CBOE OPTIONS INSTITUTE

CBOE – Chicago Board Option Exchange

AAII Seattle Presentation

September 16, 2017
Senior Instructor: Kevin Davitt

Disclaimer

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. Copies are available from your broker or from The Options Clearing Corporation, One North Wacker Drive, Suite 500, Chicago, Illinois 60606 or at www.theocc.com. The information in this presentation is provided for general education and information purposes only. No statement within this presentation should be construed as a recommendation to buy or sell a security or to provide investment advice. Supporting documentation for any claims, comparisons, statistics or other technical data in this presentation is available by contacting CBOE at www.cboe.com/Contact. Multiple leg strategies involve multiple commission charges. Past performance is not indicative of future results. CBOE® and Chicago Board Options Exchange® are registered trademarks and CBOE Options Institute is a service mark of Chicago Board Options Exchange, Incorporated (CBOE). All other trademarks and service marks are the property of their respective owners.

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AAII Outline

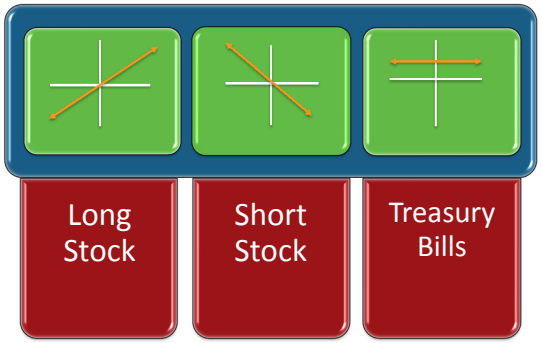
Outline

- Why Options?
- Creation of the Option Contract
- Option Strategies for Conservative Investors/Traders
- What Else? Risk Adjusted Returns

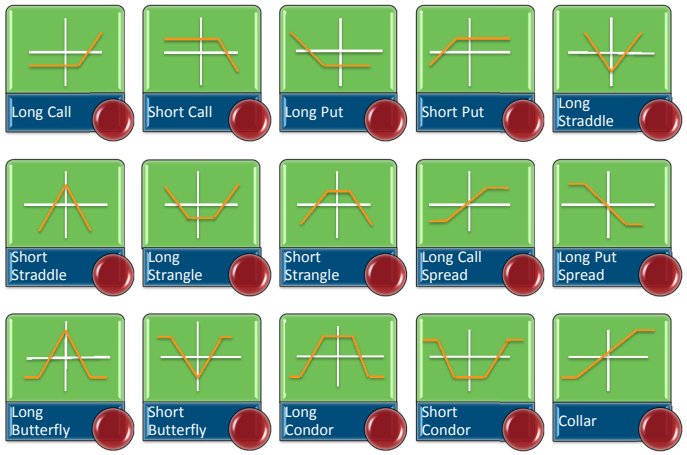
Why Options?

Why Options?

In a world without options, stock investors have limited choices.



Options Give You Options



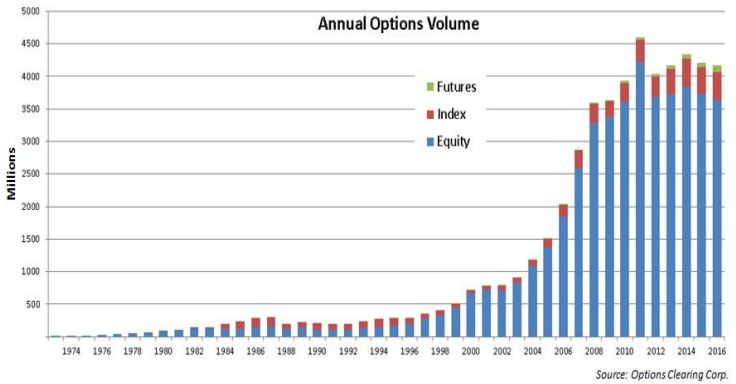
Options Are Tools

Investment Objectives

- Profits may be attained in any market conditions
- Allows investors to trade the same number of shares at a lower cost
- Strategies using options to protect your stock portfolio establishing a known maximum risk or loss
- Selling options to generate income

From Niche to Mainstream

There's Something About Options



Creation of an Option Contract

Creation of an Option Contract

Option Buyer

Option Buyer

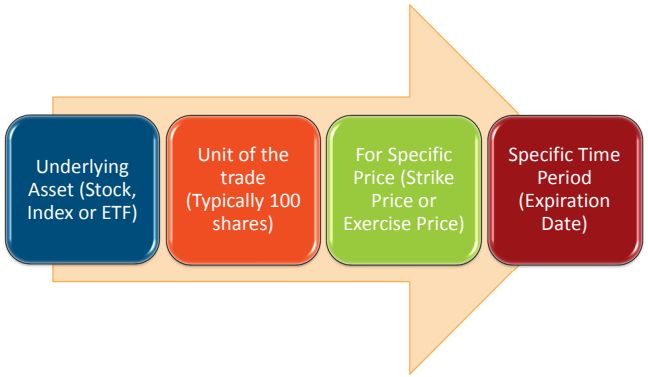
- The buyer of an option has the RIGHT to either buy (call) or sell (put) the underlying asset
- At defined price (Strike Price)
- For a specified time period (Expiration Date)

Seller of an Option

Option Seller

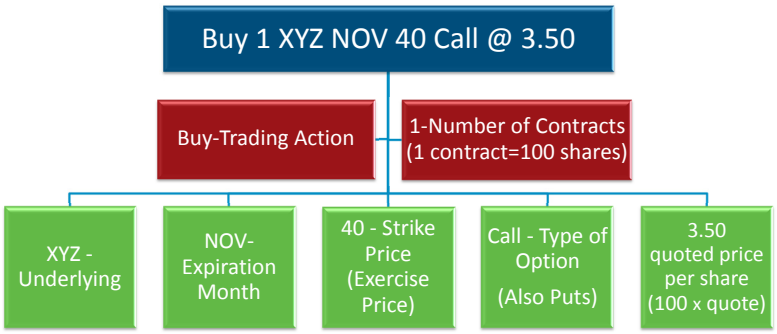
- Obligated to either sell (calls) or buy (puts) the underlying asset
- At a given price (Strike Price) and by a given date (Expiration Date)
- The option seller is also referred to as the option "writer"

Defined Terms of the Contract

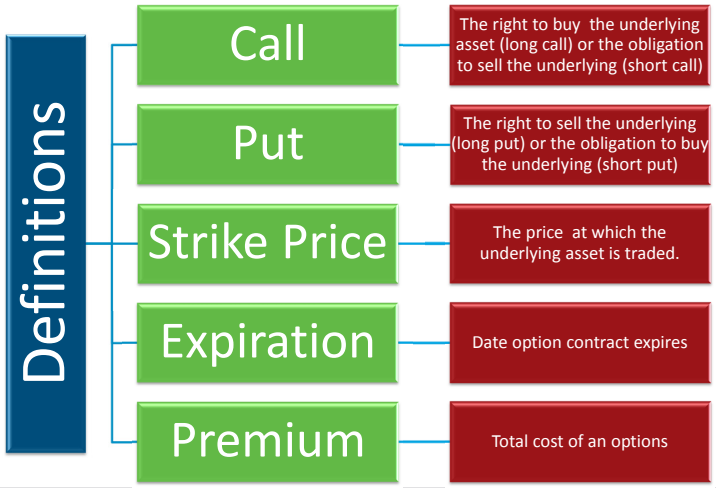


Essential Components

Components of an Option Trade



Components of an Option Trade



Option Types

Two types:

- **American-style** may be exercised at any time before expiration
- **European-style** options can only be exercised at expiration
- All stocks and Exchange Traded Funds (ETF) have American style options
- Major broad-based indices, with the exception of S&P 100 (OEX) have European-style options

Option Premium

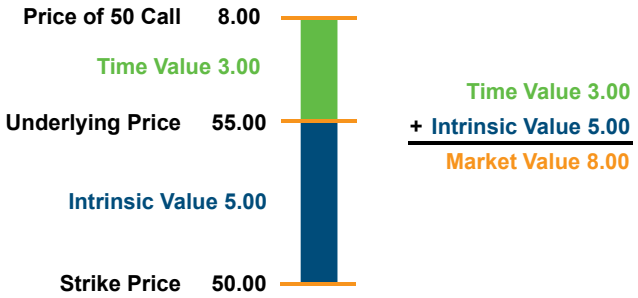
Option Premium

- An option buyer pays a premium (or price)
- An option seller receives a premium (or price)
  - Keep, whether assigned or not
- Premiums are quoted on a per share basis
  - For Example $3.00 quote x 100 = $300.00

Pricing Concepts

Intrinsic Value and Time Value

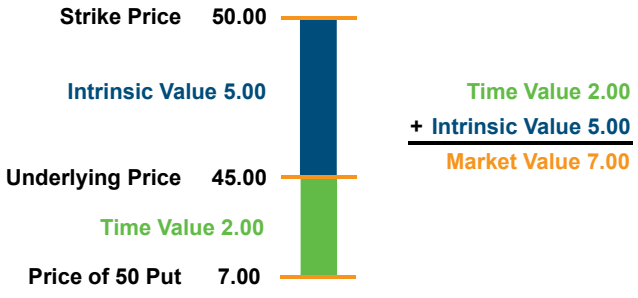
XYZ @ 55.00 with XYZ 50 Call @ 8.00



Pricing Concepts

Intrinsic Value and Time Value

XYZ @ 45.00 with XYZ 50 Put @ 7.00



Option Strategies for Conservative Investors

Strategies for Conservative Investors

Overview

- Options are often considered risky trading instruments
- In reality call and put options are typically used to create strategies that REDUCE equity or portfolio risk
- Income generation and hedging against adverse outcomes are also goals that may be achieved using options
- Options, in many ways, make protecting and potentially growing capital easier

Basics of Options

Equity Option Buyer

Contract that gives the buyer a right to buy or sell a stock at a specified price until an expiration date

Long Call = Right to Buy
Long Put = Right to Sell

Basics of Options

Equity Option Seller

Contract that give the seller the obligation to buy or sell a stock at a specified price until an expiration date

Short Call = Obligation to Sell
Short Put = Obligation to Buy

Basics of Options

Index Option Buyer

Contract that give the buyer the theoretical right to buy or sell a market index at a specified specified price on an expiration date

Long Call = Receive Cash if In-The-Money
Long Put = Receive Cash if In-The-Money

Basics of Options

Index Option Seller

Contract that gives the seller the theoretical obligation to buy or sell a market index at a specified price on an expiration date

Short Call = Pay Cash if In-The-Money
Short Put = Pay Cash if In-The-Money

Think About Your Goals Then Work Backwards

Option Strategies: Income

The Covered Call

- This strategy involves selling a call option against a long stock position
- A short call results in the obligation to sell shares at a certain price over a certain period of time
- This obligation to sell shares is 'covered' through having a long stock position
- Generally BuyWrite = Stock purchase and call sale executed concurrently.

Enhancing Performance

Covered Call

Two motivations for entering into a covered call

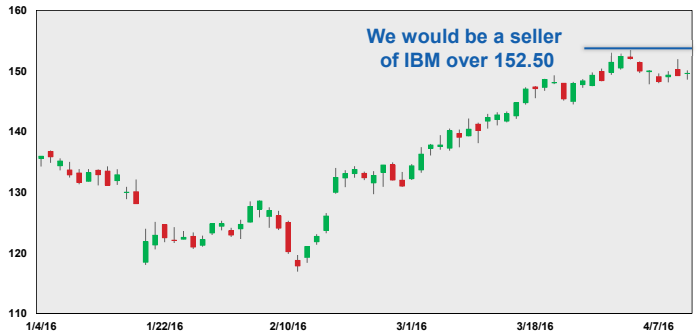
Exit Stock

Increase Portfolio Income (don't sell stock)

Enhancing Performance

Covered Call

Long 100 IBM at 149.50



Enhancing Performance

Covered Call

Long 100 IBM at 149.50

Sell 1 IBM Apr 22nd 152.50 Call at 1.25

Covered Call Position

Long 100 IBM at 149.50
Short 1 IBM Apr 22nd 152.50 Call at 1.25

Enhancing Performance

Covered Call

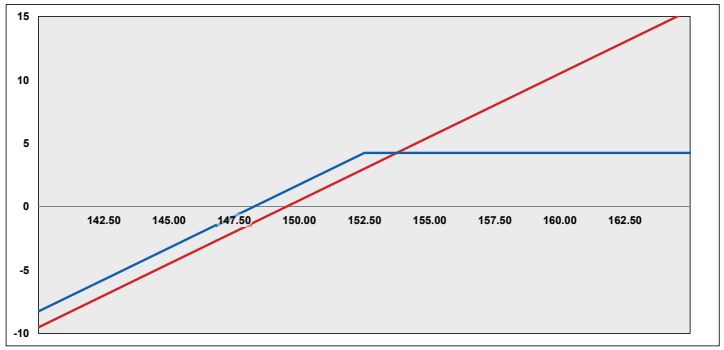
Payoff at April 22nd Expiration

Stock at Expiration	Stock P/L	Short 152.50 Call P/L	Credit	Position P/L
142.50	(7.00)	0.00	1.25	(5.75)
145.00	(4.50)	0.00	1.25	(3.25)
147.50	(2.00)	0.00	1.25	(0.75)
150.00	0.50	0.00	1.25	1.75
152.50	3.00	0.00	1.25	4.25
155.00	5.50	(2.50)	1.25	4.25
157.50	8.00	(5.00)	1.25	4.25
160.00	10.50	(7.50)	1.25	4.25
162.50	13.00	(10.00)	1.25	4.25

Enhancing Performance

Covered Call

Payoff at April 22nd Expiration



Enhancing Performance

Covered Call

Do Covered Calls Enhance Performance?

It Depends…

We have strategy indexes using S&P 500 Index options that demonstrate the performance of a consistent covered call program

Enhancing Performance

Covered Call

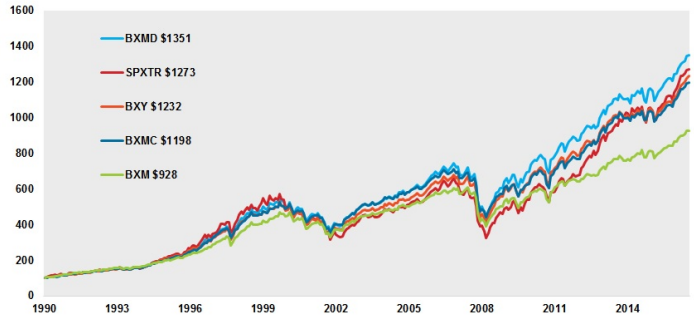
S&P 500 Buy Write Indexes

Ticker	Index
BXM	CBOE S&P 500 BuyWrite Index
BXMC	CBOE S&P 500 Conditional BuyWrite Index
BXMD	CBOE S&P 500 30-Delta BuyWrite Index
BXY	CBOE S&P 500 2% OTM BuyWrite Index

Enhancing Performance

Systematic Index Covered Call

CBOE BuyWrite Index Performance – 1991 – 2Q2017



Option Strategies: Protection

The Protective Put

- This strategy involves purchasing a put option to protect a long stock position
- The long put option position gives you the right to sell shares at a certain price through the expiration date
- This right to sell may protect a holder of shares against losses if the stock moves lower
- Essentially, the Protective Put is an insurance policy (Negative time decay)

Option Strategies: Protection

Protective Put

- **On Aug 18th AAPL is trading at 162.50**
- **A holder of 100 shares of AAPL is concerned about weakness in the stock over the next four weeks**
- **Standard Sept options expire on Sept 15th**

Trade

Buy 1 AAPL Sept 160 Put at 3.00

Protective Put Position

Long 100 AAPL at 162.50

Long 1 AAPL Sept 160 Put at 3.00

Option Strategies: Protection

Protective Put – Payoff at Expiration

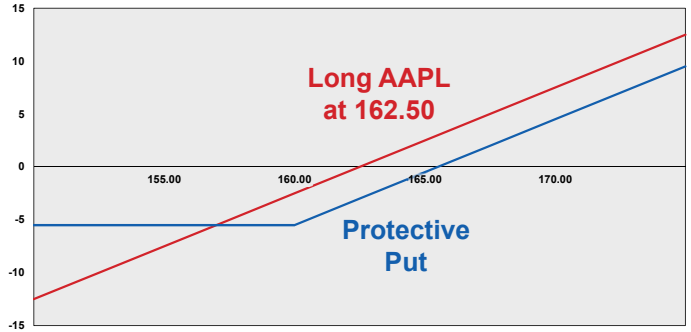
Long 100 AAPL at 162.50 + Long 1 AAPL Sept 160 Put at 3.00

Stock Price	Stock Profit / Loss	Put Value at Expiration	Option Cost	Profit / Loss
152.50	(10.00)	7.50	(3.00)	(5.50)
155.00	(7.50)	5.00	(3.00)	(5.50)
157.50	(5.00)	2.50	(3.00)	(5.50)
160.00	(2.50)	0.00	(3.00)	(5.50)
162.50	0.00	0.00	(3.00)	(3.00)
165.00	2.50	0.00	(3.00)	(0.50)
167.50	5.00	0.00	(3.00)	2.00
170.00	7.50	0.00	(3.00)	4.50
172.50	10.00	0.00	(3.00)	7.00

Option Strategies: Protection

Protective Put – Payoff at Expiration

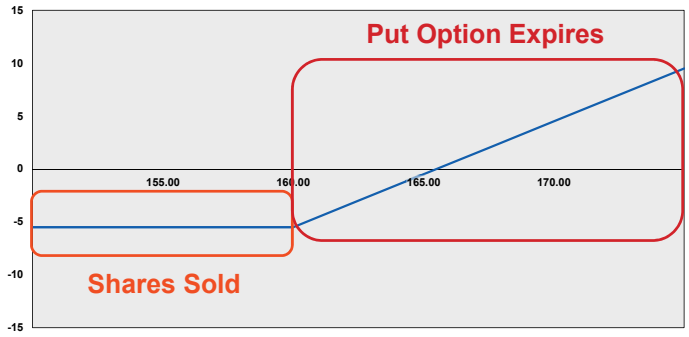
Long 100 AAPL at 162.50 + Long 1 AAPL Sept 160 Put at 3.00



Option Strategies: Protection

Protective Put – Payoff at Expiration

Long 100 AAPL at 162.50 + Long 1 AAPL Sept 160 Put at 3.00



Option Strategies: Financed Protection

The Collar

- This strategy involves purchasing an (OTM) put option concurrent with the sale of an (OTM) call
- This is an alternative to a Protective Put approach whereby insurance is "financed" by the sale of a call
- Some or all of the cost of protection comes from giving up some potential upside (short call)
- A Collar combines the Protective Put and Covered Call strategies (Neutral time decay)

Hedging Strategies

Concentrated Holding

- **Situation**
- **We own a stock and for any number of reasons we are not prepared to sell our shares**
- **Our hope is to lock in the current value of the stock as cheaply as possible**
- **We will give up performance in return for protection**

Solution…
The Collar

Hedging Strategies

The Collar

- **Own 100 shares of Home Depot (HD) trading at 135.50 – want to protect against losses for the next six months**
- **Willing to sacrifice upside to pay for downside protection**
- **Company expected to pay 1.40 in dividends over this time period**

Buy HD 6 Month 130 Put at 6.00
Sell HD 6 Month 140 Call at 5.20
Net Cost = 0.80

Hedging Strategies

The Collar

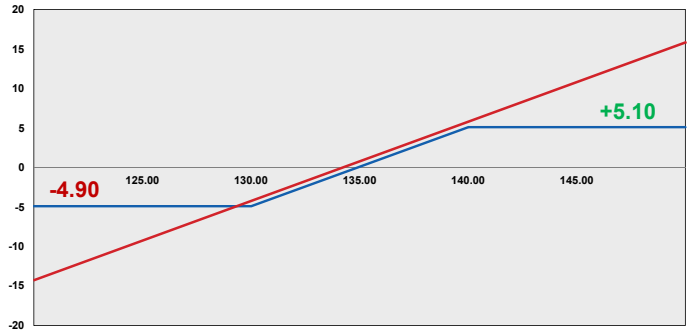
Payoff at Option Expiration

Stock at Expiration	Stock P/L	Long 130 Put	Short 140 Call	Cost	Dividends	Position P/L
125.00	(10.50)	5.00	0.00	(0.80)	1.40	(4.90)
130.00	(5.50)	0.00	0.00	(0.80)	1.40	(4.90)
135.00	(0.50)	0.00	0.00	(0.80)	1.40	0.10
140.00	4.50	0.00	0.00	(0.80)	1.40	5.10
145.00	9.50	0.00	(5.00)	(0.80)	1.40	5.10

Hedging Strategies

The Collar

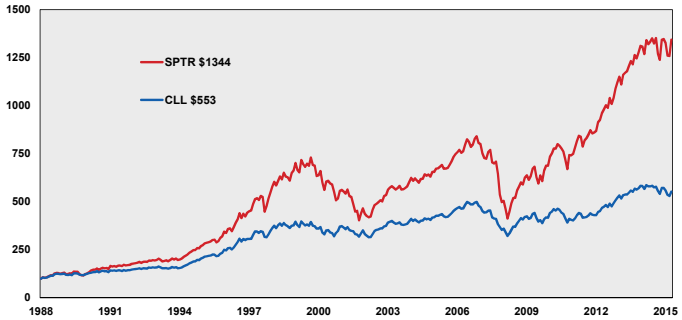
Payoff at Expiration



Hedging Strategies

The Collar

CBOE S&P 500 95 – 100 Collar Index Performance 1989 – 1Q2016



Option Strategies: Flexible

The Cash Secured Put

- This strategy (typically) involves selling an (OTM) put option (expiries can vary greatly)
- Strategy may be viewed through the Income Generation lens or as a means to target stock purchases on pullbacks
- Short put assumes obligation to purchase underlying (cost basis lowered from premium collected)
- Positive time decay

Enhancing Performance

Cash Secured Put

Combination of two positions

Short Put
+
Cash

Short Put results in obligation to buy stock
cash is available to make good on that obligation

Enhancing Performance

Cash Secured Put

IBM at 149.50

Enhancing Performance

Cash Secured Put

IBM at 149.50

Sell 1 IBM Apr 29th 145.00 Put at 1.75

Cash Secured Put Position

Short 1 IBM Apr 29th 145.00 Put at 1.75
$14,500 in cash to pay for shares

Enhancing Performance

Cash Secured Put

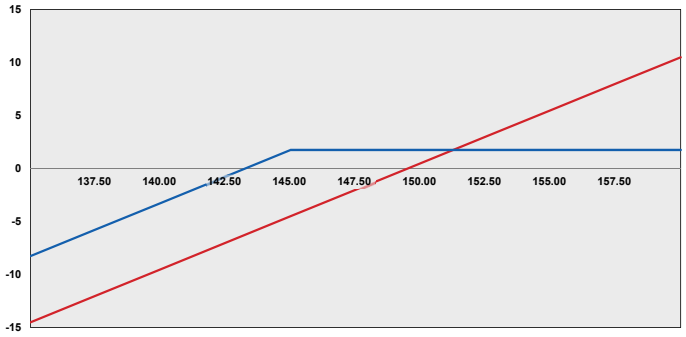
Payoff at April 29th Expiration

Stock at Expiration	Short 145 Put P/L	Credit	Position P/L
135.00	(10.00)	1.75	(8.25)
137.50	(7.50)	1.75	(5.75)
140.00	(5.00)	1.75	(3.25)
142.50	(2.50)	1.75	(0.75)
145.00	0.00	1.75	1.75
147.50	0.00	1.75	1.75
150.00	0.00	1.75	1.75
152.50	0.00	1.75	1.75
155.00	0.00	1.75	1.75

Enhancing Performance

Cash Secured Put

Payoff at April 29th Expiration



Enhancing Performance

Cash Secured Put

Do Cash Secured Puts Enhance Performance?

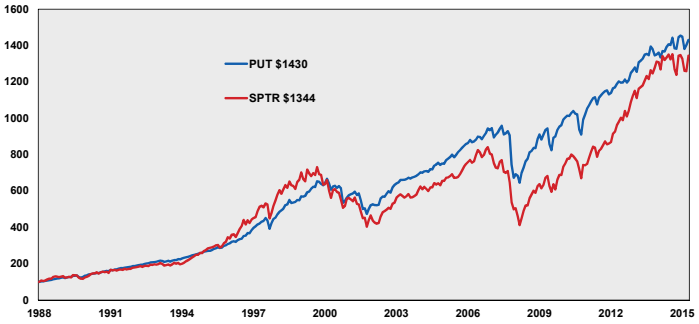
It Depends…

We have a strategy index using S&P 500 Index options that demonstrates the performance of a consistent cash secured put program

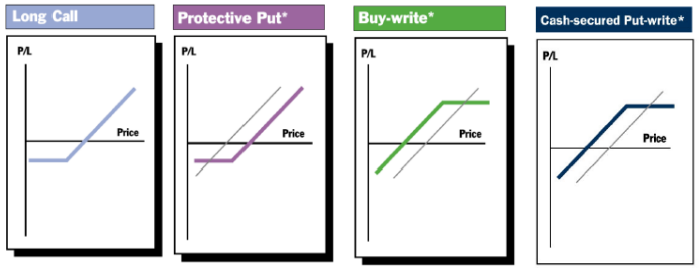
Enhancing Performance

Cash Secured Put

CBOE S&P 500 PutWrite Index Performance – 1989 – Q12016



Cliff Notes



Long call gives the holder the right to buy the underlying security at a specified price for a certain, fixed period of time.

Protective put investor purchases a put (right to sell) while holding underlying security.

Buy-write investor buys a security and writes (sells) a covered call for income.

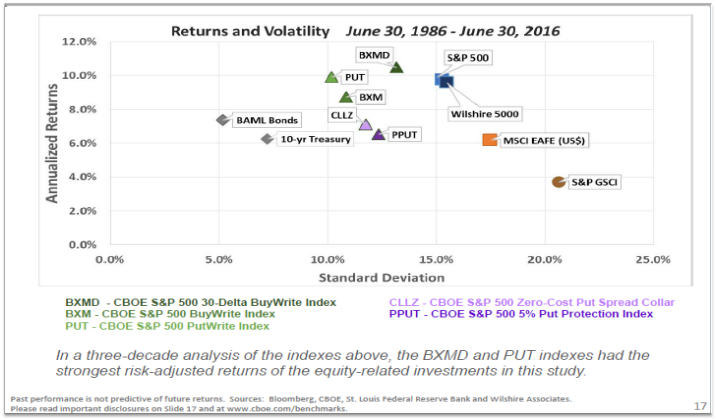
A cash-secured put-write investor can hold Treasury bills and writes (sells) puts for income.

* The colored line reflects a position with both options and stock at expiration, while the straight grey line reflects a long stock position.

Risk Adjusted Returns
Outcome Based Investing

What Else?

Efficient Frontier



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Source: Bloomberg/CBOE/St Louis Fed/Wilshire Associates

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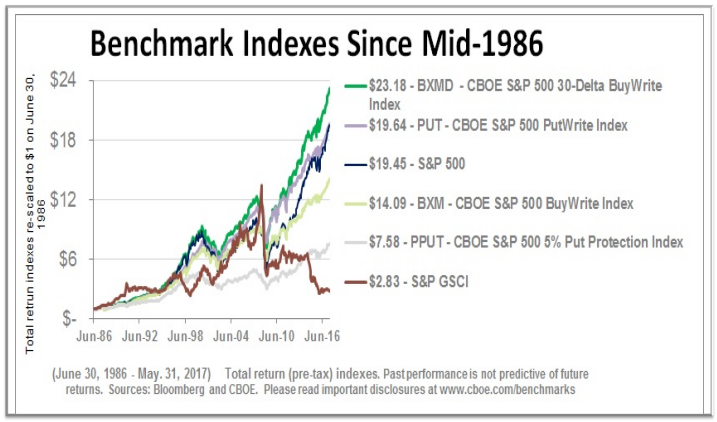
What Else?

Efficacy Continued



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Source: Bloomberg & CBOE

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What Else?

SPX Forward Returns (Annual 1928 – 2016) & Drawdowns

	S&P 500 Average Forward Returns (Annualized, 1928 - 2016)									
Valuation Percentile	1-Yr	2-Yr	3-Yr	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year
0-10%	25.5%	20.1%	19.4%	18.6%	18.3%	16.9%	16.7%	16.4%	16.1%	15.6%
10-20%	19.2%	20.7%	17.5%	16.7%	15.9%	16.7%	16.7%	16.8%	16.5%	16.2%
20-30%	15.3%	16.7%	15.6%	15.6%	15.6%	14.4%	14.5%	14.8%	14.6%	14.8%
30-40%	15.5%	13.1%	13.1%	11.1%	12.0%	12.2%	12.1%	11.7%	12.3%	13.3%
40-50%	3.4%	6.1%	6.1%	7.6%	9.3%	10.4%	10.6%	10.3%	11.3%	11.8%
50-60%	6.4%	5.1%	6.9%	7.7%	8.4%	9.2%	9.5%	10.5%	10.8%	10.1%
60-70%	10.7%	11.2%	12.6%	13.1%	13.7%	13.5%	12.1%	10.7%	9.3%	8.6%
70-80%	6.2%	6.5%	7.6%	7.7%	7.4%	5.5%	5.4%	4.9%	5.0%	4.7%
80-90%	7.9%	8.6%	7.8%	7.8%	6.1%	4.8%	4.9%	5.9%	5.9%	6.3%
90-100%	3.0%	0.9%	0.5%	0.0%	0.1%	1.5%	2.6%	3.0%	3.0%	3.1%

		S&P 500 Average Forward Maximum Loss (1928 - 2016)									
Valuation Percentile	CAPE Ratio	1-Yr	2-Yr	3-Yr	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year
0-10%	5.57 to 9.68	-4.1%	-4.5%	-4.5%	-4.5%	-4.5%	-4.5%	-4.5%	-4.5%	-4.5%	-4.5%
10-20%	9.69 to 11.22	-3.6%	-3.6%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%	-3.7%
20-30%	11.23 to 12.67	-3.7%	-4.6%	-4.7%	-4.8%	-4.8%	-4.8%	-4.8%	-4.8%	-4.8%	-4.8%
30-40%	12.68 to 14.98	-6.5%	-8.3%	-9.1%	-9.5%	-9.7%	-9.7%	-9.7%	-9.9%	-9.9%	-9.9%
40-50%	14.99 to 17.03	-12.7%	-15.5%	-17.4%	-18.9%	-18.9%	-18.9%	-18.9%	-19.9%	-19.7%	-19.7%
50-60%	17.04 to 18.84	-6.0%	-11.1%	-13.7%	-15.0%	-15.2%	-15.2%	-15.2%	-15.6%	-15.6%	-15.6%
60-70%	18.85 to 21.03	-4.8%	-7.3%	-8.2%	-9.4%	-10.2%	-10.7%	-11.2%	-11.6%	-10.9%	-10.9%
70-80%	21.03 to 22.21	-8.1%	-13.0%	-16.0%	-19.0%	-20.8%	-21.9%	-23.0%	-23.0%	-22.2%	-22.2%
80-90%	22.22 to 26.40	-5.4%	-9.2%	-15.6%	-22.3%	-24.4%	-26.1%	-26.3%	-26.3%	-25.9%	-23.9%
90-100%	26.41 to 44.20	-9.0%	-18.9%	-26.8%	-30.3%	-32.8%	-33.3%	-33.3%	-33.3%	-33.3%	-32.4%

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Source: Pension Partners

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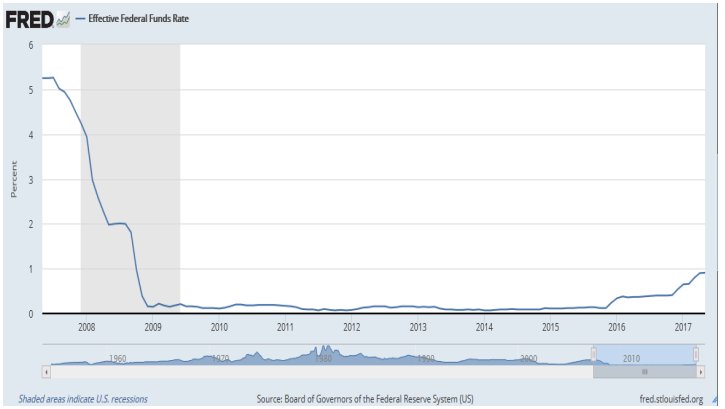
What Else?

Typical Concerns Include

- Assignment Risk
- Dividends
- Expiring ITM
- Taxes
- Same Day Stock Substitution?
- Regulation/Compliance

What Else?

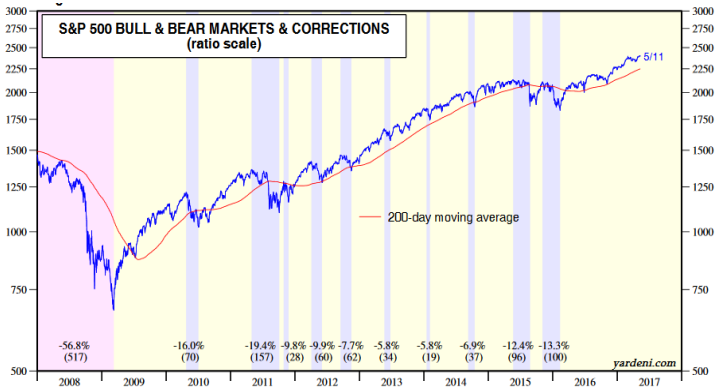
Yield Matters



 Source: St. Louis Fed

SPX Corrections Since 2007 Peak

Don't Confuse a Bull Market for Brains



 Source: Yardeni.com

Conclusion

Summary	Options gives clients tremendous flexibility whether the goal is yield, portfolio protection, capital efficiency, or other.
	Option buyers pay a premium and have rights. Option sellers collect a premium and assume an obligation
	Understand basic terminology & payoff diagrams. Great first step to mastering options & knowing what strategy to emply
	Risk mitigation is often the primary goal of option users
	If you have questions – we likely have answers

Questions / Contact

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