10 Strangles and Straddles

Chapter 1 on option basics, chapter 2 on covered calls, chapter 6 on puts and chapter 8 on put buying are useful background for this chapter.

Since we introduced using long puts and short calls to create a collar in the previous chapter, we might as well continue this theme. Two other useful combinations of puts and calls are the **strangle**.and the **straddle**.

10.1 Using a Put to Lock In Profits From a Long Call: The Strangle

If you have purchased a call which has since gone up in price, you can buy a put to "lock-in" some of your profits. The combination of a long call and a long put with different strike prices is called **buying a strangle** or a **long strangle**.

Example

You bought a call March $30 call on Sato's Silvery Flutes for 3-points when Sato's stock was selling for $28. Now Sato shares are selling for $38 and your call is selling for 9-points. There is a March $40 put which sells for 4-points. You buy the put, creating a strangle. Here are your total costs to date:

Long 1 March $30 call:	3 points
Long 1 March $40 put:	4 points
Total Cost:	7 points

This is a position where it is impossible to lose money, which is not a bad position to be in. Having paid 7-points for the two options, the minimum you can make is 3-points, and your upside is unlimited.

If Sato's closes anywhere between the two strikes at expiration (between $30 and $40), the combination will be worth 10-points. For example, should Sato's close at $34, down four points from its current price of $38, the long call will be worth 4-points, and the long put will be worth 6-points.

If the stock closes outside the strikes at expiration, the strangle will be worth even more money. If Sato's closes below $30, the call expires worthless, but the put will be worth more than $10. And if the stock closes above $40 at expiration, the put will be worthless, but the call will be worth more than $10.

Unfortunately, you can't create this situation as an initial position — you have to wait until the call has appreciated enough to make it possible. Strangles can be used as opening positions, but in that case you won't find it impossible to lose money. You can also use a strangle to lock-in the profits from a put. This was described briefly in section 8.5.5.

Do not let the magical properties of this situation blind you to the fact that may you have given up 6-points of sure profit from your long call position for 3-points from your strangle. If the stock is volatile and the time to expiration is distant, a strangle may provide you with a happier ending. You may also find yourself wishing you had just sold your call when you had the chance.

10.1.1 Buying Strangles as an Initial Position

You may occasionally find yourself in the position of considering a stock for purchase which seems to have equal chances of a tremendous upside and tremendous downside. Such situations can be found with small biotech startups. These firms are typically "one product wonders" and the success of the company hinges on whether or not the FDA will approve the drug or device. In an unusual case like this, where the least likely scenario is that the shares will trade in a narrow range, a strangle makes a good deal of sense as an initial position:

Example

Peter's Prostate Pills, a biotech with a new cure for prostate cancer, is currently trading at $37 a share. The FDA will announce its decision on May 1, at which point you expect the shares to either rocket to the sky, or fall into the ground. The May $30 puts are selling for 2-points and the May $40 calls also sell for 2-points. You purchase one of each, establishing a strangle.

It is clear from the profit graph in Figure 10.1 why you want to avoid a stock that may have a stable price when using a strangle. While the potential profits from a strangle are huge, the maximum loss is possible over a rather wide range. In the present case, if Peter's Prostate Pills closes anywhere between $35 and $40 at expiration, you will lose your entire investment.

This example demonstrates an out-of-the-money strangle, which is probably the most common type. You can also buy an in-the-money strangle:

Example

With Peter's Prostate Pills at $37, you decide to use in-the-money options. There is a May $35 call selling for 4-points and a May $40 put also selling for 4-points. The cost for this is twice the cost of the out-of-the-money strangle (8-points versus 4-points), but the value of the combination will always be worth at least 5-points, since the put is 5-points

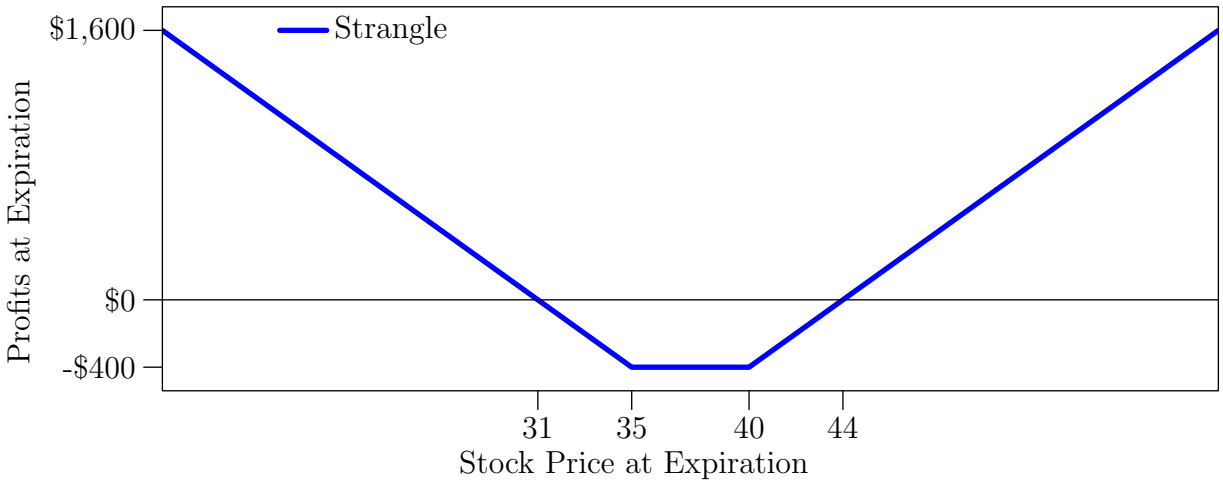

Figure 10.1: Profit graph of an out-of-the-money strangle.

higher than the call. This means the most you can lose is 3-points. Your potential profits remain unlimited in either direction if the stock moves by a sufficiently large amount.

If you are concerned that the stock may trade within a narrow region, buying the in-the-money strangle makes sense, even though it involves a larger initial investment. This follows logically from what you have already learned about buying both puts and calls. For both puts and calls, the in-the-money purchase was the safest, so it shouldn't be surprising that when combining both purchases, the in-the-money position is also the safest.

10.1.2 I Bought a Strangle — Now What?

If the underlying moves rapidly in either direction, you may be able to protect some of your profits. For example, if the stock moved up rapidly, you can roll the put up to the next higher strike. Do not do this automatically. Depending on the actual prices involved, the cost for rolling up may be prohibitive. Study each situation on its merits, and make your decision accordingly.

10.2 Selling a Strangle

When you sell a call and a put with different strike prices, you are **selling a strangle**. Note that this involves selling a call and unless you own enough shares to cover it, you will have a naked call. When you do own enough shares to cover the call, it is called a **covered strangle**, otherwise it is an **uncovered** or **naked strangle**. Naked strangles have their uses, but since they are high-risk positions, and since most newcomers to options would

not have sufficient permissions from their broker to trade them anyway, we won't discuss them further here.

Since you are selling a put, you want to be comfortable with the price you would pay if you ended up being assigned shares. Similarly, since you are also selling a call, you want to be happy with the price you would receive if the shares were called away from you. This is easier to achieve than you might suspect, since you are receiving two premiums, but it is only possible for one of the options to be executed. It should also be noted that you will be required to have enough cash on hand to secure the puts you sell.

EXAMPLE

Nate's Natty Timber Company shares are currently $35 a share. You think the fair value of Nate's is between $32 to $38 a share. You would be happy to get more shares for less than $32, or sell your current shares for more than $38.

The April $40 calls are selling for 4-points, and the April $30 puts are selling for 3-points. You open a short strangle, selling a call and a put for a total of 7-points. If Nate's closes between $30 and $40 at expiration, you keep both premiums.

If the share price drops below $30 and the put is executed, since you received 7-points for the strangle, your effective price for the shares is $30 - $7 = $23 per share — a substantial discount to the current market price and also to your estimate of fair value. On the other hand, should the stock rise to $42 and your call is executed, you are in effect being paid $40 + $7 = $47 a share, a substantial premium to the market and considerably higher than your fair value estimate.

The covered strangle seems to be rarely used by many investors. The additional income from the double premiums would seem to make it an improvement on the covered call strategy. The potential for acquiring more shares at a much lower price or selling the shares for a much higher price is also a nice feature if you are positive about the stock. It seems to me that the covered strangle is a very under appreciated options strategy. Perhaps the necessity to secure the puts with cash or margin are the explanation, but I am always surprised to find that more investors don't exploit it.

Figure 10.2 gives the profit graph for a naked short strangle. That is this position excluding any profits or losses from the stock. As you can see, this is an exact inversion of the profit graph of the long strangle given earlier. Note that while the long strangle has an extended area of loss if the stock doesn't move much, the short strangle has an extended area of maximum profit under the same circumstances. Thus your chances for keeping both the shares and your premiums are typically good with this strategy.

10.2.1 I Have a Covered Strangle, Now What?

Followup action on the strangle depends on which leg of the strangle needs attention. Figure 10.3 gives the profit graph of the total position, assuming execution. Note that

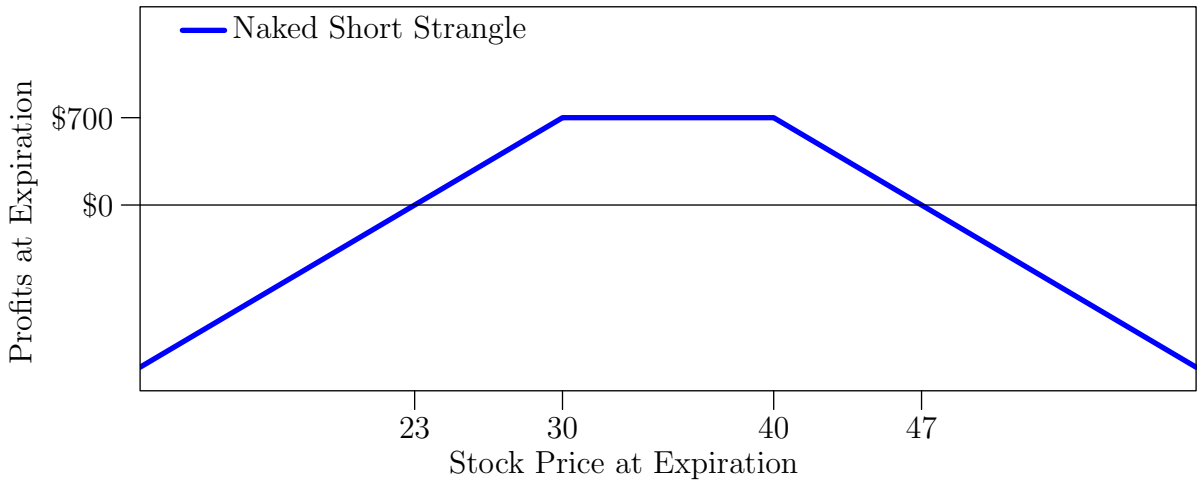

Figure 10.2: Profit graph of a naked short strangle.

profits are enhanced, but so are losses. While one of the ideas behind this strategy is to acquire additional shares at a lower cost basis, if the stock appears to be entering a severe decline, you would be wise to pay close attention to the put. Any of the actions described in subsection 7.1.2 can be tried. The same is true with the call. Should the stock appreciate, you can treat it similarly to any covered call position (section 2.8). If you aren't careful, strangles can involve you in excessive commissions, particularly if the stock see-saws between the two strikes. For example, you might be tempted to roll shares prematurely when the stock nears one of the strikes, only to see it move the other direction. This can be dangerous to your profits, so use discipline.

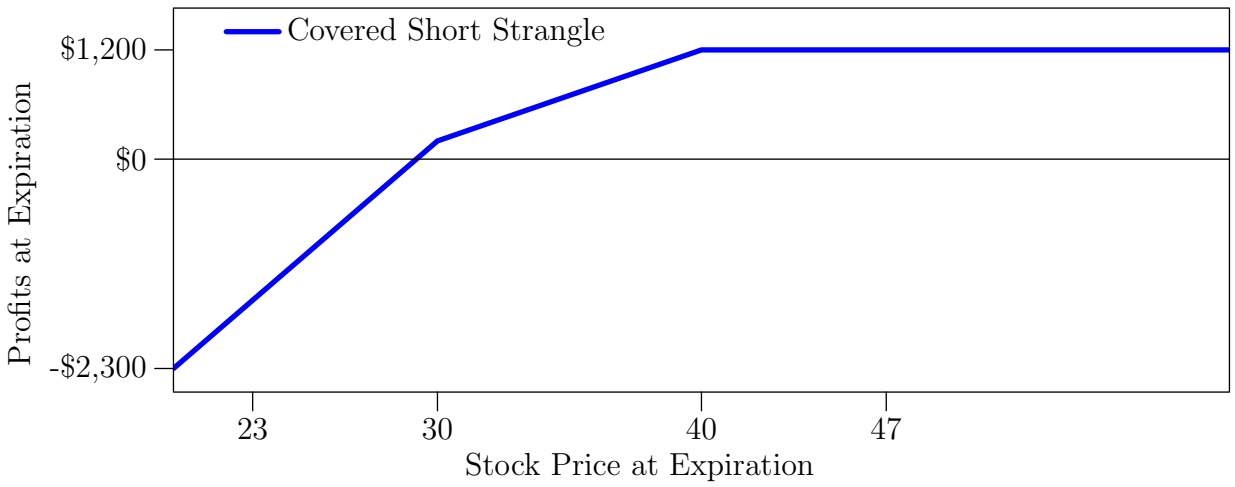

Figure 10.3: Profit graph of a covered short strangle.

10.3 Buying a Straddle

When you purchase both a put and a call with the same underlying, strike price and expiration date, you have bought a **straddle**. Buying a straddle allows you to make large profits if the stock moves far enough in either direction. Your loss is limited to your initial investment.

EXAMPLE

Shares of Sato's Silvery Flutes is selling for $30. You buy a September $30 call for 3-points, and a September $30 put for 2-points, for a net investment of 5-points plus commissions. If SATO stays at $30 at expiration, you will lose your investment, since both options would expire worthless. However, if the stock is above $35 at expiration, the call would be worth more than 5-points and you would make money, even though the put expires worthless. Similarly, if the stock is below $25 at expiration, the put would be worth more than 5-points, and you would make money, even though the call expired worthless. The profits are potentially large on either side, if the stock moves a great distance before expiration.

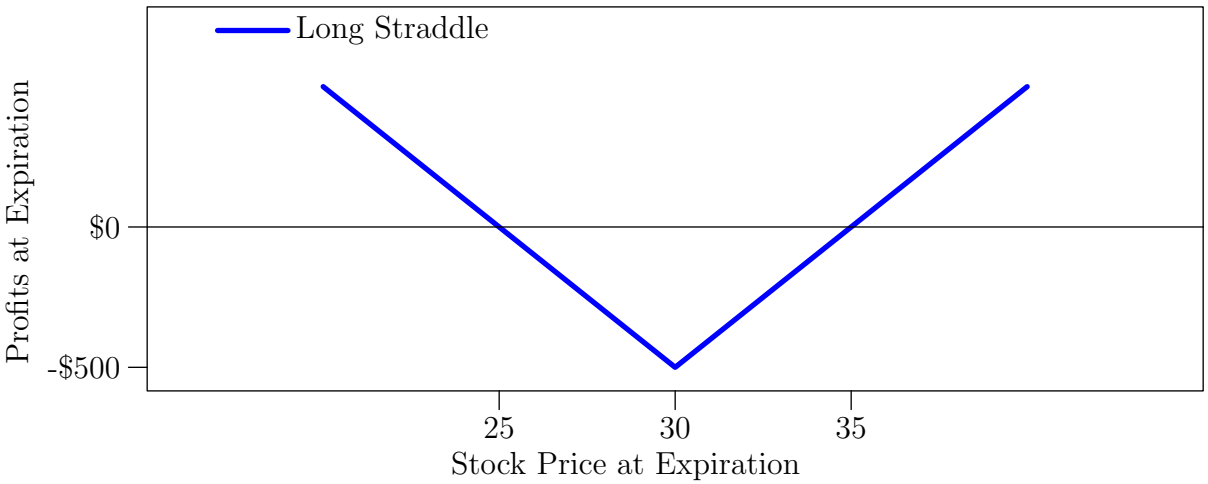

Figure 10.4: Profit graph of a long straddle.

The profit graph of the long strangle is shown in Figure 10.4. As you can see, there are two break-even points, easily calculated, and two ways to make big profits. Straddles are most desirable when premiums are low (to reduce the initial investment) and the stock is volatile. Obviously, this combination is very difficult to find. However, given enough volatility, profits can be made even with higher premiums. Even so, losses can be expected in a large percentage of cases if the straddle is held to expiration. And while theoretically

you can lose your entire investment, in practice, this is unusual. Even on expiration day, the options can be sold for a small amount to recoup some of your investment, and for more money prior to expiration.

10.3.1 The Reverse Hedge

The long straddle is equivalent to shorting the stock and buying two calls, which is known as a **Reverse Hedge**. Should the stock price decline, you will profit from the short position in the stock. If the stock price increases, you will profit from the calls. If the stock remains near the strike, you will lose your initial investment.

The long straddle is generally superior to the reverse hedge because it does not involve a short position in the stock. Short sellers of stock must pay dividends and other fees that option buyers are not subject to.

A Reverse Hedge with Puts

A reverse hedge can also be entered by purchasing the stock and buying two puts. In this case, if the stock rises, the stock position will become more valuable, while if it falls, the puts will become more valuable. As with the long straddle and the other form of reverse hedge, if the stock remains unchanged you stand to lose your initial investment. This is superior to the reverse hedge discussed in the last section because you might receive dividend payments from the stock. However, since it requires a larger dollar investment, it is inferior to the long straddle.

10.3.2 Buying the Best Straddle

In theory, you should be able to find the best straddle by using the criteria for both the best call purchases and the best put purchases. Then if both puts and calls looked worthwhile, the straddle could be entered.

Example

Using our previous example, of Sato's Silvery Flutes:

Sato's Shares:	$30
September $30 Call;	3-points
September $30 Put:	2-points

If we assume that there is a 25% chance of the shares being at $34 and a 25% chance of the shares being at $26 by expiration, we will have one of the following outcomes:

Sato's shares:	\$34
September \$30 Call:	5.5-points
September \$30 Put:	1-point
Net Profit:	6.5-points

Sato's Shares:	\$26
September \$30 Call:	1-point
September \$30 Put:	4.5-points
Net Profit:	5.5-points

So we stand to make either 5.5-points or 6.5 points, for an average potential return of 6-points. Since the straddle would cost us 5-points, this is a 20% profit. You can enter this straddle, or compare with another potential straddle investment to see which is better. Note that you can only meaningfully compare returns from straddles with the same probabilities.

10.3.3 So I Bought a Straddle, Now What?

If the stock moves up to the next strike, you should consider rolling the put up. Using our previous example:

EXAMPLE

Recall that you are long a straddle on Sato's Silvery Flutes, with a September \$30 call and a September \$30 put. Now the shares are selling for \$35. You decide to roll the put up, so you sell the September \$30 put for 1-point, and buy the September \$35 put for 3-points. Since you spent 5-points for the initial straddle, your investment is now 7-points.

Even though you have increased your initial investment to 7-points, you have reduced your maximum possible loss to 2-points. With Sato's shares at \$35, the call will be worth 5-points at expiration. Should the shares drop back to \$30, your new put will be worth \$5, reducing your maximum loss on the downside to 2-points. And you have maintained unlimited upside should the stock move strongly in either direction.

If the stock drops to the next lower strike, you can (and probably should) roll call down for a similar result.

10.3.4 Some Cautions

What often happens when an investor purchases a straddle is that the stock will move significantly upwards or downwards, and then just as suddenly reverse direction. This creates the temptation to take a small profit on one side of the straddle, while hoping

the stock will move enough in the opposite direction to take a small profit there as well. However, with straddles, *taking small profits is a poor strategy.* If you are the excitable type, you may find this easier to appreciate in theory than to perform in practice. It can be very distressing for an excitable investor to watch a straddle gain 2 or 3-points only to watch it lose that and more. You enter a long straddle because you think the stock will make a large move in either direction. Unless there is a rational reason to change your opinion, it is in your best interests to exercise discipline.

10.4 Selling a Straddle

Straddles can also be sold, and they are classed as covered or uncovered, depending on whether or not you own enough shares to cover the short call side of the straddle. Both the short put and the short call can cost you big time in a short, uncovered straddle, so this is a risky strategy, is not recommended, and will not be discussed further here.

However, the covered straddle can be a profitable and low-risk strategy. This is particularly appealing to many investors who have already become involved in selling covered calls.

Example

Sato's Silvery Flutes is selling at $31 and a September $30 call is selling for 5-points while a September $30 put is selling for 4-points. If you own (or purchase) 100 shares of Sato's, and also sell both the the call and the put, you have a covered strangle.

If Sato's shares close at $30 by expiration, you will make the maximum profit of $800 — $900 worth of gains from the option premiums, less the $100 loss on the sale of the stock at $30/share.

In general, you can calculate the maximum profit from a straddle quite simply:

Maximum Profit = Straddle Premiums + Strike Price - Initial Stock Price

To calculate the break-even point, notice that both arms of the straddle have a break-even of $26. Therefore, the combined position must also have a break-even of $26. Here's a formula:

Break-even = (Stock Price + Strike Price - Straddle Premium)/2

10.4.1 Positions Equivalent to the Short Covered Straddle

In section subsection 7.1.1 it was shown that a short, naked put is equivalent to a covered call. This means that the short covered straddle can be though of in two ways: as a 200-share covered call, or as the sale of two naked puts. In fact, some investors feel that there

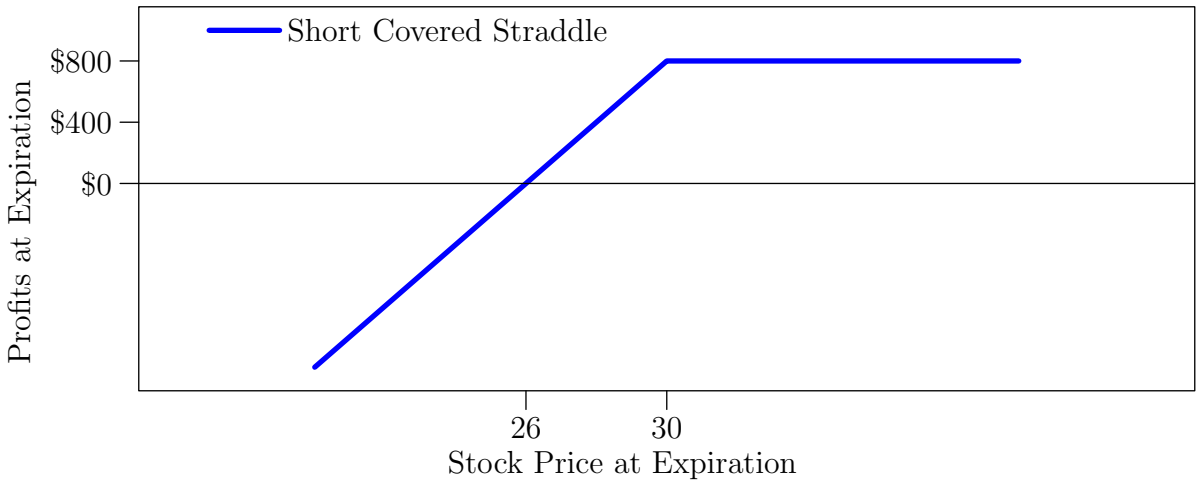

Figure 10.5: Profit graph of a short covered straddle.

is more merit to selling two puts instead of selling a covered straddle. Commission costs and initial investment would be smaller in margin accounts, but it could also be pointed out that leverage isn't always the best policy.

These comments also apply somewhat to the sale of strangles, which were covered earlier.

10.4.2 Comparison of the Short Covered Straddle to the Short Covered Strangle

Obviously, there are many similarities between the short covered straddle and the short covered strangle. Both positions can be viewed as arising naturally from the desire of the covered call seller to increase his profits with the addition of the sale of a put. The strangle would be more usefully employed when the stock is not likely to trade in a narrow range — is more volatile, in other words. The straddle is best if the stock did not move at all by expiration.

But also note the differences: the seller of the strangle *makes their maximum profit over a much wider range of stock prices than the covered straddle seller.* This is because it is almost impossible for both options in a straddle to expire worthless, since they are usually set so close to the current price of the stock. Strangle strikes are usually set over a wider range, and so the maxium profit will occur over a wider range as well.

While this may make the strangle appear more conservative than the straddle, recall that if the stock makes a strong movement in either direction, the strangle writer will have little recourse besides buying back the in-the-money option, which will generally be quite expensive.

10.4.3 I Sold a Covered Straddle, Now What?

If you sold your straddle for prices that would make you happy to sell your stock on a bullish turn, or buy more on a bearish one, then there is little follow-up required. If not, then you will need to take some action.

There is usually very little to be gained from rolling a straddle up or down. If the stock runs up dramatically, and you want to keep your shares, you will probably want to buy back your call. You might consider re-purchasing the call when it reaches the price you were paid for the straddle. For example, if the straddle paid you 7-points, and the call will now cost you 7-points to buy back, perhaps this would be a good time to repurchase the call. The risk here is that the stock could then turn around and make the put more valuable, and you would be stuck with an expensive re-purchase on both sides of your position. Of course, the same strategy can be used if the stock tanks dramatically. The put can be bought back when it reaches the price you were paid for the straddle. This assumes you do not want to purchase the shares.

There is another, somewhat more complex follow-up strategy that has a lot to recommend it. It is best explained by example:

Example

A straddle was sold for 7-points when the underlying stock was at $25. Now the stock is at $50, and the following option prices exist:

September $25 call	7-points
September $25 put	1-point
September $30 call	3-points

As discussed above, you could by back the September $25 call for 7-points, the same amount you were paid for the straddle. If the stock stays above $25, then you have pretty much eliminated any major loss. On the other hand, you have also eliminated any hope of a gain.

Another possibility is to buy the September $30 call for 3-points. This reduces your total profit to 4-points, but now you are completely protected on the upside, no matter how far much the stock price may increase. Should the stock close above $30 at expiration, you will have to buy back the $25 call for 5-points, but this leaves you with a loss of only 1-point. However, if the stock closes between $21 and $29, you will be able to buy the straddle back for less than 4-points, which gives you a profit.

Should the stock continue to climb, you can consider buying back the put for minimal amounts, say 0.5-point. Then should the stock reverse and be anywhere below $28.5, you will keep your 3.5-points of profit.

Alternatively, even if the stock suddenly drops, after the large run-up it will probably take some time to fall back below $25, at which time there will be greatly reduced time value and you can probably buy back the spread for much less than 7-points.

While the above example discusses the case when the stock runs up, a similar strategy works well when the stock goes down, namely buying a put at the next lower strike to limit losses on the downside.

Starting Out Protected

It sometimes makes sense to start a straddle with no risk in one direction. To do this, buy an out-of-the-money call or put at the same time as you enter the straddle. This is the same as the follow-up strategy discussed in the last section, but the protection will cost much less at the start of the straddle, since it is out-of-the-money. You could even protect yourself on both sides by purchasing two out-of-the-money protective options. Whether or not this is wise depends completely on the market prices of the options when you enter the straddle, but it is certainly worth consideration.

10.5 Up to the Minute Summary

- A strangle is a combination of a put and and a call on the same underlying stock. A strangle may be bought or sold.
- You can buy a strangle to lock-in the profits from a long call.
- You can buy a strangle to lock-in the profits from a long put.
- When the unusual situation arises that a stock is more likely to make a large movement up or down than to stay in a narrow trading range, buying a strangle makes sense as an initial position.
- In-the-money strangles cost more, but are the safest.
- If the stock moves up or down, you may use any of the tactics discussed for calls or puts as follow up actions. This can involve you in excessive commissions, so do not do this automatically.
- A covered strangle is a short strangle combined with a long stock position to cover the short call.
- Covered strangles can be used with advantage when a stock is trading in its fair value range, to increase profits, or obtain stock at better prices.
- Follow up actions for covered strangles are particularly important if the stock makes a precipitous drop.
- A straddle is a combination of a put and a call on the same underlying stock, with the same expiration date and strike price.

- Long straddle can make money for you if the stock rises or falls dramatically. You lose your investment if it remains unchanged at expiration.
- The best follow-up actions for a straddle buyers are rolling up the put (if the stock price increases) or rolling down the call (if the stock price decreases).
- It is easy to lose money on straddles by trading to much. Avoid this temptation.
- Selling a straddle is best done *covered*, by owning enough stock to cover the short call arm.
- With a short straddle, you make most of your profits if the stock closes at the strike price of the options on expiration day.
- It is best to sell straddles when you would be happy to part with the stock or buy more at the cost adjusted prices.
- You can buy protective puts or calls when the stock goes down or runs up.
- Consider starting your straddle with protection in place on one or both sides. If it can be done economically, it may be a very good idea.