

5.3. HEDGING WITH SPREADS

If straddles and strangles are called **combinations** because they combine the use of calls and puts, **spreads** are the use of two or more options of the same type, either a long and short call or a long and short put.

A **call spread** is the purchase and sale of call options at a different strike price. If you buy a call with a *lower* strike price than the strike price of the call you write, it is called a **long call spread**, or a **bull call spread**. Remember that for call spreads, you are bullish if you are long the lower strike price. If the call you write has the lower strike price, it is called a **short call spread**, or alternatively, a **bear call spread**.

A **put spread** is the purchase and sale of put options at a different strike price. If the put you buy has a *higher* strike price than the put you write, it is called a **long put spread** or a **bull put spread**. With a **short put spread** or **bear put spread**, the put you buy will have the lower strike price, and you will profit by a fall in price that puts your position in the money.

For spreads, whenever the option purchased has a higher premium than the option sold, the investor's spread account will have a net debit, and the spread will be called a **debit spread**. This is called a debit spread because the investor is spending more money than he receives, meaning that the premium he pays is higher than the premium he takes in. For debit spreads, the investor's maximum loss is the net amount of money that the investor has paid in premiums.

In contrast, a **credit spread** is a spread where the written option has the higher premium. This is called a credit spread because the investor is taking in more money than he is putting out, meaning that the premium the investor received was greater than the premium the investor paid. For credit spreads, the maximum gain is always the net amount of money that the investor receives in premiums.

A long call spread has the general characteristics of a long call. A short put spread has the characteristics of a short put. A spread simply applies a ceiling on both profits and losses.

5.3.1. DEBIT CALL SPREAD

Suppose you open positions on the following options:

Long Sep Gold 1245 call @ 16
Short Sep Gold 1255 call @ 11

You have purchased the more expensive option of the two, so you have put out more money than you have taken in. This is a **debit spread**. This particular spread is a **debit call spread** because the two options are both calls. It is also called a **bull debit spread** because, as we will see, the spread turns a profit as the price of the underlying product rises.

The maximum loss for the holder of a debit call spread occurs when gold is trading at or below the lower strike price. In our example, if gold is trading below \$1,245 at expiration, both options will expire, and your total losses will be fixed at the \$5 difference

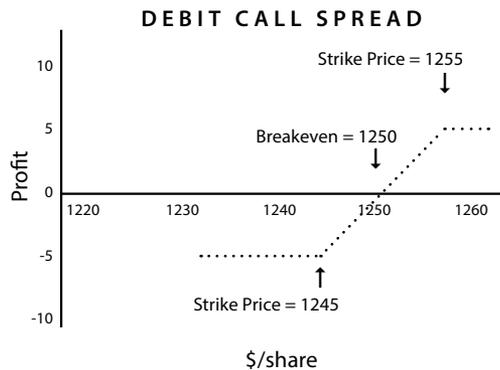


between the two premiums. You can never lose more than the premium you pay for a debit call spread.

For a debit call spread, you calculate the breakeven by adding the difference between the two premiums to the lower strike price. In this case, you will breakeven at \$1,250 (\$1,245 + 5).

If gold rises to \$1,255, you have hit your maximum gain at \$5. Why? Let's look at the numbers when the price of gold has climbed to \$1,260. The long call is in the money by \$15 (\$1,260 – \$1,245 strike). The short call is now out of the money by \$5 (\$1,260 – \$1,255 strike). You will take in \$15 but have to pay \$5. This difference is \$10. You then subtract the \$5 premium from the \$10 for a maximum gain of \$5. A quicker way to calculate this is to remember that your maximum gain is the difference in the two strike prices minus the difference in the premiums: $((\$1,255 - \$1,245) - (\$16 - \$11)) = \$10 - \$5 = \$5$.

Investors purchase a bull call spread if they expect prices to rise but want to reduce the cost of a long call. With a bull call spread, an investor chooses to cap his upside potential, to reduce his premium.



Max Gain: Difference in strike prices – difference in premiums; occurs at upper strike price and above

Max Loss: Difference in premiums; occurs at lower strike price and below

Breakeven: Lower strike price + difference in premium

The maximum gain occurs when the market price equals or exceeds the upper strike price. Its amount is the difference in strike prices minus the difference in premiums. The maximum loss occurs when the market price drops at or below the lower strike price and equals the difference in premiums. The breakeven price equals the sum of the lower strike price and the difference in premiums.

SAMPLE QUESTION 1

Isabel likes cotton #2 futures at its current price of 71 cents. She buys a call just out of the money with a strike of 73 at 4.85, and she writes a call at a strike of 75 at 4.07. The position she has created is called a:

- A. Long strangle
- B. Bull call spread
- C. Bear call spread
- D. Credit spread

Answer: B. Isabel has written and bought two options of the same type, which makes her position



a spread, a call spread to be more exact. With calls, we know that as the strike price increases, the premium decreases. Since the call she bought has the lower strike price, this is a bull call spread. She expects to profit by a rising cotton price. Since the call she bought has the higher premium, she has bought a debit spread.

SAMPLE QUESTION 2

Gabrielle likes coffee futures at its current price of 138.00. She buys a call with a strike of 140 at 7.20 and she writes a call at a strike of 145 at 5.50. The contract size for a coffee contract is 37,500 pounds, and it is priced in cents per pound. What is Gabrielle's maximum loss, maximum gain, and breakeven?

- A. Maximum loss = \$637.50, Maximum gain = Unlimited, Breakeven = \$143.30
- B. Maximum loss = \$1,237.50, Maximum gain = \$637.50, Breakeven = \$139.70
- C. Maximum loss = \$637.50, Maximum gain = \$1,237.50, Breakeven = \$141.70
- D. Maximum loss = Unlimited, Maximum gain = \$637.50, Breakeven = \$139.70

Answer: C. Gabrielle has written and bought two options of the same type, which makes her position a spread, a debit call spread to be more exact. Her maximum loss is the net amount she put out, which is the difference in the premiums (1.7 cents per lb. x 37,500 = \$637.50). Isabel's maximum gain is the difference in the strike prices minus the difference in the premiums (5 – 1.7) times the contract size (3.3 cents x 37,500), or \$1,237.50. Her breakeven price is the difference in the premiums plus the lower strike price: 1.7 + 140 = 141.70.

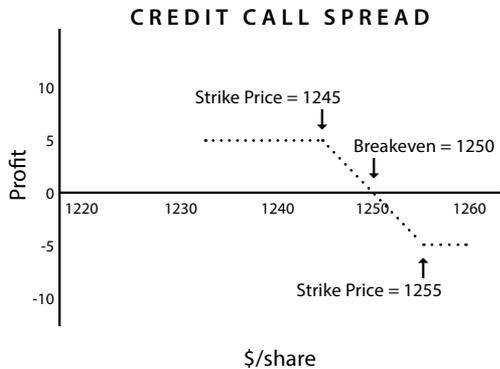
5.3.2. CREDIT CALL SPREAD

If you want to take in income and do not expect much volatility in the underlying futures contract, but you want to cap your risk, you can create a credit call spread. Here is an example:

Short Sep Gold 1245 call @ 16
Long Sep Gold 1255 call @ 11

In this case, the spread writer expects the price to decline or go nowhere. An investor who opens this position is bearish, which is why it is sometimes called a bear credit spread. In the example above, the spread writer takes in a total of \$5 (\$16 – \$11), which is why it is called a credit spread—it creates a credit in the investor's account. An investor in this credit call spread has the same breakeven as the debit call spread we described above: the difference between the premiums added to the lower strike price (1,245 + 5 = 1,250). The maximum gain is the difference in premiums (\$5 x 100 troy ounces = \$500). The maximum loss occurs when the security's rising market price reaches and exceeds the higher strike price. The maximum loss is always the difference in the strike prices minus the difference in the premiums ((1,255 – 1,245) – (16 – 11)) x 100 troy ounces = \$500).





Max Gain: Difference in premiums; occurs at lower strike price and below

Max Loss: Difference in strike prices – difference in premiums; occurs at upper strike price and above

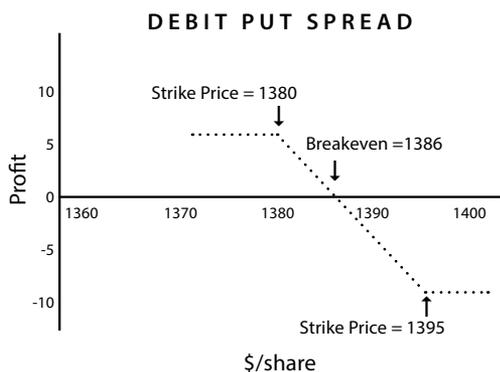
Breakeven: Lower strike price + difference in premiums

5.3.3. DEBIT PUT SPREAD

With a **debit put spread**, also called a **bear put spread**, or a **long put spread**, you buy a long put with a higher strike price and a short put with a lower strike price. You do this, because you expect the underlying to drop, but not significantly. Consider the following spread:

Long July Russell 2000 1395 Put @ 42
 Short July Russell 2000 1380 Put @ 33

This is a debit spread because you have spent more in premiums to acquire the position (42 index points) than you received (33). The premium you pay totals \$450 (9 index points x \$50 multiplier). This is your maximum loss. Your maximum gain occurs when the index drops to 1,380. At this point, your net gain is \$300. This is calculated by taking the difference in the strike prices (15) minus the difference in the premiums (9) and applying the multiplier. Your breakeven point is the upper strike price minus the difference in the premiums, or 1,386 (1,395 – 9).



Max Gain: Difference in strike prices – difference in premiums

Max Loss: Difference in premiums

Breakeven: Higher strike price – difference in premiums

5.3.4. CREDIT PUT SPREAD

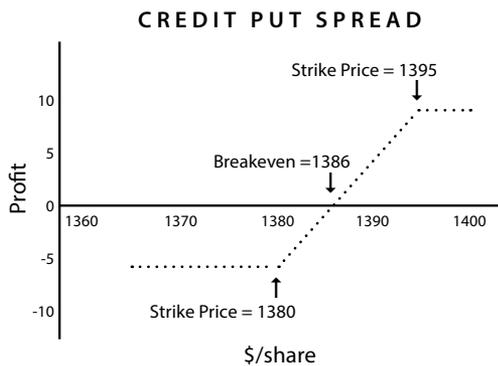
With a **credit put spread**, the put you write will have a more expensive premium than

the put you buy, because the long put is farther out-of-the-money. A credit put spread is also called a **short put spread**, or a **bull put spread**.

Short July Russell 2000 1395 Put @ 42
 Long July Russell 2000 1380 Put @ 33

Suppose the Russell 2000 is trading at 1,386. You write a put with a 1,395 strike price and collect a premium of 42. To hedge against an unexpected drop in the price of the underlying, you buy a 1,380 put at 33. Since you have taken in more than you paid (a net of 9 points, or \$450), your put spread is a credit spread. This \$450 is your maximum gain, regardless of whether the Russell 2000 holds steady or rises in price. If the price falls, however, your losses will be capped at \$300 (the 15-point difference in strike prices minus the 9-point difference in premiums times 50, which is the multiplier for the Russell 2000). Once the strike price for the long put is reached, any additional losses from the short put due to a further drop in price of the underlying will be exactly offset by the gains reaped from the long put. Your breakeven is the difference in the premiums subtracted from the higher strike price. In this case, $1,395 - 9 = 1,386$.

A short put spread works for the more cautious investor, who is unwilling to risk his house and car in order to maximize his profits.



Max Gain: Difference in premiums

Max Loss: Difference in strike prices – difference in premiums

Breakeven: Higher strike price – difference in premiums

Note: The easiest way to determine whether a spread is bullish or bearish is to look at the long position. If the strike price of the long position is the lower strike price, it is a bullish position. Remember that the word BULL has two Ls, for Long the Lower strike price. In contrast, if the long position has a higher strike price, it is a bearish spread.

Type of Spread	Market Expectation	Initial Outlay	Long Call or Put Has:	
			Strike	Premium
Debit call	Bullish	Debit	Lower	Higher
Credit call	Bearish	Credit	Higher	Lower
Debit put	Bearish	Debit	Higher	Higher
Credit put	Bullish	Credit	Lower	Lower

SUMMARY





EXERCISE

MATCH THE SPREAD TYPE TO THE INVESTMENT:

- A. Debit call spread
 - B. Debit put spread
 - C. Credit call spread
 - D. Credit put spread
1. ____ Long January Gold 1260 Put @ 340; short January Gold 1275 Put @ 354
 2. ____ Long March Random Lumber 416 Call @ 48; short March Random Lumber 425 Call @ 38
 3. ____ Long July Oats 271'6 Call @ 55'2; short July Oats 262'4 Call @ 63'6
 4. ____ Long December Russell 2000 1550 Put @ 60; short December Russell 2000 Put 1250 @ 37
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Answers: 1. D; 2. A; 3. C; 4. B

