

## Option Spreads

You believe the price of a stock will rise? You buy a call option. That it will go down? Then, you buy a put option. The most important advantages of buying options are the large potential profit and the limited potential loss (limited to the premium paid). However, the deteriorating factor is the impact of the time decay, which reduces the value of option every day until the option's expiration. Investors could take advantage of the impact of the time decay by selling call options (in anticipation of a stock price decline) or by selling put options (to profit from an increase in the price of a stock). However, in doing so, investors are exposed to large potential losses, whereas potential gains are limited to the premium received.

Option spreads are created by combining the purchase and the sale of call options (or put options). Using spreads allows investors to take advantage of directional moves while limiting risk and reducing considerably the impact of the time decay. Since there is no free lunch in finance, the trade-off to spreads is the limited profit potential. A thorough knowledge of option spreads is essential since advanced and complex options strategies, such as butterfly spreads and condor spreads, are a combination of simple option spreads.

There are two categories of option spreads: vertical spreads and time (calendar) spreads. In this issue we will discuss vertical spreads. Time spreads will be covered in the next issue.

### VERTICAL SPREADS

Vertical spreads are divided into two groups: bull spreads and bear spreads, which can be constructed either with call options or put options.

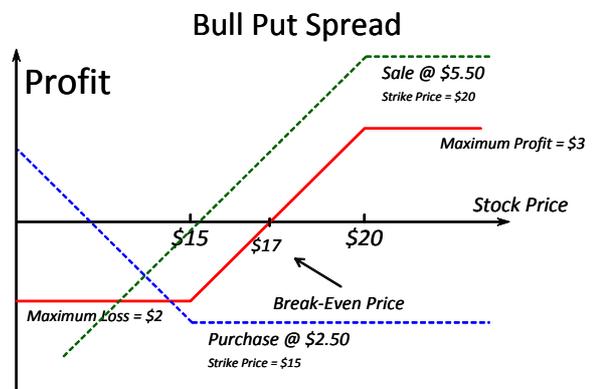
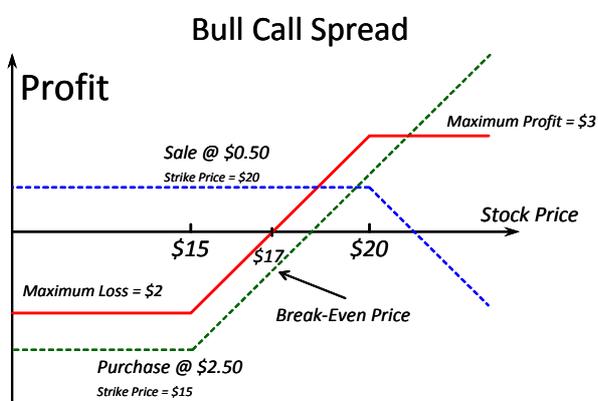
#### Bull spreads

Whether with call options or put options, bull spreads are established the same way: the purchase of an option at a lower strike price and the sale of another option at a higher strike price with the same expiration date.

ABC = \$15	Strike Price	Bull Call Spread	Bull Put Spread
Sell	\$20	\$0.50	\$5.50
Buy	\$15	\$2.50	\$2.50
		\$2.00 dr.	\$3.00 cr.
Maximum Profit		Difference between the strike prices less the net premium paid \$3 (\$20 - \$15 - \$2)	Net premium received \$3
Maximum Loss		Net premium paid \$2	Difference between the strike prices less the net premium received \$2 (\$20 - \$15 - \$3)
Break-Even Price		Lower strike price plus the maximum loss per share \$17 (\$15 + \$2)	Lower strike price plus the maximum loss per share \$17 (\$15 + \$2)

The table above shows that the bull call spread results in a debit of \$2 per share and the bull put spread generates a credit of \$3 per share. As it is the case with the outright purchase and sale of call options or put options, an investor's maximum loss is limited to the premium paid and the maximum profit is limited to the premium received from the strategy. Hence, the \$2 debit of the bull call spread represents the maximum loss per share; and the maximum profit of \$3 from the bull call spread is the \$5 difference between the strike prices less the debit of \$2. The break-even price of \$17 is obtained by adding the lower strike price of \$15 and the maximum loss of \$2 per share.

With the bull put spread, the maximum profit is equal to the credit of \$3; and the maximum loss of \$2 is the difference between the strike prices of \$5 less the credit of \$3 from the strategy. The break-even price of \$17 is also calculated by adding the lower strike price of \$15 and the maximum loss of \$2 per share. In both cases, the maximum profit is realized at the expiration of the options when the stock price is greater than or equal to the higher strike price of \$20; and the maximum loss is realized when the stock price is less than or equal to the lower strike price of \$15.



A bull call spread gives investors the right to buy shares at the lower strike price. However, they have the obligation to sell the shares at the higher strike price if they're assigned. This strategy allows investors to profit (up to a certain limit) from an increase in the share price at a lower cost compared to the outright purchase of call options since the sale of the call options at the higher strike price reduces the cost of the call options purchased at the lower strike price.

Bull put spreads oblige investors to buy shares at the higher strike price if they're assigned. On the other hand, it gives them the right to sell shares at the lower strike price. This strategy is a less risky alternative than the naked short sale of put options since the purchase of the put options at a lower strike price reduces the potential risk of loss following a large drop in the share price.

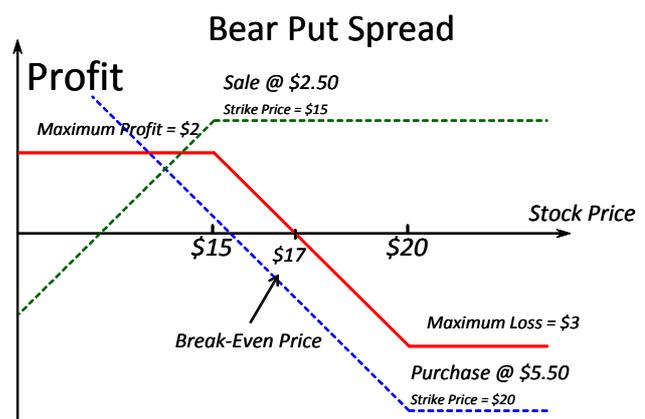
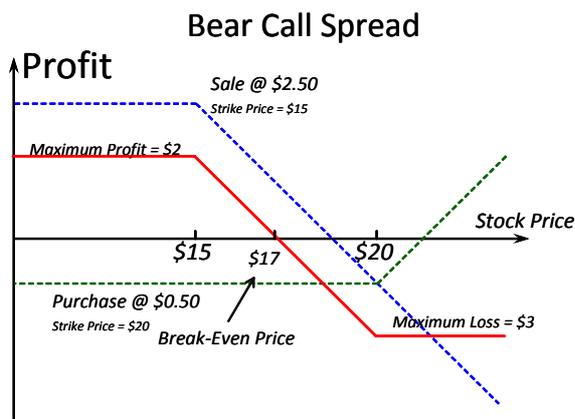
### BEAR SPREADS

Bear spreads are the exact opposite of bull spreads: they are constructed by buying an option at a higher strike price and selling another option at a lower strike price with the same expiration date.

ABC = \$15	Strike Price	Bear Call Spread	Bear Put Spread
Buy	\$20	\$0.50	\$5.50
Sell	\$15	\$2.50	\$2.50
		\$2.00 cr.	\$3.00 dr.
Maximum Profit		Net premium received \$2	Difference between the strike prices less the net premium paid \$2 (\$20 - \$15 - \$3)
Maximum Loss		Difference between the strike prices less the net premium received \$3 (\$20 - \$15 - \$2)	Net premium paid \$3
Break-Even Price		Higher strike price less the maximum loss per share \$17 (\$20 - \$3)	Higher strike price less the maximum loss per share \$17 (\$20 - \$3)

As shown in the table above, this bear call spread generates a credit of \$2 per share and the bear put spread results in a debit of \$3 per share. The \$3 debit of the bear put spread represents the maximum loss per share whereas the maximum profit of \$2 from the bear put spread represents the \$5 difference between the strike prices less the \$3 debit of the position. The break-even price of \$17 is the difference between the higher strike price of \$20 and the maximum loss of \$3 per share.

In the case of the bear call spread, the maximum profit is equal to the \$2 credit and the maximum loss of \$3 is obtained from the difference between the strike prices of \$5 less the credit of \$2 from the position. The break-even price of \$17 represents the higher strike price of \$20 less the maximum loss of \$3 per share. In both cases, the maximum loss is realized at the expiration of the options when the share price is greater than or equal to the higher strike price of \$20; and the maximum profit is realized when the share price is less than or equal to the lower strike price of \$15.



In a bear call spread, investors have the obligation to sell the shares at the lower strike price if they're assigned. However, investors have the right to buy the shares at the higher strike price. This strategy is a less risky alternative than the naked short sale of call options since the purchase of the call options at a higher strike price reduces the potential risk of loss after a sharp rally in the share price.

A bear put spread gives investors the right to sell shares at the higher strike price; however, it obliges them to buy the shares at the lower strike price if they're assigned. This strategy allows investors to profit (up to a certain limit) from a drop in the share price at a lower cost compared to the purchase of put options since the sale of put options at a lower strike price reduces the cost of the put options at a higher strike price.

## Conclusion

The strike price selection as well as the strike price interval has an impact on the potential profit and loss and also on the probabilities of success of the strategy. The greater the difference between the two strike prices, the greater the potential profit, and the greater the potential risk as well.

When constructing a bull spread, the more both strike prices are above the current stock price, the lesser is the potential loss and the greater is the potential profit. However, chances of success will be smaller. On the other hand, the lower the strike prices compared to the actual stock price, the greater is the potential loss and the smaller is the potential profit. However, chances of success will be greater.

When entering into a bear spread, the lower both strike prices are below the current stock price, the lesser is the potential loss and the greater is the potential profit. However, chances of success will be smaller. On the other hand, the higher the strike prices compared to the actual stock price, the greater is the potential loss and the smaller is the potential profit. However, chances of success will be greater.

The use of vertical spreads allows investors to take advantage of directional moves with limited risks and limited profits. The sale of options reduces considerably the impact, and in certain cases allows investors to take advantage, of the erosion of time decay associated with options holding. A thorough knowledge of vertical spreads is essential since advanced and complex options strategies, such as butterfly spreads and condor spreads, are a combination of simple vertical spreads.