Introduction to Options

Understanding Calls, Puts & Risk Management Strategies

BUS331 Investments | Prof. Farhat

What Is a Stock Option?

A stock option is a contract giving the buyer the RIGHT — but not the OBLIGATION — to buy or sell a stock at a predetermined price before a set expiration date.

CALL OPTION — Right to BUY

- Buyer has the right to PURCHASE the stock at the strike price
- Buyer is BULLISH — expects price to rise
- Seller is BEARISH — expects price to stay flat or drop
- Max loss for buyer = premium paid
- Max gain for buyer = unlimited

PUT OPTION — Right to SELL

- Buyer has the right to SELL the stock at the strike price
- Buyer is BEARISH — expects price to fall
- Seller is BULLISH — expects price to rise or stay flat
- Max loss for buyer = premium paid
- Max gain for buyer = strike price minus premium

Core Terminology

Premium

The upfront fee paid by the buyer to acquire the option. If the option expires worthless, the seller keeps the premium as profit.

Strike Price (Exercise Price)

The predetermined price at which the stock can be bought (call) or sold (put).

Expiration Date

The deadline for the option. American options can be exercised any time up to expiration. European options only on the expiration date.

Contract Size

Options are typically traded in lots of 100 shares. So one contract controls 100 shares of the underlying stock.

Break-Even Point

Call: Strike Price + Premium. Put: Strike Price - Premium. The stock price at which the option holder neither gains nor loses.

Expires Worthless

If an option is not exercised before expiration, it expires worthless. The buyer loses only the premium; the seller keeps it as profit.

Moneyness: How Profitable Is Your Option Right Now?

IN THE MONEY

Exercising the option is profitable right now.

CALL: Market price > Strike price
PUT: Market price < Strike price

Example (Call): Strike = $72, Stock = $75 → In the money by $3

AT THE MONEY

The strike price equals the current market price exactly.

CALL & PUT: Market price = Strike price

Example: Strike = $75, Stock = $75 → At the money

Neither profitable nor unprofitable to exercise.

OUT OF THE MONEY

Exercising the option would result in a loss.

CALL: Market price < Strike price
PUT: Market price > Strike price

Example (Call): Strike = $80, Stock = $75 → Out of the money by $5

Call Options — How They Work

The Textbook Analogy

A student wants to buy a textbook for $200 but doesn't need it right away. They pay a friend $5 (the premium) to guarantee the right to buy it for $170 (the strike price) within two weeks.

- If the price drops to $150 → Let the option expire, buy cheaper
- If the price rises to $220 → Exercise the option, buy for $170

The $5 premium is the cost of this flexibility.

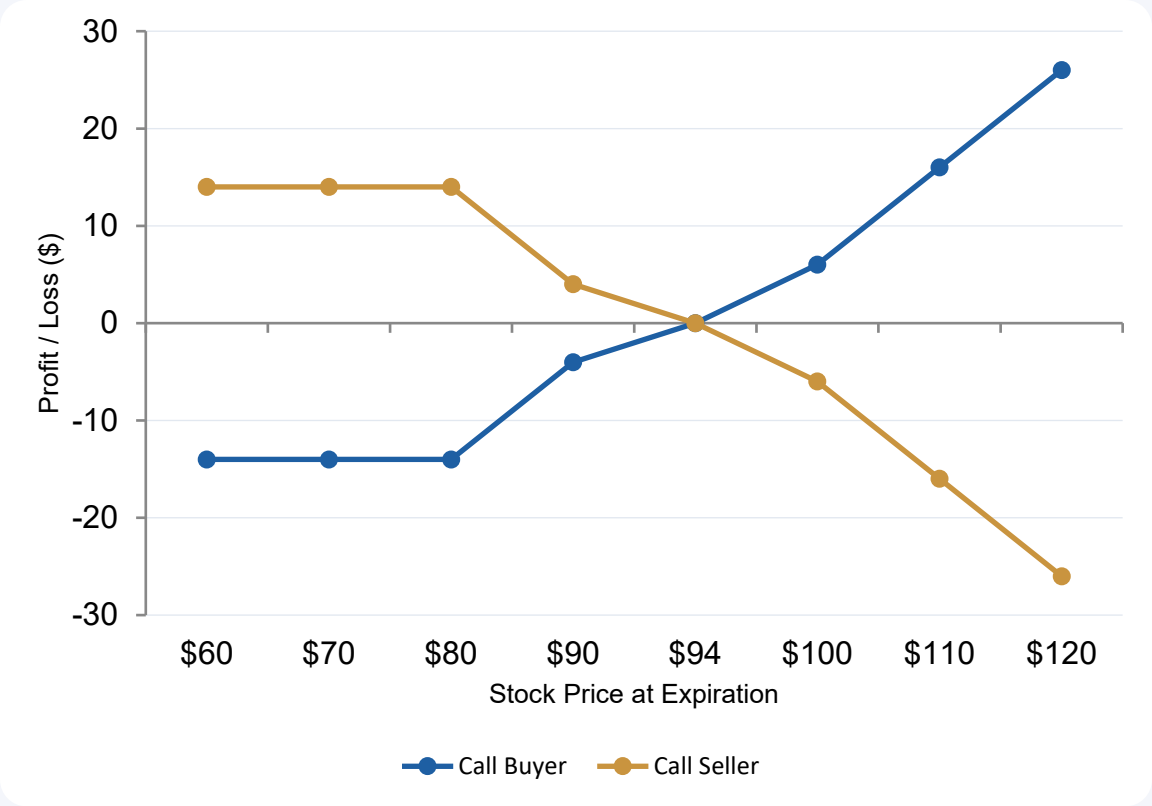
Microsoft Call — Real Example

Strike Price: $72.00
Premium Paid: $1.15 per share
Break-Even: $73.15 (= $72 + $1.15)

If stock = $71.75 at expiry:
→ Option expires worthless
→ Loss = $1.15 premium only

If stock = $80 at expiry:
→ Exercise the call
→ Profit = $80 − $73.15 = $6.85/share

Call Option — Profit & Loss Diagram



Key Numbers

Strike Price: $80
Premium: $14
Break-Even: $94

BUYER:
Max Loss = $14
Max Gain = Unlimited

SELLER:
Max Gain = $14
Max Loss = Unlimited

Put Options — How They Work

Insurance for Your Portfolio

A put option gives you the right to SELL your stock at the strike price — even if the market crashes.

Think of it as insurance: you pay a premium to guarantee a floor price for your stock.

- Buyer is BEARISH — profits when stock falls
- Seller is BULLISH — keeps premium if stock rises
- Maximum loss for buyer = premium paid
- Maximum gain = Strike Price − Premium (if stock → $0)

Microsoft Put — Real Example

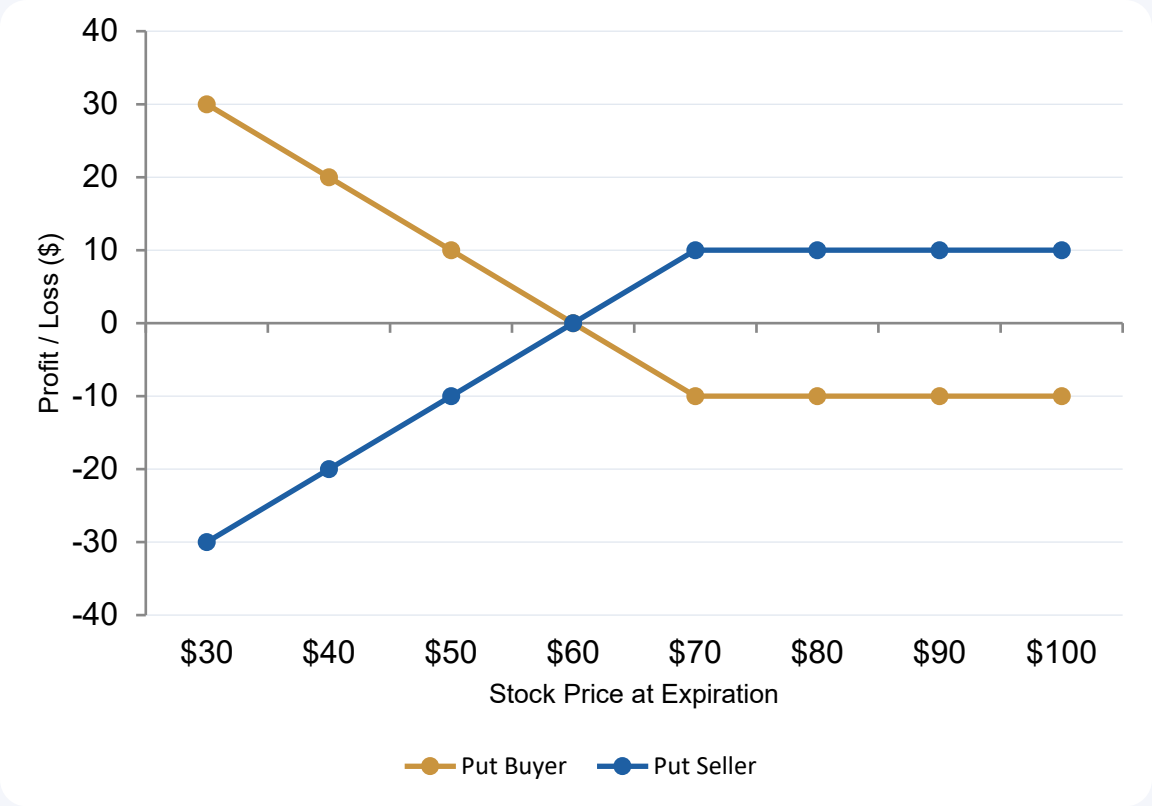
Stock bought at $68, now at $75
Worried about a price drop?

Strike Price: $72.00
Premium Paid: $1.32 per share
Break-Even: $70.68 (= $72 − $1.32)

If stock drops to $70:
→ Sell at $72 (gross profit: $2)
→ Net profit = $2 − $1.32 = $0.68/share

Downside is protected. Upside remains open.

Put Option — Profit & Loss Diagram



Key Numbers

Strike Price: $70
Premium: $10
Break-Even: $60

BUYER:
Max Loss = $10
Max Gain = $60 (stock → $0)

SELLER:
Max Gain = $10
Max Loss = $60

Real-World Case: Protecting a Stock Portfolio

Joseph Jones holds 10,000 shares at $40/share = $400,000. He needs at least $350,000 (min $35/share) for a house down payment in January, but hopes to reach $450,000. He evaluates THREE strategies:

COVERED CALL

Sell $45 calls at $3 premium
→ Collects $30,000 upfront
→ Max gain capped at $480K
→ NO downside protection
⚠ If stock falls to $0, only keeps $30K

PROTECTIVE PUT

Buy $35 puts at $3 premium
→ Costs $30,000
→ Guarantees min $350K
→ Net floor = $320K
✓ Upside remains unlimited

ZERO-COST COLLAR ★

Buy $35 put + Sell $45 call
→ Net cost = $0
→ Floor: $350,000
→ Ceiling: $450,000
✓ BEST for house down payment

Options Strategy Comparison

Strategy	Cost	Downside Protection	Upside Potential	Best For
Covered Call	None (earn premium)	None	Capped at strike + premium	Generating income on held stock
Protective Put	Premium paid	Full (guaranteed floor)	Unlimited	Insuring against price drop
Zero-Cost Collar	$0 net	Full floor at put strike	Capped at call strike	Preserving wealth for a goal
Long Straddle	2x premium	None (both options paid)	Unlimited (either direction)	Betting on extreme volatility

Key Takeaways

1 Options give the RIGHT but not the OBLIGATION to buy or sell.

2 Calls are bullish; Puts are bearish.

3 The premium is always the maximum loss for the option buyer.

4 Break-even = Strike + Premium (call) or Strike − Premium (put).

5 Combine options strategically: collars, spreads & straddles manage real-world risk.