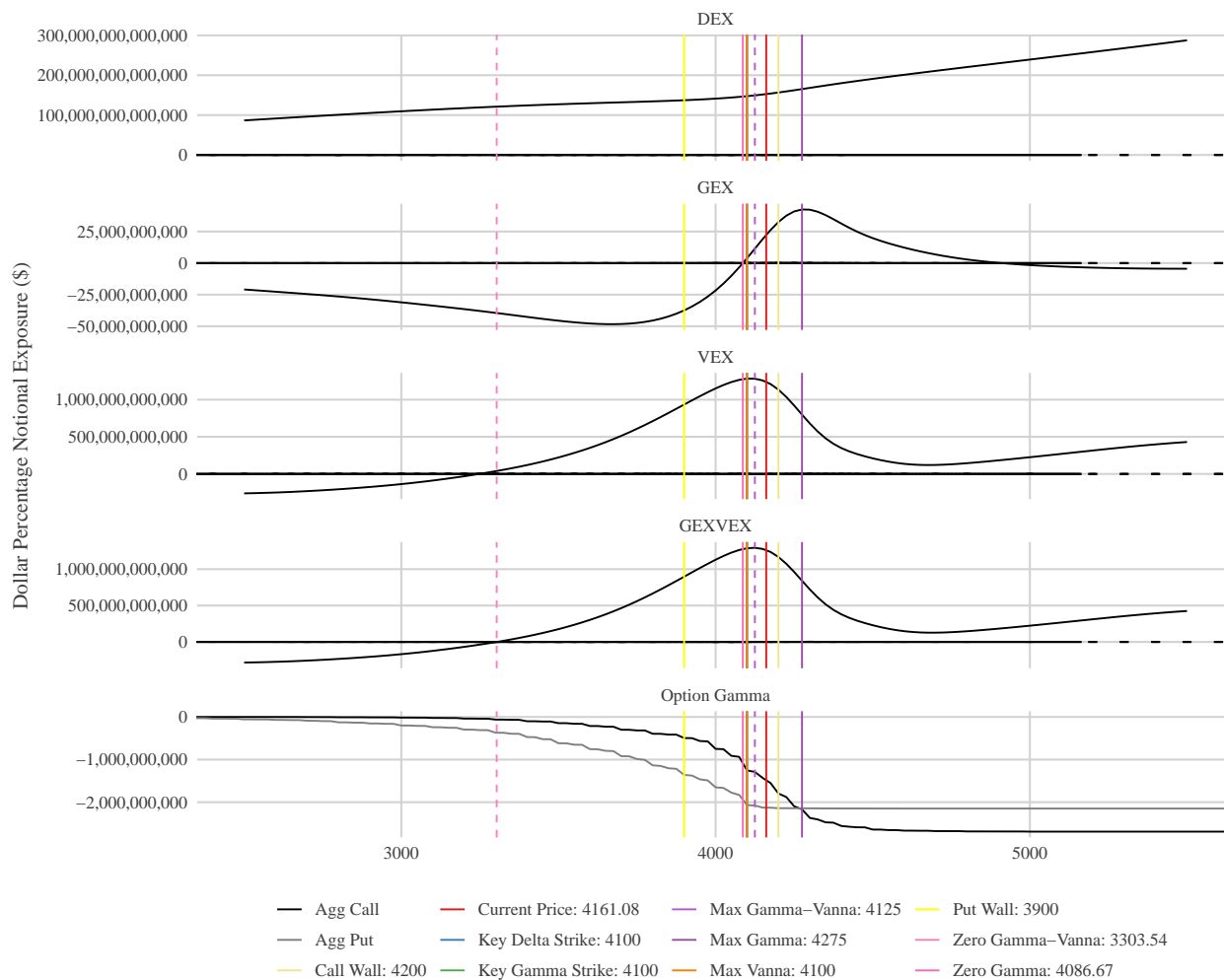




### 4.3 STOXX50

#### Dollar Notional Exposure for Euro Stoxx 50 Futures

Largest Gamma Strike: 2021-12-17 0.276  
Largest Delta Strike: 2021-12-17 0.426  
Next Expiration: 2021-08-20  
Next Expiration Gamma: 0.231  
Next Expiration Delta: 0.048  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06



Call Strike Exposure Put Strike Exposure

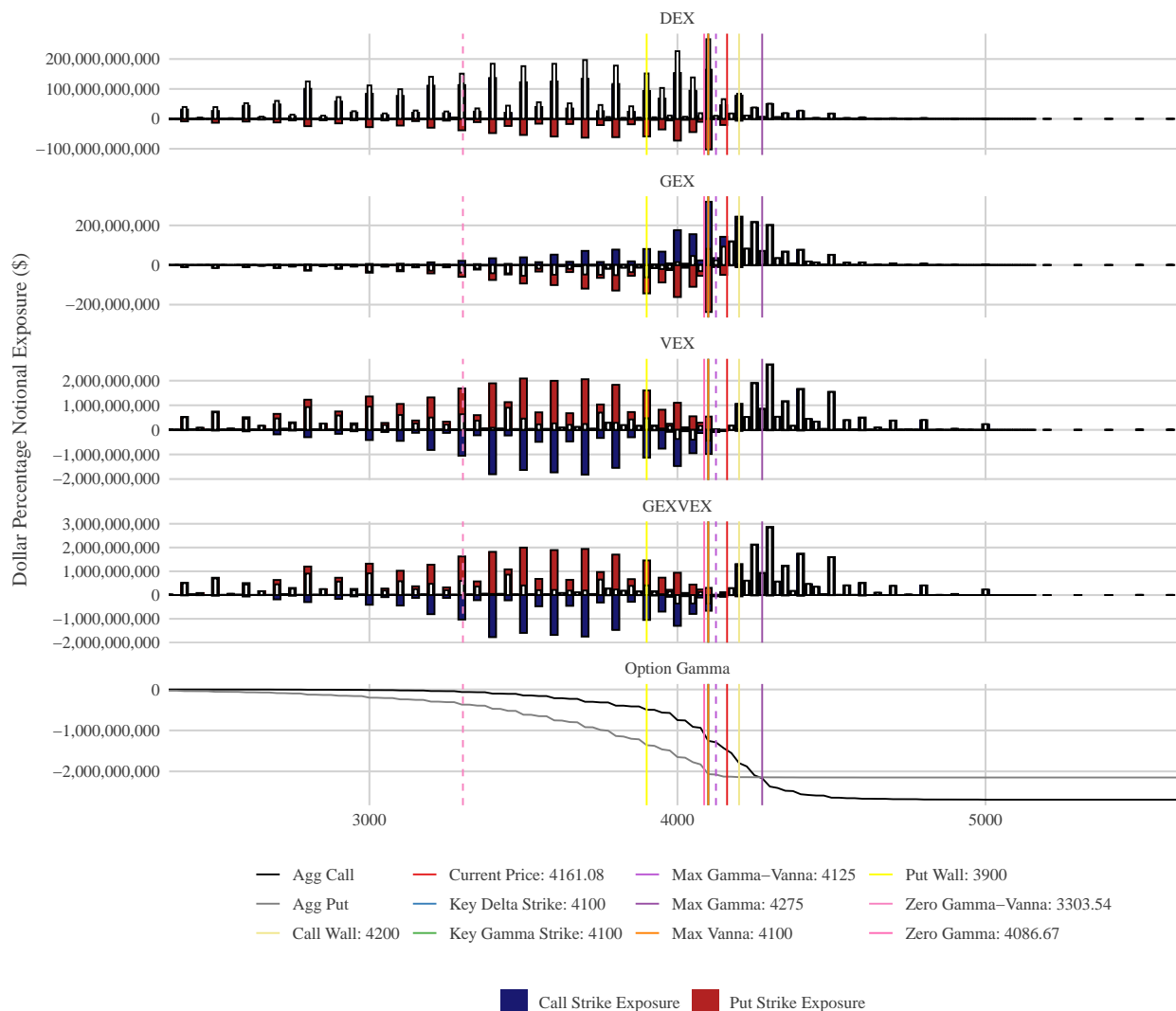
The STOXX50 registered a return of 0.39%. The STOXX50 has done admittedly well for the week, as a result of strong corporate earnings from big name companies, such as Siemens. This materialized in the backdrop of rising cases of the COVID-19 Delta variant (yet again).

**Expected trading range: 4100 - 4200.**



## Strike Notional Exposure for Euro Stoxx 50 Futures

Largest Gamma Strike: 2021-12-17 0.276  
Largest Delta Strike: 2021-12-17 0.426  
Next Expiration: 2021-08-20  
Next Expiration Gamma: 0.231  
Next Expiration Delta: 0.048  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06

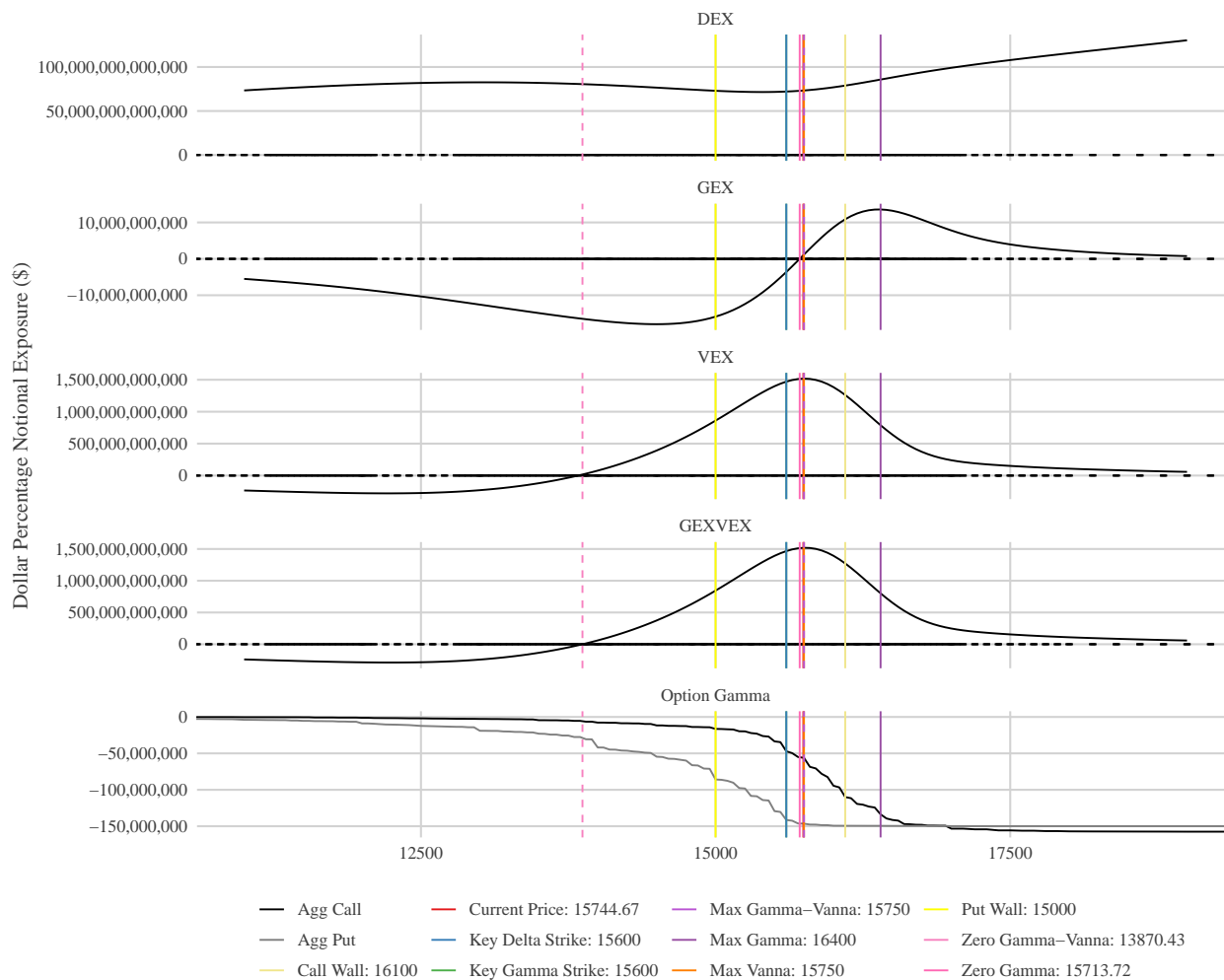




## 4.4 DAX

### Dollar Notional Exposure for DAX Futures

Largest Gamma Strike: 2021-08-20 0.362  
Largest Delta Strike: 2021-12-17 0.526  
Next Expiration: 2021-08-20  
Next Expiration Gamma: 0.362  
Next Expiration Delta: 0.138  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06



The DAX concluded the Thursday trading day with a return of 0.33%. The performance can be attributed to gains in the Software, Industrials, and Insurance sectors.

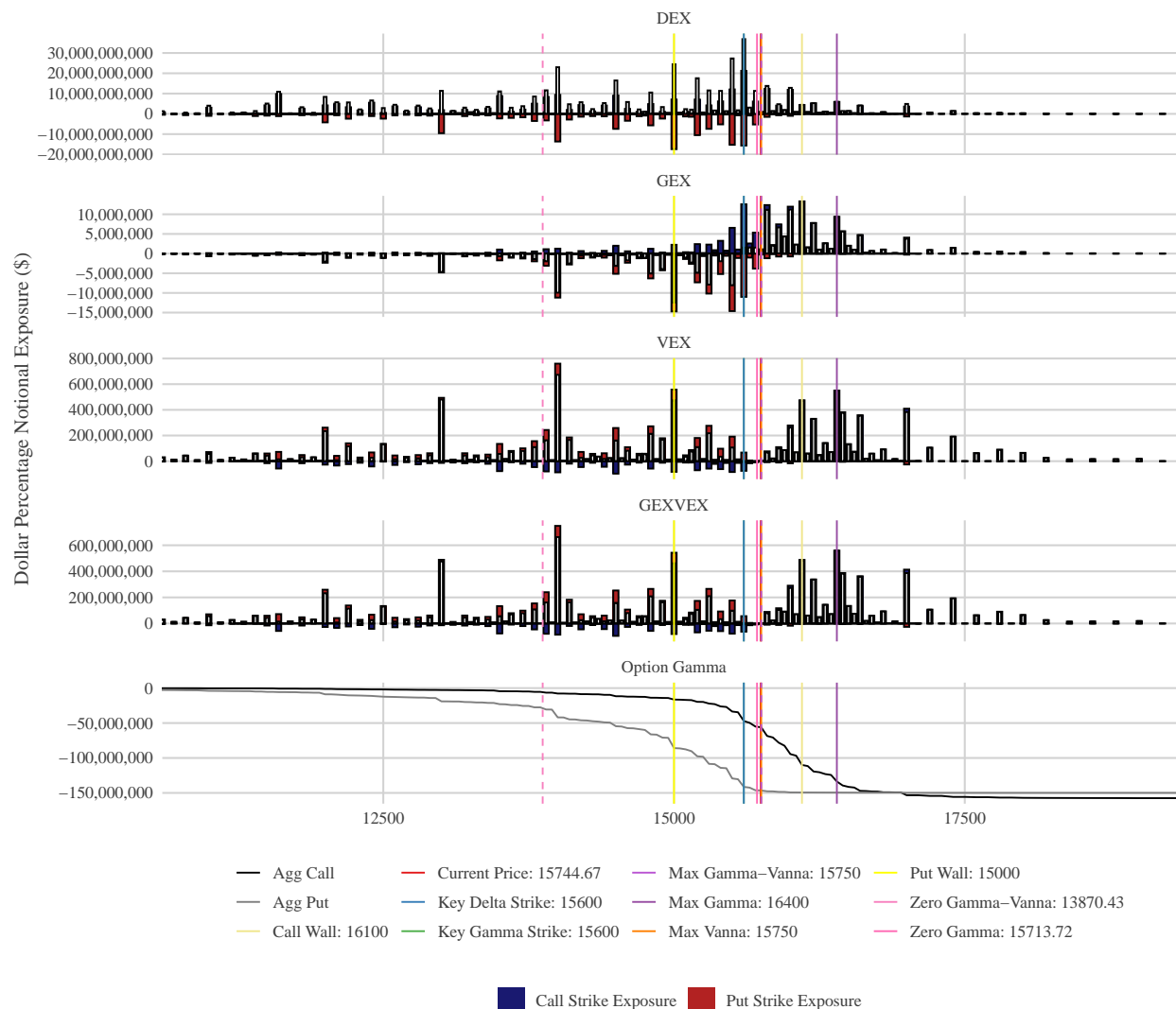
The DAX has crossed over into positive gamma territory, which indicates subdued volatility. There is still a great deal of protection bought by investors, as indicated by the massive put option gamma. This may signal that we are not out of the woods yet.

**Expected trading range: 15710 - 15800.**



## Strike Notional Exposure for DAX Futures

Largest Gamma Strike: 2021-08-20 0.362  
Largest Delta Strike: 2021-12-17 0.526  
Next Expiration: 2021-08-20  
Next Expiration Gamma: 0.362  
Next Expiration Delta: 0.138  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06



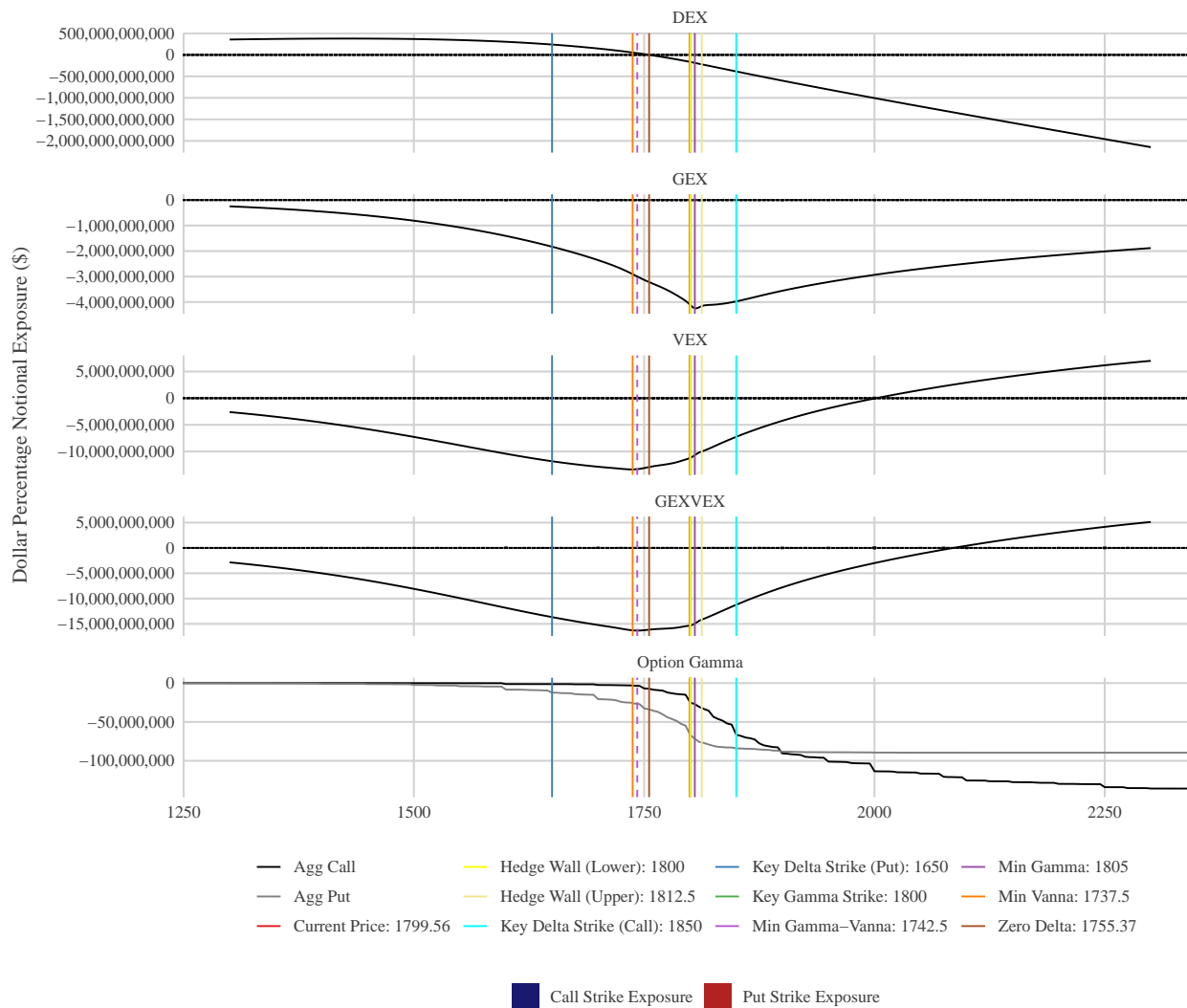


## 5 Commodities

### 5.1 Gold

#### Dollar Notional Exposure for Gold Futures

Largest Gamma Strike: 2021-08-26 0.313  
Largest Delta Strike (Put): 2021-08-06 -0.023  
Largest Delta Strike (Call): 2022-05-26 0.294  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.134  
Next Expiration Delta: -0.023  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06



The mild rally of stocks has crimped the return for Gold, in the form of waning appeal for Gold as a safe-haven. The 10-Year Treasury note also crept upwards, which weighed in on Gold Prices. Nevertheless, Gold still remains as a reliable safe-haven support from uncertainties stemming from the more COVID-19 Delta variant.

We anticipate the Lower Hedge Wall and Key Gamma Strike of 1800 to be a reliable support for Gold. If Gold breaches this support, any further downside volatility should be reduced.

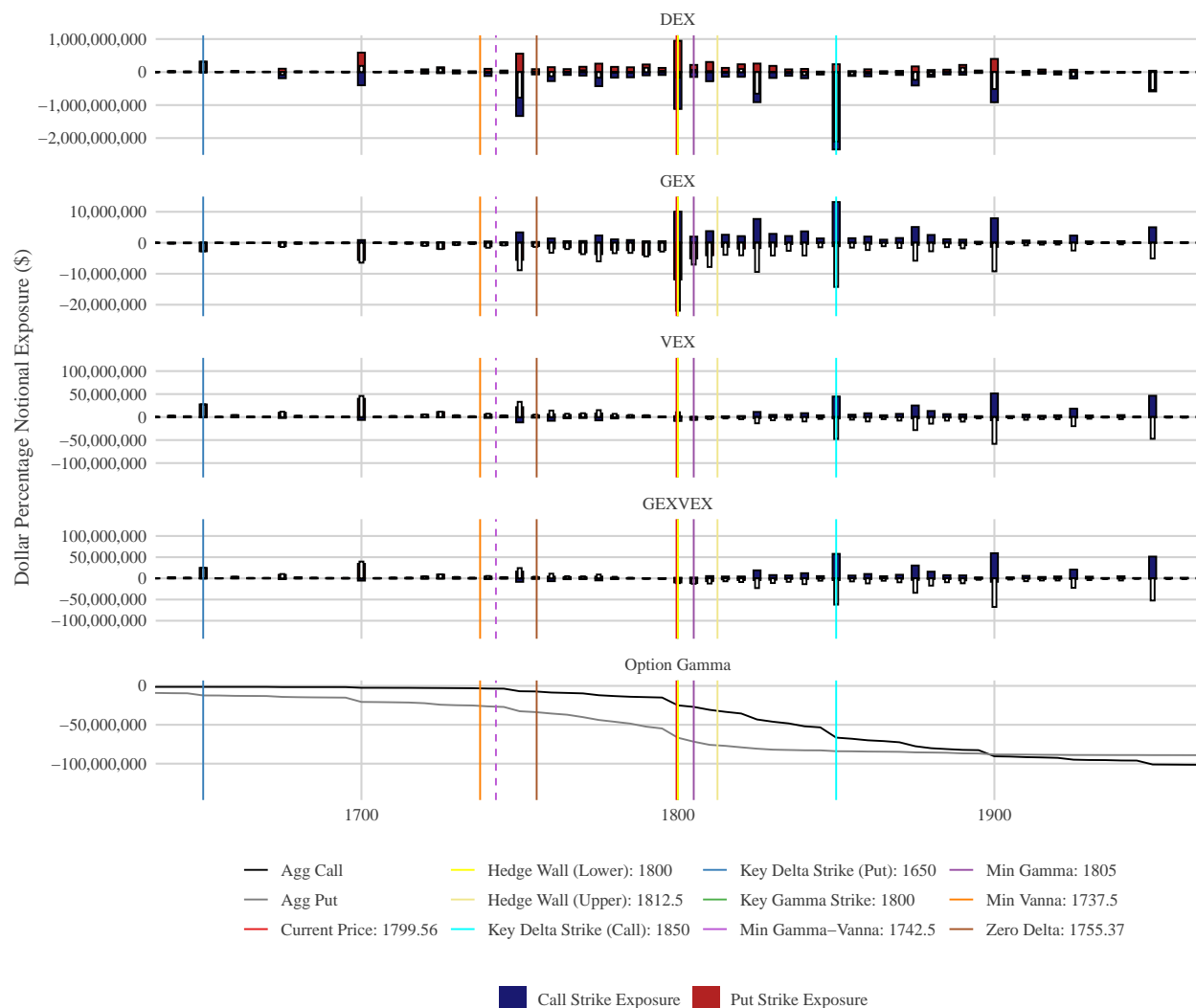
**Expected trading range: 1800 - 1810.**





## Strike Notional Exposure for Gold Futures

Largest Gamma Strike: 2021-08-26 0.313  
Largest Delta Strike (Put): 2021-08-06 -0.023  
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Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.134  
Next Expiration Delta: -0.023  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06

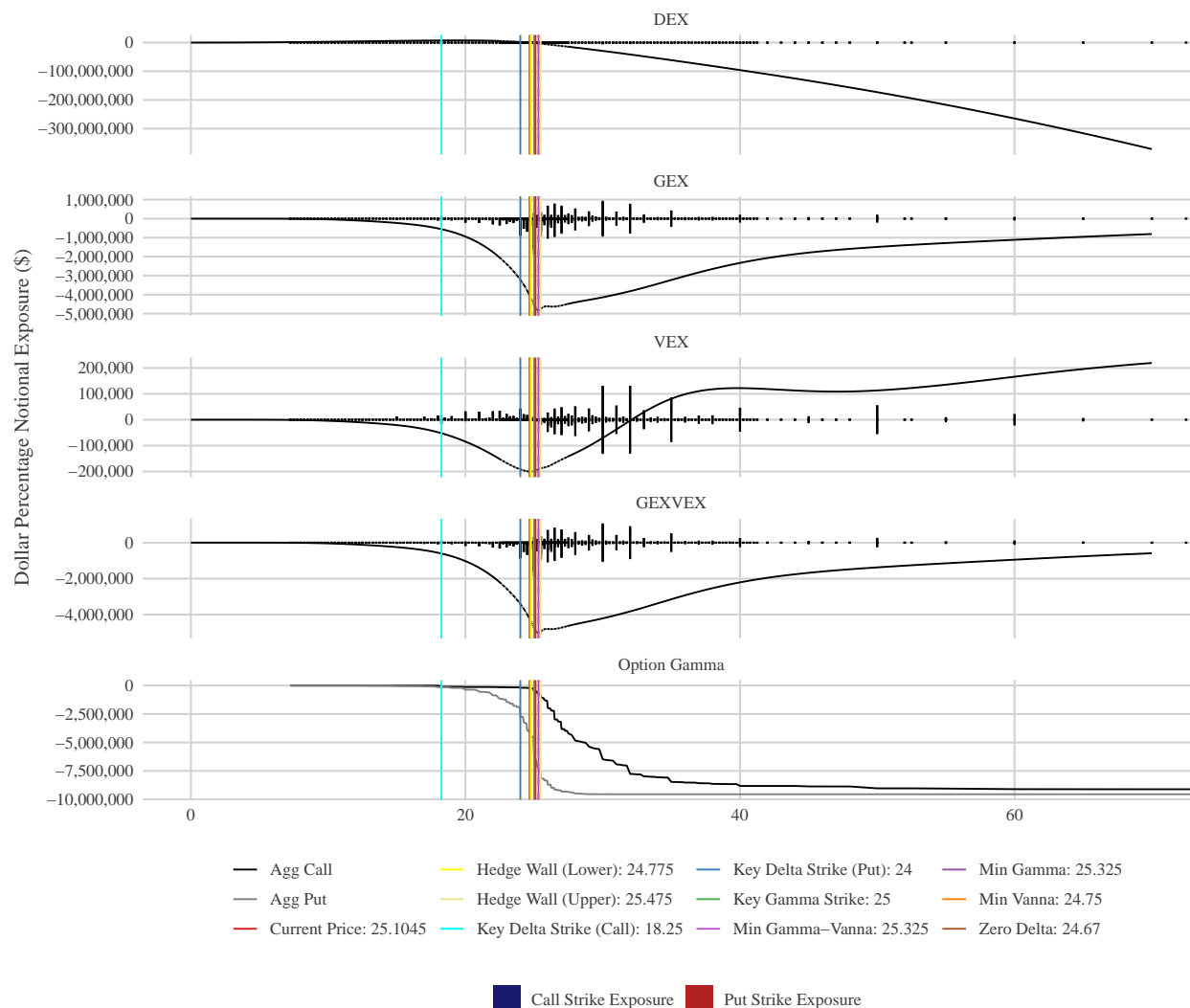




## 5.2 Silver

### Dollar Notional Exposure for Silver Futures

Largest Gamma Strike: 2021-08-26 0.416  
Largest Delta Strike (Put): 2021-08-26 -0.437  
Largest Delta Strike (Call): 2021-11-25 0.67  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.179  
Next Expiration Delta: -0.128  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06



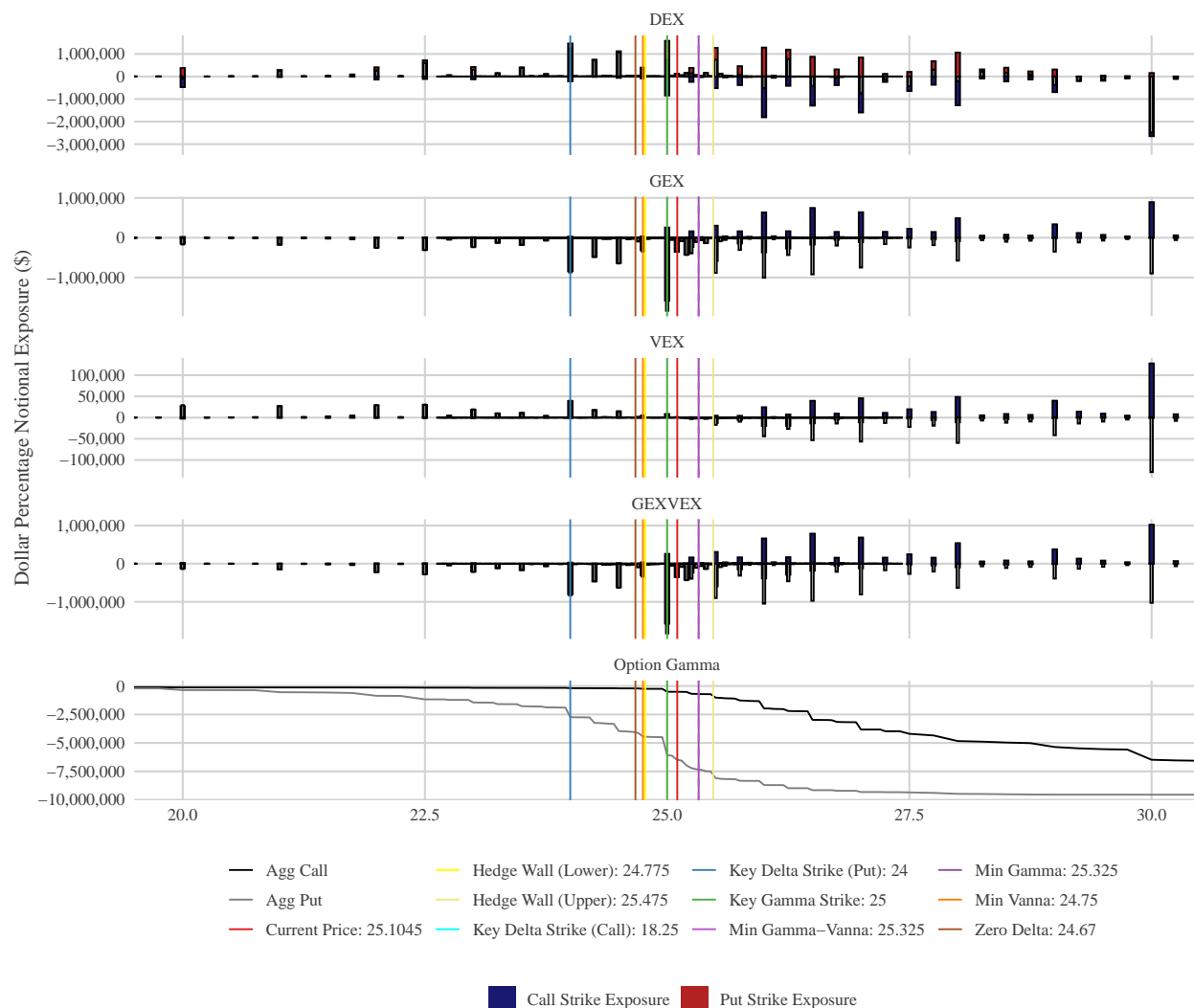
Silver is still trading within a range. There has been no material news thus far. The price level of 25 should act as a support.

**Expected trading range: 25 - 25.5.**



## Strike Notional Exposure for Silver Futures

Largest Gamma Strike: 2021-08-26 0.416  
Largest Delta Strike (Put): 2021-08-26 -0.437  
Largest Delta Strike (Call): 2021-11-25 0.67  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.179  
Next Expiration Delta: -0.128  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06





### 5.3 Crude Oil

Both WTI and Brent closed higher, as the rally in stocks may be indicative of a brighter economic outlook, which is positive for energy demand.

Other positive news include signs of US fuel demand returning to normalcy, with the US Department of Transport reporting that distance driven on US highways in the seven days ending August 1 was 17 billion miles. Such levels are close to the similar week in 2019, before the existence of COVID-19.

There is also an increase in Middle-East tensions whereby Israeli Defense Minister Gantz on Thursday said that Israel is prepared to attack Iran for a drone attack on an Israeli oil tanker last week in the Gulf of Oman, which helped buoy the price of oil upwards.

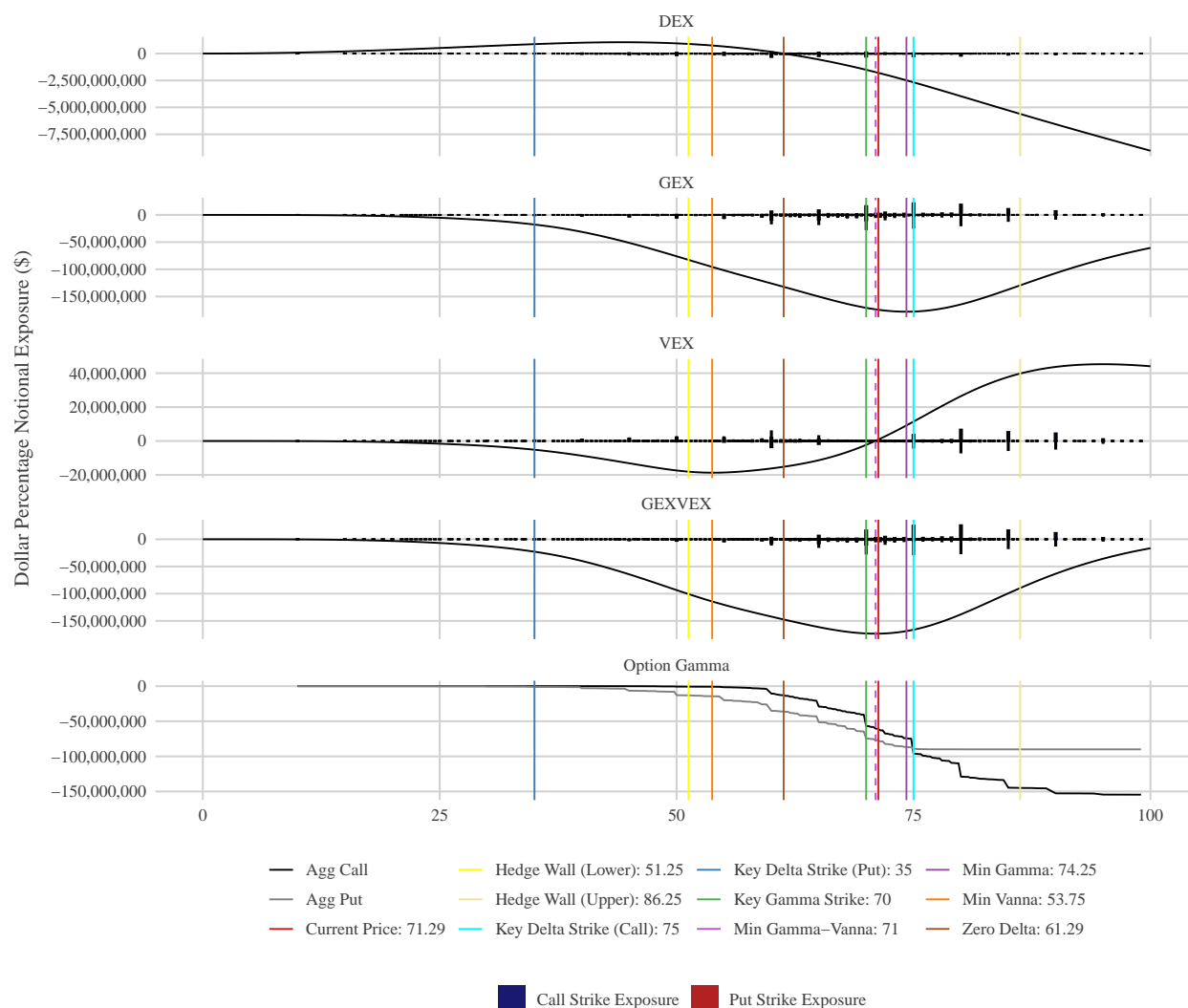
**Expected trading range: Above 70.**



### 5.3.1 Brent

#### Dollar Notional Exposure for ICE Crude Oil Brent

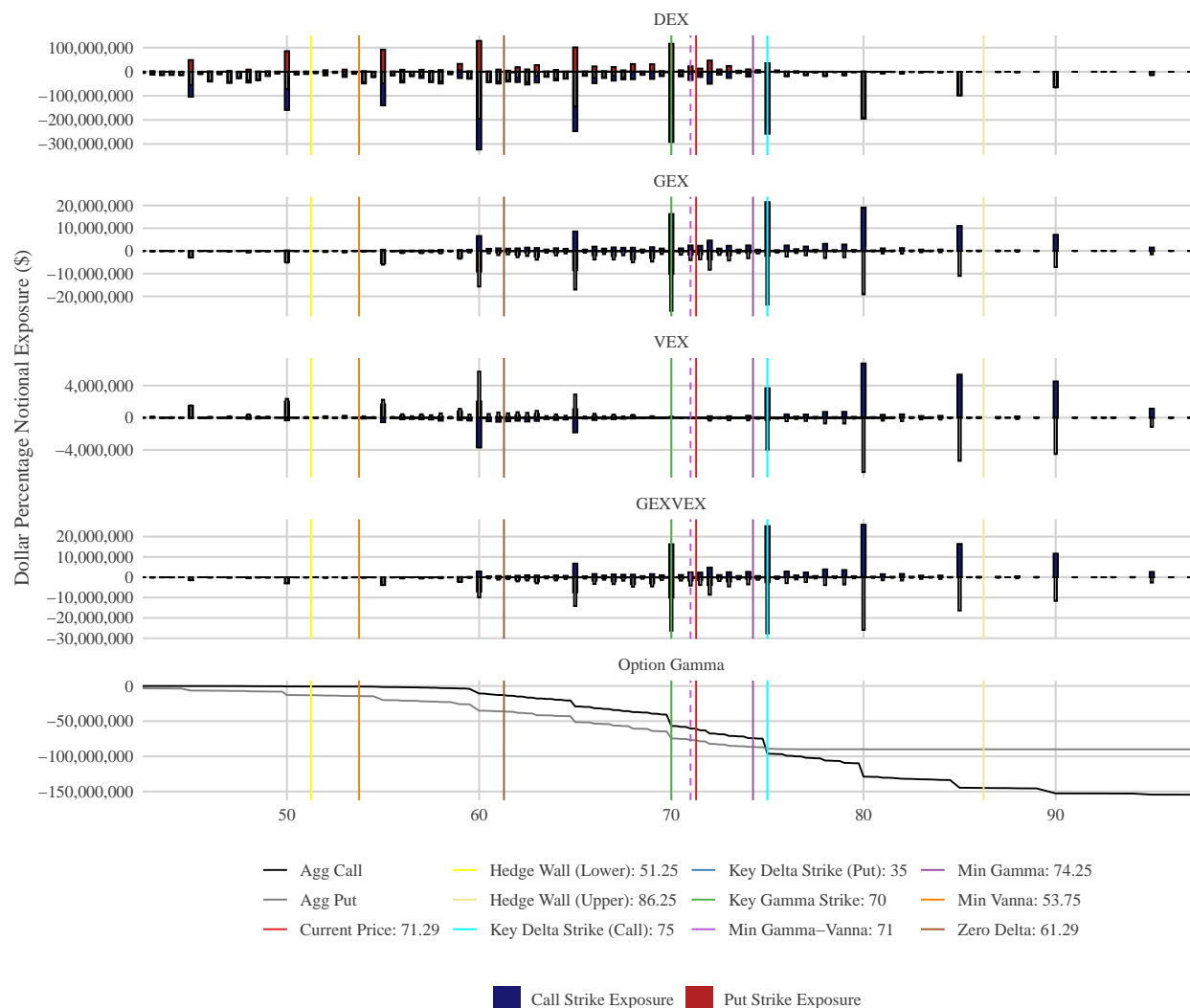
Largest Gamma Strike: 2021-10-26 0.366  
Largest Delta Strike (Put): 2021-11-24 -0.00247  
Largest Delta Strike (Call): 2021-10-26 0.633  
Next Expiration: 2021-08-25  
Next Expiration Gamma: 0.292  
Next Expiration Delta: 0.0336  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06





## Strike Notional Exposure for ICE Crude Oil Brent

Largest Gamma Strike: 2021-10-26 0.366  
Largest Delta Strike (Put): 2021-11-24 -0.00247  
Largest Delta Strike (Call): 2021-10-26 0.633  
Next Expiration: 2021-08-25  
Next Expiration Gamma: 0.292  
Next Expiration Delta: 0.0336  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06

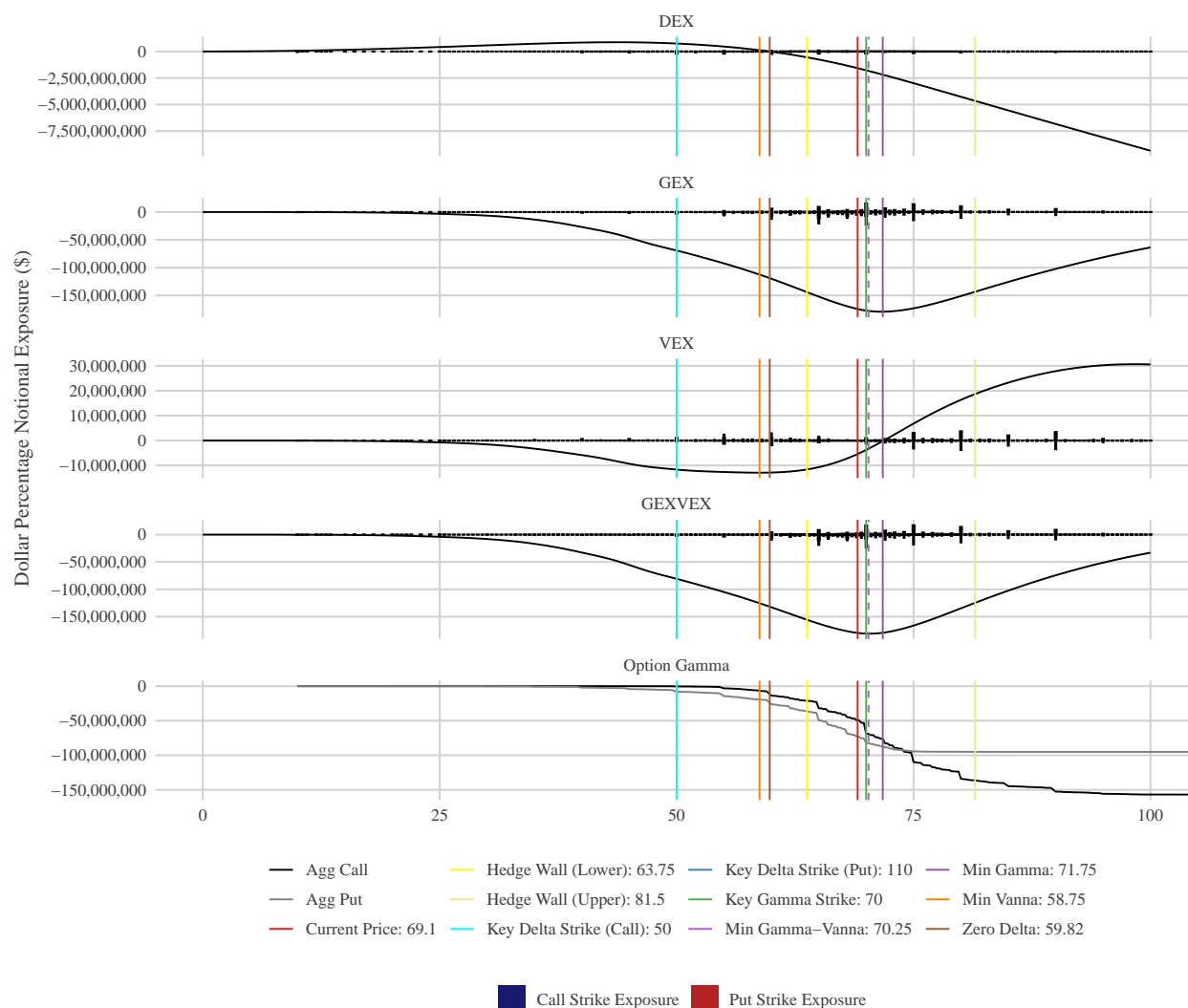




### 5.3.2 West Texas Intermediate (WTI)

#### Dollar Notional Exposure for Crude Oil WTI

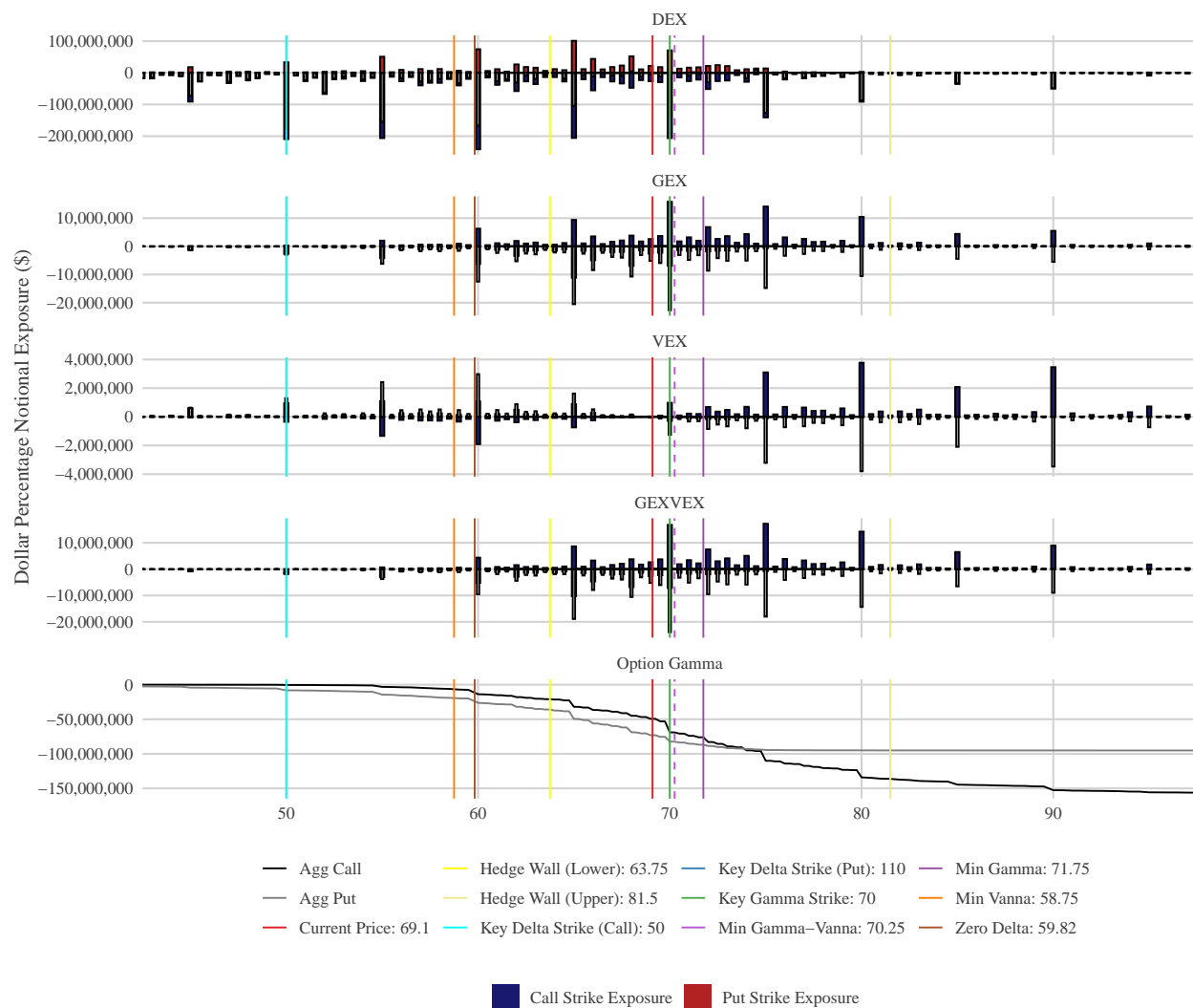
Largest Gamma Strike: 2021-08-17 0.394  
Largest Delta Strike (Put): 2021-08-06 -0.00519  
Largest Delta Strike (Call): 2021-11-16 0.582  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.0282  
Next Expiration Delta: -0.00519  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06





## Strike Notional Exposure for Crude Oil WTI

Largest Gamma Strike: 2021-08-17 0.394  
Largest Delta Strike (Put): 2021-08-06 -0.00519  
Largest Delta Strike (Call): 2021-11-16 0.582  
Next Expiration: 2021-08-06  
Next Expiration Gamma: 0.0282  
Next Expiration Delta: -0.00519  
Source: CBOE, COMEX, NYMEX, ICE/EU, author's compilation  
Data as of 2021-08-06







## 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.