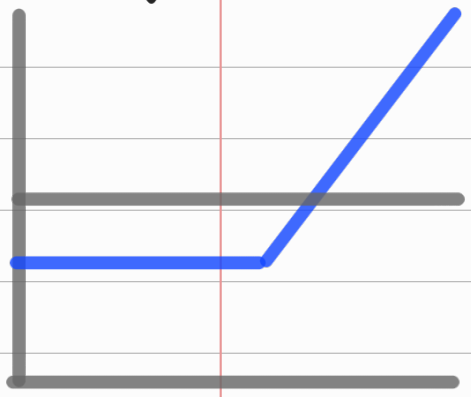
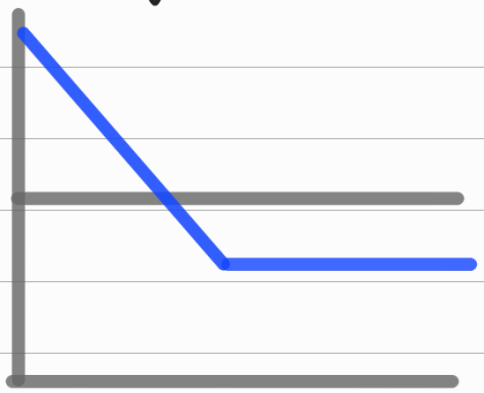
Module 6: Option Strategies

Long Call Profit



Long Put Profit.



X = exercise/Strike price
S = stock price
p/c = premium/price of call/put

Implied Volatility : the estimated volatility inferred by the current value of the option

6.2. Synthetic options :

Long call + short put = Synthetic long forward position

@ expiration, value = $S_T - X$

Put-Call Parity

$$C_0 + PV(X) = P_0 + S_0$$

Long/Short position ⇔ +/− in PCP

e.g. $C_0 = 6.26$.

$P_0 = 3.87$

$C_0 - P_0 = 6.26 - 3.87 = 2.37$

Breakeven at expiration = 50 + 2.39
= 52.39

EXAMPLE: Synthetic Long Forward Position

Gavin Ennis is a dealer who has just sold a four-month forward contract on AlphaCo Stock to a client who will thereby purchase 1,000 shares of the stock for 179.59. AlphaCo's current share price is 179, and AlphaCo will not be paying a dividend during the next four months. The annualized interest rate is 1%, and AlphaCo 179.59 calls and puts are both currently trading at 16.34 per share.

Explain how Ennis could hedge his short forward position using a synthetic long forward position, and explain what happens at expiry if the AlphaCo share price is above or below 179.59.

Put-Call forward parity

$$C_0 + PV(x) = PV(F_0(T)) + P_0$$

↑ substitute S_0.

$F_0(T)$ = forward price of a contract that matures at the same time as the options.

if forward contract **pays no yield**,

$$F_0(T) = FV(S_0).$$

Put-call parity : $C_0 - P_0 = S_0 - PV(x)$

$0 = 179 - 179.59 \div (1.01)^{4/12}$.

$S_0 = PV(F_0(T))$

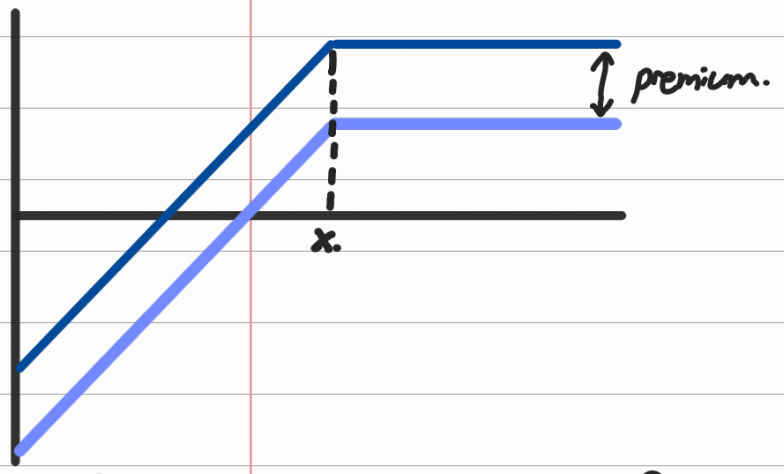
Use synthetic long position by long call + short put. (both at 179.59)

$S_T > 179.59$ ⇒ long call off. the short fwd

$S_T < 179.59$ ⇒ short forward ct will pay off the short put.

Covered Call = sell a call
+ buy the stock.

Covered call profit



e.g. $X = 55$. $S_0 = 52.14$. $C = 2.52$.

$S_T > 55$ ⇒ call is exercised
(i.e. sell the long position)
$S_T < 55$ ⇒ call isn't exercised
I hold the stock

maximum profit at expiry $= X - S_0 + C_0$
breakeven stock price at expiry
$= S_0 - C_0$

3 Scenarios of using covered calls:

- **Yield Enhancement.**
  (don't see an upside so want to sell off upside)

- **Reducing a position at a favorable price**

- **Target price realization** (selling the call at a price slightly higher than S_0, believing that stock is worth slightly more than its current price).
  downside of the strategy:
  ① stock might rise much higher than $X + C_0$
  ② stock might drop lower than S_0

Price of X in different strategies:

Yield Enhancement.	: OTM
Reducing position @ favorable price	: ITM
Target price realization	: Marginally OTM

MODULE QUIZ 6.1, 6.2, 6.3

1. Which of the following trades would create a synthetic short exposure to PQR stock? The options expire in 6 months, and the risk-free interest rate is 2%.
   A. Borrow 99, buy a PQR 100 put and sell a PQR 100 call.
   B. Borrow 101, buy a PQR 100 put and buy a PQR 100 call.
   C. Buy a PQR 100 call and sell a PQR 100 put, simultaneously selling a six-month forward contract on PQR at 100.
2. An investor purchases a stock for $43 and sells a call for $2.10 with a strike price of $45. At expiration of the call:
   a) **compute** the maximum profit and loss and the breakeven price.
   b) **compute** the profit or loss when the stock price is $0, $35, $40, $45, $50.

1. Synthetic short $\Leftrightarrow$ finding $-(S_0)$ in PCP.

$$C + PV(X) = S + P.$$

$$-S_0 = P - C - PV(X).$$ (A)

2a). Maximum profit $= (45 + \cancel{2.10} - 43) + 2.10$

$= (45 - 43) + 2.10$

$= 4.10$

Maximum loss $= 43 - 2.10$

$= 40.9$

Breakeven Price $= 40.9$

Protective Put = Long Stock + Long Put

Maximum Loss = $S_0 - X + P_0$ (imagine you buy a 39 Put, S_0 is 40)

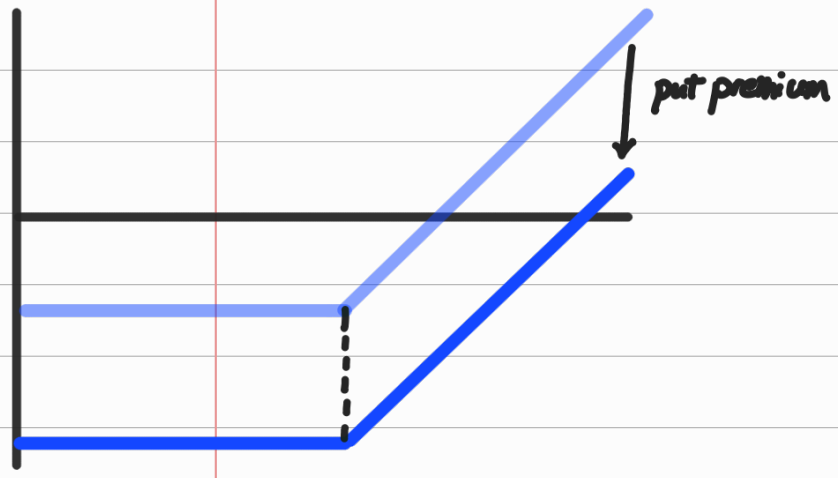
Breakeven price = $S_0 + P_0$

↑ breakeven for stock

↖ breakeven for put

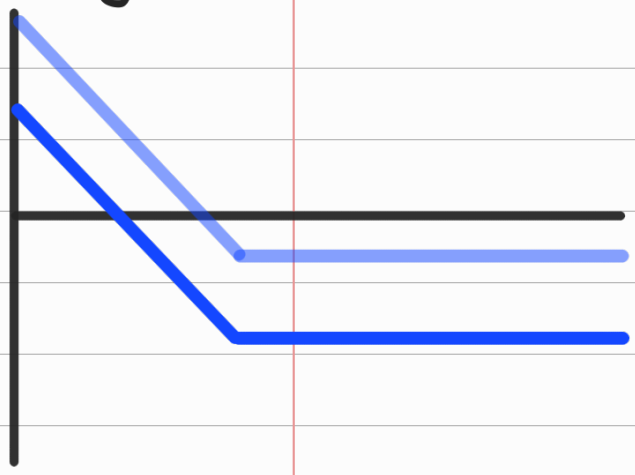
(No Max Profit)

Protective Put Profit

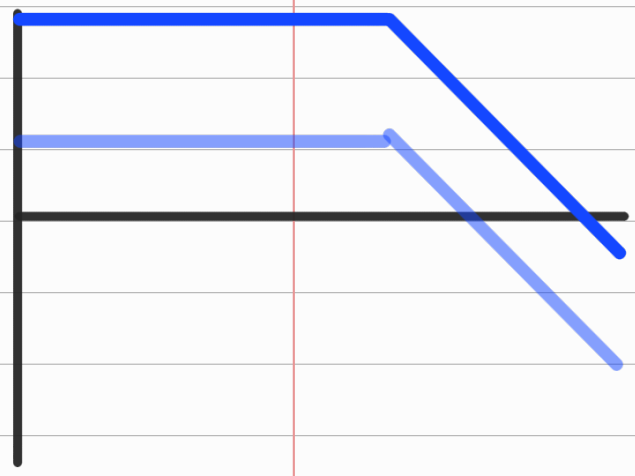


Option to hedge a short position

Long Call + Short Stock. Profit.



Short Put + Long Stock



MODULE QUIZ 6.4, 6.5

1. An investor purchases a stock for $37.50 and buys a put for $1.40 with a strike price of $35. At expiration of the put:

   a) **compute** the maximum profit, maximum loss, and breakeven price.

   b) **compute** the profit or loss for when the stock price is $30, $35, $40, and $50.

2. It is September, and Jones has a short position in Alphacorp stock. The share price is currently 220 and Jones anticipates little movement in the price over the next month, although his long-term view is bearish. To increase his yield from the holding Jones would *most likely* sell:
   A. October 240 calls.
   B. October 240 puts.
   C. October 200 puts.

1.a) Maximum Profit = ∞

Max Loss = (e.g. $S_T = 36$)

= 37.5 − 35 + 1.4.

= 3.9

Breakeven Price = 37.5 + 1.4

= 38.9

2. A ✗ C

A is not right b/c Jones doesn't have the stock long.

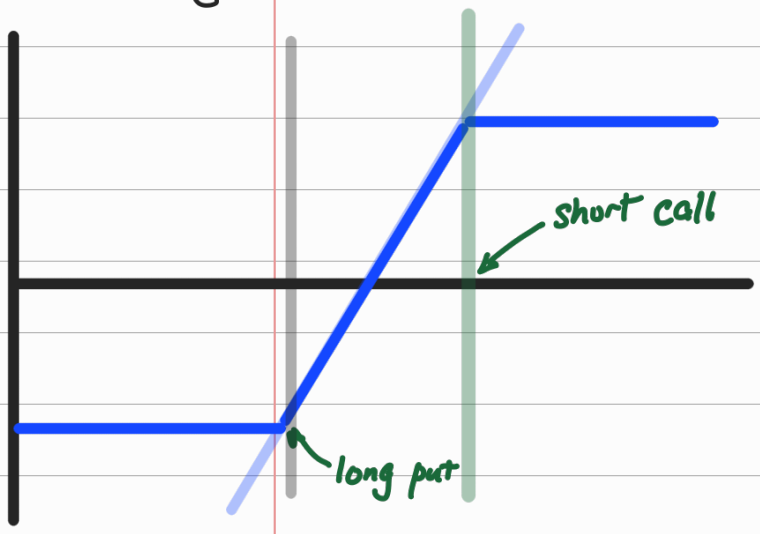
Jones has short exposure, selling a put will increase yield

combinations of protective put + covered call

most likely OTM

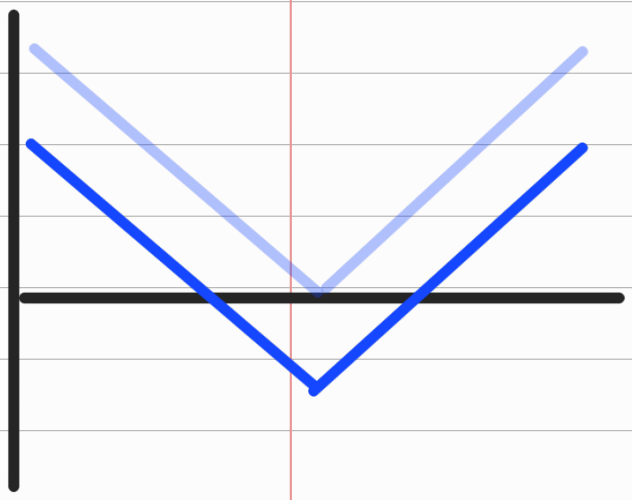
COLLARS.

= Long Stock + Long Put + Short Call

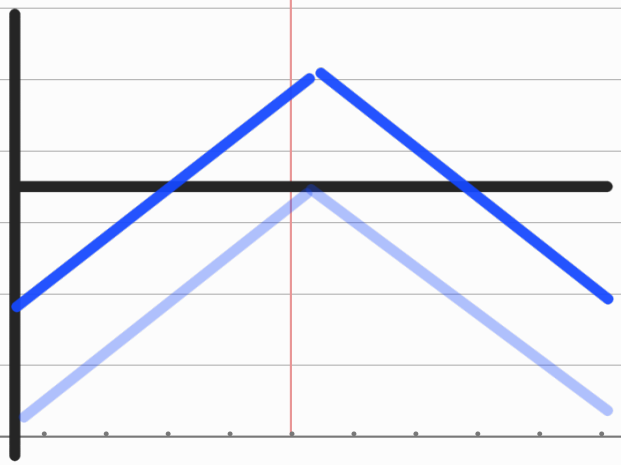


ZERO-COST COLLAR if put prem = call prem.

Straddles = Long Put + Long Call (i.e. volatility play)



SHORT STRADDLE = Short Put + Short Call



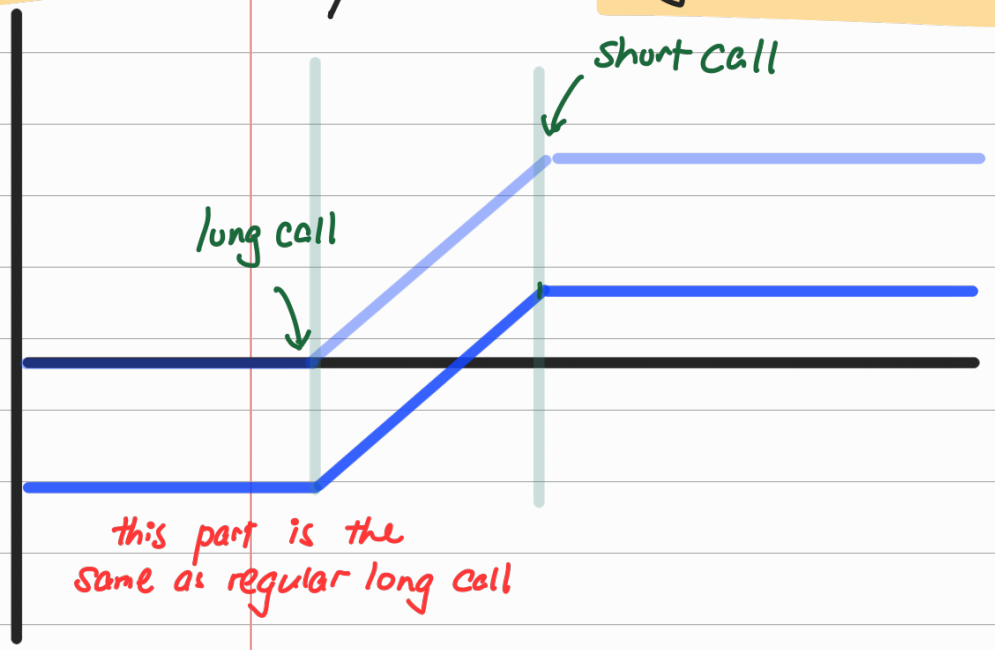
(won't mix call & put in the same spread)

Spread: n long option on one strike
+ n short option on a second strike.

Bull Spread: LONG ON LOWER Strike, SHORT ON HIGHER Strike (BULL = BUy-LLOW)

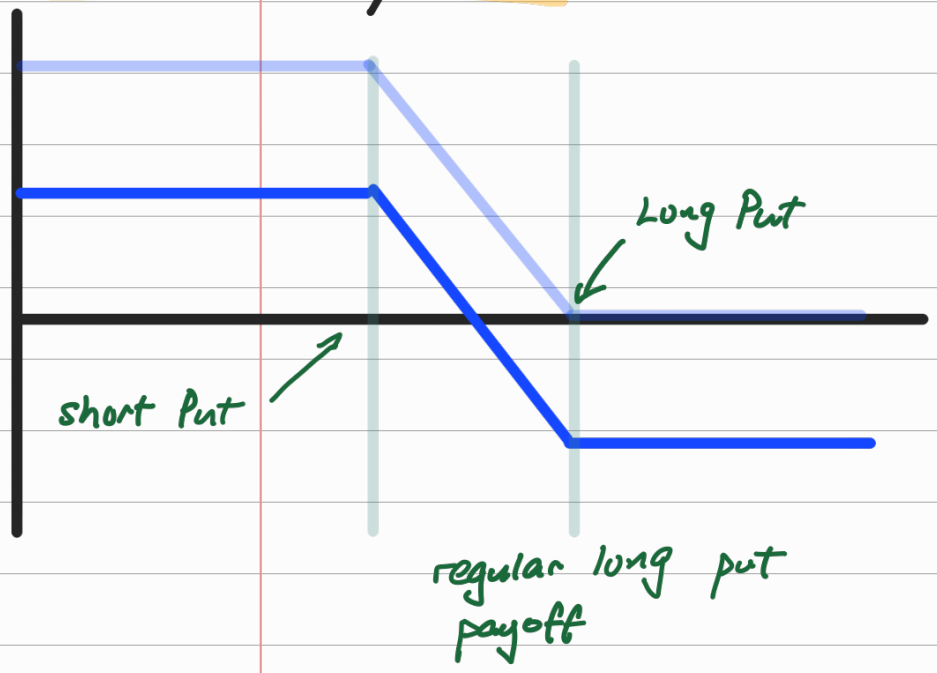
Bear Spread: SHORT ON LOWER Strike
LONG ON HIGHER Strike

Bull Call Spread (Long & Short Call)



Max. Loss = Net premium paid
Breakeven = Lower strike + net prem. paid
Max profit = Diff b/w strikes - net prem. paid

Bear Put Spread.

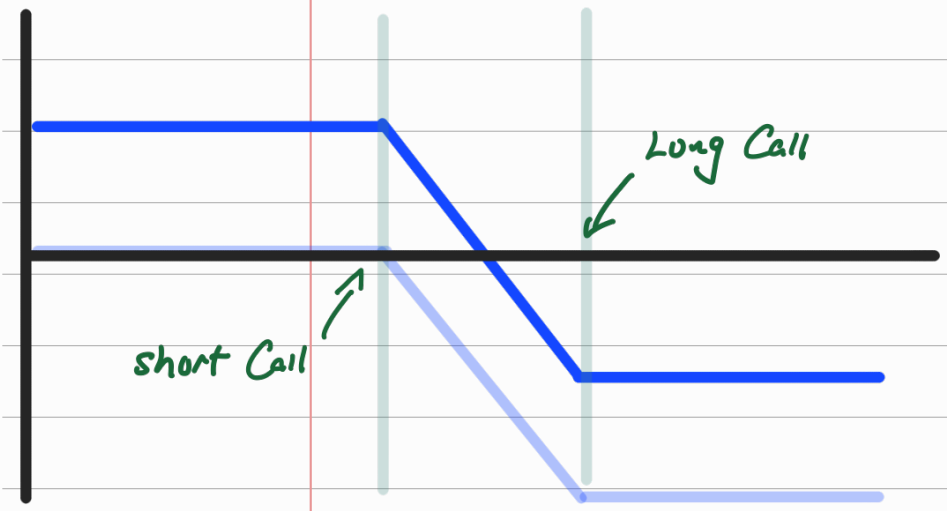


Max Loss = Net Premium paid

Breakeven = higher strike - net prem. paid

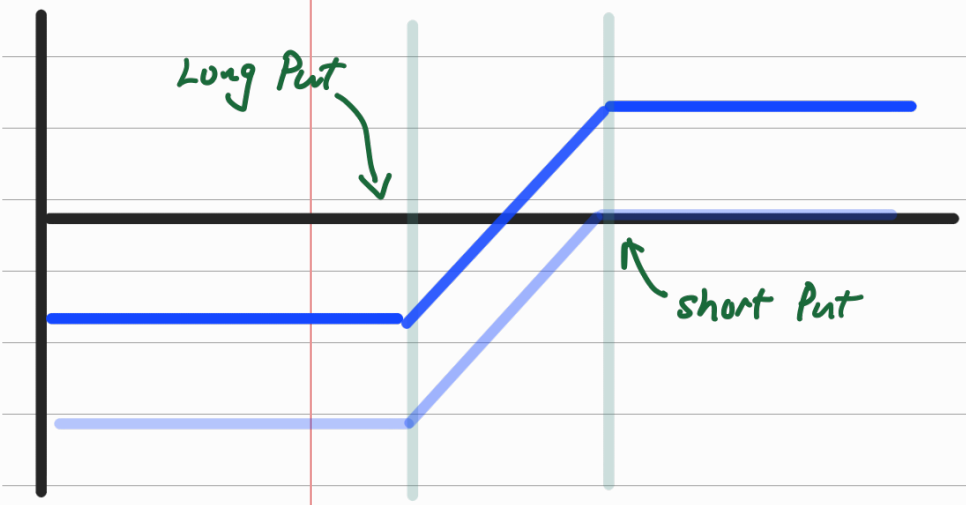
Max Profit = Diff b/w strikes - net prem. paid

Bear Call Spread



Max Profit = net prem. paid
Breakeven = lower strike + net prem. paid
Max Loss = diff b/w strikes - net prem. paid

Bull Put Spread.



Max Profit = net prem. paid
Breakeven = higher strike - net prem. paid
Max Loss = diff b/w strikes - net prem. paid

Adding a short leg to the long position

- Strategy: if long call already profiting (i.e. lower than current stock price), can sell a call higher than current stock price to sell off the upside

Generalized Formulas for spreads

if debit spread (BULL CALL & BEAR PUT)

max loss = net prem. paid

max profit = diff b/w strikes − net prem. paid

if Credit Spreads (BEAR CALL & BULL PUT):

max loss = diff b/w strikes − net prem. paid

max profit = net prem. paid

MODULE QUIZ 6.8

1. An investor purchases a call for $2.10 with a strike price of $45 and sells a call for $0.50 with a strike price of $50. At expiration of the options:
   a) **Compute** the maximum profit and loss and the breakeven price.
   b) **Compute** the profit or loss when the price is $35, $45, $48, $50, and $55.
2. An investor purchases a put for $4.00 with a strike price of $25.00 and sells a put for $1.80 with a strike price of $20.00. At expiration of the puts:
   a) **Compute** the maximum profit and loss and the breakeven price.
   b) **Calculate** the profit or loss when the price is $15, $20, $23.50, $25, and $30.
3. A stock trades at 51. Calls with strike prices of 47 and 53 are priced at 5.25 and 0.75, respectively. **Compute** the initial investment for a bear spread and the breakeven price or prices of the spread at options expiration.

6.8. Quiz

1) a) Initial cost = 2.10 - 0.50 = 1.60 ✓

Maximum profit = $S = 50$ = 50 - 45 - 1.60

= 3.40 ✓

Maximum Loss = 1.60

Breakeven price = 46.60

b) 35 < 46.60 ⇒ 1.60 loss

45 < 46.60 ⇒ 1.60 loss

48 > 46.60 ⇒ 1.40

50 > 46.60 ⇒ 3.40

55 > 46.60 ⇒ 3.40

2 a) Initial cost = 4 - 1.8 = 2.2

Maximum profit = $S_0 = 20$ = 5 - 2.2 = 2.8

Maximum loss = 2.2

Breakeven price = 25 - 2.2 = 22.8

b) 15 = 2.8 profit

20 = 2.8 profit

23.50 = 0.7 loss

25 = 2.2 loss

30 = 2.2 loss.

3. Bear Call Spread

Sell low <=> Bear ⇒ buy high

Remember this to figure out the direction

Sell 47, buy 53 ⇒ initial investment = gain of $4.50

Breakeven price = 51.50

69 Delta & Gamma

	CALL	PUT
Delta	+	−
Gamma	+	+
Theta	−	−
Vega	+	+

$$\text{Delta } (\Delta) = \frac{\text{Change in option price}}{+1 \text{ in share price}}$$

$$\text{Gamma } (\Gamma) = \frac{\text{Change in delta}}{+1 \text{ in share price}}$$

Theta (Θ) = daily change in option price (effect of time passing)

$$\text{Vega } (\nu) = \frac{\text{Change in option price}}{+1\% \text{ in share volatility}}$$

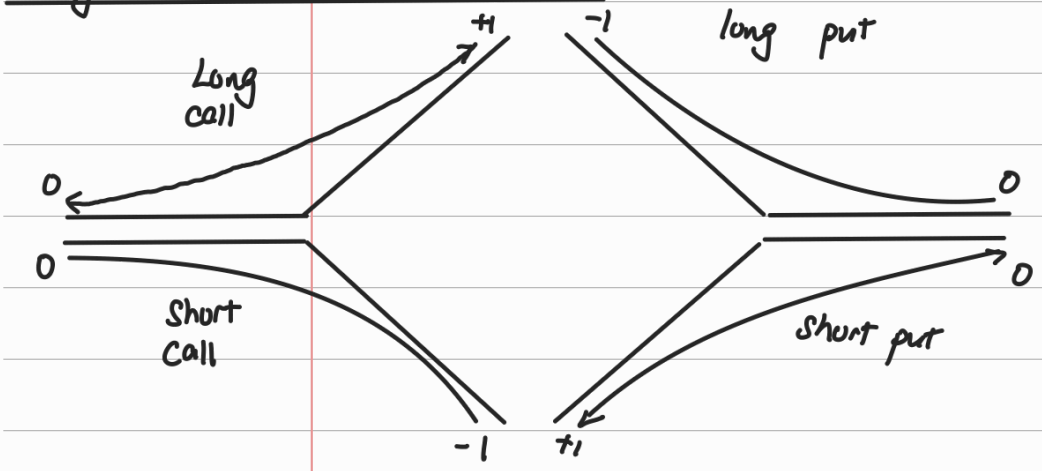
Time value = vertical line b/w the (total) value line & the intrinsic value line (greatest around ATM, diminishes the more the option is ITM or OTM)

All other factors held constant,

the more ITM is an option, the closer the absolute delta is to 1

the more OTM is an option, the closer the absolute delta is to 0

Ranges of values of delta:



Gamma: tends to be higher the closer to ATM, greatest for ATM close to expiry

Delta(a long position in one unit of underlying) = +1
Delta(a short position in one unit of underlying) = -1.

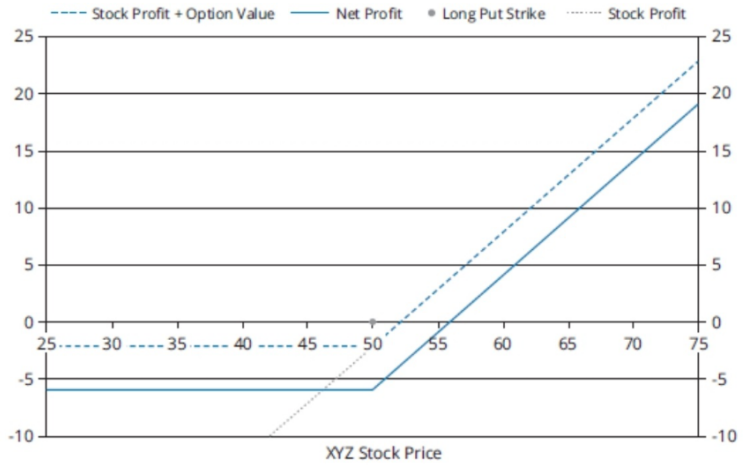
e.g. Delta (1000 Shares + 10 Long Put)

= 1000 + (-0.6) · 1000.

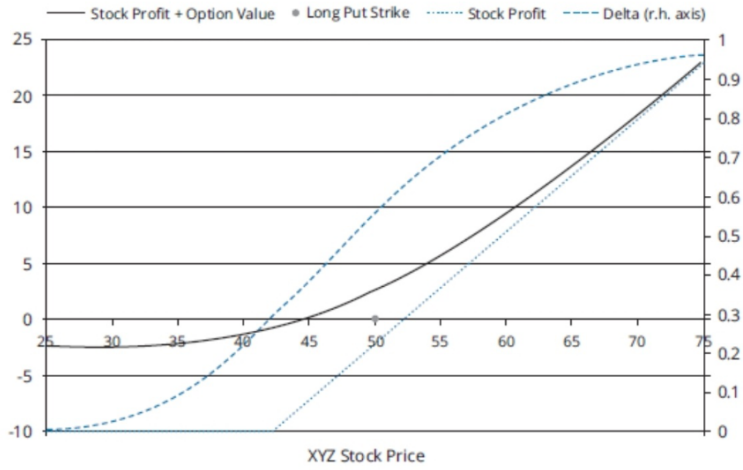
= 400

delta = -0.6

Protective Put Pre-expiry



However, before expiration, the protective put is better thought of as modifying the delta of the long stock from its unhedged value of +1:



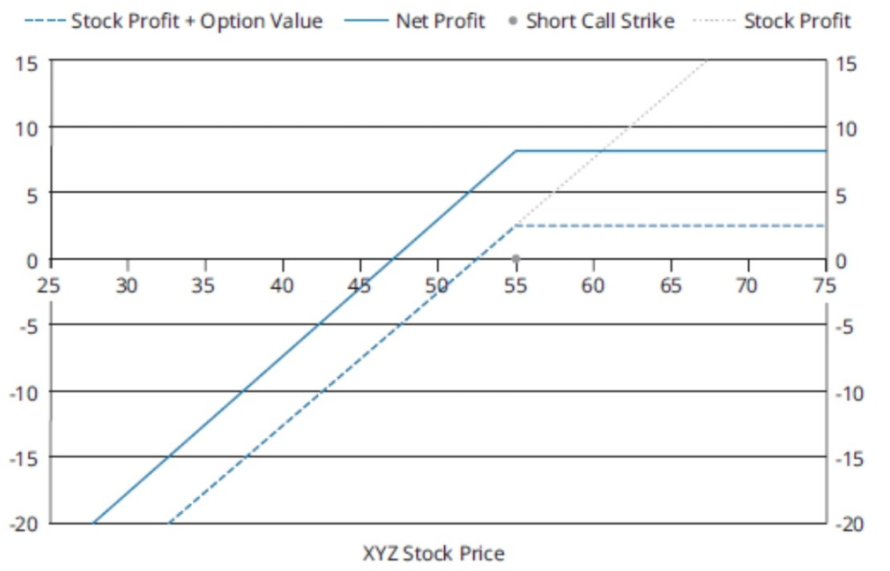
ignores the premium paid

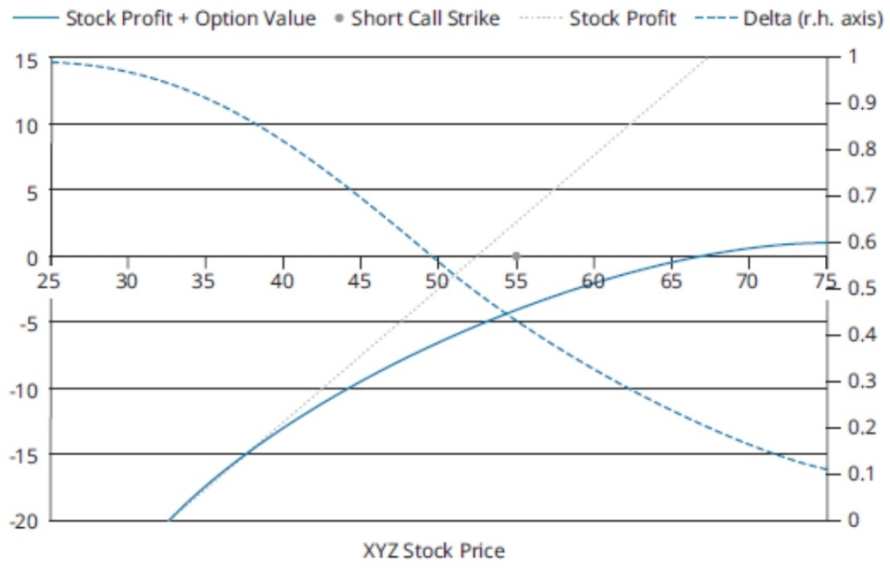
Net effect: if stock goes up, delta(option) ≈ 0 as option goes OTM => position delta = 1

if stock goes ↓, delta(option) ≈ -1 as option goes ITM => position delta = 0

Stock + protective put has a net exposure eq. to LONG CALL (0 to +1 delta)

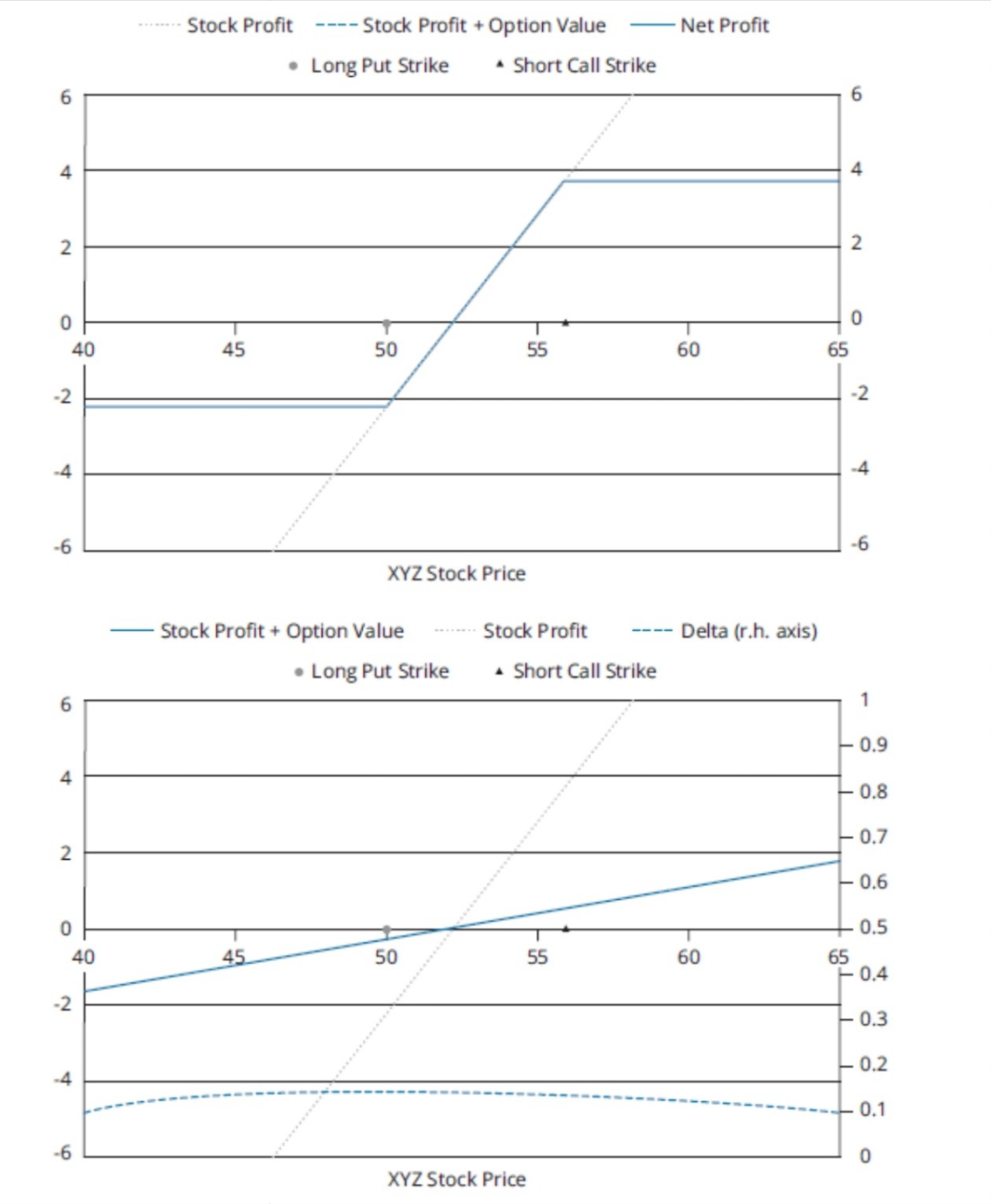
Covered Call Pre-expiry



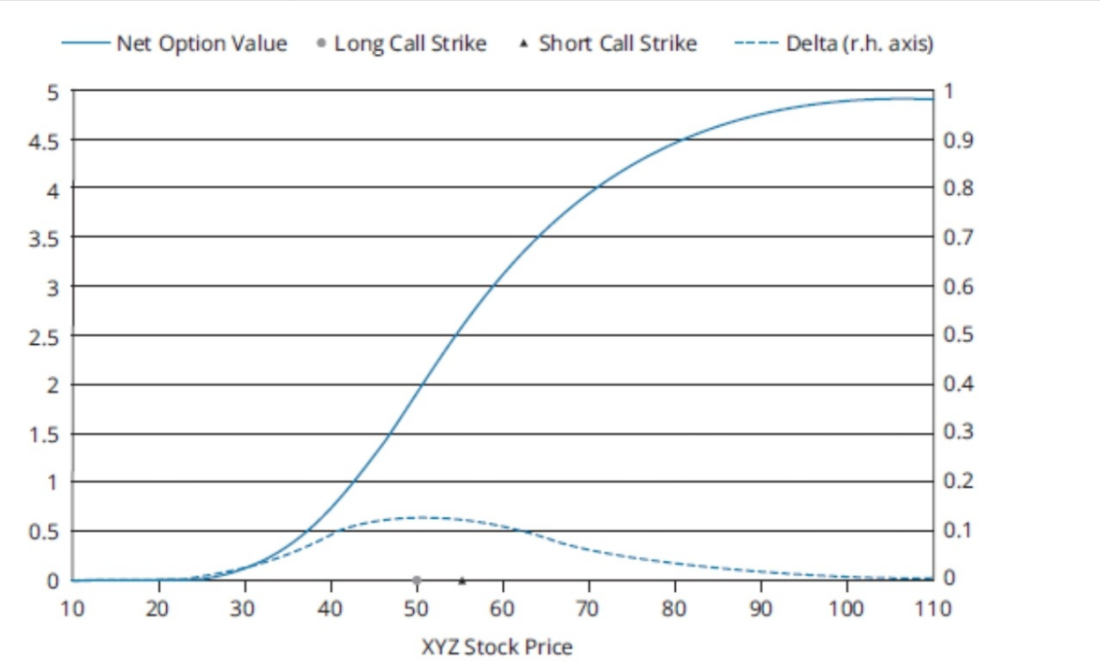


Same as protective put, position delta varies from +1 (call = OTM) to 0 (call = ITM)

Collar Pre-expiry



Bull Call Spread



MODULE QUIZ 6.9

1. Which of the following would *most likely* be possible deltas for covered call and protective put positions, just after they were established with three months to expiration?
   A. Both have deltas of zero.
   B. The covered call has a delta of 0.4, and the protective put has a delta of 0.45.
   C. The covered call has a delta of 0.35, while the protective put has a delta of −0.4.

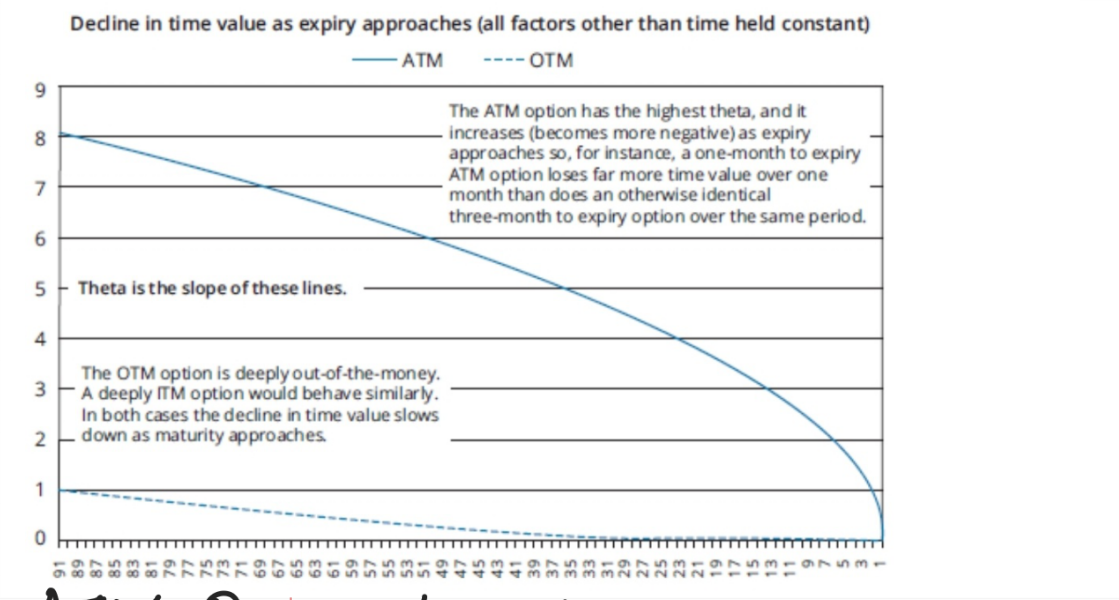
1. A x B

Before expiry, both PP & CC have positive deltas (both short call & long puts have negative deltas, w/ absolute val < 1, so they partially hedge the +1 delta of underlying)

PP & CC is NOT delta-neutral!

6.10 : Theta & Vega

Theta is always negative :
less time to expiration = less time value



ATM Options lose time value at an increasing rate as they mature.

Calendar Spreads

- only strategy with options w/ diff. expirations
- goal : exploit the diff in theta b/w close-to-expiry & more-distant-from-expiry options.
- nearer-dated options will have a higher absolute theta (i.e. more negative) than longer-dated options. (i.e. nearer date is cheaper).

- long cal spread strategy:
long longer-dated options & selling shorter-dated option
(same strike, same underlying, ATM)

EXAMPLE: Long calendar spread

Suppose that on 20 March, when the XYZ stock price is $52.14 Jenkins has a long-term bullish view on the XYZ stock price, but that over the next month he anticipates very little price movement.

He buys 4 XYZ June 52.5 call contracts (on 100 shares) at 6.22, and sells 4 XYZ April 52.5 call contracts for $3.53. The net premium outlay is $2.69 × 4 × 100 = $1,076.

If at the April call's expiry the stock price is still $52.14, both calls will be OTM and the April call will expire worthless. Assuming all other factors are unchanged, the June call will now be worth $5.00 (this is derived from the pricing model and, if needed, would be given in a question).

Jenkins will now have a position worth $5 × 400 = $2,000, having paid only $1,076 a month earlier. The profit would be even higher if implied volatility rose since that would drive the June call value higher.

Short cal spread strategy

long shorter-dated options
& short longer-dated options

(options need to be sufficiently ITM/OTM)

Short cal spread is vulnerable to options moving towards ATM as shorter-dated options expire (so the longer-dated option premium also rises)

Overall principle: sell the options that are expected to fall relatively faster as time passes.

In general,

LONG cal spread will benefit from a stable market / ↑ in imp. vol.

SHORT cal spread will benefit from a moving market / ↓ in imp. vol.

Vega

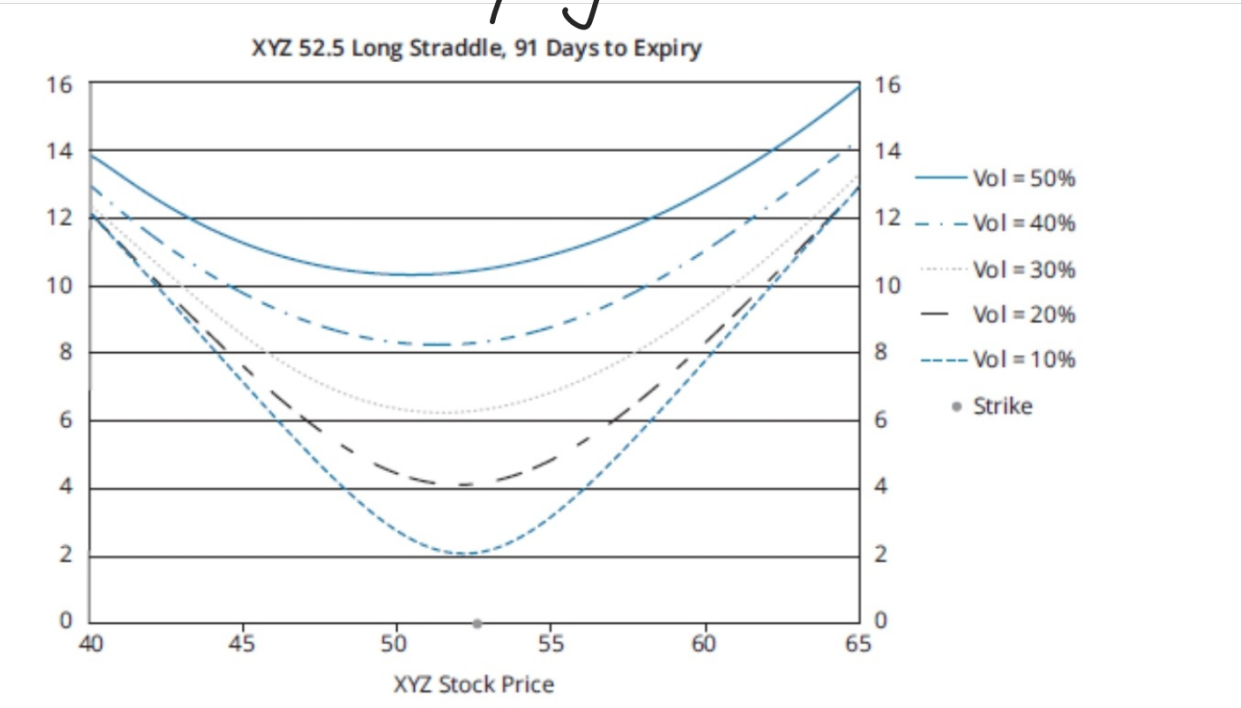
- always positive
- higher the more time to expiry, but diminishes the further ITM/OTM.
- Calculating volatility:

  e.g. annualized implied volatility = 57%
  (252 trading days in a year).

  Expected volatility of option expiring in 2 months (42 trading days)

  $= 57\% \times \sqrt{\frac{42}{252}} = 23.27\%$

Straddle Pre-expiry



- value still increase the further the underlying is away from the strike. BUT slope of the line (i.e. the delta) 0 when near the strike, +1 when the underlying increases, -1 as underlying decreases.

6.11 Volatility Skew / Smile.

2 often-observed patterns in relationship b/w implied volatility & strike price:

Vol. Smile: further-from-ATM has higher Imp. Vol. (i.e. U-shaped curve).
less common than vol. skew.

Vol. Skew: Imp. Vol. increases for more OTM puts, but decreases for more OTM calls (OTM puts are desirable as insurance against market declines).

Market Sentiment Implications:

sharp ↑ in skew level & ↑ in lv of imp. vol $\Leftrightarrow$ MARKET SENTIMENT = BEARISH.

Higher Imp Vol. (compared to hist. levels) for OTM calls $\Leftrightarrow$ BULLISH INVESTORS SENTIMENT

Risk Reversal:

Long RR: Long Call + Short Put

Short RR: Short Call + Long Put

e.g. trader believes that put imp. vol. is too high. (comp to for calls),

$\Rightarrow$ BUY OTM call + SELL OTM put
(relatively underpriced) (relatively overpriced)

would also create a broadly long exposure (could be problematic)

e.g. PQR price = $50
put strike = $40. imp. vol = 70%
call strike = $60 imp. vol = 60%
delta (Risk Reversal) = 0.3

Since $1 fall in stock price
⇒ RR losing $1 \times 0.3 \times 1000 = \$300$
↑ NET LONG EXPOSURE

a DELTA-HEDGE strategy = short 300 shares

MODULE QUIZ 6.10, 6.11

1. An investor has a long-term bearish view on the Acme stock price, but over the next two months he anticipates very little price movement. An appropriate strategy to benefit from this view would be to:
   A. buy ATM calls on Acme with two months to expiry and simultaneously sell ATM calls on Acme with five months to expiry.
   B. sell ATM puts on Acme with two months to expiry and simultaneously buy ATM puts on Acme with five months to expiry.
   C. buy OTM calls on Acme with two months to expiry and sell OTM puts on Acme with two months to expiry.
2. Which of the following statements is *most correct*?
   A. A long straddle is a strategy based on the implied volatility smile, since the further the underlying moves from the strike by the expiration of the options, the greater the profit from the strategy.
   B. Volatility skew describes the empirical situation where implied volatility increases for more OTM calls, and decreases for more OTM puts.
   C. Volatility skew describes the empirical situation where implied volatility increases for more OTM puts, and decreases for more OTM calls.

1. B
2. C Straddle has little to do w/ voletility smile.

/ /

Covered Call

SCENARIO

A client needs cash. Within their portfolio is a stock (current price = 169) that they are considering selling in the near future and on which their advisor has a bearish outlook over the next six months. Information is provided on 44-day exchange-listed options (calls and put premiums and deltas, plus vegas).

Solution

Sell calls on the stock to generate premium income (provides the required cash) and reduce delta of stock holding (reduce exposure given bearish outlook).

Considerations

The premium on chosen option must be high enough to meet cash target (assumes 50 contracts sold to match 5,000 shares held): ITM call would generate the most cash, but there is a danger of shares being called away, so choose 170 calls (just OTM). More OTM calls raise too little cash.

Risks

Stock may rise. If it is above 170 at expiry then sell at 170 and lose further gain.

Stock may fall over period to expiry, giving loss on long stock position (but cushioned by premium).

Other points

Position delta is calculated for covered call at point options written, but otherwise the focus is on at-expiry outcomes. Vegas are ignored.

Put Writing

SCENARIO

Investor OQ wants to purchase shares, but considers them too expensive at 169. OQ is prepared to pay no more than 165.

Solution

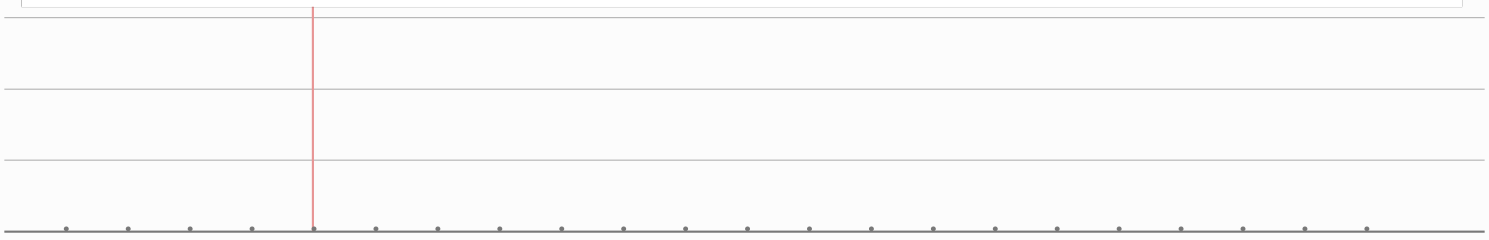
Write OTM puts (165 strike), and effectively gets paid to buy the stock.

If the stock is less than 165 at expiry then the put is exercised (by the counterparty) and OQ has to buy at 165.

Risks

Shares may fall below $X - p_0$ by expiry, in which case would have been better off buying them outright (cheaper than 165 by more than the premium).

The stock may rise to point where $S_T - 169 > p_0$. At that point it would have been better off buying shares at 169 since the rise in value since would exceed the premium received.



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Long Straddle

SCENARIO

KH believes a stock price is about to rise or fall dramatically (at least ±10%), and considers a straddle.

Before KH makes the trade, a news story breaks that increases volatility, making the same straddle more expensive.

Solution

The straddle is no longer worthwhile, since to reach new breakeven points stock needs to move > ±12%. Therefore, do not enter into the long straddle.

Other points

KH uses vega of the straddle before the news story broke to predict the effect of the story on the price of the straddle (sum of put and call premiums). The implied volatility is higher by 15 percentage points × initial vega of 0.468 (given) = 7.02 ($) increase in straddle value. This is very close to actual rise in price of straddle, given earlier in the solution.

Collar

SCENARIO

A client has a long position in a low cost basis stock, which means that selling is ruled out. Need to protect against a decline in price.

Solution

Use a zero-cost collar. Short calls sell off right tail of return distribution (potential large gains) and subsidize the purchase of puts that eliminate the left tail (potential large losses).

Calendar Spread

SCENARIO

ID expects little price movement in Euro Stoxx 50 index over next month from the current level of 3,500, but has a bearish long-term view. The consensus is for a flat market. ATM options are available.

Solution

Sell a three-month 3,500 put option and buy a six-month 3,500 put option (a **long** calendar spread, since they are long the options with more time to expiry).

This requires a net initial payment because the longer-dated put is more valuable (€173 – €119 = €54).

If ID's expectation is correct, and the stock index is unchanged at the expiry of the short (so the options are still ATM) then the following is true:

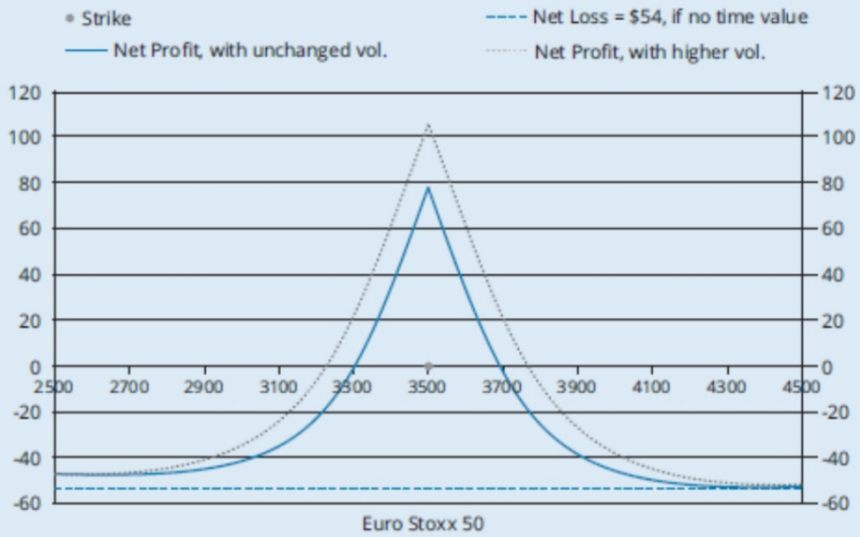
- The short put expires worthless. The long put (which now has three months to expiry) will be worth less than when it was bought (less time value), but its value will be higher than the net premium paid initially.
- This is because the three-month put had higher (more negative) theta, so it fell in value by more. ID was short this put and long the other, so makes a net profit.
- ID could either sell the long put at this point, realizing the net profit, or keep it as a bet on the index subsequently falling (having paid less, net, compared to solely going long).

Considerations

A calendar spread could use calls or puts, so why puts in this case? Because once the near-dated option expires ID wants to be left with a bearish exposure to the index – hence long puts.

Risks

At the short put's expiry it will only have intrinsic value, whereas the long put will have both intrinsic and time value. At any expiry level of the index the two options will have identical (absolute) intrinsic values (same strike), and these will cancel out, but the long put will also have time value, which is thus the net value of the position. Subtracting the net premium from the time value gives us the net profit:



A rise or fall in the index would reduce the (time) value of the long put, reducing the profit. A sufficiently large move, either way, could lead to a loss.

The worst outcome would be the entire net premium being lost.

A rise in implied volatility could increase profit/reduce loss, by pumping-up the long put's time value. Vice-versa a fall in implied volatility would decrease profit/increase loss.

Hedging an Expected Increase in Equity Market Volatility

SCENARIO

JW has a stock portfolio and fears the market is due a correction (a fall), which will be accompanied by a rise in short-term volatility. He wants to set up a position that will benefit from higher volatility, while lowering the cost of this hedge.

Solution

Buy an ATM call on volatility index (VIX) futures (futures which rise or fall with an index of market volatility). If volatility rises then the call will expire ITM and he will receive a payoff.

However, such a call could be expensive, so he simultaneously sells an OTM put on VIX futures—selling off the benefit of a fall in volatility.

Considerations

A regression of the portfolio's historic profits/losses versus changes in volatility could be used to determine what value of options to trade (to balance the hedge).

Buying VIX futures would be an alternative, less flexible, hedge.

Other points

Given the apparent negative correlation between volatility and the level of the market JW is in effect short volatility, and the hedge can be seen as equivalent to a collar, but against a short, rather than a long exposure.

Long Calls as a Proxy for the Underlying

SCENARIO

AS anticipates a rise in a share's price from £60 to £70 over the next three months, with no change in the implied volatility of the associated stock options. He wants to recommend the three-month (long) call that will maximize profits if this happens.

Solution

Choose the call which maximizes the ratio of expected profit to cost (assuming the stock rises to £70):

$$\frac{\text{profit at expiration if stock } = \text{£70}}{\text{premium}} = \frac{70 - (X + c_0)}{c_0}$$

Note that we can automatically rule out any call where the breakeven ($X + c_0$) is above £70.

They also comment on delta, presumably because they are implicitly assuming that the position may not be held to call expiration, but could be closed out by selling the call once the rise in share price has happened. In that case the key issue is how the call value will change if the share price rises. The call that has the highest value for the profit to cost ratio has a lower (absolute) value of delta, suggesting that it is less responsive to rises in the underlying share price (bad), but it does have a higher gamma which, the answer claims, will more than compensate.

Risks

Not covered within the solution, but the obvious risk is that the share ends at a price other than £70, in which case a different call could have been preferable.

Protective Put

SCENARIO

EM holds shares that he expects will suffer a decline of up to 10% in one week. This would take the price down from €42 to €37.80. He wants to protect the position, while keeping the cost of the protection to a minimum. A range of one-month puts are presented.

Solution

Similarly to the previous example, they identify the put that maximizes the ratio of expected profit to cost (assuming the stock falls to €37.80):

$$\frac{\text{profit at expiration if stock} = €37.80}{\text{premium}} = \frac{(X - p_0) - 37.8}{p_0}$$

Note that we can automatically rule out any put with breakeven $(X - p_0)$ below €37.80.

Since the put will not be held to expiration this breakeven calculation (based on intrinsic value) is not definitive (although it could be seen as providing a worst-case estimate, ignoring time value). In practice the hedge will be closed out by selling the put once the period in which the decline is likely has passed, thus the hedge is really based on how the premium on the put will change over the holding period.

They thus go on to discuss delta, since the key issue is how the put value will change if the share price falls. The put that has the highest value for the profit to cost ratio has a lower (absolute) value of delta, suggesting that it is less responsive to falls in the underlying share price, but it does have a higher gamma which, the answer claims, will more than compensate.

	outlook on trend of underlying		
Expected Move in Imp. Vol.	Bearish	Neutral	Bullish
Decrease	Write Calls.	Write Straddle.	Write Puts
Remains unchanged	Write calls. & Buy puts	Cal. Spread	Buy calls & Write puts
Increases	Buy puts	Buy straddle.	Buy calls

MODULE QUIZ 6.12

Use the following information to answer Questions 1 and 2.

Dennis Austin works for O'Reilly Capital Management and manages endowments and trusts for large clients. The fund invests most of its portfolio in S&P 500 stocks, keeping some cash to facilitate purchases and withdrawals. The fund's performance has been quite volatile, losing over 20% last year but reporting gains ranging from 5% to 35% over the previous five years. O'Reilly's clients have many needs, goals, and objectives, and Austin is called upon to design investment strategies for their clients. Austin is convinced that the best way to deliver performance is to, whenever possible, combine the fund's stock portfolio with option positions on equity.

1. Given the following scenario:
   - Performance to date: Up 3%
   - Client objective: To maintain a positive stock position and retain upside potential
   - Austin's scenario: Expect low stock price volatility between now and the end of year.

   Which is the *best* option strategy to meet the client's objective?
   A. Bull call.
   B. Protective put.
   C. Bull put.

2. Given the following scenario:
   - Performance to date: Up 16%
   - Client objective: Earn at least 15%
   - Austin's scenario: Good chance of large gains or large losses between now and end of year.

   Which is the *best* option strategy to meet the client's objective?
   A. Long straddle.
   B. Long calendar spread.
   C. Short straddle.

3. An investor believes that a stock they own will continue to oscillate in price and may trend downward in price. The *best* course of action for them to take would be to:
   A. sell call options on the stock.
   B. buy put options on the stock.
   C. enter into both a covered call and protective put strategy.

4. A short position in naked calls on an asset can be hedged by:
   A. buying a put.
   B. buying the underlying asset.
   C. shorting the underlying asset.

1. B, buy a put to eliminate downside ✓
2. A ✓
3. B ✗ (C) stock oscillating & not trending upwards
   ⇒ covered call (i.e sell call) to earn the prem.
   ⇒ protective put to eliminate downside (a collar)
4. B ✓

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