



# Options for Traders

WORKSHOP STUDY GUIDE



## Disclaimer

In order to simplify the computations, commissions and potential tax implications have not been included in the examples used in these materials. Commissions and taxes will impact the outcome of all stock and options transactions and must be taken into account.

Options involve risk and are not suitable for everyone. Prior to buying or selling an option, a person must receive a copy of Characteristics and Risks of Standardized Options. Copies may be obtained from The Chicago Board Options Exchange (1-800-OPTIONS) or from your broker. The investor considering options should consult their tax advisor as to how taxes may affect the outcome of contemplated options transactions. A prospectus, which discusses the role of the Options Clearing Corporation, is also available, without charge, upon request, addressed to the Options Clearing Corporation: 440 S. LaSalle St., Suite 908, Chicago, Illinois 60605 or to the Chicago Board Options Exchange: LaSalle at Van Buren, Chicago, Illinois 60605.

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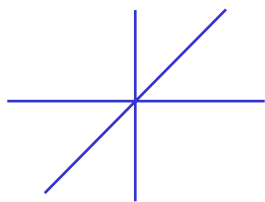
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# The Opportunities Options Create

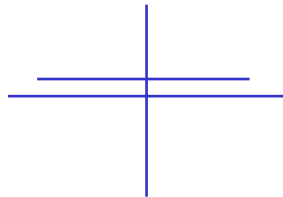
- Options add another dimension to investing.
  - They create opportunities in all types of market environments.
  - They allow you to define the risk and reward profile of your investments.

## Without Options

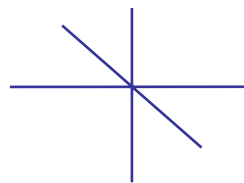
Without options these are the risk profiles that are readily available to investors.  
 Key: X-axis = Price, Y-axis = Profit/Loss



Long Stock

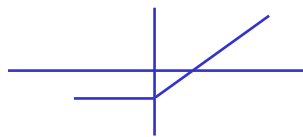


Treasury Bill

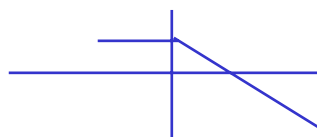


Short Stock

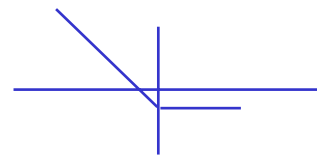
## With Options



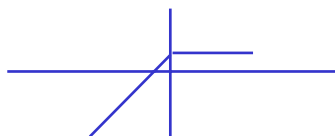
Long Call



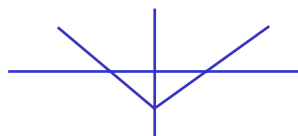
Short Call



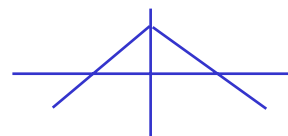
Long Put



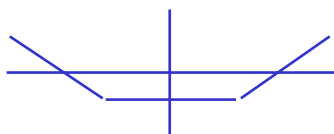
Short Put



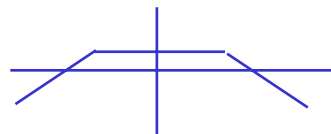
Long Straddle



Short Straddle



Long Strangle



Short Strangle

# Option Terminology

## Options are contracts that can be bought or sold.

- The owner (buyer) gains the right to buy or sell an asset at a fixed price, within a specific period of time.
- The seller (writer), taking the opposite side of the contract, has the obligation to fulfill the buyer's rights within that period of time.

Option buyers have “rights” and are “long”, whereas sellers have “obligations” and are “short.”

## Calls and Puts

- Calls are options to **buy** an “underlying” asset such as a stock or an index.
  - The buyer obtains the right (but not the obligation) to purchase the underlying stock or index.
  - The seller of a call assumes the obligation to supply the underlying asset when the call contract is “exercised”.
- Puts are options to **sell** a stock or an index.
  - The buyer obtains the right (but not the obligation) to sell the underlying stock or index.
  - The seller of a put assumes the obligation to purchase an underlying asset when the put contract is “exercised.”

## Underlying

- Option contracts are customarily offered on underlying assets, such as individual stocks or indices.
- Equity options ordinarily represent 100 shares of stock, while index options often reflect the value of an index with a multiplier of 100.

## Strike Price

- The pre-determined price at which the underlying asset will be bought or sold, when the option is exercised
- In the listed option's marketplace the strike price intervals are standardized.
  - Stocks priced between 0-25 have strike price intervals of 2 ½.
  - Stocks priced between 25-200 have strike price intervals of 5.
  - Stocks priced greater than 200 have strike price intervals of 10.

## Premium

- The price of the option
- Paid by buyer, received by seller
- The price is multiplied by the number of shares the contract represents, generally 100 shares.
  - \$3.10 option actually costs 100 x \$3.10 or \$310.00

## Expiration – American Style

- Options may be exercised on any business day up to expiration.
- Usually, American-style equity and index options expire on the Saturday following the third Friday of each month.
- The last day they can be exercised or traded is the third Friday of the month.
- PM Settlement

## Expiration – European Style

- Options can only be exercised at expiration.
- Usually, European-style index options expire on the Saturday following the third Friday of each month.
- The last day a European-style index option can be traded is typically the **Thursday** before the third Friday of the month.
- AM Settlement

## Volume and Option Interest

- Option Volume
  - Option volume is the number of option contracts that have traded within a day.
- Open Interest
  - Open interest is the number of outstanding option contracts of a particular strike price and expiration date that have been bought or sold to open a position. An opening transaction increases open interest and a closing transaction decreases it. Open interest is calculated at the end of each business day.

# Basic Strategies

## Four Basic Positions

	CALL	PUT
Buyer (long)	<b>Right to buy</b>	<b>Right to sell</b>
Seller (short)	<b>Obligation to sell</b>	<b>Obligation to buy</b>

## Buying Call

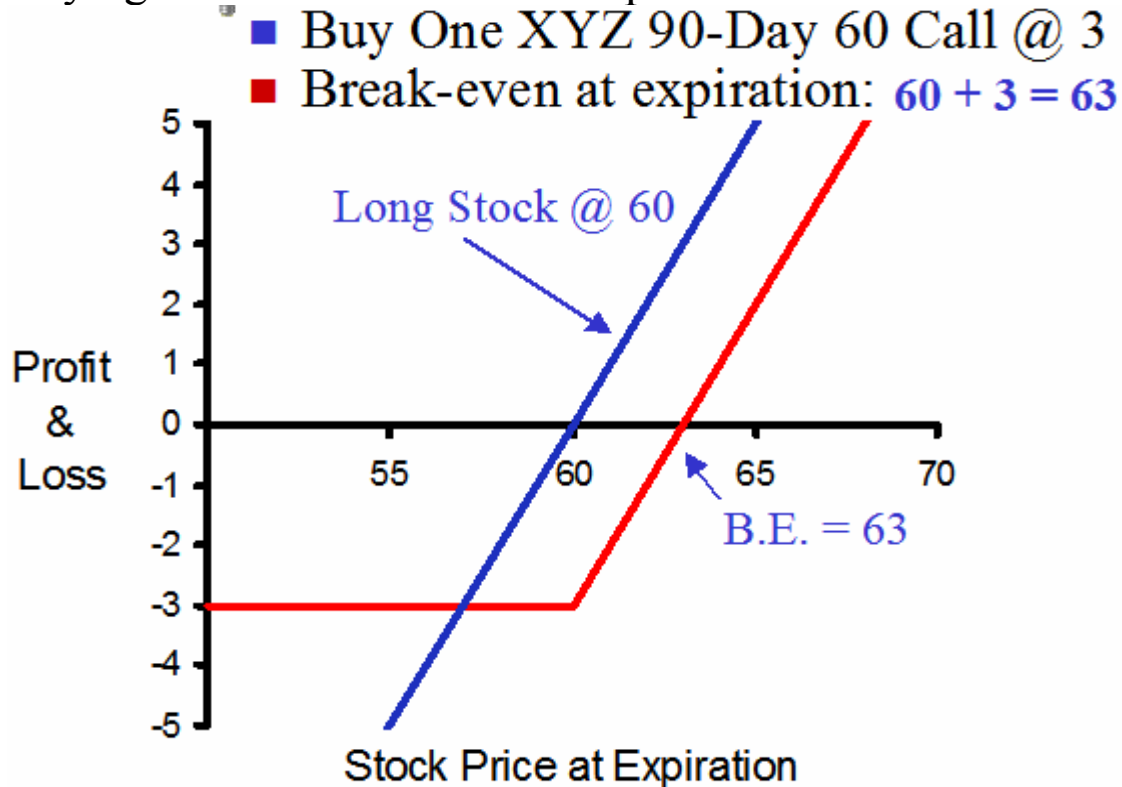
- Situation:
  - XYZ stock is trading at \$60
- Market Forecast:
  - Bullish on the stock, but want limited capital exposure if the stock decreases in price
- Strategy:
  - Buy 1 XYZ 90-day 60 Strike Call @ \$3.00
  - Cost is \$3.00 x 100 or \$300.00, plus commission
- Max Risk:
- Max Profit:
- Break-Even:

## Buying Call - Profit & Loss Table

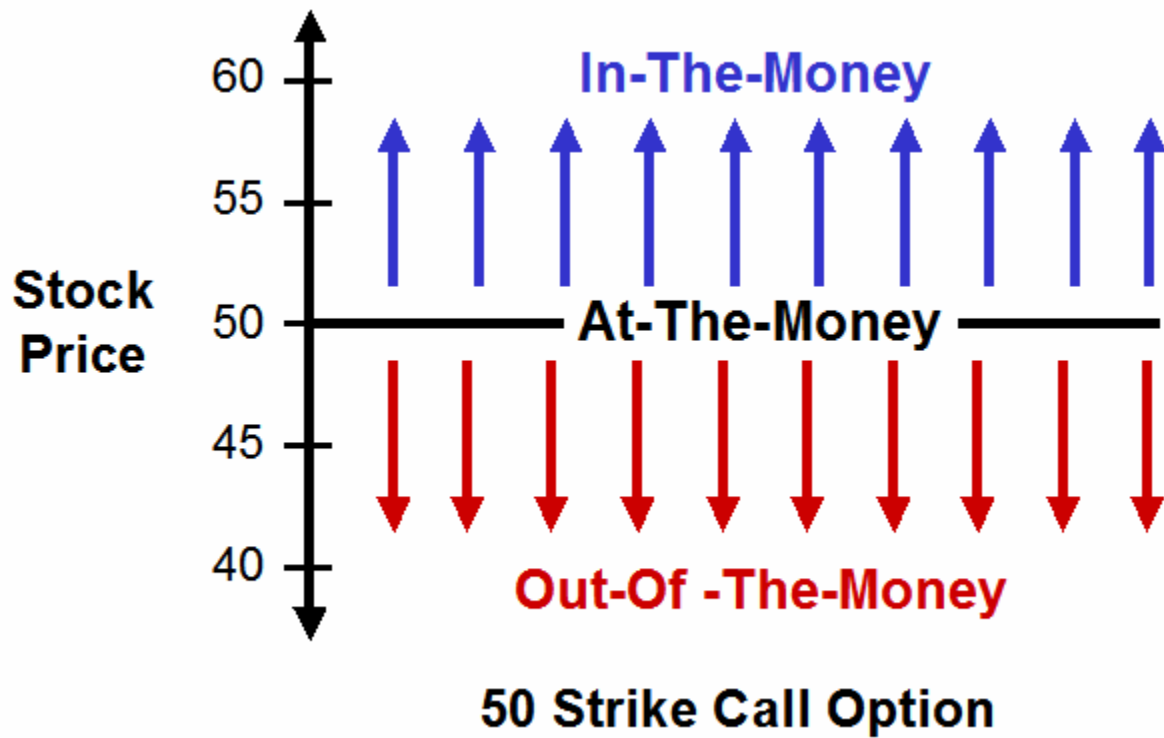
- Buy 1 XYZ 90-Day 60 Call @ 3

Stock @ Exp	Option Cost	Call Value @ Exp	Net P/(L)
70	(3)	10	7
65	(3)	5	2
63	(3)	3	0
60	(3)	0	(3)
55	(3)	0	(3)

Buying Call - Profit & Loss Graph:



## Ins and Outs of Call Options



### Selling Call

- Situation:
  - \_\_\_\_\_ stock is trading at \$ \_\_\_\_\_
- Market Forecast:
  - Neutral to bearish on the stock
- Strategy:
 

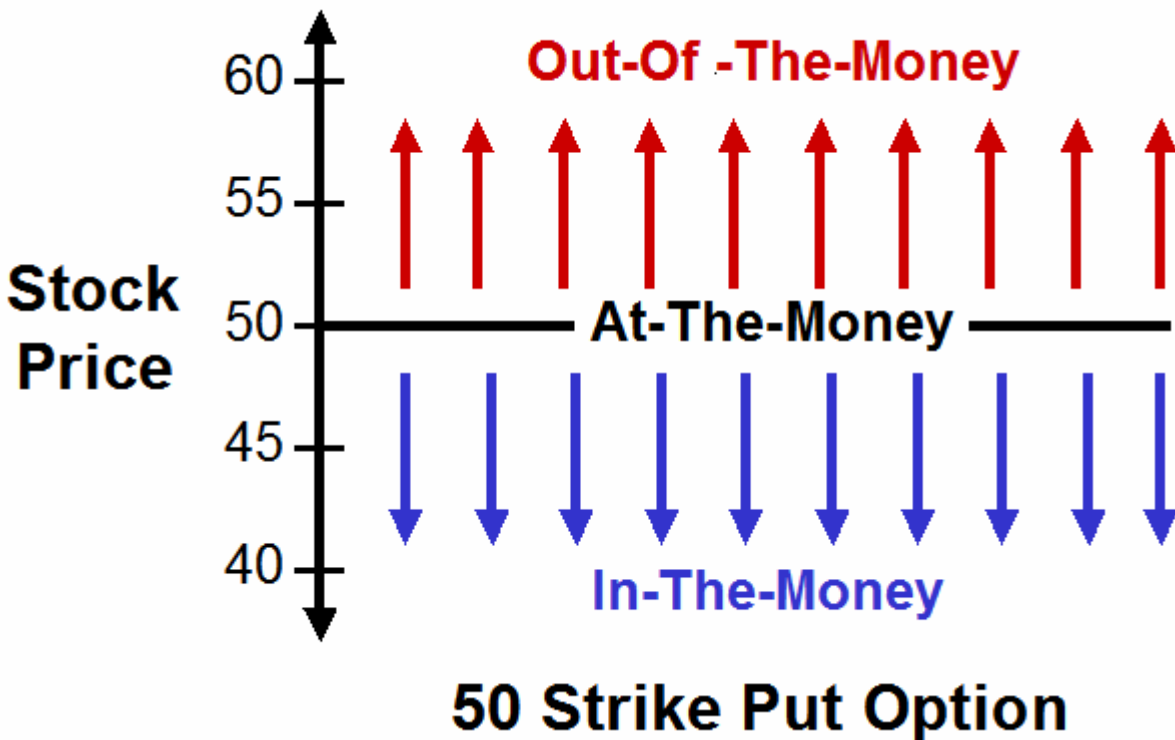
Sell \_\_\_\_\_ Call @ \_\_\_\_\_  
Net Credit \_\_\_\_\_
- Max Risk:
- Max Profit:
- Break-Even:

## Buying Put

- Situation:
  - \_\_\_\_\_ stock is trading at \$ \_\_\_\_\_
- Market Forecast:
  - Bearish on the stock, but want limited capital exposure if the stock increases in price
- Strategy:
 

Buy \_\_\_\_\_ Put @ \_\_\_\_\_  
Net Debit \_\_\_\_\_
- Max Risk:
- Max Profit:
- Break-Even:

## Ins and Outs of Put Options



## Selling Put

- Situation:
  - \_\_\_\_\_ stock is trading at \$ \_\_\_\_\_
- Market Forecast:
  - Neutral to bullish on the stock
- Strategy:  
Sell \_\_\_\_\_ Put @ \_\_\_\_\_  
Net Credit \_\_\_\_\_
- Max Risk:
- Max Profit:
- Break-Even:

## I'm Long, What Now?

- Sell it.
- Exercise it.
- Let it expire.

## I'm Short, What Now?

- Buy it back.
- Accept assignment.
- Let it expire.

## Summary of Strategy Section

- Buying Calls
  - Right to buy
  - Long market participation with limited capital exposure
  - Can also be used like insurance to protect short positions
- Selling Calls
  - Obligation to sell
  - Brings in cash and sets sell prices above current stock prices
- Buying Puts
  - Right to sell
  - Short market participation with limited capital exposure
  - Can also be used like insurance to protect long positions
- Selling Puts
  - Obligation to buy
  - Brings in cash and sets buy prices below current stock prices

# Listed Option Exchanges and Order Routing

## Exchanges and Order Routing

Six Listed Option Markets:

- American Stock Exchange (AMEX)
- Boston Options Exchange (BOX)
- Chicago Board Options Exchange (CBOE)
- International Securities Exchange (ISE)
- Pacific Stock Exchange (PSE)
- Philadelphia Stock Exchange (PHLX)

ARCA is an electronic ECN destination for stocks.

TRADE GRID

EX	BID	BS	EX	ASK	AS
NYSE	81.26	66	ARCA	81.30	1
ISLAND	81.24	10	NYSE	81.34	404
ARCA	81.07	1	ISLAND	81.43	1
BOX	80.76	1	BOX	81.84	1
NASDAQ INT	80.60	1	PHLX	82.29	1
PHLX	80.27	1	NASDAQ INT	82.86	1
CHX	39.39	1	CHX	125.76	1

ORDER ENTRY AND ORDER QUEUE

ORDER ENTRY | ORDER QUEUE

SPREAD	SIDE	QTY	SYMBOL	SPC	EXP	STRIKE	TYPE	PRICE	LMT	ORDER	RULES	EXCHANGE
STOCK	BUY	+100	IBM				STOCK	81.30	LMT	LIMIT	DAY	BEST

Queue Analyze Single Order

Mid 81.19 Nat 81.30

Delete Confirm and Send

## Option Pricing

### Intrinsic & Time Value

30 Strike Call @ 7  
 Stock Price @ 35

Stock Price 35  
 Strike Price -30  
 Intrinsic Value 5

Option Price 7  
 Intrinsic Value -5  
 Time Value 2

### Pricing Components Analogy

Insurance Policy	Option
Price of Asset	Stock Price
Deductible	Strike Price
Time	Expiration Date
Carry Costs <small>(Interest Rates)</small>	Int. Rate & Div.
Level of Risk	Volatility
= Premium	= Premium

## Option Price Behavior

Stock Price:           \$50   →   \$51

Days to Exp:           90    →    90

50-Strike Call:        4.00 →    ?

## Option Price Behavior

\*Most option prices don't move as much as the underlying.

### Delta:

- A measure of the rate of change in an option's theoretical value, for a one-unit change in the price of the underlying stock.

### Rule of Delta

- In-the-Money Options
  - Deltas greater than .50 but not larger than 1
- At-The-Money
  - Deltas near .50
- Out-of-The-Money
  - Deltas less than .50 but not less than 0

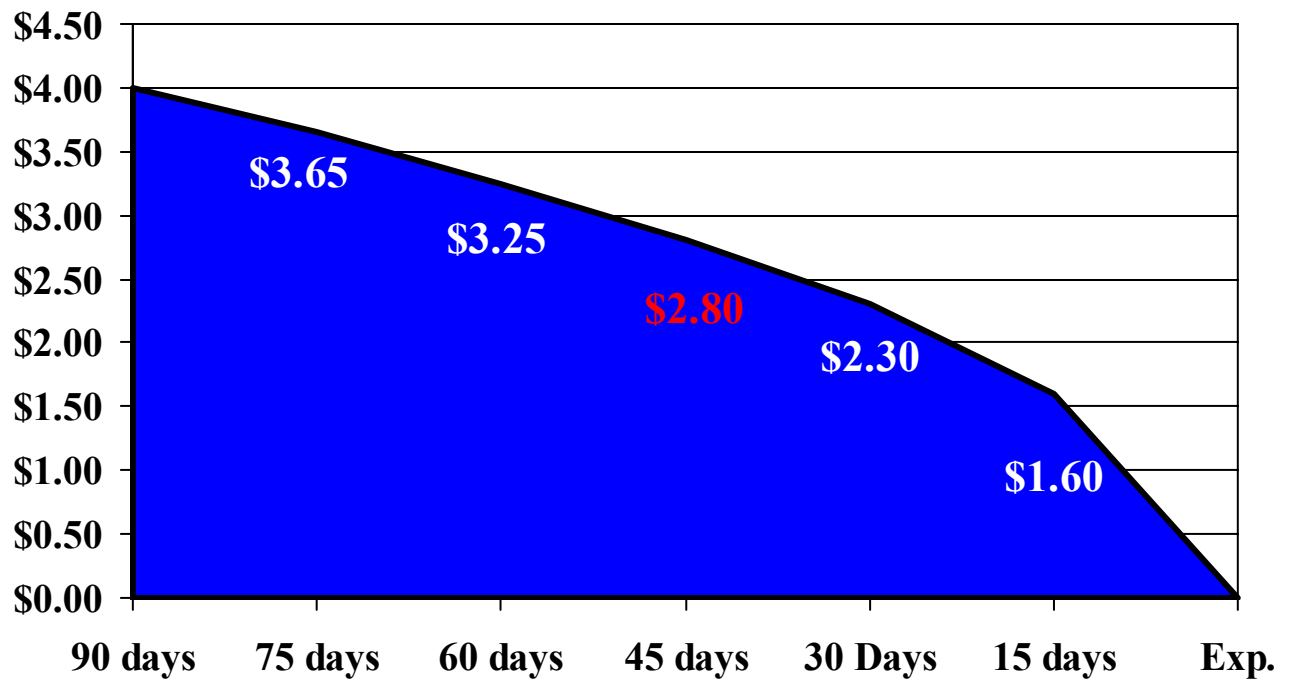
## Option Price Behavior Example:

Stock Price:           \$50   →   \$50

Days to Exp:           90    →    45

50-Strike Call:        4.00 →    ?

## Time Decay for At-the-Money Options



## Combining Strategies

### Covered Call

- Strategy:
 

Buy		@	
Sell		@	
	Call		
	Net debit		
- Max Risk:
- Max Profit:
- Break-Even:

### Protective Put

- Strategy:
 

Buy		@	
Buy		@	
	Put		
	Net debit		
- Max Risk:
- Max Profit:
- Break-Even:

### Collar

- Strategy:
 

Buy		@	
Buy		@	
Sell		@	
	Put		
	Call		
	Net debit		
- Max Risk:
- Max Profit:
- Break-Even:

## Vertical Spread Defined

The purchase of one option and the simultaneous sale of another option on the same underlying, with the same expiration dates, but with different strike prices.

### Long Vertical Call Spread\*

Underlying price \_\_\_\_\_  
 Buy \_\_\_\_\_ Call @ \_\_\_\_\_  
 Sell \_\_\_\_\_ Call @ \_\_\_\_\_  
 Net Debit \_\_\_\_\_

- Max Profit:
- Max Loss:
- Break-Even Point:

### Short Vertical Call Spread\*

Underlying price \_\_\_\_\_  
 Buy \_\_\_\_\_ Call @ \_\_\_\_\_  
 Sell \_\_\_\_\_ Call @ \_\_\_\_\_  
 Net Debit \_\_\_\_\_

- Max Profit:
- Max Loss:
- Break-Even Point:

\*You may have heard terms such as “ ‘Bull’ call spread” or “ ‘Bear’ put spread”. Professional traders omit the “Bulls” and the “Bears” from their trading lingo. Since our trading platform integrates the way floor traders think and trade, you will be more efficient if you train yourself to abandon “bulls” and “bears” terminology and simply define each trade, even if it is a spread, as a credit “short” and/or a debit “long”.