



## OPTIONS II



## OPTIONS II

1612 E. Cape Coral Parkway  
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*Welcome!*

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Orientation

# GOALS

## CLASS GOALS

- Participate
  - The only dumb question is...
- Paper Trade
  - Paper trade until proficient
  - Live trade with small positions
  - Live trade with normal positions

## TRADING GOALS

- Generate consistent results
  - Only realistic if you have a consistent approach
  - Depends on market conditions
- Plan your trade & trade your plan
  - Banish your emotions
- Maximize gains & minimize losses
  - Trade management is the secret

Notes: \_\_\_\_\_

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# CLASS PROGRESSION

1. Review Basics, Risk Graphs, and Greeks
2. Vertical Spreads
3. Volatility Based Trading – Straddles, IV, and Strangles
4. Calendar Spreads – Horizontal and Diagonal
5. Synthetics and Risk-Reversals
6. System Development

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# OPTIONS II

## MASTER STRATEGY LIST

- Bull Call
- Bear Put
- Long Straddle
- Long Strangle
- Short Straddle
- Short Strangle
- Horizontal Call/Put
- Diagonal Call/Put
- Bullish Risk Reversal
- Bearish Risk Reversal

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# TOOLS USED IN THIS CLASS

## SOFTWARE

- ThinkorSwim
- OptionsXpress

## WEBSITES

- [www.cboe.com](http://www.cboe.com)
- [www.ivolatility.com](http://www.ivolatility.com)
- [www.finviz.com](http://www.finviz.com)



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# **Module 1:** **LET'S GET ON** **THE SAME PAGE – BASICS**

# MODULE GOALS

## WHAT YOU WILL LEARN

- Option Transactions
  - Buying to Open vs. Selling to Open
- Building Block Strategies
- Exercise & Assignment
  - Rights and Obligations of Options
- Risk Graphs
  - Trade Visualization
  - Stress Testing
  - Position Sizing
- Greeks
- Extrinsic and Intrinsic Value
- Black-Scholes Model

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# LEARNING OBJECTIVES OF MODULE

## SKILLS YOU WILL LEAVE WITH

- Know how to price an option and calculate intrinsic and extrinsic value
- Know how to read a risk graph to assess the potential risk and reward of a trade
- How to use Greeks
- Understand how the basic positions combine to produce more advanced strategies

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# OPTION BASICS WITH A KICK

LIPSTICK ON A PIG; STILL A PIG



# OPTION LEGAL DEFINITION

- A **Contract** between a buyer and seller, that gives the buyer the right, but not the obligation to buy or to sell a specific stock at a specific price on or before a specific date in exchange for a market premium
- Let's break down the definition
- Six questions that need to be answered

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# WHY TRADE OPTIONS

- Options are traded in **contracts**, not shares, but they are still priced by the share
- In the options market:
  - 1 contract typically represents 100 shares of stock = multiplier of contract
  - If the per share quote on the stock is \$40, then 100 shares purchased would cost \$4,000
  - If the per share quote of the option is \$4, then 1 contract purchased would cost \$400
- There are two main reasons people trade options:
  - Leverage
  - Limited liability

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# DETOUR - EFFECT OF STOCK SPLITS

- Why do companies split their stock?
- What is the effect of a split on the stock options?

| XYZ @ \$60 per share  |           | XYZ @ \$60 per share     |
|-----------------------|-----------|--------------------------|
| Buy 100 shares @ \$60 | 2:1 split | Buy a \$60 call @ \$2.00 |
| \$6000 in stock       |           | \$200 in the option      |
| After split:          |           | After split:             |
| Buy 100 shares @ \$60 | 3:2 split | Buy a \$60 call @ \$2.00 |
| After split:          |           | After split:             |

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# DETOUR - EFFECT OF STOCK SPLITS

| AAPL - Apple Inc. Common Stock |          |             |                |                         |          |          |            |         |         | Company Profile |          |  |
|--------------------------------|----------|-------------|----------------|-------------------------|----------|----------|------------|---------|---------|-----------------|----------|--|
| Underlying                     |          | Last X      | Nel Chng       | Bid X                   | Ask X    | Size     | Volume     | Open    | High    | Low             |          |  |
|                                |          | 130.415 Q   | +1.625         | 130.41 K                | 130.43 P | 4 x 3    | 88,005,694 | 128.765 | 130.87  | 126.61          |          |  |
| OPTION CHAIN                   |          | Filter: Off | Spread: Single | Layout: Delta, Impl Vol |          |          |            |         |         |                 |          |  |
|                                |          |             |                | CALLS                   |          | Strikes: | ALL        |         | PUTS    |                 |          |  |
| Delta                          | Impl Vol |             |                | Bid X                   | Ask X    | Exp      | Strike     | Bid X   | Ask X   | Delta           | Impl Vol |  |
| JAN 16 (323) 100               | .69      | 29.06%      |                | 20.15 A                 | 20.40 C  | JAN 16   | 117.14     | 7.80 A  | 7.95 A  | -.31            | 28.18%   |  |
|                                | .68      | 29.00%      |                | 19.70 A                 | 19.95 C  | JAN 16   | 117.86     | 8.10 M  | 8.25 X  | -.31            | 28.19%   |  |
|                                | .67      | 28.97%      |                | 19.30 M                 | 19.50 X  | JAN 16   | 118.57     | 8.35 C  | 8.50 A  | -.32            | 28.08%   |  |
|                                | .66      | 28.88%      |                | 18.45 T                 | 18.65 X  | JAN 16   | 120        | 8.90 A  | 9.10 A  | -.34            | 27.98%   |  |
|                                | .64      | 28.74%      |                | 17.60 A                 | 17.80 A  | JAN 16   | 121.43     | 9.50 A  | 9.70 C  | -.36            | 27.88%   |  |
|                                | .62      | 28.65%      |                | 16.80 A                 | 17.00 A  | JAN 16   | 122.86     | 10.15 A | 10.30 A | -.37            | 27.78%   |  |
|                                | .59      | 28.49%      |                | 15.30 C                 | 15.45 A  | JAN 16   | 125.71     | 11.45 C | 11.65 A | -.40            | 27.61%   |  |
|                                | .56      | 28.33%      |                | 13.85 A                 | 14.05 X  | JAN 16   | 128.57     | 12.90 A | 13.20 X | -.44            | 27.59%   |  |
|                                | .54      | 28.25%      |                | 13.20 X                 | 13.35 A  | JAN 16   | 130        | 13.65 C | 13.80 C | -.45            | 27.35%   |  |
|                                | .52      | 28.08%      |                | 12.50 C                 | 12.65 N  | JAN 16   | 131.43     | 14.45 X | 14.55 C | -.47            | 27.26%   |  |
|                                | .51      | 28.07%      |                | 11.90 A                 | 12.05 C  | JAN 16   | 132.86     | 15.25 X | 15.40 A | -.49            | 27.24%   |  |
|                                | .49      | 28.01%      |                | 11.30 X                 | 11.45 A  | JAN 16   | 134.29     | 16.05 A | 16.25 A | -.50            | 27.16%   |  |
|                                | .48      | 27.95%      |                | 11.00 A                 | 11.15 M  | JAN 16   | 135        | 16.50 Q | 16.65 A | -.51            | 27.14%   |  |
|                                | .47      | 27.94%      |                | 10.70 A                 | 10.90 A  | JAN 16   | 135.71     | 16.90 C | 17.10 A | -.52            | 27.10%   |  |
|                                | .46      | 27.84%      |                | 10.15 C                 | 10.30 A  | JAN 16   | 137.14     | 17.75 C | 17.95 A | -.54            | 26.99%   |  |
|                                | .43      | 27.71%      |                | 9.10 C                  | 9.25 A   | JAN 16   | 140        | 19.60 A | 19.75 X | -.57            | 26.88%   |  |
|                                | .37      | 27.51%      |                | 7.45 X                  | 7.65 A   | JAN 16   | 145        | 22.95 A | 23.15 X | -.62            | 26.65%   |  |
|                                | .32      | 27.40%      |                | 6.15 Z                  | 6.25 A   | JAN 16   | 150        | 26.55 X | 26.75 X | -.68            | 26.38%   |  |
|                                | .28      | 27.21%      |                | 4.95 A                  | 5.10 A   | JAN 16   | 155        | 30.35 A | 30.60 X | -.72            | 26.13%   |  |
|                                | .23      | 27.05%      |                | 3.95 C                  | 4.15 A   | JAN 16   | 160        | 34.35 A | 34.85 C | -.76            | 26.16%   |  |

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# CHANGE IN CONTRACT SPECS

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Displaying Memos 1 - 20 of 101

**OCC** #34698

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**DATE:** MAY 30, 2014

**SUBJECT:** APPLE INC. - 7 FOR 1 STOCK SPLIT OPTION SYMBOLS: AAPL/2AAPL MINI OPTION SYMBOL: AAPL7 EX-DATE: 6/9/2014 \* \* \* REMINDER \* \* \*

Ex/Eff Date: 06/09/2014, Contract Adjustment, Options

Apple Inc. (AAPL) has announced a 7 for 1 stock split. The Ex-distribution Date is June 9, 2014. The Payable Date is June 6, 2014. The Record Date is June 2, 2014.

Pursuant to Article VI, Section 11A, of OCC's By-Laws, all Apple Inc. options will be adjusted as follows:

**CONTRACT ADJUSTMENT**

Effective Date: June 9, 2014

Option Symbols: AAPL remains AAPL  
2AAPL remains 2AAPL  
AAPL7 remains AAPL7

New Multiplier: AAPL:  
100 (e.g., for premium or strike dollar extensions 1.00 will equal \$100)

AAPL7:  
10 (e.g. for premium or strike dollar extensions, 1.00 will equal \$10)

Contract Multiplier: 7

Strike Divisor: 7

New Deliverable Per Contract: AAPL:  
100 Apple Inc. (AAPL) Common Shares

Notes: \_\_\_\_\_

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# BUY VS. SELL

- A Contract between a **Buyer** and **Seller**, that gives the buyer the right, but not the obligation to buy or to sell a specific stock at a specific price on or before a specific date in exchange for a market premium

Notes: \_\_\_\_\_

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# BUYING TO OPEN

**BE CAREFUL - WE MIGHT BE PAYING TOO MUCH**

- Option holder
- Buy to open (BTO)
- Long the option
- Buying options
  - The buyer of an option has the right, but not the obligation, to buy or sell the stock
  - A buyer is not legally bound to execute the contract
  - Risk is limited to the cost of the position

Notes: \_\_\_\_\_

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# SELLING TO OPEN

**BE CAREFUL** - WE MIGHT NOT RECEIVE ENOUGH

- Option writer
- Sell to open (STO)
- Short an option
- Selling options
  - The Seller of an option is in a legally binding contract and has an obligation to fulfill the contract
  - Selling options could carry unlimited risk
  - Example:

Notes: \_\_\_\_\_

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# CALLS

- A Contract between a buyer and seller, that gives the buyer the **right**,  
but not the obligation **to buy** or to sell a specific stock at a specific price  
on or before a specific date in exchange for a market premium
- Right to buy the stock = call option
- We have the right to “call” someone out of the stock
- XYZ @ 100.00
  - We BTO the May 100 call @ \$2.00
  - Reward vs. Risk

Notes: \_\_\_\_\_

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# WHEN TO BUY CALL

- Long call, or BTO a call
- When we are bullish on the stock
  - Want the stock price to increase
  - Also known as (+) Delta
- We think that volatility will increase
  - Want the stock to move more
  - Want implied volatility of the contract to increase
  - Also known as (+) Vega
- Time is hurting the position
  - Want stock to move quickly
  - Also known as (-) Theta



Notes: \_\_\_\_\_

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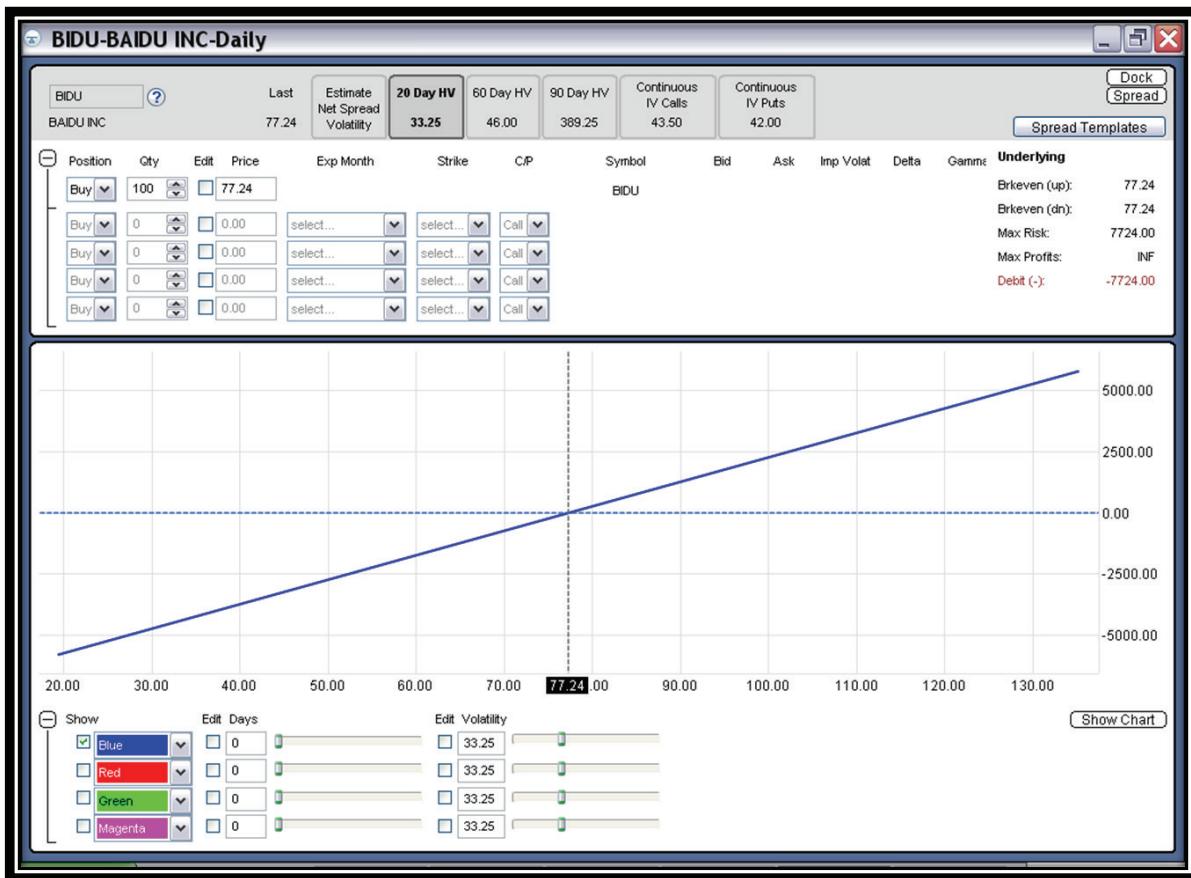
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# RISK GRAPH LONG STOCK



Notes: \_\_\_\_\_

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# RISK GRAPH LONG CALL



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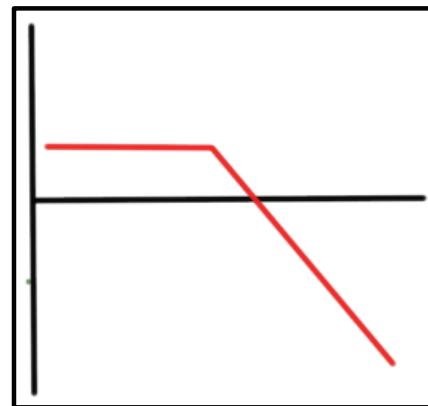
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# SELLING A CALL

- Also known as shorting the call, or naked call
- A Call obligates the seller of the call to deliver the specific underlying stock
- If the seller of the call is forced to deliver the stock, then this is known as assignment
- Unlimited risk



Notes: \_\_\_\_\_

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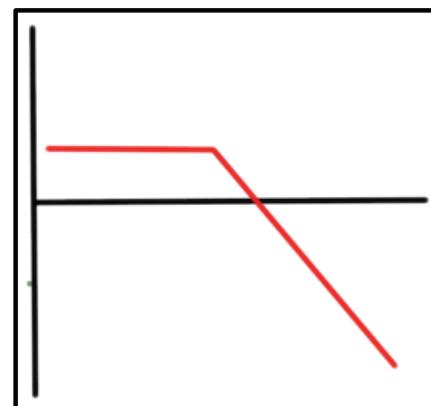
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# WHEN TO SELL CALL

- Short call, or STO a call
- When we are bearish on the stock
  - Want the stock price to decrease
  - Also known as (-) Delta
- We think that volatility will decrease
  - Want stock to move around less
  - Want the implied volatility of the contract to decrease
  - Also known as (-) Vega
- Time is helping the position
  - Want the stock to move slowly
  - Also known as (+) Theta



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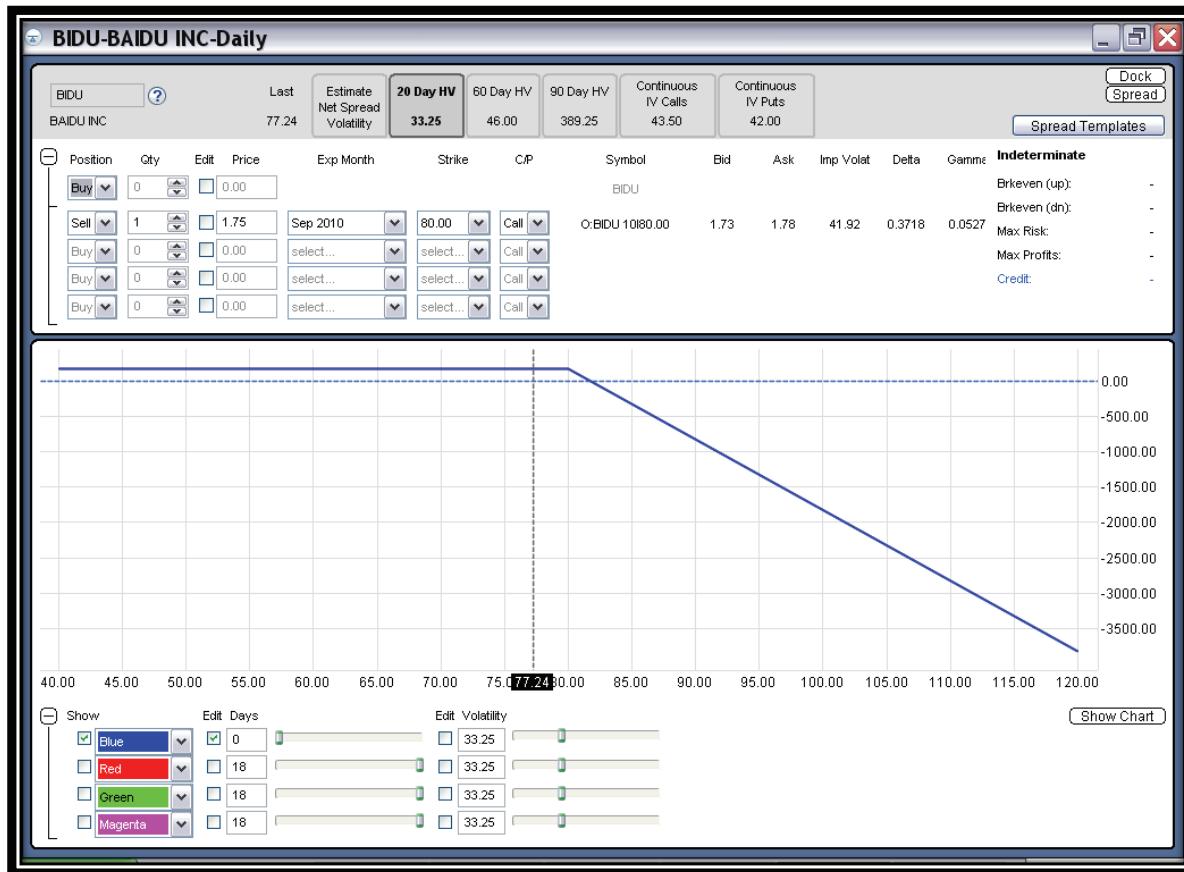
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# RISK GRAPH SHORT CALL



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# PUTS

- A Contract between a **buyer** and seller, that gives the buyer the right, but not the obligation to buy or **to sell** a specific stock at a specific price on or before a specific date in exchange for a market premium
- Right to sell the stock = put option
  - We have the right to “put” someone the stock
  - We can “stick it” to someone at the strike price
- XYZ @ \$100.00
  - We BTO the May 100 put @ \$2.00
  - Reward vs. Risk

Notes: \_\_\_\_\_

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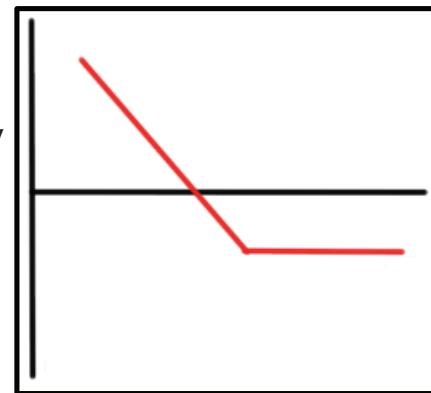
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# WHEN TO BUY A PUT

- Long put, or BTO a put
- When we are bearish on the stock
  - Want the stock price to decrease
  - Also known as (-) Delta
- We think that volatility will increase
  - Want the volatility of the stock to increase
  - Want the implied volatility of the contract to increase
  - Also known as (+) Vega
- Time is hurting the position
  - We want the stock to move quickly
  - Also known as (-) Theta



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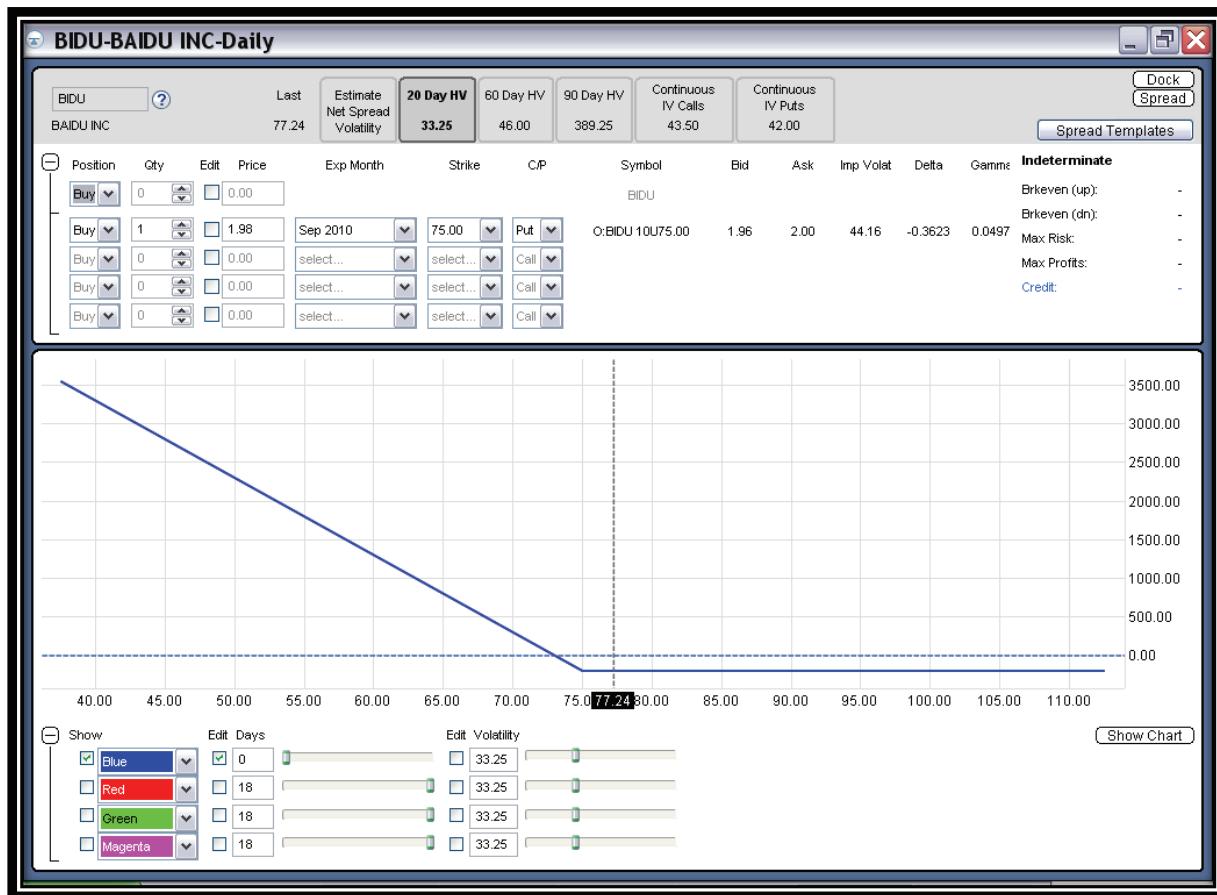
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# RISK GRAPH LONG PUT



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# MATRIX

- Selling to open a put (naked put) is the most confusing
- Double negative = positive

|          |          |             |
|----------|----------|-------------|
| BTO (+)  | STO (-)  | -----       |
| CALL (+) | PUT (-)  | -----       |
| BTO (+)  | CALL (+) | (+) BULLISH |
| STO (-)  | CALL (+) | (-) BEARISH |
| BTO (+)  | PUT (-)  | (-) BEARISH |
| STO (-)  | PUT (-)  | (+) BULLISH |

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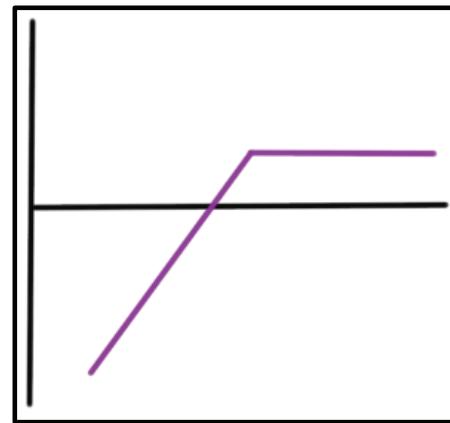
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# SELLING A PUT

- Also known as shorting the put, or a naked put
- A put obligates the seller of the put to take delivery of the specific underlying stock
- If the seller of the put is forced to take delivery (buy) of the stock, then this is known as assignment
- Risk limited only by stock falling to \$0



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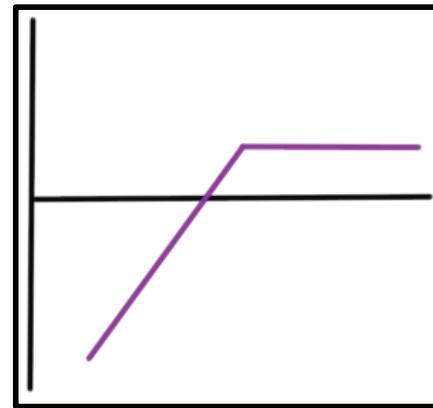
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# WHEN TO SELL A PUT

- Short put, or STO a put
- When we are bullish on the stock
  - Want the stock price to increase
  - Also known as (+) Delta
- We think that volatility will decrease
  - Want the volatility of the stock to decrease
  - Want the implied volatility of the contract to decrease
  - Also known as (-) Vega
- Time is helping the position
  - We want the stock to move slowly
  - Also known as (+) Theta



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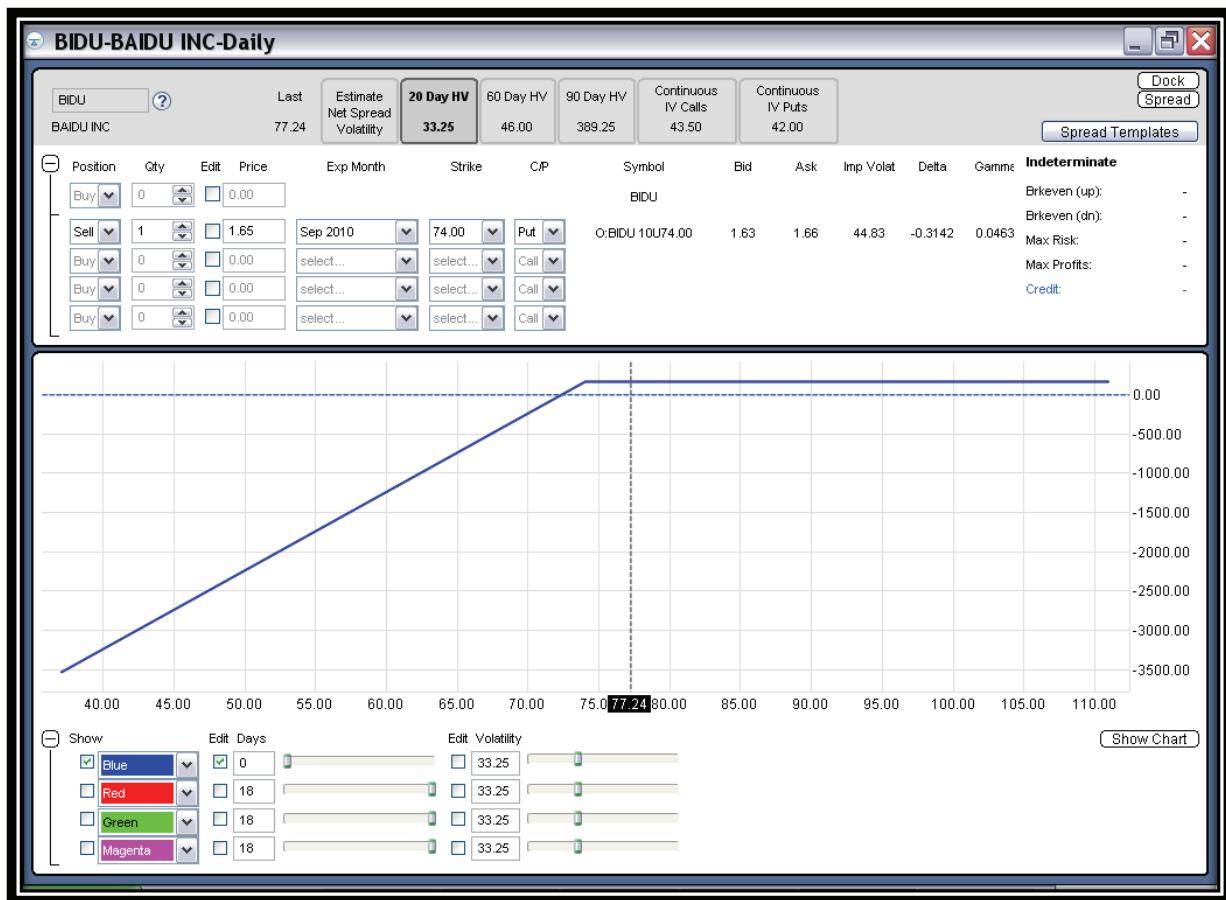
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# RISK GRAPH SHORT PUT



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# STOCK OPINION

- A Contract between a Buyer and Seller, that gives the buyer the right, but not the obligation to buy or to sell a specific stock at a specific price on or before a specific date in exchange for a market premium
- 4 basic market outlooks
  - Bullish
  - Bearish
  - Neutral
  - Bi-directional

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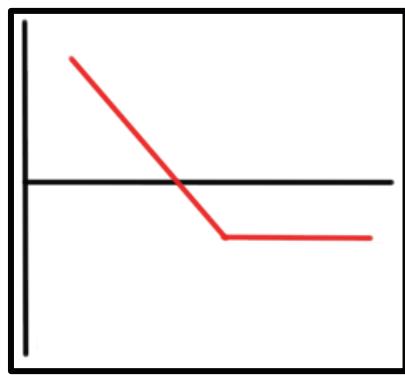
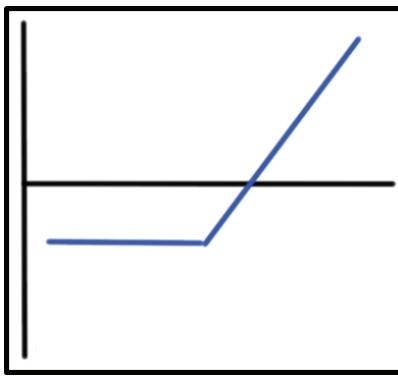
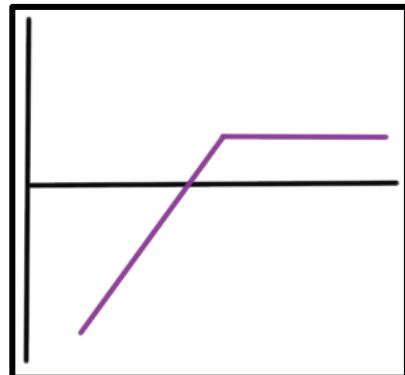
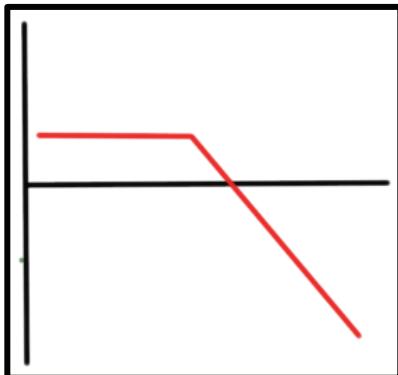
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# QUIZ



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# STRIKE PRICES

- A Contract between a Buyer and Seller, that gives the buyer the right, but not the obligation to buy or to sell a specific stock at a specific price on or before a specific date in exchange for a market premium
- ITM, ATM, and OTM
- Strike price selection is key for each strategy

Notes: \_\_\_\_\_

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# STRIKE PRICES

- Strike price increments
  - Determined by market makers
  - More strikes available than ever before
- Weekly expirations
  - ETFs
- Standard strike increments
  - Stock price 5.00 to 25.00 = 2.50 strikes
  - Stock price 25.00 to 200.00 = 5.00 strikes
  - Stock price > 200.00 = 10.00 strikes
- Examples

Notes: \_\_\_\_\_

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# STRIKE PRICES

- Strikes vary greatly stock to stock, but the following situations can create abnormal strikes
  - Stock splits, spin-offs, or other stock distributions
  - Exchange traded funds (ETFs) have \$1.00 strikes
- Check the contract multiplier prior to trade entry
- Let's go through the steps to check the multiplier

Notes: \_\_\_\_\_

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# EXPIRATION DATES

A Contract between a Buyer and Seller, that gives the buyer the right, but not the obligation to buy or to sell a specific stock at a specific price on or before a specific date in exchange for a market premium

Notes: \_\_\_\_\_

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# EXPIRATION DATES

- What is the last day that an option can be traded and exercised
- A stock option legally expires Friday at 4 pm Eastern
- Options settle either ITM, or OTM, Friday at 4 pm Eastern
- 0.01 ITM = automatic exercise
- Legal expiration used to be Saturday at 12 pm Eastern – it was changed after February 2015 expiration
- If Friday of expiration is a market holiday, then Thursday is the last trading day
- <http://www.cboeoptionshub.com/2013/04/11/expiration-saturday-soon-to-be-gone/>

Notes: \_\_\_\_\_

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# WEEKLYS AND LEAPS

- Long-term Equity AnticiPation SecuritiesSM (LEAPS) at CBOE
  - Expirations greater than 8 months
  - January is the typical expiration month
  - Listed 2-3 years out
  - Calls and puts
- Weekly expirations
  - Liquid stocks, ETFs, and indexes
  - Expiration is each Friday
  - 3-4 weeks out
  - Mar4 = last trading day is the 4th Friday of March
  - Feb2 = last trading day is the 2nd Friday of March

Notes: \_\_\_\_\_

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# PREMIUM

- A Contract (**100 shares**) between a Buyer and Seller, that gives the buyer the right, but not the obligation to buy (**call**) or to sell (**put**) a specific stock (**underlying security**) at a specific (**strike**) price on or before a specific (**expiration**) date in exchange for a market premium
- Premium is the price of the option
  - Intrinsic value
  - Extrinsic value

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# INTRINSIC VALUE

- Intrinsic value is the amount of money that could be realized if we exercise an option
- Only ITM options have intrinsic value
- It is the distance ITM

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# INTRINSIC VALUE

|                 | Last X<br>129.56 B | Net Chng<br>- .855 | Bid X<br>129.56 Q | Ask X<br>129.57 Z                      | Size<br>14 x 4 | Volume<br>34,979,782 | Open<br>130.00 | High<br>130.57 | Low<br>128.59 |      |       |
|-----------------|--------------------|--------------------|-------------------|--|----------------|----------------------|----------------|----------------|---------------|------|-------|
| OPTION CHAN     |                    | Filter: Off        | Spread: Single    | Layout: Position, Intrinsic, Extrinsic |                |                      |                |                |               |      |       |
|                 | CALLS              |                    |                   | PUTS                                   |                |                      |                |                |               |      |       |
|                 | Position           | Intrinsic          | Extrinsic         | Bid X                                  | Ask X          | Exp                  | Strike         | Bid X          | Ask X         |      |       |
| MAR 15 (21) 100 |                    |                    |                   |  |                |                      |                |                |               |      |       |
|                 | 4.56               | 1.64               | 6.15 C            | 6.25 C                                 |                | MAR 15               | 125            | 1.58 Q         | 1.60 C        | 0    | 1.69  |
|                 | 3.56               | 1.94               | 5.45 A            | 5.55 C                                 |                | MAR 15               | 126            | 1.88 Q         | 1.90 N        | 0    | 1.89  |
|                 | 2.56               | 2.29               | 4.80 C            | 4.90 C                                 |                | MAR 15               | 127            | 2.22 W         | 2.24 N        | 0    | 2.23  |
|                 | 1.56               | 2.685              | 4.20 X            | 4.25 C                                 |                | MAR 15               | 128            | 2.62 Q         | 2.63 N        | 0    | 2.625 |
|                 | 56                 | 3.115              | 3.65 A            | 3.70 C                                 |                | MAR 15               | 129            | 3.05 C         | 3.10 C        | 0    | 3.075 |
|                 | 0                  | 3.175              | 3.15 I            | 3.20 C                                 |                | MAR 15               | 130            | 3.55 H         | 3.60 C        | 44   | 3.135 |
|                 | 0                  | 2.71               | 2.70 Q            | 2.72 M                                 |                | MAR 15               | 131            | 4.10 W         | 4.15 C        | 1.44 | 2.685 |
|                 | 0                  | 2.30               | 2.29 Q            | 2.31 Q                                 |                | MAR 15               | 132            | 4.65 C         | 4.75 C        | 2.44 | 2.26  |
|                 | 0                  | 1.935              | 1.93 H            | 1.94 Z                                 |                | MAR 15               | 133            | 5.30 C         | 5.40 C        | 3.44 | 1.81  |
|                 | 0                  | 1.62               | 1.61 C            | 1.63 Z                                 |                | MAR 15               | 134            | 6.00 I         | 6.10 A        | 4.44 | 1.61  |
|                 | 0                  | 1.255              | 1.25 N            | 1.26 Z                                 |                | MAR 15               | 135            | 6.75 C         | 6.85 C        | 5.44 | 1.34  |

- If we BTO the March 126 call @ \$5.50, then exercise the contract
- What is the net result?
- Does it make sense to exercise the contract?

Notes: \_\_\_\_\_

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# ITM, ATM, AND OTM

- **ITM**

- Sensitivity to time
- Sensitivity to volatility
- Sensitivity to price move

- **ATM**

- Sensitivity to time
- Sensitivity to volatility
- Sensitivity to price move

- **OTM**

- Sensitivity to time
- Sensitivity to volatility
- Sensitivity to price move

Notes: \_\_\_\_\_

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# ITM, ATM, AND OTM

LET'S TAKE A QUIZ

| Last X   |       | Net Chng | Bid X    | Ask X    | Size   | Volume     | Open   | High   | Low    |
|--|-------|----------|----------|----------|--------|------------|--------|--------|--------|
| 129.56 B   |       | - .855   | 129.86 Q | 129.57 Z | 14 x 4 | 34,979,762 | 130.00 | 130.57 | 128.59 |
| OPTION CHAIN Filter: Off Spread: Single Layout: Position, Intrinsic, Extrinsic               |       |          |          |          |        |            |        |        |        |
| CALLS  |       |          |          |          |        |            |        |        |        |
| Position Intrinsic Extrinsic Bid X Ask X Exp Strike Bid X Ask X Position Intrinsic Extrinsic |       |          |          |          |        |            |        |        |        |
| MAR 15 (21) 100  |       |          |          |          |        |            |        |        |        |
| 4.56   | 1.64  | 8.15 C   | 6.25 C   | MAR 15   | 125    | 1.58 Q     | 1.80 C | 0      | 1.59   |
| 3.56   | 1.94  | 5.45 A   | 5.55 C   | MAR 15   | 126    | 1.88 Q     | 1.90 N | 0      | 1.89   |
| 2.56   | 2.29  | 4.80 C   | 4.80 C   | MAR 15   | 127    | 2.22 W     | 2.24 N | 0      | 2.23   |
| 1.56   | 2.665 | 4.20 X   | 4.25 C   | MAR 15   | 128    | 2.62 Q     | 2.63 N | 0      | 2.625  |
| .56  | 3.115 | 3.85 A   | 3.70 C   | MAR 15   | 129    | 3.05 C     | 3.10 C | 0      | 3.075  |
| 0  | 3.175 | 3.15 I   | 3.20 C   | MAR 15   | 130    | 3.55 H     | 3.60 C | .44    | 3.135  |
| 0  | 2.71  | 2.70 Q   | 2.72 M   | MAR 15   | 131    | 4.10 W     | 4.15 C | 1.44   | 2.685  |
| 0  | 2.30  | 2.29 Q   | 2.31 Q   | MAR 15   | 132    | 4.65 C     | 4.75 C | 2.44   | 2.28   |
| 0  | 1.935 | 1.83 H   | 1.94 Z   | MAR 15   | 133    | 5.30 C     | 5.40 C | 3.44   | 1.91   |
| 0  | 1.62  | 1.61 C   | 1.63 Z   | MAR 15   | 134    | 6.00 I     | 6.10 A | 4.44   | 1.61   |
| 0  | 1.255 | 1.25 N   | 1.26 Z   | MAR 15   | 135    | 6.70 C     | 6.80 Q | 5.44   | 1.24   |

Notes: \_\_\_\_\_

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# EXTRINSIC VALUE

- All options have extrinsic value
- Also known as “time value”
- ATM strike typically have the greatest amount of extrinsic value

Notes: \_\_\_\_\_

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# EXTRINSIC VALUE

XYZ @ \$40 per Share

We BTO the 35.00 call

**Premium** - the intrinsic value = extrinsic value

| <u>Option Strike</u> | <u>Price of Option</u> |              |                 |                 |
|----------------------|------------------------|--------------|-----------------|-----------------|
| 50                   | .35                    |              |                 |                 |
| 45                   | 1.05                   |              |                 |                 |
| 40                   | 2.70                   | Option Price | Intrinsic Value | Extrinsic Value |
| 35                   | 5.70                   | 5.70         | -               | 5.00 = .70      |

Notes: \_\_\_\_\_

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# PRICE IS RIGHT

## BLACK SCHOLES MODEL

- Black, Scholes and Merton are credited with establishing Option pricing standards in 1973
- They won the Nobel Prize in Economics in 1997

Theoretical option price =  $pN(d_1) - se^{-rt}N(d_2)$

$$\text{where } d_1 = \frac{\ln(p/s) + (r + 1/2\sigma^2)t}{\sigma\sqrt{t}}$$

$$\text{and } d_2 = d_1 - \sigma\sqrt{t}$$

Variables:

$p$  = stock price       $s$  = strike price       $t$  = time until expiration

$r$  = current risk-free interest rate      ( % of a year)

$\sigma$  = volatility (Annual Std. Deviation)       $\ln$  = natural logarithm

$N(x)$  = cumulative normal density function

Notes: \_\_\_\_\_

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# WHAT DETERMINES EXTRINSIC VALUE

- Time remaining to expiration
  - 100 days out
  - 10 days out
- Volatility of the underlying security
  - NFLX
  - CSCO
- Interest rates
- Stock price
  - \$400.00 per share
  - \$40.00 per share
- Dividends
- Strike price
  - ITM
  - OTM



Notes: \_\_\_\_\_

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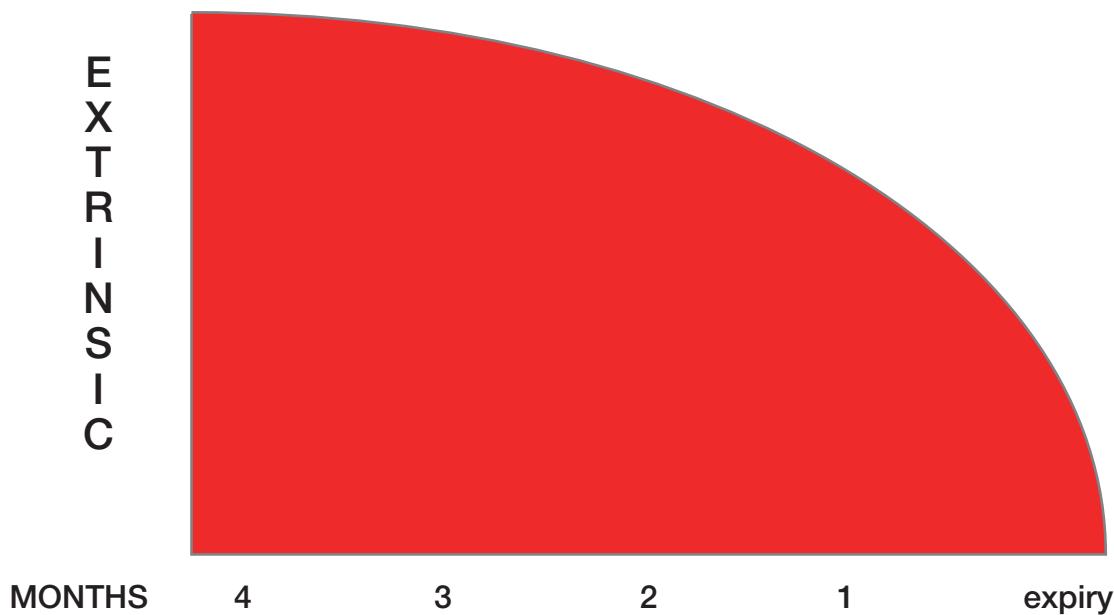
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# TIME DECAY (THETA)

XYZ \$40 per share

We buy the 4 month 40 call for \$4.00, and the stock does not move for 4 months

What is the time value loss of the option month by month?



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# SUMMARY

- We can buy to open or sell to open an option
- Both calls and puts can be STO, or BTO
- Risk graphs help analyze gain, loss, breakeven(s), and position size
- We want to fit our strategy to our stock opinion
- Intrinsic vs. extrinsic value



Notes: \_\_\_\_\_

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# VOCABULARY

## A TRADER'S GUIDE TO THE WORLD

### **American Style Option**

an option that can be exercised anytime on or before expiration. All option-able stocks and exchange traded funds (ETFs) have American style options

### **Assignment**

this happens when an option seller has to make good on their obligation to buy or sell shares of the underlying stock

### **At-the-Money**

the option with a strike price that is equal to or closest to the current stock price

### **Call Option**

an option that gives you the right, but not the obligation, to buy a stock at a particular price on or before a specific date

### **Exercise**

this happens when an option buyer utilizes their right to buy or sell shares of the underlying stock

### **European Style Option**

an option that can only be exercised at expiration. Options on most broad-based indices (e.g. SPX, NDX, DAX)

### **Extrinsic Value**

how much you pay for time and volatility  
Extrinsic value = premium – intrinsic value

### **In-the-Money**

call options with a strike price below the stock price. Put options with a strike price above the stock price

### **Intrinsic Value**

how much in-the-money the option is  
Call = stock price – strike price.  
Put = strike price – stock price

### **Option Contract**

a contract between a buyer and seller, that gives the purchaser of the option the right to buy or sell a particular stock at a specific price on or before a specific date

### **Option Premium**

the cost or value of an option contract

### **Out-of-the-Money (OTM)**

call options with a strike price above the stock price. Put options with a strike price below the stock price

### **Profit and Loss Diagram**

an analytical tool used to model an option position. It displays the potential risk, reward, and breakeven points for the trade

### **Put Option**

an option that gives you the right, but not the obligation, to sell a stock at a particular price on or before a specific date

### **Risk Graph**

see profit and loss diagram

# **Module 2:**

## **OUR FIRST SPREAD**

### **— BULL CALL**



# TABLE OF SPREADS

| April | May | Aug | Oct | Jan |
|-------|-----|-----|-----|-----|
| 100   | 100 | 100 | 100 | 100 |
| 105   | 105 | 105 | 105 | 105 |
| 110   | 110 | 110 | 110 | 110 |

Notes: \_\_\_\_\_

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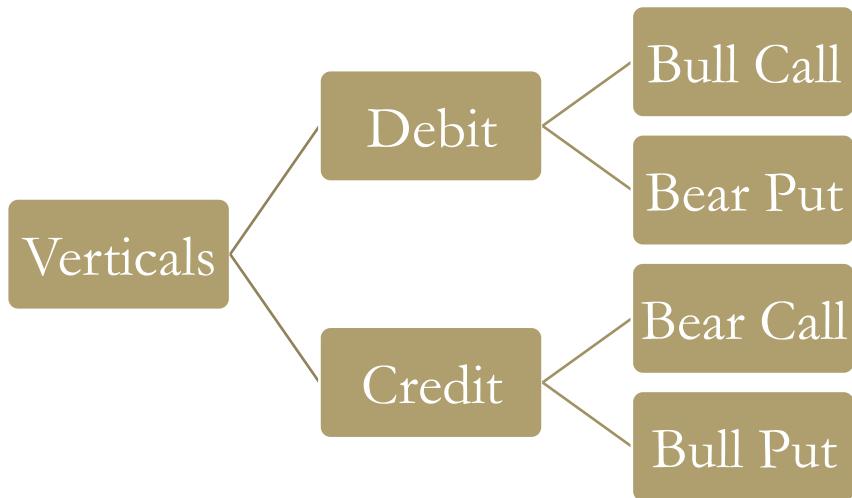
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# VERTICAL SPREADS



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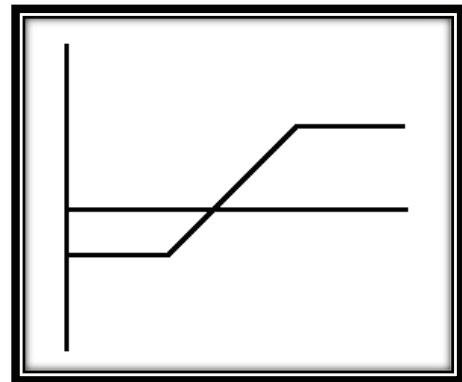
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# BULL CALL

- **Outlook**
  - Bullish
- **Max gain**
  - Spread between strikes – net debit
- **Risk**
  - Net debit
- **Probability of profit**
  - Delta of the higher strike call
- **Expiration breakeven**
  - Lower strike call + net debit



# BULL CALL GREEKS

- Positive Delta
  - Profit as stock rises
- Negative Theta
  - Time decay hurts
- Positive Gamma
  - Rate of gain accelerates as stock price rises
- Positive Vega
  - Profit as volatility increases



Notes: \_\_\_\_\_

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# BULL CALL STRUCTURE

- The Bull Call spread is generally used when we anticipate a moderate rise in a particular stock
- Lower-risk than owning the stock, or a straight call option
- Structure involves BTO lower strike calls while at the same time STO an equal number of higher strike calls
- Same expiration on both “legs” of the spread

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# BULL CASE STUDY

XYZ IS TRADING FOR \$200

- BTO April 200 call for \$8, Delta 0.50
  - Right to buy @ \$200
- Sell April 215 call for \$2, Delta 0.25
  - Obligated to sell @ \$215
- Risk-Reward
  - Net debit \$6
  - Max Risk \$6
  - Breakeven 206.00 (\$200 + \$6 net debit)
  - Probability of profit (POP) 25%



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# BULL CALL GUIDELINES

1. Moderately bullish outlook (traditional up-trend is best)
  - think higher highs + higher lows
2. Use an expiration that is at least 3 months out
3. BTO and STO an equal number of contracts
4. Enter so that cost (net debit) is  $\leq 40\%$  of the spread (distance between the strikes)
5. The net Delta of trade should be  $\geq 0.25$
6. Make sure there is plenty liquidity in the options
7. Check for news – it is fine to hold through earnings



Notes: \_\_\_\_\_

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# # 1 BULLISH TREND

- We want to trade with the trend
- Don't second guess the trend
- Higher highs + higher lows
- What is the velocity of the stock?



Notes: \_\_\_\_\_  
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# # 1 BULLISH TREND



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# #2 EXPIRATION DATE

- NOC has moved up from \$120.00 to \$170.00 in 4.5 months which is an average monthly move of roughly \$\_\_\_\_\_ per month
- We are expecting NOC to move up \$20 per share, and based on its current trend it would take \_\_\_\_\_ months
- With March expiration quickly approaching, we would look at \_\_\_\_\_ expiration to trade a \$20.00 move
- We do not have to hold the position until \_\_\_\_\_, but we want plenty of time

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# #3 EQUAL NUMBER OF CONTRACTS

- For a bull call spread, we always BTO and STO an equal number of contracts
- Never sell more contracts than we own
- If we STO more contracts than we BTO, then we will be in a naked position

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# #4 COST

- Enter so that the maximum cost is  $\leq 40\%$  of the spread
- The spread is the difference between the strikes that we buy and sell
- This gives us a 1.5 to 1 reward/risk

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# # 4 COST

- The net debit (cost) of the bull call spread is function of:
  - Time until expiration
  - Underlying stock price
  - Spread between strikes
  - Using ATM vs. OTM
- We want the net debit  $\leq$  40% of the spread
- Remember that net Delta must be  $\geq 0.25$  (more on this later)

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# #5 NET DELTA $\Delta$

- What is Delta
- Delta is the rate of change of the option premium in relation to a \$1.00 increase in the price of the underlying
- Delta = dollar gain of option premium
- How sensitive is the option to stock price movement?

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# #5 NET DELTA $\Delta$

- Model inputs:
  - Price of the stock
  - Days Until Expiration day
  - Interest Rate
  - Dividend
  - Strike price
  - Volatility
- The theoretical value of the option is calculated off of the above variables

$$\text{Theoretical option price} = pN(d_1) - se^{-rt}N(d_2)$$

$$\text{where } d_1 = \frac{\ln(p/s) + (r + 1/2v^2)t}{v\sqrt{t}}$$

$$\text{and } d_2 = d_1 - v\sqrt{t}$$

Variables:

$p$  = stock price       $s$  = strike price       $t$  = time until expiration

$r$  = current risk-free interest rate      ( % of a year)

$v$  = volatility (Annual Std. Deviation)       $\ln$  = natural logarithm

$N(x)$  = cumulative normal density function

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# #5 NET DELTA $\Delta$

- Stocks have a fixed Delta
- The Delta of stock is always 1.00
- \$1 rise in the price of the stock is equal to a \$1 gain or profit in the position
- \$1 fall in the price of the stock is equal to a \$1 loss in the position
- An option Delta can change
- Option Delta will range between 0 and 1.00
- If Delta closer to 0 it is OTM
- If Delta close to .50 it is ATM
- If Delta closer to 1.00 it is ITM

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# #5 NET DELTA $\Delta$

| Stock Price | Premium | Delta | Gamma |
|-------------|---------|-------|-------|
| 42          | 5.03    | 0.56  | 0.02  |
| 41          | 4.50    | 0.53  | 0.03  |
| 40          | 4.00    | 0.50  | 0.03  |
| 39          | 3.50    | 0.47  | 0.03  |
| 38          | 2.97    | 0.44  | 0.02  |
| 37          | 2.44    | 0.42  | 0.02  |

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# #5 NET DELTA $\Delta$

- The bull call spread consists of buying one (or more) lower-strike calls and selling one (or more) higher-strike calls
- We BTO and STO an equal number of contracts
- The options that we buy and sell will have different Deltas
- XYZ @ 100
  - BTO XYZ 100 call      Delta = \_\_\_\_\_
  - STO XYZ 110 call      Delta = \_\_\_\_\_
  - Net Delta = \_\_\_\_\_

Notes: \_\_\_\_\_  
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# #5 NET DELTA △

| Northrop Grumman Corp Holding Co   |        |         |        |          |        |   |                    |       |       | <a href="#">Time &amp; Sales</a>   <a href="#">Chart</a>   <a href="#">Volatility View</a>   <a href="#">News</a> |       |          |        |   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
|--|--------|---------|--------|----------|--------|---|--------------------|-------|-------|---|-------|----------|--------|---|-------|--|--|--|--|--|--|------|--|--|--|--|--|--|---|------|-----|-----|-----|----------|-------|--------|--------|------|-----|-----|-----|----------|-------|--------|--|--|--|--|--|--|--|--------------------|--|--|--|--|--|--|-------------------|-------|---|-------|-------|------|-------|---|--------|------|-------|------|------|------|--------|---|-------|---|-------|-------|------|-------|---|--------|------|---|------|------|------|--------|---|-------|---|-------|-------|------|-------|---|--------|------|-------|------|------|------|--------|---|-------|-------|------|-------|------|-------|---|--------|------|-------|------|------|------|--------|---|------|-------|------|------|------|-------|---|--------|------|-------|------|------|------|--------|---|------|---|------|------|------|-------|---|--------|------|-------|------|------|------|--------|---|------|-------|------|------|------|-------|---|--------|------|---|------|-------|------|--------|---|------|-------|------|------|------|-------|---|--------|-------|---|-------|-------|------|--------|---|------|-------|------|------|------|-------|---|--------|---|---|-------|-------|------|--------|---|
| Symbol   | Last   | Change  | Bid    | Ask      | High   | Low   | Volume             |       |       | Chart   |       |          |        |   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| NOC  | 167.10 | +1.39 ▲ | 164.61 | 0.00     | 167.73 | 165.47  | 2,354,150          |       |       |                                |       |          |        |   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| <b>Dividend Information*</b>   |        |         |        |          |        |   |                    |       |       |   |       |          |        |   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| <input type="checkbox"/> Include Dividends   | n/a    | n/a     | n/a    |          | 1.00   | %   |                    |       |       |   |       |          |        |   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| NOC Expiration Months: <a href="#">Mar15</a>   <a href="#">Apr15</a>   <a href="#">May15</a>   <a href="#">Aug15</a>   <a href="#">Jan16</a>   |        |         |        |          |        |   |                    |       |       |   |       |          |        |   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| <table border="1"> <thead> <tr> <th colspan="7">Calls</th> <th colspan="7">Puts</th> <th><input type="checkbox"/> Disable Roll Overs</th> </tr> <tr> <th>Last</th><th>Chg</th><th>Bid</th><th>Ask</th><th>Imp. Vol</th><th>Delta</th><th>Action</th> <th>Strike</th><th>Last</th><th>Chg</th><th>Bid</th><th>Ask</th><th>Imp. Vol</th><th>Delta</th><th>Action</th> </tr> </thead> <tbody> <tr> <td colspan="7"><b>- May15 Calls</b> (74 days to expiration)</td><td colspan="7"><b>NOC @ 167.1</b></td><td><b>May15 Puts</b></td></tr> <tr> <td>22.57</td><td>0</td><td>21.60</td><td>23.90</td><td>20.3</td><td>.9472</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>145.00</td><td>0.90</td><td>+0.01</td><td>0.80</td><td>0.95</td><td>25.3</td><td>-.0937</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>20.80</td><td>0</td><td>17.90</td><td>18.90</td><td>21.6</td><td>.8804</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>150.00</td><td>1.35</td><td>0</td><td>1.20</td><td>1.35</td><td>23.4</td><td>-.1367</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>14.00</td><td>0</td><td>13.60</td><td>14.30</td><td>19.8</td><td>.8183</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>155.00</td><td>2.00</td><td>-0.05</td><td>1.85</td><td>2.10</td><td>22.0</td><td>-.2032</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>10.10</td><td>+0.20</td><td>9.70</td><td>10.40</td><td>19.0</td><td>.7174</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>160.00</td><td>3.10</td><td>-0.25</td><td>2.90</td><td>3.10</td><td>20.4</td><td>-.2945</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>6.60</td><td>+0.10</td><td>6.40</td><td>6.80</td><td>17.8</td><td>.5883</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>165.00</td><td>4.82</td><td>-0.28</td><td>4.50</td><td>4.70</td><td>19.3</td><td>-.4159</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>4.00</td><td>0</td><td>3.70</td><td>4.10</td><td>16.8</td><td>.4354</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>170.00</td><td>7.10</td><td>-0.40</td><td>6.70</td><td>7.10</td><td>18.3</td><td>-.5568</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>2.05</td><td>-0.05</td><td>1.95</td><td>2.15</td><td>16.1</td><td>.2827</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>175.00</td><td>9.00</td><td>0</td><td>9.90</td><td>10.20</td><td>17.8</td><td>-.6952</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>1.00</td><td>+0.10</td><td>0.85</td><td>1.05</td><td>15.6</td><td>.1596</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>180.00</td><td>12.70</td><td>0</td><td>13.70</td><td>14.30</td><td>18.2</td><td>-.8003</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> <tr> <td>0.41</td><td>+0.01</td><td>0.30</td><td>0.50</td><td>15.3</td><td>.0786</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td><td>185.00</td><td>0</td><td>0</td><td>17.30</td><td>19.80</td><td>19.8</td><td>-.8591</td><td><a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/></td></tr> </tbody> </table> |        |         |        |          |        |   |                    |       |       |   |       |          |        |   | Calls |  |  |  |  |  |  | Puts |  |  |  |  |  |  | <input type="checkbox"/> Disable Roll Overs | Last | Chg | Bid | Ask | Imp. Vol | Delta | Action | Strike | Last | Chg | Bid | Ask | Imp. Vol | Delta | Action | <b>- May15 Calls</b> (74 days to expiration) |  |  |  |  |  |  | <b>NOC @ 167.1</b> |  |  |  |  |  |  | <b>May15 Puts</b> | 22.57 | 0 | 21.60 | 23.90 | 20.3 | .9472 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 145.00 | 0.90 | +0.01 | 0.80 | 0.95 | 25.3 | -.0937 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 20.80 | 0 | 17.90 | 18.90 | 21.6 | .8804 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 150.00 | 1.35 | 0 | 1.20 | 1.35 | 23.4 | -.1367 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 14.00 | 0 | 13.60 | 14.30 | 19.8 | .8183 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 155.00 | 2.00 | -0.05 | 1.85 | 2.10 | 22.0 | -.2032 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 10.10 | +0.20 | 9.70 | 10.40 | 19.0 | .7174 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 160.00 | 3.10 | -0.25 | 2.90 | 3.10 | 20.4 | -.2945 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 6.60 | +0.10 | 6.40 | 6.80 | 17.8 | .5883 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 165.00 | 4.82 | -0.28 | 4.50 | 4.70 | 19.3 | -.4159 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 4.00 | 0 | 3.70 | 4.10 | 16.8 | .4354 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 170.00 | 7.10 | -0.40 | 6.70 | 7.10 | 18.3 | -.5568 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 2.05 | -0.05 | 1.95 | 2.15 | 16.1 | .2827 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 175.00 | 9.00 | 0 | 9.90 | 10.20 | 17.8 | -.6952 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 1.00 | +0.10 | 0.85 | 1.05 | 15.6 | .1596 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 180.00 | 12.70 | 0 | 13.70 | 14.30 | 18.2 | -.8003 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 0.41 | +0.01 | 0.30 | 0.50 | 15.3 | .0786 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 185.00 | 0 | 0 | 17.30 | 19.80 | 19.8 | -.8591 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |
| Calls  |        |         |        |          |        |   | Puts               |       |       |   |       |          |        | <input type="checkbox"/> Disable Roll Overs                             |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| Last   | Chg    | Bid     | Ask    | Imp. Vol | Delta  | Action  | Strike             | Last  | Chg   | Bid   | Ask   | Imp. Vol | Delta  | Action  |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| <b>- May15 Calls</b> (74 days to expiration)   |        |         |        |          |        |   | <b>NOC @ 167.1</b> |       |       |   |       |          |        | <b>May15 Puts</b>   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 22.57  | 0      | 21.60   | 23.90  | 20.3     | .9472  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 145.00             | 0.90  | +0.01 | 0.80  | 0.95  | 25.3     | -.0937 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 20.80  | 0      | 17.90   | 18.90  | 21.6     | .8804  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 150.00             | 1.35  | 0     | 1.20  | 1.35  | 23.4     | -.1367 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 14.00  | 0      | 13.60   | 14.30  | 19.8     | .8183  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 155.00             | 2.00  | -0.05 | 1.85  | 2.10  | 22.0     | -.2032 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 10.10  | +0.20  | 9.70    | 10.40  | 19.0     | .7174  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 160.00             | 3.10  | -0.25 | 2.90  | 3.10  | 20.4     | -.2945 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 6.60   | +0.10  | 6.40    | 6.80   | 17.8     | .5883  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 165.00             | 4.82  | -0.28 | 4.50  | 4.70  | 19.3     | -.4159 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 4.00   | 0      | 3.70    | 4.10   | 16.8     | .4354  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 170.00             | 7.10  | -0.40 | 6.70  | 7.10  | 18.3     | -.5568 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 2.05   | -0.05  | 1.95    | 2.15   | 16.1     | .2827  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 175.00             | 9.00  | 0     | 9.90  | 10.20 | 17.8     | -.6952 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 1.00   | +0.10  | 0.85    | 1.05   | 15.6     | .1596  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 180.00             | 12.70 | 0     | 13.70   | 14.30 | 18.2     | -.8003 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| 0.41   | +0.01  | 0.30    | 0.50   | 15.3     | .0786  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 185.00             | 0     | 0     | 17.30   | 19.80 | 19.8     | -.8591 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |
| <a href="#">Trade Calc</a> <a href="#">Mini Pricer</a> <a href="#">Watch List</a> <a href="#">Reset</a> <a href="#">Trade</a>  |        |         |        |          |        |   |                    |       |       |   |       |          |        |   |       |  |  |  |  |  |  |      |  |  |  |  |  |  |   |      |     |     |     |          |       |        |        |      |     |     |     |          |       |        |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |                   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |   |       |       |      |       |   |        |      |   |      |      |      |        |   |       |   |       |       |      |       |   |        |      |       |      |      |      |        |   |       |       |      |       |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |       |      |      |      |        |   |      |   |      |      |      |       |   |        |      |       |      |      |      |        |   |      |       |      |      |      |       |   |        |      |   |      |       |      |        |   |      |       |      |      |      |       |   |        |       |   |       |       |      |        |   |      |       |      |      |      |       |   |        |   |   |       |       |      |        |   |

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# #6 LIQUIDITY

- Open interest equals the number of open contracts for a particular strike and expiration
- We want 100 contracts of open interest on both legs
- Make sure there is volume somewhere in the expiration we are trading
- Look at open interest and volume on the option chain
- Birds in a tree
- BTO and STO adds open interest, while BTC and STC reduces open interest
- Open interest = running total
- Volume = starts as 0 each day

Notes: \_\_\_\_\_

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# #7 CHECK FOR NEWS



- Check for pending news
- Earnings reports
- What does this change
  - Exit plans
  - Position size
- Check on chart
- Earnings calendar

Notes: \_\_\_\_\_  
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# BULL CALL EXAMPLE

| Northrop Grumman Corp Holding Co   |        |          |           |                       |        |   |                    |       |       | <a href="#">Time &amp; Sales</a>   <a href="#">Chart</a>   <a href="#">Volatility View</a>   <a href="#">News</a> |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
|--|--------|----------|-----------|-----------------------|--------|---|--------------------|-------|-------|---|-------|----------|--------|---|--|--|--|--|--|--|--|--|--|--|--|
| Symbol   | Last   | Change   | Bid       | Ask                   | High   | Low   | Volume             |       |       | Chart   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| NOC  | 167.10 | +1.39 ▲  | 164.61    | 0.00                  | 167.73 | 165.47  | 2,354,150          |       |       |                                |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| <hr/>  |        |          |           |                       |        |   |                    |       |       |   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| <b>Dividend Information*</b>   |        | Dividend | Frequency | Div Date (mm/dd/yyyy) |        |   | Int Rate           |       |       |   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Include Dividends   | n/a    | n/a      | n/a       | n/a                   |        |   | 1.00 %             |       |       |   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| <hr/>  |        |          |           |                       |        |   |                    |       |       |   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| NOC Expiration Months: <a href="#">Mar15</a>   <a href="#">Apr15</a>   <a href="#">May15</a>   <a href="#">Aug15</a>   <a href="#">Jan16</a> |        |          |           |                       |        |   |                    |       |       |   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| <hr/>  |        |          |           |                       |        |   |                    |       |       |   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |
| <b>Calls</b>   |        |          |           |                       |        |   | <b>Puts</b>        |       |       |   |       |          |        | <input type="checkbox"/> Disable Roll Overs                             |  |  |  |  |  |  |  |  |  |  |  |
| Last   | Chg    | Bid      | Ask       | Imp. Vol              | Delta  | Action  | ▲ Strike ▼         | Last  | Chg   | Bid   | Ask   | Imp. Vol | Delta  | Action  |  |  |  |  |  |  |  |  |  |  |  |
| <b>May15 Calls</b>   |        |          |           |                       |        |   | <b>NOC @ 167.1</b> |       |       |   |       |          |        | <b>May15 Puts</b>   |  |  |  |  |  |  |  |  |  |  |  |
| 22.57  | 0      | 21.60    | 23.90     | 20.3                  | .9472  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 145.00             | 0.90  | +0.01 | 0.80  | 0.95  | 25.3     | -.0937 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 20.80  | 0      | 17.90    | 18.90     | 21.6                  | .8804  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 150.00             | 1.35  | 0     | 1.20  | 1.35  | 23.4     | -.1367 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 14.00  | 0      | 13.60    | 14.30     | 19.8                  | .8183  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 155.00             | 2.00  | -0.05 | 1.85  | 2.10  | 22.0     | -.2032 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 10.10  | +0.20  | 9.70     | 10.40     | 19.0                  | .7174  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 160.00             | 3.10  | -0.25 | 2.90  | 3.10  | 20.4     | -.2945 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 6.60   | +0.10  | 6.40     | 6.80      | 17.8                  | .5883  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 165.00             | 4.82  | -0.28 | 4.50  | 4.70  | 19.3     | -.4159 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 4.00   | 0      | 3.70     | 4.10      | 16.8                  | .4354  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 170.00             | 7.10  | -0.40 | 6.70  | 7.10  | 18.3     | -.5568 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 2.05   | -0.05  | 1.95     | 2.15      | 16.1                  | .2827  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 175.00             | 9.00  | 0     | 9.90  | 10.20 | 17.8     | -.6952 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 1.00   | +0.10  | 0.85     | 1.05      | 15.6                  | .1596  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 180.00             | 12.70 | 0     | 13.70   | 14.30 | 18.2     | -.8003 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| 0.41   | +0.01  | 0.30     | 0.50      | 15.3                  | .0786  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 185.00             | 0     | 0     | 17.30   | 19.80 | 19.8     | -.8591 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |  |  |
| <a href="#">Trade Calc</a> <a href="#">Mini Pricer</a> <a href="#">Watch List</a> <a href="#">Reset</a> <a href="#">Trade</a>                |        |          |           |                       |        |   |                    |       |       |   |       |          |        |   |  |  |  |  |  |  |  |  |  |  |  |

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# BULL CALL EXAMPLE



Notes: \_\_\_\_\_

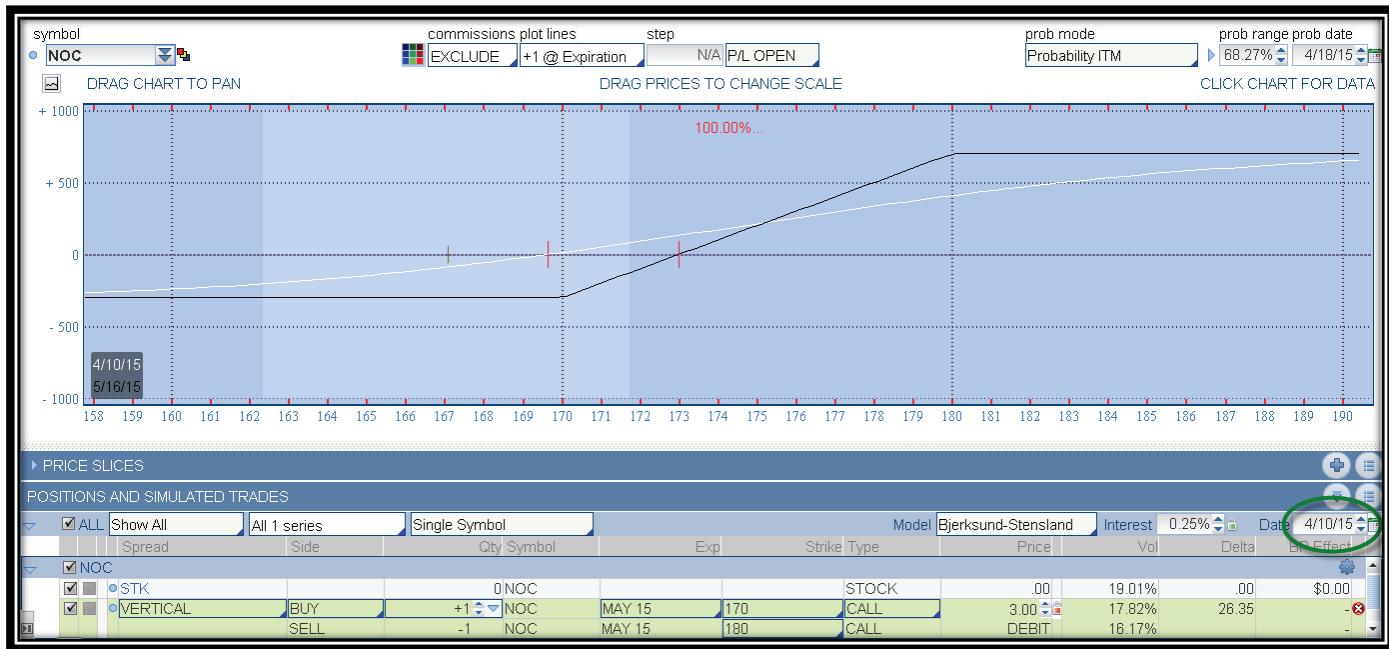
\_\_\_\_\_

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# BULL CALL EXAMPLE



Notes: \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# BULL CALL EXAMPLE

| Stock _____            | Price _____ | Date _____                        |
|------------------------|-------------|-----------------------------------|
| BTO lower strike call  |             | Debit                             |
| STO higher strike call |             | Credit                            |
| Net debit/max loss     |             | Stock $\leq$ low strike @ expiry  |
| Max gain               |             | Stock $\geq$ high strike @ expiry |
| Break-even @ expiry    |             | Low strike + net debit            |
| Best-case scenario     |             | Stock $\geq$ high strike @ expiry |

Notes: \_\_\_\_\_

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# BULL CALL EXIT

- When stock hits the higher strike ☺
- 60% gain on net debit
- 40% loss on net debit
- If  $\frac{1}{2}$  way to expiration we have not reached our profit, or price target, then re-evaluate
- We can exit prior to expiration – use risk graph
- Predetermine exit strategy, and remember our IQ drops in  $\frac{1}{2}$  once we enter
- Exit plan determines position size

Notes: \_\_\_\_\_

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# SUMMARY

- A bull call spread is known as buying a call vertical spread, or a call vertical debit spread
- It is created by buying a lower strike call and selling a higher strike call in the same expiration month
- Think of it as a lower risk/cost alternative to a long call



Notes: \_\_\_\_\_

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# **Module 3:**

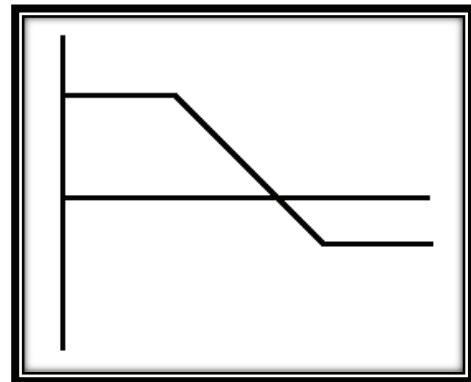
## **MORE VERTICAL SPREADS**

### **— BEAR PUT, BULL PUT AND BEAR CALL**



# BEAR PUT

- **Outlook**
  - Bearish
- **Max gain**
  - Spread between strikes – net debit
- **Risk**
  - Net debit
- **Probability of Profit (POP)**
  - Delta of lower strike put
- **Expiration break-even**
  - Higher strike put - net debit



Notes: \_\_\_\_\_

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# BEAR PUT GREEKS

- Negative Delta
  - Profit as stock drops
- Negative Theta
  - Time decay hurts
- Positive Gamma
  - Delta increases as stock falls (acceleration)
- Positive Vega
  - Profit as volatility increases



Notes: \_\_\_\_\_

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# BEAR PUT STRUCTURE

- The bear put spread is generally used when we anticipate a moderate drop in a particular stock
- Lower-risk than shorting the stock, or a long put
- Structure involves BTO higher strike puts while at the same time STO an equal number of lower strike puts
- Same expiration on both “legs” of the spread

# BEAR PUT CASE STUDY

XYZ IS TRADING FOR \$200

- BTO April 200 put for \$8, Delta 0.50
  - Right to sell @ \$200
- STO April 185 put for \$2, Delta 0.25
  - Obligated to buy @ \$185
- Risk-Reward
  - Net debit \$6
  - Max Risk \$6
  - Breakeven 194 (\$200 strike - \$6 net debit)
  - Probability of profit (POP)25%



Notes: \_\_\_\_\_

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# BEAR PUT GUIDELINES

1. Moderately bearish outlook (traditional down-trend is best) – think lower lows+ lower highs
2. Use an expiration that is at least 2 months out
3. BTO and STO an equal number of contracts
4. Enter so that cost (net debit) is  $\leq 40\%$  of the spread (distance between the strikes)
5. The net Delta of the trade should be  $\geq 0.25$
6. Make sure there is plenty of liquidity in the options
7. Check for news – it is fine to hold through earnings



Notes: \_\_\_\_\_

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# # 1 BEARISH TREND

- We want to trade with the trend
- Don't second guess the trend
- Lower lows + lower highs
- What is the velocity of the stock?



Notes: \_\_\_\_\_  
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# # 1 BEARISH TREND



Notes: \_\_\_\_\_

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# #2 EXPIRATION DATE

- OII has moved down from \$72.00 to \$49.00 in 3.5 months which is an average monthly move of roughly \$\_\_\_\_\_ per month
- We are expecting OII to move down \$10 per share, and based on its current trend it would take \_\_\_\_\_ months
- With March expiration quickly approaching, we would look at \_\_\_\_\_ expiration to trade a \$10.00 move
- We do not have to hold the position until \_\_\_\_\_, but we want plenty of time

Notes: \_\_\_\_\_

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# #3 EQUAL NUMBER OF CONTRACTS

- For a bear put spread, we always BTO and STO an equal number of contracts
- Never sell more contracts than we own
- If we STO more contracts than we BTO, then we will be in a naked position

Notes: \_\_\_\_\_

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# #4 COST

- Enter so that the maximum cost is  $\leq 40\%$  of the spread
- The spread is the difference between the strikes that we buy and sell
- This gives us a 1.5 to 1 reward/risk
- Same as bull call spread



Notes: \_\_\_\_\_

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# # 4 COST

- The net debit (cost) of the bear put spread is function of:
  - Time until expiration & Underlying stock price
  - Spread between strikes
  - Using ATM vs. OTM
- We want the net debit  $\leq$  40% of the spread
- Remember that net Delta must be  $\geq 0.25$  (more on this later)

Notes: \_\_\_\_\_

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# #5 NET DELTA $\Delta$

- The bull call spread consists of buying one (or more) higher-strike puts and selling one (or more) lower-strike puts
- We BTO and STO an equal number of contracts
- The options that we buy and sell will each have a different Delta
- XYZ @ 100
  - BTO XYZ 100 put      Delta = \_\_\_\_\_
  - STO XYZ 90 put      Delta = \_\_\_\_\_
  - Net Delta = \_\_\_\_\_

Notes: \_\_\_\_\_  
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# #5 NET DELTA △

Oceaneering International Inc

| Symbol | Last  | Change  | Bid   | Ask  | High  | Low   | Volume    | Chart   |
|--------|-------|---------|-------|------|-------|-------|-----------|---|
| OII    | 54.17 | -0.36 ▼ | 46.99 | 0.00 | 54.44 | 53.02 | 1,977,789 |  |

Dividend Information\*      Dividend      Frequency      Div Date (mm/dd/yyyy)      Int Rate

Include Dividends      n/a      n/a      n/a       %

OII Expiration Months: Mar15 | Apr15 | Jul15 | Oct15

| Calls                                      |       |       |       |          |        |   |          | Puts               |     |       |       |          |        |   |            | <input type="checkbox"/> Disable Roll Overs |
|--|-------|-------|-------|----------|--------|---|----------|--------------------|-----|-------|-------|----------|--------|---|------------|---|
| Last                                       | Chg   | Bid   | Ask   | Imp. Vol | Delta  | Action                                  | Strike ▾ | Last               | Chg | Bid   | Ask   | Imp. Vol | Delta  | Action                                  | Apr15 Puts |   |
| <b>Apr15 Calls</b> (46 days to expiration) |       |       |       |          |        |   |          | <b>OII @ 54.17</b> |     |       |       |          |        |   |            |   |
| 0  | 0     | 17.90 | 19.60 |          | 1.0000 | Trade   Detail <input type="checkbox"/> | 35.00    | 0                  | 0   | 0     | 0.10  | 57.7     | -.0125 | Trade   Detail <input type="checkbox"/> |            |   |
| 11.00                                      | 0     | 12.90 | 14.60 |          | 1.0000 | Trade   Detail <input type="checkbox"/> | 40.00    | 0.50               | 0   | 0     | 0.20  | 46.6     | -.0273 | Trade   Detail <input type="checkbox"/> |            |   |
| 7.00                                       | 0     | 8.20  | 9.70  |          | 1.0000 | Trade   Detail <input type="checkbox"/> | 45.00    | 0.35               | 0   | 0.15  | 0.40  | 38.8     | -.0772 | Trade   Detail <input type="checkbox"/> |            |   |
| 4.88                                       | -1.02 | 4.70  | 5.10  | 29.2     | .7984  | Trade   Detail <input type="checkbox"/> | 50.00    | 0.75               | 0   | 0.75  | 0.90  | 32.1     | -.2201 | Trade   Detail <input type="checkbox"/> |            |   |
| 1.45                                       | +0.05 | 1.45  | 1.80  | 25.7     | .4573  | Trade   Detail <input type="checkbox"/> | 55.00    | 2.72               | 0   | 2.50  | 2.85  | 29.5     | -.5323 | Trade   Detail <input type="checkbox"/> |            |   |
| 0.57                                       | 0     | 0.25  | 0.40  | 25.1     | .1382  | Trade   Detail <input type="checkbox"/> | 60.00    | 7.30               | 0   | 5.90  | 7.40  | 36.1     | -.7654 | Trade   Detail <input type="checkbox"/> |            |   |
| 0.05                                       | 0     | 0     | 0.10  | 25.9     | .0272  | Trade   Detail <input type="checkbox"/> | 65.00    | 11.98              | 0   | 10.50 | 12.20 | 44.9     | -.8544 | Trade   Detail <input type="checkbox"/> |            |   |
| 0.15                                       | 0     | 0     | 0.10  | 34.5     | .0216  | Trade   Detail <input type="checkbox"/> | 70.00    | 11.03              | 0   | 15.40 | 17.40 | 58.1     | -.8713 | Trade   Detail <input type="checkbox"/> |            |   |
| 0.04                                       | 0     | 0     | 0.10  | 42.2     | .0184  | Trade   Detail <input type="checkbox"/> | 75.00    | 10.90              | 0   | 20.30 | 22.30 | 65.9     | -.8975 | Trade   Detail <input type="checkbox"/> |            |   |

Trade Calc | Mini Pricer | Watch List | Reset | Trade

Notes: \_\_\_\_\_

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# #6 LIQUIDITY

- Open interest equals the number of open contracts for a particular strike and expiration
- We want 100 contracts of open interest on both legs
- Make sure there is volume somewhere in the expiration we are trading
- We will look at open interest and volume on the option chain
- Birds in a tree
- BTO and STO adds open interest, and BTC and STC reduces open interest
- Open interest = running total
- Volume = resets at 0 each day

Notes: \_\_\_\_\_

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# #7 CHECK FOR NEWS



- Check for pending news
- Earnings reports
- What does this change
  - Exit plans
  - Position size
- Check on chart
- Earnings calendar

Notes: \_\_\_\_\_  
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# BEAR PUT EXAMPLE

| Oceaneering International Inc  |       |          |           |                       |        |   |             |   |     | <a href="#">Time &amp; Sales</a>   <a href="#">Chart</a>   <a href="#">Volatility View</a>   <a href="#">News</a> |       |          |        |   |  |  |  |
|--|-------|----------|-----------|-----------------------|--------|---|-------------|---|-----|---|-------|----------|--------|---|--|--|--|
| Symbol   | Last  | Change   | Bid       | Ask                   | High   | Low   | Volume      | Chart   |     |   |       |          |        |   |  |  |  |
| OII  | 54.17 | -0.36 ▼  | 46.99     | 0.00                  | 54.44  | 53.02   | 1,977,789   |  |     |   |       |          |        |   |  |  |  |
| Dividend Information*  |       |          |           |                       |        |   |             |   |     |   |       |          |        |   |  |  |  |
| <input type="checkbox"/> Include Dividends   |       | Dividend | Frequency | Div Date (mm/dd/yyyy) |        |   | Int Rate    |   |     |   |       |          |        |   |  |  |  |
|  |       | n/a      | n/a       | n/a                   |        |   | 1.00 %      |   |     |   |       |          |        |   |  |  |  |
| OII Expiration Months: <a href="#">Mar15</a>   <a href="#">Apr15</a>   <a href="#">Jul15</a>   <a href="#">Oct15</a> |       |          |           |                       |        |   |             |   |     |   |       |          |        |   |  |  |  |
| Calls  |       |          |           |                       |        |   | Puts        |   |     |   |       |          |        | <input type="checkbox"/> Disable Roll Overs   |  |  |  |
| Last   | Chg   | Bid      | Ask       | Imp. Vol              | Delta  | Action  | ▲ Strike ▼  | Last  | Chg | Bid   | Ask   | Imp. Vol | Delta  | Action  |  |  |  |
| <input checked="" type="checkbox"/> Apr15 Calls (46 days to expiration)  |       |          |           |                       |        |   | OII @ 54.17 | Apr15 Puts  |     |   |       |          |        |   |  |  |  |
| 0  | 0     | 17.90    | 19.60     |                       | 1.0000 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 35.00       | 0   | 0   | 0   | 0.10  | 57.7     | -.0125 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 11.00  | 0     | 12.90    | 14.60     |                       | 1.0000 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 40.00       | 0.50  | 0   | 0   | 0.20  | 46.6     | -.0273 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 7.00   | 0     | 8.20     | 9.70      |                       | 1.0000 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 45.00       | 0.35  | 0   | 0.15  | 0.40  | 38.8     | -.0772 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 4.88   | -1.02 | 4.70     | 5.10      | 29.2                  | .7984  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 50.00       | 0.75  | 0   | 0.75  | 0.90  | 32.1     | -.2201 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 1.45   | +0.05 | 1.45     | 1.80      | 25.7                  | .4573  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 55.00       | 2.72  | 0   | 2.50  | 2.85  | 29.5     | -.5323 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 0.57   | 0     | 0.25     | 0.40      | 25.1                  | .1382  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 60.00       | 7.30  | 0   | 5.90  | 7.40  | 36.1     | -.7654 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 0.05   | 0     | 0        | 0.10      | 25.9                  | .0272  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 65.00       | 11.98   | 0   | 10.50   | 12.20 | 44.9     | -.8544 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 0.15   | 0     | 0        | 0.10      | 34.5                  | .0216  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 70.00       | 11.03   | 0   | 15.40   | 17.40 | 58.1     | -.8713 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
| 0.04   | 0     | 0        | 0.10      | 42.2                  | .0184  | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/> | 75.00       | 10.90   | 0   | 20.30   | 22.30 | 65.9     | -.8975 | <a href="#">Trade</a>   <a href="#">Detail</a> <input type="checkbox"/>   |  |  |  |
|  |       |          |           |                       |        |   |             |   |     |   |       |          |        | <a href="#">Trade Calc</a> <a href="#">Mini Pricer</a> <a href="#">Watch List</a> <a href="#">Reset</a> <a href="#">Trade</a> |  |  |  |

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# BEAR PUT EXAMPLE



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# BEAR PUT EXAMPLE



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# BEAR PUT EXAMPLE

| Stock _____           | Price _____ | Date _____                        |
|-----------------------|-------------|-----------------------------------|
| BTO higher strike put |             | Debit                             |
| STO lower strike put  |             | Credit                            |
| Net debit/max loss    |             | Stock $\geq$ high strike @ expiry |
| Max gain              |             | Stock $\leq$ low strike @ expiry  |
| Break-even @ expiry   |             | High strike - net debit           |
| Best-case scenario    |             | Stock $\leq$ low strike @ expiry  |

Notes: \_\_\_\_\_

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# BEAR PUT EXIT

- When stock hits the lower strike ☺
- 60% gain on net debit
- 40% loss on net debit
- If  $\frac{1}{2}$  way to expiration we have not reached our profit, or price target, then reevaluate
- We can exit prior to expiration – use risk graph
- Predetermine exit strategy, and remember our IQ drops in  $\frac{1}{2}$  once we enter
- Exit plan determines position size

Notes: \_\_\_\_\_

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# BULL PUT SPREAD

SELL A VERTICAL PUT SPREAD

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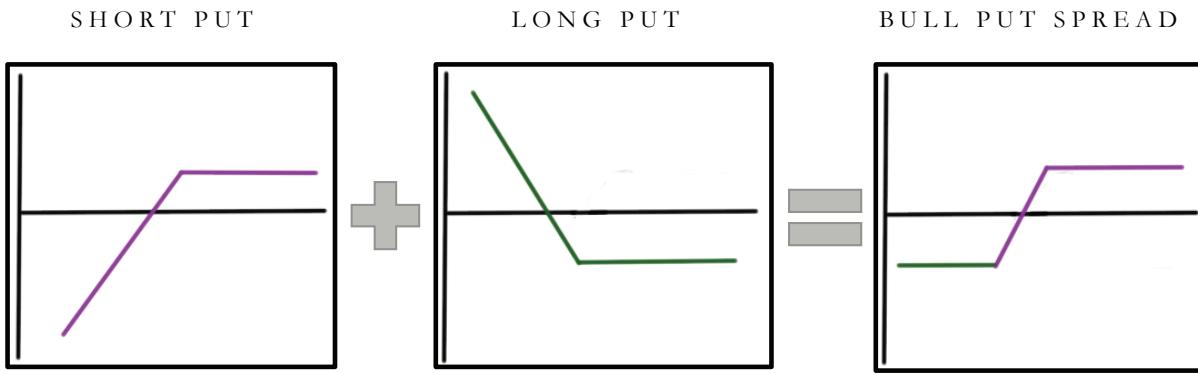
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# BULL PUT SPREAD

- Sell a higher strike put and buy a lower strike put in the same expiration month
- Aka sell a put vertical spread, short put vertical credit spread



Notes: \_\_\_\_\_

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# REMEMBER THAT NAKED PUT?

TAKE THAT, UNLIMITED RISK!

- To the blackboard

Notes: \_\_\_\_\_

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# BULL PUT TRADE PROFILE

- Outlook
  - Neutral to Bullish
- Net Credit/Max Reward
  - Premium received for short put minus premium paid for long put
- Risk
  - Limited to the distance between strike minus the net credit
- Probability of Profit (POP)
  - $1 - \text{delta of short put}$
- Expiration Breakeven
  - Higher strike put minus net credit



Notes: \_\_\_\_\_

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# BULL PUT GREEKS

- Positive Delta
  - Profit as stock rises
- Positive Theta
  - Profit from time decay
- Negative Gamma
  - Rate of losses accelerate as stock falls
- Negative Vega
  - Profit as implied volatility falls



Notes: \_\_\_\_\_

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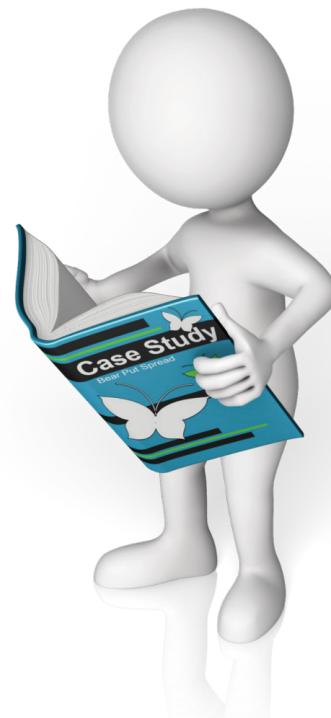
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# BULL PUT CASE STUDY

XYZ IS TRADING FOR \$200

- Sell April 190 put for \$8, delta 25
  - Obligation to buy @ \$190
- Buy April 180 put for \$5
  - Right to sell @ \$180
- Risk-Reward
  - Net credit \$3
  - Max Risk \$7 (\$10 - \$3)
  - Breakeven \$187 (\$190-\$3)
  - Probability of Profit 75%



Notes: \_\_\_\_\_

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# HOW MUCH TIME?

- Long-term
  - More conservative
  - Takes longer to capture max gain
  - Takes longer to incur max loss
- Short-term
  - More aggressive
  - Capture max gain quicker
  - Incur max loss quicker
- Most traders sell short-term put spreads  
(1 to 2 months)



Notes: \_\_\_\_\_

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# WHICH STRIKE PRICE?

## OUT-OF-THE MONEY (OTM)

- Higher probability of profit (POP)
- Wider profit zone
- By using low Delta options, Theta becomes the primary driver for the trade

Notes: \_\_\_\_\_

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# BEAR CALL SPREAD

SELL A CALL VERTICAL SPREAD

Notes: \_\_\_\_\_

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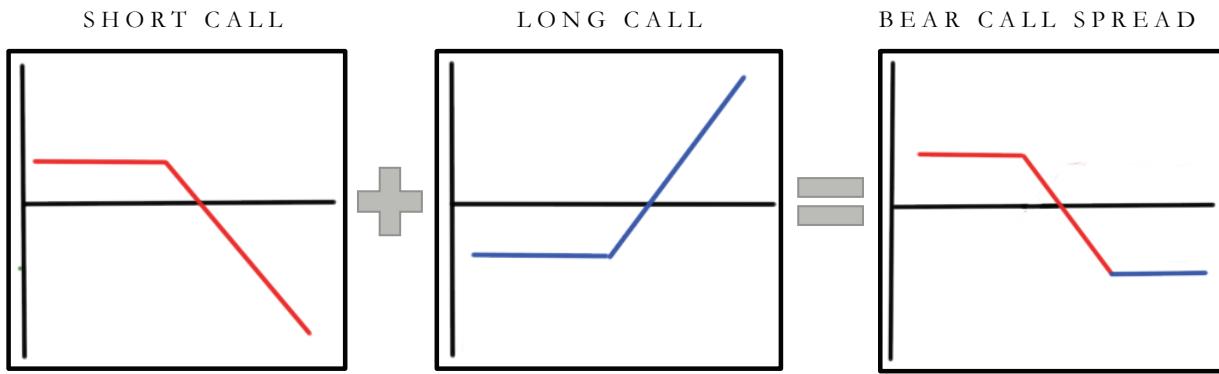
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# BEAR CALL SPREAD

- Sell a lower strike call and buy a higher strike call in the same expiration month
- Aka sell a call vertical spread, short call vertical credit spread



Notes: \_\_\_\_\_

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# REMEMBER THAT NAKED CALL?

TAKE THAT, UNLIMITED RISK!

- To the blackboard

Notes: \_\_\_\_\_

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# BEAR CALL TRADE PROFILE

- Outlook
  - Neutral to Bearish
- Net Credit/Max Reward
  - Premium received for short call minus premium paid for long call
- Risk
  - Limited to the distance between strike minus the net credit
- Probability of Profit (POP)
  - $1 - \text{delta of short call}$
- Expiration Breakeven
  - Lower strike call plus net credit



Notes: \_\_\_\_\_

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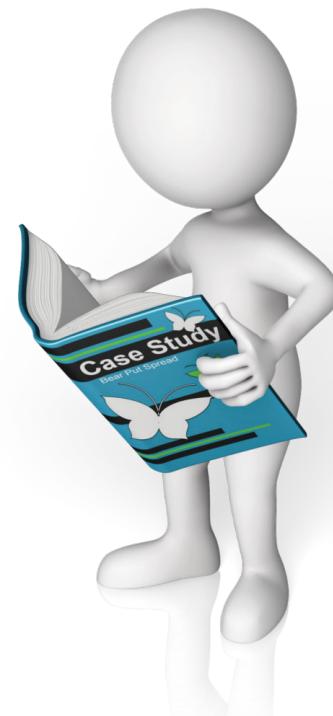
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# BEAR CALL CASE STUDY

XYZ IS TRADING FOR \$150

- Sell April 155 call for \$5, delta 30
  - Obligation to sell @ \$155
- Buy April 160 call for \$3
  - Right to buy @ \$160
- Risk-Reward
  - Net Credit \$2
  - Max Risk \$3 ( $\$5 - \$2$ )
  - Breakeven \$157 ( $\$155 + \$2$ )
  - Probability of Profit 70%



Notes: \_\_\_\_\_

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# BEAR CALL GREEKS

- Negative Delta
  - Profit as stock falls
- Positive Theta
  - Profit from time decay
- Negative Gamma
  - Rate of losses accelerate as stock falls
- Negative Vega
  - Profit as implied volatility falls



Notes: \_\_\_\_\_

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# HOW MUCH TIME?

- Long-term
  - More conservative
  - Takes longer to capture max gain
  - Takes longer to incur max loss
- Short-term
  - More aggressive
  - Capture max gain quicker
  - Incur max loss quicker
- Most traders sell short-term call spreads  
(1 to 2 months)



Notes: \_\_\_\_\_

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# WHICH STRIKE PRICE?

## OUT-OF-THE MONEY (OTM)

- Higher probability of profit (POP)
- Wider profit zone
- By using low Delta options, Theta becomes the primary driver for the trade

Notes: \_\_\_\_\_

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# SUMMARY

- Options spreads offer less risk than selling options naked and a higher probability of profit than buying options outright
- There are 3 major classes of spreads
  - Vertical, horizontal, diagonal
- Bull put spreads offer limited risk alternative to selling naked puts
- Bear call spreads offer limited risk alternative to selling naked calls
- Bull call spreads offer limited risk alternative to buying calls
- Bear put spreads offer limited risk alternative to buying puts



Notes: \_\_\_\_\_

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# **Module 4:**

# **TRADING NEWS AND VOLATILITY**



# NEWS EVENTS

- Options are sensitive to news
  - Stock price can move dramatically
  - Premium can inflate/deflate with implied volatility
- Two categories of news events
  - Unscheduled
    - Mergers
    - Earnings pre-announcements
    - Personnel changes
  - Scheduled
    - Earnings
    - Economic reports

Notes: \_\_\_\_\_

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# EARNINGS

- Public companies release earnings every quarter
- Most reports are issued during “earnings season”
  - Mid January, April, July, and October
  - Focus turns away from economics/politics
- Earnings announcements have two parts
  - Statement
  - Conference call

Notes: \_\_\_\_\_

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# EARNINGS

- There is no excuse for being surprised – Trader's Motto  
Where do we locate the dates and times
  - Calendars
  - Directly on the chart
  - Website resources
- Let's check out a few sources

# EARNINGS

- There are two main methods to play earnings
  - We want stock to move more than expected
  - We want stock to move less than expected
- Another way to think about it
  - We think that options are overpriced
  - We think that options are underpriced

Notes: \_\_\_\_\_

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# HISTORICAL VOLATILITY



- Historical Volatility (HV)
  - The level of volatility exhibited by a stock over a certain time frame
  - Also referred to as realized or statistical volatility

Notes: \_\_\_\_\_

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# IMPLIED VOLATILITY

- Implied Volatility (IV)
  - Expectation of future volatility
  - Derived from option premiums
- Vega measures how much an option will change in value given a 1% change in implied volatility



Notes: \_\_\_\_\_

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# HV AND IV



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# HV AND IV



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# HV AND IV

- Implied volatility (IV) fluctuates
  - Impending news
  - Large pull-back
  - Parabolic moves
- High IV
  - Options expensive
  - Better to sell premium
- Low IV
  - Options inexpensive
  - Better to buy premium
- Most people look at an IV index
- Every option has its own unique IV
- IV is mean reverting
- IV is auto-correlating

Notes: \_\_\_\_\_

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# HV AND IV

| Implied Vola (%) ? | Call Delta ? | Option Value ? | Change (%)      | Call Bid/Ask Mean ? | Expiry ?     | Strike ? Days | Put Bid/Ask Mean ? | Change (%)        | Option Value ? | Put Delta ? | Implied Vola (%) ? |
|--------------------|--------------|----------------|-----------------|---------------------|--------------|---------------|--------------------|-------------------|----------------|-------------|--------------------|
| 26.72%             | 55.90%       | 10.3000        | 1.95<br>(23.35) | 10.300              | Mar 13, 2015 | 477.5 11      | 7.600              | -3.30<br>(-30.28) | 7.6000         | -44.14%     | 26.92%             |
| 26.55%             | 51.41%       | 8.9500         | 1.82<br>(25.61) | 8.950               | Mar 13, 2015 | 480.0 11      | 8.775              | -3.55<br>(-28.80) | 8.7750         | -48.59%     | 26.84%             |
| 26.50%             | 46.90%       | 7.7500         | 1.10<br>(16.54) | 7.750               | Mar 13, 2015 | 482.5 11      | 10.625             | -2.52<br>(-19.20) | 10.6250        | -52.77%     | 28.46%             |
| 26.26%             | 42.37%       | 6.6000         | 1.20<br>(22.22) | 6.600               | Mar 13, 2015 | 485.0 11      | 11.475             | -4.00<br>(-25.85) | 11.4750        | -57.49%     | 26.70%             |
| 27.20%             | 55.04%       | 12.9750        | 2.00<br>(18.22) | 12.975              | Mar 20, 2015 | 477.5 18      | 10.250             | -3.27<br>(-24.21) | 10.2500        | -44.97%     | 27.35%             |
| 27.14%             | 51.60%       | 11.6750        | 1.80<br>(18.23) | 11.675              | Mar 20, 2015 | 480.0 18      | 11.475             | -3.42<br>(-22.99) | 11.4750        | -48.40%     | 27.34%             |
| 26.99%             | 48.14%       | 10.4250        | 1.57<br>(17.80) | 10.425              | Mar 20, 2015 | 482.5 18      | 12.725             | -3.60<br>(-22.05) | 12.7250        | -51.85%     | 27.18%             |
| 26.88%             | 44.68%       | 9.2750         | 1.42<br>(18.15) | 9.275               | Mar 20, 2015 | 485.0 18      | 14.125             | -3.67<br>(-20.65) | 14.1250        | -55.25%     | 27.18%             |

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# HV AND IV



Notes: \_\_\_\_\_

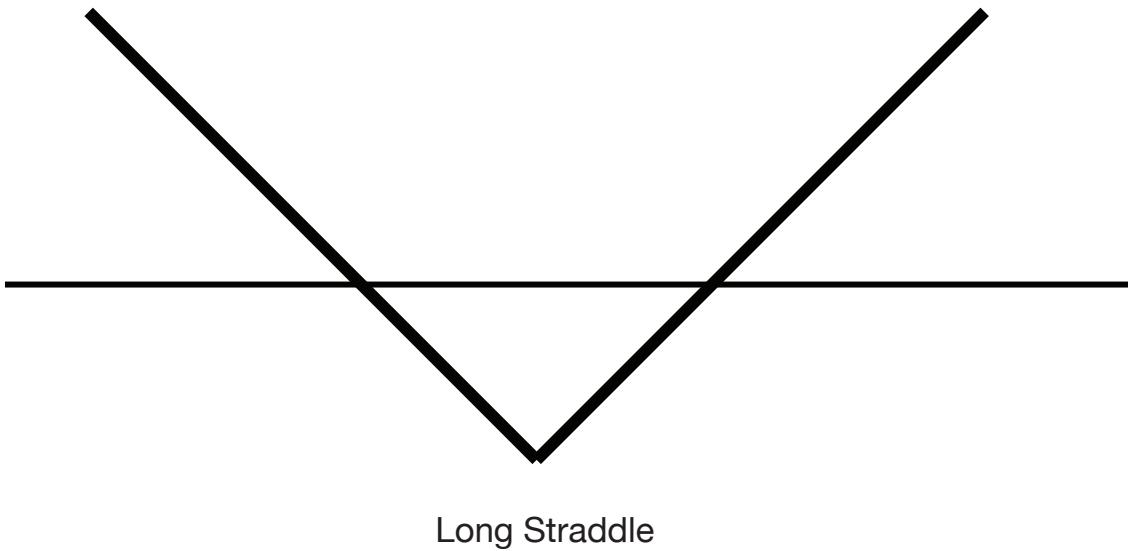
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# LONG STRADDLE/STRANGLE



Notes: \_\_\_\_\_

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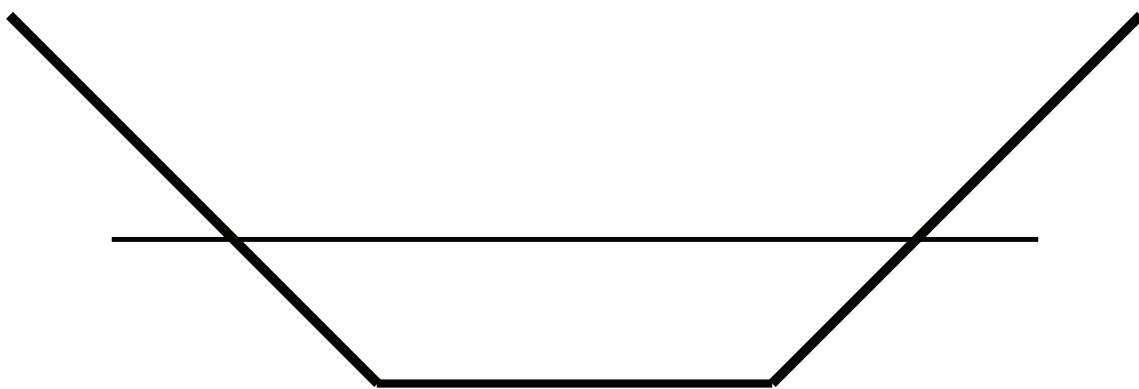
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# LONG STRADDLE/STRANGLE



Long Strangle

Notes: \_\_\_\_\_

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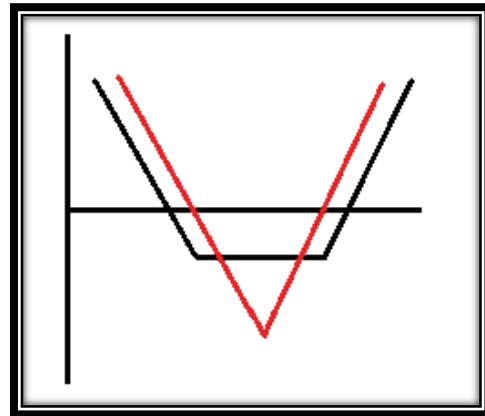
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# LONG STRADDLE/LONG STRANGLE PROFILES

- Outlook
  - Bi-directional
- Max Reward
  - Unlimited
- Risk
- Net debit/cost of trade
- Probability of Profit (POP)
  - Use a risk graph
- Break-evens
  - Call strike + total debit
  - Put strike – total debit



Notes: \_\_\_\_\_

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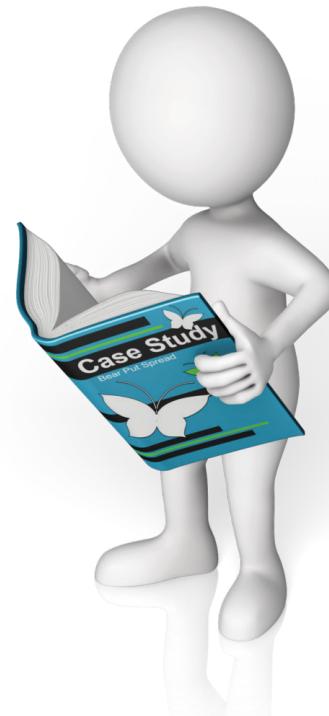
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# LONG STRANGLE CASE STUDY

XYZ IS TRADING FOR \$50

- Buy April 55 call for \$3, Delta 0.25
  - Right to buy @ \$55
- Buy April 45 put for \$3, Delta 0.25
  - Right to sell @ \$45
- Risk-Reward
  - Net debit \$6
  - Max Risk \$6
  - Two break-evens
  - Probability of profit less than 50%



Notes: \_\_\_\_\_

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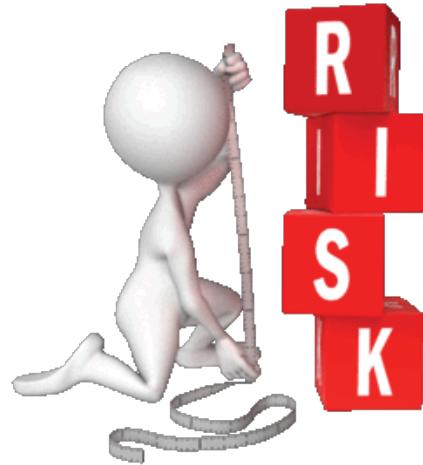
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# LONG STRADDLE/STRANGLE GREEKS

- Neutral Delta
  - We don't have a directional opinion
- Negative Theta
  - Time decay hurts
- Positive Gamma
  - Delta increases as stock moves in the same direction
- Positive Vega
  - Profit as implied volatility rises



Notes: \_\_\_\_\_

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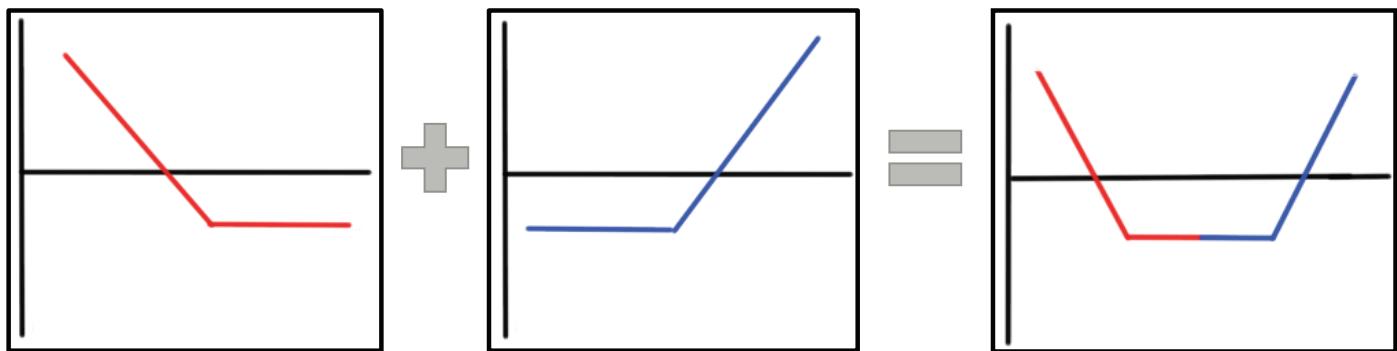
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# LONG STRADDLE/STRANGLE



Notes: \_\_\_\_\_

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# LONG STRADDLE/STRANGLE

- STRADDLE = BTO calls + BTO an equal number of puts with the same expiration month and same strikes
- STRANGLE = BTO calls + BTO an equal number of puts with same expiration and different strikes

Notes: \_\_\_\_\_

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# # 1 FINDING CANDIDATES

- Enter 3-8 weeks prior to the known event
  - Give the stock time to move
  - Lower option prices (lower IV)
- Look at stocks that are trading over \$30.00 per share
- Have history of moving dramatically prior to earnings
- Specifically, look for stocks that have a history of moving at least 15% in a 1.5 month window
- Verify past movement

Notes: \_\_\_\_\_

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# # 1 FINDING CANDIDATES

| Filters: 3                   |             | Descriptive(2)               |       | Fundamental                   |                | Technical(1)            |       | All(3)                    |           |
|------------------------------|-------------|------------------------------|-------|-------------------------------|----------------|-------------------------|-------|---------------------------|-----------|
| Exchange                     | Any ▾       | Index                        | Any ▾ | Sector                        | Any ▾          | Industry                | Any ▾ | Country                   | Any ▾     |
| Market Cap.                  | Any ▾       | P/E                          | Any ▾ | Forward P/E                   | Any ▾          | PEG                     | Any ▾ | P/S                       | Any ▾     |
| P/B                          | Any ▾       | Price/Cash                   | Any ▾ | Price/Free Cash Flow          | Any ▾          | EPS growth this year    | Any ▾ | EPS growth next year      | Any ▾     |
| EPS growth past 5 years      | Any ▾       | EPS growth next 5 years      | Any ▾ | Sales growth past 5 years     | Any ▾          | EPS growth qtr over qtr | Any ▾ | Sales growth qtr over qtr | Any ▾     |
| Dividend Yield               | Any ▾       | Return on Assets             | Any ▾ | Return on Equity              | Any ▾          | Return on Investment    | Any ▾ | Current Ratio             | Any ▾     |
| Quick Ratio                  | Any ▾       | LT Debt/Equity               | Any ▾ | Debt/Equity                   | Any ▾          | Gross Margin            | Any ▾ | Operating Margin          | Any ▾     |
| Net Profit Margin            | Any ▾       | Payout Ratio                 | Any ▾ | Insider Ownership             | Any ▾          | Insider Transactions    | Any ▾ | Institutional Ownership   | Any ▾     |
| Institutional Transactions   | Any ▾       | Float Short                  | Any ▾ | Analyst Recom.                | Any ▾          | Option/Short            | Any ▾ | Earnings Date             | Any ▾     |
| Performance                  | Any ▾       | Performance 2                | Any ▾ | Volatility                    | Month - Over ▾ | RSI (14)                | Any ▾ | Gap                       | Any ▾     |
| 20-Day Simple Moving Average | Any ▾       | 50-Day Simple Moving Average | Any ▾ | 200-Day Simple Moving Average | Any ▾          | Change                  | Any ▾ | Change from Open          | Any ▾     |
| 20-Day High/Low              | Any ▾       | 50-Day High/Low              | Any ▾ | 52-Week High/Low              | Any ▾          | Pattern                 | Any ▾ | Candlestick               | Any ▾     |
| Beta                         | Any ▾       | Average True Range           | Any ▾ | Average Volume                | Over 500K ▾    | Relative Volume         | Any ▾ | Current Volume            | Any ▾     |
| Price                        | Over \$30 ▾ |                              |       |                               |                |                         |       |                           | Reset (3) |

- [www.finviz.com](http://www.finviz.com)
- Enter the criteria

Notes: \_\_\_\_\_

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# # 1 FINDING CANDIDATES

| No. | ▲ Ticker | Company                                  | Sector           | Industry                          | Country        | Market Cap | P/E    | Price  | Change | Volume     |
|-----|----------|--|------------------|-----------------------------------|----------------|------------|--------|--------|--------|------------|
| 1   | AGIO     | Agios Pharmaceuticals, Inc.              | Healthcare       | Biotechnology                     | USA            | 3.93B      | -      | 105.66 | -2.07% | 361,393    |
| 2   | CRR      | CARBO Ceramics Inc.                      | Basic Materials  | Oil & Gas Equipment & Services    | USA            | 847.16M    | 15.10  | 36.39  | 0.55%  | 389,061    |
| 3   | CYBR     | CyberArk Software, Ltd.                  | Technology       | Business Software & Services      | Israel         | 1.77B      | 725.25 | 58.02  | 0.48%  | 1,365,164  |
| 4   | DO       | Diamond Offshore Drilling, Inc.          | Basic Materials  | Oil & Gas Drilling & Exploration  | USA            | 4.16B      | 10.79  | 30.33  | -1.08% | 1,631,462  |
| 5   | EMES     | Emerge Energy Services LP                | Basic Materials  | Oil & Gas Equipment & Services    | USA            | 1.28B      | 16.44  | 53.77  | 4.71%  | 401,495    |
| 6   | GPRO     | GoPro, Inc.                              | Consumer Goods   | Photographic Equipment & Supplies | USA            | 5.20B      | 54.46  | 40.30  | 0.93%  | 4,312,769  |
| 7   | GTLS     | Chart Industries Inc.                    | Industrial Goods | Metal Fabrication                 | USA            | 1.14B      | 14.05  | 37.23  | 4.52%  | 1,000,386  |
| 8   | HLF      | Herbalife Ltd.                           | Consumer Goods   | Personal Products                 | Cayman Islands | 2.88B      | 9.35   | 31.24  | 2.63%  | 1,691,279  |
| 9   | ICPT     | Intercept Pharmaceuticals, Inc.          | Healthcare       | Drug Manufacturers - Major        | USA            | 5.58B      | -      | 247.36 | 9.67%  | 831,654    |
| 10  | JUNO     | Juno Therapeutics Inc.                   | Healthcare       | Biotechnology                     | USA            | 4.35B      | -      | 48.06  | 3.24%  | 565,017    |
| 11  | KITE     | Kite Pharma, Inc.                        | Healthcare       | Biotechnology                     | USA            | 2.60B      | -      | 61.47  | -4.13% | 1,015,295  |
| 12  | LL       | Lumber Liquidators Holdings, Inc.        | Services         | Home Improvement Stores           | USA            | 1.10B      | 16.92  | 40.78  | 5.02%  | 17,095,024 |
| 13  | NBIX     | Neurocrine Biosciences Inc.              | Healthcare       | Drugs - Generic                   | USA            | 3.45B      | -      | 40.86  | 1.06%  | 1,136,733  |
| 14  | NUS      | Nu Skin Enterprises Inc.                 | Consumer Goods   | Personal Products                 | USA            | 3.09B      | 16.74  | 52.07  | -0.72% | 812,068    |
| 15  | PCYC     | Pharmacyclics Inc.                       | Healthcare       | Biotechnology                     | USA            | 16.48B     | 200.71 | 216.76 | -2.04% | 1,494,794  |
| 16  | PDCE     | PDC Energy, Inc.                         | Basic Materials  | Independent Oil & Gas             | USA            | 1.94B      | 18.44  | 54.04  | 1.43%  | 1,290,070  |
| 17  | RCPT     | Receptos, Inc.                           | Healthcare       | Biotechnology                     | USA            | 3.94B      | -      | 124.99 | -1.65% | 399,257    |
| 18  | RDUS     | Radius Health, Inc.                      | Healthcare       | Biotechnology                     | USA            | 1.62B      | -      | 43.87  | -0.70% | 333,237    |
| 19  | SCO      | ProShares UltraShort Bloomberg Crude Oil | Financial        | Exchange Traded Fund              | USA            | -          | -      | 74.91  | -2.14% | 1,514,265  |
| 20  | SHAK     | Shake Shack Inc.                         | Services         | Specialty Eateries                | USA            | 1.62B      | 893.60 | 44.68  | -1.76% | 657,389    |

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# #2 VERIFY MOVEMENT

- Check to see if the stock has a history of moving up/down at least 15% over 1.5 months prior to earnings
- We would like to see this degree of movement at least twice out of the last four earnings announcements

Notes: \_\_\_\_\_

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# #2 VERIFY MOVEMENT



Notes: \_\_\_\_\_  
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# #3 ENTER WHEN IV IS LOW

- Check the IV for the given stock
- Note the high/low for the last 12 months
- We want IV in the bottom 1/3 of its 12-month range
- When IV is lower than normal, then options could be inexpensive
- IV will increase closer to earnings
- See the article “Putting Volatility to Work”

Notes: \_\_\_\_\_

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# #3 ENTER WHEN IV IS LOW



# #4 EXPIRATION DATE

- If we BTO 1 month options, we will suffer strong time decay (-) Theta
- If we BTO 3 - 5 month options, we give up some Delta growth (Gamma), but in return we suffer a smaller amount of time decay (Theta)
- If 4 month contracts are not available, then go to the 3 month expiry before looking at 5 month expiry
- Do not BTO less than 3 month expiry

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# #5 DELTA NEUTRAL

- To build a long **straddle**
  - BTO ATM call/put
  - Net Delta between the call/put  $\leq 0.05$

Example:

- If the stock is not on a strike, we might want to use a long strangle
- To build a long **strangle**
  - Enter the trade with an OTM call and put
  - Net Delta between the call/put  $\leq 0.05$
  - Delta on each leg must be  $\geq 0.25$

Example:

Notes: \_\_\_\_\_

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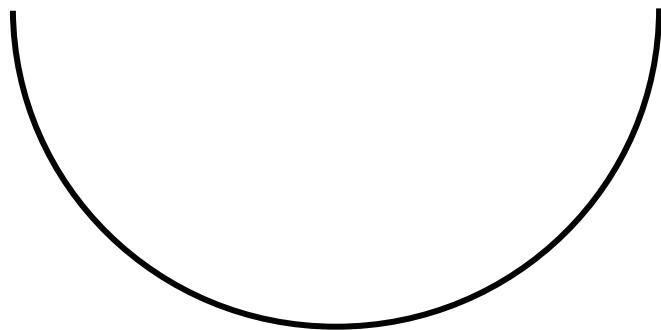
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# #5 DELTA NEUTRAL

XYZ \$50

BTO 55.00 Call Delta= 0.25 0.30 0.35 0.41 0.47 0.53 0.58

BTO 45.00 Put Delta= -0.25 -0.21 -0.18 -0.16 -0.14 -0.12 -0.10



BTO 55 call @ 1.50

After a \$7.00 dollar move:

BTO 45 put @ 1.60

55C = 4.39

Net debit = 3.10

45P = .44

Trade = 4.80 (rounded down)

- Cost 3.10

1.70 Gain or 55%

Notes: \_\_\_\_\_

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# HLF LONG STRADDLE

| Herbalife Ltd   |       |                          |       |          |       |  |           |   |       | Time & Sales   Chart   Volatility View   News |       |          |        |  |
|---|-------|--------------------------|-------|----------|-------|--|-----------|---|-------|---|-------|----------|--------|--|
| Symbol  | Last  | Change                   | Bid   | Ask      | High  | Low  | Volume    | Chart   |       |   |       |          |        |  |
| HLF   | 31.45 | +0.21▲                   | 31.40 | 31.88    | 31.68 | 30.32  | 1,879,150 |  |       |   |       |          |        |  |
| Dividend Information*   |       |                          |       |          |       |  |           |   |       |   |       |          |        |  |
| <input type="checkbox"/> Include Dividends  | n/a   | n/a                      | n/a   | 1.00     | %     |  |           |   |       |   |       |          |        |  |
| HLF Expiration Months: MarWk1   MarWk2   MarWk4   AprWk1   AprWk2   Mar15   Apr15   May15   Jun15   Aug15   Jan16   Jan17 |       |                          |       |          |       |  |           |   |       |   |       |          |        |  |
| Calls   |       |                          |       |          |       |  |           | Puts  |       |   |       |          |        |  |
| Last  | Chg   | Bid                      | Ask   | Imp. Vol | Delta | Action   | Strike ▾  | Last  | Chg   | Bid   | Ask   | Imp. Vol | Delta  | Action   |
| <input checked="" type="checkbox"/> Jun15 Calls   |       | (107 days to expiration) |       |          |       |  |           | HLF @ 31.45   |       |   |       |          |        |  |
| 13.70   | 0     | 10.20                    | 10.70 | 80.5     | .8396 | Trade   Detail <input type="checkbox"/>            | 22.50     | 1.92  | -0.18 | 1.77  | 1.92  | 90.1     | -.1745 | Trade   Detail <input type="checkbox"/>            |
| 9.30  | 0     | 8.35                     | 8.85  | 76.8     | .7785 | Trade   Detail <input type="checkbox"/>            | 25.00     | 2.84  | 0     | 2.45  | 2.62  | 85.7     | -.2318 | Trade   Detail <input type="checkbox"/>            |
| 6.49  | -1.81 | 6.75                     | 7.20  | 74.3     | .7061 | Trade   Detail <input type="checkbox"/>            | 27.50     | 3.80  | +0.15 | 3.30  | 3.55  | 82.5     | -.2979 | Trade   Detail <input type="checkbox"/>            |
| 5.15  | -0.40 | 5.30                     | 5.70  | 71.2     | .6265 | Trade   Detail <input type="checkbox"/>            | 30.00     | 4.95  | -0.05 | 4.35  | 4.60  | 79.2     | -.3702 | Trade   Detail <input type="checkbox"/>            |
| 4.45  | +0.24 | 4.30                     | 4.60  | 71.7     | .5466 | Trade   Detail <input checked="" type="checkbox"/> | 32.50     | 5.80  | +0.05 | 5.65  | 6.00  | 77.9     | -.4443 | Trade   Detail <input checked="" type="checkbox"/> |
| 3.20  | -0.15 | 3.15                     | 3.50  | 68.2     | .4614 | Trade   Detail <input type="checkbox"/>            | 35.00     | 7.30  | -0.90 | 7.15  | 7.50  | 76.4     | -.5179 | Trade   Detail <input type="checkbox"/>            |
| 2.49  | -0.21 | 2.39                     | 2.69  | 67.1     | .3843 | Trade   Detail <input type="checkbox"/>            | 37.50     | 9.60  | 0     | 8.85  | 9.20  | 75.4     | -.5868 | Trade   Detail <input type="checkbox"/>            |
| 1.80  | -0.30 | 1.92                     | 2.09  | 67.7     | .3209 | Trade   Detail <input type="checkbox"/>            | 40.00     | 11.50   | 0     | 10.60   | 11.15 | 74.7     | -.6499 | Trade   Detail <input type="checkbox"/>            |

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# HLF LONG STRANGLE

| Herbalife Ltd   |       |                          |       |          |       |  |            |   |            | <a href="#">Time &amp; Sales</a>   <a href="#">Chart</a>   <a href="#">Volatility View</a>   <a href="#">News</a> |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
|---|-------|--------------------------|-------|----------|-------|--|------------|---|------------|---|-------|----------|-------|--|--|--|--|--|--|--|--|--|--|--|
| Symbol  | Last  | Change                   | Bid   | Ask      | High  | Low  | Volume     | Chart   |            |   |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
| HLF   | 31.45 | +0.21 ▲                  | 31.40 | 31.88    | 31.68 | 30.32  | 1,879,150  |  |            |   |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
| <b>Dividend Information*</b>  |       |                          |       |          |       |  |            |   |            |   |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Include Dividends  |       | n/a                      | n/a   | n/a      | 1.00  | %  |            |   |            |   |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
| HLF Expiration Months: <a href="#">MarWk1</a>   <a href="#">MarWk2</a>   <a href="#">MarWk4</a>   <a href="#">AprWk1</a>   <a href="#">AprWk2</a>   <a href="#">Mar15</a>   <a href="#">Apr15</a>   <a href="#">May15</a>   <a href="#">Jun15</a>   <a href="#">Aug15</a>   <a href="#">Jan16</a>   <a href="#">Jan17</a> |       |                          |       |          |       |  |            |   |            |   |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
| <b>Calls</b>  |       |                          |       |          |       |  |            |   |            |   |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
| Last  | Chg   | Bid                      | Ask   | Imp. Vol | Delta | Action   | ▲ Strike ▼ | Last  | Chg        | Bid   | Ask   | Imp. Vol | Delta | Action   |  |  |  |  |  |  |  |  |  |  |
| <input checked="" type="checkbox"/> Jun15 Calls   |       | (107 days to expiration) |       |          |       | HLF @ 31.45  |            |   | Jun15 Puts |   |       |          |       |  |  |  |  |  |  |  |  |  |  |  |
| 13.70   | 0     | 10.20                    | 10.70 | 80.5     | .8396 | Trade   Detail  | 22.50      | 1.92  | -0.18      | 1.77  | 1.92  | 90.1     | -1745 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |
| 9.30  | 0     | 8.35                     | 8.85  | 76.8     | .7785 | Trade   Detail  | 25.00      | 2.84  | 0          | 2.45  | 2.62  | 85.7     | -2318 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |
| 6.49  | -1.81 | 6.75                     | 7.20  | 74.3     | .7061 | Trade   Detail  | 27.50      | 3.80  | +0.15      | 3.30  | 3.55  | 82.5     | -2979 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |
| 5.15  | -0.40 | 5.30                     | 5.70  | 71.2     | .6265 | Trade   Detail  | 30.00      | 4.95  | -0.05      | 4.35  | 4.60  | 79.2     | -3702 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |
| 4.45  | +0.24 | 4.30                     | 4.60  | 71.7     | .5466 | Trade   Detail  | 32.50      | 5.80  | +0.05      | 5.65  | 6.00  | 77.9     | -4443 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |
| 3.20  | -0.15 | 3.15                     | 3.50  | 68.2     | .4614 | Trade   Detail  | 35.00      | 7.30  | -0.90      | 7.15  | 7.50  | 76.4     | -5179 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |
| 2.49  | -0.21 | 2.39                     | 2.69  | 67.1     | .3843 | Trade   Detail  | 37.50      | 9.60  | 0          | 8.85  | 9.20  | 75.4     | -5868 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |
| 1.80  | -0.30 | 1.92                     | 2.09  | 67.7     | .3209 | Trade   Detail  | 40.00      | 11.50   | 0          | 10.60   | 11.15 | 74.7     | -6499 | Trade   Detail  |  |  |  |  |  |  |  |  |  |  |

Notes: \_\_\_\_\_

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# LONG STRADDLE VS. LONG STRANGLE

## Long Straddle Order:

BTO 1 June 32.5 call @ \_\_\_\_ Net Delta = \_\_\_\_

BTO 1 June 32.5 put @ \_\_\_\_ Limit debit = \_\_\_\_

## Long Strangle Order:

BTO 1 June 40 call @ \_\_\_\_ Net Delta = \_\_\_\_

BTO 1 June 27.5 put @ \_\_\_\_ Limit Debit = \_\_\_\_

- We will negotiate the lowest net debit possible

Notes: \_\_\_\_\_

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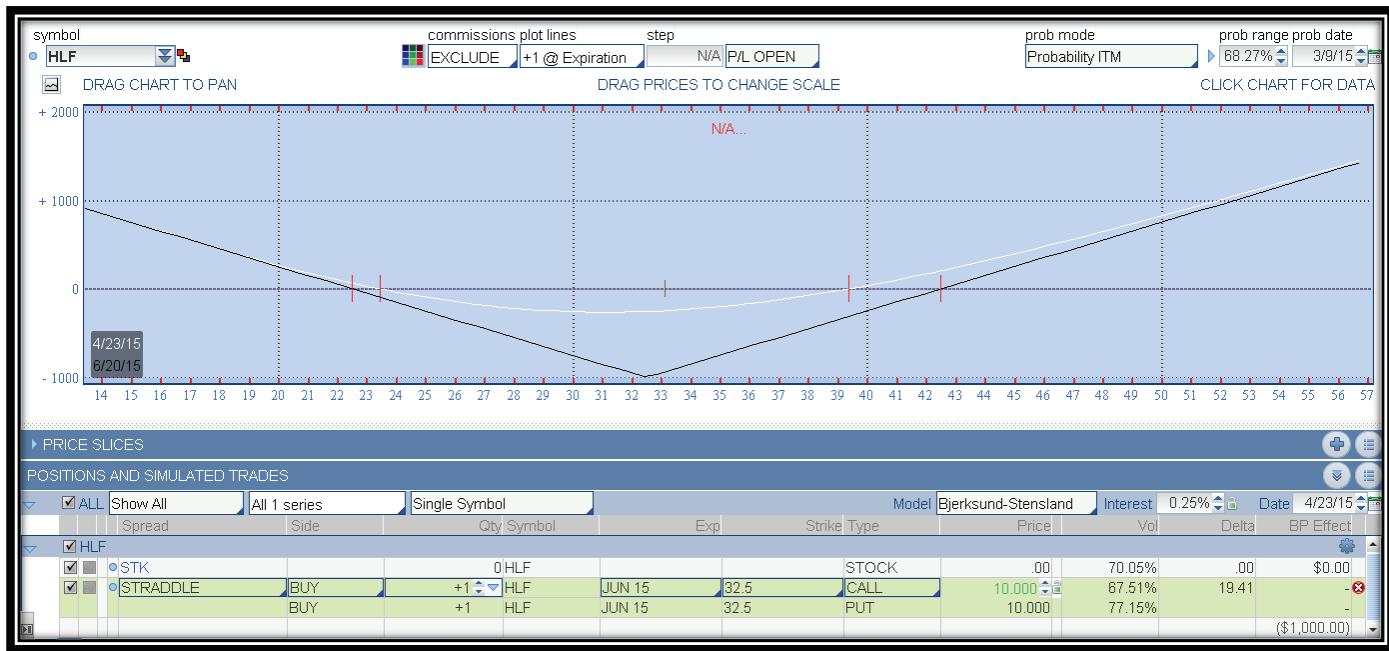
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# LONG STRADDLE



Notes: \_\_\_\_\_

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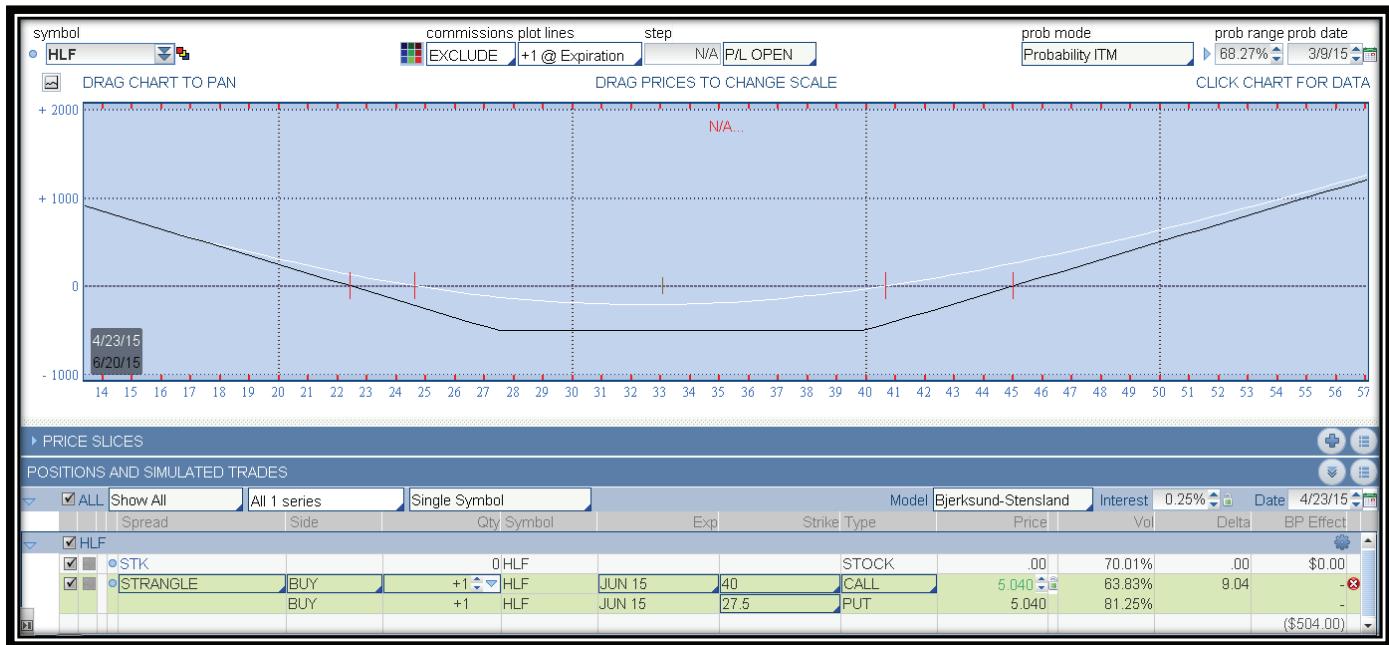
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# LONG STRANGLE



Notes: \_\_\_\_\_

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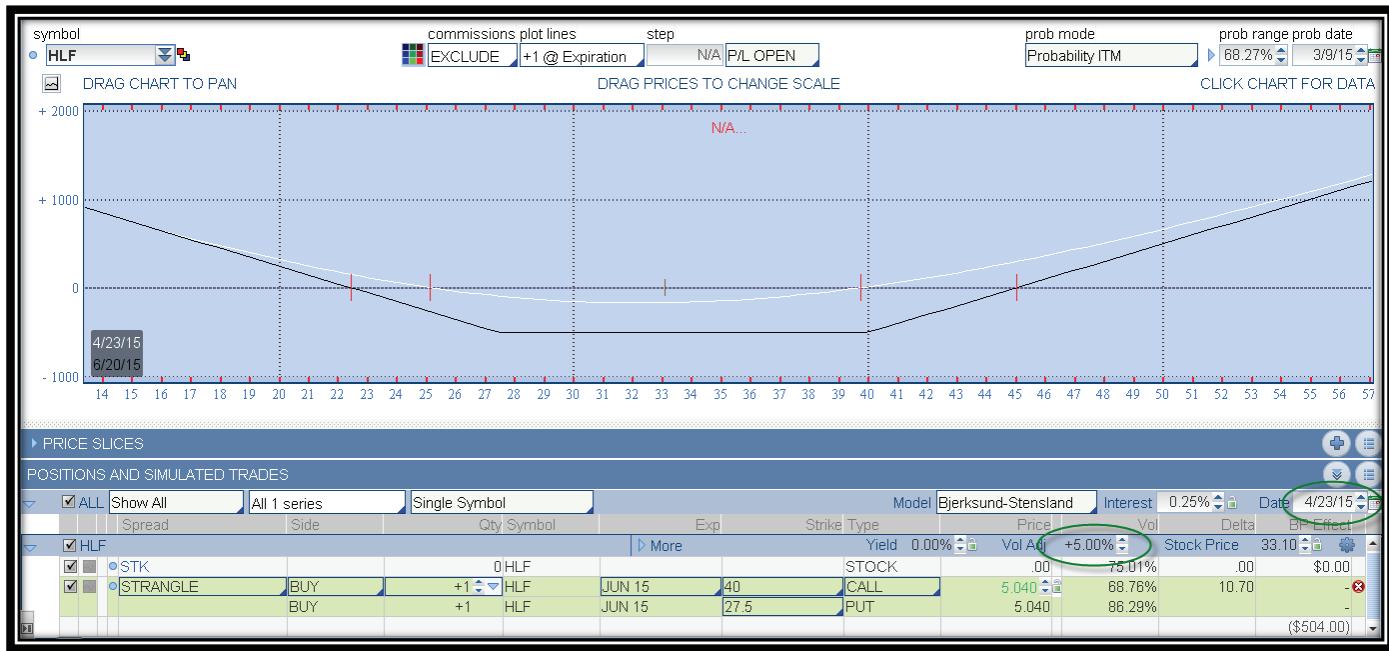
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# LONG STRANGLE



# LONG STRANGLE

Ticker \_\_\_\_\_ Current price \_\_\_\_\_ Date \_\_\_\_\_

BTO \_\_\_\_\_ (-) \_\_\_\_\_

BTO \_\_\_\_\_ (-) \_\_\_\_\_

Max gain \_\_\_\_\_ Unlimited

Max loss \_\_\_\_\_ Total net debit

High breakeven @ expiry \_\_\_\_\_ High strike + debit

Low breakeven @ expiry \_\_\_\_\_ Low strike - debit

Notes: \_\_\_\_\_

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# LONG STRANGLE

- When expected move, or profit target, is achieved
- Expected move not achieved
  - If the stock has a history of moving, then exit post earnings
  - Volatility crush
- Close the trade before the news is released
  - IV is still high
  - Miss out on potential gap
- Legging out

Notes: \_\_\_\_\_

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# SHORT STRANGLE



Notes: \_\_\_\_\_

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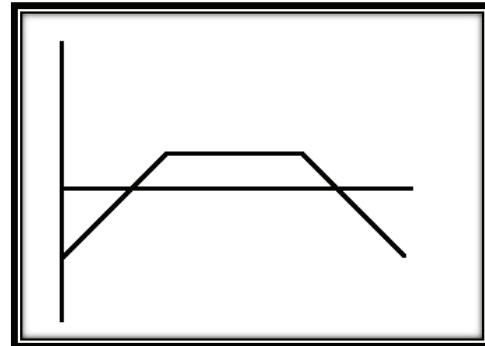
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# SHORT STRANGLE

- Outlook
  - Neutral
- Max Reward
  - Net credit
- Risk
  - Unlimited
- Probability of Profit (POP)
  - $1.00 - (\text{Delta of short put} + \text{Delta of short call})$
- Break-evens
  - Call strike + total net credit
  - Put strike – total net credit



Notes: \_\_\_\_\_

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# SHORT STRANGLE GREEKS

- Neutral Delta
  - We don't have a directional opinion
- Positive Theta
  - Time decay helps
- Negative Gamma
  - Delta increases as stock keeps moving in the same direction
- Negative Vega
  - Profit as implied volatility drops
  - Want stock to calm down



Notes: \_\_\_\_\_

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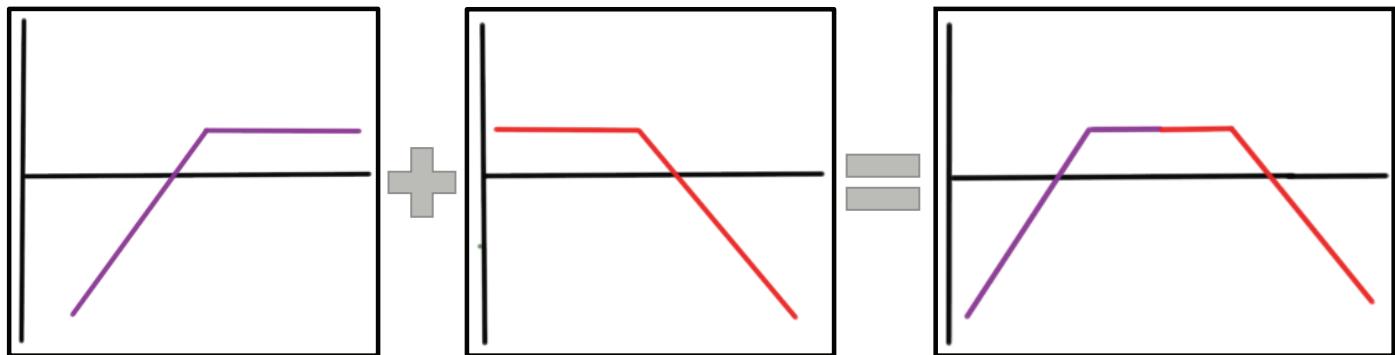
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# SHORT STRANGLE



Notes: \_\_\_\_\_

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# SHORT STRANGLE CASE STUDY

XYZ IS TRADING FOR \$50

- Sell April 60 call for \$1, Delta 0.15
  - Obligation to sell @ \$60
- Sell April 40 put for \$1, Delta 0.15
  - Obligation to buy @ \$40
- Risk-Reward
  - Net credit \$2
  - Unlimited risk
  - Two break-evens
  - Probability of max gain through expiration = 70%



Notes: \_\_\_\_\_

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# SHORT STRANGLE RULES

- Stock price  $\leq \$50$
- Close to expiration
  - 2 – 60 days out
  - Time decay accelerating
- Contract Delta  $\leq 0.20$  (high probability)
- IV higher than normal
- Short put strike below support
- Short call strike above resistance
- Be aware of earnings
  - IV high – more credit
  - Stock could gap beyond strikes

Notes: \_\_\_\_\_

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# SHORT STRANGLE MARGIN

- The writing of uncovered options requires an initial deposit and maintenance of the greatest of the following three formulas:
  - 20% of the underlying stock less the out-of-the-money amount, if any, plus 100% of the current market value of the option(s).
  - 10% of the exercise value of the underlying stock PLUS the premium value.
  - \$50 per contract plus 100% of the premium
- Margin held on one side only – the side that is closest to the current stock price

Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE



Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE

- Example with QIHU
  - QIHU is announcing earnings
  - QIHU @ 47.62
  - Date: 3/9/2015
  - IV is higher than normal

STO (1) April 60 call @ \$0.75 credit Delta = 0.17

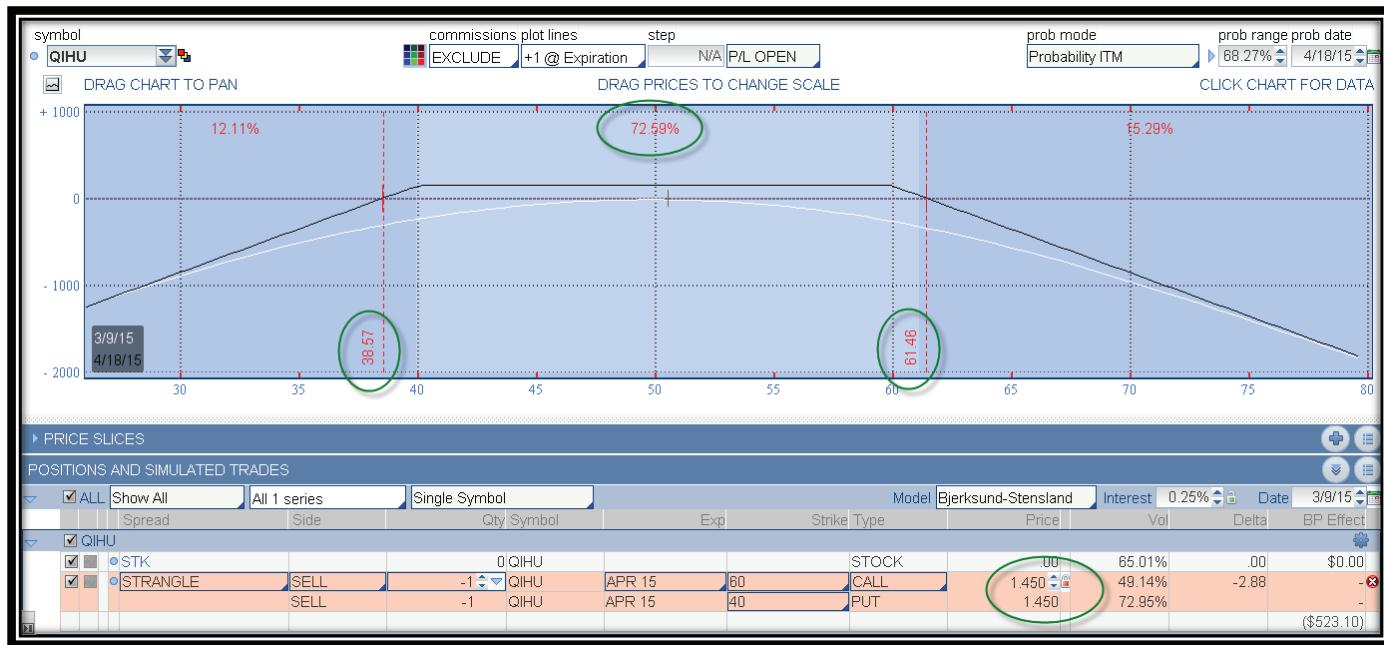
STO (1) April 40 put @ \$0.65 credit Delta = 0.15

Net credit = \$1.40

Net Delta = 0.02 (close to 0.00)

Margin required to place trade = (\$522.60)

# SHORT STRANGLE EXAMPLE



# SHORT STRANGLE EXAMPLE



Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE

- Max gain = total net credit \_\_\_\_\_
  - What has to happen:
  - QIHU above \_\_\_\_\_
  - QIHU below \_\_\_\_\_
  - When \_\_\_\_\_
- Max loss = unlimited
- Breakevens @ expiration
  - Higher
  - Lower
- Closing prior to expiration
  - IV drops
  - Time passes

Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE

- Position sizing
- Willing loss per trade ÷ loss at the short strike = number of contracts



Notes: \_\_\_\_\_  
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# SUMMARY

- Earnings Season
- High Implied Volatility
- Low Implied Volatility
- Long Straddle/Strangle
- Short Strangle



Notes: \_\_\_\_\_

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# Module 5: DIAGONAL AND HORIZONTAL SPREADS



# TABLE OF SPREADS

| April | May | Aug | Oct | Jan |
|-------|-----|-----|-----|-----|
| 100   | 100 | 100 | 100 | 100 |
| 105   | 105 | 105 | 105 | 105 |
| 110   | 110 | 110 | 110 | 110 |

Notes: \_\_\_\_\_

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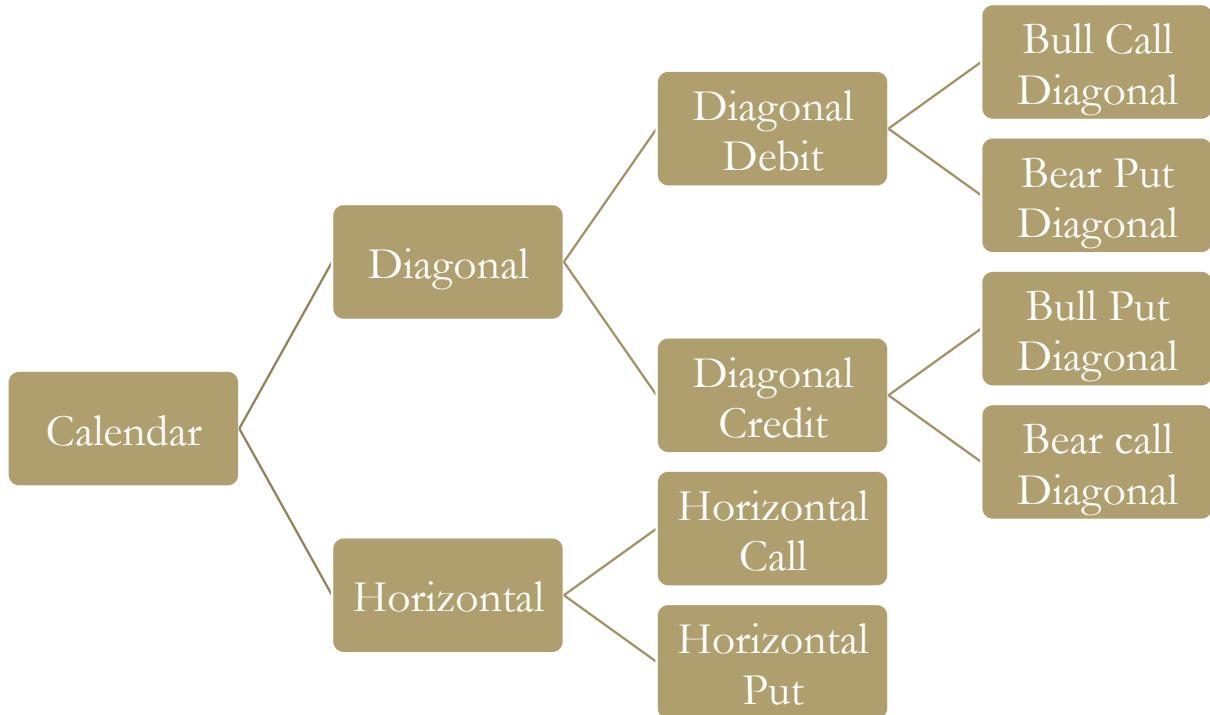
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# CALENDAR SPREADS



Notes: \_\_\_\_\_

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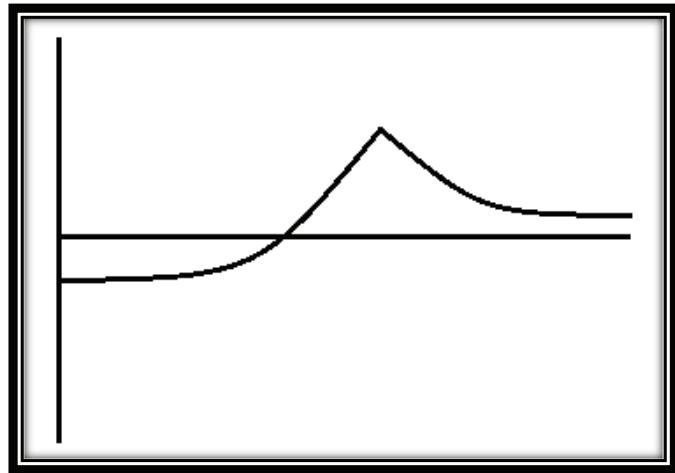
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# BULL CALL DIAGONAL

- Outlook
  - Neutral to bullish
- Max Reward
  - Limited
- Risk
  - Limited to the net debit
- Break-evens
  - 1-2 break-evens
  - Use risk graph
- Probability of profit
  - Use risk graph



Notes: \_\_\_\_\_

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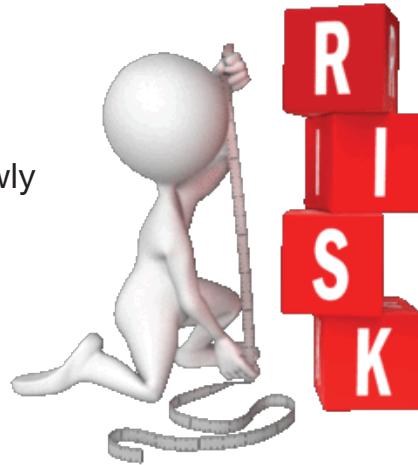
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# BULL CALL DIAGONAL

- Positive Delta
  - Slightly bullish
- Positive Theta
  - Time decay helps
- Neutral Gamma
  - Low net Gamma
  - As stock rises Delta changes slowly from (+) to (-)
- Positive Vega
  - Profit as implied volatility rises
  - Function of long call



Notes: \_\_\_\_\_

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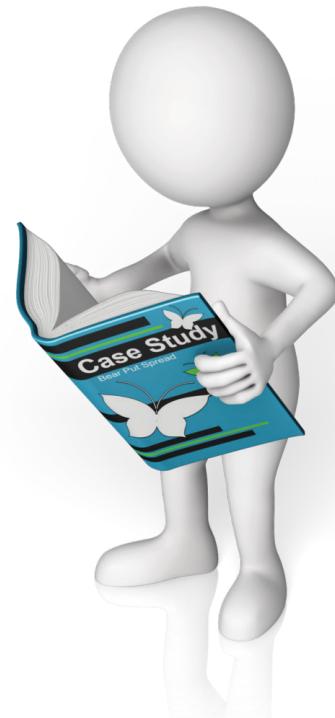
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# BULL CALL CASE STUDY

XYZ IS TRADING FOR \$100

- Date: March 9th, 2015
- Sell April 105 call for \$1.85, Delta 0.15
  - Obligation to sell @ \$60
- Buy July 95 call for \$6, Delta 0.85
  - Right to buy @ \$95
- Risk-Reward
  - Net debit = \$4.15
  - Limited reward
  - 1-2 break-evens
  - Probability of max gain through expiration = see risk graph (too complex)



Notes: \_\_\_\_\_

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# BULL CALL DIAGONAL RULES

- Stock over \$50
- STO near term + BTO long term
- BTO 2-12 months out and 1-2 strikes ITM
- STO 2-60 days out
  - STO ATM – neutral
  - STO OTM – bullish
- Try to enter when IV is low
- Short contract premium  $\geq$  10% of long contract premium
- Equal number of contracts on each leg

Notes: \_\_\_\_\_

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# BULL CALL DIAGONAL EXAMPLE

- Example with IWM
  - IWM no earnings
  - IWM @ \$120.30
  - Date: 3/10/2015
  - IV is relatively low
- BTO (1) Nov 118 call @ \$8.42 debit
- STO (1) Apr 123 call @ \$1.17 credit
- Net debit = \$7.25
- Cost of trade = (\$725.00) per contract

Notes: \_\_\_\_\_

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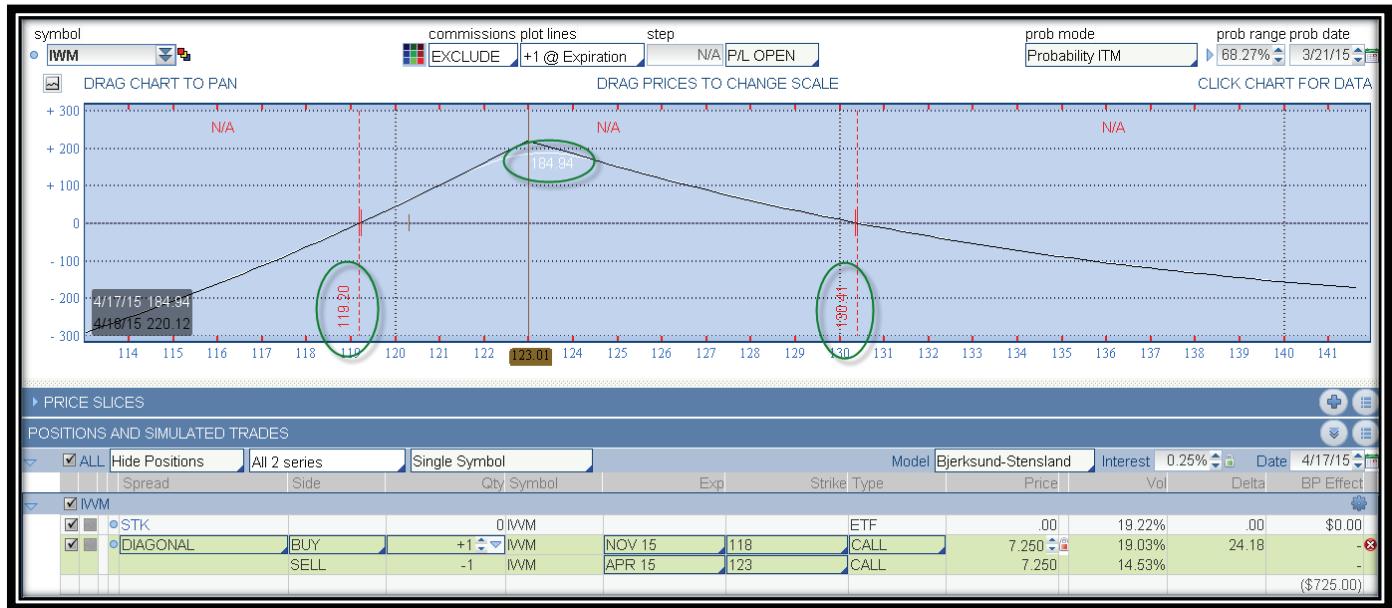
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# BULL CALL DIAGONAL EXAMPLE



Notes: \_\_\_\_\_

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# BULL CALL DIAGONAL EXAMPLE

- Max gain
  - Stock @ short call strike
  - At expiration of short call
- Max loss
  - Net debit of trade
  - Tremendous move down prior to short call expiry
- Break-even
  - 1-2 break-evens
  - Use risk graph
- Exit plans
  - Hold to short call expiration
  - Short call expires worthless
  - Short call ITM
  - STO again

Notes: \_\_\_\_\_

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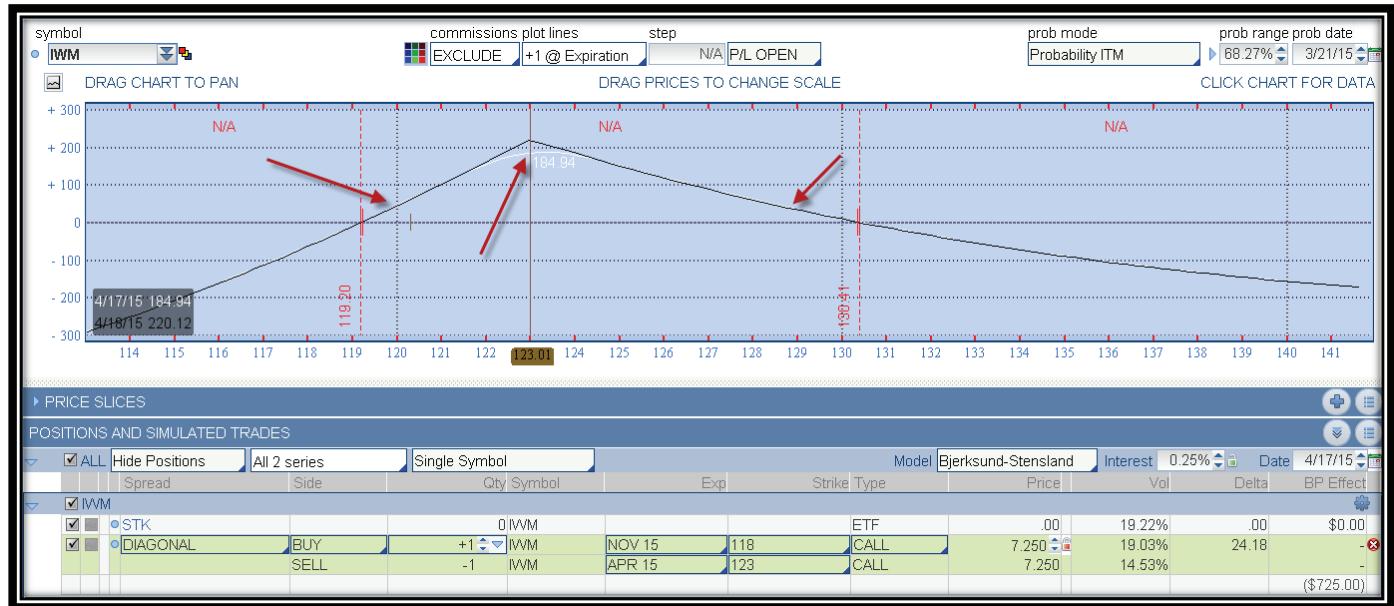
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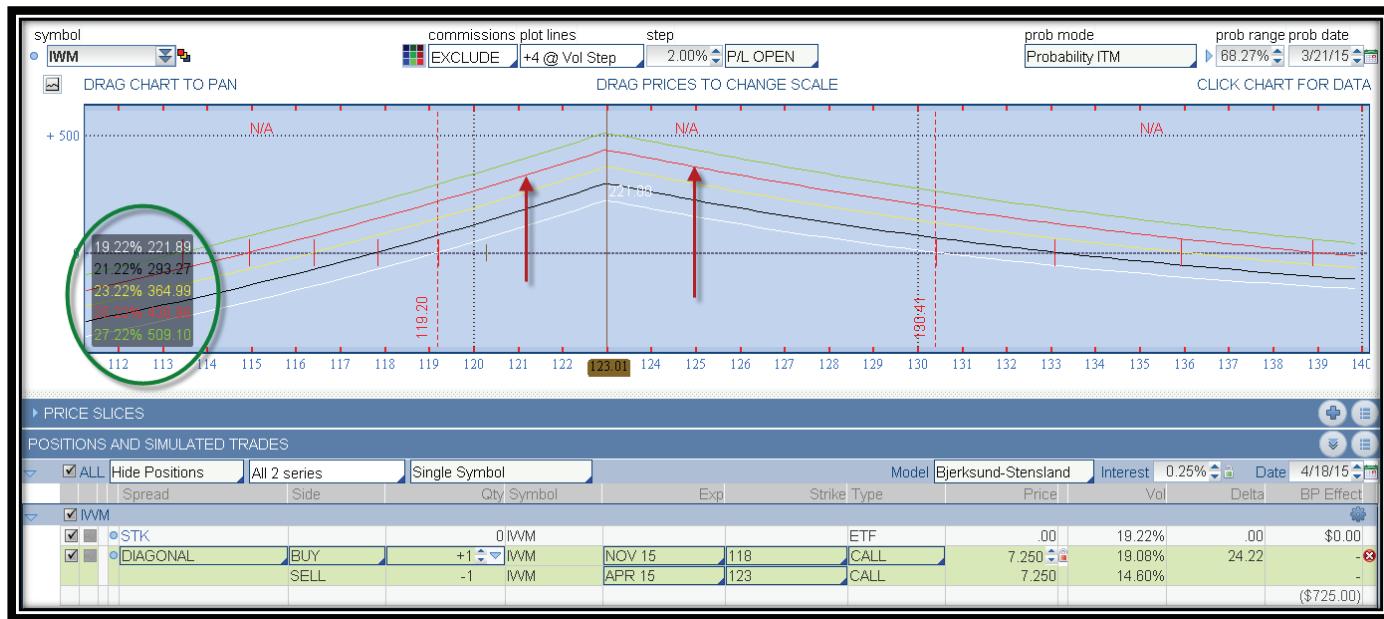
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# BULL CALL DIAGONAL DELTA



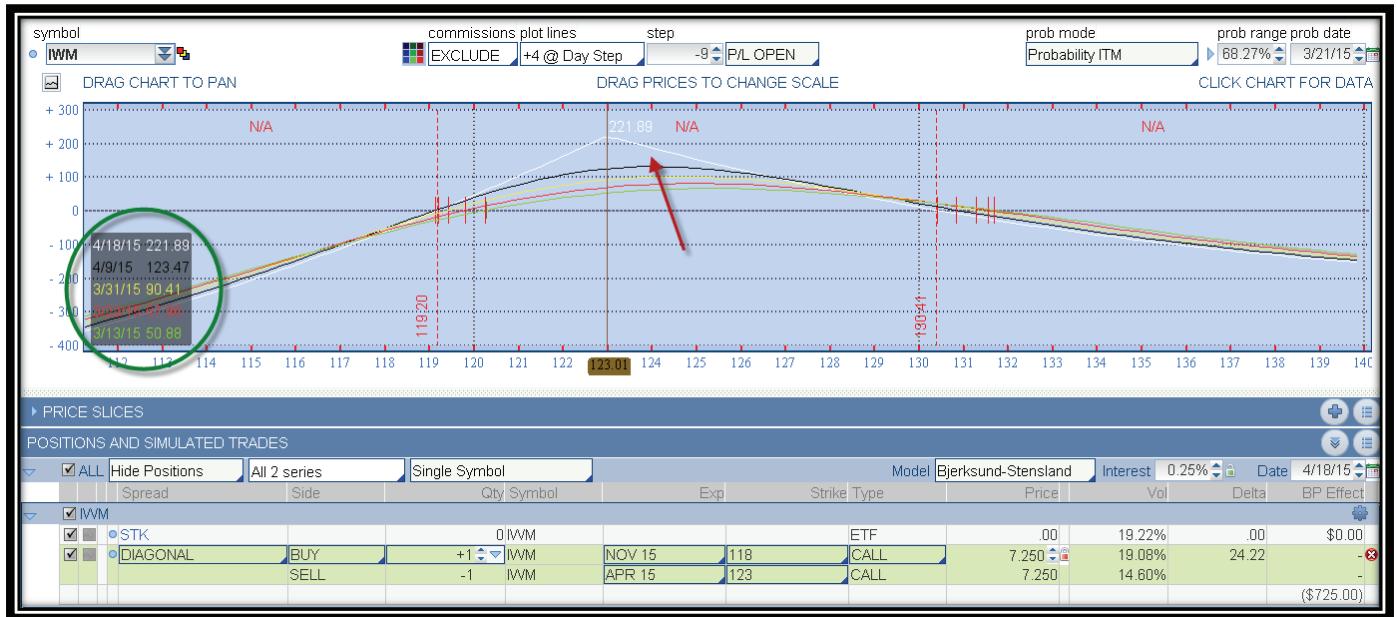
Notes: \_\_\_\_\_  
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# BULL CALL DIAGONAL VEGA



Notes: \_\_\_\_\_  
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# BULL CALL DIAGONAL THETA



Notes: \_\_\_\_\_

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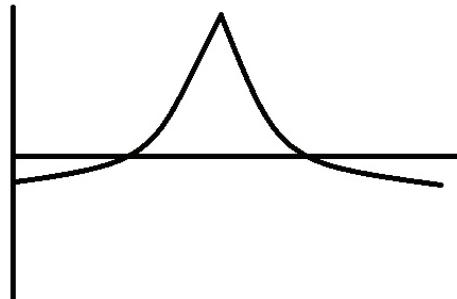
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# HORIZONTAL CALL

- **Outlook**
  - **Bullish**
- **Max Reward**
  - **Limited**
- **Risk**
  - **Limited to the net debit**
- **Break-evens**
  - **2 break-evens**
  - **Use risk graph**
- **Probability of profit**
  - **Use risk graph**



Notes: \_\_\_\_\_

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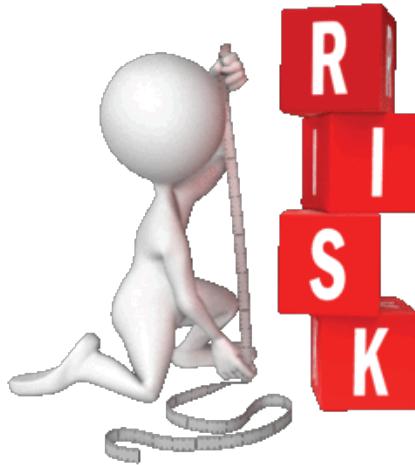
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# HORIZONTAL CALL

- Positive Delta
  - Bullish, but can switch to bearish
- Positive Theta
  - Time decay helps
- Positive Gamma
  - Delta accelerates
  - Pronounced closer to expiration
- Positive Vega
  - Profit as implied volatility rises
  - Function of long call



Notes: \_\_\_\_\_

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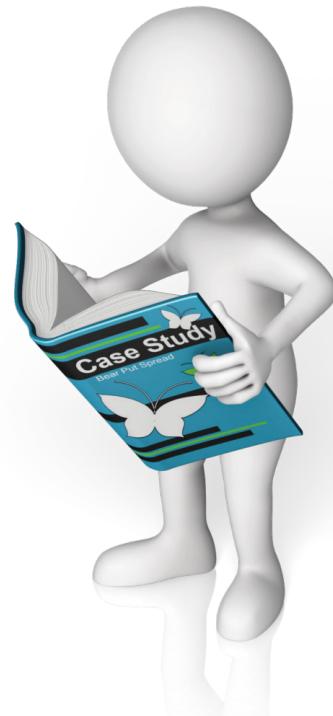
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# HORIZONTAL CALL CASE STUDY

XYZ IS TRADING FOR \$100

- Date: March 10th, 2015
- Target \$110
- Sell April 110 call for \$1
  - Obligation to sell @ \$110
- Buy May 110 call for \$2
  - Right to buy @ \$110
- Risk-Reward
  - Net debit = \$1.00
  - Limited reward
  - 2 break-evens
  - Probability of max gain through expiration = see risk graph (too complex)



Notes: \_\_\_\_\_

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# HORIZONTAL CALL RULES

- Stock over \$50
- STO near term + BTO long term
- Same strikes
- BTO 2-3 months out
  - ATM neutral
  - OTM bullish
- STO 2-60 days out
  - ATM – neutral
  - OTM – bullish
- Try to enter when IV is low
- Short contract premium  $\geq$  10% of long contract premium
- Equal number of contracts on each leg

Notes: \_\_\_\_\_

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# HORIZONTAL CALL EXAMPLE

- Example with AAPL
  - AAPL no earnings through April 2015 expiration
  - AAPL @ \$124.51
  - Date: 3/10/2015
  - IV is relatively low
- BTO (1) May 135 call @ \$2.50 debit
- STO (1) Apr 135 call @ \$0.96 credit
- Net debit = \$1.54
- Cost of trade = (\$154) per contract

Notes: \_\_\_\_\_

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# HORIZONTAL CALL EXAMPLE



Notes: \_\_\_\_\_

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# HORIZONTAL CALL EXAMPLE

- Max gain
  - Stock @ short/long strike
  - At expiration of short call
- Max loss
  - Net debit of trade
  - Tremendous move down/up prior to short call expiry
- Break-even
  - 2 break-evens
  - Use risk graph
- Exit plans
  - Close if AAPL touches the strike of spread
  - Close last trading day of short call
  - Control risk through position size

Notes: \_\_\_\_\_

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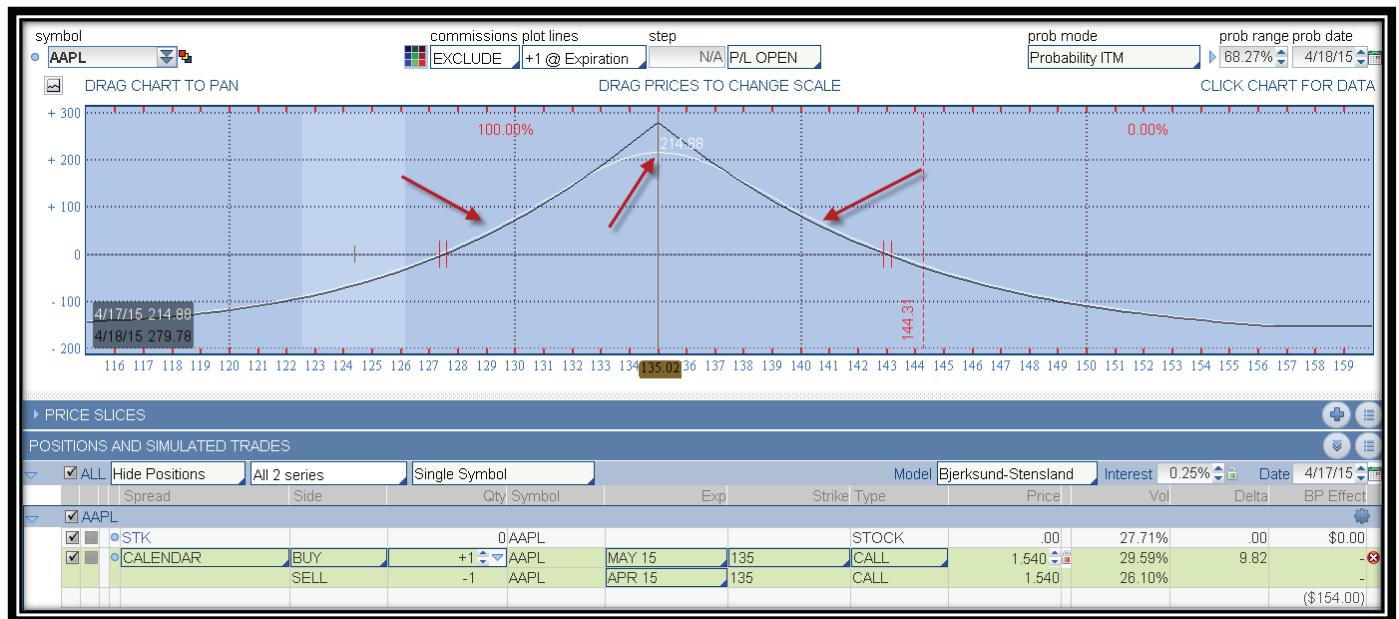
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# HORIZONTAL CALL DELTA



Notes: \_\_\_\_\_

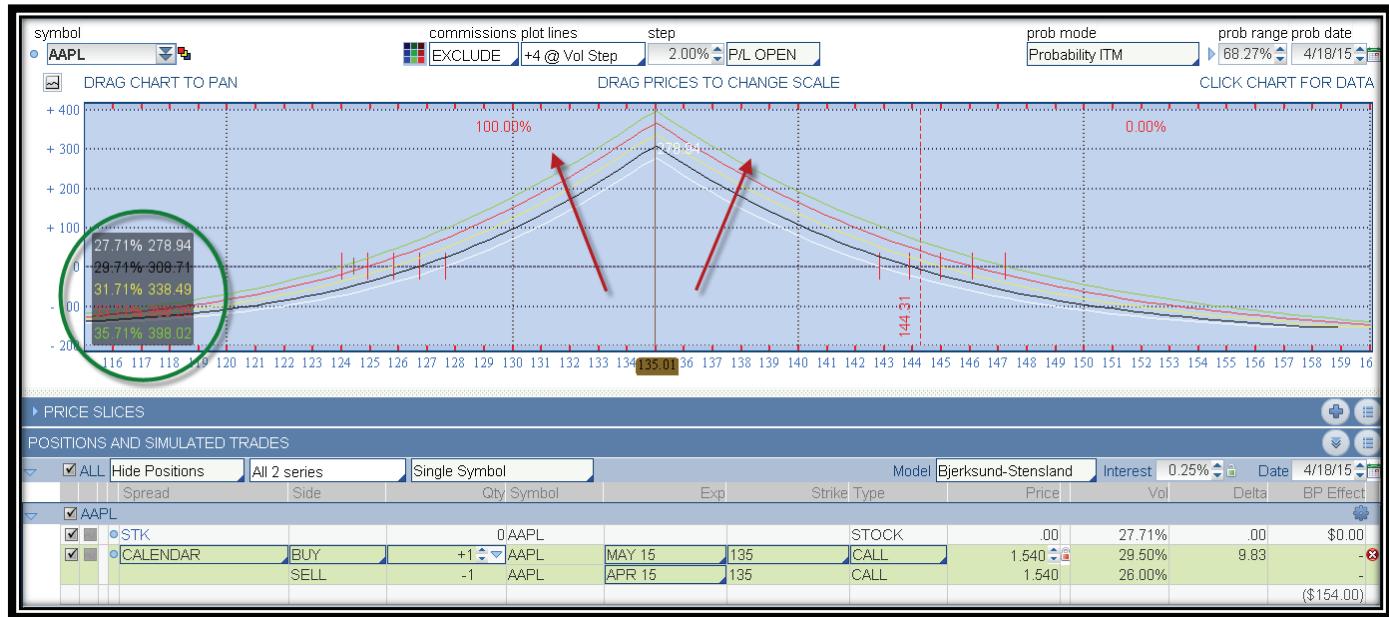
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# HORIZONTAL CALL VEGA



Notes: \_\_\_\_\_

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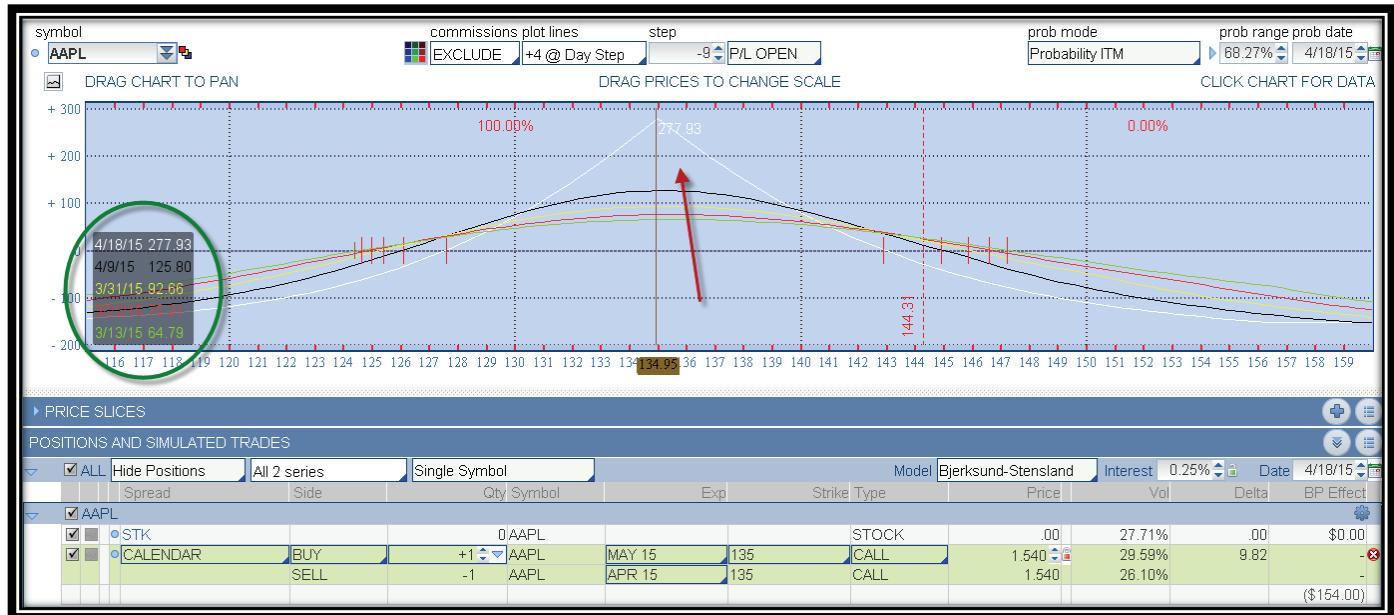
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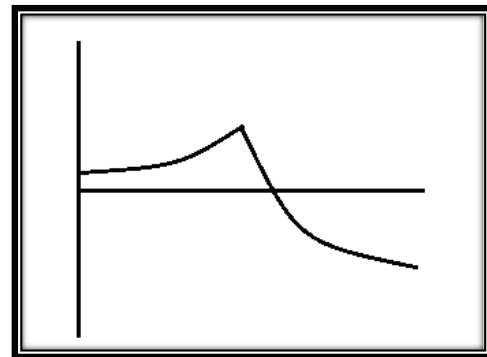
# HORIZONTAL CALL THETA



Notes: \_\_\_\_\_  
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# BEAR PUT DIAGONAL

- Outlook
  - Neutral to bearish
- Max Reward
  - Limited
- Risk
  - Limited to the net debit
- Break-evens
  - 1-2 break-evens
  - Use risk graph
- Probability of profit
  - Use risk graph



Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL

- Positive Delta
  - Slightly bearish
- Positive Theta
  - Time decay helps
- Neutral Gamma
  - Low net Gamma
  - As stock falls Delta changes slowly from (-) to (+)
- Positive Vega
  - Profit as implied volatility rises
  - Function of long put



Notes: \_\_\_\_\_

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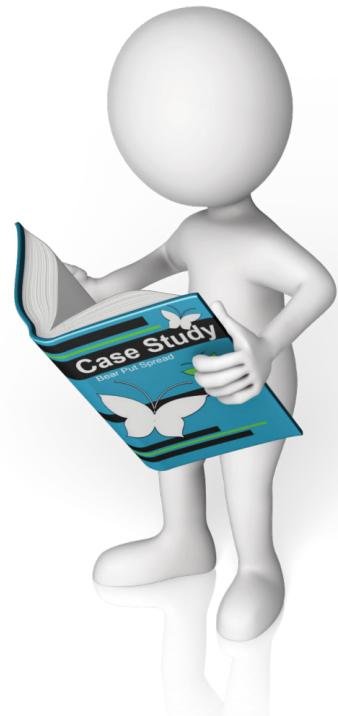
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# BEAR PUT DIAGONAL CASE STUDY

XYZ IS TRADING FOR \$100

- Date: March 10th, 2015
- Sell April 95 put for \$1.85, Delta 0.15
  - Obligation to buy @ \$95
- Buy July 105 put for \$6, Delta 0.85
  - Right to sell @ \$105
- Risk-Reward
  - Net debit = \$4.15
  - Limited reward
  - 1-2 break-evens
  - Probability of max gain through expiration = see risk graph (too complex)



Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL RULES

- **Stock over \$50**
- **STO near term + BTO long term**
- **BTO 2-12 months out and 1-2 strikes ITM**
- **STO 2-60 days out**
  - **STO ATM – neutral**
  - **STO OTM – bearish**
- **Try to enter when IV is low**
- **Short contract premium  $\geq$  10% of long contract premium**
- **Equal number of contracts on each leg**

Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL EXAMPLE

- Example with XLE
  - XLE no earnings
  - XLE @ \$75.17
  - Date: 3/10/2015
  - IV is medium – stock has been falling
- BTO (1) Sep 78 put @ \$7.15 debit (ITM)
- STO (1) Apr 71 put @ \$1.05 credit (OTM)
- Net debit = \$6.10
- Cost of trade = (\$610.00) per contract

Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL EXAMPLE



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# BEAR PUT DIAGONAL EXAMPLE

- Max gain
  - Stock @ short put strike
  - At expiration of short put
- Max loss
  - Net debit of trade
  - Tremendous move up prior to short put expiry
- Break-even
  - 1-2 break-evens
  - Use risk graph
- Exit plans
  - Hold to short put expiration
  - Short put expires worthless
  - Short put ITM
  - STO again

Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL DELTA



Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL VEGA



Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL THETA



Notes: \_\_\_\_\_

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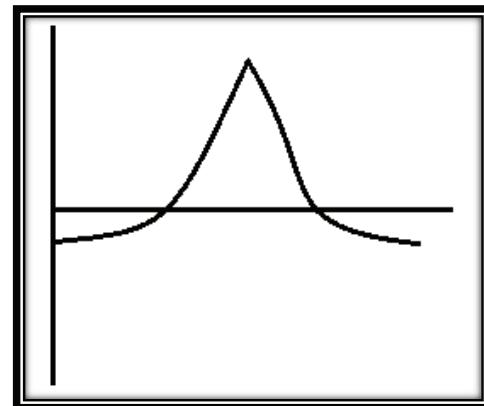
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# HORIZONTAL PUT

- Outlook
  - Bearish
- Max Reward
  - Limited
- Risk
  - Limited to the net debit
- Break-evens
  - 2 break-evens
  - Use risk graph
- Probability of profit
  - Use risk graph



Notes: \_\_\_\_\_

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# HORIZONTAL PUT

- Negative Delta
  - Initially bearish, but can switch to bullish
- Positive Theta
  - Time decay helps
- Positive Gamma
  - Delta accelerates
  - Pronounced closer to expiration
- Positive Vega
  - Profit as implied volatility rises
  - Function of long put



Notes: \_\_\_\_\_

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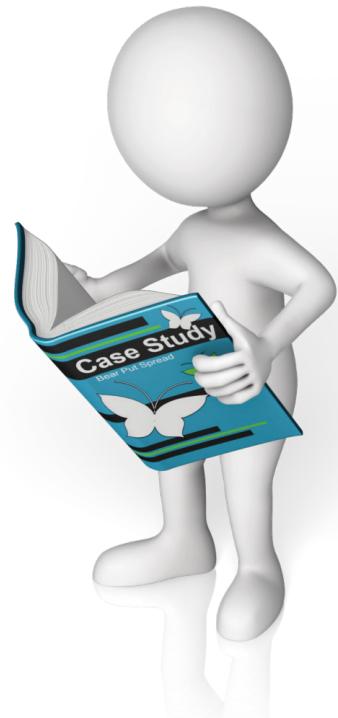
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# HORIZONTAL PUT CASE STUDY

XYZ IS TRADING FOR \$100

- Date: March 10th, 2015
- Target \$90
- Sell April 90 put for \$1
  - Obligation to buy @ \$90
- Buy May 90 put for \$2
  - Right to sell @ \$90
- Risk-Reward
  - Net debit = \$1.00
  - Limited reward
  - 2 break-evens
  - Probability of max gain through expiration = see risk graph (too complex)



Notes: \_\_\_\_\_

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# HORIZONTAL PUT RULES

- Stock over \$50
- STO near term + BTO long term
- Same strikes
- BTO 2-3 months out
  - ATM neutral
  - OTM bearish
- STO 2-60 days out
  - ATM – neutral
  - OTM – bearish
- Try to enter when IV is low
- Short contract premium  $\geq$  10% of long contract premium
- Equal number of contracts on each leg

Notes: \_\_\_\_\_

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# HORIZONTAL PUT EXAMPLE

- Example with BIDU
  - BIDU no earnings through April 2015 expiration
  - BIDU @ 210.34
  - Date: 3/10/2015
  - IV is relatively low
- BTO (1) May 190 put @ \$4.02 debit
- STO (1) Apr 190 put @ \$1.38 credit
- Net debit = \$2.64
- Cost of trade = (\$264) per contract

Notes: \_\_\_\_\_

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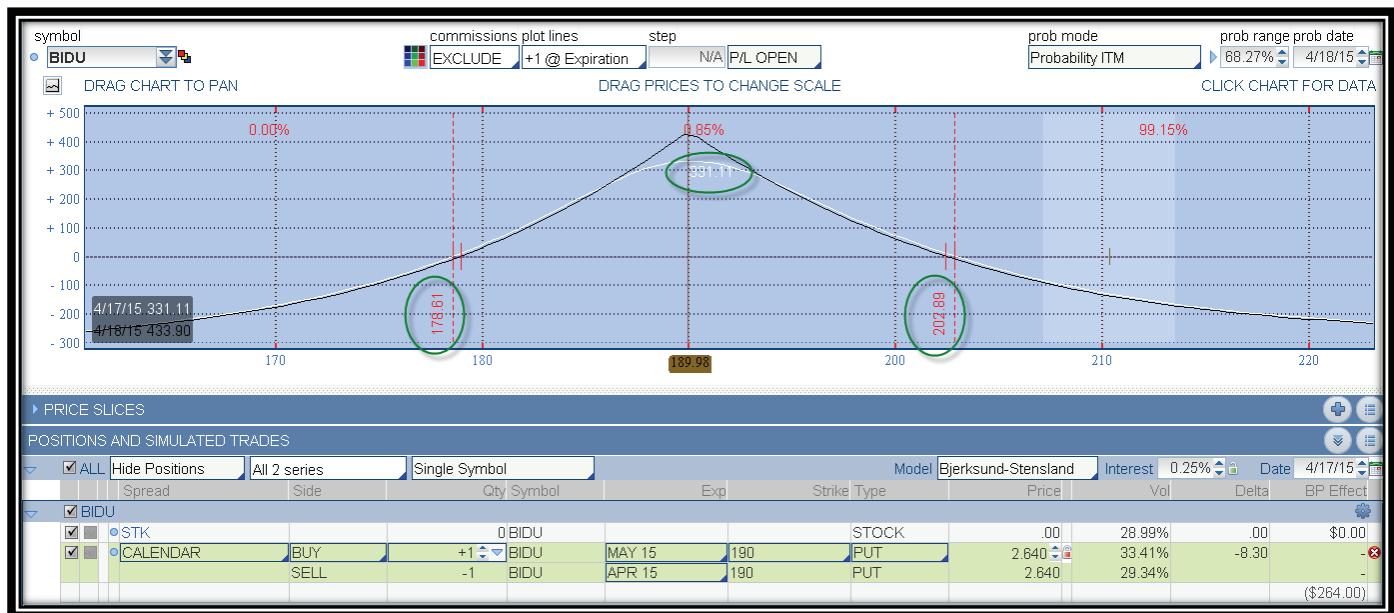
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# HORIZONTAL PUT EXAMPLE



Notes: \_\_\_\_\_

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# HORIZONTAL PUT EXAMPLE

- Max gain
  - Stock @ short/long strike
  - At expiration of short put
- Max loss
  - Net debit of trade
  - Tremendous move down/up prior to short put expiry
- Break-even
  - 2 break-evens
  - Use risk graph
- Exit plans
  - Close if BIDU touches the strike of spread
  - Close last trading day of short put
  - Control risk through position size

Notes: \_\_\_\_\_

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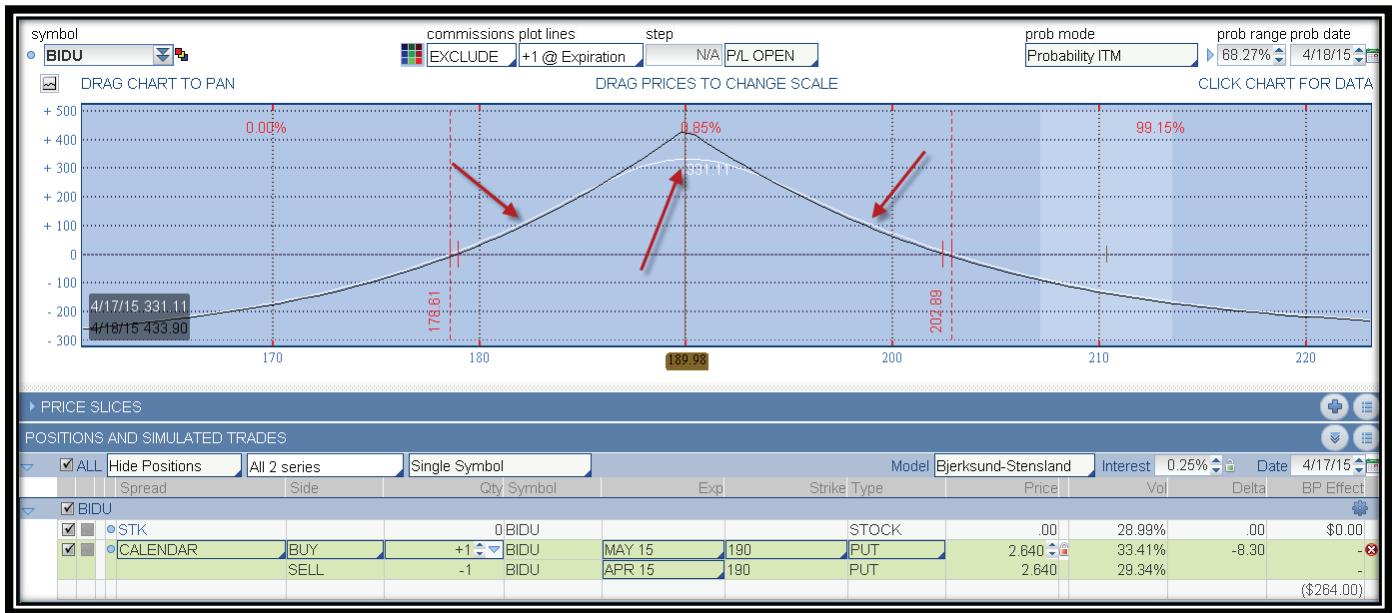
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# HORIZONTAL PUT DELTA



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# HORIZONTAL PUT VEGA



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# HORIZONTAL PUT THETA



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# SUMMARY

- Bull Call Diagonal
- Horizontal Call
- Bear Put Diagonal
- Horizontal Put



Notes: \_\_\_\_\_

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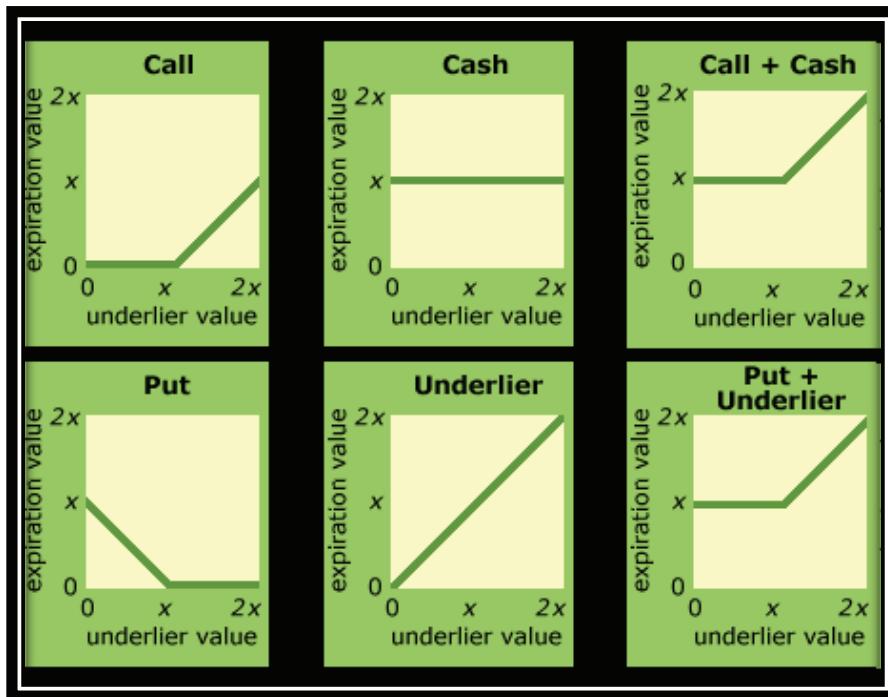
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# **Module 6:**

## **PUT/CALL PARITY AND RISK REVERSALS**



# PUT/CALL PARITY



**call + cash = put + stock**

Notes: \_\_\_\_\_  
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# PUT/CALL PARITY

- Long call example
- Long call = long stock + long put
- call + cash = put + stock
- AAPL @ \$351.78
- BTO 1 Feb 2011 350 call @ \$6.00

| AAPL      | (?)    | Exp: Feb 2011 | Last  | 5 Day HV | 20 Day HV | 60 Day HV | 90 Day HV | Continuous IV Calls | Continuous IV Puts                         |                  |              |
|-----------|--------|---------------|-------|----------|-----------|-----------|-----------|---------------------|--|------------------|--------------|
| APPLE INC |        |               |       | 351.88   | 14.75     | 23.00     | 19.00     | 20.00               | 23.75                                      | 23.50            |              |
| Vega      | Gamma  | Delta         | IV    | OI       | Volume    | Net       | Bid       | Ask                 | Last                                       | Symbol           | Exp          |
| 0.0179    | 0.0013 | 0.9891        | 36.24 | 900      | 0         | 0.00      | 46.75     | 47.05               | 45.95                                      | O:AAPL 11B305.00 | Feb11 305.00 |
| 0.0407    | 0.0028 | 0.9710        | 38.85 | 7369     | 656       | 5.05      | 41.80     | 42.10               | 41.70 <span style="color: green;">▲</span> | O:AAPL 11B310.00 | Feb11 310.00 |
| 0.0423    | 0.0033 | 0.9698        | 34.24 | 1461     | 378       | 5.05      | 36.85     | 37.10               | 36.85 <span style="color: green;">▲</span> | O:AAPL 11B315.00 | Feb11 315.00 |
| 0.0474    | 0.0042 | 0.9649        | 30.57 | 13112    | 2075      | 5.10      | 31.95     | 32.15               | 32.10 <span style="color: green;">▲</span> | O:AAPL 11B320.00 | Feb11 320.00 |
| 0.0797    | 0.0070 | 0.9326        | 30.51 | 4354     | 798       | 4.75      | 27.05     | 27.25               | 27.00 <span style="color: red;">▼</span>   | O:AAPL 11B325.00 | Feb11 325.00 |
| 0.0869    | 0.0089 | 0.9249        | 26.01 | 20092    | 4037      | 4.60      | 22.25     | 22.50               | 22.20 <span style="color: red;">▼</span>   | O:AAPL 11B330.00 | Feb11 330.00 |
| 0.1261    | 0.0135 | 0.8748        | 24.99 | 8619     | 3060      | 4.35      | 17.60     | 17.85               | 17.60 <span style="color: red;">▼</span>   | O:AAPL 11B335.00 | Feb11 335.00 |
| 0.1711    | 0.0192 | 0.7998        | 23.90 | 24918    | 8790      | 3.90      | 13.30     | 13.40               | 13.35 <span style="color: green;">▲</span> | O:AAPL 11B340.00 | Feb11 340.00 |
| 0.2107    | 0.0268 | 0.7045        | 21.16 | 14790    | 11525     | 3.30      | 9.25      | 9.45                | 9.40 <span style="color: green;">▲</span>  | O:AAPL 11B345.00 | Feb11 345.00 |
| 0.2404    | 0.0309 | 0.5647        | 20.92 | 27745    | 23507     | 2.40      | 5.95      | 6.05                | 6.00 <span style="color: green;">▲</span>  | O:AAPL 11B350.00 | Feb11 350.00 |

Notes: \_\_\_\_\_

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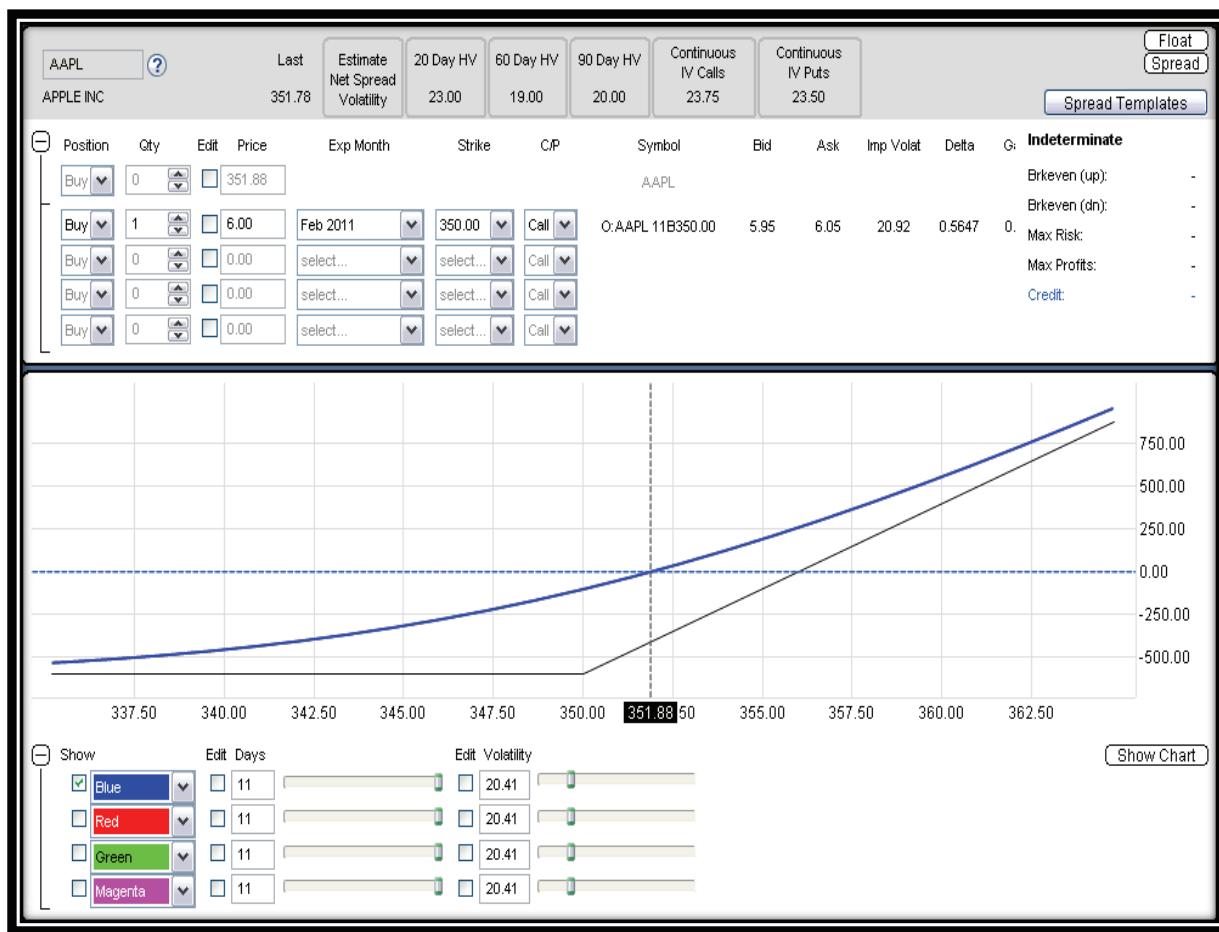
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# PUT/CALL PARITY



Notes: \_\_\_\_\_

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# PUT/CALL PARITY

- AAPL @ 351.88
- Buy 100 shares @ 351.88
- BTO 1 Feb 350 put @ 4.20
- Feb 2011 expiration

| AAPL             |              | ? | Exp: Feb 2011    | Last   | 5 Day HV | 20 Day HV | 60 Day HV | 90 D |
|------------------|--------------|---|------------------|--------|----------|-----------|-----------|------|
| APPLE INC        |              |   |                  | 351.88 | 14.75    | 23.00     | 19.00     | 20   |
| Symbol           | Exp          | ▲ | Symbol           | Last   | Bid      | Ask       |           |      |
| O:AAPL 11B305.00 | Feb11 305.00 |   | O:AAPL 11N305.00 | 0.11   | 0.09     | 0.11      |           |      |
| O:AAPL 11B310.00 | Feb11 310.00 |   | O:AAPL 11N310.00 | 0.14   | 0.13     | 0.15      |           |      |
| O:AAPL 11B315.00 | Feb11 315.00 |   | O:AAPL 11N315.00 | 0.19   | 0.19     | 0.20      |           |      |
| O:AAPL 11B320.00 | Feb11 320.00 |   | O:AAPL 11N320.00 | 0.24   | 0.24     | 0.26      |           |      |
| O:AAPL 11B325.00 | Feb11 325.00 |   | O:AAPL 11N325.00 | 0.38   | 0.34     | 0.38      |           |      |
| O:AAPL 11B330.00 | Feb11 330.00 |   | O:AAPL 11N330.00 | 0.59   | 0.55     | 0.59      |           |      |
| O:AAPL 11B335.00 | Feb11 335.00 |   | O:AAPL 11N335.00 | 0.94   | 0.89     | 0.93      |           |      |
| O:AAPL 11B340.00 | Feb11 340.00 |   | O:AAPL 11N340.00 | 1.51   | 1.49     | 1.54      |           |      |
| O:AAPL 11B345.00 | Feb11 345.00 |   | O:AAPL 11N345.00 | 2.54   | 2.51     | 2.58      |           |      |
| O:AAPL 11B350.00 | Feb11 350.00 |   | O:AAPL 11N350.00 | 4.25   | 4.15     | 4.25      |           |      |

Notes: \_\_\_\_\_

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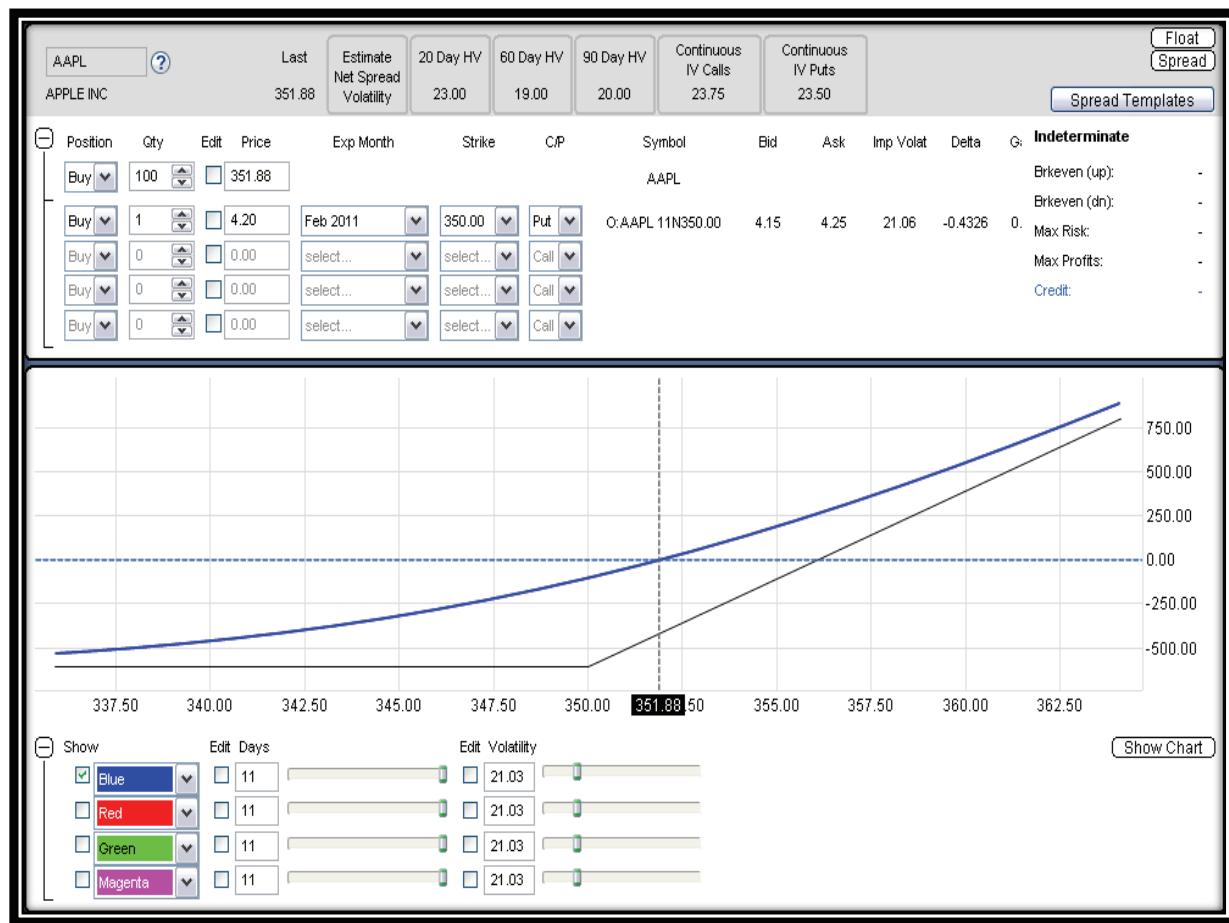
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# PUT/CALL PARITY



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# PUT/CALL PARITY

- Naked Put = Covered Call
- Put/Call parity:
  - $\text{call} + \text{cash} = \text{put} + \text{stock}$
- Rearrange the equation:
  - $(-) \text{put} + \text{cash} = (-) \text{call} + \text{stock}$
- AAPL @ \$351.88
  - Covered call on AAPL
  - Buy 100 shares @ \$351.88 + STO 1 Feb 350 call @ \$6

Notes: \_\_\_\_\_

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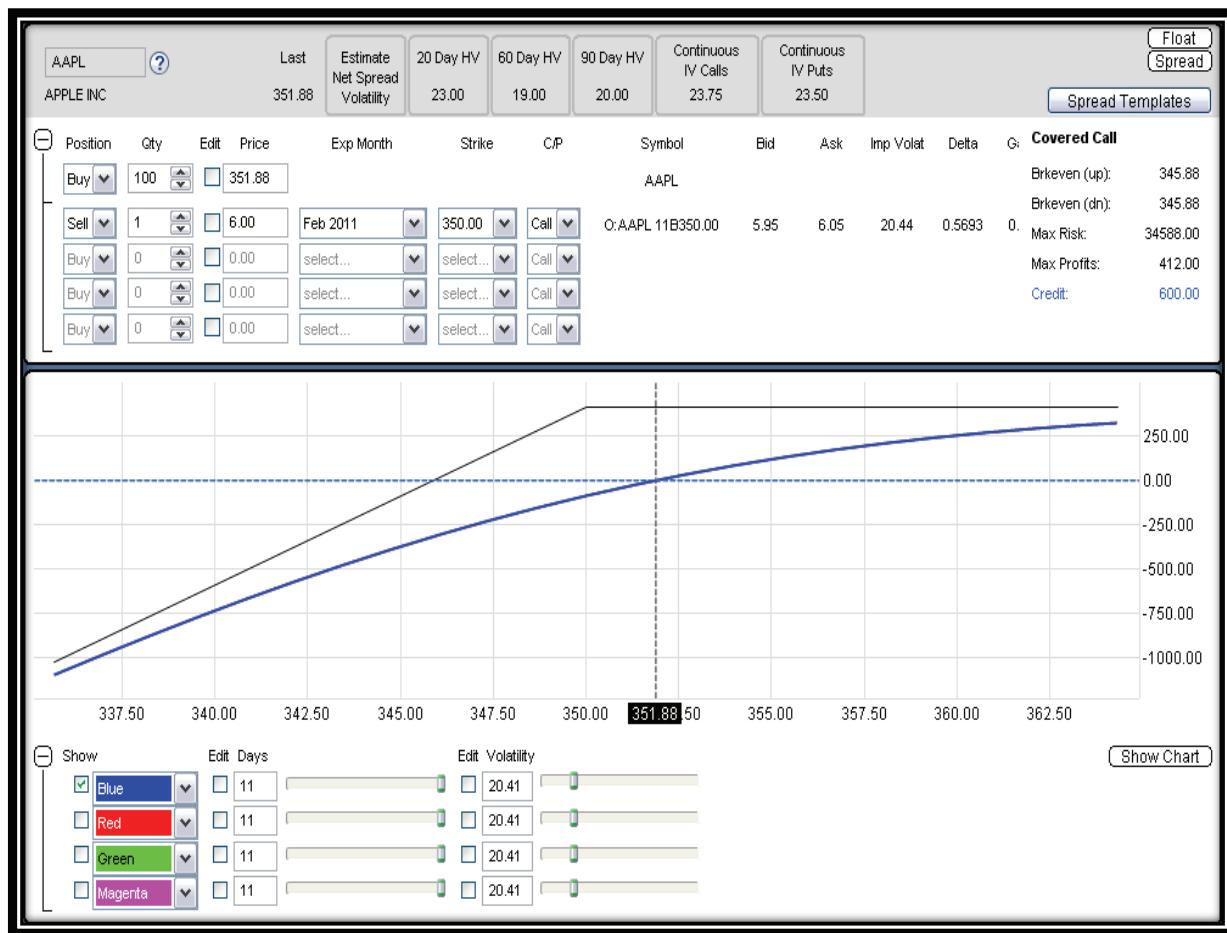
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# PUT/CALL PARITY



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# PUT/CALL PARITY

- Naked Put = Covered Call
- Put/Call parity:
  - Call + Cash = Put + Stock
- Rearrange the equation:
  - (-) Put + Cash = (-) Call + Stock
- AAPL @ \$351.88
  - Naked put on AAPL
  - STO (1) Feb 350 put @ \$4.20

Notes: \_\_\_\_\_

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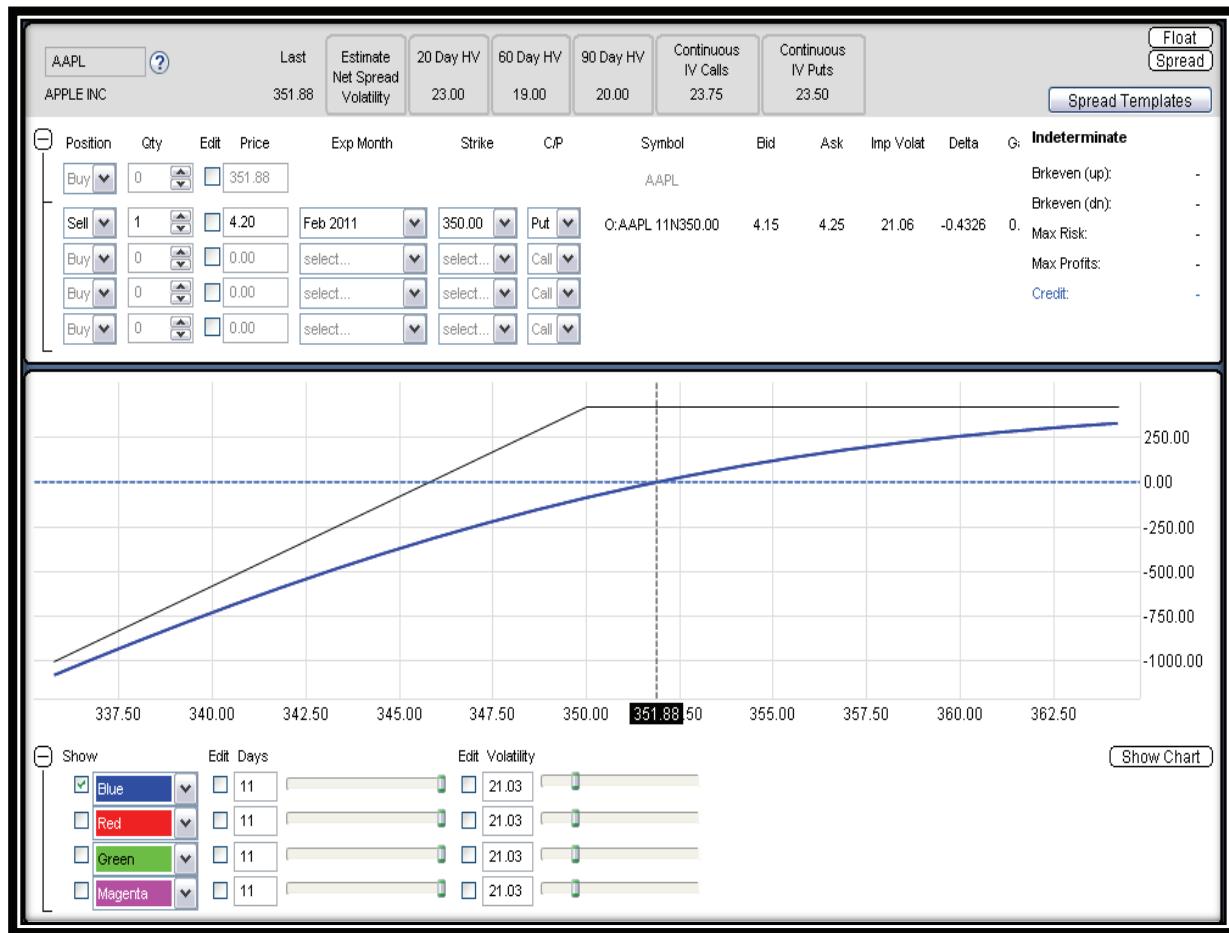
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# PUT/CALL PARITY



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# PUT/CALL PARITY

- Long stock = long call + short put
- Put/Call Parity
  - call + cash = put + stock
- Rearrange the equation
  - call + cash - put = stock

**BUY 100 shares of AAPL @ 351.88 = STO Feb 350 put + BTO Feb 350 call**

Notes: \_\_\_\_\_

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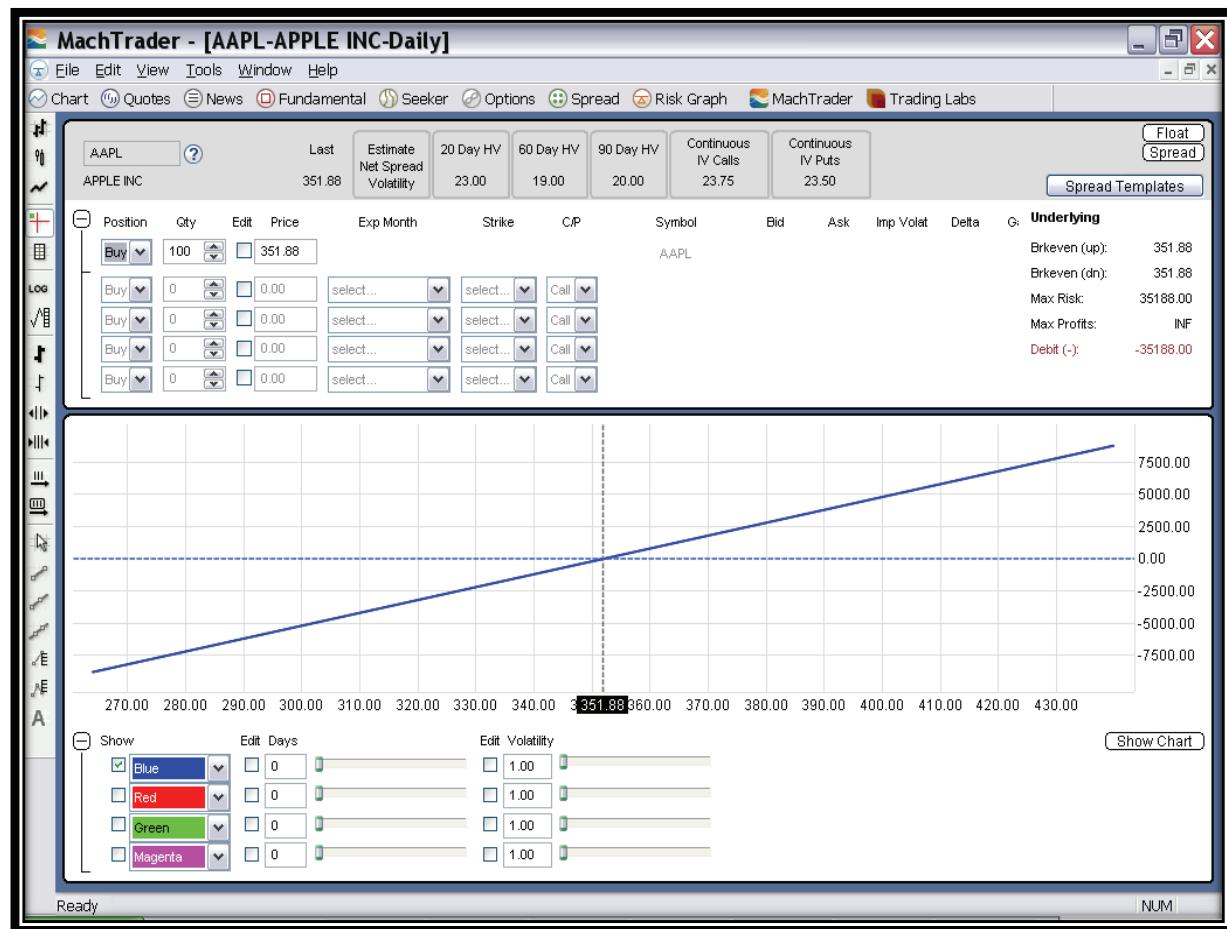
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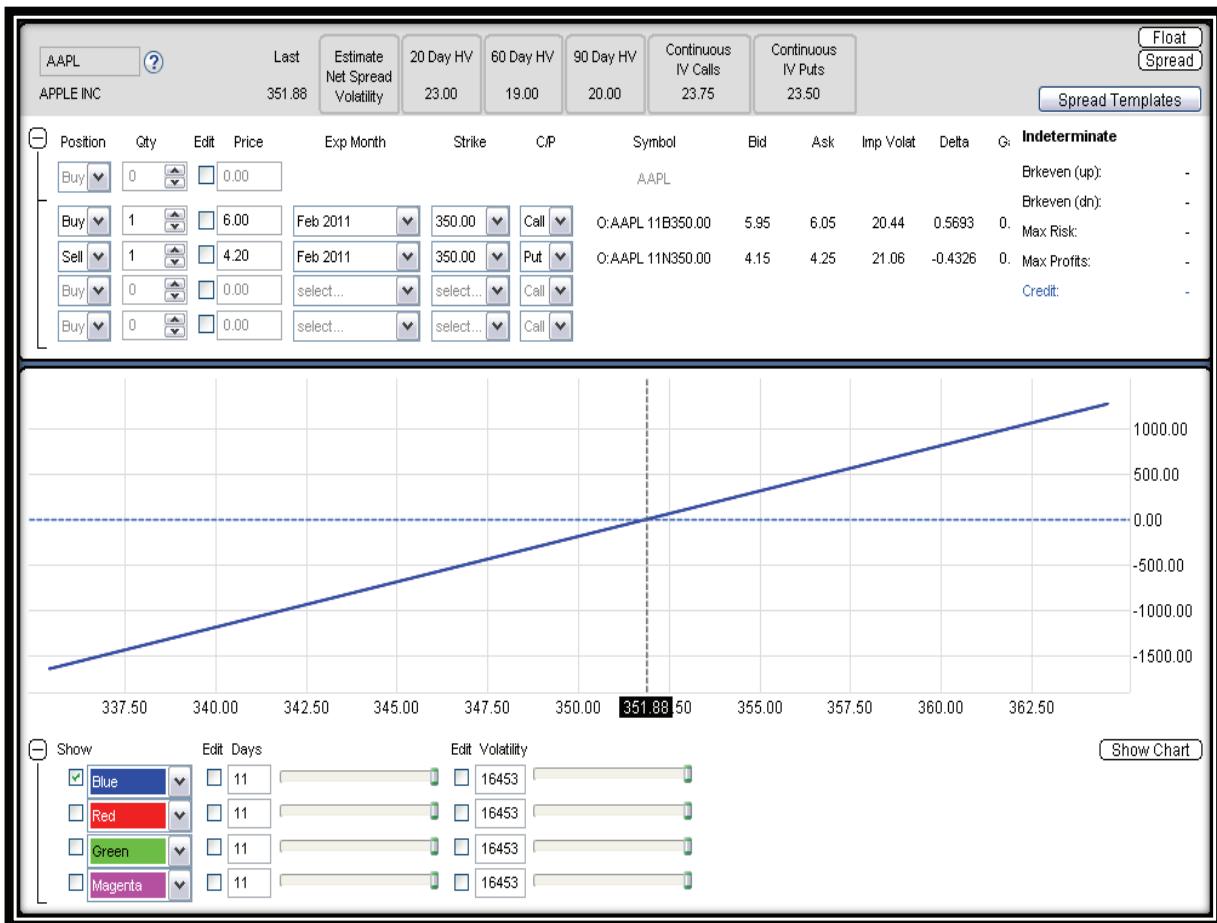
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# PUT/CALL PARITY



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# PUT/CALL PARITY



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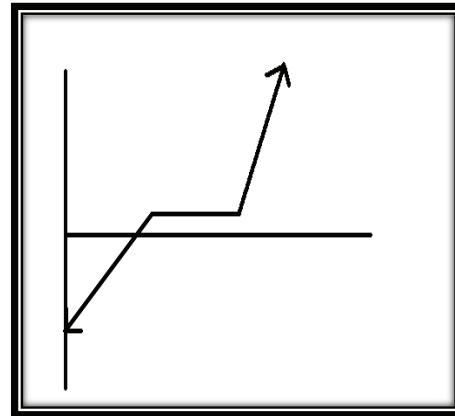
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# BULLISH RISK REVERSAL

- Outlook
  - Extremely bullish
- Max Reward
  - Unlimited
- Risk
  - Limited by stock dropping to 0.00
- Break-evens
  - 1 break-even
  - Short put strike – net credit
- Probability of profit
  - $1 - \text{Delta of short put}$



Notes: \_\_\_\_\_

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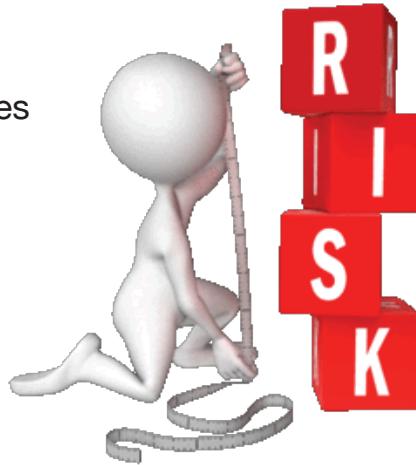
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# BULLISH RISK REVERSAL

- Positive Delta
  - Want stock to rise dramatically
- Negative Theta
  - Time decay hurts
- Positive Gamma
  - As stock price rises Delta increases
- Positive Vega
  - Profit as implied volatility rises
  - Function of long calls



Notes: \_\_\_\_\_

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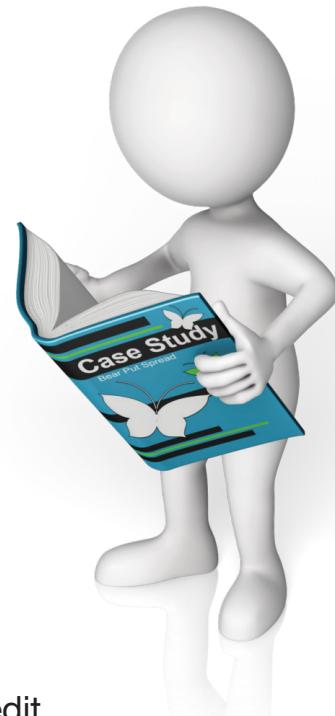
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# BULLISH RISK REVERSAL CASE STUDY

## XYZ IS TRADING FOR \$100

- Date: March 11th, 2015
- Target \$125, or higher
- Sell (1) May 100 put for \$3.50
  - Obligation to buy @ \$100 (100 shares)
- Buy (5) May 115 calls for \$0.50 each
  - Right to buy @ \$115 (500 shares)
- Risk-Reward
  - Net credit = \$1.00
  - Unlimited reward
  - 1 break-even = short put strike – net credit
  - Probability of profit through expiration  $\approx 1.00 - \text{short put Delta}$



Notes: \_\_\_\_\_  
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# BULLISH RISK REVERSAL RULES

- Select an underlying that we believe will move up strongly
- STO an ATM or OTM put
  - STO ATM = more aggressive
  - STO OTM = less aggressive
- BTO 1, or more, OTM calls
  - Consider using a call strike around the projected target price
- The farther OTM put strike we STO, the less premium we have to buy calls
- If call(s) strike is closer to put strike, then the number of call(s) we can purchase will drop
- Net credit of at least \$0.01 in trade
- We are naked on the short put
- If we BTO more than 1 call for every put we STO, then try to enter when IV is low

Notes: \_\_\_\_\_

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# BULLISH RISK REVERSAL EXAMPLE



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# BULLISH RISK REVERSAL EXAMPLE

TBT @ \$40.50

Target is old support level of \$46.00

Date: 2/7/2011

STO 1 June 41 put @ \$3.22 credit

BTO 3 June 47 calls @ \$1.00 cost

Net credit on trade =  $\$3.22 - (\$1.00 \times 3 \text{ calls}) = \$0.22$

- Margin required to place the trade is same as selling to open a naked put:
  - 20% of the underlying stock price – distance OTM + premium
- We also spent \$3.00 debit on the long calls
- Total buying power effect under Reg.T = \$1035.71 (based on a popular broker)

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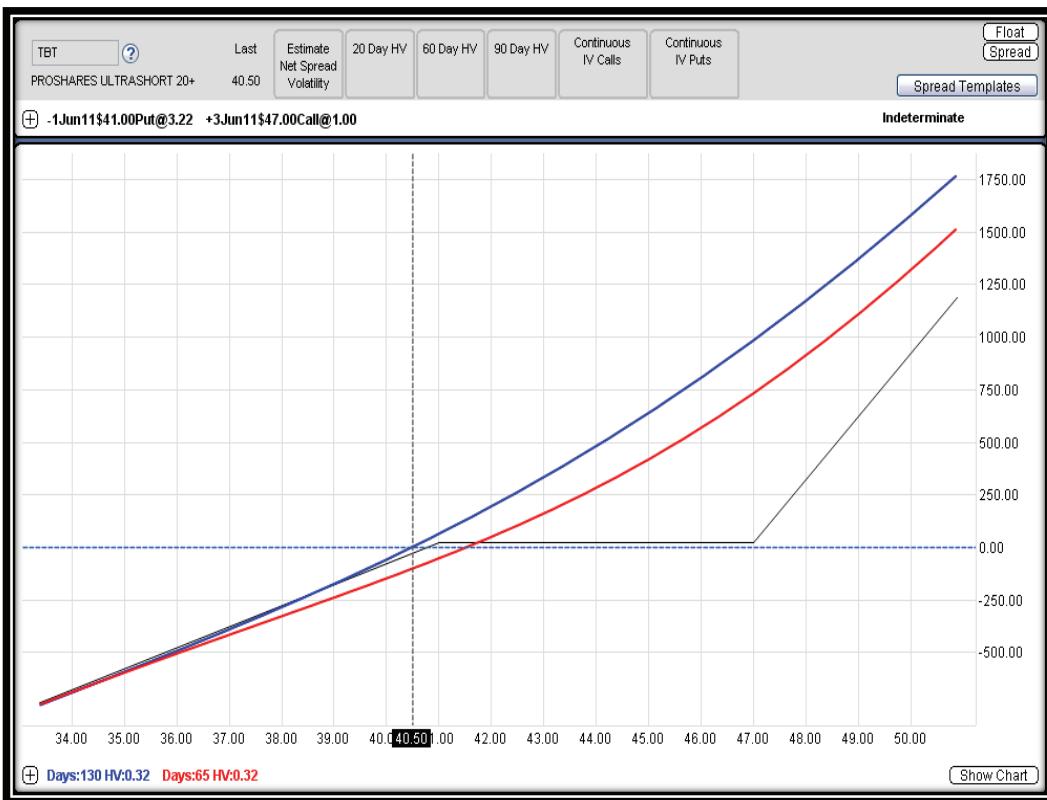
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# BULLISH RISK REVERSAL EXAMPLE



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# BULLISH RISK REVERSAL EXAMPLE

- Max gain
  - Unlimited
  - Long calls have unlimited upside
- Max loss
  - Strike of put – net credit
  - Stock must drop to 0.00
- Break-even
  - 1 break-even
  - Strike of put – net credit
- Margin required
  - Let broker calculate
  - Margin held on short put + net debit of long calls

Notes: \_\_\_\_\_

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# BULLISH RISK REVERSAL DELTA

- Impact of stock price movement
- Trade is (+) Delta
- There is a region where trade is (0) Delta, but that is at expiration between the short put and long call strikes
- Slope of profit increases as stock nears the long call(s) strike, in other words the net (+) Delta of the trade accelerates (+) Gamma

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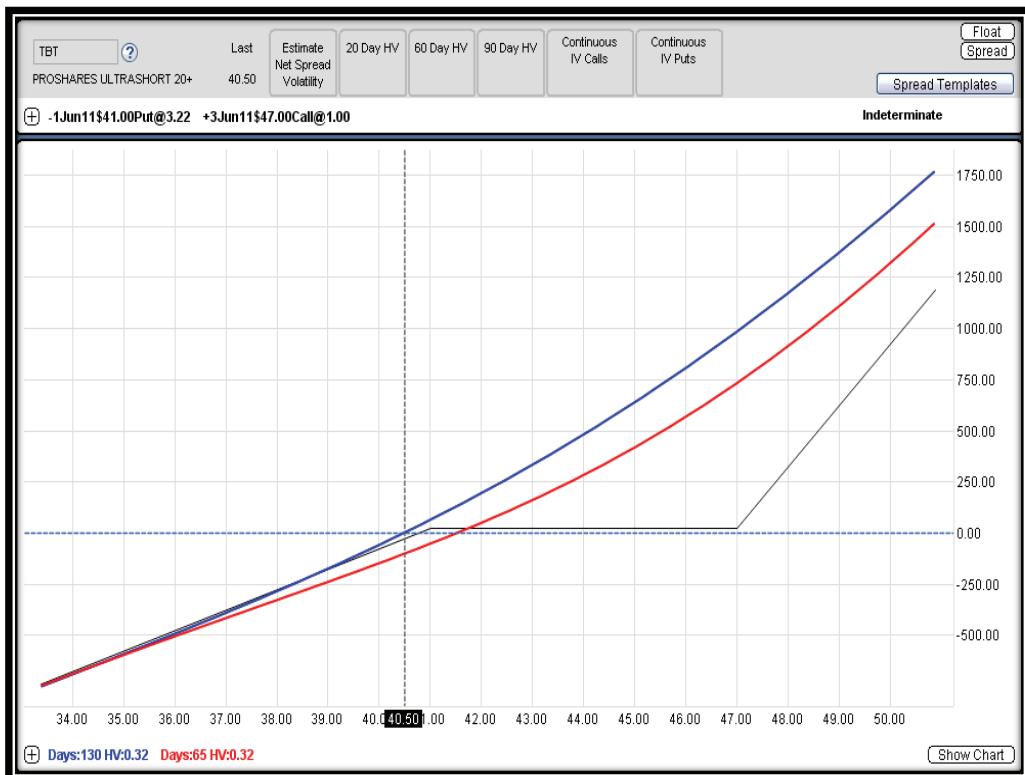
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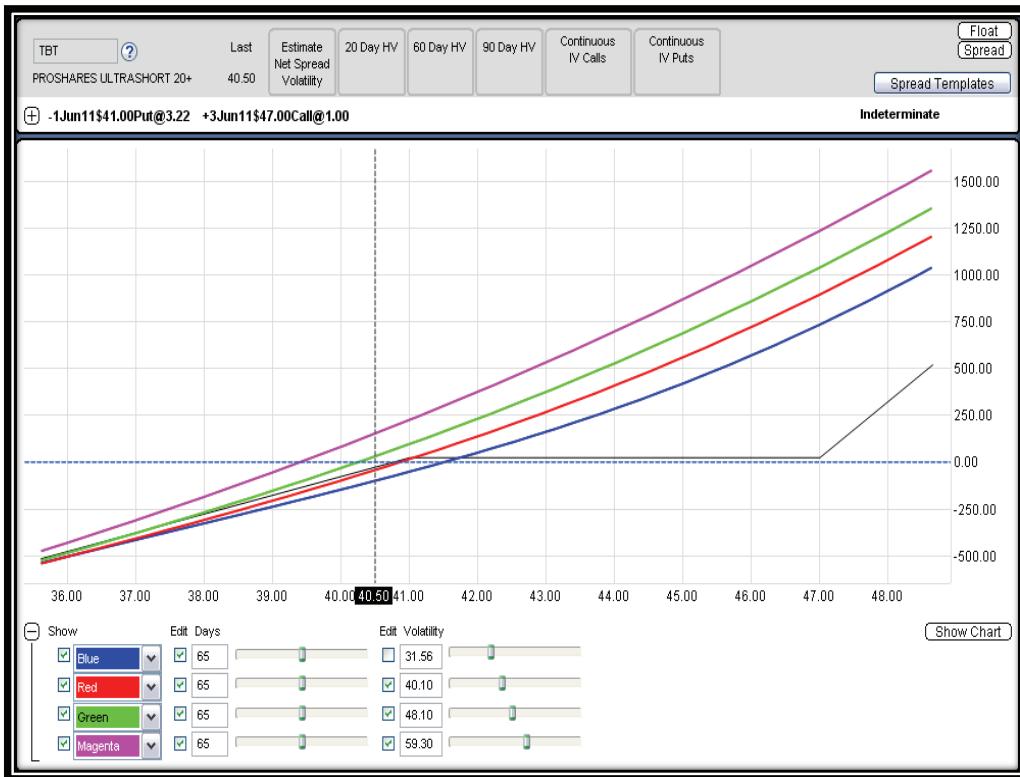
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# BULLISH RISK REVERSAL DELTA



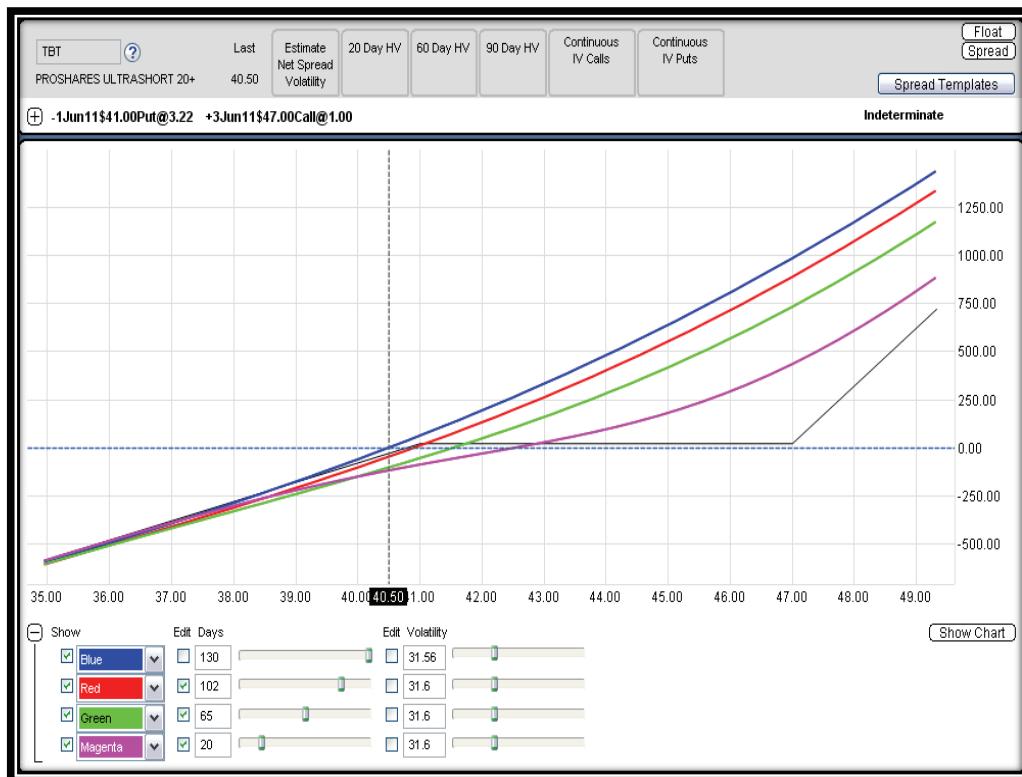
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# BULLISH RISK REVERSAL VEGA



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# BULLISH RISK REVERSAL THETA



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# BULLISH RISK REVERSALS

- Exit strategies
  - Ostrich approach, set it and forget it
  - Close trade at a predetermined time  
(1/2 way to expiration)
  - Close trade if we hit the predetermined target  
(old support becomes new resistance)
  - Close trade if we lose a predetermined amount  
(willing loss per trade)
  - There are adjustments...next page

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# BULLISH RISK REVERSALS

- Adjustments
  - If the stock rises to where the short put is near worthless, then BTC the short put
  - Keep the long calls and let them run (free)
  - The risk of trade is more a function of the short put
  - At a later date, we could STO another put ATM or OTM at a higher strike to further offset cost/time decay on long calls

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# SUMMARY

- Put/Call Parity
- Bullish Risk Reversal



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# BEAR PUT DIAGONAL EXAMPLE

- Max gain
  - Stock @ short put strike
  - At expiration of short put
- Max loss
  - Net debit of trade
  - Tremendous move up prior to short put expiry
- Break-even
  - 1-2 break-evens
  - Use risk graph
- Exit plans
  - Hold to short put expiration
  - Short put expires worthless
  - Short put ITM
  - STO again

Notes: \_\_\_\_\_

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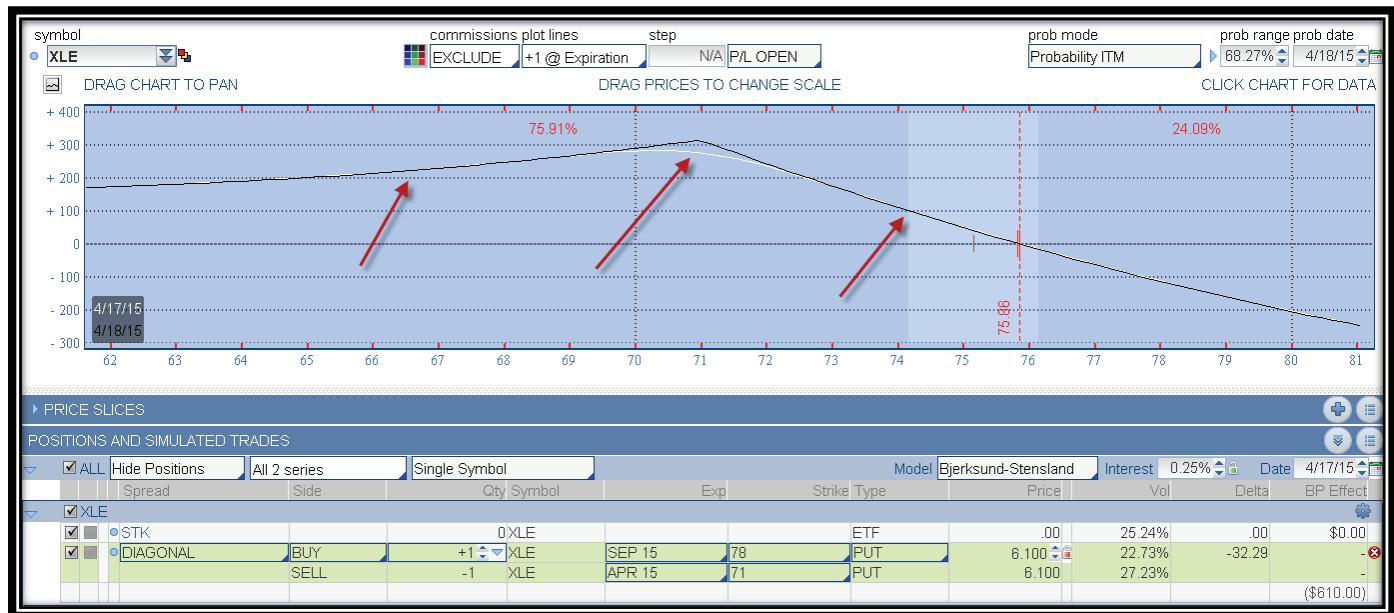
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# BEAR PUT DIAGONAL DELTA



Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL VEGA



Notes: \_\_\_\_\_

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# BEAR PUT DIAGONAL THETA



Notes: \_\_\_\_\_

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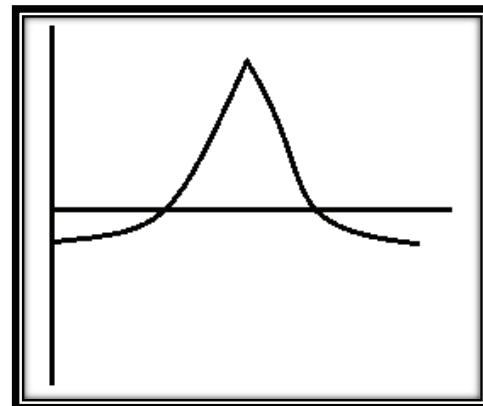
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# HORIZONTAL PUT

- Outlook
  - Bearish
- Max Reward
  - Limited
- Risk
  - Limited to the net debit
- Break-evens
  - 2 break-evens
  - Use risk graph
- Probability of profit
  - Use risk graph



Notes: \_\_\_\_\_

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# HORIZONTAL PUT

- Negative Delta
  - Initially bearish, but can switch to bullish
- Positive Theta
  - Time decay helps
- Positive Gamma
  - Delta accelerates
  - Pronounced closer to expiration
- Positive Vega
  - Profit as implied volatility rises
  - Function of long put



Notes: \_\_\_\_\_

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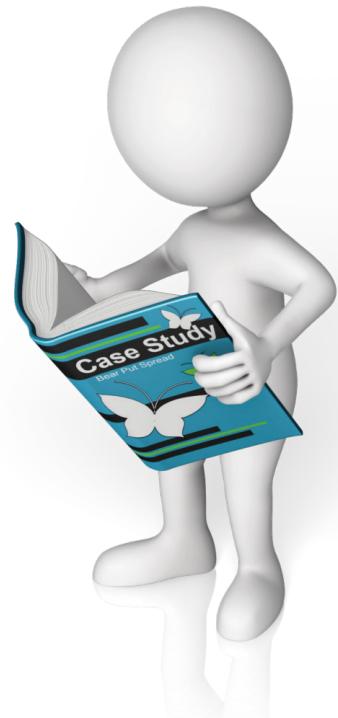
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# HORIZONTAL PUT CASE STUDY

## XYZ IS TRADING FOR \$100

- Date: March 10th, 2015
- Target \$90
- Sell April 90 put for \$1
  - Obligation to buy @ \$90
- Buy May 90 put for \$2
  - Right to sell @ \$90
- Risk-Reward
  - Net debit = \$1.00
  - Limited reward
  - 2 break-evens
  - Probability of max gain through expiration = see risk graph (too complex)



Notes: \_\_\_\_\_

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# HORIZONTAL PUT RULES

- Stock over \$50
- STO near term + BTO long term
- Same strikes
- BTO 2-3 months out
  - ATM neutral
  - OTM bearish
- STO 2-60 days out
  - ATM – neutral
  - OTM – bearish
- Try to enter when IV is low
- Short contract premium  $\geq$  10% of long contract premium
- Equal number of contracts on each leg

Notes: \_\_\_\_\_

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# HORIZONTAL PUT EXAMPLE

- Example with BIDU
  - BIDU no earnings through April 2015 expiration
  - BIDU @ 210.34
  - Date: 3/10/2015
  - IV is relatively low
- BTO (1) May 190 put @ \$4.02 debit
- STO (1) Apr 190 put @ \$1.38 credit
- Net debit = \$2.64
- Cost of trade = (\$264) per contract

Notes: \_\_\_\_\_

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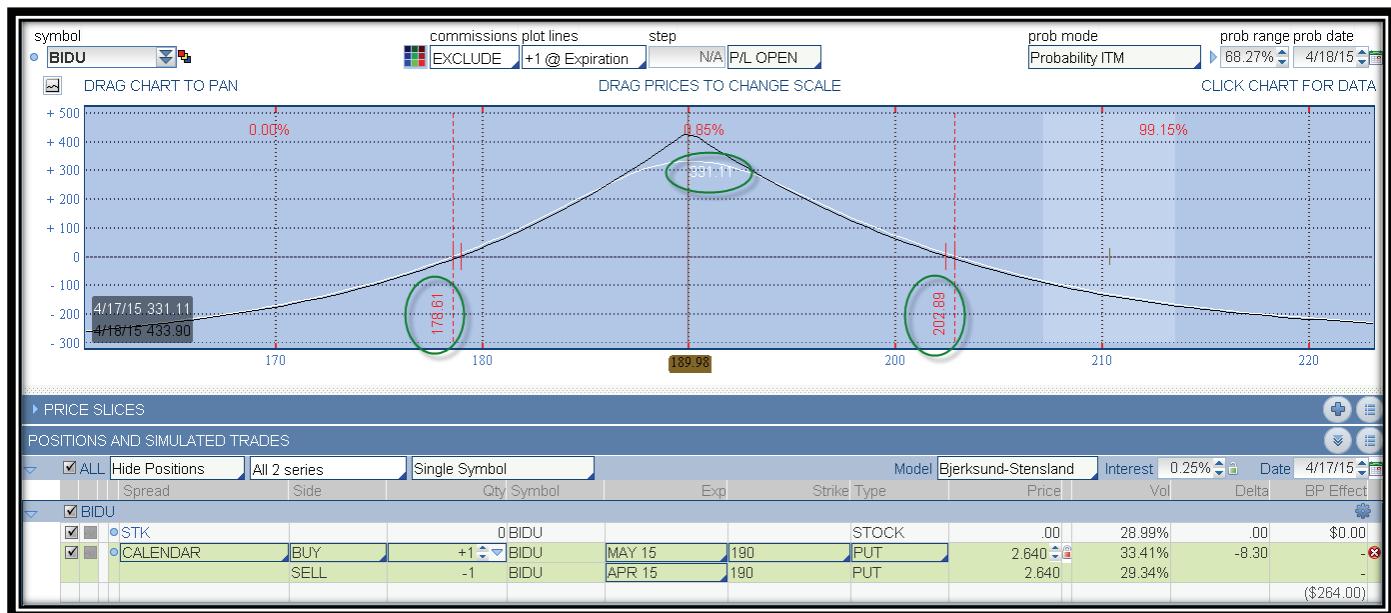
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# HORIZONTAL PUT EXAMPLE



Notes: \_\_\_\_\_

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# HORIZONTAL PUT EXAMPLE

- Max gain
  - Stock @ short/long strike
  - At expiration of short put
- Max loss
  - Net debit of trade
  - Tremendous move down/up prior to short put expiry
- Break-even
  - 2 break-evens
  - Use risk graph
- Exit plans
  - Close if BIDU touches the strike of spread
  - Close last trading day of short put
  - Control risk through position size

Notes: \_\_\_\_\_

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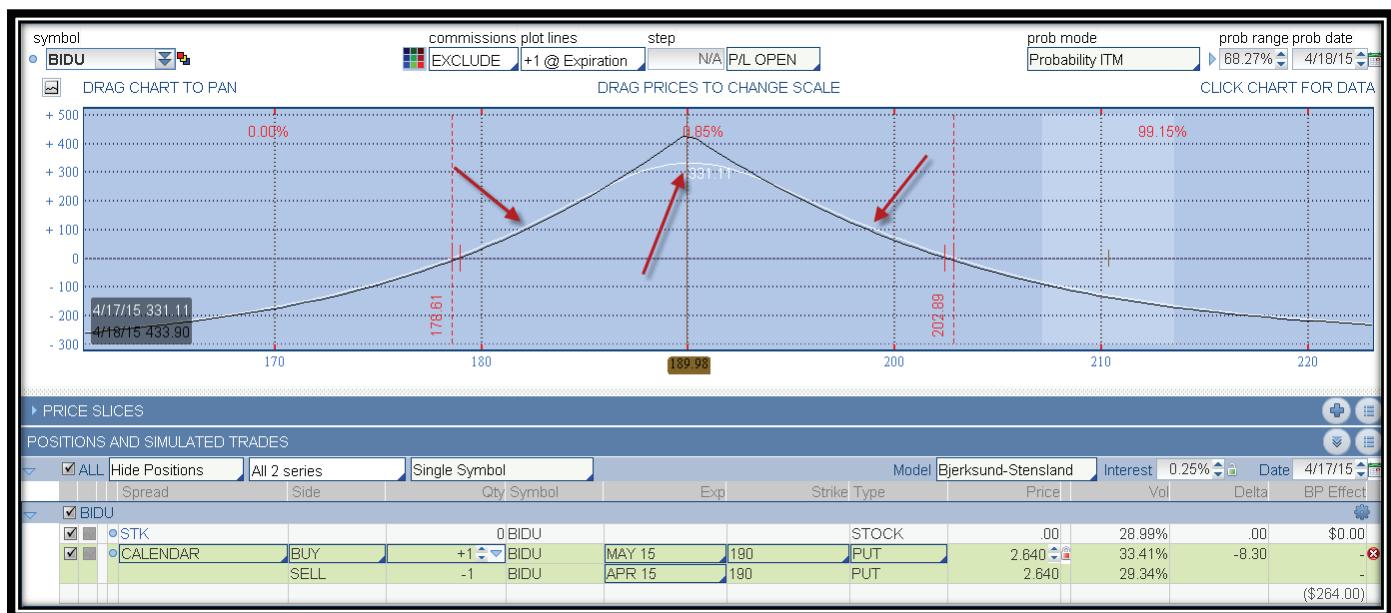
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# HORIZONTAL PUT DELTA



Notes: \_\_\_\_\_

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# HORIZONTAL PUT VEGA



Notes: \_\_\_\_\_

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# HORIZONTAL PUT THETA



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# SUMMARY

- Bull Call Diagonal
- Horizontal Call
- Bear Put Diagonal
- Horizontal Put



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Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE

- Example with QIHU
  - QIHU is announcing earnings
  - QIHU @ 47.62
  - Date: 3/9/2015
  - IV is higher than normal

STO (1) April 60 call @ \$0.75 credit Delta = 0.17

STO (1) April 40 put @ \$0.65 credit Delta = 0.15

Net credit = \$1.40

Net Delta = 0.02 (close to 0.00)

Margin required to place trade = (\$522.60)

Notes: \_\_\_\_\_

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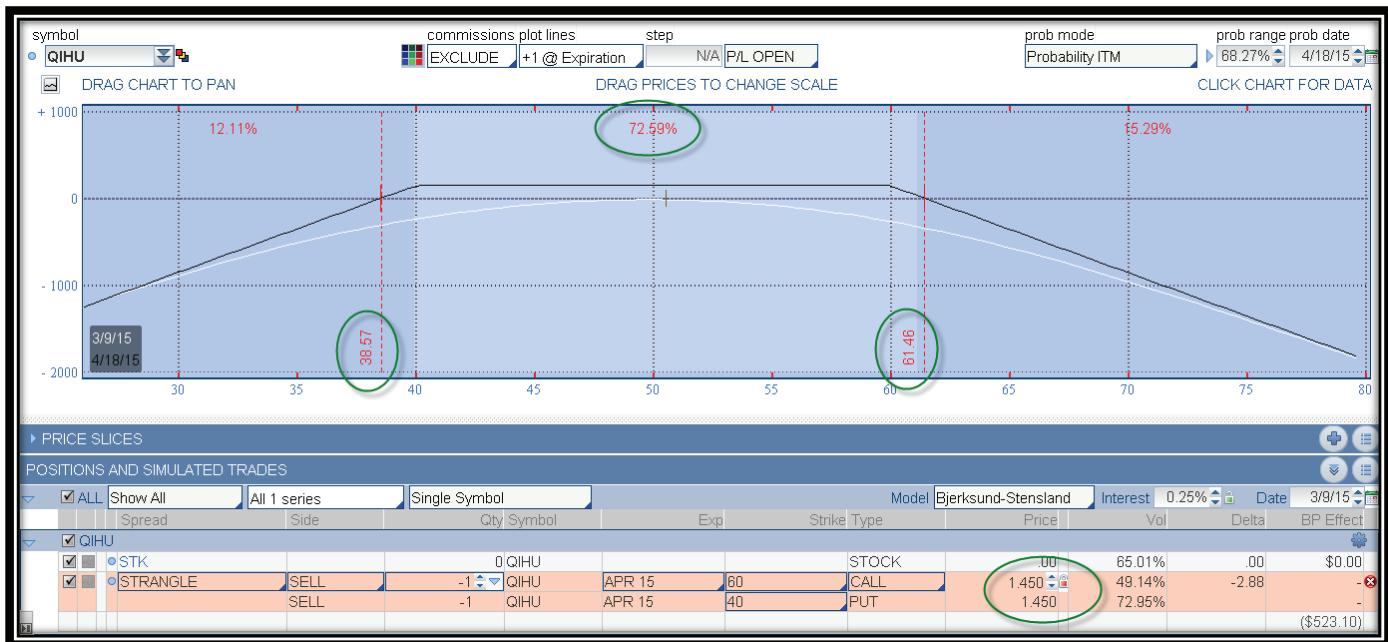
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# SHORT STRANGLE EXAMPLE



Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE



Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE

- Max gain = total net credit \_\_\_\_\_
  - What has to happen:
  - QIHU above \_\_\_\_\_
  - QIHU below \_\_\_\_\_
  - When \_\_\_\_\_
- Max loss = unlimited
- Breakevens @ expiration
  - Higher
  - Lower
- Closing prior to expiration
  - IV drops
  - Time passes

Notes: \_\_\_\_\_

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# SHORT STRANGLE EXAMPLE

- Position sizing
- Willing loss per trade ÷ loss at the short strike = number of contracts



# SUMMARY

- Earnings Season
- High Implied Volatility
- Low Implied Volatility
- Long Straddle/Strangle
- Short Strangle



Notes: \_\_\_\_\_

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# Module 7: RISK MANAGEMENT



# RISK MANAGEMENT

ENSURE YOUR SURVIVAL

Notes: \_\_\_\_\_

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# COME ONE, COME ALL



Notes: \_\_\_\_\_

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# MARBLES AND THE URN



# LESSONS

- What do we learn from the marbles and urn game?
  - The typical person underestimates risk in any situation
  - Trading results are random in the short-run
  - Streaks happen, but are also random
  - Play enough and we start to see a pattern emerge
  - We need to be consistent

Notes: \_\_\_\_\_

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# RANDOMNESS REIGNS

- Beware the short-run
- There is a random distribution between winners and losers
  - We never know which trade is a red marble and which is a green marble
  - 3 green in a row
  - 3 red in a row
- Time and additional occurrences eliminate the annoying effects of randomness
- How do we survive losing streaks?



Notes: \_\_\_\_\_

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# A PARTTERN EMERGES

- Play enough and we see a pattern emerge – the average result
  - Walk across a busy highway with a blindfold
  - Trade with too large of a position
- It is better to place a lot of trades than just a few
  - Reach the average result quicker
  - Common mistake is not making enough trades
- If my average result is positive I want to place as many trades as I can that qualify for my rules

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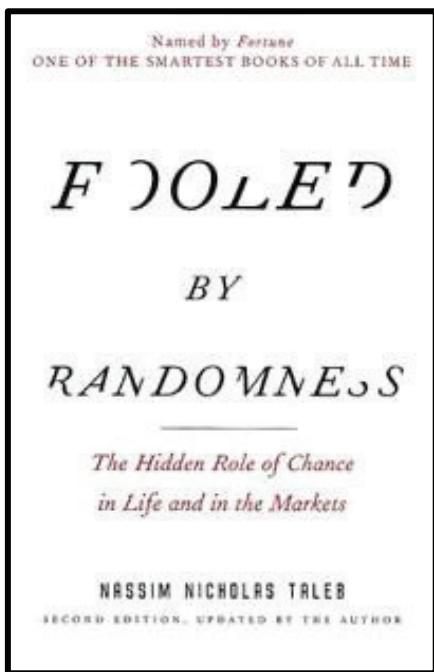
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# FOOLED BY RANDOMNESS



*"Repetitiveness is the key for the revelation of skills... If you bang one million dollars at your next visit to Las Vegas at the roulette table in one single shot, you will not be able to ascertain from this single outcome whether the house has the advantage or if you were particularly out of the gods' favor. If you slice your gamble into a series of one million bets of one dollar each, the amount you recover will systematically show the casino's advantage. This is the core of sampling theory, traditionally called the Law of Large Numbers."*

Notes: \_\_\_\_\_  
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# CONSISTENCY

- Why is consistency important?
- Why were you able to accurately forecast your outcome in the marbles and urn game?
- What are common ways traders are inconsistent?



Notes: \_\_\_\_\_

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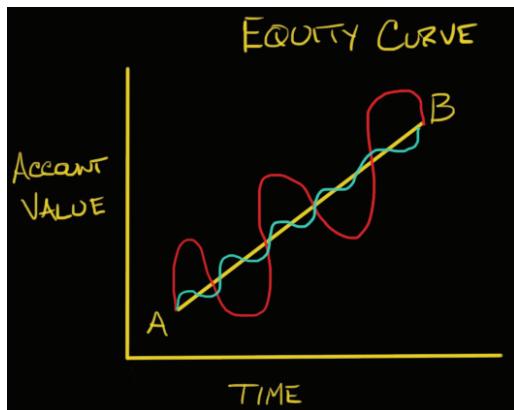
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# THE EQUITY CURVE



- Which line is better?
- How do we become the blue line?
- Reduce amplitude (height of the wave)
- Increase frequency (speed of the wave)
- Maintain positive slope (2 steps forward, 1 step back)

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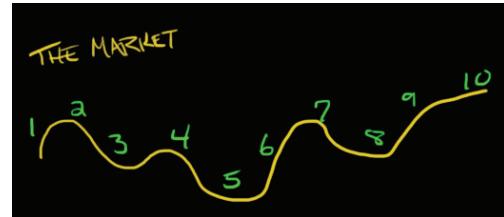
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# TIME DIVERSIFICATION

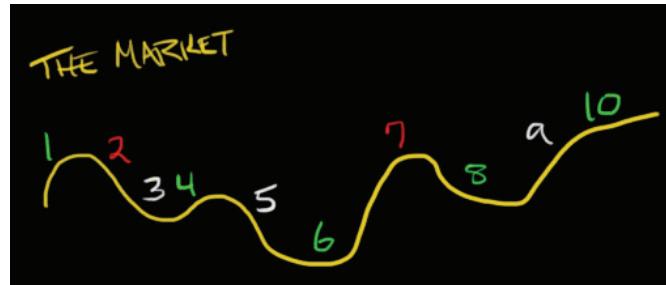
- Stagger your entry into numerous trades over time
- Advantages
  - Even if trades are all bullish we reduce our risk by entering them at different times
  - Breaks the correlation between trades
  - Don't tempt fate!
- Independent occurrences
- Example
  - I want to place 10 trades every month
  - 20 trading days in a month
  - Place 1 trade every 2 days



Notes: \_\_\_\_\_  
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# STRATEGY DIVERSIFICATION

- Rotate between different strategies
  - Bullish
  - Bearish
  - Neutral
  - Bi-Directional
- How does this make our equity curve like the blue line?
- A renewed look at the market cycle



Notes: \_\_\_\_\_

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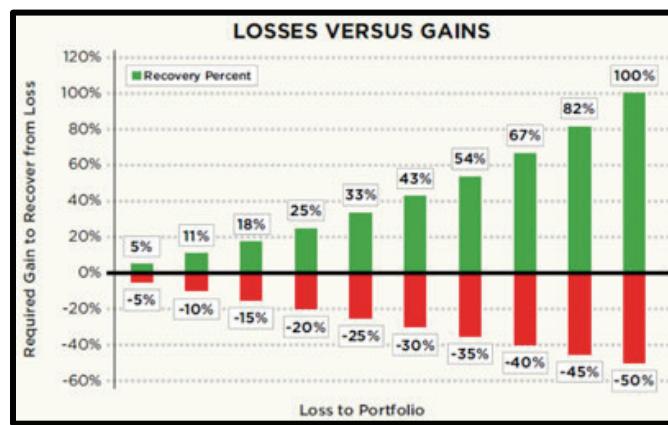
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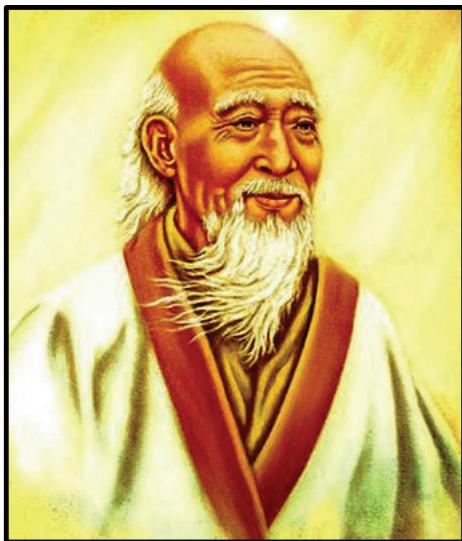
# RISK PER TRADE

- How much are we willing to lose on a losing trade?
- Equal risk per trade
  - Why?
- A profit and a loss are not equivalent. A minor loss always requires a larger gain to offset it



Notes: \_\_\_\_\_  
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# WISDOM



*“Take care of what is difficult while it is still easy, and deal with what will become big while it is yet small.”*

— Lao Tzu

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# SUMMARY

- Time and many occurrences eliminate the annoying effects of randomness
- Time diversification refers to staggering your entry into trades over time
- Strategy diversification refers to alternating entry into bullish, bearish, and neutral trades
- Risk a small amount and the same amount of your portfolio in each trade



Notes: \_\_\_\_\_

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# VOCABULARY

## A TRADER'S GUIDE TO THE WORLD

### **Equity Curve**

a graphical representation of your account value over time

### **IV Rank**

the current level of implied volatility relative to its 1-year historical range. The scale of IV rank runs from zero to 100

### **Mean Reversion**

the tendency for prices or volatility to return to some average level over time

### **Strategy Diversification**

alternate entry into bullish, bearish, and neutral trades over time

### **Time Diversification**

stagger your entry into multiple trades over time

Notes: \_\_\_\_\_  
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# STRATEGY SELECTION

- How do you determine which strategy to trade?
  - Try everything to get a feel for it
  - Don't become a jack of all trades and master of none
- Strategy selection depends on a number of factors
  - Personality
  - Risk tolerance
  - Skillset
    - Play to your strengths
      - Directional trader – buy calls/puts, debit spreads
      - Non-directional trader – positive theta, high probability plays
- Let's build a sample trade plan

Notes: \_\_\_\_\_

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# FINAL HOMEWORK

## WHAT'S EXPECTED OF YOU NOW

- Review the class recordings
- Select your favorite strategies and master them
- Enroll in a trading lab for help in applying concepts from class
- Look into the Elite Options class

Notes: \_\_\_\_\_

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