OIC The Options Industry Council

Buying Options: Using Call Options as an Alternative to Buying Stock

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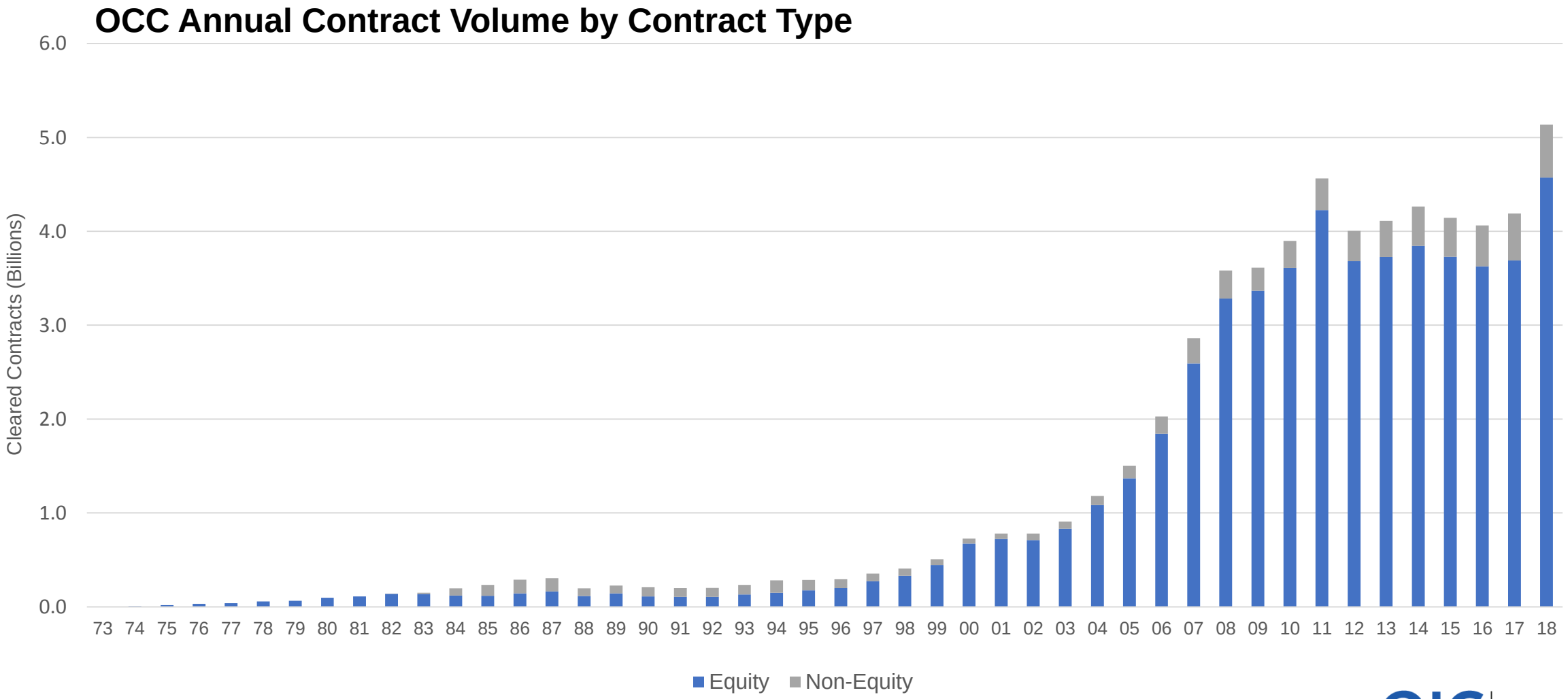
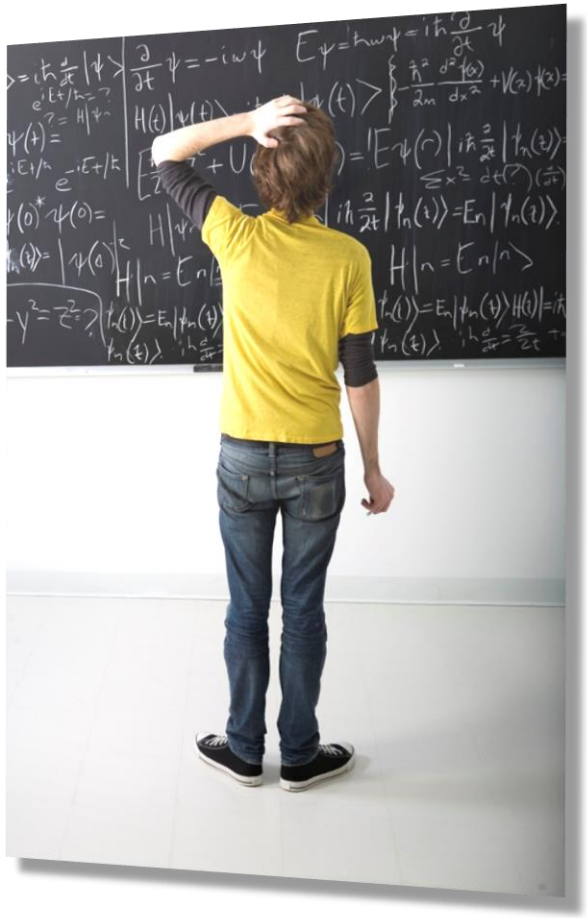
U.S. Listed Options Exchanges

Annual Options Volume 1973-2018



Presentation Outline

- Benefits & Risks of Buying
- Leverage
- Choosing Strikes and Expiry's
- Buying Calls
- Buying Puts



What To Buy

Starts with a forecast:

- Will shares move up, down, or stay the same?
- How high/low will they go?

Followed by an expiry:

- How long will it take the forecast to occur?
  - "Time is money"

Select a strategy:

- Buy calls/buy puts or something else?
- Exit strategy: Take profits/cut losses

Leverage

More Bang for your Buck!

- Lower initial investment can result in higher returns (as a %) vs. buying shares outright.

Scenario: Due to recent events, Lindsay is extremely bullish on various pharmaceutical stocks. To speculate on the industry as a whole, she's found an ETF that groups several of these companies together. With stock currently trading $50, she can buy 100 shares and invest (and risk) $5,000 or buy a six-month 50 strike call for $4.50 ($450).

Leverage From Options

Long 1 six-month 50 call for $4.50 ($450)

Stock Price at Expiration	Long 100 shares from $50	Percentage Gain/Loss	Long 1 50 Call at Expiration	Percentage Gain/Loss
$40	($1,000)	10%	($450)	(100%)
$45	($500)	20%	($450)	(100%)
$50	-0-	-0-	($450)	(100%)
$55	$500	10%	$50	11%
$60	$1,000	20%	$550	120%

What Leverage Allows You To Buy

Long **11** six-month 50 call for $4.50 ($4950) vs. buying 100 shares ($5,000)

Stock Price at Expiration	Long 100 shares from $50	Percentage Gain/Loss	Long 1 50 Call at Expiration	Percentage Gain/Loss
$40	($1,000)	10%	($4,950)	(100%)
$45	($500)	20%	($4,950)	(100%)
$50	-0-	-0-	($4,950)	(100%)
$55	$500	10%	$550	11%
$60	$1,000	20%	$6,050	120%

Strike selection

In, At, & Out-of-the Money

Options pricing has two components:

- Intrinsic Value: Difference between strike price and share price
- Extrinsic (Time) Value: Comprised of time to expiration, implied volatility, dividends and interest rates

ITM options have intrinsic value and MAY have extrinsic as well
ATM/OTM options have extrinsic value ONLY

The "Moneyness" of an Option

In-the-Money (ITM)
At-the-Money (ATM)
Out-of-the-Money (OTM)

Moneyness ≠ Profit

- Used to determine intrinsic value of the contract
- Stock price movements influence intrinsic value
- All ATM/OTM options have ZERO intrinsic value

Call Options	
Moneyness	Relationship to Stock
In-the-Money	Strike price < Stock price
At-the-Money	Strike price = Stock price
Out-of-the-Money	Strike price > Stock price

Put Options	
Moneyness	Relationship to Stock
In-the-Money	Strike price > Stock price
At-the-Money	Strike price = Stock price
Out-of-the-Money	Strike price < Stock price

Strike selection

In, At, & Out-of-the Money

In-the money strikes

- More expensive than ATM/OTM strikes of same expiry
- More favorable breakeven point/profitability
- Greater likelihood of contract having intrinsic value at expiry

At/Out-of-the money strike

- Less expensive than ATM/OTM strikes of same expiry
- Less favorable breakeven point/profitability
- Less likelihood of contract having intrinsic value at expiry

Strike selection

Stock price of $75 with a 45-day expiry and 30% IV

Strike	Call Value	Call Delta	Breakeven	Put Value	Put Delta	Breakeven
65	$10.30	.92	$75.30	$0.30	.08	$64.70
70	$6.18	.76	$76.18	$1.18	.24	$68.82
75	$3.15	.52	$78.15	$3.15	.48	$71.85
80	$1.35	.29	$81.35	$6.35	.71	$73.65
85	$0.48	.13	$85.48	$10.48	.87	$74.52

Expiration selection

Weekly's, Monthly's, and LEAPS

TIME IS MONEY!!!

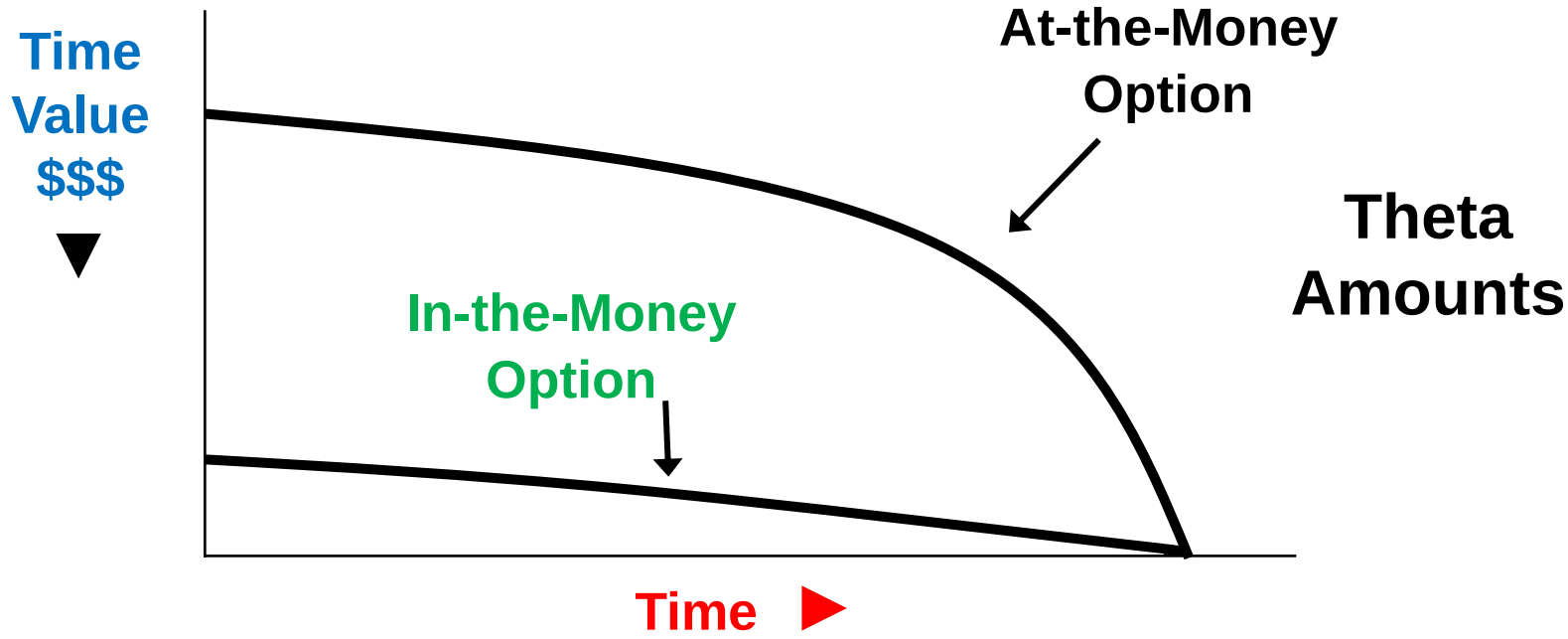
As time is a component of options pricing (extrinsic value), *more time = greater premiums*

Ex. 50 strike: LEAPS > Monthly > Weekly

Remember forecast? *Where is the stock going to go and how long will it take to get there?*

Buying more time than is needed?

Option Theta and Expiry



Overall rate of time decay is exponential (**accelerates** towards expiry)

ATM = decay exponential = volatility is key decay factor

ITM = decay linear = cost-to-carry is key decay factor

Option Theta and Expiration

Theta: Amount by which an options premium theoretically decays per day, all other things constant

XYZ=$50	ATM call	20% IV
Days to Expiration	Theta	Option Premium
365	-$.005	$3.98
150	-$.008	$2.55
75	-$.012	$1.81
50	-$.015	$1.48
30	-$.019	$1.14
20	-$.023	$.93
10	-$.033	$.66
5	-$.047	$.47

XYZ=$50	ATM call	40% IV
Days to Expiration	Theta	Option Premium
365	-$.011	$7.93
150	-$.017	$5.10
75	-$.024	$3.61
50	-$.030	$2.95
30	-$.038	$2.28
20	-$.047	$1.87
10	-$.067	$1.32
5	-$.093	$.93

Why Buy Calls?

Investor is near-term **BULLISH** on a particular stock

- Looking to benefit from rising prices with:
  - a small cash outlay (premium)
  - a limited, pre-defined risk (100% of investment)
- Wants an alternative to buying stock with the idea of reselling option for a profit
- Leverage

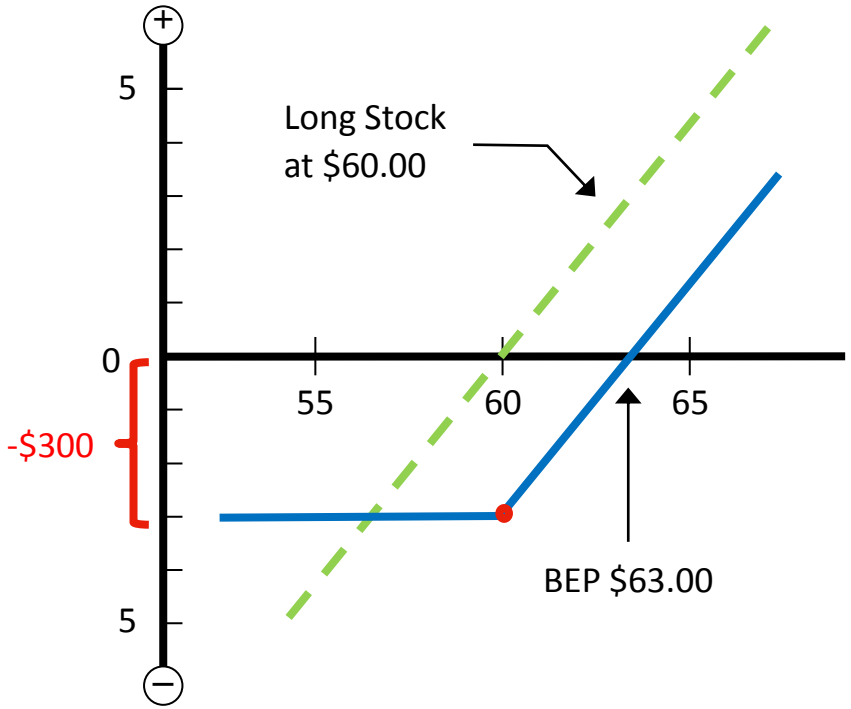
Call Buying Example

- Stock XYZ is trading at $60.00 **(100 shares = $6,000)**
  - Investor is bullish on the stock
  - Investor wants limited downside risk
- Investor buys a three-month, 60.00 strike call at $3.00
  - Total premium paid = $3.00 x 100 shares = $300.00

Stock Price at Expiration	Value of Long 60 Call x $100	Initial Cost of Long 60 Call	Long 60 Call Net Profit/(Loss) x $100
$70.00	$1,000	($300)	$700
$65.00	$500	($300)	$200
$60.00	-$0-	($300)	($300)
$55.00	-$0-	($300)	($300)
$50.00	-$0-	($300)	($300)

Call Buying Example

Buy 60.00 strike call at $3.00



Break-even at Expiration:
Strike Price + Call Premium Paid
$60.00 + $3.00 = $63.00

Maximum Loss:
$3.00 Call Premium Paid
$300.00 Total

Why Buy Puts?

- Investor is **BEARISH** on a particular stock or looking to **hedge** a position
- Investor is looking to benefit from falling prices with:
  - a small cash outlay
  - a limited, pre-defined risk (up to 100% of your investment)
- Investor wants an alternative to selling stock short
- Has the right to sell underlying stock
- For this right the put buyer pays premium

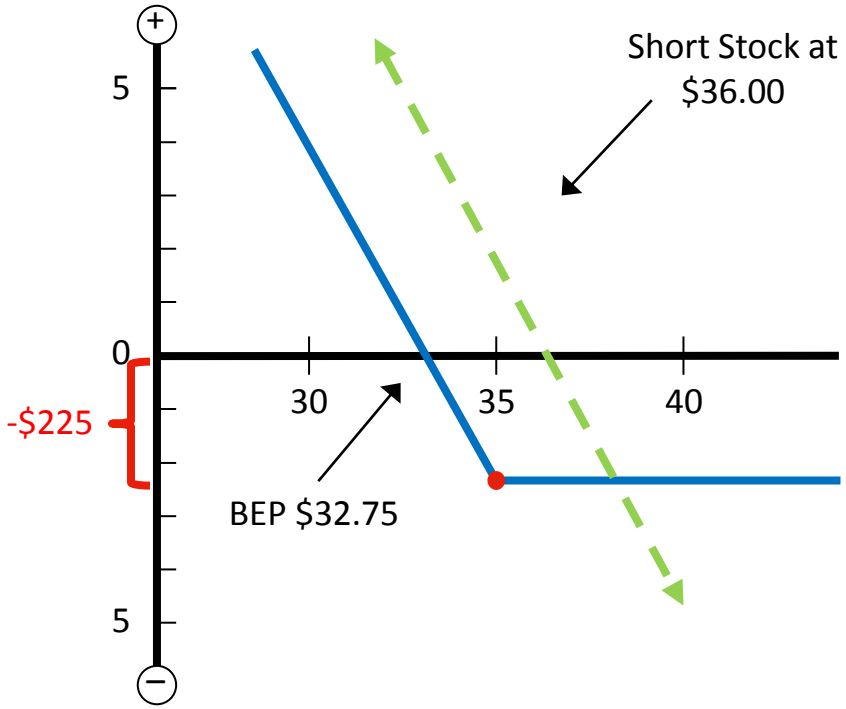
Put Buying Example

- Stock XYZ is trading at $36.00
  - Investor is bearish on the stock
  - Investor wants limited upside risk
- Investor buys a three-month, 35.00 strike put at $2.25
  - total premium paid = $2.25 x 100 shares = $225.00

Stock Price at Expiration	Value of Long 35 Put x $100	Initial Cost of Long 35 Put	Long 35 Put Net Profit/(Loss) x $100
$40.00	$0.00	($225)	-$225
$35.00	$0.00	($225)	-$225
$32.75	$225	($225)	-0-
$30.00	$500	($225)	$275
$25.00	$1,000	($225)	$775

Put Buying Example

Buy 35.00 strike put at $2.25



Break-even at Expiration:
Strike Price – Put Premium Paid
$35.00 – $2.25 = $32.75

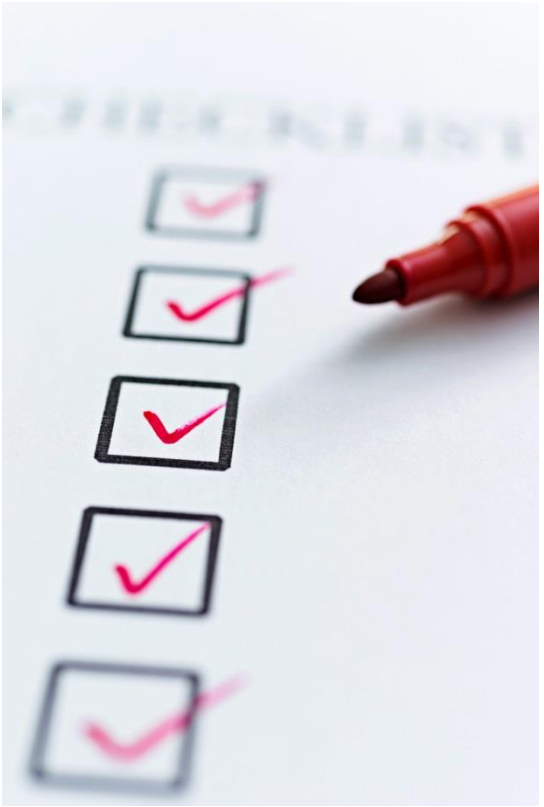
Maximum Loss:
$2.25 Put Premium Paid
$225.00 Total

Rights of Options Buyers

	Call Buyers	Put Buyers
Rights/Obligations	Has the **right** but not the obligation to buy shares at an agreed upon price within a specific period of time	Has the **right** but not the obligation to sell shares at an agreed upon price within a specific period of time
Market Outlook	Typically Bullish (market increase)	Typically Bearish (market decrease)
Potential Benefits	Take advantage of rising share prices with small cash outlay and pre-defined risk. Possible to buy shares below market price	Take advantage of falling share prices and sell stock above market price
Potential Risks	Limited to 100% of premium paid.	Limited to 100% of premium paid.

Things to Know

- ❑Option buyers can speculate on the potential pricing movements of a stock/ETF
- ❑Premium paid is maximum risk
- ❑Strike selection and expiry are determined by forecast
- ❑Time is Money! More time = $$$
- ❑Passage of time works against option buyers



For More Information

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