

AAll San Diego Options Trading

Research on options trading

<https://aaiisandiego.com/sub-groups/options-trading/>





Please note:

- Keep microphones on mute
- Unmute to ask a question during the presentation
- Submit written questions via the chat facility
- We are recording the session; please turn off your camera if you prefer privacy
- See adiisandiego.com for other meetings



Agenda:

- Some results from research (I've chosen a representative result)
 - Call returns
 - Puts returns
 - Straddles and other volatility trades
 - Behavior of time value
 - Covered Calls
- Not covered:
 - Effects of active trading
 - Information from the options market
- Tips on how to use/interpret academic research
- Resources

Let's start...

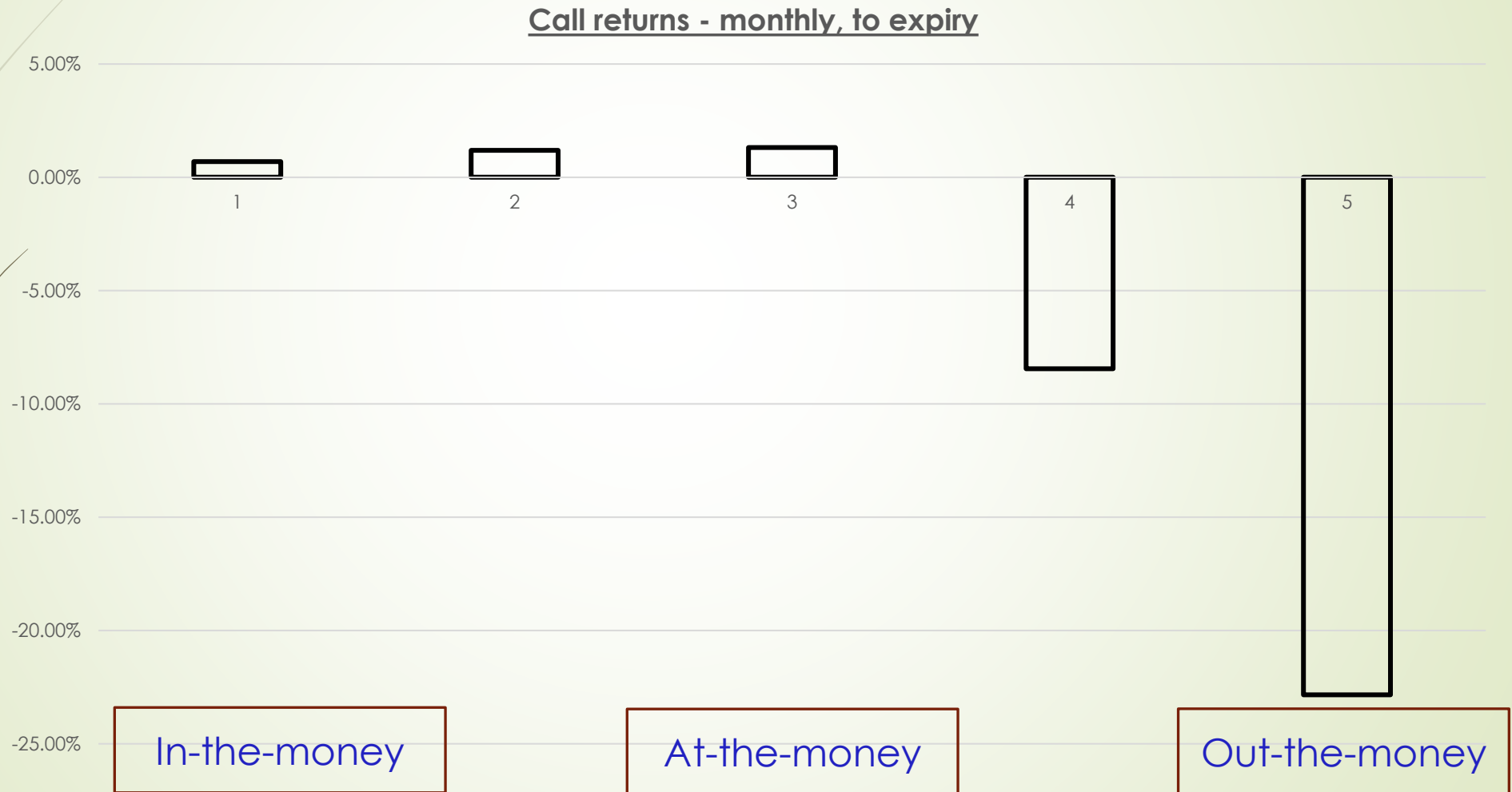


Did you know that globally **nearly 80-85% of the options expire worthless.** That means; the buyer of the option loses money on the option while the seller actually takes the premium. There could be two reasons for the same.

- x% of options expire out-the-money
- I actually have no idea where this comes from, or even exactly what it means
- Although I've seen statements like this a lot in emails or articles, I've never seen a reference for it

Call options

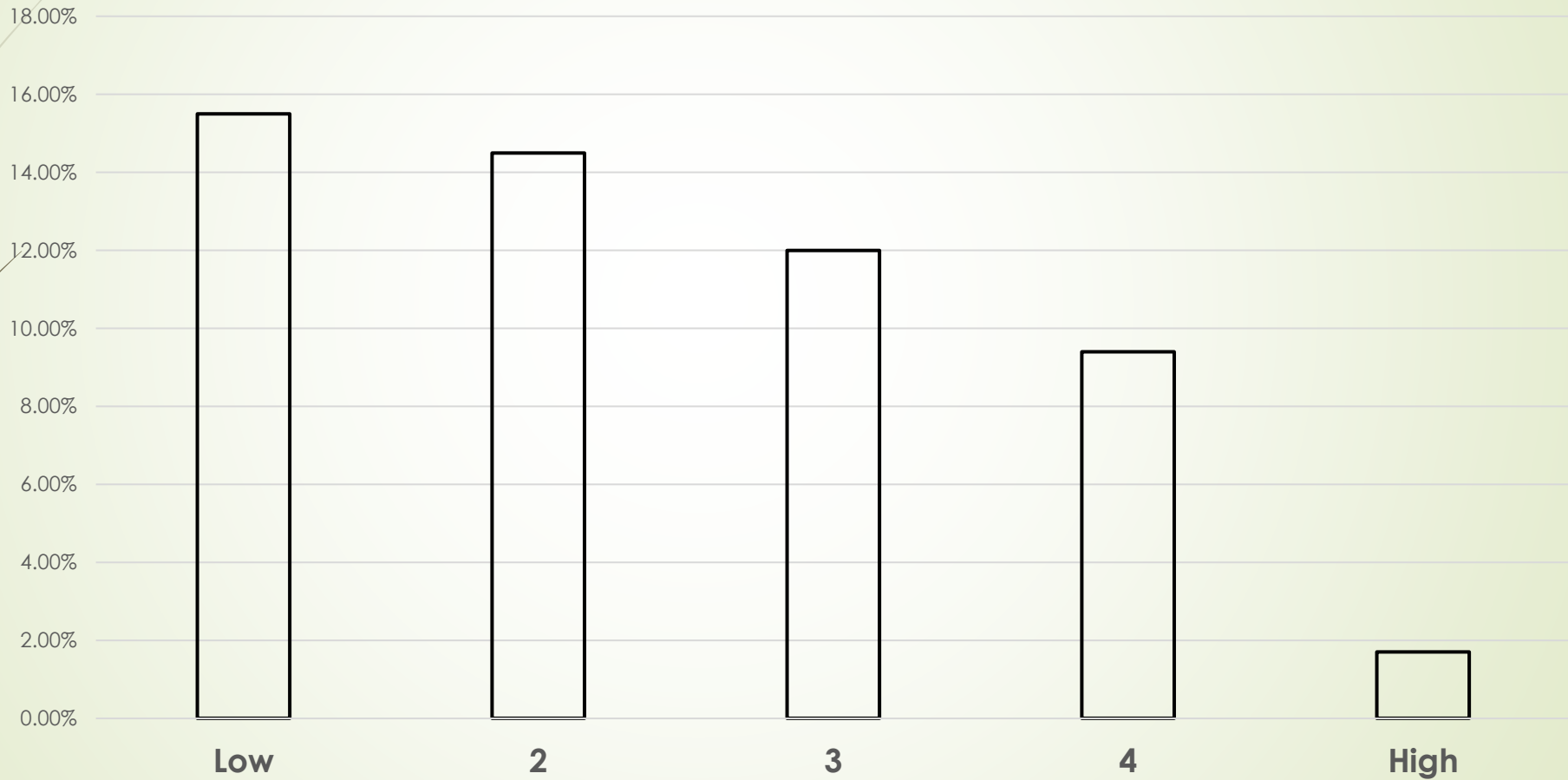
Ni: "Stock Option Returns: A Puzzle"



Call options

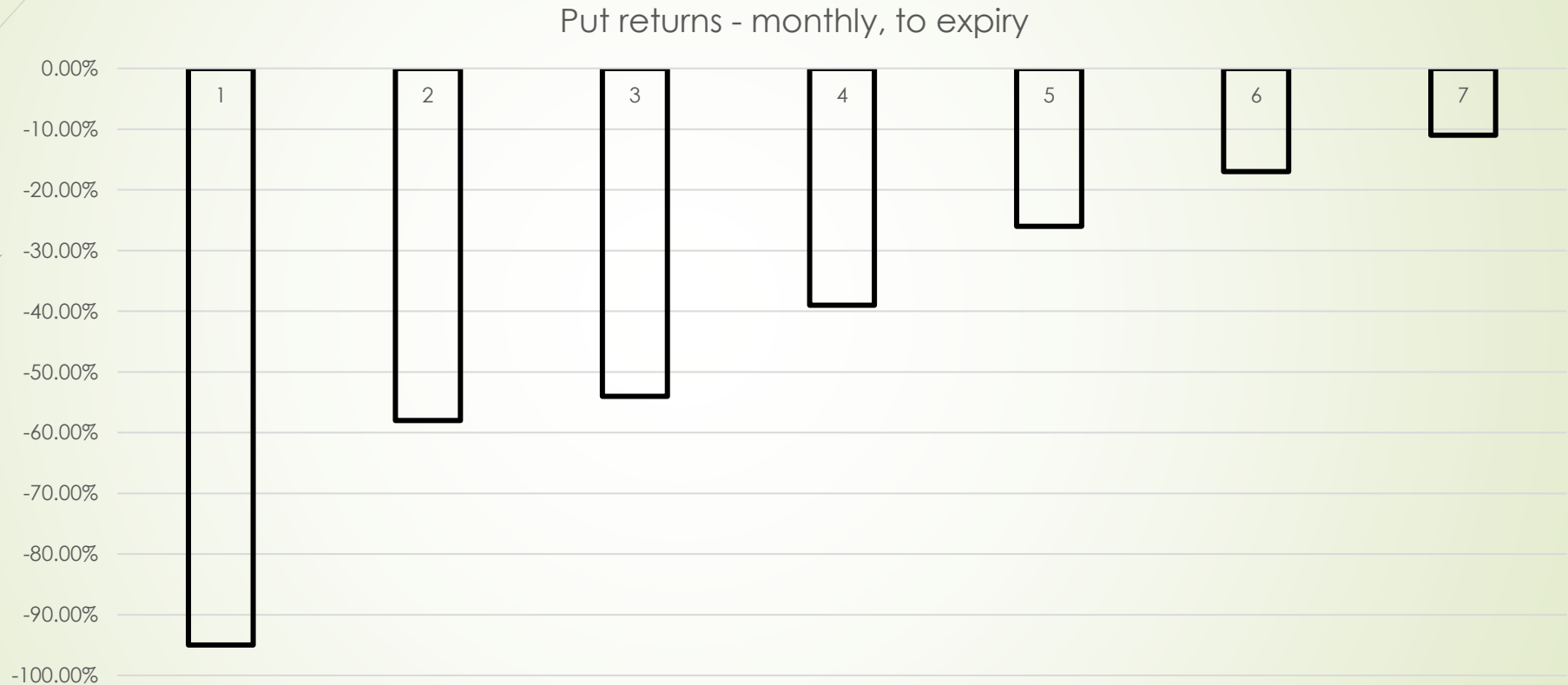
Hu and Jacobs: "Volatility and Expected Option Returns"

ATM calls - monthly returns by recent volatility



Put options

Bondarenko: "Why Are Put Options So Expensive?"



Out-the-money

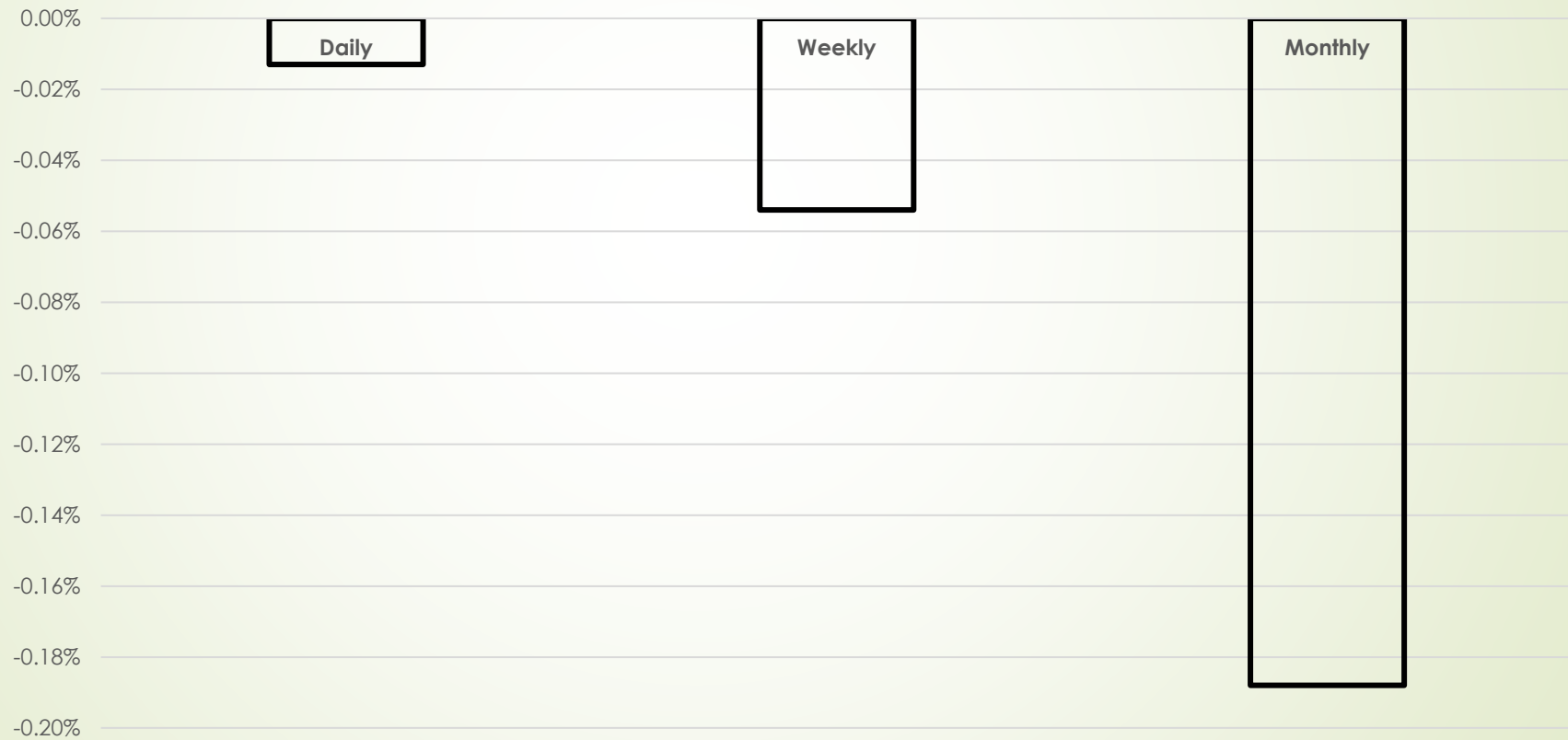
At-the-money

In-the-money

Straddles

Goltz and Lai: "Empirical Properties of Straddle Returns"

ATM Straddles

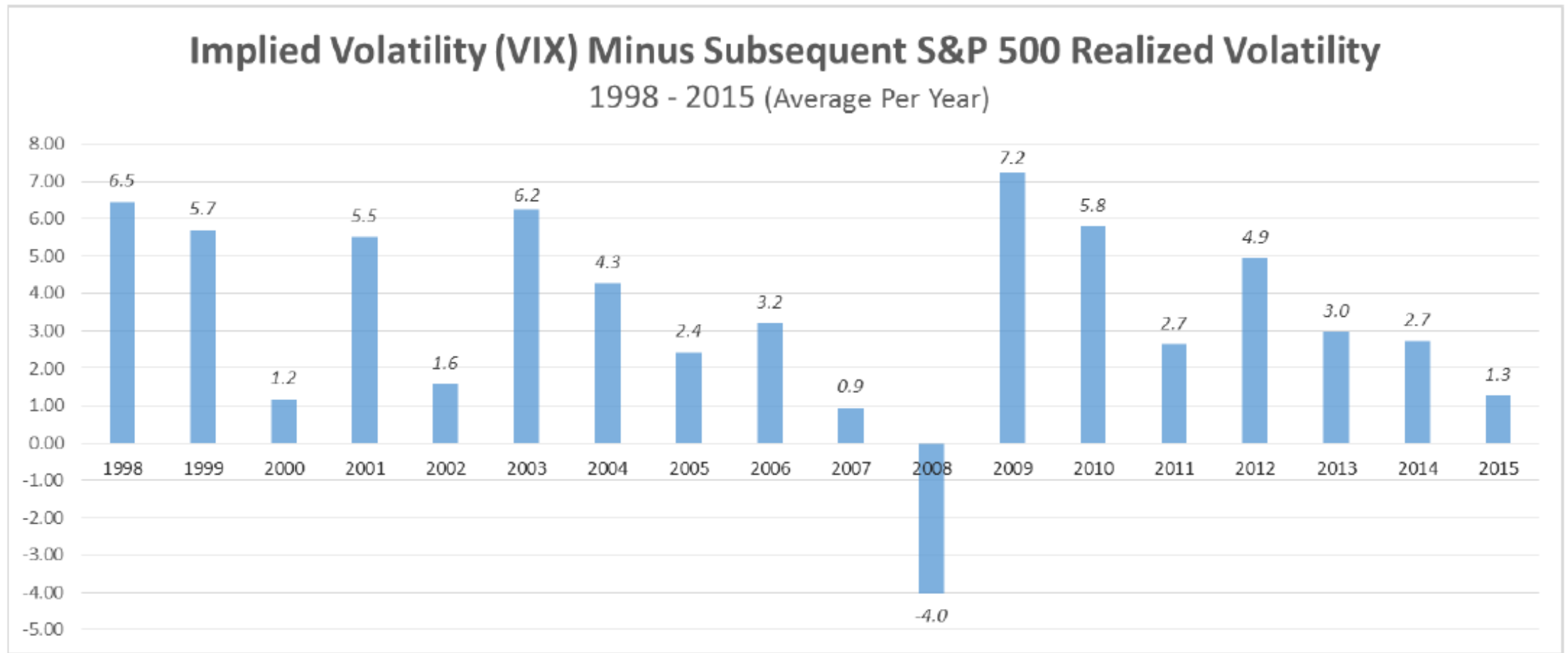


Volatility Risk Premium

Wilshire Analytics: "Three Decades of Options-Based Benchmark Indices...."

Implied > Realized Volatility Rewards Sellers

Exhibit 8

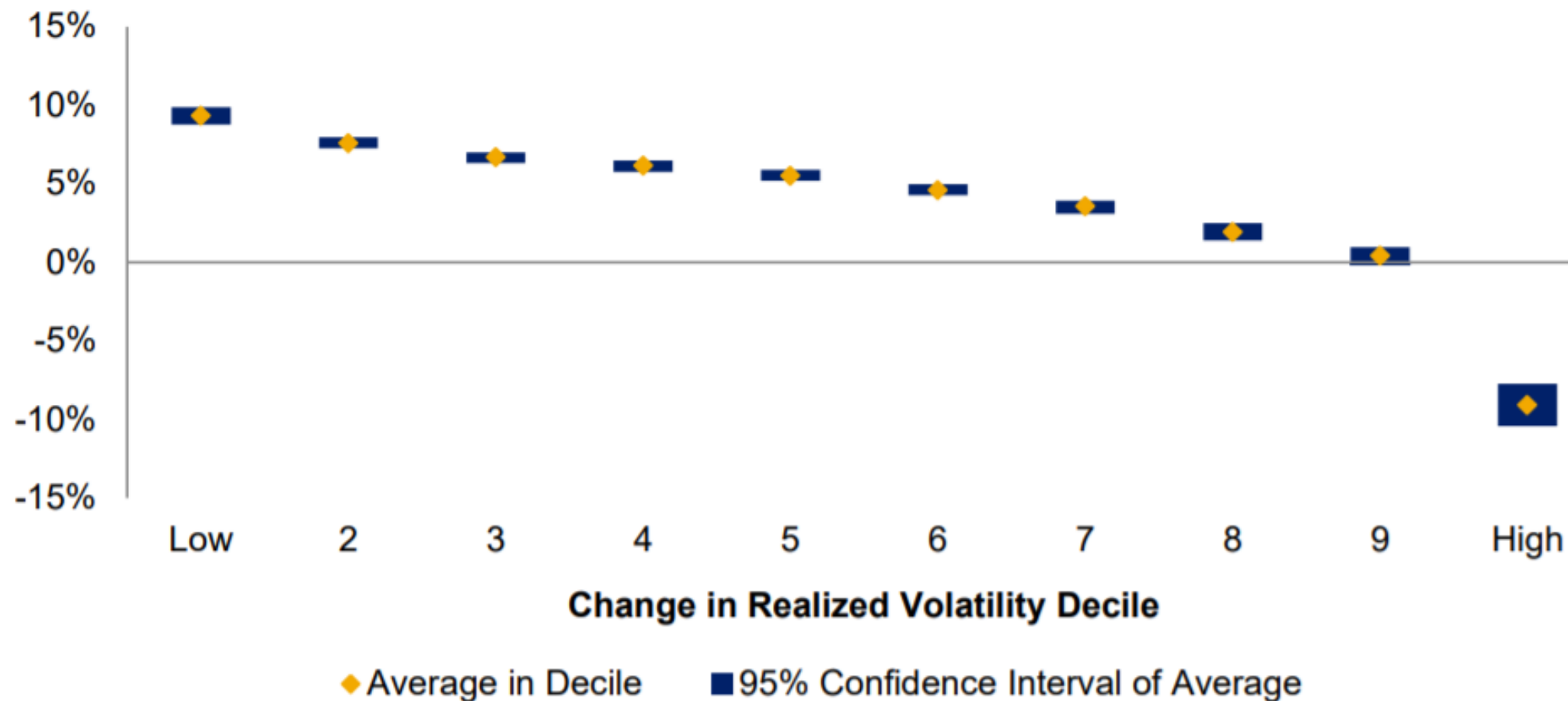


Volatility Risk Premium

Israelov and Tummala: "Being Right is Not Enough: Buying Options to Bet on Higher Realized Volatility"

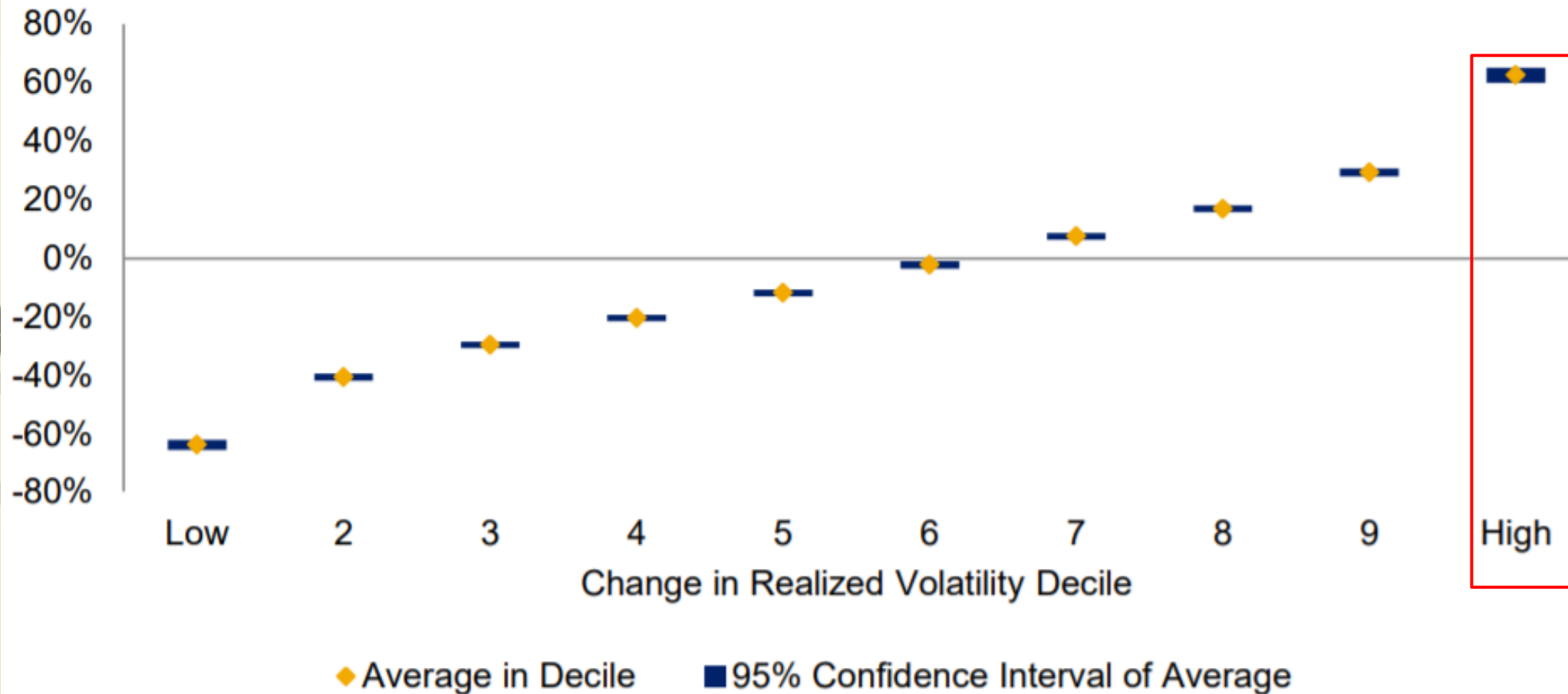
Exhibit 5: Ex Post Volatility Risk Premium (Bucketed by Change in S&P 500 Volatility)

1996 - 2016



Volatility Risk Premium

Exhibit 1: Percentage Change in S&P 500 Volatility (Bucketed by Percentage Change in S&P 500 Volatility) 1996 - 2016



Covered Calls

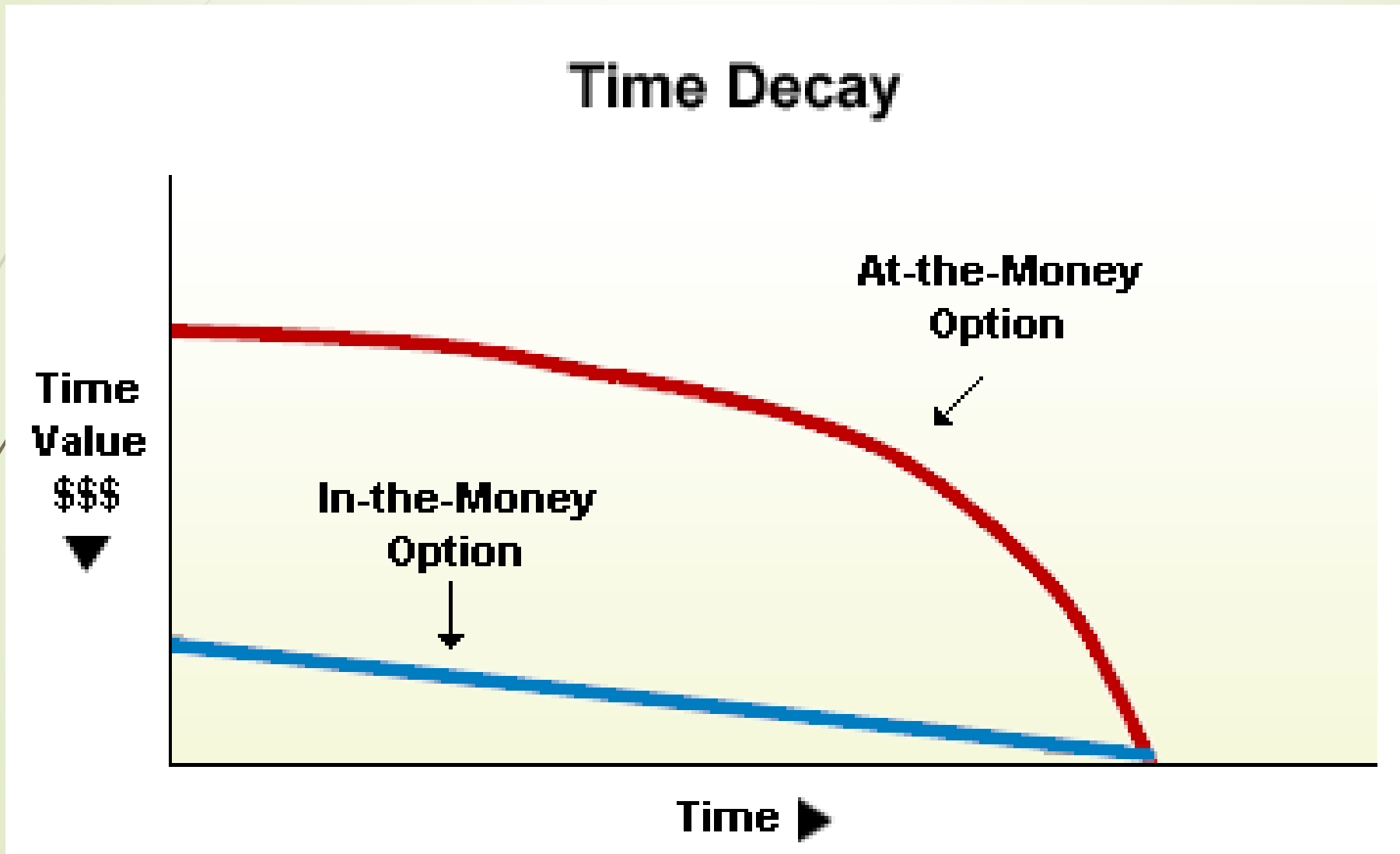
Israelov and Nielsen: "Covered Calls Uncovered"

Covered Calls Uncovered

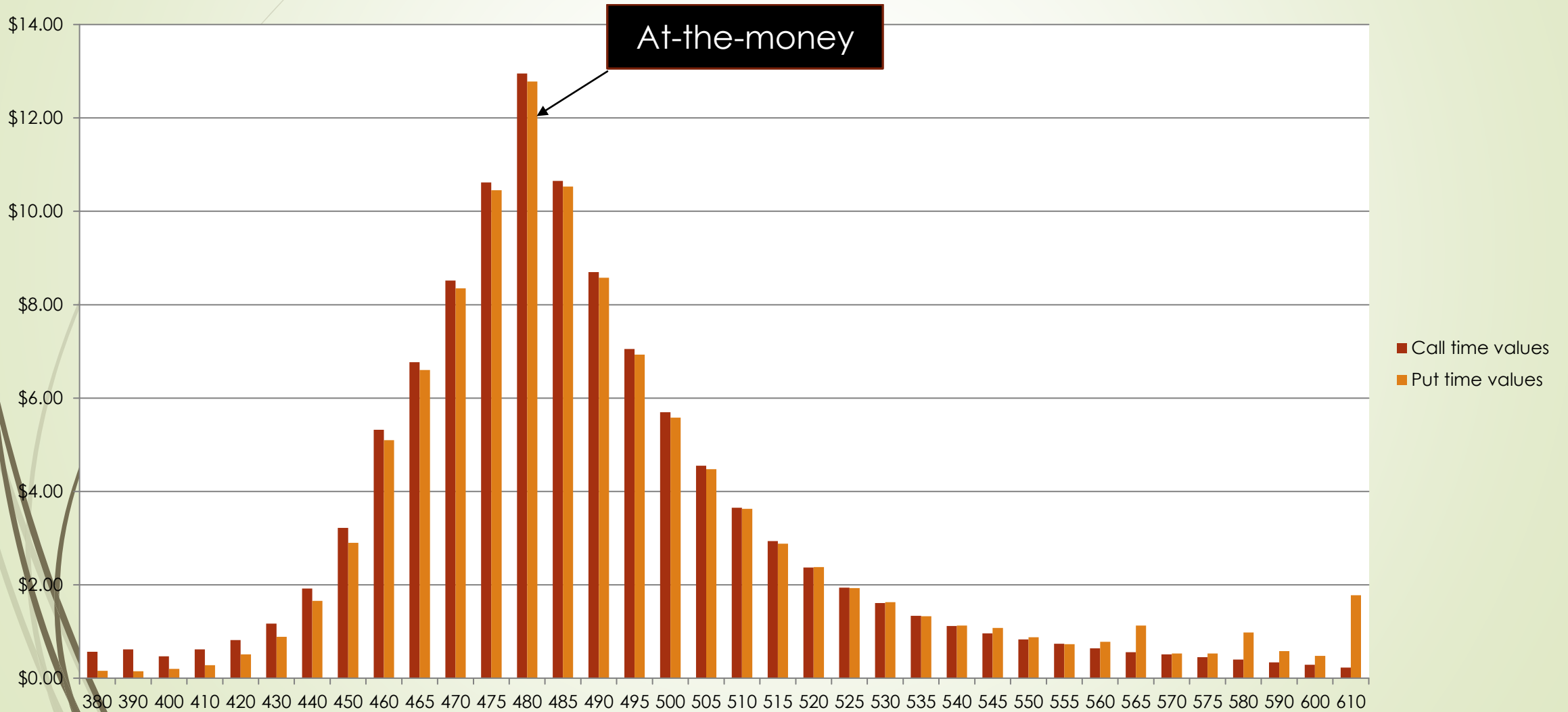
Table 6. Summary Statistics: Returns (Annualized), 25 March 1996–31 December 2014

	S&P 500	BXM	Hedged BXM	BXY	Hedged BXY
Excess return (simple)	6.8%	4.9%	5.1%	6.3%	6.5%
Excess return (geometric)	5.2%	4.2%	4.8%	5.4%	5.8%
Volatility	16.4%	11.4%	9.2%	13.3%	12.4%
Sharpe ratio (geometric)	0.32	0.37	0.52	0.41	0.46
Skew	-0.7	-1.6	-1.1	-1.1	-0.9
Kurtosis	3.1	7.6	4.2	5.0	3.7
Beta to S&P 500	1.00	0.62	0.54	0.76	0.75
Upside beta	1.00	0.46	0.49	0.61	0.71
Downside beta	1.00	0.85	0.60	0.89	0.78

How does time value behave?

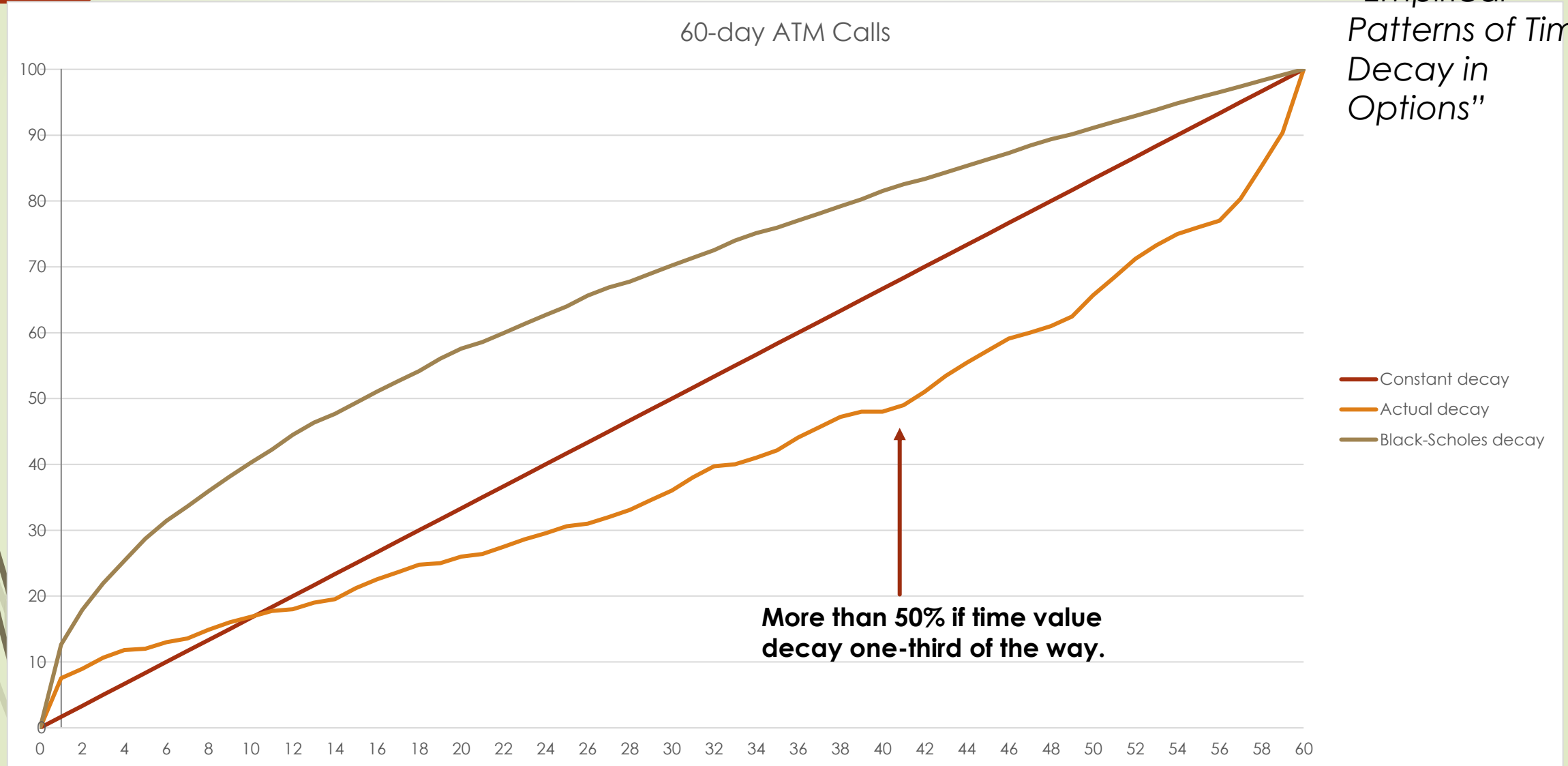


Time value affected by *stock price*



ATM options do not confirm to the picture

McKeon:
"Empirical
Patterns of Time
Decay in
Options"



Summary of main results

- ▶ The following are reliably losing propositions:
 - ▶ Buying short-dated, OTM calls
 - ▶ Buying puts ... any puts
 - ▶ Straddles ... buying or selling
 - ▶ Long volatility
- ▶ The following offer opportunity for long-run positive results
 - ▶ Selling puts
 - ▶ Buying longer-dated, ITM calls
 - ▶ Buying call options on low-volatility stocks
- ▶ Time value:
 - ▶ Heavily affected by stock/index price movements
 - ▶ ATM options (calls and puts) will have strongest decay early in the trade
 - ▶ OTM/ITM options can exhibit very late decay



Resources

- ▶ SSRN – financial economics
 - ▶ <https://www.ssrn.com/index.cfm/en/fen/>
- ▶ Tastytrade – market measures
 - ▶ <https://www.tastytrade.com/shows/market-measures>
- ▶ Optionalpha – podcast
 - ▶ <https://optionalpha.com/podcast>



Tips on how to use/interpret academic research

- ▶ If it's about call options...
 - ▶ ...are the positions delta-hedged?
- ▶ Is it telling you what's going to happen to *the stock*, rather than what will happen when you trade the option?
- ▶ What trading costs have been left out of the study? How would these effect your returns?
 - ▶ Margin, taxes, commissions etc.
- ▶ How much do we trust something that's model-generated?
 - ▶ Prime example: Volatility Risk Premium

Resources

- ▶ “Stock Option Returns: A Puzzle”
<https://www.efalken.com/pdfs/NiStockOptionReturns.pdf>
- ▶ “Empirical Properties of Straddle Returns”
https://risk.edhec.edu/sites/risk/files/EDHEC_Working_Paper_Empirical_Properties_of_Straddle_Returns.pdf
- ▶ “Why are Put Options So Expensive?”
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=375784
- ▶ “Empirical Patterns of Time Value Decay in Options”
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2725664
- ▶ “Being Right is Not Enough: Buying Options to Bet on Higher Realized Volatility”
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3248500
- ▶ “Volatility and Expected Option Returns”
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2695569