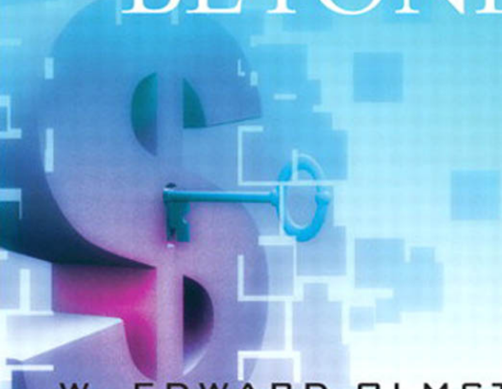
SECOND EDITION

UNLOCK THE OPPORTUNITIES AND
MINIMIZE THE RISKS

OPTIONS FOR THE BEGINNER AND BEYOND



W. EDWARD OLMSTEAD

OPTIONS FOR THE BEGINNER AND BEYOND

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OPTIONS FOR THE BEGINNER AND BEYOND:

UNLOCK THE OPPORTUNITIES AND MINIMIZE THE RISKS, SECOND EDITION

W. Edward Olmstead

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To my wife Pandy,
who gleaned enough from the contents
herein to become a very proficient trader in her own right.
To my sons Hal and Randy,
who shared in my development
as an options trader.

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About the Author

W. Edward Olmstead has a B.S. from Rice University and a Ph.D from Northwestern University, where he is currently Professor of Applied Mathematics in the McCormick School of Engineering and Applied Sciences. He has received several prestigious awards for teaching excellence including an endowed chair. His teaching activities include courses that cover both the theory of options pricing and practical strategies for trading options.

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Dr. Olmstead was Editor of *The Options Professor* newsletter published by Independent Investor, Inc. during 2003-07. His consulting activities included service as an options analyst for Spear Capital Management. He also worked on an ultra short-term trading concept for a member firm of the Chicago Mercantile Exchange. Since 2010, he has utilized a proprietary options strategy in the management of funds for a group of private clients.

For more information about Dr. Olmstead's current options interests, go to **www.olmsteadoptions.com**.

Preface

This book is intended for people who are just starting to learn about options as well as for those who want to advance their basic knowledge to a higher level. Much of the material for the first edition of this book appeared in a series of articles written for *The Options Professor*, a monthly online newsletter about options trading, published by Independent Investor, Inc. Some of the material was originally developed by the author for a course on options pricing theory and applications taught at Northwestern University. The new material included in this revised version of the book is largely drawn from the author's trading experience during the past few years.

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.

Section II includes Chapters 10 through 25. Each chapter in this section is devoted to a strategy that goes beyond the basic trade of owning a call or a put option. Some chapters are an advanced continuation of the strategy introduced in the preceding chapter. The advanced chapters are marked with an asterisk and can be passed over by beginners during their first reading of this book.

Section III includes Chapters 26 through 30. Each chapter in this section covers a topic that is intended for people with options experience who want to develop a broader background. Some of these chapters include topics topics not covered in other books devoted to the trading of options. All of these chapters are marked with an asterisk, so this whole section can be passed over by beginners during their first reading of this book.

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1

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 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 to use options.

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 and the advantages of options to optimize your results.

Throughout this book, the use of call and put options are illustrated through a variety of examples. The examples concern options associated with either individual stocks or Exchange Traded Funds (ETFs). An ETF trades like an individual stock but represents a group of stocks that might be identified with an index such as the Dow 30 or might be identified with a financial industry such as semiconductors.

The Basic Concept of Options

To understand the basic concept of options, 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 also changes, although by a smaller amount. As the price of a stock goes through its daily ups and downs, the price of an associated option undergoes 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, which 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 position can be held only until the expiration date associated with the option. When you buy an option, you can choose from various expiration dates. You always have the choice of various monthly options that expire on the third Friday of the expiration month. The expiration months offered to you include the current month, the next month, and a selection of other months extending out to a year or more. Some stocks and ETFs now offer weekly options with a 9-day life also expiring on a Friday.

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 2 months, a similar option expiring in 4 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 decreases with time when there is no change in the stock price. If you buy an option for $1 per share with 2 months until expiration, for example, it might be worth only $.65 with 1 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, you can choose from several strike prices. For higher-priced stocks, the strike prices of its options are set at $5 increments within the broad trading range of the stock. For lower- and medium-priced stocks, strike prices are offered in increments of $2.50 or even $1.0. 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 nearly the same as the stock price, 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 changes 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 changes by less than 50 percent of the change in the stock price. The price of an in-the-money option moves 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 × 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 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 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 be presented with a written document representing this contract, just as you are never presented with actual shares of stock purchased through a broker. As soon as you buy or sell an option through a broker, its existence will be verified by its appearance among all the listed items in your brokerage account.

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. Almost all options associated with individual stocks or ETFs 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, you 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 is usually based on your expectation that the price of XYZ stock will soon rise above its current level. Now 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, so 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 price movement of XYZ stock until the call expires in 2 months.

- **Risk:** Your risk on this trade is limited to the $200 paid for one call contract.
- **Outcome:** 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 trading at $5.50 in the market place 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.

      Now 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, 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 the $200 that you originally paid for the option. Usually, there is no need to incur such a complete loss. If XYZ is still approximately $49 in early April with only a couple 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 position 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. If ultimately you are required to give up your stock for $70 per share, that is an additional gain. Now 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 can 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 need worry about losing your stock only 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:** Now 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 could 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. Now 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. Now 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 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:** Now 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 to 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 approximately 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.

Now 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, see what happens 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. Now 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:** Now 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 are allowed in your account. The types of allowed trades depend on the size of your account and whether it is a retirement account. Upon receiving approval, you can 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.

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