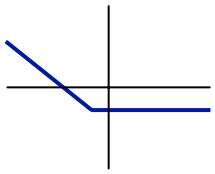
The Deutsche Bank Quick Guide to Basic Option Strategies

Directional View

Bearish

Long Put

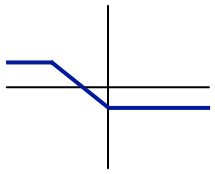


"I'm bearish on the stock, but I'm too worried about a short squeeze to go short"

Pay up-front in an effort to profit from a decline in stock price while limiting upside exposure, risking loss of premium paid

Long Put Spread

long higher-strike put + short lower-strike put

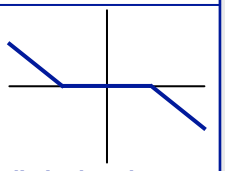


"I think the stock is going lower, but there is a downside support level"

Opportunity to profit from a limited decline in stock price risking cost of strategy; lower up-front cost than long put alone

Bearish Risk Reversal

long lower-strike put + short higher-strike call

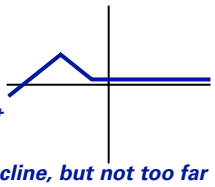


"I think the upside is limited, and there is significant downside potential"

Opportunity to benefit from a sell-off, financed by taking on risk of unlimited loss if stock rallies

Long 1x2 Put Spread

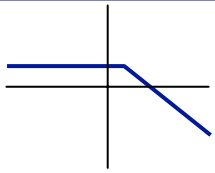
long 1 higher-strike put + short 2 lower-strike puts



"The stock will decline, but not too far and gradually"

Opportunity to profit from limited stock decline, but risk substantial loss in severe sell-off; lower up-front cost than long put or put spread

Short Call



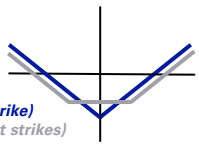
"If the stock goes higher, I'll be a seller"

Generate premium up-front for assuming risk of unlimited loss if stock rallies

Neutral

Long Straddle or Strangle

long call + long put (same strike)
long call + long put (different strikes)



"The stock is not staying here: it will move either much lower or much higher"

Opportunity to profit from large moves up or down, but risk losing premium paid for the options

Identifying an Option Trade: A 5-Step Guide

1. Determine what type of option strategy would best express your view on direction and timing

2. Use *ederivatives.db.com* to help formulate a view on whether implied volatilities are low, fair, or high (more overleaf)

3. Consider how the pricing of your strategy depends on implied volatility - do you see a pricing edge in being either a net buyer or seller of options?

4. Check option liquidity

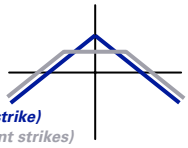
5. Examine live option prices to select specific option contracts (i.e., choose strikes and expiries)

Turn the page over to learn even more about options

Please contact the Equity Derivatives Strategy Group for further discussion of option trading strategies and their risks

Short Straddle or Strangle

short call + short put (same strike)
short call + short put (different strikes)

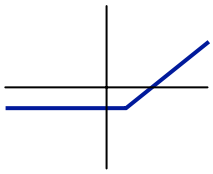


"This stock is dead-money: it is range-bound for the time being"

Opportunity to profit if the stock does not move significantly in either direction, but risk unlimited loss on significant stock move

Bullish

Long Call

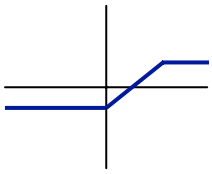


"I'm bullish on the stock, but I don't want the downside risk if I'm wrong"

Pay up-front in an effort to profit from a rise in stock price while limiting downside exposure, risking loss of premium paid

Long Call Spread

long lower-strike call + short higher-strike call

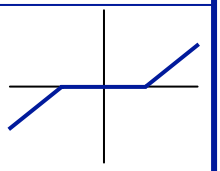


"I think the stock is going higher, but there is an upside resistance level"

Opportunity to profit from a limited rise in stock price risking cost of strategy; lower up-front cost than long call alone

Bullish Risk Reversal

long higher-strike call + short lower-strike put

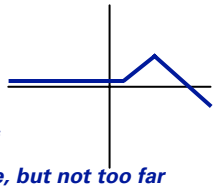


"I think the downside is limited, and there is significant upside potential"

Opportunity to benefit from a rally, financed by taking on risk of substantial loss if the stock falls

Long 1x2 Call Spread

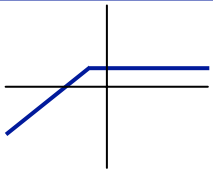
long 1 lower-strike call + short 2 higher-strike calls



"The stock will rise, but not too far and gradually"

Opportunity to profit from limited stock gain, but risk unlimited loss in sharp rally; lower up-front cost than long call or call spread

Short Put



"If the stock goes lower, I'll be a buyer"

Generate premium up-front for assuming risk of substantial loss if stock declines

Implied Volatility View

- **Low**
- **Fair**
- **High**

Note: All payoff graphs depicted at expiration; horizontal axis represents underlying price, vertical axis represents potential gain or loss from strategy

Deutsche Bank

Equity Derivatives Strategy Group

Glossary of option terms

Option: a contract giving the buyer the right (but not the obligation) to buy or sell an asset on or before a future date at a pre-specified price

Underlying: the asset (stock or index) on which an option is written

Strike price: the pre-specified price at which the underlying may be bought or sold

Out-of- / At- / In-the-money: designates where the current price of the underlying is relative to the strike price, i.e., whether the option would have a negative, zero, or positive payoff if exercised immediately

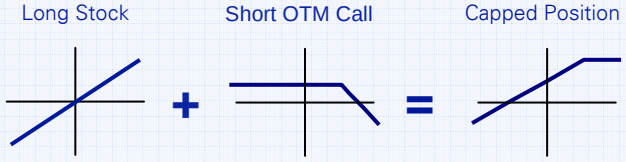
Expiration date: the date on which an option contract becomes void; the expiration date for listed stock options is the Saturday after the 3rd Friday of the expiration month (outside the US, most contracts expire on 3rd Friday of the expiration month)

Option style: designates when an option can be exercised, either at or any time before expiry (American), or only at expiry (European)

Exercising an option: the buyer of an option buys or sells the underlying under the terms specified by the option contract

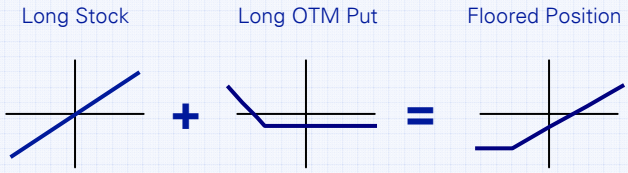
Common option overlays for long-stock positions

Yield enhancement through overwriting



Help enhance yield on a long-stock position in exchange for limiting your upside; remain exposed to substantial loss if stock sells off

Hedging with a put

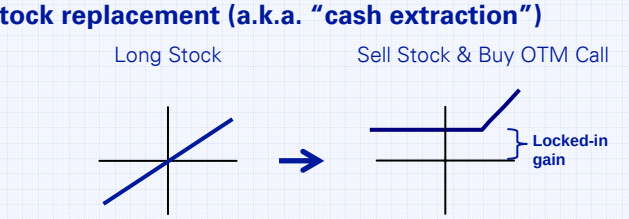


Pay up-front to help establish a downside limit on your position

Hedging with a "collar"

Help establish a downside limit in your position in exchange for limiting your upside; lower up-front cost than buying the put alone

Stock replacement (a.k.a. "cash extraction")



Pay cost of call to lock in a gain while maintaining upside exposure

The "Greeks"

Option traders use a standard set of terms, called the Greeks, to describe how the value of an option position changes with respect to several factors:

Delta: the change in position value for a $1 change in the underlying

Gamma: the change in delta for a $1 change in the underlying

Vega: the change in position value for a 1 point change in implied volatility

Theta: the change in position value in one day assuming nothing else changes

Rho: the change in position value for a 1% change in the risk-free rate of interest

If a call position has a delta of $100K, you'd expect the value of the position to rise by $100K for a $1 increase in the price of the underlying.

If a straddle has $100K of vega, you'd expect that a 1 point decline in implied volatility would lower the value of the straddle by $100K.

Volatility and the price of options

Volatility is a measure of uncertainty of stock or index returns. It is a key component of option pricing. Option traders commonly consider two types of volatility:

Realized volatility: the annualized standard deviation of daily log-returns of the underlying, calculated from historical stock prices or index levels – measures how volatile the underlying has been

Implied volatility: the volatility used by the option market to price an option (via the Black-Scholes formula) – reflects how volatile the underlying is expected to be

Formulating a view on whether implied volatilities are high, fair, or low helps you assess whether options are rich, fairly priced, or cheap from a vol standpoint. If implied vols seem low, consider being a buyer of options. If implied vols seem high, consider being a seller of options.

In developing a view on implied volatility, we examine the history of the underlying's realized and implied vols, the vols of similar underlyings, and other factors.

Please contact Equity Derivatives Strategy for further discussion.

Mark-to-market risk – a word of caution

When you trade options, mark-to-market is a serious consideration. This is particularly true if you've sold (or "written") options because the price at which you will be able to buy an option back can be much higher than its immediate-exercise (or intrinsic) value. The longer the option's remaining life, the higher the price at which you'll have to buy the option back. A rise in implied volatility will also increase the buy-back price of the option.

Consider the 1-by-2 call spread (long one lower-strike call and short two higher-strike calls). If the stock price rises quickly and reaches the higher strike where you are short options, the mark-to-market P&L on the 1-by-2 can be negative, even though the stock moved to the region where, at expiry, you'd expect to make the most money. You have predicted the direction of the underlying correctly, but you can still lose money if you close the 1-by-2 position early.

When you sell options, consider not just where the stock will be at expiry, but also the path it will take to get there.

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