8 Put Buying

Chapter 1 on option basics and chapter 6 on puts should be read before beginning this chapter. Section 3.4.1 may also be helpful.

8.1 Buying Puts

One common reason for buying a put is to make a profit when the stock price goes down. It is equivalent to shorting stock, just as buying a call is equivalent to being long stock. The advantages and disadvantages are similar to buying calls. Advantages first:

Example

Shares of Xaio Mei's Lovely Pens are trading at $30 a share. There is a March $30 put which sells for 5-points. You purchase the put, and Xaio Mei's stock soon drops to $20. The put is now selling for $17, with a profit of $1,200 on a $500 investment.

Should the stock go up instead, you will have a loss, but your loss is limited to your initial investment of $500.

There are considerable advantages to buying puts instead of shorting stock. The short sale of stock has unlimited risk — should the stock rise instead of fall, your loss will grow dollar for dollar with its rise. Short sellers must also pay the dividends on the stock, while the put seller has no such obligation. There can also be charges imposed by your brokerage for borrowing shares on your behalf. With no obligation to pay dividends or fees, combined with the limited risk of the put, buying puts instead of shorting stock looks very appealing.

Figure 8.1 gives the profit graphs comparing the purchase of an at-the-money put with the short-sale of stock. The purchase of the put underperforms the short-sale by the amount of time value you purchased with the put. Note that the short-sale profit curve does not account for the costs associated with shorting, such as the amount paid to your broker to borrow the stock. If those had been included, this small difference would be even less.

The short-sale sale wins if the stock remains unchanged or drops after the put has expired. On the other hand, if the stock increases, the long put is the clear winner for risk management.

The problems with put buying are the same as for call buying: you must be right about the stock, and the market must recognize this during the lifetime of the option. Short positions are difficult, perhaps more difficult than long positions in stock. Like long calls and unlike most option strategies, long puts require precision.

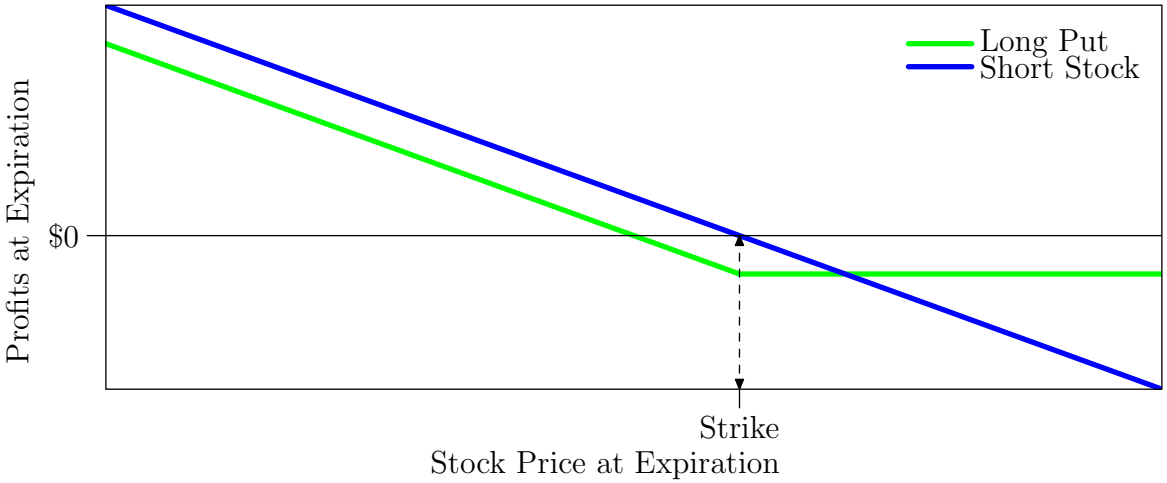

Figure 8.1: Profit graphs comparing a short sale of stock with the purchase of an at-the-money put.

8.2 Put Selection

The considerations are similar to purchasing calls. You may wish to review chapter 3 which goes into more detail. This section will concentrate on the details specific to puts.

Out-of-the-money puts are the high risk, high profit choice. Since they cost less, the returns are much larger — when you get them. However, the stock must fall more for the profits to be realized. The in-the-money put is the safer choice.

Example

The table below gives the profits at expiration for a stock at $39 and two puts, a July $35 put for 1-point and a July $40 put for 3-points.

Stock Price	July $35	July $40
30	400	700
34	0	300
37	(100)	0
40	(100)	(300)

If the underlying drops to $30, the out-of-the-money July $35 gives a 400% return, compared to the 233% return of the in-the-money put. But note that the break-even point for the out-of-the-money put is $34 — it loses everywhere above that point. It's worth noticing that when the out-of-the-money put buyer manages to break-even, the in-the-money-put owner has already made a 100% return on their investment. Unless the stock makes a fairly severe decline, the in-the-money put would be the best choice in this situation.

Since time value decays much faster for in-the-money puts than in-the-money calls, you would not usually hold the option until expiry, because time value decay would eat into your profits. For this reason, taking your profits early is even better advice for put buyers than it is for call buyers.

The rapid decay of an in-the-money put's time value creates additional problems for the purchaser of the out-of-the-money put. When the out-of-the-money put moves into-the-money, the time value may decay faster than the intrinsic value grows.

EXAMPLE

For the prices in the previous example, if the stock fell to $34 shortly after purchasing the $40 put, you will probably find that the put increased by about 2-points. This would be a disappointment after seeing a 5-point stock movement in your favor, and is much less than you would get from a long call with a 5-point move to the upside.

Call buyers, especially those with short time-horizons, must often avoid the longer-term options because the extra cost is not worth the risk involved. But the situation is not the same with puts. Once puts are in-the-money, the time value will drop across all the series, and you can often get a longer-term put for very little extra money. If you can get a longer term put for almost the same price as the near-term put, you should purchase the long-term one.

EXAMPLE

Here are some typical prices for $40 puts on a stock selling at $36:

	June	September	December
$40 Put	4.0	4.50	5.0

As you would expect for in-the-money puts, there is very little time value here. The December put is 6-months away from the June put, but it only has a single point of additional time value. You might as well purchase the December put. If you do so, and the stock declines right away, you will profit, but less than if you had bought the June put. On the other hand, if the stock price recovers, time value will increase in all of these puts, with the December put increasing the most. Here's the situation with the stock at $40:

	June	September	December
$40 Put	1.0	2.50	3.50

Clearly the December put suffered the least loss, and this is completely due to the additional time.

8.2.1 Put Deltas

The concept of the delta of an option was introduced in subsection 3.4.1 in the context of buying calls. Please review that section if you need to brush up on the basics of option deltas.

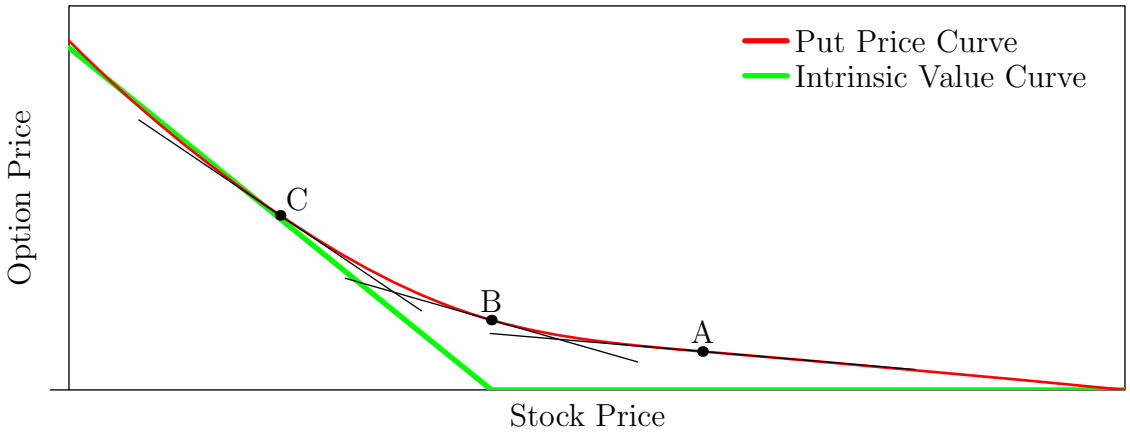

Figure 8.2: The delta of a put option.

Recall that the delta of an option is the amount that the option premium will change as the stock moves up or down. For example, a call option with a delta of 0.50 will move up 1/2 point every time the stock moves up by a full point. Since put premiums increase when the stock price decreases and vice versa, *the delta of a put option is negative*. A put option with a delta of -0.50 will move *down* 1/2 point for every point the stock moves *up*. There is an interesting approximation that relates put and call deltas:

1 = Delta of Call - Delta of Put

This is accurate unless the put is very deep-in-the-money. Because of the differences in the behavior of time-value between puts and calls, a simple linear equation such as this could not model the deltas for all premiums.

As we did in subsection 3.4.1, we can use a ruler and a pencil to approximate the put delta. Recall that by laying a ruler so that it intersects just one point on the options price curve, and drawing a line with a pencil, we get a straight line whose steepness or **slope** is the delta of the option at that point. Figure 8.2 shows the result. As expected, the slope of the pencil lines is *downhill* or negative. And as with the call option, slopes at either end of the put's price curve are very close to the put's intrinsic value line.

Since the intrinsic value line of a put has a slope of zero above the strike, and a slope of -1 below it, we can use this fact to approximate the deltas of the puts. The delta of a deeply out-of-the-money put, which is very near the intrinsic value line on the right, must be very close to zero. At the opposite end, the deep-in-the-money put must have a delta very close to -1. Note that as the underlying stock begins to decline in price, the put's

delta decreases slowly at first, and would then decrease faster as the stock moved through and below the strike price. It gets very close to -1, as low as it can go, when the stock is only moderately below the strike. This highlights the fact that an out-of-the-money put holds on to its time premium very strongly, and an in-the-money put comes to parity very quickly.

8.2.2 Using Volatility to Select Puts

As has been mentioned several times during this book, the volatility of the stock should be a consideration when selecting short-term options. The mathematics of volatility are forbidding, and won't be given here. However, the interested reader is referred to the section 4.5, where a method for approximating volatility was outlined.

8.3 So I Bought a Put, Now What?

As when buying calls, it is rarely in your interest to exercise the put, unless you are intending to sell the stock in any case. The tactics for handling both winning positions and losing positions with put buying are similar to the ones with long calls.

Note: As with calls, many of these strategies use spreads, which require the use of a margin account and sufficient option approvals from your broker.

8.4 Actions to Take On a Loss

When you are looking at a losing position, the simplest is always to liquidate the position by selling the put. When you are being trampled by the bulls, accepting your loss by selling the put may be the wisest course. But if the situation is not so dire, other actions may be superior.

8.4.1 Convert to a Bear Put Spread

You may remember that when faced with a loss on a long call position, it can be an advantage to convert to a bull call spread (see subsection 3.7.2) to improve the break-even price. When you are in a losing situation with long puts, you may be able to achieve something similar by creating a **bear put spread**.

Example

Shares of Sato's Fabulous Flutes are selling for $35, and you are convinced that the flute market is set to decline. You buy a March $35 put for $3. Shortly after that, the stock rises to $38 and your put is now selling for $1.50[1] With Sato's selling at $38, the March $40's might be selling for $3. You take the following steps:

[1]Notice that the put retains considerable time value. This is typical of out-of-the-money puts.

1. Sell your original March $35 put for $1.50
2. Sell a new March $35 put for $1.50
3. Buy one March $40 put for $3.00

You are now short one March $35 put and long one March $40 put. Since you did this for even money (before commissions), you can view this as a new position that cost you basically what you spent to buy the original March $35 put. Obviously, the less you spend on converting to the spread, the better off you will be.

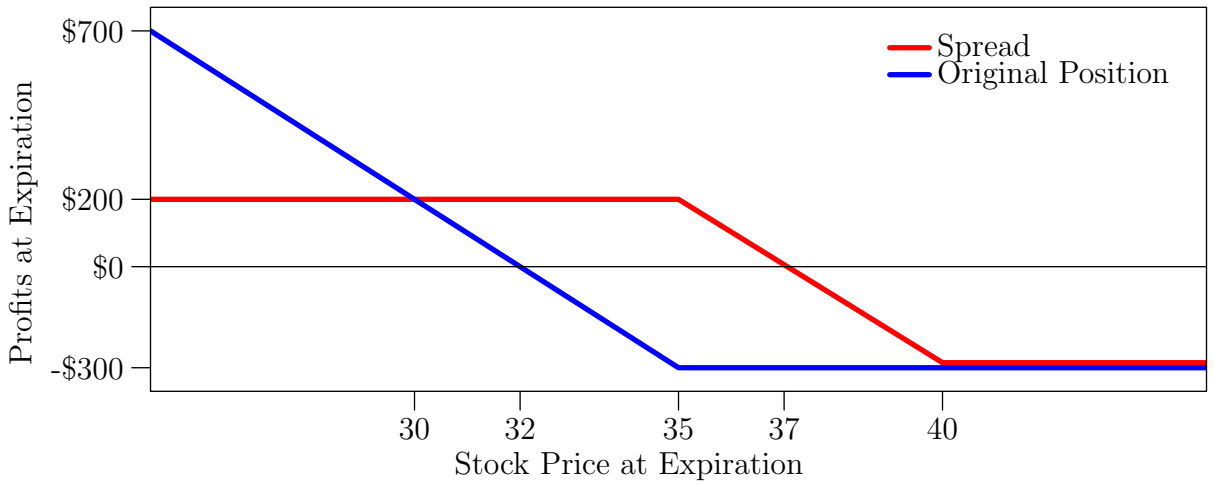

Figure 8.3: Profit graphs comparing original long put with bear put spread.

Figure 8.3 compares the two positions. Since you were able to convert to the spread for even money, you haven't taken on any additional risk. In return, you have raised your break-even point from the original $32 to $37. In fact, you won't reach your maximum possible loss unless the shares reach $40, and you have a position that outperforms the original between $30 and $35. In return for this, you have given up your original unlimited potential profit — the maximum you can make in the spread is $200. However, when you are being trampled, maximum profits are not usually your first priority.

8.4.2 Convert to a Calendar Spread

Something often recommended when you are facing a loss on a long put position is a calendar spread. This is a horizontal spread — the strikes are the same, but the expiration dates are different. In the present instance, you attempt a partial rescue by selling a near term put against the longer one you already hold.

EXAMPLE

As before, you did not appreciate the magnificence of the company that is Sato's Fabulous Flutes, and bought a March $35 put. Sato shares are now selling for $38, and your put is at $1.50. You decide to sell the December $35 put for $1, reducing your loss by 1 point. You are hoping that the December put will expire worthless, and the stock will then drop below $35 before the long call expires.

Aside from the investment thesis here, which is "multiple points of hope", the big problem with the calendar spread is that it makes losses possible in return for little profit. Consider what happens if the stock drops to $35 before December expiration. Because puts hold on to their time value when out-of-the-money, the spread will not widen much. With the stock at $35, the December put would probably be at $1.50 and the March put would be at $2.50. This gives you a loss on both legs of your spread. Plus you have four commissions to pay — two to setup the spread, and two more to liquidate. If you decide not to liquidate and the stock continues to decline, the spread will narrow further as the puts come to parity, and you will end up with an even larger loss.

8.5 Actions to Take on a Gain

As with losses, tactics here are similar to the ones used when you are long calls: liquidate, do nothing, roll down, or create a spread. If those aren't enough options for you, you can also buy a call.

EXAMPLE

You bought a $30 put on Horni Corni's, a Mexican Taco Chain owned by a Pasadena movie mogul, when the shares were selling for $32. The stock is now $25, making the put worth 6-points. The following table summarizes the situation that will be used for each tactic:

	Purchase Price	Current Price
Horni Corni's Shares (not purchased)	$32	$25
April $30 Put	2	6
April $25 Put	NA	2
April $35 Call	NA	3

8.5.1 Liquidate

Liquidating gives a profit of 4-points. This is the easiest and safest alternative. There's no further chance for gains, but there is also no chance for losses. It has a lot to recommend it — the market is an uncertain place and gains are worth having. As with calls, if you own more than one put, you can also consider selling only part of your puts to recover some or all of your initial investment, leaving the rest to run.

8.5.2 Doing Nothing

This is the opposite extreme. Doing nothing is the riskiest tactic, since you could lose your gains or even end up with a large loss. But this tactic will result in the largest gains if the stock continues to move down.

8.5.3 Roll Down

The idea here is to recover your initial investment and then add more leverage. Selling the April $30 would give 6-points. You keep 2-points to recover your initial investment, and then buy 2 April $25 puts with the 4-points remaining. The appeal of this tactic is that it increases your leverage with someone elses money. If the stock continues to fall, you can reap large profits. Should the stock rise, you will lose nothing, since you have completely eliminated your risk.

8.5.4 Create a Bear Put Spread

You sell a $25 put to create a bear put spread. We will cover this spread in more detail in chapter 12, but for the moment, just focus on what can happen in this situation. Since the sale of the the $25 put refunded the money you spent to buy the $30 put initially, you have no risk (other than commissions).

If the underlying rises to $30 by expiration, all the puts expire worthless. This is the worst that can happen — zero profits. But there is no loss. The maximum profit the spread can bring is 5-points, which you will get if the stock closes anywhere below $25 by expiration. This would definitely be the best choice if the stock looked like it was going to close very near $25.

8.5.5 Buy a Call

Being long both a put and a call is an example of a **combination**.[2] The idea behind buying a call is to hedge your position in case the stock goes back up, but retain the possibility of profits. It may seem that buying the April $25 call has increased your total investment cost to 5-points, but appearances can be deceiving. The most interesting thing about this new position is that *it will always be worth at least 5-points.* This means you have reduced

[2]This particular combination is known as a **strangle**, which is discussed further in chapter 10.

your risk to zero, and anything that follows will be pure profit. If the stock closes above $30 or below $25, you will make money. Here are some examples:

Horni Corni's Shares	$26	$32	$23
April $30 Put	4	0	7
April $25 Call	1	7	0
Net	5	7	7

This would be the best tactic if the stock has a tendency to make dramatic moves up and down.

8.5.6 Which Tactic is Best?

As with buying calls, the only answer to this question is: "It depends." The combined profit graph for all these tactics, shown in Figure 8.4, is starting to look like the New York City subway map. All of them are the best at one time or the other. The spread is never the worst one. The only strategy that gives a loss is doing nothing. Absent a strong reason to choose another strategy, either the combination or the roll-down would seem to be the most appealing. If you have a large enough position, any of these tactics could be used in part. For example, if you had 8 puts, you could sell four of them, and use the remaining four in any of the above strategies.

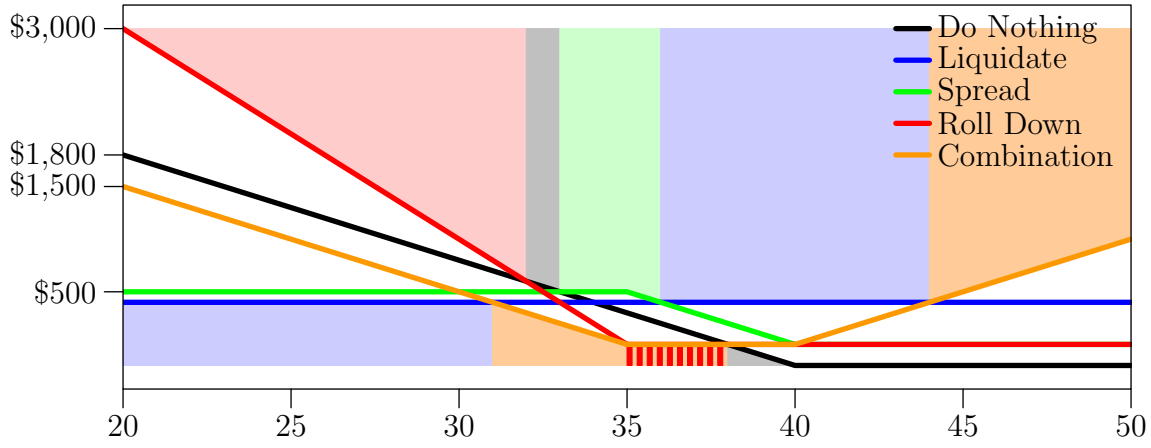

Figure 8.4: Profit graphs comparing the various tactics for managing a winning position.

8.6 Up to the Minute Summary

- You can buy puts instead of shorting stock.
- It gives leveraged returns and limited risk.

- Shorting is difficult. You must be precise and the market must agree with you before the put expires.
- Selling out-of-the-money puts is more profitable, but more risky.
- In-the-money puts are the safest choice.
- Because time value drops so rapidly when the put is in-the-money, it makes sense to buy the farthest put you can.
- The delta of a put is negative, and moves between 0 and -1.
- Unless the put is very deeply out of the money, 1 = Delta of Call - Delta of Put
- When you have a loss, you can liquidate. This may be the best option if the stock is moving strongly upward.
- You can convert to a bear put spread if you have a loss.
- The less you spend on the conversion, the better. It is ideal if you can do it for even money.
- The bear put spread limits your profits, but increases your break-even point.
- You can convert to a calendar spread when looking at a loss. This is inferior to closing the position or the bear spread.
- When looking at a gain, you can
  1. Do nothing at all.
  2. Liquidate (i.e. close the position)
  3. Roll down to more puts.
  4. Create a bear put spread.
  5. Buy a call to create a combination.
- All tactics perform well in different scenarios.

8.7 Chapter Glossary

Combination A position involving puts and calls on the same underlying stock.