

The All Put Flat Fly (APFF)

*An unbalanced put butterfly option trading strategy**

San Diego AAI
Options Trading Subgroup Webinar
5-23-20

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* A strategy developed by Mark Fenton and Dan Sheridan and taught by Sheridan Options Mentoring

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For those who may ask, “Who is this guy?”

- From San Diego, attending Options Sub-Group ~ 4years
- Alumni: SDSU, Vanderbilt, UNC Chapel Hill (PhD), Georgetown (post-doc)
- Asst Prof at Vanderbilt Med School (taught anatomy to medical students)
- Worked for Abbott Labs, Celgene and Arena Pharmaceuticals (retired in 2016)
- Trading options for 9 years: mostly SPX, condors, butterflys, covered calls, CSP puts
- Learned **not** to swim if the waves are really big.
- Minimal trading since VIX ~ 30 (2-27-20)



Option Volume on 5-20-20, 11:30am

Vehicle volume

SPX

Trade Analysis	Calls	Puts	P/C	Total
Total Volume:	329,693	449,035	1.3	778,728

0

SPY

Trade Analysis	Calls	Puts	P/C	Total
Total Volume:	1,335,273	2,030,847	1.5	3,366,120

48,346,910

/ES

Trade Analysis	Calls	Puts	P/C	Total
Total Volume:	67,290	83,786	1.2	151,076

1,159,779

AAPL

Trade Analysis	Calls	Puts	P/C	Total
Total Volume:	264,092	192,802	0.7	456,894

19,938,088

Underlying Trading Volume

SPX	S&P 500 INDEX	2966.87	+43.93 +1.50%	B: 2966.27 A: 2967.37				
Underlying								
Last X	Net Chng	Bid X	Ask X	Size	Volume	Open	High	Low
2966.87	+43.93	2966.27	2967.37	0 x 0	0	2953.63	2980.29	2953.63
Last Size	Yield	PE	Div	Div.Freq	Ex Div.Date	52High	52Low	Shares
0	N/A	N/A	N/A	--	N/A	3393.52	2191.86	0

SPY	SPDR S&P500 ETF TRUST TR UNIT ETF	296.60	+4.63 +1.59%	B: 296.60 A: 296.61	ETB	NYSE	EXTO Eligible	
Underlying								
Last X	Net Chng	Bid X	Ask X	Size	Volume	Open	High	Low
296.60 Q	+4.63	296.60 Z	296.61 P	1 x 7	48,346,910	295.82	297.87	295.57
Last Size	Yield	PE	Div	Div.Freq	Ex Div.Date	52High	52Low	Shares
100	1.90%	N/A	1.406	Q	3/20/20	339.08	218.26	0

Contract Size

\$50 x SPX

/ES	E-mini S&P 500 Index Futures,ETH (JUN 20)	2964.00	+45.25 +1.55%	B: 2963.75 A: 2964.00							
Futures ACTIVE ONLY Spread: Single											
Symbol	Days	Exp	Last X	Net Chng	Bid X	Ask X	Size	Volume	Open	High	Low
/ESM20 ACTIVE	30	JUN 20	2964.00 G	+45.25	2963.75 G	2964.00 G	85 x 20	1,159,779	2913.50	2975.75	2908.50

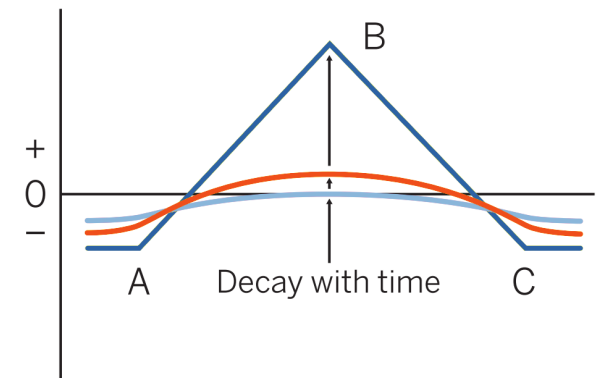
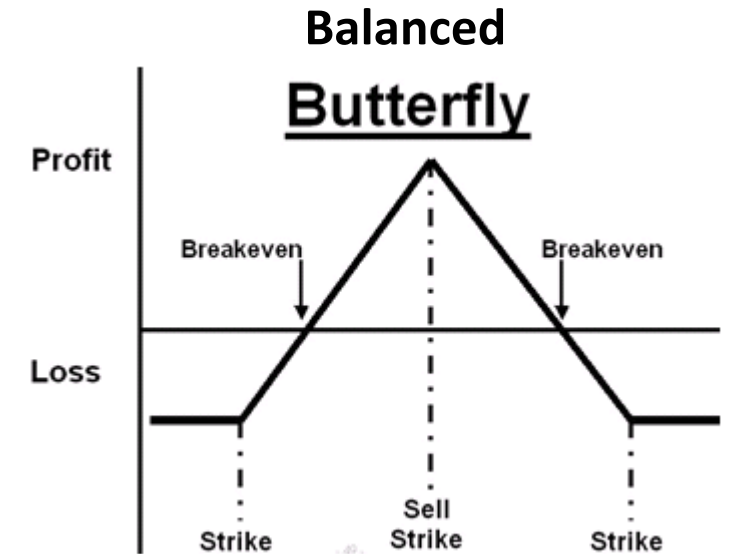
\$5 x SPX

/MES	Micro E-mini S&P 500 (JUN 20)	2964.75	+46.00 +1.58%	B: 2964.75 A: 2965.00							
Futures ACTIVE ONLY Spread: Single											
Symbol	Days	Exp	Last X	Net Chng	Bid X	Ask X	Size	Volume	Open	High	Low
/MESM20 ACTIVE	30	JUN 20	2964.75 G	+46.00	2964.75 G	2965.00 G	1 x 114	716,853	2913.75	2975.75	2908.50

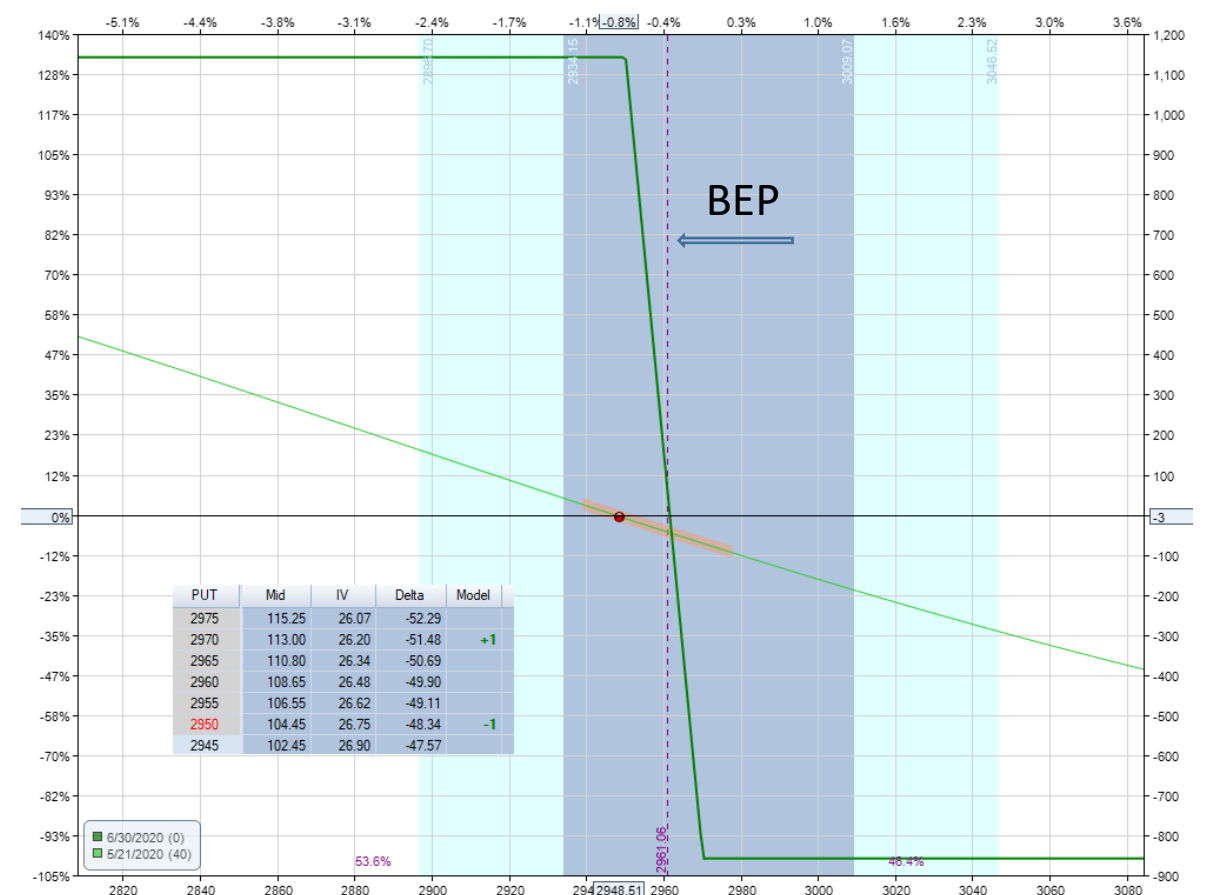
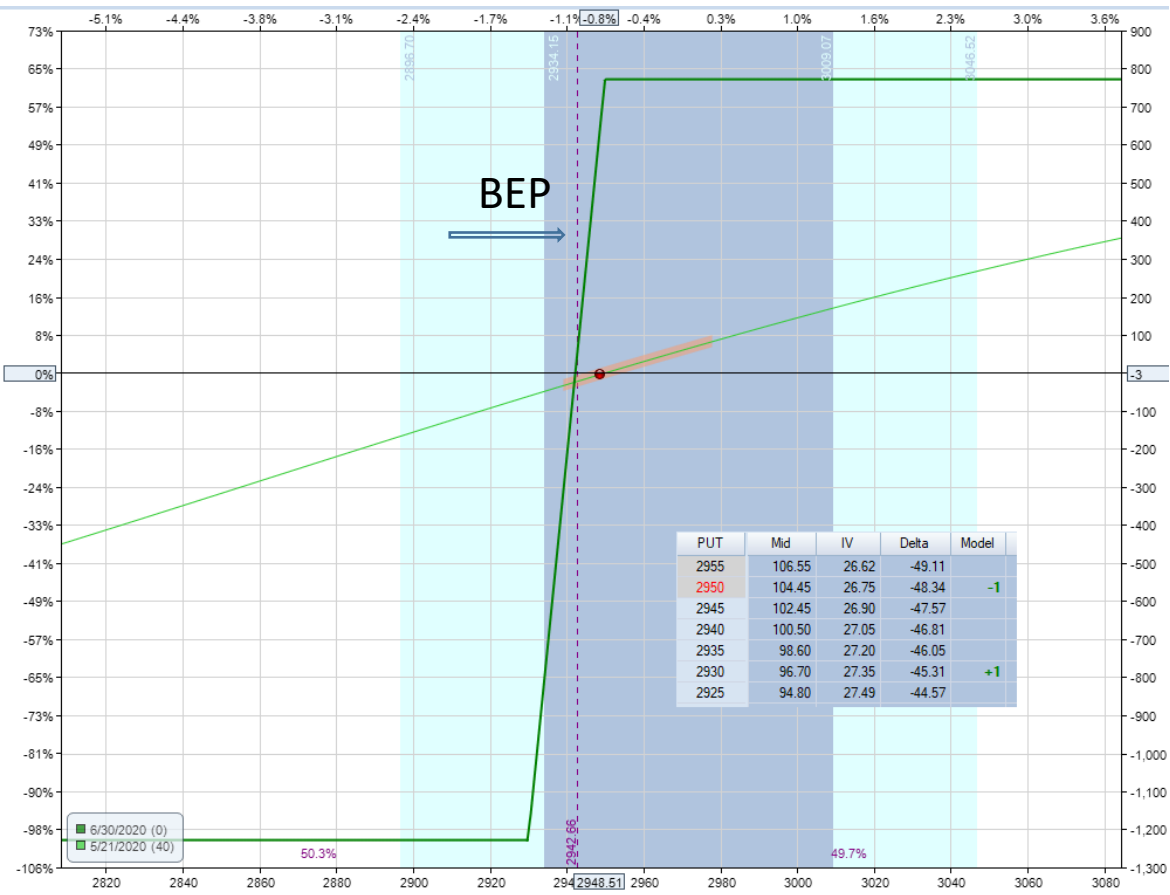
AAPL	APPLE INC COM	318.12	+4.98 +1.59%	B: 318.07 A: 318.11	ETB	NASDAQ		
Underlying								
Last X	Net Chng	Bid X	Ask X	Size	Volume	Open	High	Low
318.12 Q	+4.98	318.07 Z	318.11 Q	2 x 1	19,938,088	316.68	319.52	316.20
Last Size	Yield	PE	Div	Div.Freq	Ex Div.Date	52High	52Low	Shares
100	1.03%	24.87	.82	Q	5/8/20	327.85	170.27	4,334,335,000

What is the All Put Flat Fly (APFF)?

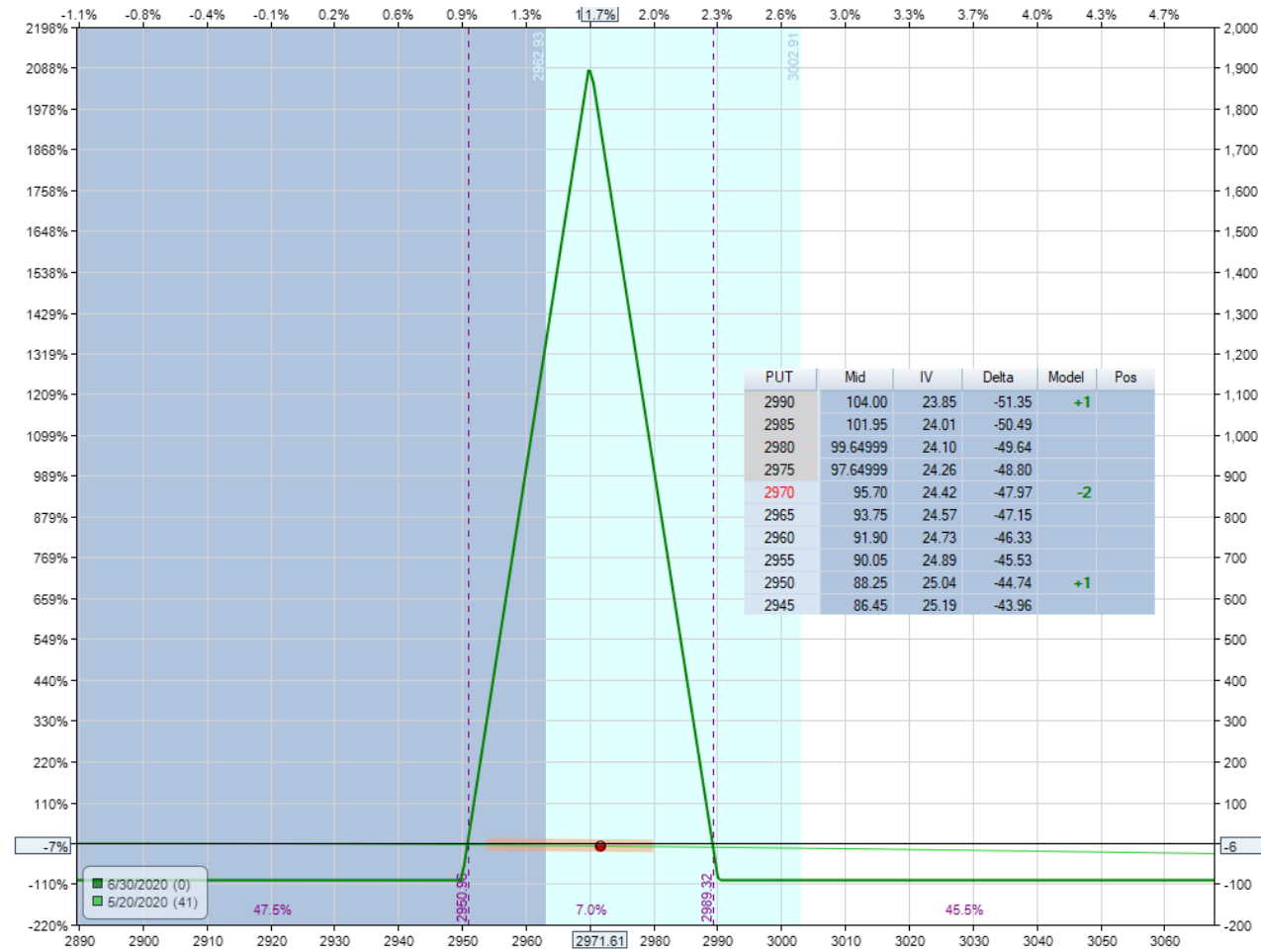
- An (unbalanced) put butterfly
- Building blocks: put debit spread + put credit spread
- Middle strikes are short (-2)
- Upper (1) and lower (1) strikes are long
- A relatively simple, easily managed trade for monthly income



Put debit spread + Put credit spread = (see next slide)



Balanced Put Butterfly



PUT	Mid	IV	Delta	Model	Pos
2990	104.00	23.85	-51.35	+1	
2985	101.95	24.01	-50.49		
2980	99.64999	24.10	-49.64		
2975	97.64999	24.26	-48.80		
2970	95.70	24.42	-47.97	-2	
2965	93.75	24.57	-47.15		
2960	91.90	24.73	-46.33		
2955	90.05	24.89	-45.53		
2950	88.25	25.04	-44.74	+1	
2945	86.45	25.19	-43.96		

Isolation Mode		Combine	Auto	Trade Analysis								Ignore Today's Trades
Analysis	OrigMargin	Cost	Curr Cost	Com	Profit/Loss	PnL%	Delta	Gamma	Theta	Vega	T/D	Plot
Model	86.00	-86.00	80.00	6.00	-6.00	-6.98%	-0.12	0.00	0.53	-2.29	4	<input checked="" type="checkbox"/>

All Put Flat Fly

1. Trade Entry: 38-50 DTE.
2. Don't start during after price move of >1.5 SD down side.
3. Trade Entry: Buy top strike 15-25 points above current price.
4. Sell center strikes 40 points lower
5. Buy lower strike 50 points below that.
6. 10% profit, 15% max loss. % (debit + margin)

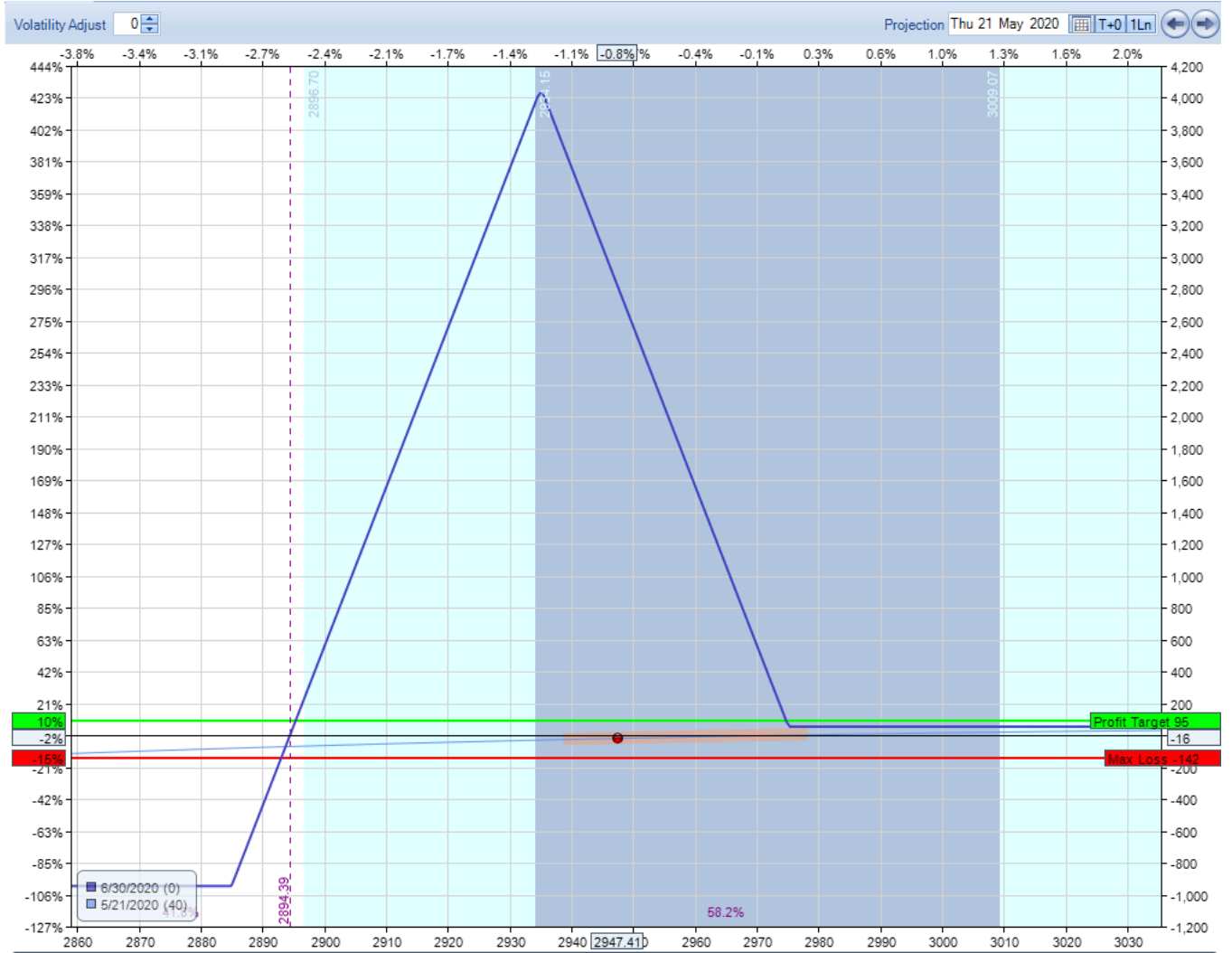
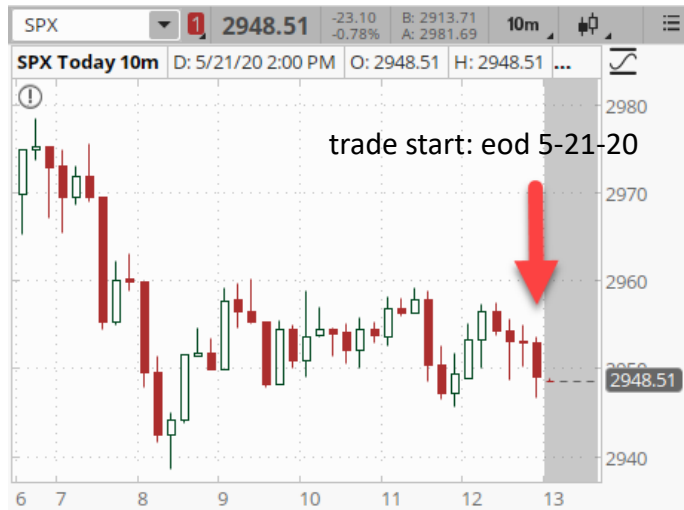
All Put Flat Fly strike selection

Top strike	+25 pts (above ATM)	ATM + 25
Center strikes	-40 pts	ATM -20
Bottom strike	-50 pts	ATM -70

All Put Flat Fly strike selection

		Quarterly	30 Jun 20 (40)	25.10%		
PUT	Mid	IV	Delta	Model	Pos	
2980	112.70	24.79	-53.28			
2975	110.55	24.97	-52.41		+1	← +25 points
2970	108.30	25.09	-51.59			
2965	106.25	25.27	-50.74			
2960	104.15	25.42	-49.91			
2955	102.00	25.54	-49.11			
ATM →	2950	100.00	-48.30			
	2945	98.05	-47.50			
	2940	96.10	-46.71			
	2935	94.30	-45.92		-2	← -40 points
	2930	92.35	-45.16			
	2925	90.55	-44.39			
	2920	88.89999	-43.63			
	2915	87.10	-42.90			
	2910	85.50	-42.16			
	2905	83.65	-41.43			
	2900	82.05	-40.72			
	2895	80.55	-40.01			
	2890	78.95	-39.33			
	2885	77.35	-38.64		+1	← -50 points
	2880	75.85	-37.96			
	2875	74.45	-37.30			

APFF start date: 5-21-20



SPX Standard & Poor's 500 24.97 (+4%)										Open Position (2) #1321 SPX 30 JUN APFF				
Open	High	Low	Last	Chg	Chg%	SD	Model	Pos		DIT	SD	IVChg%	OrigMargin	PnL%
2969.95	2978.50	2938.57	2947.70	-23.91016	-0.80%	-0.64				0	0.00	0.31%	946.00	-1.69%

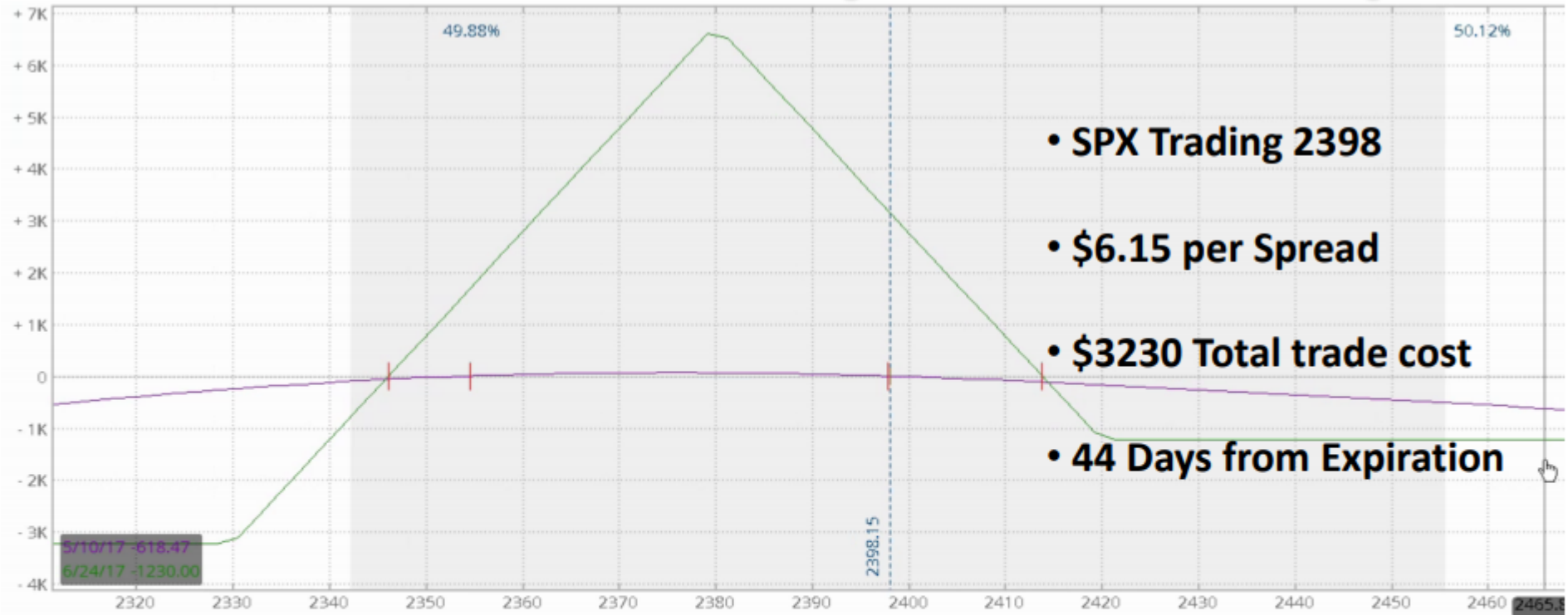
Trade Analysis												
Analysis	OrigMargin	Cost	Curr Cost	Com	Profit/Loss	PnL%	Delta	Gamma	Theta	Vega	T/D	Plot
Position	946.00	54.00	-60.00	6.00	-6.00	-0.63%	0.80	-0.01	2.62	-12.52	3	<input checked="" type="checkbox"/>

Trade Adjustments

- **1st Adjustment**
- UPPER: if price trades 5-10 points above the upper breakeven, add a second Butterfly centered 15-25pts above the current price.
- LOWER: if price reaches lower break even, add another butterfly centered 15-20 points below where currently trading.

- **2nd Adjustment**
- UPPER: if current price reaches upper short strike remove the lower fly.
- LOWER: if current price reaches 5-10 points before the short strike remove the upper fly.

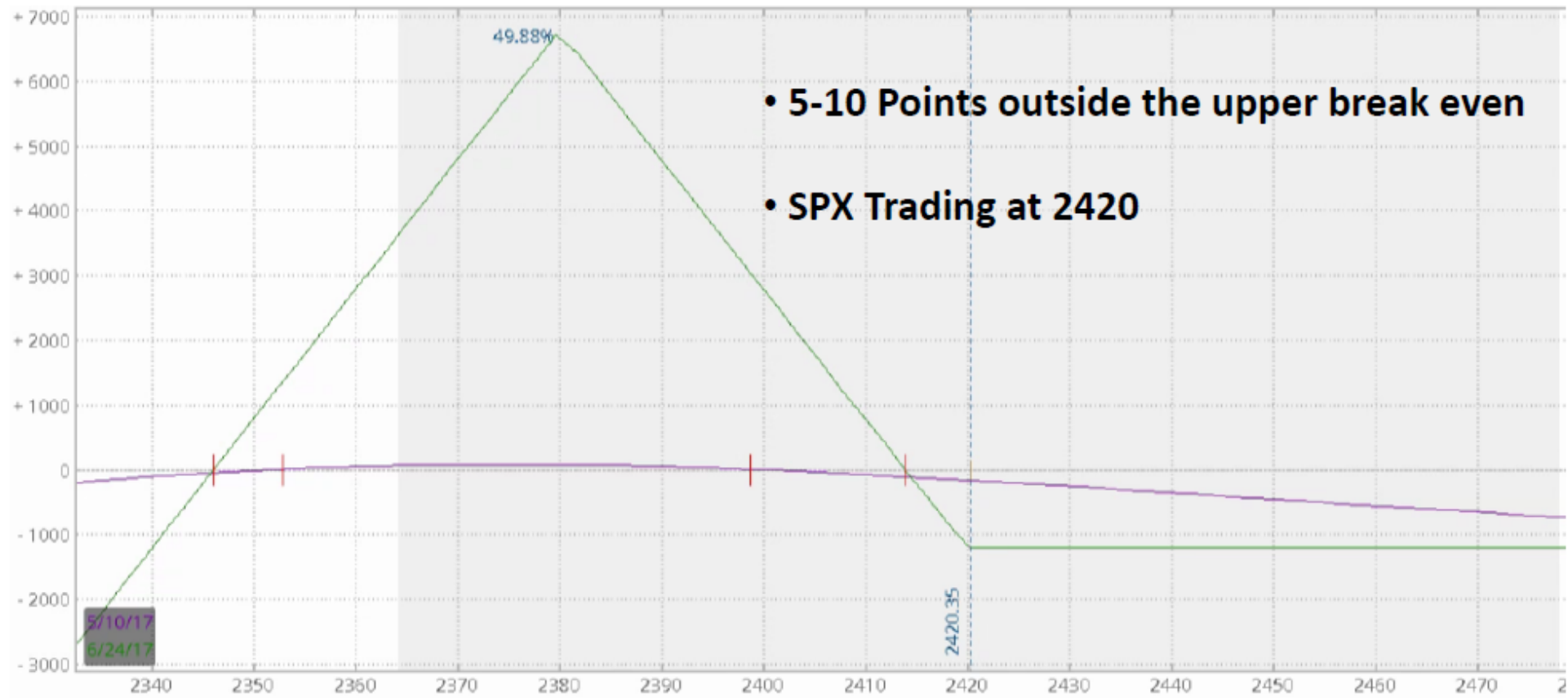
SPX All Put Flat fly



- SPX Trading 2398
- \$6.15 per Spread
- \$3230 Total trade cost
- 44 Days from Expiration

Price Slices									
Stk Price	Offset	Delta	Gamma	Theta	Vega	P/			
2398.15	\$0	-5.60	-20	12.88	-137.92				
Positions and Simulated Trades									
<input type="checkbox"/> ALL	Hide Positions	<no selected>	Single Symbol	All groups	Model: Bjerk Sund-Stensland	Interest: 0.75%	Date: 05/10/2017		
<input type="checkbox"/> SPX	Spread	Side	Qty/Symbol	Exp	Strike	Type	Price		
<input type="checkbox"/>	IND		0	SPX		INDEX	.00		
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+2	SPX 23 JUN 17	2420	PUT	6.15		
		SELL	-4	SPX 23 JUN 17	2380	PUT	DEBIT		
		BUY	+2	SPX 23 JUN 17	2330	PUT			

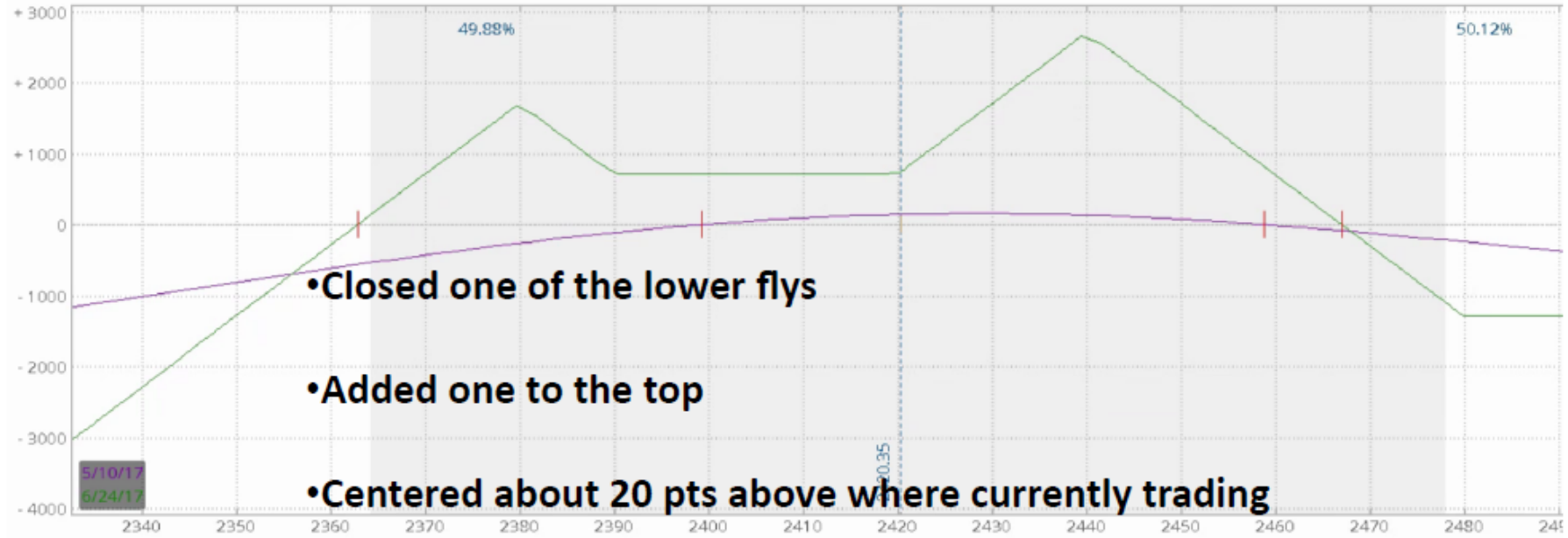
The Upside Adjustment Point



Price Slices

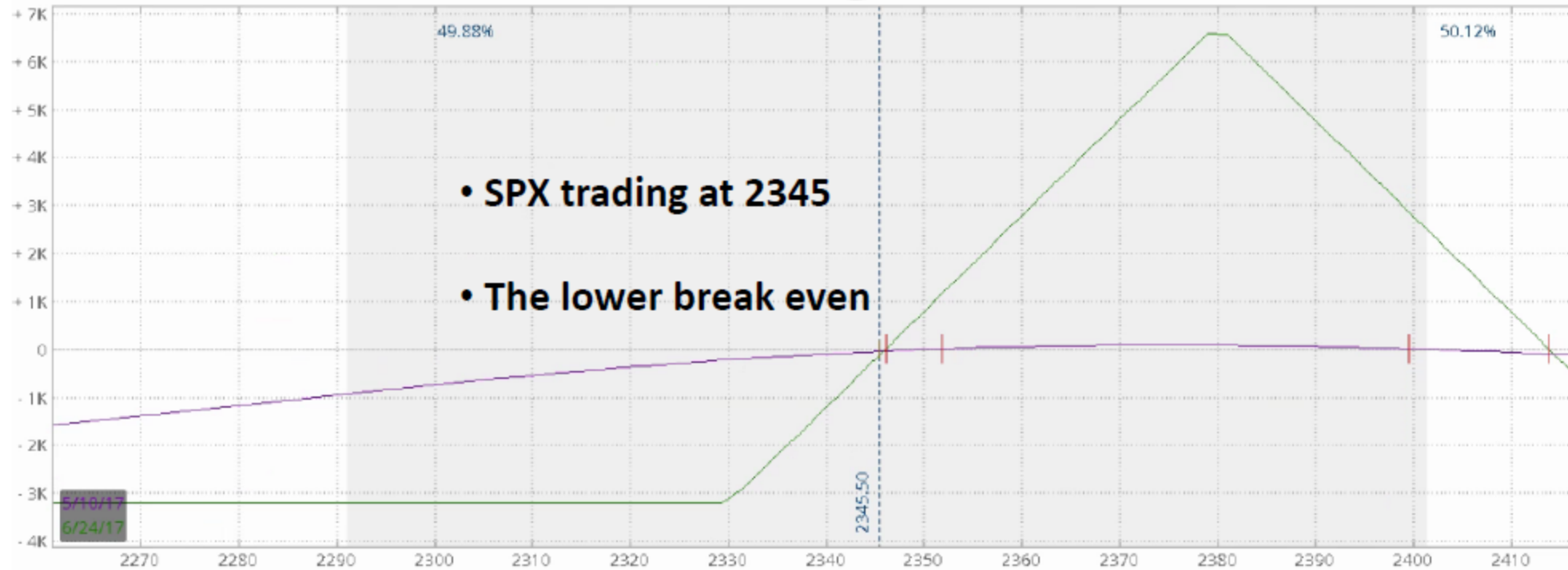
Stk Price	Offset	Delta	Gamma	Theta	Vega
2420.35	\$0	-9.16	-.10	8.90	-82.60

The Upside Adjustment



Price Slices									
Stk Price	Offset	Delta	Gamma	Theta	Vega	P/			
2420.35	\$0	3.01	-.38	11.74	-176.22	\$			
Positions and Simulated Trades									
<input type="checkbox"/>	ALL	Hide Positions	<no selected>	Single Symbol	All groups	Model: Bjerkund-Stensland	Interest: 0.75%	Date: 05/10/2017	
	Spread	Side	Qty	Symbol	Exp	Strike	Type	Price	
<input type="checkbox"/>	IND		0	SPX			INDEX	.00	
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+1	SPX 23 JUN 17	2420		PUT	6.15	
		SELL	-2	SPX 23 JUN 17	2380		PUT	DEBIT	
		BUY	+1	SPX 23 JUN 17	2330		PUT		
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+1	SPX 23 JUN 17	2480		CALL	16.75	
		SELL	-2	SPX 23 JUN 17	2440		CALL	DEBIT	
		BUY	+1	SPX 23 JUN 17	2390		CALL		

The Downside Adjustment Point



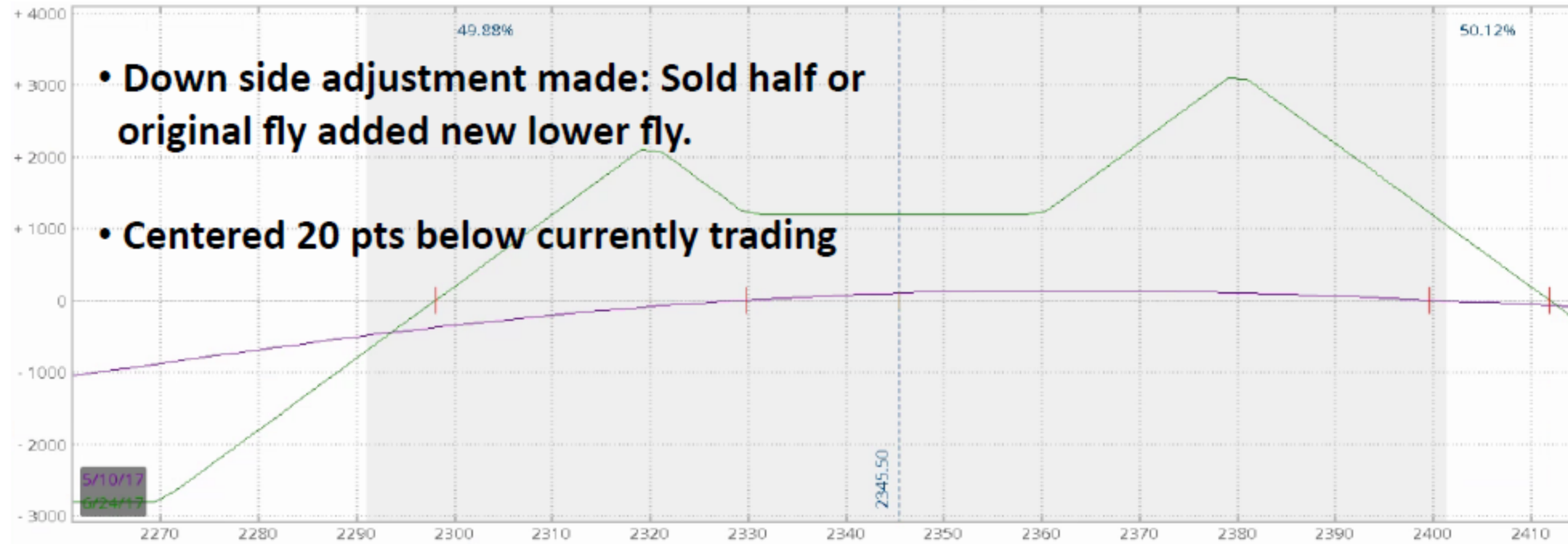
Price Slices

Stk Price	Offset	Delta	Gamma	Theta	Vega	P/L C
2345.50	\$0	9.11	-31	9.64	-161.15	(\$51)

Positions and Simulated Trades

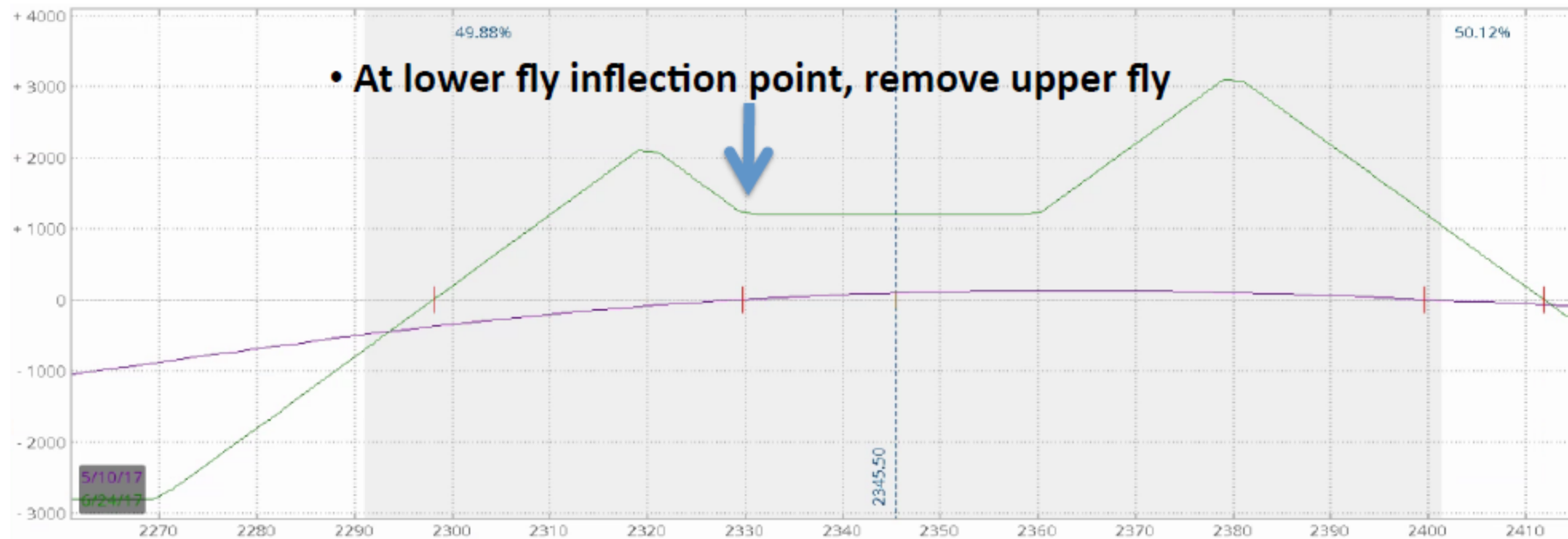
ALL	Hide Positions	<no selected>	Single Symbol	All groups	Model: Bjerkund-Stensland	Interest: 0.75%	Date: 05/10/2017
Spread	Side	Qty	Symbol	Exp	Strike	Type	Price
<input type="checkbox"/>	SPX						Yield 0.00% Vol Adj 0.00%
<input type="checkbox"/>	IND	0	SPX			INDEX	.00
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+2	SPX 23 JUN 17	2420	PUT	6.15
		SELL	-4	SPX 23 JUN 17	2380	PUT	DEBIT
		BUY	+2	SPX 23 JUN 17	2330	PUT	

The Downside Adjustment



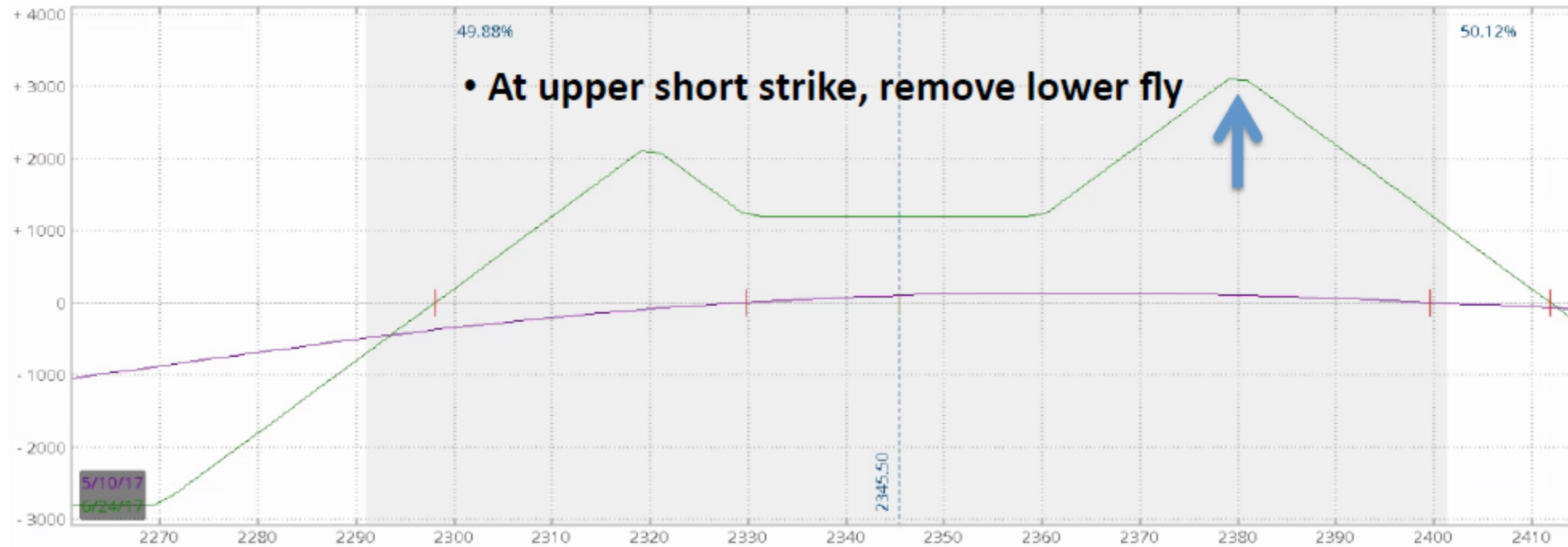
Price Slices									
Stk Price	Offset	Delta	Gamma	Theta	Vega	P/I			
2345.50	\$0	4.05	-26	17.61	-173.52	5			
Positions and Simulated Trades									
<input type="checkbox"/>	ALL	Hide Positions	<no selected>	Single Symbol	All groups	Model: Bjerkund-Stensland	Interest: 0.75%	Date: 05/10/2017	
	Spread	Side	Qty	Symbol	Exp	Strike	Type	Price	
<input type="checkbox"/>	IND		0	SPX			INDEX	.00	
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+1	SPX	23 JUN 17	2420	PUT	6.00	
		SELL	-2	SPX	23 JUN 17	2380	PUT	DEBIT	
		BUY	+1	SPX	23 JUN 17	2330	PUT		
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+1	SPX	23 JUN 17	2360	CALL	12.15	
		SELL	-2	SPX	23 JUN 17	2320	CALL	DEBIT	
		BUY	+1	SPX	23 JUN 17	2270	CALL		

Second Lower Adjustment Point



Price Slices									
Stk Price	Offset	Delta	Gamma	Theta	Vega	P/I			
2345.50	\$0	4.05	-0.26	17.61	-173.52	\$			
Positions and Simulated Trades									
<input type="checkbox"/>	ALL	Hide Positions	<no selected>	Single Symbol	All groups	Model: Bjerkund-Stensland	Interest: 0.75%	Date: 05/10/2017	
	Spread	Side	Qty	Symbol	Exp	Strike	Type	Price	
<input type="checkbox"/>	IND		0	SPX			INDEX	.00	
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+1	SPX 23 JUN 17	2420		PUT	6.00	
		SELL	-2	SPX 23 JUN 17	2380		PUT	DEBIT	
		BUY	+1	SPX 23 JUN 17	2330		PUT		
<input checked="" type="checkbox"/>	BUTTERFLY	BUY	+1	SPX 23 JUN 17	2360		CALL	12.15	
		SELL	-2	SPX 23 JUN 17	2320		CALL	DEBIT	
		BUY	+1	SPX 23 JUN 17	2270		CALL		

Second Upper Adjustment Point



Price Slices

Stk Price	Offset	Delta	Gamma	Theta	Vega	P/I
2345.50	\$0	4.05	-0.26	17.61	-173.52	

Positions and Simulated Trades

Model: Bjerk Sund-Stensland | Interest: 0.75% | Date: 05/10/2017

Spread	Side	Qty	Symbol	Exp	Strike	Type	Price
IND		0	SPX			INDEX	.00
BUTTERFLY	BUY	+1	SPX	23 JUN 17	2420	PUT	6.00
	SELL	-2	SPX	23 JUN 17	2380	PUT	DEBIT
	BUY	+1	SPX	23 JUN 17	2330	PUT	
BUTTERFLY	BUY	+1	SPX	23 JUN 17	2360	CALL	12.15
	SELL	-2	SPX	23 JUN 17	2320	CALL	DEBIT
	BUY	+1	SPX	23 JUN 17	2270	CALL	

Backups

Call and Put Options

A **put** is a contract giving the owner the right (not the obligation) to **sell** shares of an underlying security.

A **call** gives the owner the right (not the obligation) to **buy**.

Implied volatility (IV)

Volatility is a measure of price uncertainty expressed as a percentage. IV is derived from a statistical formula that determines a one standard deviation annual price distribution.

Example: If we have a stock trading at \$100 with an IV of 25 percent, the options are implying that the stock will be higher or lower by 25 percent within one standard deviation. (One standard deviation equals 68 percent in a normal distribution.) So the stock has a 68 percent probability of being between \$75 and \$125.



Option Greeks

Delta

The change in option price with a change in the underlying price. For a \$1.00 increase in the underlying price, the value of the *delta* is added to the value of the option. Conversely, for each \$1.00 decrease in the price of the underlying, the value of *delta* is subtracted from the value of the option.

The *delta* of call options is always positive (0 to 100) and the *delta* of put options is always negative (0 to -100).

The *delta* of an at-the-money option is approximately .50 (calls) or -.50 (puts).

The *delta* of an option at expiration is either 0 or 100 (-100 for puts).

Theta

The change in option price per day resulting from time decay.

Vega

The change in option price with changes in implied volatility (IV, see following slide).

Gamma

The change in delta with changes in price of the underlying security.

The Black-Scholes pricing formula for call options.

$$C = SN(d_1) - N(d_2)Ke^{-rt}$$

C = Call premium
S = Current stock price
t = Time until option exercise
K = Option striking price
r = Risk-free interest rate
N = Cumulative standard normal distribution
e = Exponential term

s = St. Deviation
ln = Natural Log

$$d_1 = \frac{\ln\left(\frac{S}{K}\right) + \left(r + \frac{s^2}{2}\right)t}{s \cdot \sqrt{t}}$$

$$d_2 = d_1 - s \cdot \sqrt{t}$$

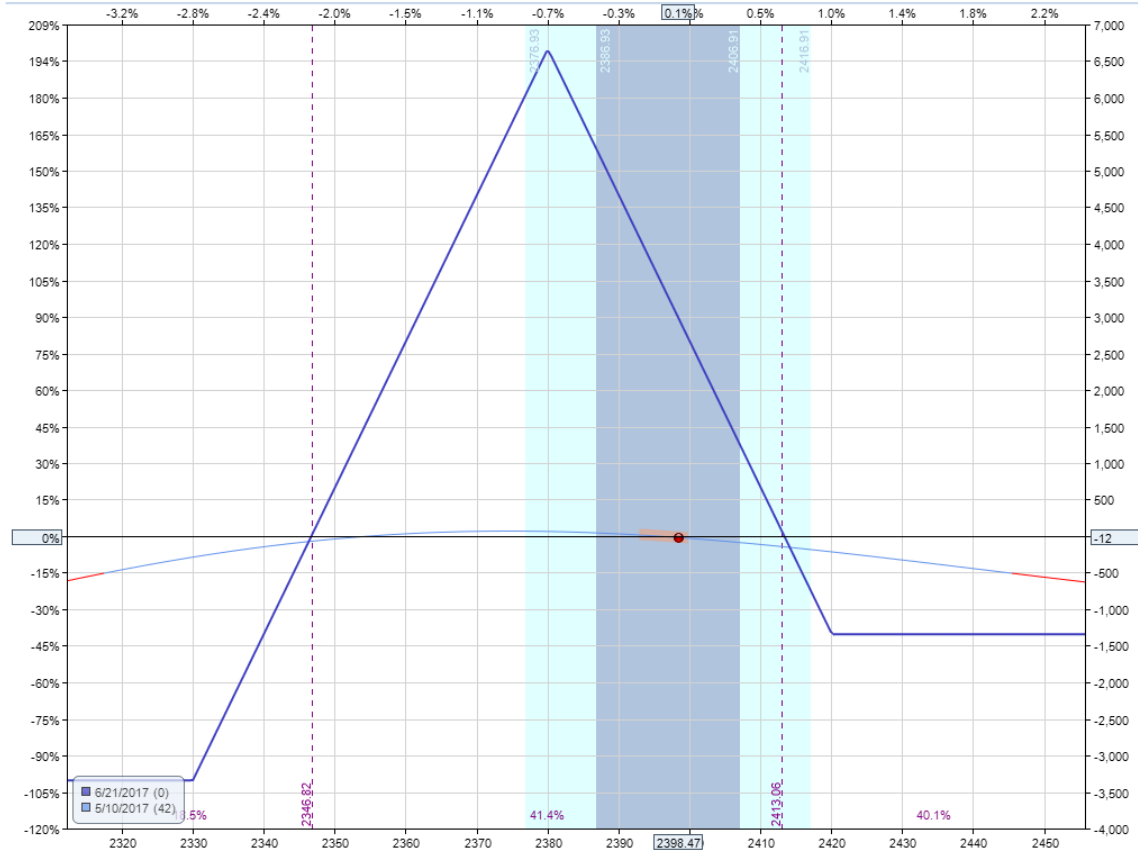
Option Greeks

- **Delta** indicates an option's sensitivity to change in the underlying price. It predicts the change in the option's price with a \$1 change in the underlying price.
- **Theta** indicates an option's time decay, giving us the change in price per day.
- **Vega** is the option's sensitivity to changes in implied volatility. A rise in implied volatility is a rise in option premiums, and so will increase the value of long calls and long puts. Vega increases with each expiration further out in time.

For every 1% volatility increase in the underlying asset, the value of vega is added to the value of the option.

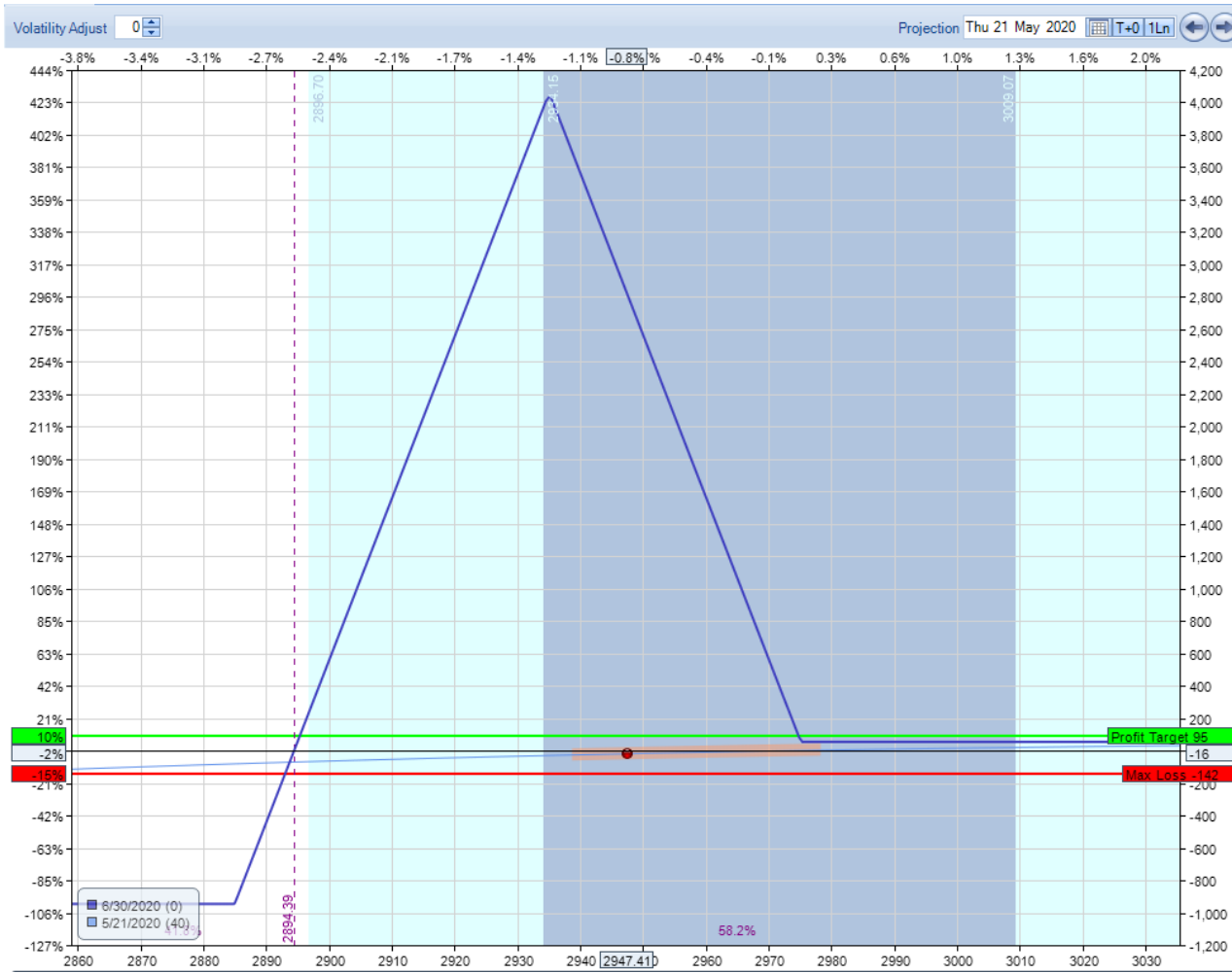
- Conversely, for every 1% volatility decrease, the value of vega is subtracted from the value of the option.
- **Gamma** is the sensitivity of the delta to changes in price of the underlying asset.

Weekly		21 Jun 17 (42)				8.63%
CALL	Mid	IV	Delta	Model	Pos	
2555						
2550	0.425	8.45	1.73			
2545						
PUT	Mid	IV	Delta	Model	Pos	
2440	53.15	8.60	-71.36			
2435	49.65	8.62	-68.88			
2430	46.30	8.65	-66.30			
2425	43.20	8.72	-63.59			
2420	40.15	8.76	-60.89			+2
2415	37.45	8.86	-58.08			
2410	34.85	8.95	-55.30			
2405	32.45	9.06	-52.54			
2400	30.25	9.19	-49.83			
2395	28.15	9.31	-47.18			
2390	26.25	9.45	-44.62			
2385	24.55	9.62	-42.16			
2380	22.85	9.75	-39.78			-4
2375	21.40	9.92	-37.54			
2370	20.05	10.10	-35.41			
2365	18.75	10.26	-33.38			
2360	17.60	10.44	-31.48			
2355	16.50	10.62	-29.67			
2350	15.50	10.80	-27.97			
2345	14.60	10.99	-26.39			
2340	13.70	11.16	-24.87			
2335	12.90	11.34	-23.46			
2330	12.20	11.55	-22.17			+2
2325	11.50	11.73	-20.92			
2320	10.85	11.91	-19.75			
2315	10.25	12.10	-18.65			
2310	9.65	12.27	-17.59			
2305	9.15	12.47	-16.65			



Standard & Poor's 500										7.15 (-10%)			Open Position (1) #1311 SPX 21 JUN APFF			
Open	High	Low	Last	Chg	Chg%	SD	Model	Pos		DIT	SD	IVChg%	OrigMargin	PnL%		
2396.79	2399.64	2392.79	2398.47	+1.55005	+0.06%	0.16				0	0.00	0.00%	3,342.00	-0.36%		

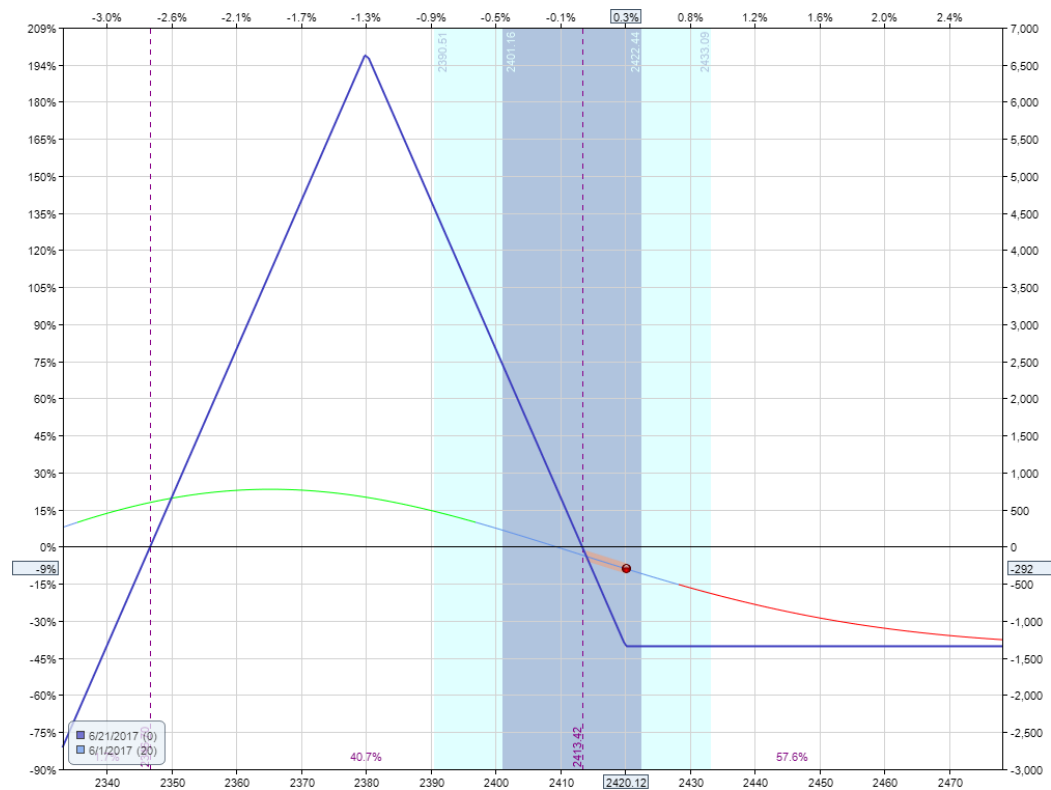
Trade Analysis												<input type="checkbox"/> Ignore Today's Trades
Analysis	OrigMargin	Cost	Curr Cost	Com	Profit/Loss	PnL%	Delta	Gamma	Theta	Vega	T/D	Plot
Position	3,342.00	-1,342.00	1,330.00	12.00	-12.00	-0.36%	-6.99	-0.23	14.20	-146.73	2	<input checked="" type="checkbox"/>



SPX Standard & Poor's 500 24.97 (+4%)									Open Position (2) #1321 SPX 30 JUN APFF				
Open	High	Low	Last	Chg	Chg%	SD	Model	Pos	DIT	SD	IVChg%	OrigMargin	PnL%
2969.95	2978.50	2938.57	2947.70	-23.91016	-0.80%	-0.64			0	0.00	0.31%	946.00	-1.69%

Trade Analysis												
Analysis	OrigMargin	Cost	Curr Cost	Com	Profit/Loss	PnL%	Delta	Gamma	Theta	Vega	T/D	Plot
Position	946.00	54.00	-60.00	6.00	-6.00	-0.63%	0.80	-0.01	2.62	-12.52	3	<input checked="" type="checkbox"/>

Ignore Today's Trades



SPX										Standard & Poor's 500					6.23 (-26%)					Open Position (2) #1311 SPX 21 JUN APFF				
Open	High	Low	Last	Chg	Chg%	SD	Model	Pos		DIT	SD	IVChg%	OrigMargin	PnL%										
2415.65	2420.29	2413.54	2420.12	+8.32007	+0.34%	0.78				22	0.51	-12.87%	3,342.00	-8.74%										

Trade Analysis													Ignore Today's Trades	
Analysis	OrigMargin	Cost	Curr Cost	Com	Profit/Loss	PnL%	Delta	Gamma	Theta	Vega	T/D	Plot		
Position	3,342.00	-1,342.00	1,050.00	12.00	-292.00	-8.74%	-27.01	0.18	21.41	-36.99	1	<input checked="" type="checkbox"/>		