

Section I

BASIC CONCEPTS

Section I includes Chapters 1 through 9. These chapters contain fundamental information about options, mainly intended for the beginner. Those who have some experience with options may still find it worthwhile to skim through Section I to fill some gaps in their knowledge.

INTRODUCTION

Why Options?

Why should someone who invests or speculates in the market learn to use options? The simple answer is that options can greatly enhance your profit from stocks and/or provide the means to protect your portfolio. The goal of this chapter is to familiarize the beginner with call and put options, and demonstrate some of the basic ways that options are used.

Suppose you buy a stock for \$30 a share and it goes to \$33. The stock price has risen by 10 percent and accordingly you have a 10 percent profit. That's nice! If instead of buying the stock, you buy an appropriate option, you might make a 100 percent profit or even more for the same 10 percent rise in the stock price. That's better than nice. That's fantastic!

Of course, there are risks associated with options, just as there are risks with any investment. You need to understand the risks as well as the advantages of options in order to optimize your results.

Throughout this book, the use of call and put options are illustrated through a variety of examples. For simplicity, the focus is on equity options—that is, options associated with individual stocks. With minor variations, the same concepts apply to most other kinds of options, such as those associated with an index such as the Dow or those that represent an industry such as the semiconductor industry.

The Basic Concept of Options

To understand the basic concept of options, let's start with a simplified look at how they work.

An (equity) option is linked to a specific stock. The price of the option is much less than the price of the underlying stock, which is a major reason for the attractiveness of options. If the price of the stock changes, the price of the option will also change, although by a smaller amount. As the price of a stock goes through its daily ups and downs, the price of an associated option will undergo related fluctuations.

The price of an option can be viewed and followed in much the same way as a stock price. There are numerous online services, including the data feed for your brokerage account, that provide the prices of options. The Chicago Board Options Exchange (CBOE) offers a free online service for quotes on option prices that are 20 minutes delayed.

For a call option, if the stock price goes up, the option price also increases. If the stock price goes down, the price of the call decreases.

For a put option, if the stock price goes down, the option price increases. If the stock price goes up, the price of the put decreases.

This sounds like owning a call option is similar to holding a long position in the stock, because you have the potential to make a profit when the stock price goes up. And owning a put option is similar to holding a short position in the stock, because you have the potential to make a profit when the stock price goes down. In a rough sense, this analogy is true, but there are some significant differences.

Major Differences Between Stocks and Options

Leverage

Options typically cost only a fraction of the stock price. If you think XYZ stock, currently at \$49 per share, is going up in price, you can purchase 100 shares at a cost of \$4,900. If instead you buy 1 call option contract (1 contract represents 100 shares of stock), you might pay only \$2 per share for a total of only \$200 to participate in an upward price movement of XYZ.

Analogously, if you think XYZ is going down in price, you could short 100 shares of stock, but that creates a margin responsibility in your brokerage account, which can become costly if XYZ goes up. If instead you

buy one put contract, you might pay just \$2 per share for a total of only \$200 to participate in a downward price movement of XYZ.

Time Limitation

One reason options are cheap is that they are time limited. A long or short position involving stock can be held indefinitely, but an option expires on a fixed date. The expiration date is typically the third Friday of the expiration month designated in the option contract. When you buy an option, you can select from various expiration months, including the current month as well as other months going out possibly as far as two years.

The longer you want to hold an option, the more expensive it will be. If a price of \$1 per share applies to an option expiring in two months, a similar option expiring in four months might be priced at \$2 per share. For 12 months, the price could be as much as \$7 per share, but even this would typically be a small fraction of the stock price.

Another important aspect of being time limited is that the value of an option will decrease with time when there is no change in the stock price. If you buy an option for \$1 per share with two months until expiration, for example, it might be worth only \$.65 with one month to go if the stock price has not gone up. This is one of the risks of owning an option, namely that its value diminishes over time when the stock price remains unchanged.

Price Movement

As the stock price changes, the option price also changes, but by a lesser amount. How closely the change in the option price matches the change in the stock price depends on the reference price designated in the option contract. This reference price is called the *strike price*.

When you decide to purchase an option, there will be several strike prices from which to make a selection. For most stocks, the strike prices of its options are set at \$5 increments within the broad trading range of the stock. For some lower- and medium-priced stocks, strike prices are offered in increments of \$2.50, whereas options on some high-priced stocks only have strike price increments of \$10.

There is a terminology used by options traders to describe the relative relationship between the stock price and the strike price of an option. If the strike price of either a call or a put is close to the price of the stock, the option is said to be *at-the-money*. If the strike price of a call (put) is above (below) the stock price, the option is said to be *out-of-the-money*. If the strike price of a call (put) is below (above) the stock price, the option is said to be *in-the-money*.

For an at-the-money option, the price of the option will change by about 50 percent of the amount of change in the stock price. For an out-of-the-money option, the price of the option will change by less than 50 percent of the change in the stock price. The price of an in-the-money option will move by more than 50 percent of the change in the stock price.

For example, suppose XYZ stock is priced at \$49 and a call option with a \$50 strike price is purchased for \$2 per share. If the price of XYZ stock rises by \$2 up to \$51 soon after purchasing the option, the price of the call would typically increase by about \$1, raising its price by up to \$3 per share. Suppose instead, a call option with a \$55 strike price was purchased for \$.75 per share. Then the same \$2 move in the stock price might increase the price of the call by only \$.20, up to \$.95 per share. On the other hand, a call option with a \$45 strike price and a cost of \$5 per share might see an increase in the price of the call by as much as \$1.60, up to \$6.60 per share.

Of course, if XYZ fell \$2 from \$49 down to \$47, the call option with a \$50 strike price could be expected to lose about \$1 per share, reducing its price from \$2 down to \$1. This illustrates how the leverage of options works in both directions.

Financial Risk

When you buy an option, your maximum risk is limited to your original cost of that option. The worst outcome is that you hold the option until expiration, at which time it has become worthless because the stock price failed to move in a beneficial manner.

For example, if you buy one option contract for a price of \$2 per share, your cost is \$200 ($2 \times 100 = 200$). This is the most that you can lose. Compare that dollar risk with the risk of either owning or shorting

100 shares of stock. When the stock price undergoes a substantial move against your long or short position in the stock, the dollar loss will be much greater than the cost of a call or put option.

A major risk with options is that you invest heavily by purchasing numerous contracts and then allow them to expire worthless. This represents a 100 percent loss on a significant investment. Of course, it is rarely necessary to lose all of your original investment when the stock does not move as expected. Typically, you can sell your options before expiration and recover some part of your original cost.

A Detailed Explanation of Options

Additional insight into options from both the owner and seller viewpoints is provided in the more detailed explanation that follows here.

The Option Contract

An (equity) option represents a contract between a buyer and a seller. This contract is an agreement concerning the buying or selling of a stock at a reference price during a stipulated time frame. You will never see any written document for this contract, just as you do not see actual shares of stock that you purchase in your brokerage account. The existence of the option contract is implied as soon as you buy or sell an option through your broker.

We will continually refer to the buying and selling of options. In case you are wondering where all this buying and selling takes place, there are exchanges for trading options similar to the exchanges for trading stocks. Your broker routes your order to buy or sell an option to one of those option exchanges, just like he sends your order to buy or sell stock to a stock exchange.

There are rights and obligations associated with an option contract, which need to be understood. Options associated with individual stocks trade in a manner called “American style,” which permits the owner of the option to exercise the rights of the contract at any time before the option expires. To better comprehend the implications of an option being exercised, we examine the call option and the put

option from the viewpoints of both the buyer (owner) and the seller (writer).

The Call Option

The buyer (owner) of a call option has the right to purchase 100 shares of stock at the strike price designated in the contract. This right to purchase can be exercised anytime before the contract expires. Typically, the time frame of the option extends through the third Friday of the expiration month stipulated in the contract.

The seller (writer) of a call option has the obligation to supply 100 shares of stock for purchase at the strike price, if so requested by the owner of the option. This obligation to supply the stock may be required at any time before the contract expires. As a practical matter, if the stock price is below the strike price, the stock is almost never “called” away from the seller. Even when the stock price goes above the strike price, the assignment of a call rarely happens until near the expiration date.

BUYING A CALL OPTION

The motivation to buy a call option could be based on your expectation that the price of XYZ stock will soon rise above its current level. Let’s set up a possible trade, clarify its risk, and examine some possible outcomes resulting from the trade:

- **Trade.** In early February, with XYZ trading at \$49, you decide to buy one call contract to benefit from the expected rise in the stock price. To allow a reasonable amount of time for XYZ to advance, you select a contract with an April expiration. You also select a strike price of \$50. Option prices are quoted on a per-share basis, and let’s suppose that this call option costs \$2 per share. Because the option covers 100 shares of stock, this means you pay \$200 to own this particular call contract.

In the jargon of options, you are “long one XYZ Apr 50 call.” Now you have the right to purchase 100 shares of XYZ stock at \$50 per share anytime before the close of trading on the third Friday of April.

This right to purchase XYZ stock for \$50 per share does not look so good at the moment, because the stock is priced in the market at only \$49. Indeed, why have you paid \$2 per share for something that presently has no intrinsic value? Because the expression “time is money” is most appropriate as it applies to options. You paid \$2 per share as a cheap way to participate in the movement of the price of XYZ stock until the call expires in two months.

- **Risk.** Your risk on this trade is limited to the \$200 paid for one call contract.
- **Outcome.** Let’s examine a few scenarios to see how this trade might work out:
 1. Suppose your faith in XYZ stock is validated as its price reaches \$54 by the end of March. Now your right to purchase XYZ at \$50 looks good, and you decide it is time to take your profit. Should you call your broker and tell him to exercise your right to purchase this stock at \$50? No, because you will do much better if you just sell the option. The option you bought for \$2 is likely to now be worth \$5.50. So, the contract for which you paid \$200 can now be sold for \$550, giving you a nice \$350 profit. That represents a 175 percent profit on the option, whereas the stock price has risen only 15 percent.

Why is this option worth \$5.50 when its intrinsic value is only \$4 ($54 - 50 = 4$)? Again, because “time is money,” and the person who buys your call option is paying the extra \$1.50 per share over its intrinsic value in hopes that XYZ stock will go even higher before the April expiration.

Let’s see why selling the option is more profitable than exercising it. If you had exercised your option to buy XYZ stock at \$50 and then immediately sold the stock at \$54, that would be a \$400 gain on the stock, less the \$200 cost of the option for a net profit of only \$200. So, exercising the option yields only a 100 percent profit as compared with the 175 percent profit received from selling the option. Also,

selling the option avoids any issue about having enough cash in your brokerage account to take ownership of the stock.

2. In contrast to the happy Scenario 1, let's see what happens in the unfortunate case when XYZ is under \$50 when the April options expiration date arrives. If you remained stubbornly optimistic until the end, you would have seen the value of your option diminish until it expired worthless. In this worst-case situation, you would lose all of the \$200 that you originally paid for the option. Usually, there is no need to incur such a complete loss. If XYZ is still around \$49 in early April with only a couple of weeks left until expiration, you might conclude that the chance for success looks remote. Then sell your option for whatever value remains. Suppose that you could sell the option for \$1 per share and thereby close the trade for a 50 percent loss. The decision to limit your loss on a long option trade to 50 percent is a reasonable exit strategy.

SELLING A CALL OPTION

Suppose that you own 100 shares of ZYX stock, which at the current price of \$67 is above where you bought it, but now seems to be stalled. It would be nice to make a bit more money on this stock, and you would be quite happy to part with it at \$70 per share. This could be your motivation to sell a call. Selling a call would immediately bring some cash into your brokerage account, and if ultimately you are required to give up your stock for \$70 per share, that is an additional gain. Let's set up a possible trade, clarify its risk, and examine some possible outcomes resulting from the trade:

- **Trade.** In early February, you decide to sell one call contract on ZYX. You pick the \$70 strike price and a March expiration. The March option is selected so as to have an early resolution as to whether your stock will be retained or sold. Suppose that you are able to sell the March call for \$2 per share. Because the contract covers 100 shares of stock, that brings in \$200, which is yours to keep.

In the jargon of options, you are “short one ZYX Mar 70 call.” Also, this particular combination of owning a stock and selling a call is referred to as a *covered call position*. Chapter 14, “Covered Calls,” discusses this type of trade more fully.

You now have the obligation to give up your stock at \$70 a share if someone exercises that right against you before the close of trading on the third Friday of March. Does this mean your stock will be called away as soon as its price is a penny over \$70? No, because under most circumstances you only need worry about losing your stock within a few days of the expiration date. Why? As illustrated previously, until near the expiration date, the owner of the option will always profit more by selling it than by exercising it. Of course, as the expiration date is reached with ZYX above \$70, someone is ultimately going to exercise their option and call away your stock.

- **Risk.** Your risk here is the usual risk of owning a stock, because its price could drop significantly. To a small degree, this risk is offset by the decrease in value of the short call.
- **Outcome.** Let’s examine a few scenarios to see how this trade might work out:
 1. At expiration, ZYX is at \$71. Your stock is called away for \$70. You have made \$2 per share for the call that you sold, and the stock is being sold for \$3 more than the \$67 it was worth when you sold the option. Thus, you have a \$500 gain since the time that you initiated the option trade.

Things look a little different if ZYX is \$74 at expiration. Your stock will still be taken away at \$70, and you have exactly the same \$500 gain that you had when ZYX closed at \$71. But in this case, you could have made \$700 on the stock if you had not sold the option. Of course, that \$700 gain is unrealized unless you actually sell the stock at \$74. One benefit of the covered call trade is that it forces some discipline upon you to take a profit and get rid of a stock that possibly has little upside left in it.

2. If ZYX is slightly above \$70 as expiration nears, you might decide that you do not want to part with your stock. Then you must buy back the short call. If ZYX is hovering around \$71 on the expiration day, you can probably buy back the call option for a bit more than \$1 a share (even at expiration it will cost you a little more than its intrinsic value). This gives you a profit of the difference between the \$2 that you took in from the sale of the call less your approximate cost of \$1 from buying it back. Now you get to keep your stock, but if its price soon begins to fall, you may regret the decision to keep it.
3. If ZYX is only \$69 at expiration, the call that you sold expires worthless. You already have the \$2 from selling the option, and you also retain your stock. The cost basis for your stock has been lowered by \$2 per share. Now you can repeat the process in the next month. If you were able to continue bringing in \$200 every month with this covered call strategy, that represents a 36 percent annual return on a \$67 stock that does not even need to go up in price. If the stock goes up gradually and each month you can sell a call at a higher strike price, things are even better.
4. Suppose that ZYX has pulled back to \$64 at expiration. Now your stock has lost \$3 per share from the time that you sold the call. This unpleasant situation is somewhat relieved by the \$2 per share received for the call that you sold. In this case, your net loss is only \$1 per share.

The Put Option

The buyer (owner) of a put option has the right to sell 100 shares of stock at the strike price designated in the contract. This right to sell can be exercised anytime before the contract expires. Typically, the time frame of the option extends through the third Friday of the expiration month stipulated in the contract.

The seller (writer) of a put option has the obligation to buy 100 shares of stock at the strike price, if so requested by the owner of the option.

This obligation to purchase the stock may be required at any time before the contract expires. As a practical matter, the stock is never “put” to seller if the stock price is above the strike price. Even if the stock price is below the strike price, the put assignment typically does not happen until near the expiration date.

BUYING A PUT OPTION

The motivation to buy a put option could be based on your expectation that the price of XYZ stock will soon fall from its current level. Let’s set up a possible trade, clarify its risk, and examine some possible outcomes resulting from the trade:

- **Trade.** In early February, with XYZ trading at \$39, you decide to buy one put contract to benefit from the expected fall in the stock price. Because you expect XYZ to decline following an earnings report in early March, you choose a March option. You also decide on a strike price of \$40. Let’s say this put option costs \$3 per share. Because the option covers 100 shares of stock, this means that you pay \$300 to become the owner of this particular put contract. You are now “long one XYZ Mar 40 put.” This gives you the right to sell 100 shares of XYZ stock at \$40 per share anytime before the close of trading on the third Friday of March. This right to sell at \$40 per share is a slight improvement over its current price of \$39; however, that gain of \$1 per share is offset by the \$3 per share paid for the option. Why have you paid \$3 for something that has an intrinsic value of only \$1? Again, “time is money,” and you have paid an extra \$2 per share of time value in order to play XYZ for a downward move until the put expires in March.
- **Risk.** Your risk on this trade is limited to the \$300 paid for one put contract.
- **Outcome.** Let’s examine a few scenarios to see how this trade might work out:
 1. The earnings report for XYZ is indeed weak and the stock sinks to \$34. Now your right to sell XYZ at \$40 per share looks good. Does it matter that you do not own any XYZ

stock to sell? No, because if you are ready to take your profit, all you need do is sell the option. The option you bought for \$3 is likely to now be worth \$7. So, the contract for which you paid \$300 can now be sold for \$700, giving you a nice \$400 profit. That represents a 133 percent profit on the option, whereas the stock dropped only about 13 percent.

Why is the option worth \$7 when its intrinsic value is only \$6 ($40 - 34 = 6$)? As said before, time is money, and the person who buys your put option for \$7 is paying an extra \$1 per share over its intrinsic value in hopes that XYZ will go even lower before the March expiration.

Let's see why selling the option is better than exercising it. To assign the option, you would first need to buy the stock at \$34 per share and then exercise your right to have someone buy the stock at \$40 per share. Your gain would be \$600 on the stock less the \$300 you paid for the option, giving a net profit of only \$300. So, exercising the option yields a 100 percent profit as compared with the 133 percent profit received from selling the option.

2. In contrast to the happy Scenario 1, let's see what happens in the case when the price of XYZ stock is still at \$39 when the March options expiration date arrives. The earnings report failed to negatively impact the stock price and you have stubbornly refused to accept that outcome until the end. Then you would have seen the value of your option shrink from \$3 down to its intrinsic value of \$1. You could then sell the option for \$100, which represents a \$200 loss based on the \$300 paid for the option.

SELLING A PUT OPTION

Suppose that you shorted 100 shares of ZYX stock when it was \$65 a share. It has fallen to \$62 in early February, but seems to be stalled at that price level. You do have a \$300 profit, but your original goal was to ride this stock down to \$60 for a profit of \$500. This could be the motivation for selling a put option. Selling a put would immediately bring some cash into your brokerage account, and if ultimately you are

required to close your short position at \$60 per share, that is an additional gain. Let's set up a possible trade, clarify its risk, and examine some possible outcomes resulting from the trade:

- **Trade.** In February, you decide to sell a March contract so as to have an early resolution on the position of being short ZYX stock. You find that you can sell the March \$60 put for \$2 per share, which brings \$200 into your brokerage account. You are now “short one Mar 60 put.” This means that you might be required to buy 100 shares of ZYX at \$60 per share at anytime before the March options expiration date. For all practical purposes, this is not going to happen unless ZYX is below \$60 as the expiration date nears. If you are required to buy the stock at \$60, your broker will immediately use those shares to close your short position in ZYX, which you initiated at \$65.
- **Risk.** Your risk here is the usual risk of being short a stock, because its price could rise significantly. To a small degree, this risk is offset by the decrease in value of the short put.
- **Outcome.** Let's examine some scenarios to see how this trade might work out:
 1. Suppose that ZYX is still at \$62 when the March expiration date arrives. Because the stock price is above the strike price at expiration, the option expires worthless. Now you can keep the \$200 that you received from selling the put option and your short position in the stock remains in place. Thus, you have managed to make some additional profit on this short position, even though the stock is right where it was when you sold the put.
 2. If the price of ZYX is at \$59 at expiration in March, you would be required to buy 100 shares of the stock at \$60 per share. These purchased shares would immediately close your short position in ZYX. Now you have achieved your original goal of riding the stock down from \$65 to \$60, plus you have brought in an extra \$2 per share from selling the put. This yields \$500 from the short sale of the stock plus \$200 from the option for a total profit of \$700.

Comments

The discussion in this chapter focused only on some of the more common uses of call and put options. A variety of strategies use options in other ways to enhance the opportunity for making a profit under the appropriate circumstances. Many of those strategies are presented in this book.

Time is money. This phrase should always be in the back of your mind as you deal with options. Remember that the value of an option decreases in time when everything else remains unchanged. When you own an option, time is your enemy. When you have sold an option, time is your friend.

Before you can begin trading options, you need to consult your broker to determine what types of option trading will be allowed in your account. The types of allowed trades will depend on the size of your account as well as whether it is a retirement account. Upon receiving approval, you will be able to do options trading in your brokerage account much like you do stock trading, either by directing your broker to place orders or by online transactions done by yourself.

OPTION SELECTION

What Is a Cheap Option?

Each of us has our own idea about when something is cheap. On a superficial level, something that costs \$1 is cheap, and something that costs \$100 is expensive. But it is not really the dollar cost that makes something cheap or expensive. Rather, it is whether the intrinsic value of the item purchased is close to the cost paid to own that item. Often, we are tempted to buy something at a price which has been “hyped” way beyond its intrinsic value. Remember the Beanie Baby craze of a few years ago, when those cute little stuffed animals were being hyped as collector’s items and as such were being bought for way more than their intrinsic value? Now that the craze has passed, these items are being sold at garage sales for a price that is much closer to their intrinsic value. The hype value of the Beanie Baby has disappeared over time.

What does this have to do with options? Well, every option has a price that represents its intrinsic value plus a hyped value. In the language of option traders, the hyped value of the option is called its *time value*. We are all familiar with the cliché “time is money,” and never was this expression truer than as it applies to the price of an option. Options are time-limited financial instruments, and it makes sense that an option with a life of five months should cost more than an option with only one month of life. With any option, you do not want to pay for too much time value. One situation that warrants caution is when a stock is generating lots of excitement (good or bad), because the price of its options will be hyped up with extra time value.

Whenever you consider buying an option, it is a good idea to identify just how much of its price is intrinsic value and how much is time

value. It is easy to compute its intrinsic value by asking this question: What would this option be worth if it expired immediately today? When that intrinsic value is deducted from the full option price, the remainder is the time value.

Let's look at a couple of examples:

- **Example 1.** In mid-November, XYZ stock is at \$89. The December 85 call gives you the right to purchase 100 shares of XYZ stock at \$85 per share at anytime before this option expires in about four weeks. The asking price for this call is \$4.50 per share. How much of this price is intrinsic value and how much is time value?

If this option were to expire as you are looking at it, you could exercise your right to buy XYZ at \$85 and then sell it at the current market price of \$89 for a profit of \$4. So, the December 85 call has an intrinsic value of \$4 per share. The rest of the price of the option is its time value, which in this example is \$.50 per share [$4.50 - 4.00 = .50$].

Compare the December 85 call priced at \$4.50 per share with the April 85 call priced at \$7.50 per share. The intrinsic value is still \$4, but for the April option, the time value has increased to \$3.50 per share [$7.5 - 4.0 = 3.5$]. This illustrates that "time is money" because you will have to pay \$3.50 per share to control this stock for five months as compared with \$.50 per share to control it for four weeks.

- **Example 2.** Again, XYZ is at \$89 in mid-November. The December 90 call is priced at \$1.50 per share. How much of this price is intrinsic value and how much is time value?

If this option were to expire as you are looking at it, it would be worthless. The right to buy XYZ for \$90 per share is worthless when the stock can be bought in the open market for \$89 per share. So, the December 90 call has an intrinsic value of \$0. The rest of the price of the option is time value, which in this case is the total price of \$1.50. If XYZ does not go up during the four weeks before the December 90 call expires, the value of this option will shrink to \$0.

Now, let's get back to the original question: What is a cheap option? The XYZ December 85 call is \$4.50 per share, while the December 90 call is only \$1.50 per share. Is the December 90 call really cheaper? If we just consider time value, the December 90 call is three times more expensive than the December 85 call (\$1.50 versus \$.50). Of course, if XYZ is going to \$95 before the December expiration in four weeks, you will have a much larger percentage profit if you bought the December 90 call. But suppose XYZ only edges up to \$91 at the December expiration. The December 90 call would be worth \$1 and you would have a loss of \$.50 per share [$1.00 - 1.50 = -.50$]. Compare that with the December 85 call, which would be worth \$6, and you would have a profit of \$1.50 per share [$6.00 - 4.50 = 1.50$].

Now let's ask the same question—What is a cheap option?—in a different context. The XYZ April 85 call is \$7.50 per share, while the December 85 call is only \$4.50 per share. Is the December 85 call really cheaper? Although the time value of the April 85 call is much more than the December 85 call (\$3.50 versus \$.50), keep in mind that the April option has four extra months of life after the December option expires. It might seem expensive to buy that extra time value, but you are paying for a much longer window of opportunity to be right about a significant rise in XYZ stock. Of course, if your timing is impeccable and XYZ makes a run within the next four weeks, the December 85 call will yield a larger percentage profit than the April 85 call. But suppose XYZ goes nowhere before the December expiration, and then in January starts a leisurely climb to \$95 by mid-March. In this scenario, the December 85 call expires with a loss of \$.50 per share, whereas in mid-March with XYZ at \$95, the April 85 call could easily be worth \$11 per share for a profit of \$3.50 per share [$11.00 - 7.50 = 3.50$].

The objective of this discussion is to start you thinking about intrinsic value and time value when you look at an option price. When you buy an option, you are almost always going to be paying for some time value—it is the nature of the beast. Just remember that for your option to make a profit, the stock price must move enough to overcome the loss of some if not all of that time value. The preceding examples demonstrate that the option with the lowest price is not always the best bargain.

Let's continue with the thought process that you should develop in selecting a particular call option or put option to buy. We will assume that you have identified a stock, which you think is going to make a move in price (either up or down). To play this expected move in the stock price, you decide to use options to achieve more leverage for profit. Now you need to determine which option is going to work best.

To select the best option, you need to examine various choices to arrive at a proper decision. In the following illustrations, we focus on the case in which the stock price is expected to go up and hence we want to buy a call option. At the end, you learn how a similar analysis can be applied to the case of buying a put when the stock price is expected to go down.

In the context of buying a call, three example choices are presented. For each example, we follow several scenarios to see whether the outcome is compatible with our expectations. The three examples do not cover every possible situation, but they should provide enough illustration for you to begin developing your own skills at analyzing outcomes.

Selecting a Call

When you buy a call option on a stock, you are taking the view that the stock is going to rise in price. You buy a call option instead of buying the stock to give yourself more leverage for a greater profit. If the stock goes up by 15 percent, your option might easily increase in value by 100 percent or even more.

After you have decided what stock you want to play for a gain, you need to select an appropriate call option to buy. This is not as simple as it might seem. You will have many possibilities from which to make a choice. There will be several expiration months to consider, including the current month and other months that possibly go out as far as two years into the future. You will also have various strike prices to consider, including ones below the stock price (in-the-money), near the stock price (at-the-money), and above the stock price (out-of-the-money).

Which option is best? To answer this question, you must decide what you believe will be the manner in which XYZ makes its upward move. Is this a stock that is going to jump up 15 percent in the next two weeks due to a much better than expected earnings announcement? Or, is this

a stock that will slowly rise by 25 percent over the next year? As you review various choices of call options, think about how much the stock must rise and the time frame during which that rise must occur to produce a profit. Also, if the stock does not make the expected move up, check to see when you can exit the trade to minimize your loss.

General approach: When you consider buying a particular call option, first determine what portion of its total price is time value. Keep in mind that this time value will ultimately be lost as the option expiration date arrives. Then ask yourself, “Can the stock price rise high enough and fast enough to increase the value of this option by an amount that will offset the loss of its time value and provide an acceptable profit?” If you can answer yes to that question, you have a good reason to buy the option.

Let’s look at some examples to illustrate this general approach. Some of the prices used in these examples have been estimated by using an options pricing calculator.

You think that XYZ is going to rise in price in the near to intermediate future. In early April, XYZ is at \$67.

- **Example 3.** You consider buying the Apr 70 call, which is priced at \$1.50 per share. This option seems cheap enough, but is it a good one to buy? To answer this question, let’s see what XYZ needs to do for this option to provide a reasonable profit.

The Apr 70 call expires in a little more than two weeks. Because this option is out-of-the-money, all of its \$1.50 price is time value.

If XYZ rockets up to \$73 in one week, the option might become worth \$3.70 (\$3 intrinsic value and \$.70 time value). This represents a nice \$2.20 profit on a \$1.50 investment, but it required a 9 percent gain in the stock price in one week.

If XYZ only manages to rise gradually over the next two weeks to reach \$71.50 just at expiration, the option will be worth \$1.50 (all intrinsic value and no time value at expiration). In this scenario, XYZ has gone up by 7 percent in three weeks, but you only break even on the option trade.

Suppose XYZ barely edges up to \$68.50 with one week remaining. Then, this option might be worth only \$1 (all time value),

because it is still out-of-the-money and has only one week of life remaining. Now you have lost \$.50 per share on the option even though the stock has moved up slightly, and there is almost no time left to recover.

Summary: This April option is cheap, but to make a nice profit, the stock needs to make a significant rise soon after the trade is initiated. This is not a likely scenario, which makes this trade quite risky.

- **Example 4.** You consider buying the May 65 call, which is priced at \$4.20 per share. This option seems much more expensive than the Apr 70 call, but is that really true? Let's see what XYZ needs to do for this option to provide a reasonable profit.

The May 65 call expires in seven weeks. Because this option is in-the-money, it has an intrinsic value of \$2 [$67 - 65 = 2$]. Therefore, its time value is \$2.20 [$4.2 - 2.0 = 2.2$]. In comparison with Example 1, we are paying for an extra \$.70 of time value [$2.2 - 1.5 = .7$], but we have considerably more time for this option to return a reasonable profit.

If XYZ is able to make the 9 percent gain to \$73 in five to six weeks, this option might be worth \$8.60 (\$8 intrinsic value and \$.60 time value). This represents a nice profit of \$4.40 on a \$4.20 investment. Although the percentage profit on this option trade is not quite as good as compared with Example 1, the May option has allowed more time for the stock to achieve its rise to \$73.

Suppose that XYZ does nothing for six weeks and then finally manages to move up to \$71.50 in the seventh week just as expiration is reached. In this scenario, the option will be worth \$6.50 (all intrinsic value and no time value at expiration). Here you have made a profit of \$2.30 per share [$6.5 - 4.2 = 2.3$]. Compare this with Example 1, in which XYZ reached \$71.50 at expiration and produced no profit.

If XYZ is at \$69.20 at the May options expiration, the May 65 call will be worth \$4.20 [$69.2 - 65 = 4.2$] for break-even.

Summary: Although this May option may seem expensive, it has some important advantages. By having a later expiration date, it gives the stock more time to make the desired move. By having a strike price that is in-the-money, the break-even point at expiration is lower.

- **Example 5.** You consider buying the Oct 65 call, which is priced at \$8.30 per share. This option costs almost twice as much as the May 65 call in Example 4, but keep in mind that you are buying a lot more time. Let's see what XYZ needs to do for this option to provide a reasonable profit.

The Oct 65 call expires in 27 weeks. Because this option has the same strike price of \$65 as that of Example 2, its intrinsic value is the same \$2 [$67 - 65 = 2$]. But this option has a time value of \$6.30 [$8.3 - 2.0 = 6.3$]. In comparison with Example 2, we are paying for an extra \$4.10 worth of time value [$6.3 - 2.2 = 4.1$], but we have an extra 20 weeks beyond the May expiration for this option to perform.

If XYZ is able to make a 9 percent gain to \$73 in 18 weeks (about mid-August), this option might be worth \$11 (\$8 intrinsic value and \$3 time value). This represents a profit of \$2.70 on an \$8.30 investment. Although the percentage profit on this option trade is not as good as compared with Examples 1 or 2, the October option has allowed considerably more time than either the April or May options to achieve its rise to \$73.

Suppose that XYZ is able to make a 20 percent gain to \$80 as the option nears expiration in October. Then the option will be worth \$15 (all intrinsic value and no time value at expiration), and you will have made a profit of \$6.70 on an \$8.30 investment for an 81 percent gain. In this scenario, we have allowed almost seven months to achieve the 20 percent rise in XYZ. Such a rise would be much less likely in the shorter time spans described in Examples 1 or 2.

If XYZ is only at \$70 in mid-September, this trade should be close to a break-even situation. At that time, you will have been able to follow the progress of XYZ for about 22 weeks. If the

stock does not seem to be performing as expected, you could exit the trade without a loss.

Summary: This October option is the most expensive because it goes out the furthest in time and its strike price is in-the-money. The big advantage of this option is that it allows lots of time for the expected move in the price of XYZ to happen.

Overall Evaluation

Depending on the price action in XYZ stock, any of the Examples 3, 4, or 5 might produce the best profit.

Example 3 requires that you have impeccable timing about the move up in stock price. This super-aggressive trade is only going to pay off under special circumstances.

Example 4 illustrates the advantage of selecting an in-the-money option and allowing a little more time to be right about the stock price movement. This is a less-aggressive approach. If XYZ is a fairly volatile stock that cycles through a 10 percent to 15 percent move every few months, this could be the best choice.

Example 5 lends itself to a longer-term move up in the price of XYZ. This trade works best for a stock that is less volatile and more likely to show a steady upward growth over an extended time period. If LEAPS options are available, they would be a more-expensive choice that could extend the time frame out for two years.

Selecting a Put

When you buy a put option on a stock, you are taking the view that the stock is going to fall in price. You buy a put option instead of shorting the stock to give yourself more leverage for a greater profit.

The preceding examples illustrating the thought process in selecting a call option carry over to analogous examples for selecting a put. Different strike prices would be used for the corresponding puts, because an out-of-the-money put means the strike price is below the

stock price, whereas an in-the-money put means the strike price is above the stock price.

Example 3 could be based on an Apr 65 put with similar option prices and profits resulting from analogous stock price movement down rather than up.

Examples 4 and 5 could be based on a May 70 put and Oct 70 put, respectively. Again, similar option prices and profits would follow from analogous stock price movement down rather than up.