



# **Options 101: Build Your Basics**



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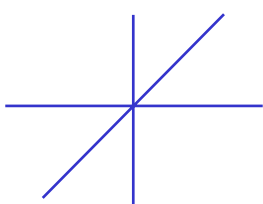
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# The Opportunities Options Create

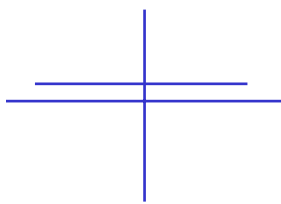
- Options add another dimension to investing
  - They create opportunities in all types of market environments.
  - They allow you to define your risk and reward profile of your investments.

## Before Options

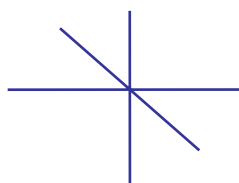
Without options these are the risk profiles that are readily available to investors



Long Stock

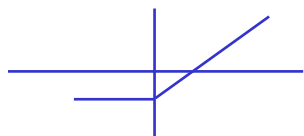


Treasury Bill

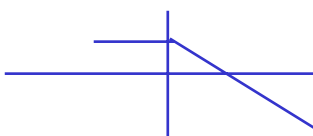


Short Stock

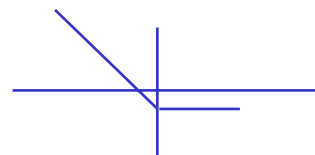
## With Options



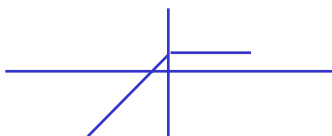
Long Call



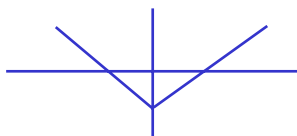
Short Call



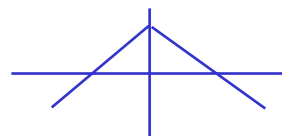
Long Put



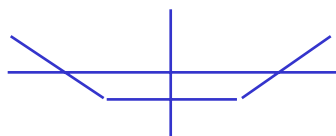
Short Put



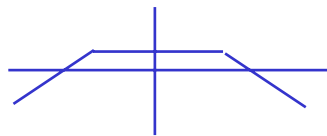
Long Straddle



Short Straddle



Long Strangle



Short Strangle

# Option Terminology

## Options are contracts:

- Giving the owner the right to buy or sell an asset at a fixed price for a specific period of time
- And, obligating the seller to take the opposite side if and when the right embedded in the option contract is exercised by the owner.

### Examples

XYZ January 70 Call at \$3.10  
ABC February 35 Put at \$1.20

## Call or Put

- Calls are options to buy a stock or an index.
  - The buyer obtains the right (but not the obligation) to purchase the underlying stock or index.
- 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.

### Examples

XYZ January 70 **Call** at \$3.10  
ABC February 35 **Put** at \$1.20

## Underlying

- Options are customarily on one underlying.
- Equity options ordinarily represent 100 shares of the underlying stock. Index options usually have a multiplier of 100.

### Examples

XYZ January 70 Call at \$3.10  
ABC February 35 Put at \$1.20

## Strike Price

- The pre-determined price at which the underlying asset will be bought or sold should the option be exercised.
- In the listed options marketplace the strike prices are standardized.
  - Stocks priced between 0-25 intervals of 2 1/2
  - Stocks priced between 25 - 200 intervals of 5
  - Stocks priced greater than 200 intervals of 10

### Examples

XYZ January **70** Call at \$3.10  
ABC February **35** Put at \$1.20

### 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

#### Examples

XYZ January 70 Call at **\$3.10**

ABC January 35 Put at **\$1.20**

### Expiration – American Style

- Options can 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.

#### Examples

XYZ January 70 Call at \$3.10

ABC February 35 Put at \$1.20

### Expiration – European Style

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

#### Examples

UVW **Index** March 150 Call at \$5.10

DEF **Index** April 500 Put at \$7.20

### 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 risk if the stock decreases in price
- Strategy:
  - Buy 1 XYZ 90-day 60 Strike Call @ \$3.00
  - Cost is \$3 x 100 or \$300, plus commission
- Max Risk:
- Max Profit:
- Break-Even:

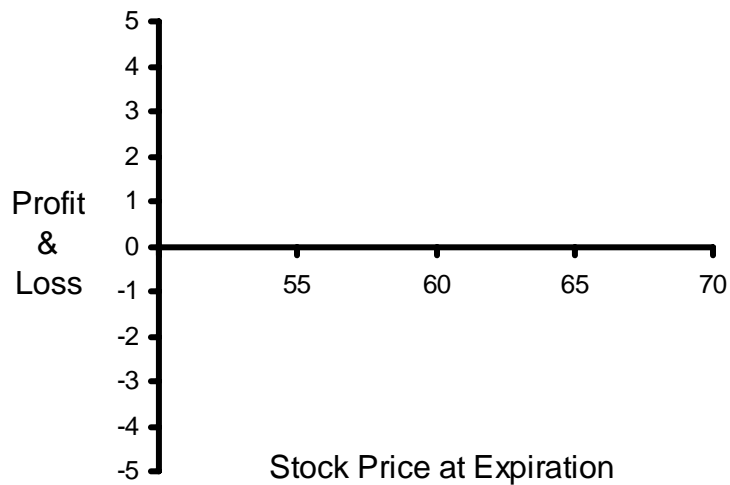
### Buying Call - Profit & Loss Table

- Buy One XYZ 90-Day 60 Call @ 3

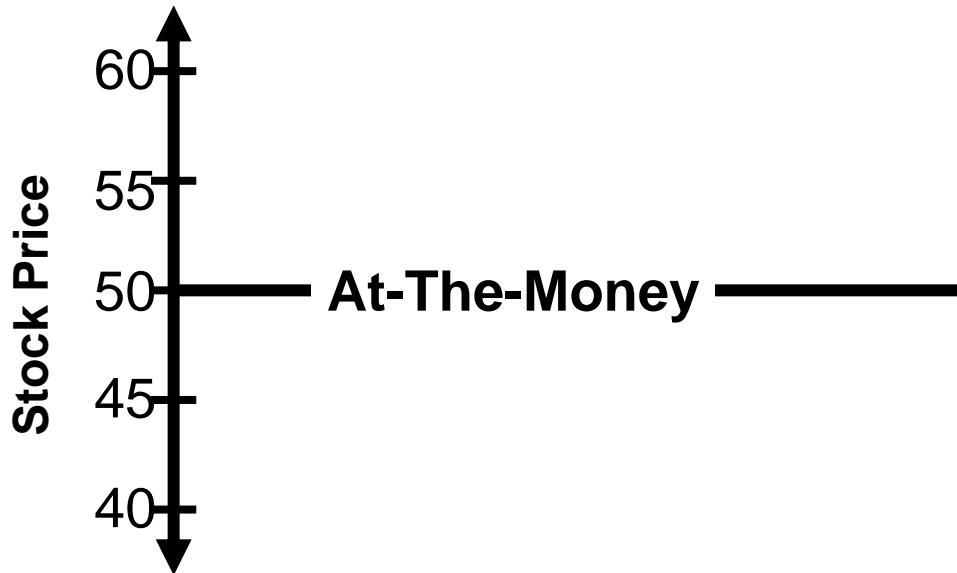
Stock @ Exp	Option Cost	Call Value @ Exp	Net P/(L)
70			
65			
63			
60			
55			

### Buying Call - Profit & Loss Graph

- Buy One XYZ 90-Day 60 Call @ 3



## In's and Out's for Call Options



### 50 Strike Call Option

#### Selling Call

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

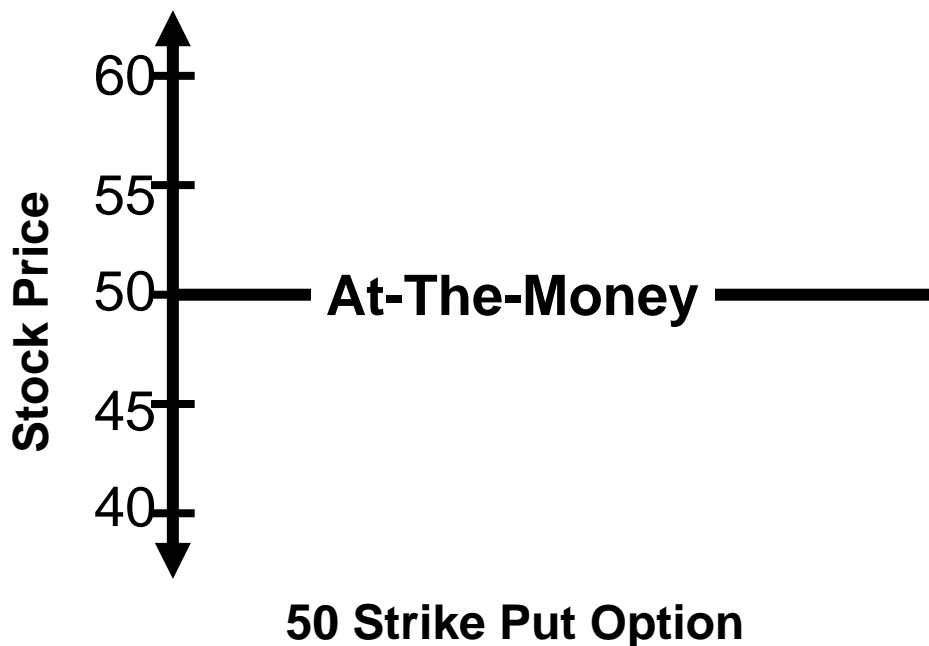
Sell \_\_\_\_\_ Call @ \_\_\_\_\_  
Net Credit \_\_\_\_\_
- Max Risk:
- Max Profit:
- Break-Even:



## Buying Put

- Situation:
  - \_\_\_\_\_ stock is trading at \$ \_\_\_\_\_
- Market Forecast:
  - Bearish on the stock, but want limited risk if the stock increases in price
- Strategy:  
Buy \_\_\_\_\_ Put @ \_\_\_\_\_  
Net Debit \_\_\_\_\_
- Max Risk:
- Max Profit:
- Break-Even:

## In's and Out's for 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

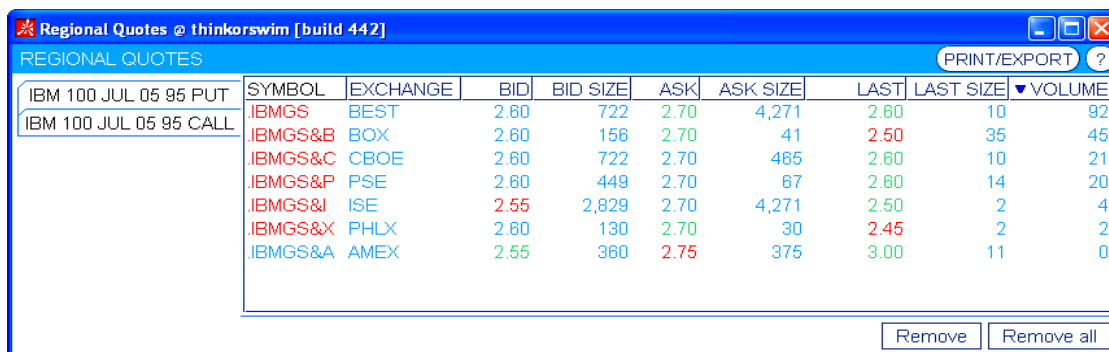
- Buying Calls
  - Right to buy
  - Long market exposure with limited risk
  - Can also be used like insurance to protect short positions
- Buying Puts
  - Right to sell
  - Short market exposure with limited risk
  - Can also be used like insurance to protect long positions
- Selling Calls
  - Obligation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

# Listed Option Exchanges and Order Routing

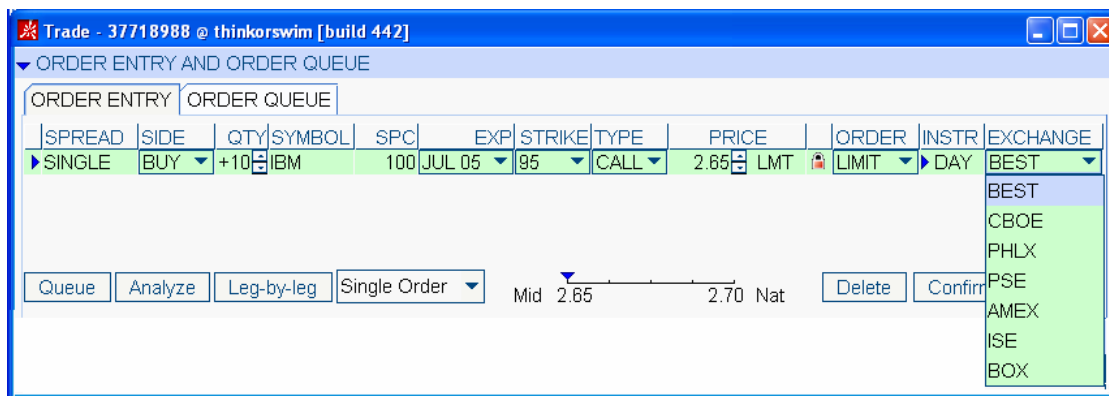
## Exchanges and Order Routing

### Six List 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)



SYMBOL	EXCHANGE	BID	BID SIZE	ASK	ASK SIZE	LAST	LAST SIZE	VOLUME
IBM 100 JUL 05 95 PUT								
IBM 100 JUL 05 95 CALL								
IBMGS	BEST	2.60	722	2.70	4,271	2.60	10	92
IBMGS&B	BOX	2.80	156	2.70	41	2.50	35	45
IBMGS&C	CBOE	2.60	722	2.70	465	2.60	10	21
IBMGS&P	PSE	2.80	449	2.70	67	2.60	14	20
IBMGS&I	ISE	2.55	2,829	2.70	4,271	2.50	2	4
IBMGS&X	PHLX	2.80	130	2.70	30	2.45	2	2
IBMGS&A	AMEX	2.55	360	2.75	375	3.00	11	0



Trade - 37718988 @ thinkorswim [build 442]

ORDER ENTRY AND ORDER QUEUE

ORDER ENTRY | ORDER QUEUE

SPREAD	SIDE	QTY	SYMBOL	SPC	EXP	STRIKE	TYPE	PRICE	ORDER	INSTR	EXCHANGE
SINGLE	BUY	+10	IBM	100	JUL 05	95	CALL	2.65	LMT	LIMIT	DAY

Queue Analyze Leg-by-leg Single Order

Mid 2.65 2.70 Nat Delete Confirm

EXCHANGE: BEST, CBOE, PHLX, PSE, AMEX, ISE, BOX

# Option Pricing

## Intrinsic & Time Value

30 Strike Call @ 7  
 Stock Price @ 35

Stock Price 35  
 Strike Price -30  
 Intrinsic Value 5

Options Price 7  
 Intrinsic Value -5  
 Time Value 2

## Pricing Components

Insurance Policy	Option
Price of Asset	
Deductible	
Time	
Carry Costs (Interest Rates)	
Level of Risk	
<b>= Premium</b>	

## Option Price Behavior

Stock Price:           \$50   →   \$51

Days to Exp:           90    →    90

50-Strike Call:        4.00 →    ?

## Option Price Behavior

\*Most options 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

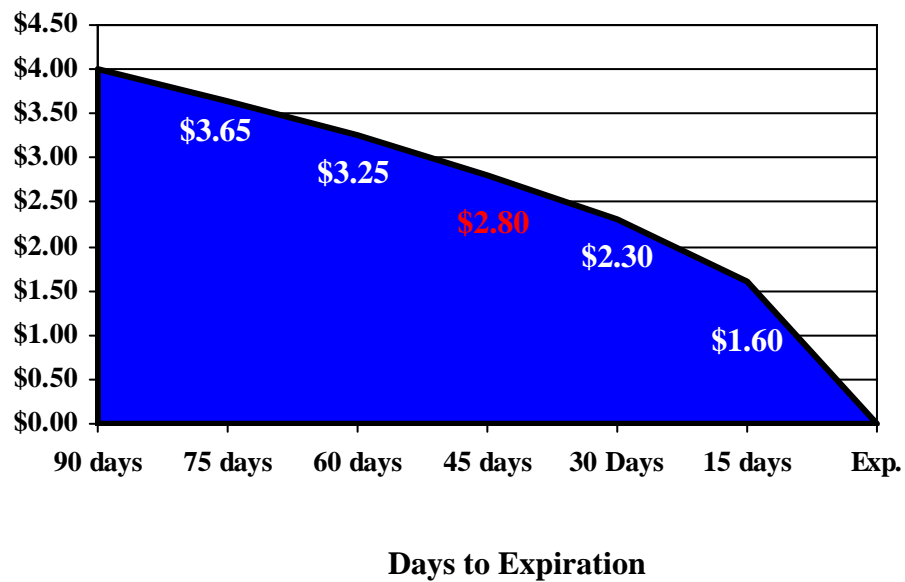
## Option Price Behavior

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



## Vertical Spread Defined

The purchase of one option and the simultaneous sale of another option with the same underlying and the same expiration date, but with a different strike price.

## Vertical Call Spread

- Long Call Spread

_____ @ _____	
Buy _____	Call @ _____
Sell _____	Call @ _____
	Net Debit _____

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

## Vertical Call Spread

- Short Call Spread

_____ @ _____	
Buy _____	Call @ _____
Sell _____	Call @ _____
	Net Debit _____

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