

Week 2 Slides

TRADING EQUITY OPTIONS

 **Covered Call**
Generate Income

 **Protective Put**
Limit Downside

STRATEGIES
RISK
REWARD

 **Vertical Spread**
Defined Risk

 **Naked Option**
Higher Risk / Higher Reward

Profit / Loss



Calls	Strike	Puts
12.60	430	4.20
9.80	435	6.10
7.20	440	8.50
5.10	445	11.20
3.40	450	14.80

Topic Summary

- IV Rank
- Key measurement parameters; POP, BPR, ROC
- Margin
- The Option Chain
- The Option Greeks
 - Delta, Gamma, Theta, Vega, and Rho
- Option Spreads
- Credit and Debit Spreads
- Defined Risk vs. Undefined Risk Spreads
- Naked Puts and Calls
- Profit and Loss Graphs
- Covered Calls and Covered Puts

IV Rank

- IV tends to be at different levels for different underlings. So when we compare two underlyings, we need a way to look at RELATIVE IV.
- IV Rank (IVR) is the relative position of the current IV as compared to the low-high IV range from the past year (or other interval) **FOR THAT UNDERLYING**. It compares current IV to past IV.
- An IV centered between the 52 week low and high IV is Rank 50.
- $$IVR = \frac{\text{Current IV} - \text{52-week Low IV}}{\text{52 Week High IV} - \text{52-Week Low IV}} \quad (\text{Expressed as 0 to 100})$$

Key Measures: POP, BPR, ROC

- POP = Probability of Profit
 - An estimate of the probability that the trade will be profitable (at least 1 cent) at expiration. We generally look for high probability trades.
- BPR = Buying Power Reduction
 - This is the amount of capital that the broker reserves in your account to cover the potential risk on a trade (both for you and your broker).
- ROC = Return on Capital (used for trades where max profit is known)
 - $ROC = \text{Maximum possible profit} / BPR$.

Types of Margin

Margin and BPR are similar terms, but margin is historically associated with stock and BPR is used with options. Both refer to use of leverage; you can take on more risk than your Net Liq. All trades with risk **reduce** your buying power because the brokerage firm must set aside some of your account equity in case your positions move against you.

- All option traders *must* be approved for margin trading. This is necessary because short option positions can lose more than the initial investment.
- Buying **stock** w/margin typically allows customer to use 50% of portfolio value as collateral and borrow that amount from the broker for new positions
- **Reg-T Margin** – Used for most option traders with small to medium sized accounts.
- **Portfolio Margin** – Used for larger accounts and more experienced traders. Much more liberal than Reg-T margin. You have to have a minimum acct value and pass a test to get it (ask me if you need help in prep or want some sample tests).
- **SPAN Margin** – Used for futures accounts, similar to Portfolio Margin, very liberal.

The Option Chain

An Option Chain is a way of presenting the various options that can be traded on an underlying.

Calls on the left, Puts on the right.

Weekly expirations are in Purple, Monthly's in black. (3rd Friday)

Implied Volatility and Expected Move for each expiry is on the far right.

Monitor	Trade	Analyze	Scan	MarketWatch	Charts	Tools	Education	Help	OnDemand
All Products	Forex Trader	Futures Trader	Active Trader	Pairs Trader					
AAPL	APPLE INC COM	188.85	+53 +0.28%	B: 188.52 A: 188.53	NASDAQ	±2.662			Company Profile
Underlying									
Last X	Net Chng	Bid X	Ask X	Size	Volume	Open	High	Low	
188.85 Q	+53	188.52 Q	188.53 P	69 x 4	45,155,216	188.65	189.99	188.00	
Last Size	Yield	PE	Div	Div.Freq	Ex Div.Date	52High	52Low	Shares	FastBeta
6,159,490	0.51%	29.37	.24	Q	2/9/24	199.62	143.90	15,441,881,000	1.15
Trade Grid									
Option Chain Sides: Both Spread: Single Layout: Volume, Open Interest, Mark									
CALLS					Strikes: 10	PUTS			
Volume	Open.Int	Mark	Bid X	Ask X	Exp	Strike	Bid X	Ask X	Volume
16 FEB 24 (5) 100 23.75% (±4.174)									
23 FEB 24 (12) 100 (Weeklys) 20.73% (±5.657)									
1 MAR 24 (19) 100 (Weeklys) 20.73% (±7.125)									
8 MAR 24 (26) 100 (Weeklys) 20.67% (±7.315)									
15 MAR 24 (33) 100 20.58% (±9.325)									
114	3,472	24.900	24.75 T	25.05 T	15 MAR 24	165	.21 N	.22 B	3,564
147	11,793	20.075	19.95 N	20.20 T	15 MAR 24	170	.33 T	.34 T	1,049
246	15,431	15.375	15.30 T	15.45 T	15 MAR 24	175	.58 D	.61 C	1,475
334	19,868	10.975	10.90 T	11.05 T	15 MAR 24	180	1.13 T	1.18 T	4,872
1,019	22,772	7.100	7.05 Z	7.15 Q	15 MAR 24	185	2.29 E	2.32 T	4,794
7,423	45,200	4.050	4.00 X	4.10 M	15 MAR 24	190	4.25 E	4.35 X	2,135
11,915	41,346	2.000	1.98 T	2.02 T	15 MAR 24	195	7.20 X	7.45 B	204
6,733	67,469	.885	.88 J	.89 P	15 MAR 24	200	11.30 X	11.50 A	154
1,106	41,491	.390	.38 N	.40 N	15 MAR 24	205	15.80 T	16.40 T	140
4,051	74,010	.205	.20 N	.21 T	15 MAR 24	210	20.80 E	21.50 T	4
22 MAR 24 (40) 100 (Weeklys) 20.69% (±10.326)									

Reading the Option Chain

- The option chain shows you the bid-ask spread on each option.
- There are expirations **Monthly** (3rd Friday) + **Weekly** expirations (every Friday).
- A small number of options have MWF expirations or Daily expirations.
- The bid is the price at which you could sell the option contract, and the ask is the price at which you could buy the option contract. The difference is the bid-ask spread and is a measure of liquidity. Midprice between bid and ask is called “**Mark Price**”.
- When you are trying to trade an option contract or spread, you usually try to buy or sell it somewhere near the midpoint of the bid-ask (you try to “work” the order).
- Since each option contract controls 100 shares, you have to multiply the price shown in the chain by 100 to get the price in \$ of 1 contract.
- The options chain always shows you the bid and ask prices. The other columns can be configured to show you additional information such as mark price, volume, open interest, IV, Greeks, etc.

The Option Greeks – Δ , Γ , v , Θ , ρ

- Understanding the option Greeks can help you set expectations for your option positions.
- Allows you to place trades that minimize your risk based on your assumptions.

DELTA	GAMMA	VEGA	THETA	RHO*
Δ	Γ	v	θ	ρ
MEASURES CHANGE IN OPTION PRICE WHEN STOCK PRICE MOVES	MEASURES CHANGE IN DELTA WHEN STOCK PRICE MOVES	MEASURES CHANGE IN OPTION PRICE WHEN VOLATILITY MOVES	DECAY IN OPTION PRICE EVERY DAY AS THE EXPIRATION GETS NEARER	MEASURES CHANGE IN OPTION PRICE WHEN INTEREST RATE MOVES
Price Sensitivity	Price Momentum	Volatility Sensitivity	Time Decay	Interest Rate Sensitivity

* Rho ρ = Impact of interest rate changes – Negligible at this time due to low interest rates.

Delta – Δ

- Delta tells how sensitive the position is to price. Tells you how much \$ the option or position will move with a \$1 up move in the underlying. Sign tells you if position is net short or long; magnitude represents directional risk.
- Delta for a single option has a range of -1 to +1
 - Positive delta is Bullish, Negative delta is Bearish.
 - ATM options have a +.50 or -.50 delta (we just call this “50 delta”).
 - Delta for a single option has a range of -1 to +1
 - Delta for a position has unlimited range ($-\infty$ to $+\infty$).
- Delta for a single option is approximately equal to the probability of the option expiring ITM. A .25 delta option has a 25% prob of expiring ITM.
- Delta is a proxy for how much the option position acts like 100 shares of stock (a .75 delta position call acts like 75 shares of stock)

Gamma – Γ

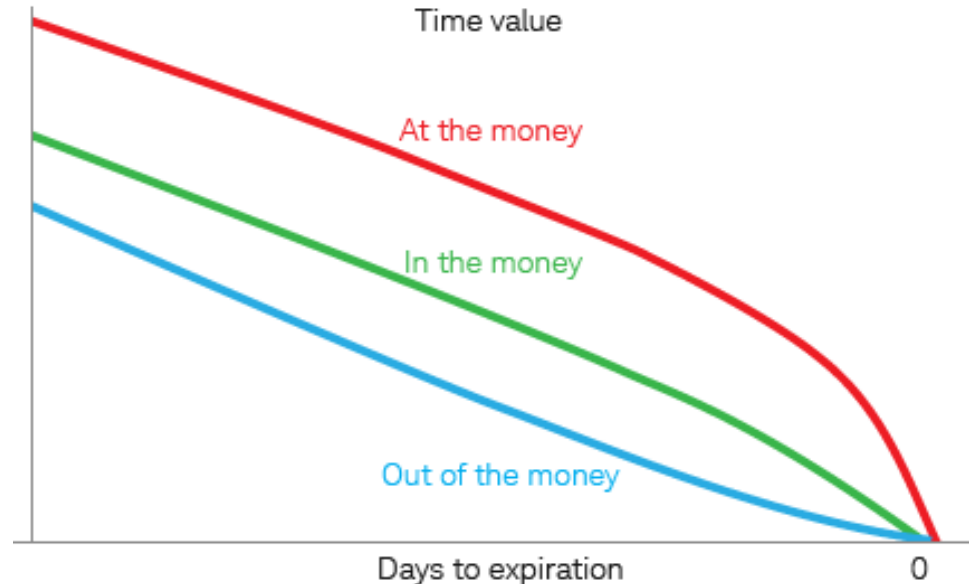
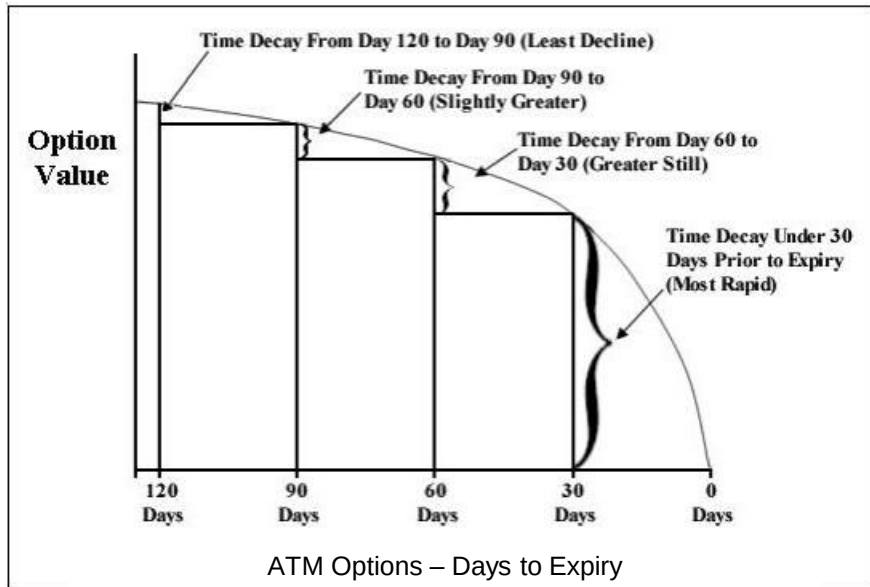
- Gamma tells us how delta changes as the underlying price changes. It is the first derivative of delta. It is like an **accelerator** for delta.
- Gamma is the change in **delta** for a \$1 up move in the underlying.
- Gamma for an option is always positive and ranges from 0 to 1.
- Gamma accelerates delta to upside as underlying rises in price.
- Gamma accelerates delta to downside as underlying falls in price.
- ATM options have the most gamma, ITM and OTM options have less.
- The closer to expiration, the larger the gamma.
- As gamma approaches expiration, it explodes for options that are ATM, so holding short options near the money into expiry is risky.

Theta – Θ

- Theta tells us how sensitive the position is to the passage of time.
- Theta is the dollar amount by which an option or position's price changes each day due to the passage of time.
- A positive theta position benefits with the passage of time (MAKES \$\$).
- A negative theta position is hurt by the passage of time (LOSES \$).
- Long options have negative theta, short options have positive theta.
- ATM options have the most theta; ITM and OTM options have less theta.
- Theta is the *PROFIT ENGINE* for short premium trades (selling options).

Time Decay for Options

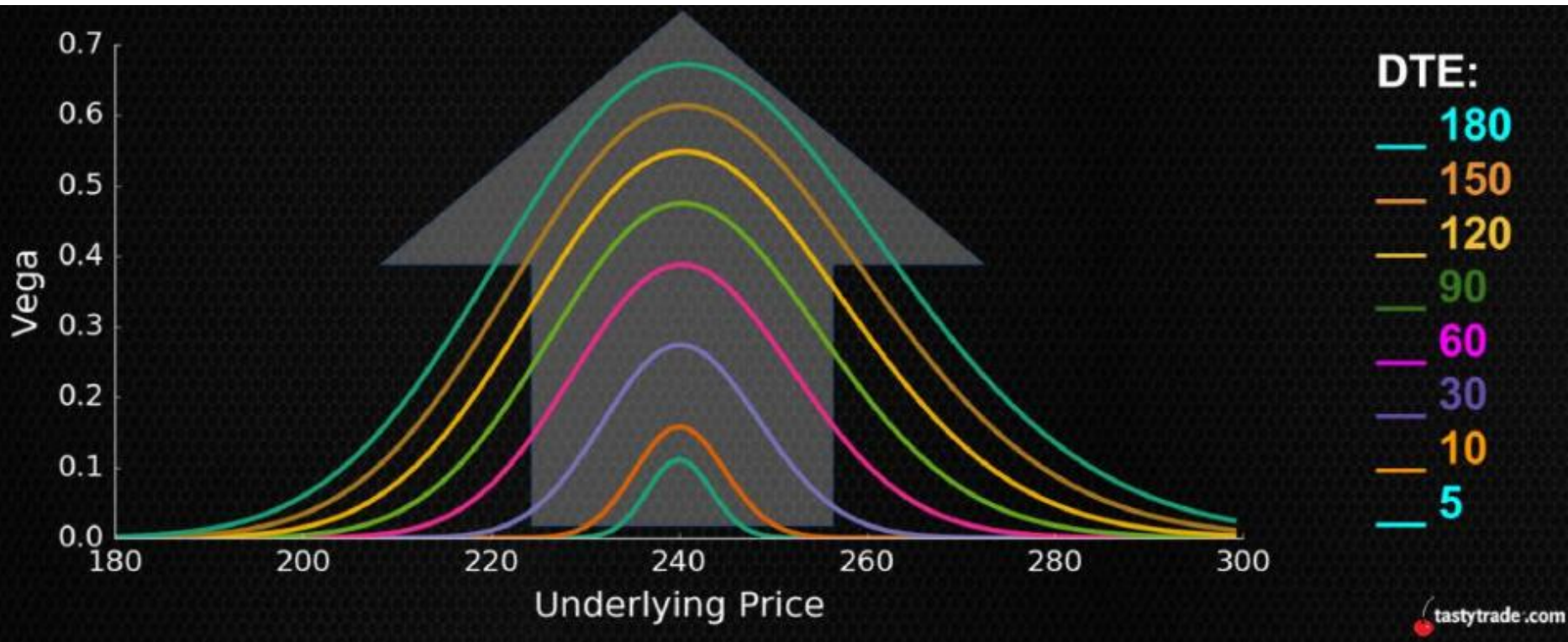
Note: Time value is highest for ATM options, and decay accelerates as it approaches expiry. For OTM options, time value is lower, but decay slows down as expiry approaches. This is why closing short OTM options early usually makes sense.



Vega – v

- Vega tells us how sensitive the position is to a change in Implied Volatility.
- Vega tells us for every 1% up change in implied volatility, how much the option price or position price will change, in dollars.
- A positive (+) Vega position benefits from increase in IV.
- A negative (-) Vega position benefits from decrease in IV.
- Long options have positive Vega, short options have negative Vega.
- ATM options have the most Vega, ITM and OTM options have less Vega.
- The more time to expiration (DTE), the more Vega an option will have, and the more sensitive it is to volatility changes.

Vega – v for option with strike 240



Using the Greeks

- What theta would you like to see in your trades (positive or negative)?
- Given stock XYZ at \$50, position delta = \$30, how much and in which direction does your P/L move with a \$2 decrease in price of XYZ stock?
- You bought 10 put contracts, each option has theta = $-.08$. How much did your P/L move and in which direction after 2 days, assuming price did not move?

Option Spreads

- When we trade options, we often trade option spreads, which may have 2, 3, or 4 legs. Over time, if we add to the position we can have many legs.
- Option spread trades can be entered as a single order on your trading platform. It's usually best to enter the order in as a spread and let it fill.
- Spreads can contain puts, calls, or both puts and calls.
- Spreads can be bullish, bearish or neutral.
- With an option spread, the puts and calls are options on a single underlying.
- The option legs may have the same expiry or different expiries.
- Option spreads have names such as vertical, calendar, butterfly, iron condor, ratio spread, etc.
- We can easily analyze our overall options position by looking at the Greeks.

Credit and Debit Spreads

- Spreads are either put on for a credit or a debit.
- A credit means you collect \$\$ for placing the trade because you take on risk.
- A debit means you are paying \$\$ to put on the trade because you are paying someone else to take on risk.
- Credit and Debit spreads have nothing to do with profit and loss.
- You will start to see profit and/or loss on a trade only **after** it is placed.
- When the trade is closed, you have a realized profit or loss.
- Credit and Debit spreads can be identical in risk profile. But as a practical matter, we usually pick one over the other depending on volatility and our mechanical trading rules. Many traders like to put on trades for a credit when possible, especially when volatility is high.

Defined Risk vs. Undefined Risk Positions

- Option positions can be either risk defined or risk undefined.
- A defined risk position means you know the max loss upon entry.
- An undefined risk means you have very large risk with near infinite loss.
- Your buying power reduction is much larger with undefined risk trades.
- Some undefined risk trades cannot be placed in an IRA.
- A single long option has defined risk – limited to the amount you paid.
- A single short option is a naked position; risk is undefined.
- For a short call, theoretical risk is unlimited to the upside and for a short put, theoretical risk is \$100 x strike price to the downside (stock goes to zero).
- You can always change an undefined risk trade into a defined risk trade by buying cheap options as protection (but it will cost some \$).

Short Options – Naked Put and Call

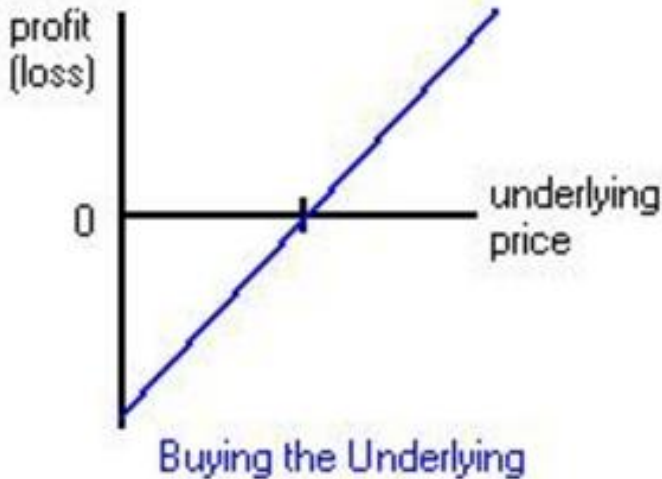
- If you sell an option without an offsetting option it is called “selling naked”.
- You are then said to be “short” the option contract.
- Naked short options are ALWAYS directional and use a lot of buying power
- Naked short puts are BULLISH and naked short calls are BEARISH.

Outlook	Put Options		Call Options	
		Assignment Risk		Assignment Risk
Bullish	Sell (short)	Obligated to Buy Stock	Buy (long)	No Obligation Cannot get assigned
Bearish	Buy (long)	No Obligation Cannot get assigned	Sell (short)	Obligated to Sell Stock

P/L Graph – Buying and Selling Stock

- P/L Graph shows how your P/L changes with underlying price change.
- These graphs generally show the P/L at expiration.

Buying and Selling Stock

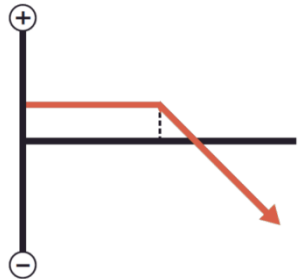


Profit and Loss Graphs

Profit and Loss (P&L) graphs are a graphical way of showing us how an options position's value will change as the price of the underlying changes. They are always drawn as **EXPIRATION** graphs.

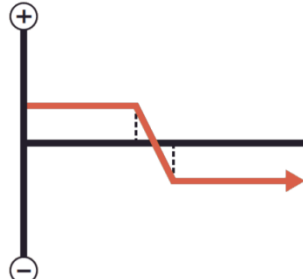
Short Naked Call

Bearish Outlook & High Volatility...



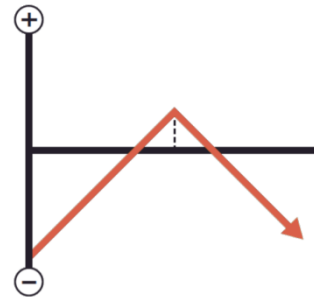
Put Debit Spread

Bearish Outlook & Low Volatility...



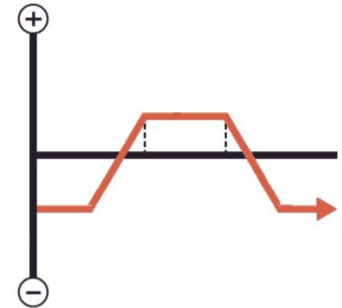
Short Straddle

Neutral Outlook & High Volatility...



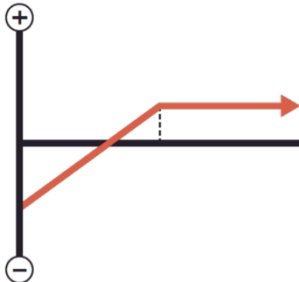
Short Iron Condor

Neutral Outlook & High Volatility...



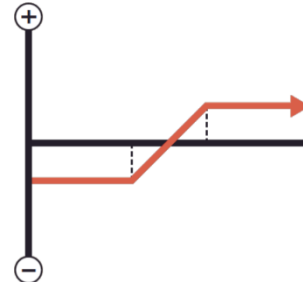
Short Naked Put

Bullish Outlook & High Volatility...



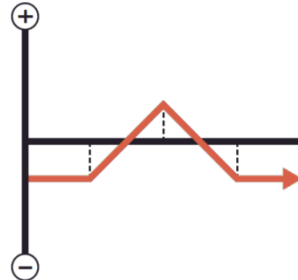
Call Debit Spread

Bullish Outlook & Low Volatility...



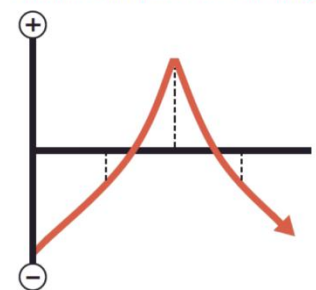
Short Iron Butterfly

Neutral Outlook & High Volatility...

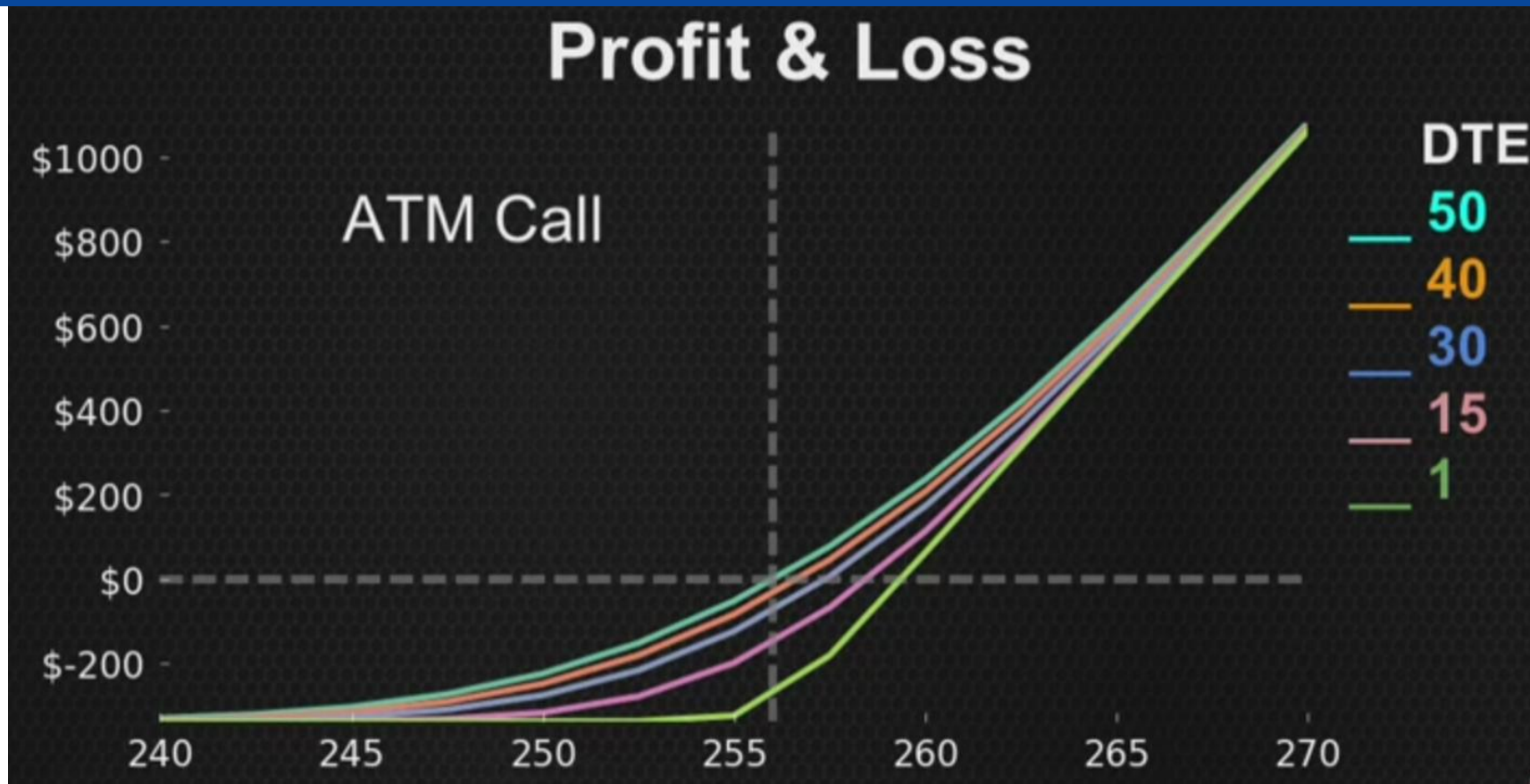


Put Calendar Spread

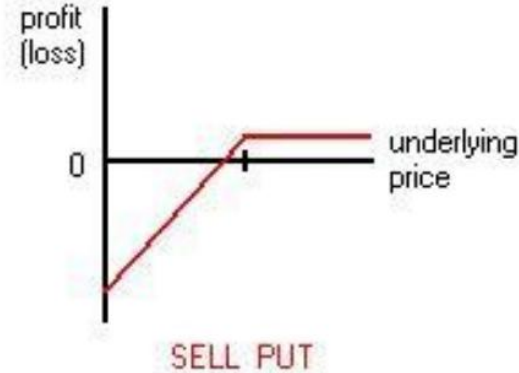
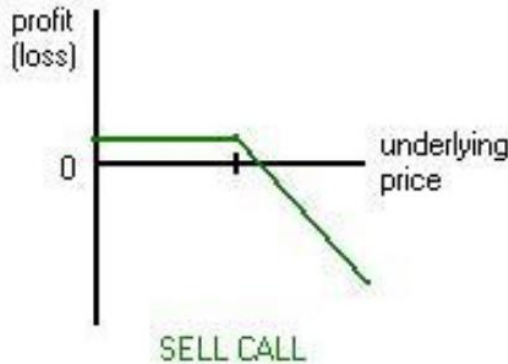
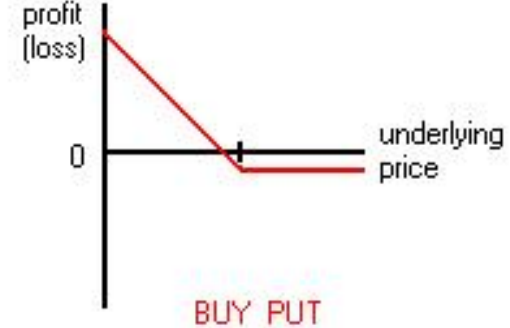
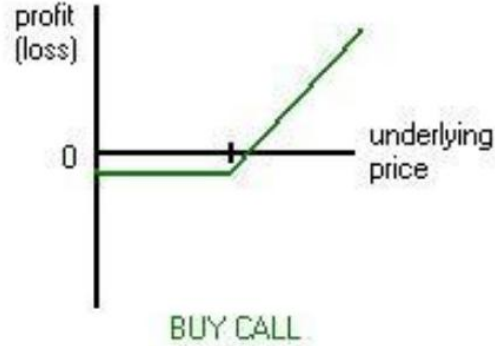
Bearish Outlook & Low Volatility...



P/L Graphs Morph into Expiration Graphs as Expiry Approaches



P/L Graphs– Buying and Selling Naked Options



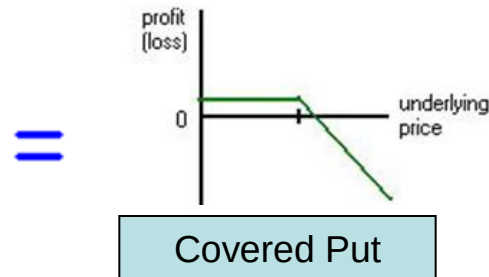
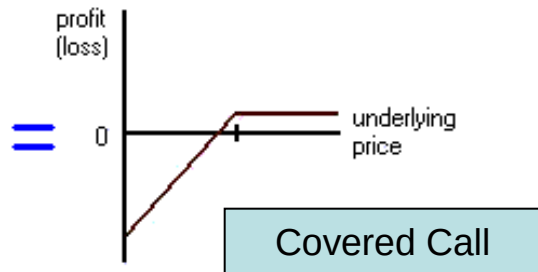
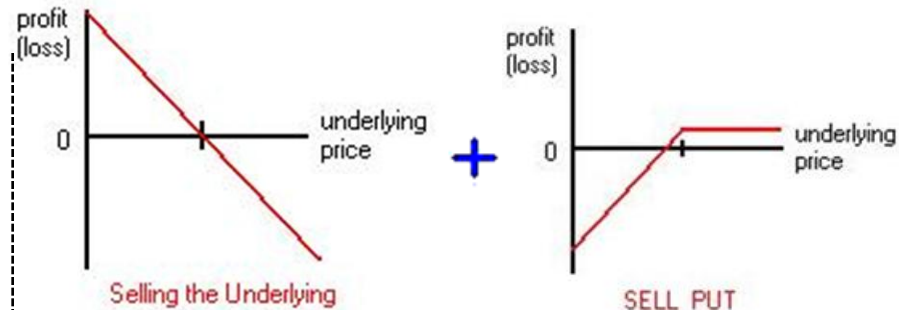
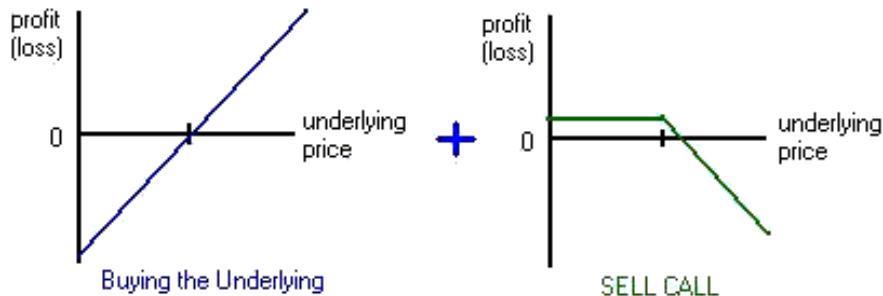
Covered Calls - Bullish

- If you own stock, you can reduce cost basis by selling calls against it.
- Covered calls are ALWAYS bullish positions.
- Covered calls give you a little protection to the downside.
- You give up the unlimited upside of owning naked stock.
- Typically, you might look to sell calls slightly OTM, 30 to 60 days out.
- Max profit occurs if stock is at or above strike price at expiration.
- If calls expire ITM, your stock is “called away” and you book a profit.
- If calls expire OTM, you keep the premium, and can sell calls in next cycle.
- If you are near expiration, and you are near the call strike price, you can buy back your short calls and roll them out in time to extend duration.
- You can do covered calls ATM, OTM, or ITM. All will increase POP.

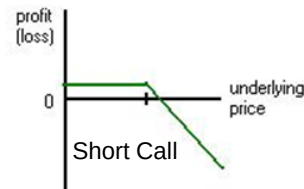
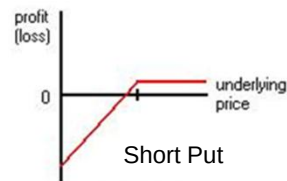
Covered Puts - Bearish

- If you are short stock, you can reduce cost basis by selling puts against it.
- Short stock with short puts are ALWAYS bearish positions.
- Covered puts give you a little protection to the upside.
- You give up the unlimited upside of being short naked stock.
- Typically, you might look to sell puts slightly OTM, 30 to 60 days out.
- Max profit occurs if stock is at or below strike price at expiration.
- If puts expire ITM, your short stock is “assigned”; you buy it back at a profit.
- If puts expire OTM, you keep the premium, and can sell puts in next cycle.
- If you are near expiration, and you are near put strike price, you can buy back your short puts and roll them out in time to extend duration.
- You can do covered puts ATM, OTM, or ITM. All will increase POP.

P/L Graphs– Buying and Selling Covered Stock



Note the same
P/L Graphs



Note the same
P/L Graphs

Covered Call vs. Short Put

- A covered call has the same P/L graph as a short put.
- Why would you choose one over the other?
- How do dividends affect your position in the covered call, the naked short put?
- What happens when the short option expires?
- Demo (Next Slide) - Look at covered call vs short put on TOS.
- What is Max Profit, Max Loss, BPR, POP, ROC for each?
- Which is the better bullish trade, covered stock or naked short put?

Example: Covered Call vs. Short Naked Put

Example compares buying a Covered Call to same strike selling a Put

Underlying: _____ Price: _____ Strike Price: _____ Option DTE: _____

Covered Call Strategy: Buy 100 shares, sell 1 Call OTM

Stock Price	Net Cost (Covered Call)	BreakEven Price = Cost Basis	Max Profit (if called)	Max Loss	BPR	Prob of Profit (POP)	ROC (if called)

Selling Put Strategy: Sell 1 Put using same strike as above Call

Sold Put Price	Net Credit (Short Put)	BreakEven Price = Stock Price – Put	Max Profit (If Put expires OTM)	Max Loss	BPR	Prob of Profit (POP)	ROC (If Put expires OTM)

Discussion Questions and Homework

- What option greek(s) would you tend to watch the most, the least?
- With short premium (short puts and calls) do we want IV to move $\uparrow$ or $\downarrow$?
- When trading options, do you pay margin interest to the broker?
- Explain in words what a “delta neutral” position would be.
- Why would we trade an undefined risk spread if we can define our risk?

Homework – Week 2

If doing the tastylive Beginners Options Course, do:

Section 2: Trade Entry Concepts

Section 3: Basic Options Strategies: Part 1

Section 5: Intro to the Greeks