



Interactive Brokers

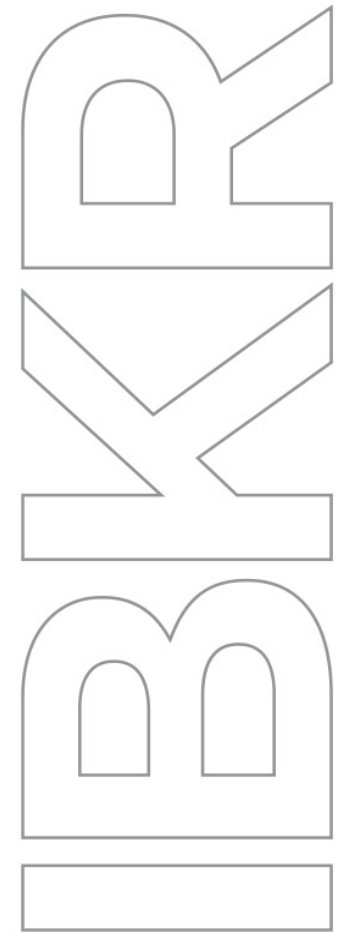
in conjunction with

CBOE

present:

Equity Index Trading Why Product Choice Matters in Your Trading Strategies

Kevin Davitt and Arianne Criqui
The Options Institute



February 2, 2021

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Equity Index Trading - Why Product Choice Matters in Your Trading Strategies

The Options Institute SM
Kevin Davitt | Arianne Criqui

Disclaimers

- **Options involve risk and are not suitable for all investors.**
- Prior to buying or selling an option, a person must receive a copy of Characteristics and Risks of Standardized Options (ODD). Copies of the ODD are available from your broker or from The Options Clearing Corporation, 125 S. Franklin Street, Suite 1200, Chicago, IL 60606.
- The information in this paper is provided solely for general education and information purposes and therefore should not be considered complete, precise, or current.
- Many of the matters discussed are subject to detailed rules, regulations, and statutory provisions which should be referred to for additional detail and are subject to changes that may not be reflected in the website information.
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Learning Objectives

- Understanding the construction and market relevance of the S&P 500 index
- Understanding the why and how market participants utilize
- Understanding of the important differences between trading index options, standard equity options, and options on ETFs
- Understanding commonly used S&P 500 options strategies and the associated risks/benefits of each



SKILLS DRILL

Notional Value Calculations & Risk Profile Metrics

Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Notional Value

Total value of the underlying assets
in a derivatives trades

Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Assume contract quantity = 1

FUTURES

“BIG”

SP Dec 20 Future level = 3,451

SP contract multiplier = \$250

Notional Value =

OPTIONS

Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Assume contract quantity = 1

FUTURES

"BIG"

SP Dec 20 Future level	= 3,451
SP contract multiplier	= \$250
Notional Value	= \$862,750

OPTIONS

Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Assume contract quantity = 1

FUTURES

"BIG"

SP Dec 20 Future level = 3,451
SP contract multiplier = \$250
Notional Value = **\$862,750**

E-MINI

ES Dec 20 Future level = 3,451
ES contract multiplier = \$50
Notional Value = ?

OPTIONS

Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Assume contract quantity = 1

FUTURES

"BIG"

SP Dec 20 Future level = 3,451
SP contract multiplier = \$250
Notional Value = **\$862,750**

E-MINI

ES Dec 20 Future level = 3,451
ES contract multiplier = \$50
Notional Value =

OPTIONS

Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Assume contract quantity = 1


FUTURES

"BIG"

SP Dec 20 Future level = 3,451
SP contract multiplier = \$250
Notional Value = **\$862,750**

E-MINI

ES Dec 20 Future level = 3,451
ES contract multiplier = \$50
Notional Value = **\$172,550**



OPTIONS



Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Assume contract quantity = 1

FUTURES

"BIG" SP Dec 20 Future level = 3,451
SP contract multiplier = \$250
Notional Value = **\$862,750**

E-MINI ES Dec 20 Future level = 3,451
ES contract multiplier = \$50
Notional Value = **\$172,550**

OPTIONS

SPX level = 3,451
SPX SPX contract multiplier = \$100
Notional Value = ?

XSP level = $3,451/10 = 345.10$
XSP XSP contract multiplier = \$100
Notional Value = ?



Notional Value = QUANTITY x PRICE (level) x CONTRACT MULTIPLIER

Assume contract quantity = 1

FUTURES

"BIG"

SP Dec 20 Future level = 3,451

SP contract multiplier = \$250

Notional Value = **\$862,750**

E-MINI

ES Dec 20 Future level = 3,451

ES contract multiplier = \$50

Notional Value = **\$172,550**

OPTIONS

SPX level = 3,451

SPX SPX contract multiplier = \$100

→ Notional Value = **\$345,100**

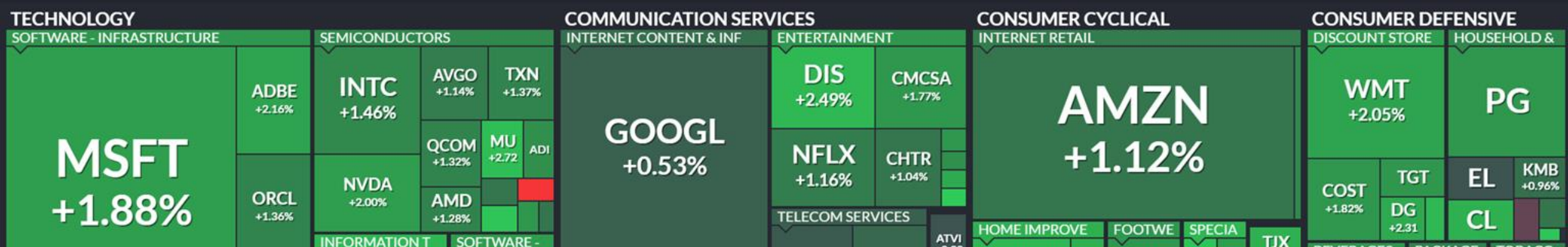
XSP level = $3,451/10 = 345.10$

XSP XSP contract multiplier = \$100

→ Notional Value = **\$34,510**

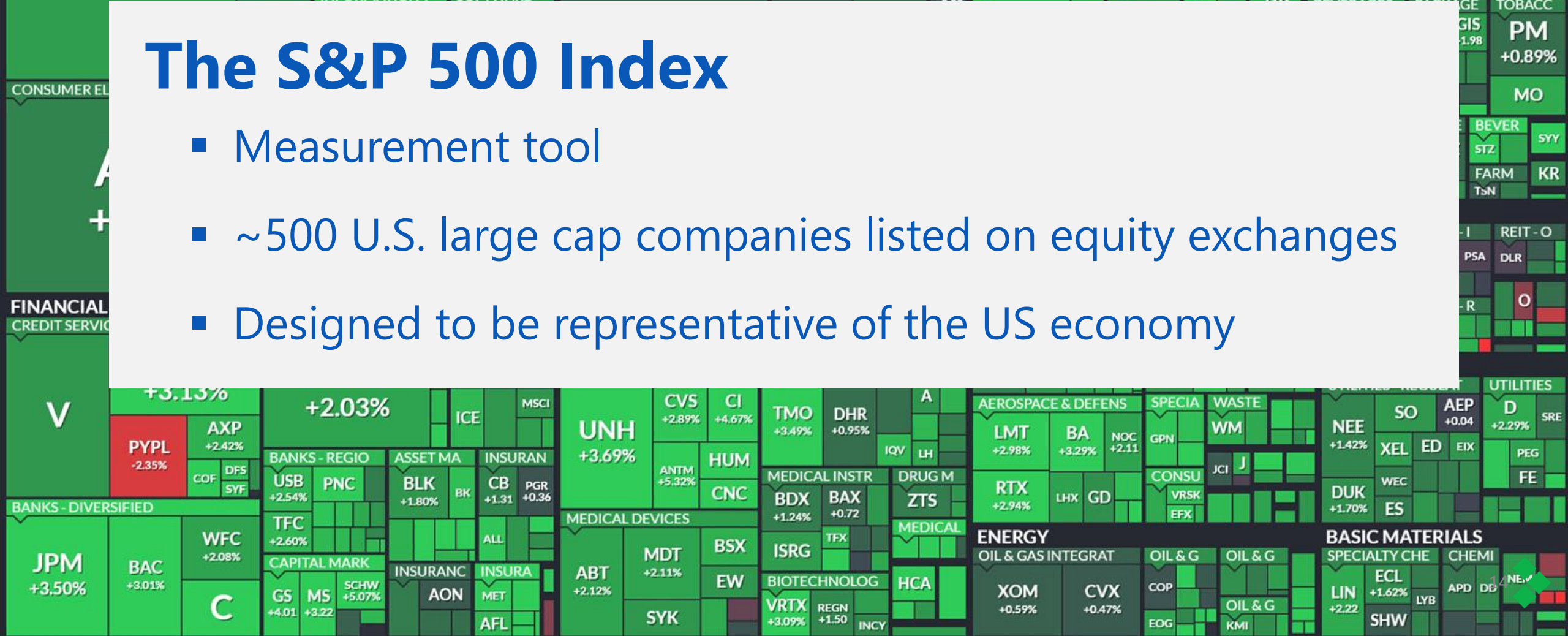


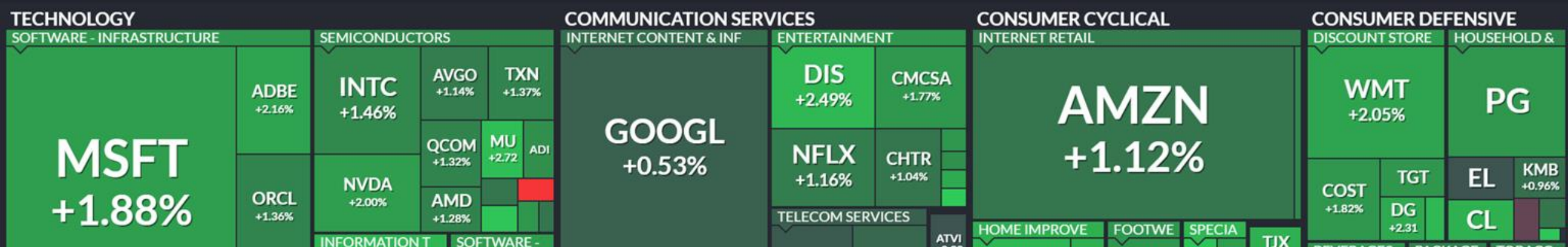
S&P 500 Index Fundamentals



The S&P 500 Index

- Measurement tool
- ~500 U.S. large cap companies listed on equity exchanges
- Designed to be representative of the US economy





The S&P 500 Index

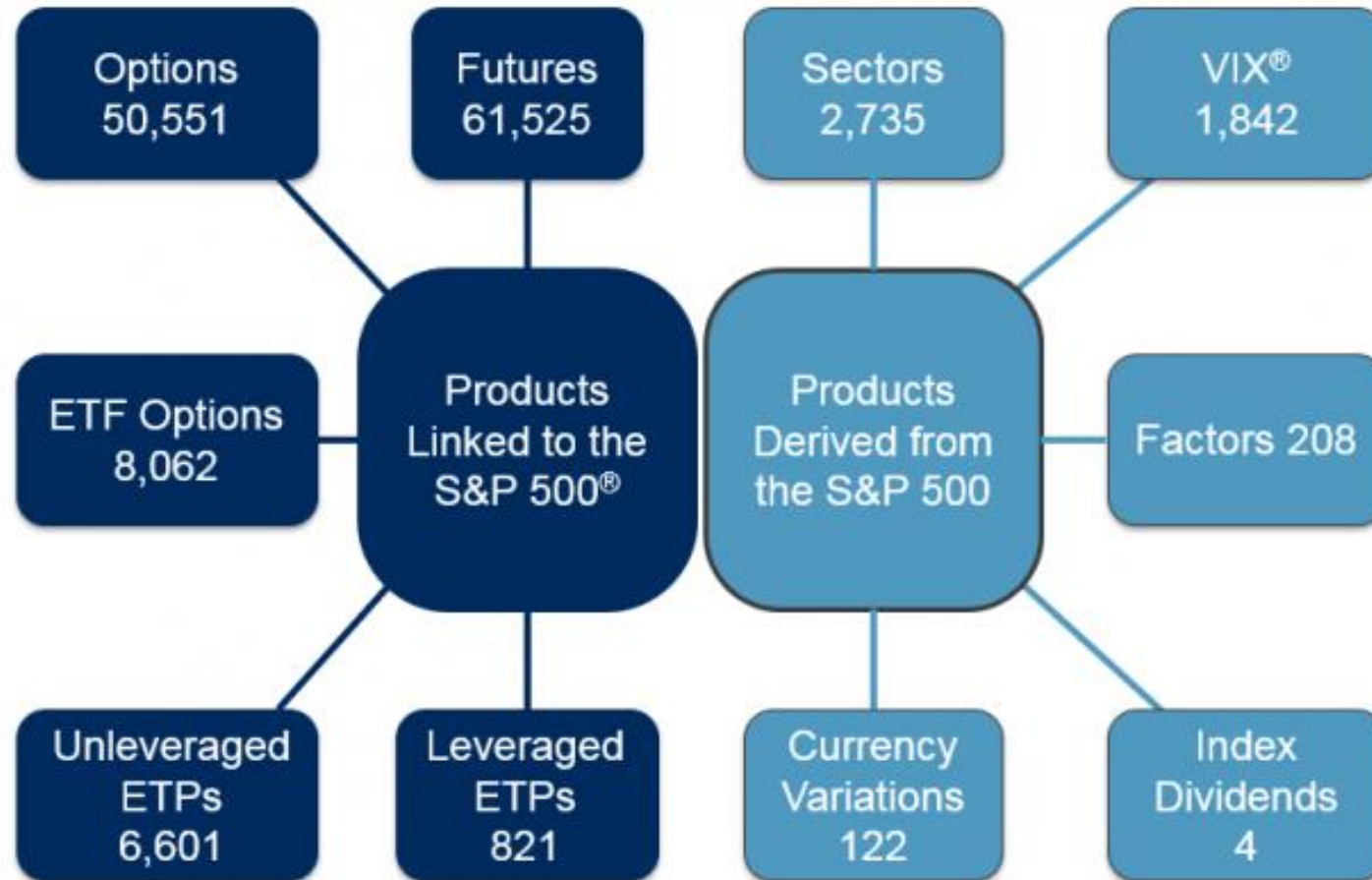
- Measurement tool
- ~500 U.S. large cap companies listed on equity exchanges
- Designed to be representative of the US economy

+ \$11.2 trillion indexed or benchmarked



The S&P Ecosystem

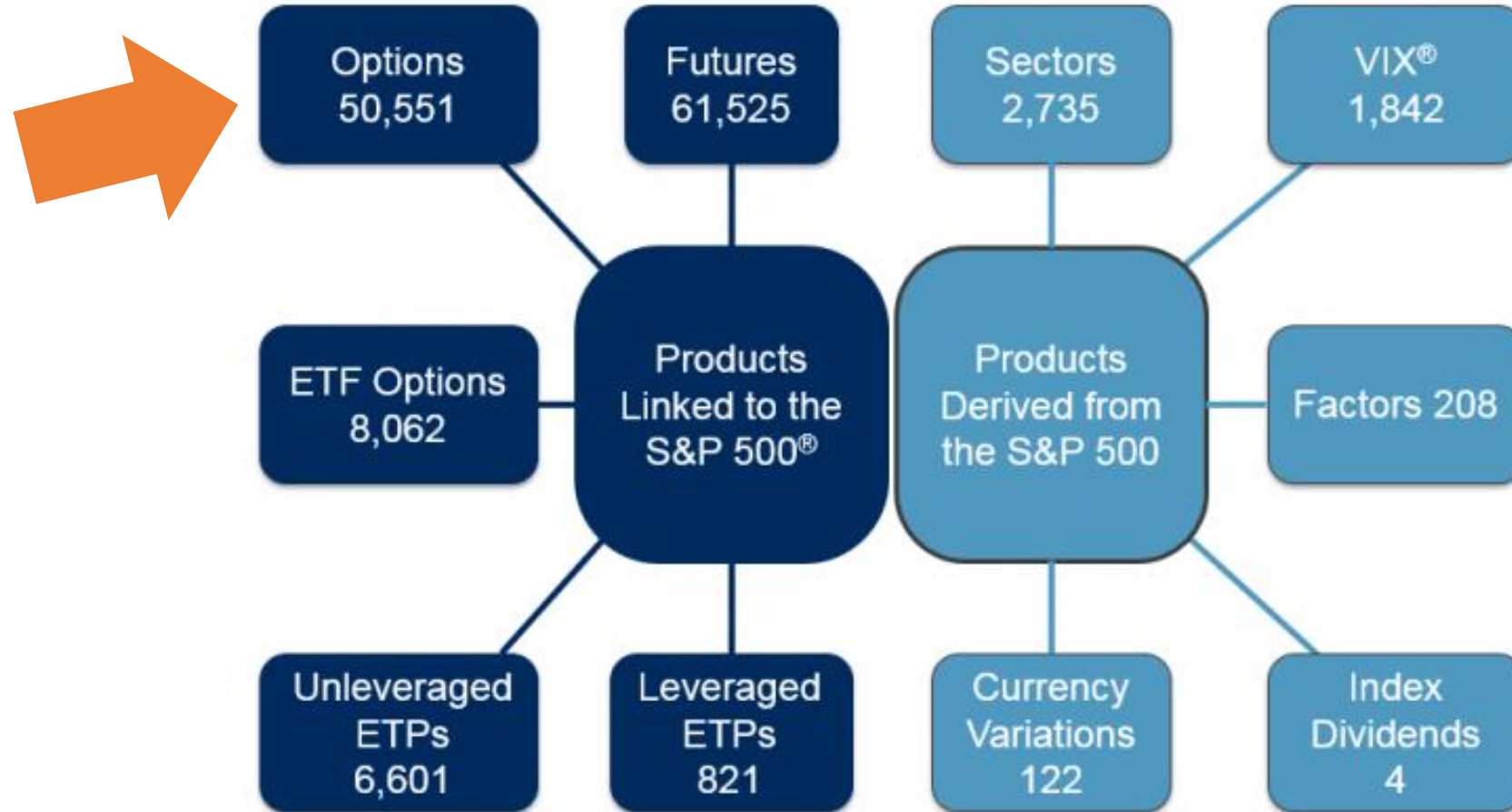
Index Equivalent Trading Volume in USD (billions)



Source: "A Window on Index Liquidity", S&P Dow Jones Indices (2019).
Figures in billions of U.S. dollars of index equivalent trading volumes over the 12 months ending June 30, 2019.

The S&P Ecosystem

Index Equivalent Trading Volume in USD (billions)



Source: "A Window on Index Liquidity", S&P Dow Jones Indices (2019).
Figures in billions of U.S. dollars of index equivalent trading volumes over the 12 months ending June 30, 2019.

Index Options: XSP

- Mini S&P 500 index options
- 1/10th the size of standard SPX contract
- Notionally equivalent to SPY options

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- Mini S&P 500 index options
- 1/10th the size of standard SPX contract
- Notionally equivalent to SPY options

SPX vs. XSP

Assume S&P 500 Index = 3600

Assume contract quantity = 1

SPX contract multiplier = 100

SPX notional = $1 \times 100 \times 3600 = \$360,000$

XSP = $1/10 \times \text{S\&P 500 Index}$

= $3600 / 10$

= 360

XSP contract multiplier = 100

XSP notional = $1 \times 100 \times 360 = \$36,000$

- 1. Income Generation**
- 2. Capital Protection**
- 3. Risk Management (hedging)**
- 4. Efficient Exposure**
- 5. Manage Cash Flows**

Options Features: XSP vs SPY

SETTLEMENT

XSP



Cash Settlement – A cash payment of the difference between the strike (K) and the settlement value

SPY



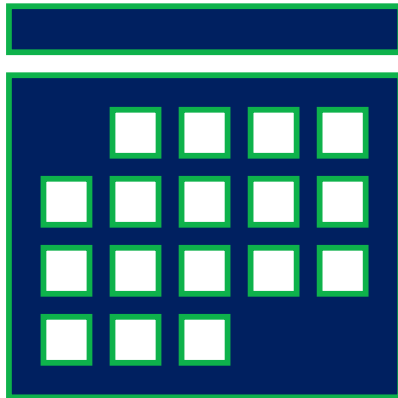
Physical Settlement – The underlying security or asset changes hands and a payment occurs equal to the amount of the strike price (K)



Options Features: XSP vs SPY

SETTLEMENT

Expiries



XSP



Cash Settlement – A cash payment of the difference between the strike (K) and the settlement value

SPY



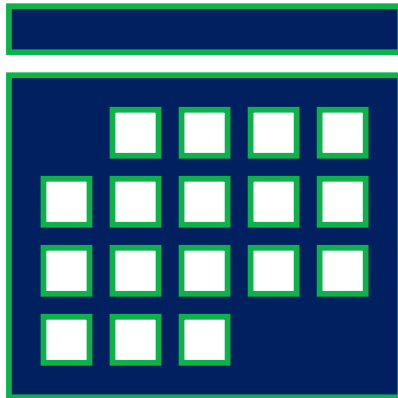
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Options Features: XSP vs SPY

SETTLEMENT

Expiries



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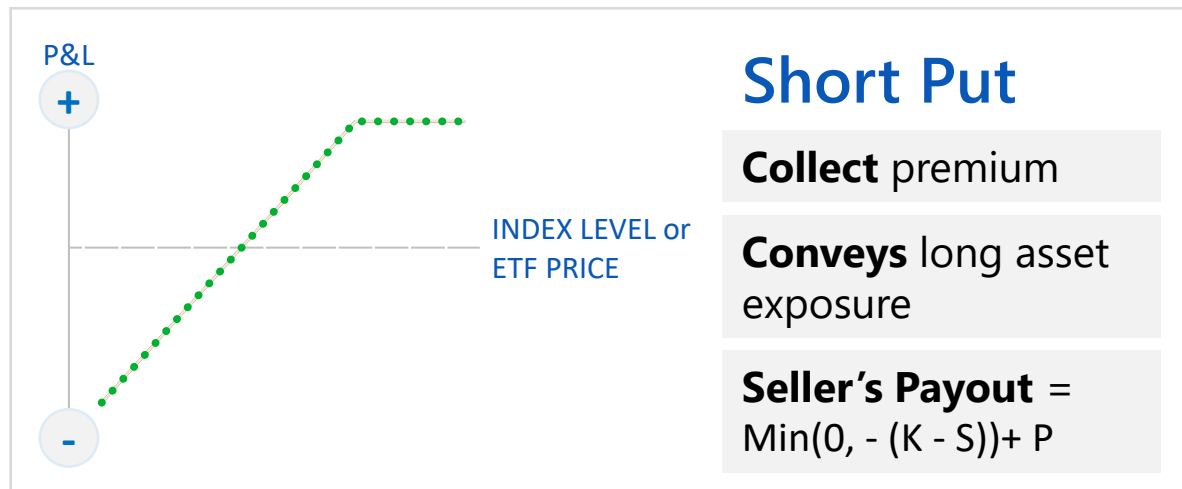
PM Settlement Value = all options except for 3rd Friday of month

AM Settlement Value = 3rd Friday or standard expiry



ETFs vs Options

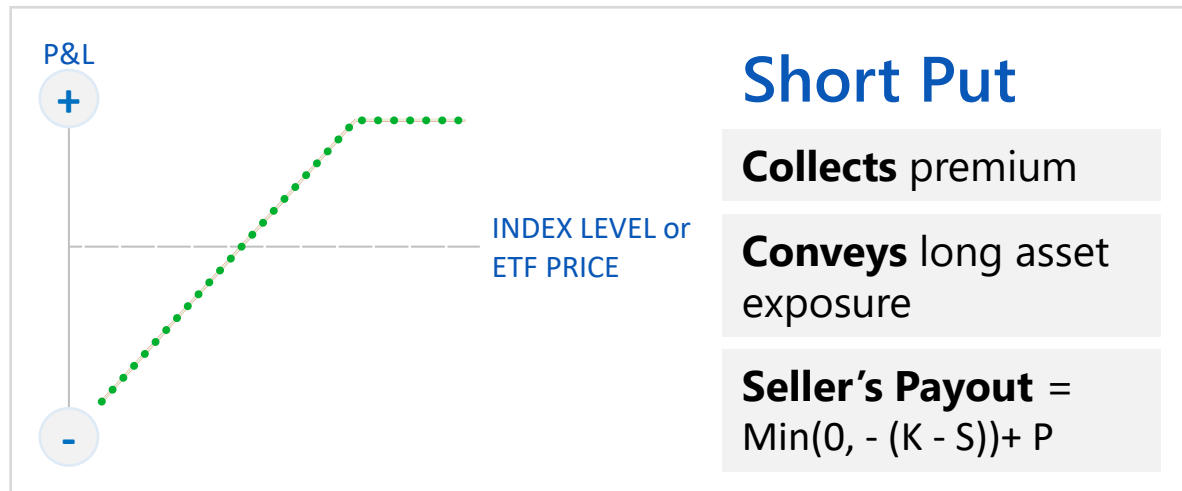
Income Generation by Premium Collection



Income Generation by Premium Collection



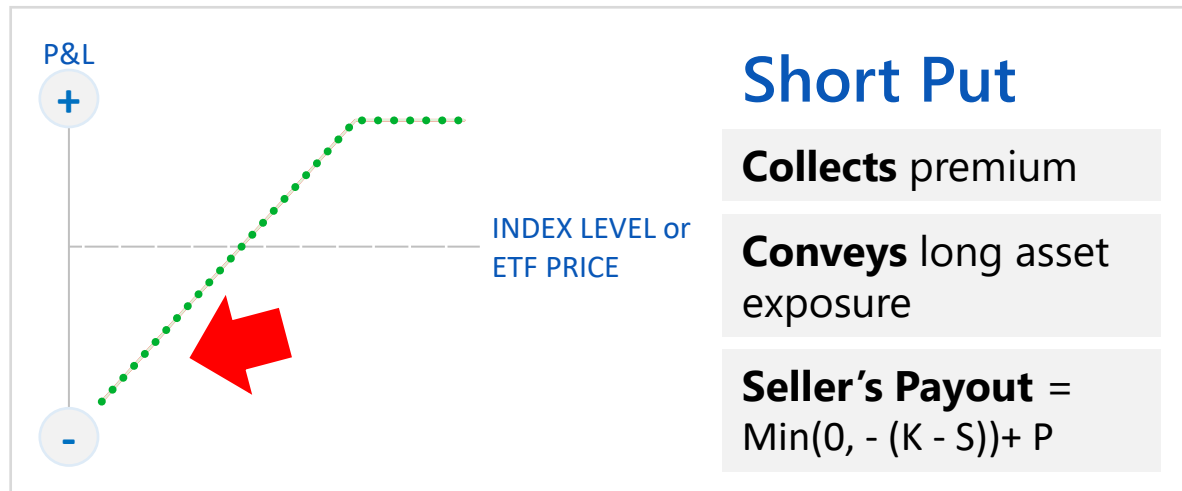
- Maximum gain = premium collected
- Maximum loss = **UNLIMITED**



Income Generation by Premium Collection

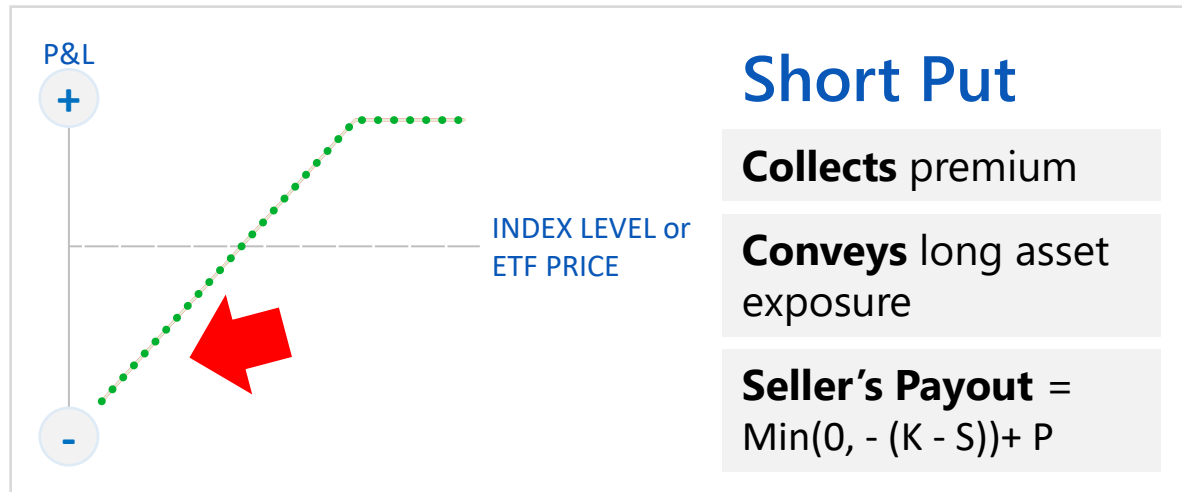


- Maximum gain = premium collected
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- Maximum gain = premium collected
- Maximum loss = **SIGNIFICANT, LIMITED**

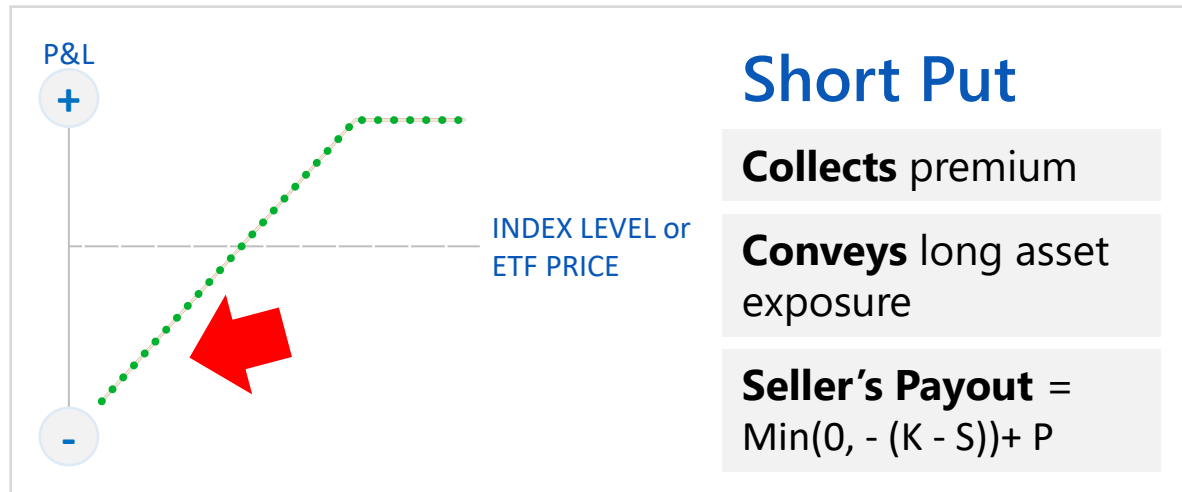
Short Put Strategy



- Maximum gain = premium collected
- Maximum loss = **SIGNIFICANT, LIMITED**

	XSP	SPY
INDEX LEVEL / ETF PRICE	\$360	\$360
CONTRACT MULTIPLIER	100	100
OPTION EXPIRY	March 360	March 360
OPTION TYPE	Put	Put
OPTION PRICE	\$12.00	\$12.00
PREMIUM COLLECTED	\$1,200.00	\$1,200.00
BREAKEVEN PRICE		

Short Put Strategy



- Maximum gain = premium collected
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BREAKEVEN PRICE	\$348	\$348

Breakeven = Put strike – premium collected

Short Put Strategy



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SETTLEMENT



Cash Settlement – A cash payment of the difference between the strike (K) and the settlement value



Physical Settlement – The underlying security or asset changes hands and a payment occurs equal to the amount of the strike price (K)



Options Features: XSP vs SPY

SETTLEMENT

Sell 1 **XSP** Mar 360 P for \$12.00

Sell 1 **SPY** Mar 360 P for \$12.00



Cash Settlement – A cash payment of the difference between the strike (K) and the settlement value



Physical Settlement – The underlying security or asset changes hands and a payment occurs equal to the amount of the strike price (K)



Options Features: XSP vs SPY

SETTLEMENT

Sell 1 **XSP** Mar 360 P for \$12.00

March Expiration, XSP = 350

Breakeven XSP price level = 348

Sell 1 **SPY** Mar 360 P for \$12.00

March Expiration, SPY = 350

Breakeven SPY price level = 348



BUY 100 SPY for \$360 each = \$36,000

Long shares means directional risk exists



Cash Settlement – A cash payment of the difference between the strike (K) and the settlement value



Physical Settlement – The underlying security or asset changes hands and a payment occurs equal to the amount of the strike price (K)



Options Features: XSP vs SPY

SETTLEMENT

Sell 1 **XSP** Mar 360 P for \$12.00

March Expiration, XSP = 350

Breakeven XSP price level = 348



Puts expire worth \$10

Account is up +\$200, no position exists

Sell 1 **SPY** Mar 360 P for \$12.00

March Expiration, SPY = 350

Breakeven SPY price level = 348

BUY 100 SPY for \$360 each = \$36,000

Long shares means directional risk exists



Cash Settlement – A cash payment of the difference between the strike (K) and the settlement value



Physical Settlement – The underlying security or asset changes hands and a payment occurs equal to the amount of the strike price (K)



Options Features: XSP vs SPY

SETTLEMENT

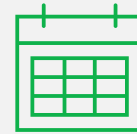
AMERICAN vs EUROPEAN

XSP



European Options – Can only be exercised on the expiration date

SPY



American Options – May be exercised any time before or on the expiration date



Options Features: XSP vs SPY

SETTLEMENT

AMERICAN vs EUROPEAN

SPY dividends

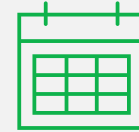
Ex/EFF DATE	TYPE	CASH AMOUNT	DECLARATION DATE	RECORD DATE	PAYMENT DATE
09/18/2020	CASH	\$1.339	01/16/2020	09/21/2020	10/30/2020
06/19/2020	CASH	\$1.366	01/16/2020	06/22/2020	07/31/2020
03/20/2020	CASH	\$1.406	01/16/2020	03/23/2020	04/30/2020
12/20/2019	CASH	\$1.57	01/10/2019	12/23/2019	01/31/2020
09/20/2019	CASH	\$1.384	01/10/2019	09/23/2019	10/31/2019
06/21/2019	CASH	\$1.432	01/10/2019	06/24/2019	07/31/2019
03/15/2019	CASH	\$1.233	01/10/2019	03/18/2019	04/30/2019
12/21/2018	CASH	\$1.435	01/10/2018	12/24/2018	01/31/2019
09/21/2018	CASH	\$1.323	01/10/2018	09/24/2018	10/31/2018
06/15/2018	CASH	\$1.246	06/14/2018	06/18/2018	07/31/2018
03/16/2018	CASH	\$1.097	01/10/2018	03/19/2018	04/30/2018

XSP

1

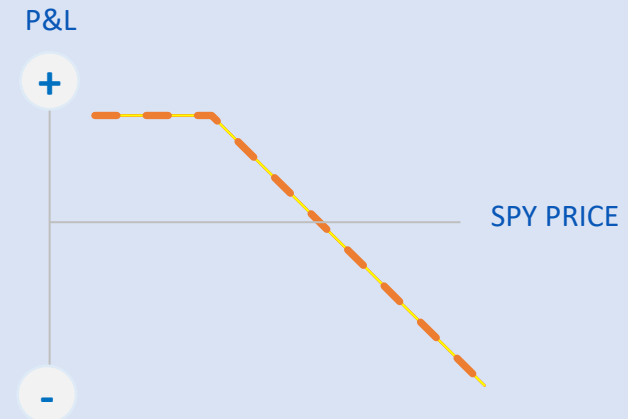
European Options – Can only be exercised on the expiration date

SPY



American Options – May be exercised any time before or on the expiration date

Short Call



Options Features: XSP vs SPY

SETTLEMENT

AMERICAN vs EUROPEAN

cBID	cASK	STRIKE
58.60	68.60	XSP Jan15'21 300.00
57.60	67.60	XSP Jan15'21 301.00
59.67	63.56	XSP Jan15'21 302.00

cBID	cASK	STRIKE
63.10	63.49	SPY Jan15'21 300.00
62.12	62.55	SPY Jan15'21 301.00
61.17	61.55	SPY Jan15'21 302.00

XSP

1

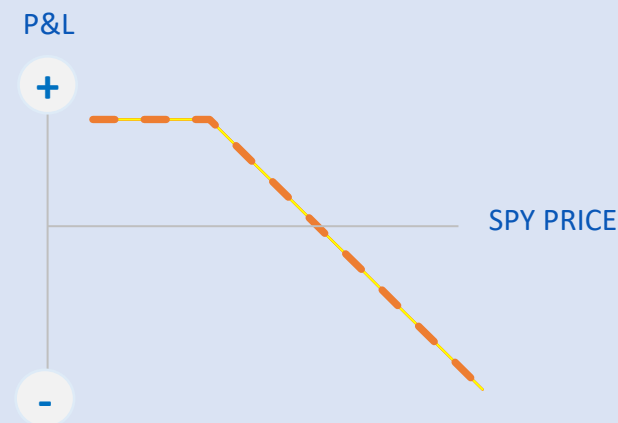
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Options Features: XSP vs SPY

SETTLEMENT

AMERICAN vs EUROPEAN

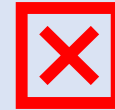
TAX TREATMENT

XSP



1256 Contracts

SPY



Options Features: XSP vs SPY

SETTLEMENT

AMERICA

TAX TREA

Portfolio A

XSP

[1256 contract tax treatment]

\$100,000

20% x \$60,000

37% x \$40,000

TOTAL TAX LIABILITY

\$26,800

Blended Rate = 26.8%

Portfolio B

SPY

\$100,000

37% x \$100,000

TOTAL TAX LIABILITY

\$37,000

Ordinary Income Rate = 37%

RECAP

INDEX OPTIONS

- ✓ Cash-settled
- ✓ European
- ✓ 1256 contracts

ETF OPTIONS

- ✓ Physically settled
- ✓ American

Benefits of Index Options

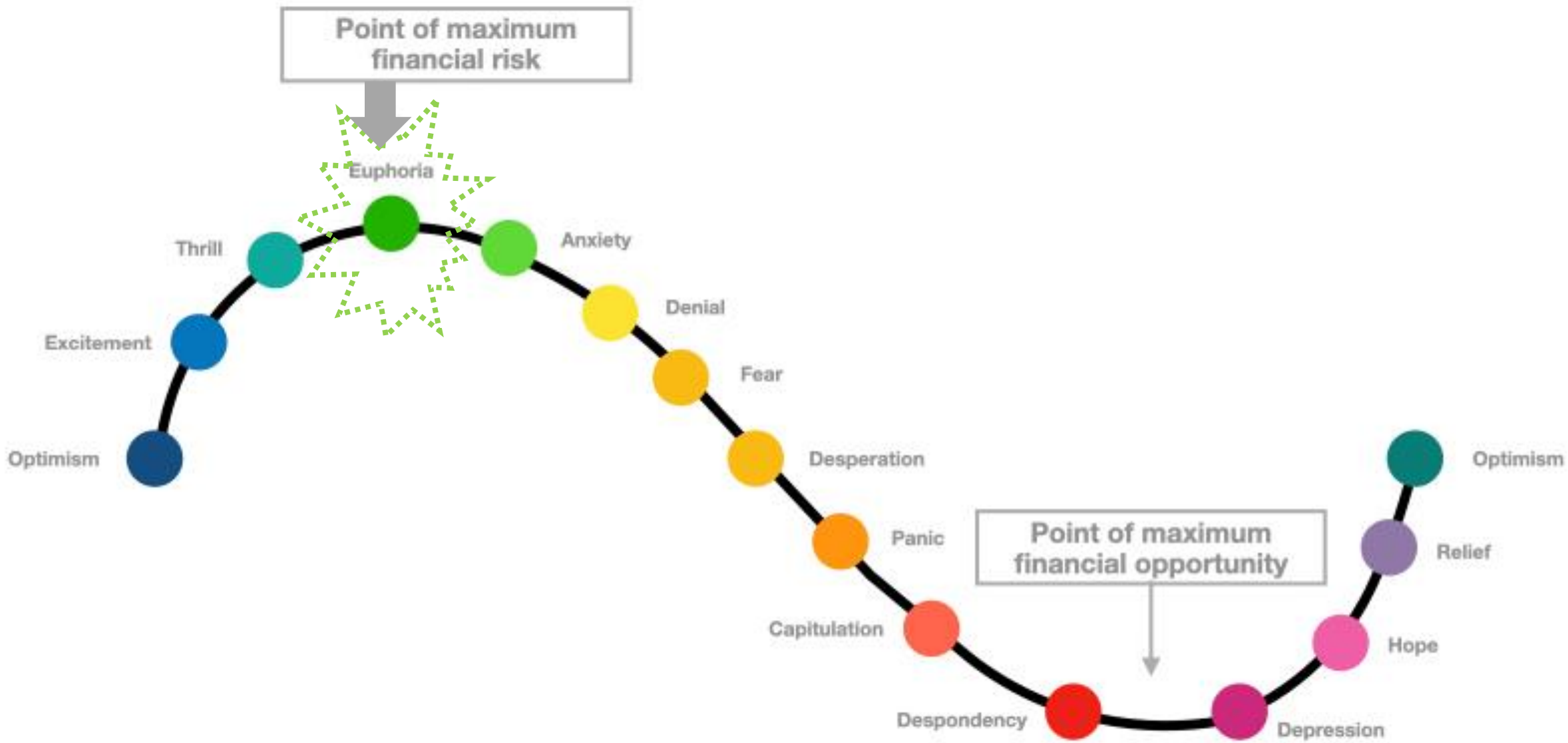


Benefits of Index Options

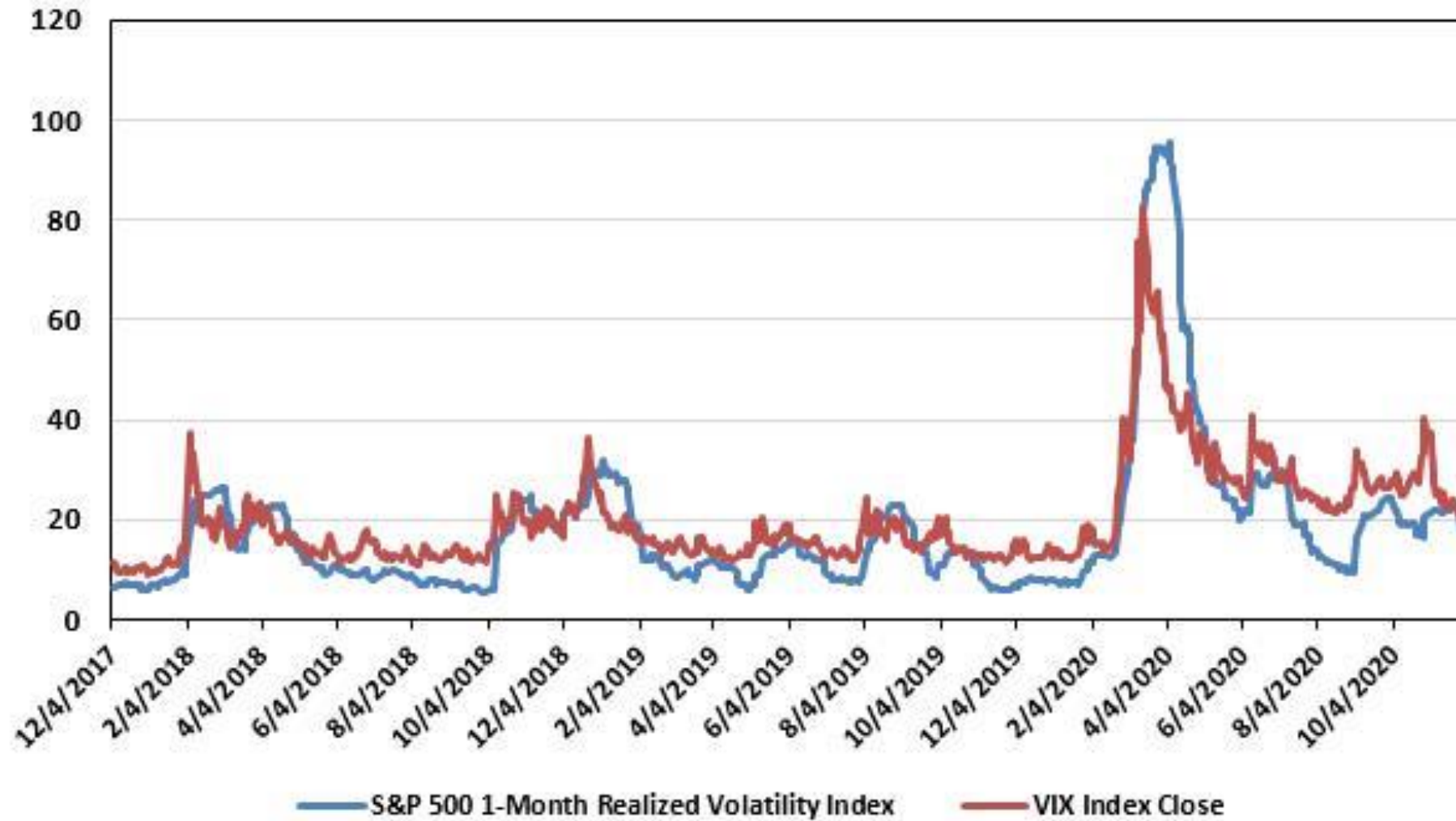
- ✓ Efficient Exposure





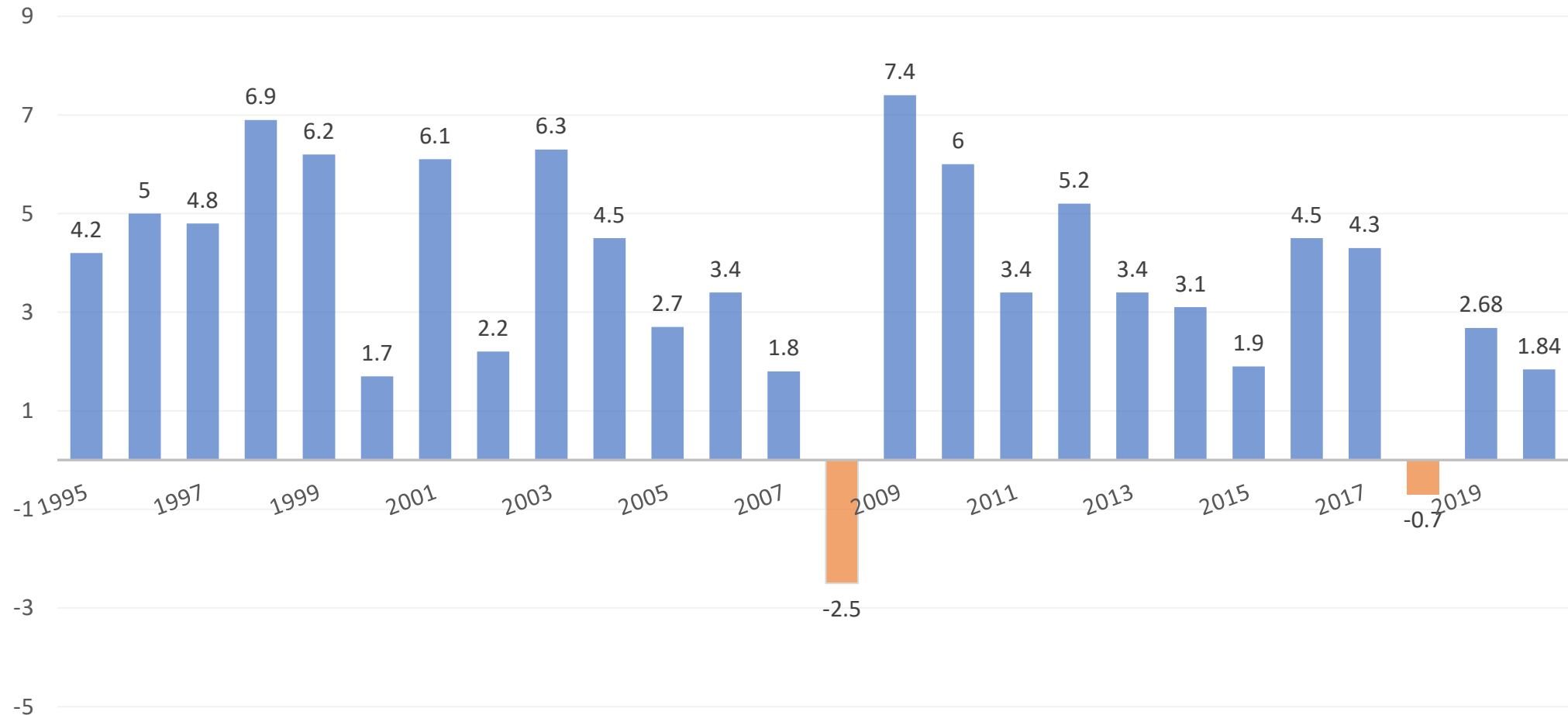


Volatility Risk Premiums (+Discounts)



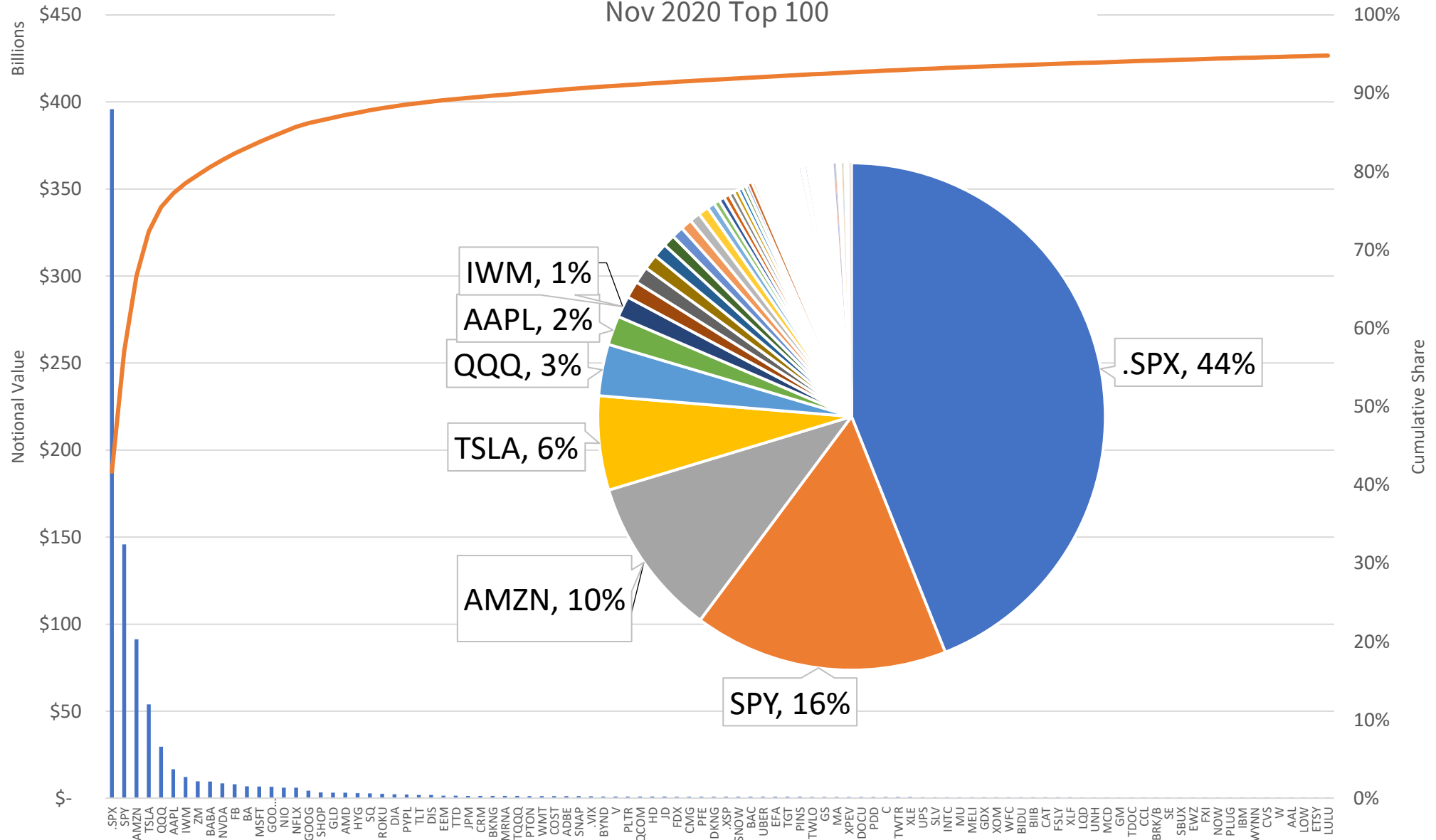
Volatility Risk Premium

Avg VIX Index vol - Avg SPX 1-month realized vol

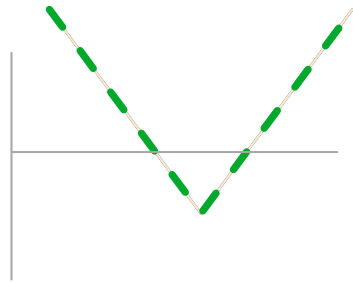


Average Daily Option Notional Value

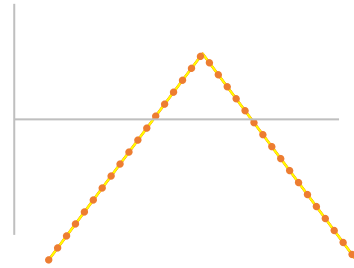
Nov 2020 Top 100



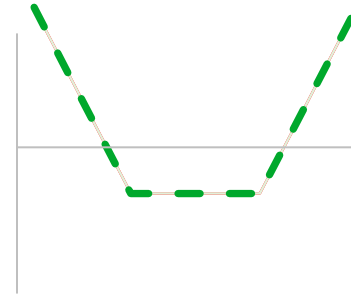
If you think it, you can build it.



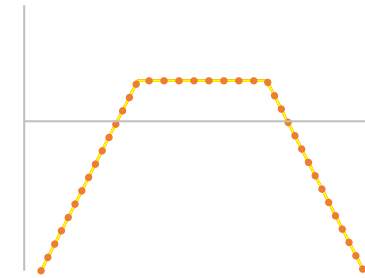
Long Straddle



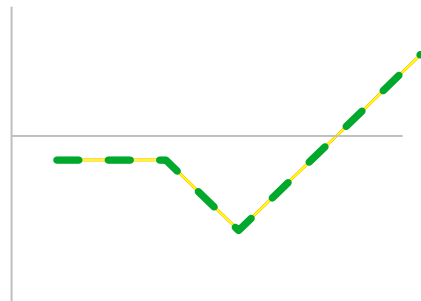
Short Straddle



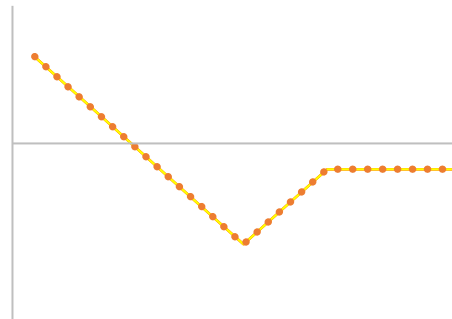
Long Strangle



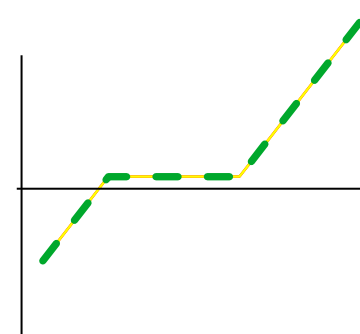
Short Strangle



Long Ratio
Call Spread

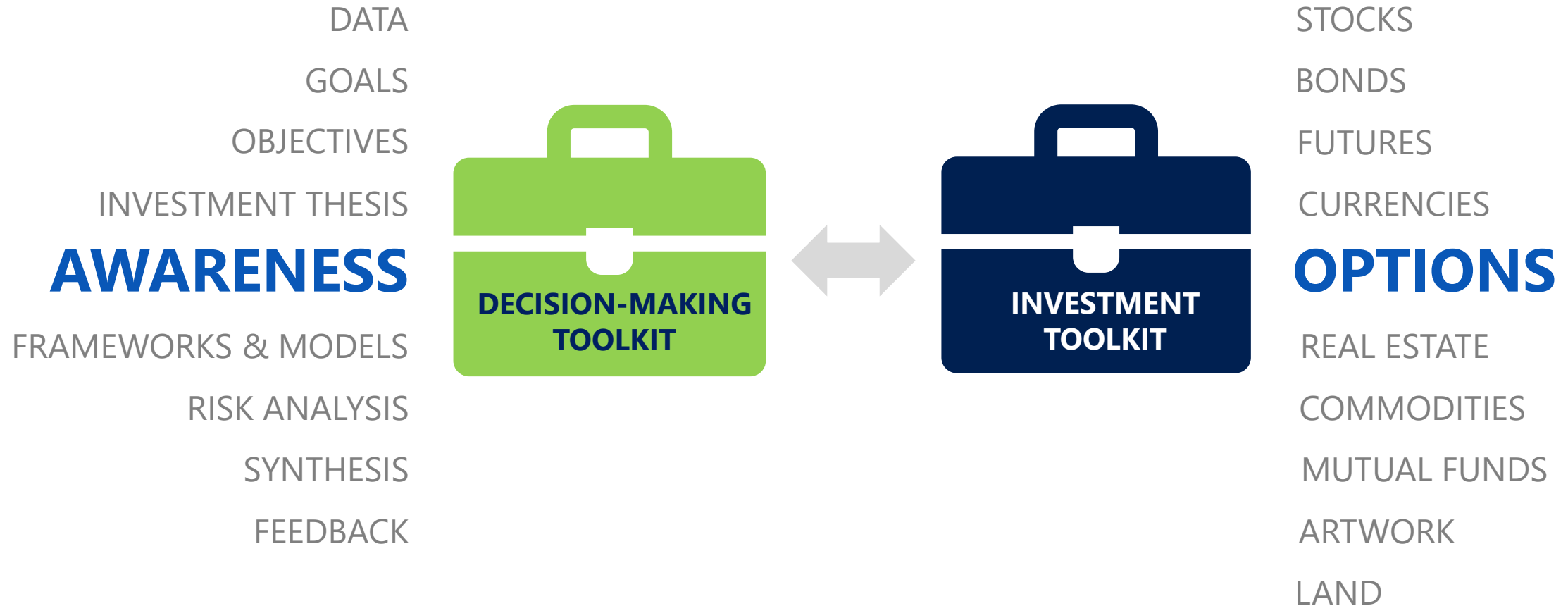


Long Ratio
Put Spread






Split-strike
Synthetic



Managing (Market) Uncertainty

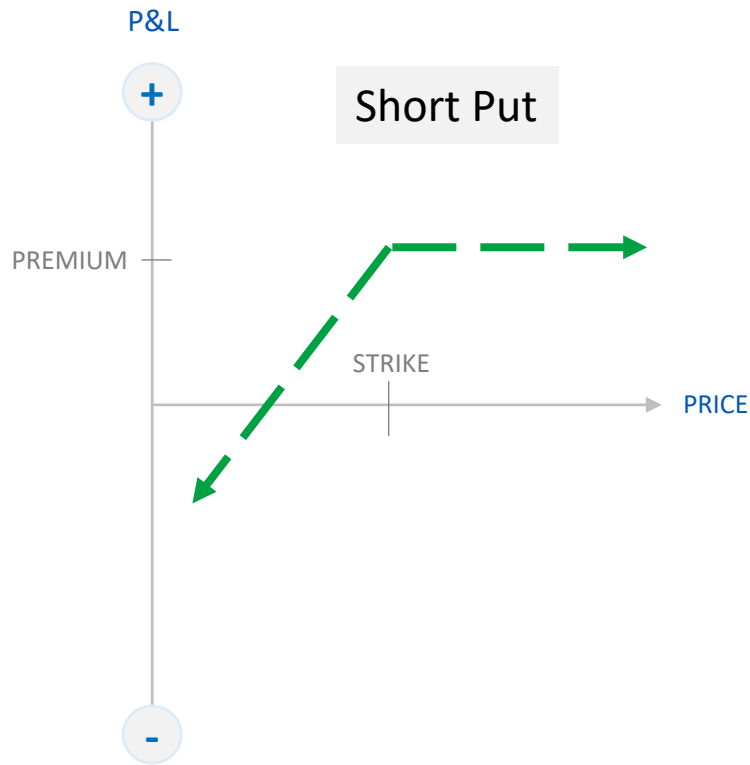


Short Put

Premium Collection 

Believe asset is staying at or above strike price  


Put  







Sell 1 XYZ 85 P for 5.00

	XYZ 85 P
UNDERLYING	XYZ
CONTRACT MULTIPLIER	100
OPTION STRIKE PRICE	85
OPTION TYPE	Put
OPTION PRICE	\$5.00
CASH-SECURED EQUITY VALUE	\$80,000.00
PREMIUM COLLECTED	\$500.00
BREAKEVEN PRICE	\$80.00

Short Put

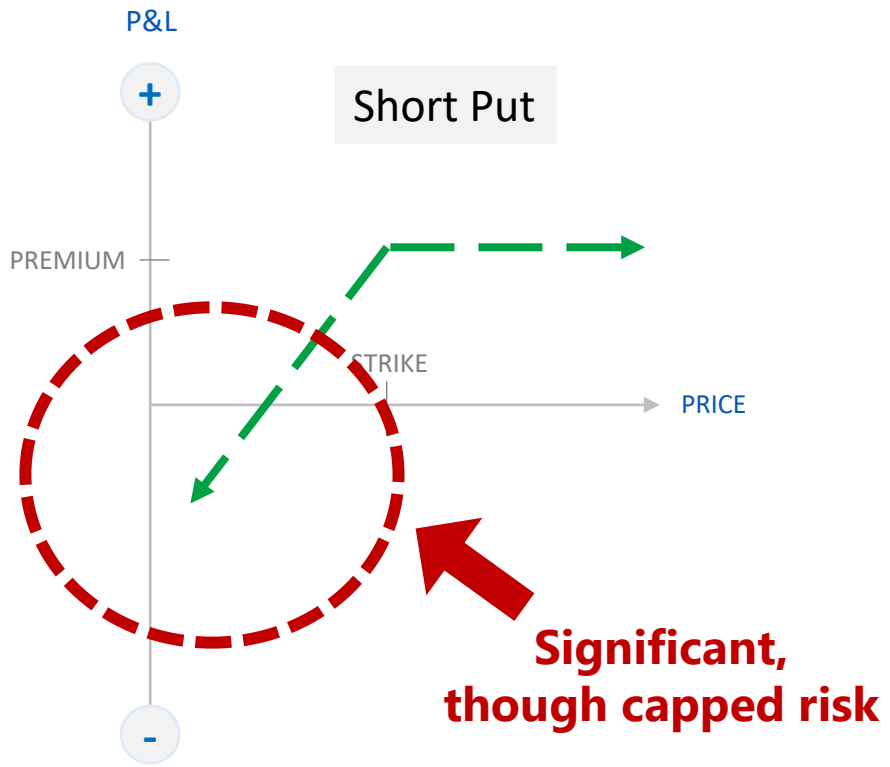
Premium Collection 

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Put  

Sell 1 XYZ 85 P for 5.00

	XYZ 85 P
UNDERLYING	XYZ
CONTRACT MULTIPLIER	100
OPTION STRIKE PRICE	85
OPTION TYPE	Put
OPTION PRICE	\$5.00
CASH-SECURED EQUITY VALUE	\$80,000.00
PREMIUM COLLECTED	\$500.00
BREAKEVEN PRICE	\$80.00



Long Butterfly



Long Butterfly



INVESTMENT THESIS

- S&P 500 +5% Q1 2021
- Low – medium confidence
- Not able to tie up too much capital
- Not comfortable with undefined risk
- Comfortable with small premium outlay



Long Butterfly



INVESTMENT THESIS

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- **Low – medium confidence**
- **Not able to tie up too much capital**
- **Not comfortable with undefined risk**
- **Comfortable with small premium outlay**

cBID	cASK	STRIKE
13.96	14.16	XSP(Q) Mar31'21 370.00
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5.57	5.74	XSP(Q) Mar31'21 389.00
5.27	5.44	XSP(Q) Mar31'21 390.00

Long Butterfly



INVESTMENT THESIS

- **S&P 500 +5% Q1 2021**
- **Low – medium confidence**
- **Not able to tie up too much capital**
- **Not comfortable with undefined risk**
- **Comfortable with small premium outlay**



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Long Butterfly



INVESTMENT THESIS

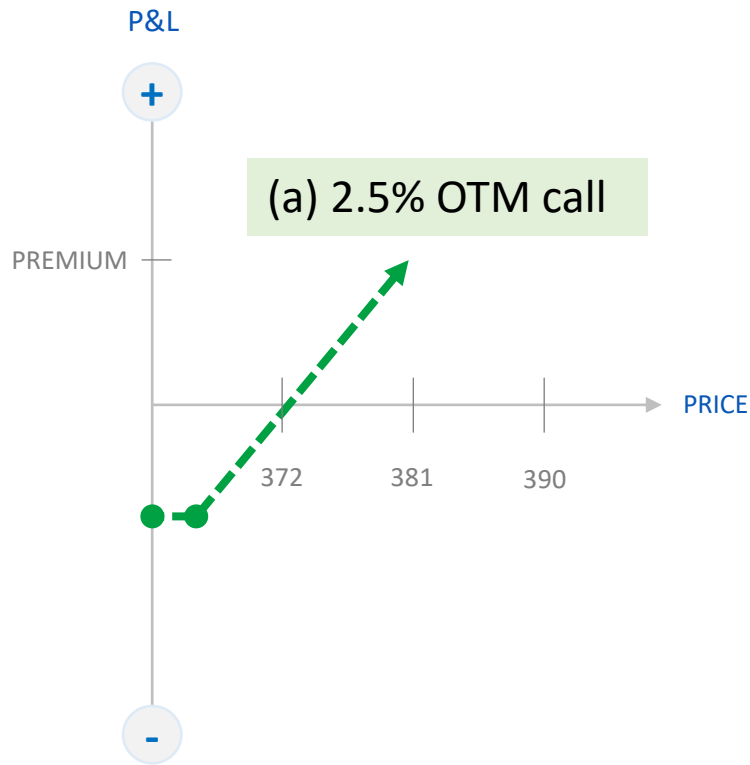
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Long Butterfly



INVESTMENT THESIS

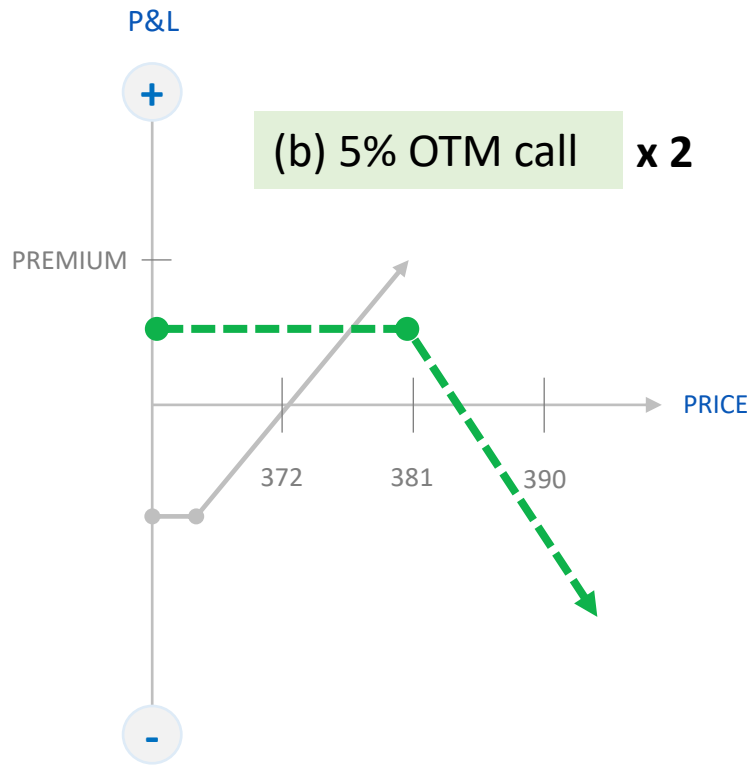
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Long Butterfly



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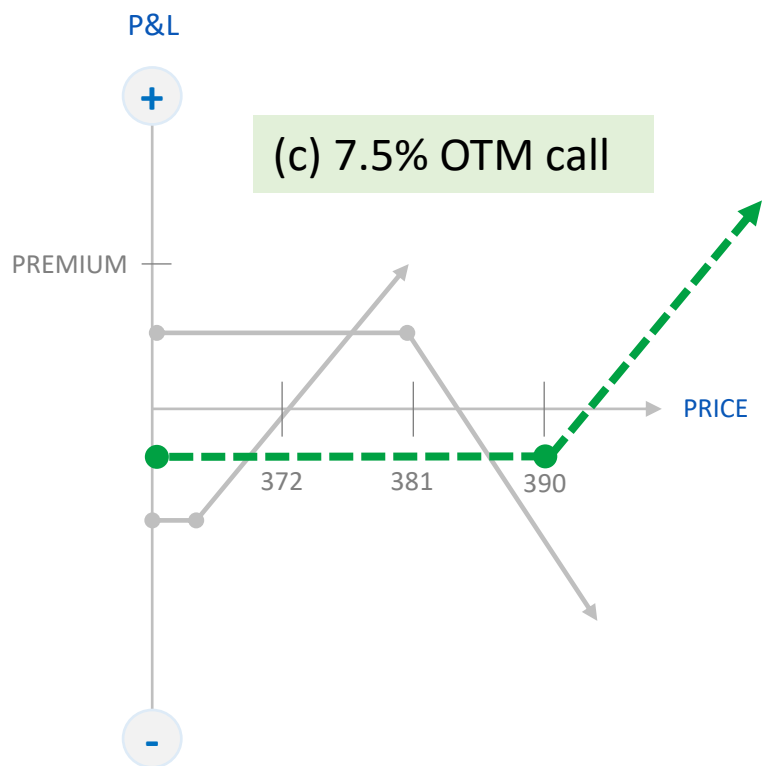
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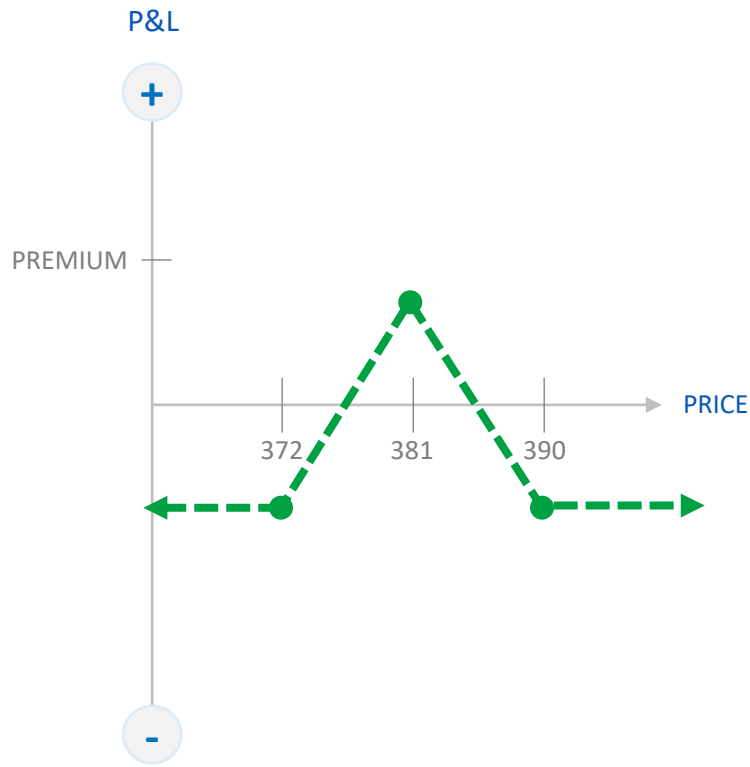
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Long Butterfly



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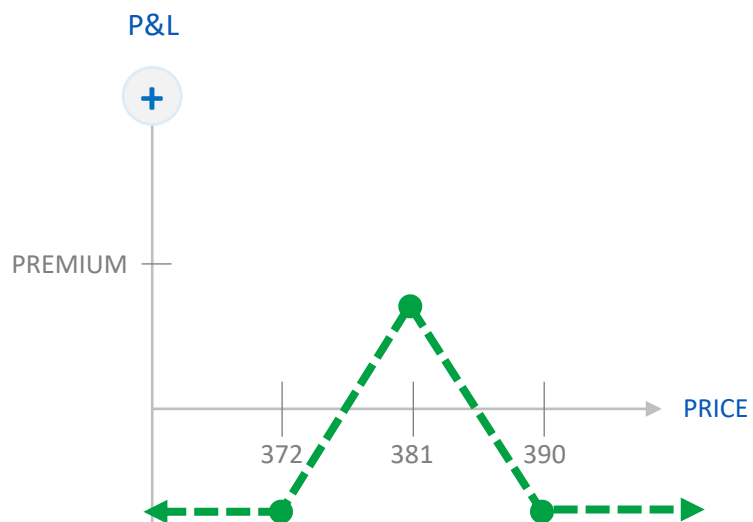
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Long Butterfly



Buy 1 XSP Mar 372 C 13.04
 + Sell 2 XSP Mar 381 C 8.48 = 16.96
 + Buy 1 XSP Mar 390 C 5.44

PAY \$1.52 for 1 XSP Mar 372/381/390 fly

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Recap

- ✓ Understand the construction and market relevance of the S&P 500 index
- ✓ Understand the why and how market participants utilize options on the S&P 500 index (and what makes them different from standard equity options and options on ETFs)
- ✓ Understand commonly used S&P 500 options strategies and the associated risks/benefits of each

Thank you!

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Arianne Criqui

SVP, Head of Derivatives and
Global Client Services
Cboe Global Markets

Kevin Davitt

Sr. Instructor, Derivatives
The Options Institute

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