

Option “Greeks”

Δ

v

θ

γ



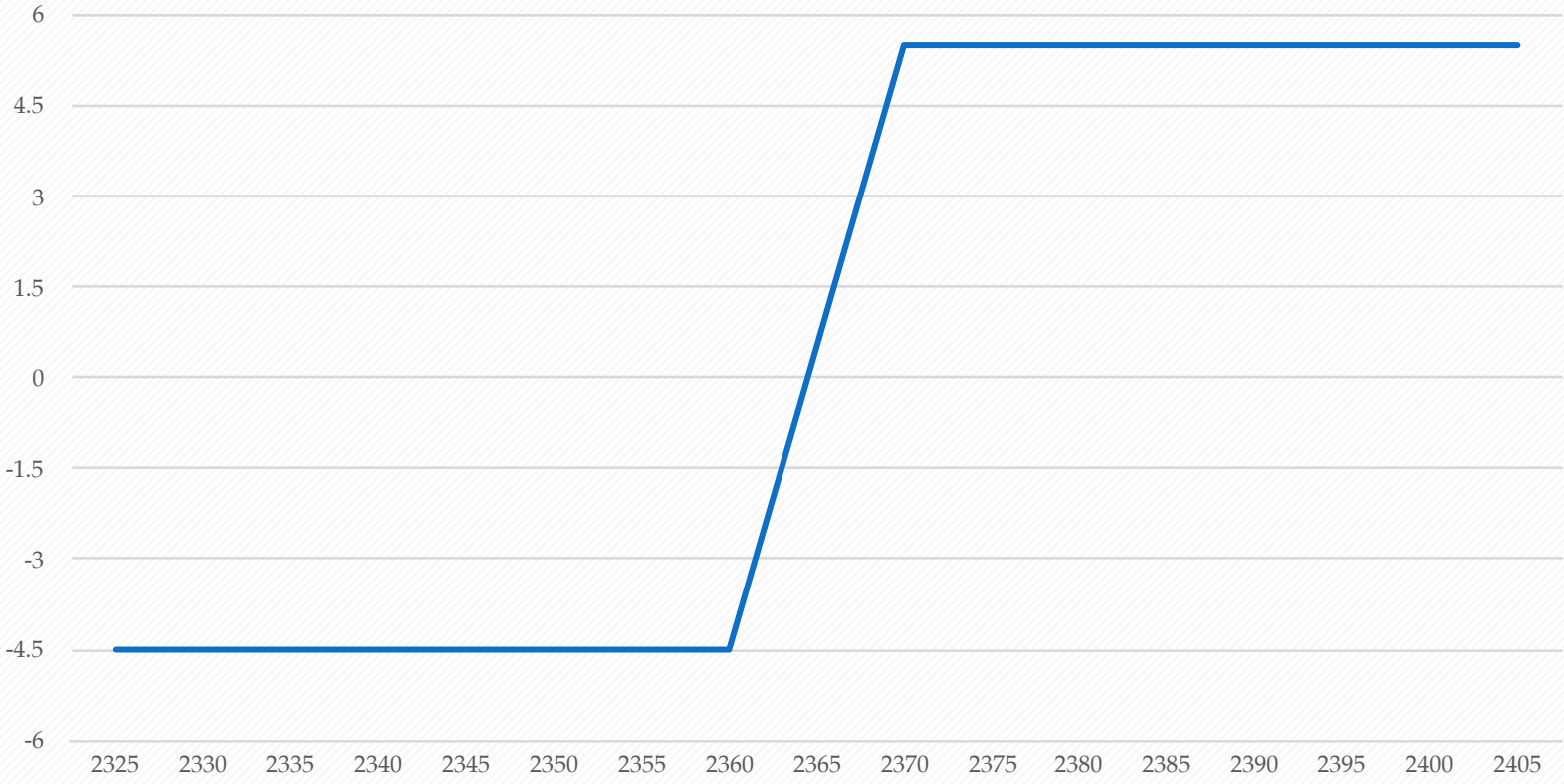
Risk sensitivities

- Delta: sensitivity of the option price to changes in the value of the underlying asset (stock/index)
- Theta: sensitivity of the option price to the passage of time
- Vega: sensitivity of the option price to changes in perception of volatility in the asset
- These are all *ceteris paribus* relationships!
i.e. they're not perfect, but approximations.
- Gamma: change in delta when the stock/index price changes

Basic Rules

- Delta: call positive, put negative (flip sign for short positions!)
- Theta: always negative (unless short position)
- Vega: always positive (unless....)
- Gamma: always positive
 - Nice “market timing effect” for buying calls
 - Call option gets more sensitive to price movements of the stock/index in bull markets, less sensitive in bear markets 😊
- These are all based on some model of options prices, for example the Black-Scholes model.

Call Spread





Virtual Account Positions

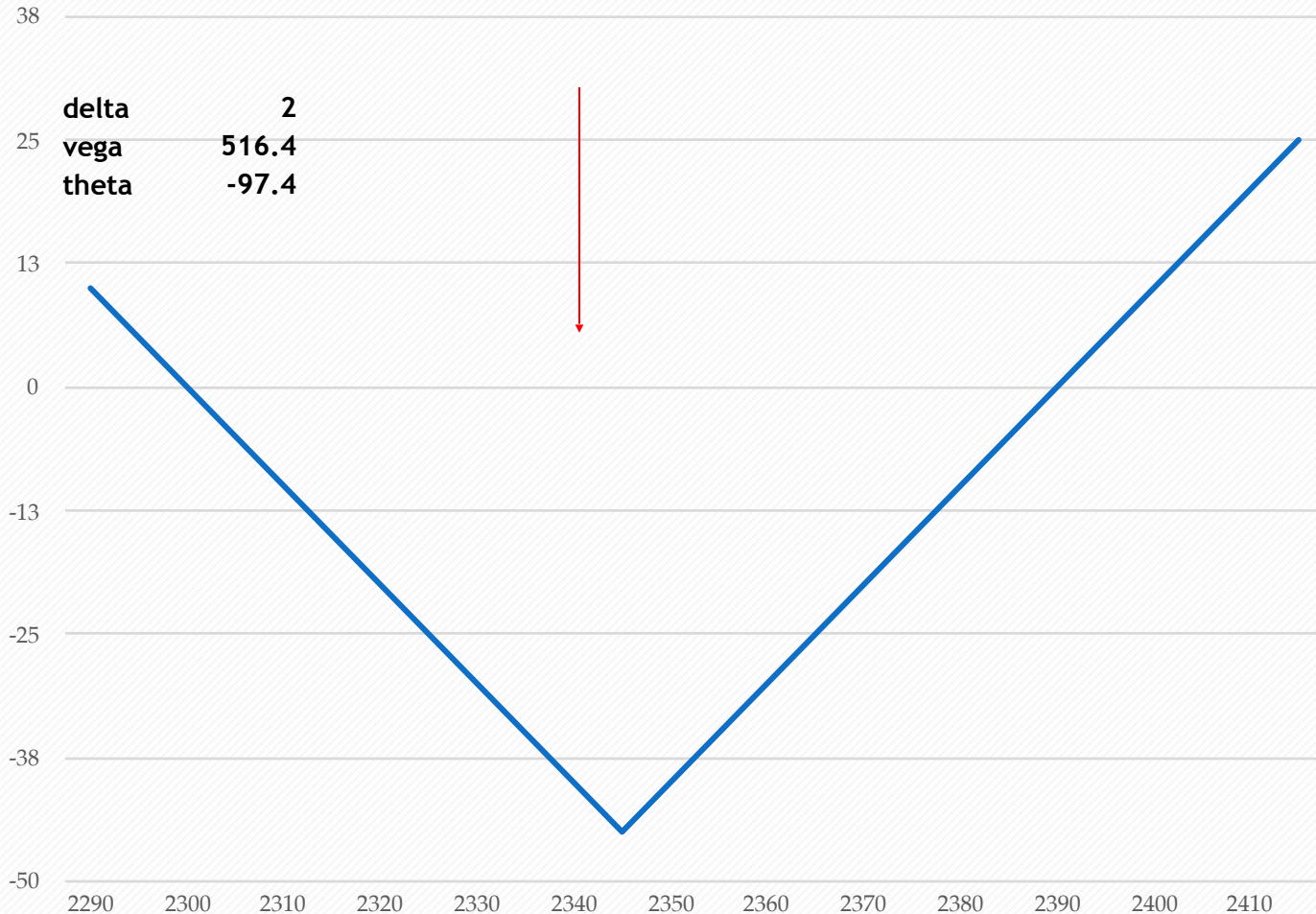
My View

Order Status

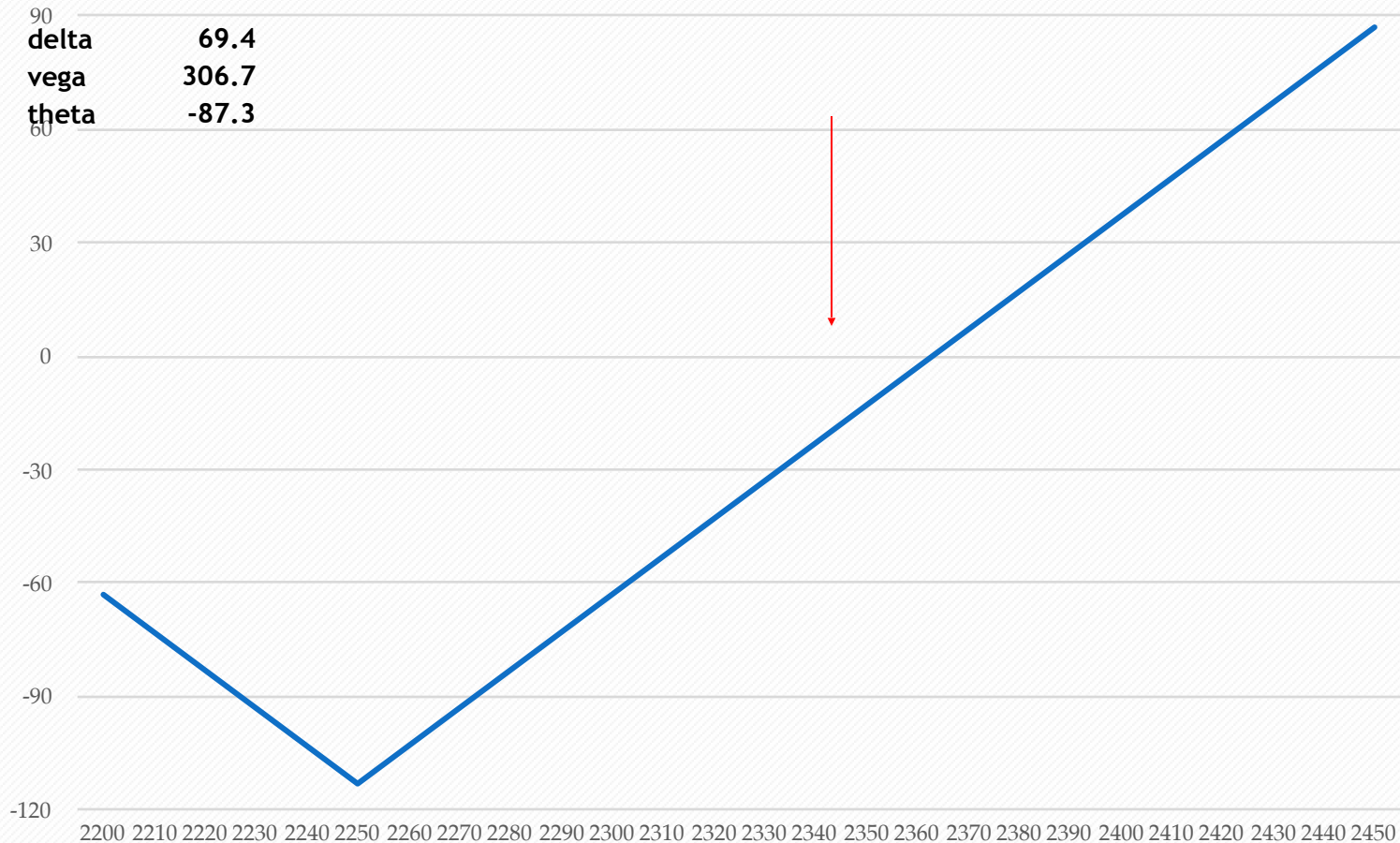
Default

Symbol ▲	Description	Stock	Qty	Avg Price	Price	Change	Value	Gain/Loss	Delta	Pos. Theta	Pos. Vega	Pos. Delta	Pos. Gamma
SPX Apr17 2360 Call	S&P 500 INDEX	\$2,343.98	10	\$25.90	\$19.70	-0.65	\$19,700.00	-\$6,200.00	0.42	-504.2	2492.17	420.14	5.92
SPX Apr17 2370 Call	S&P 500 INDEX		-10	\$18.90	\$15.40	-0.20	-\$15,400.00	\$3,500.00	0.36	458.84	-2376.42	-356.32	-5.9
										-45.36	115.75	63.82	

Straddle: buy call, buy put @2,345



Straddle: buy call, buy put @2,250



Notes

- Selling options: negative vega
 - Example: covered calls have small, positive delta (because the delta of the stock/index is 1), negative vega and negative theta
- Selling options: positive theta
 - The more time passes without any large price movements in the stock/index the better
- Buying options: positive delta, positive vega, positive gamma 😊
negative theta 😞