
Option Strategies

*Profit-Making Techniques for
Stock, Stock Index, and
Commodity Options*

Third Edition

COURTNEY D. SMITH



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Option Strategies

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Preface

About 20 years ago I approached John Wiley & Sons with the idea to write a guide to option strategies. Several books had been written that gave an overall introduction to options and too many books had been written that purported to show the reader how to make millions while sipping pina colodas on the beach. No book had been written purely on options strategies. Wiley decided to give it a go.

Twenty years and one edition later, the book is still being sold across the country. Few books live that long! I want to thank my readers for their support.

This third edition adds much more information on predicting implied volatility, how to select a strategy, and how to make money trading options. In addition, more material has been added to just about every chapter. And, of course, I've cleaned up even more errors. Thanks to my eagle-eyed readers for spotting them!

One thing I have tried to retain from the first edition is the straightforward approach to options strategies. This book is designed to be used by traders, not read by rocket scientists. I have attempted to keep the math to a bare minimum. There are now plenty of books with plenty of formulas.

The success of this book is gratifying. But the most gratifying success comes from helping you, the reader, make money in the markets. I hope this book helps you to be a trading success.

Introduction

Welcome to the third edition of *Option Strategies*. This book will take you on a guided tour of the world of option strategies. Options present the investor with a myriad of new strategies. Some are very conservative, such as covered call writing, whereas others are very speculative, such as naked call selling. Options provide more and often better ways to fine-tune your investing strategies to expected market conditions.

This book covers all types of options: stock index, stock, and commodity. Bullish and bearish strategies are covered equally. It will be useful to all options traders and hedgers, from novices to professionals.

DECISION STRUCTURES

A decision structure is an ordered line of inquiry, consisting of a structured series of situations and choices that assist you in analyzing potential trades and in determining your course of action after you have entered a trade. A decision structure is not an exhaustive compilation of all possible strategies but a concise guide to the analysis necessary to deal with the most common possibilities.

In order to achieve your objectives, you must first identify your objectives. This self-evident truth is often forgotten. Two main questions can help you:

1. How much risk are you willing to take? Each person has a subjective criterion of risk. You must have an idea of the level of risk with which you are comfortable so that you can make acceptable investments.
2. What kind of return do you need to take on that level of risk? The greater the risk, the greater should be your prospective reward. Look at competing investments. You might have found a low-risk covered write, but your return might be just above Treasury bills. Why bother with such a trade? Look for those opportunities that have significantly more reward, though they also have more risk.

SIMPLIFICATION OF OPTIONS CALCULATIONS

Most discussions of options calculations are too simple. They highlight the important issues rather than present seemingly irrelevant information. However, in the final analysis, reality is complex.

The major area of simplification has been in the mathematics of options. In general, the calculations given in books and articles have ignored such factors as transaction costs, carrying charges, and taxes. In most cases, this is not critical. However, there is no need to invest in an option trade and lose money because of ignored factors.

The discussions of risk and reward in Chapters 7 to 24 focus on the strategy and usually do not mention carrying charges, unless carrying charges tend to be a major determinant of profitability. For example, carrying charges are rarely going to affect the decision to buy a call, but an arbitrage between an underlying instrument and a reverse conversion is dominated by considerations of carrying charges.

CARRYING CHARGES

Carrying charges, including transaction costs, the bid/ask spread, slippage, and financing costs, must always be considered when deciding on a strategy.

Transaction costs are an ever-present cost of trading. The term *transaction costs* includes commissions, the bid/ask spread, and slippage. Typically, the largest transaction cost is brokerage commissions. Brokerage houses charge commissions on all transactions. Many option strategies involve the use of options in conjunction with other instruments. For

example, a covered call write program in stocks involves the sale of a call against the purchase of the underlying stock. The commission on the stock purchase and on the eventual sale should be considered in the investment decision.

Traders of options on the floors of the various exchanges do not need to consider this factor as much. Their transaction costs are pennies per contract.

Another potential transaction cost is the *bid/ask spread* of the investment. (The *bid* is the highest price that someone is willing to pay for the option; the *ask* is the lowest price at which someone is offering to sell the option.) All options and related instruments have a bid/ask spread. For example, an option may have a last price of $4\frac{1}{4}$, but the bid may be $4\frac{1}{8}$ and the ask may be $4\frac{3}{8}$. In general, most investors will have to pay the ask to buy an option, and will sell at the bid price. This has the effect of inducing slippage in calculations of profits, risks, and break-evens. It is usually wise to include at least one minimum tick or price movement into the costs of your option trade. For example, bond futures options trade in units of $\frac{1}{64}$. It would be a good idea to subtract $\frac{1}{64}$ from your expected sale price and add $\frac{1}{64}$ to your expected purchase price.

The bid/ask spread is a major source of profit for floor traders. They typically look to buy at the bid and sell at the ask. This enables them to execute many strategies that cannot be executed by everybody else. Such strategies as conversions, butterflies, and reversals tend to be the exclusive domain of professional floor traders. These strategies tend to be dominated by transaction costs. The ability to buy at the bid and sell at the offer is a powerful advantage in trading these strategies.

Slippage is the final transaction cost and is related to the bid/ask spread. It is the difference between the price that you expect on the fill of an order and the actual cost. For example, you could expect to get a fill at $1\frac{7}{8}$ on a purchase of a call, but the market is active and volatile and your order is not filled until the market is up to $2\frac{1}{8}$. *Very* conservative investors should include at least another tick on the expected price as slippage for computing expected returns on a trade.

Carrying charges, often overlooked and/or idealized, represent the costs to carry an open position. Traders should at least consider the opportunity cost of initiation and carrying a particular trade. There are an infinite number of investment possibilities. When you decide to do an option trade, you have implicitly rejected all other investment possibilities. You have eliminated the *opportunity* to invest elsewhere. Traditionally, the *opportunity cost* has been quantified as the Treasury-bill rate because it is considered riskless.

Leveraged positions have a finance charge. This finance charge must be considered before initiating a position and while calculating the

possible outcomes. For example, a covered write against a stock bought on 50 percent margin will have the profit potential reduced by the financing charges. The term *carrying charges* or *carrying costs* is used throughout this book as a shorthand reference to the various costs associated with carrying a trade or position.

The biggest cost of all is probably *taxes*. This book assumes no taxes on any of the trades when making the various calculations. However, the reader should definitely consider the tax consequences of their trades. This could have a major impact on the long-term efficacy of the trading program.

OVERVIEW OF THE BOOK

The book is divided into two parts. The four chapters of Part One outline the fundamentals of options. This part forms a base for the remainder of the book. Even experienced options traders should scan these chapters to make sure they are using the same terminology as is found in this book.

Part Two contains Chapter 6, which outlines several of the considerations that are important in selecting a strategy. The following chapters discuss each main strategy, the risks and rewards of the strategy, the selection of the various components of the strategy, and the necessary follow-up actions. I have added a new chapter, Chapter 24, which outlines the most critical aspects of trading, psychology, and risk management.

This book is meant to be used every day by the options strategist and trader. Wear it out!

PART ONE

Why and How Option Prices Move

The Fundamentals of Options

This chapter will give you the basics of options. It is necessary to know this information before going on to the other chapters. The concepts presented here will be referred to throughout the book.

WHAT IS AN OPTION?

An option gives a person the right but not the obligation to buy or sell something. A person who buys an option is said to be *long* the option. A person who sells (or *writes* or *grants*) an option is said to be *short* the option.

The buyer of an option pays a premium to the seller. The *premium* is the price negotiated and set when the option is bought or sold. The negotiation is in the form of an auction on the various exchanges. Option buyers pay the premium, while option sellers receive the premium. For example, you could buy an IBM April 140 call for a \$5 premium. The buyer of the option pays the premium to the seller. A buyer of an option is said to be *long premium*, while the seller of an option is said to be *short premium*.

The buyer of an option can *exercise* that option by notifying their broker that they wish to exercise the option. Exercising the option means that they actually wish to exercise the terms of the option. For example, say you own one December call on Widget Brothers with a \$120 strike price. That gives you the right, but not the obligation, to buy 100 shares of Widget Brothers at \$120 per share.

There are two types of option exercise: American and European. We will explain this later in this chapter.

So, to carry on our example. You could exercise that December call anytime before the expiration day in December. Once again, you have no obligation but you do have a right to do it.

The seller of an option has no right to exercise. They must wait to see what the option buyer wants to do. The seller has the obligation to sell 100 shares of Widget Brothers at \$120 per share.

In the real world, options are exercised if they are in-the-money at or near expiration only. Prior to expiration, only very deep in-the-money options will possibly be exercised.

There are two types of transactions: opening and closing. An *opening* transaction initiates an options position; a *closing* transaction liquidates the trade. An opening buy is followed by a closing sale, or exercise—a closing exercise following an opening buy means that buyers avail themselves of the right that was bought. An opening sale, or write, is followed by a closing buy, or exercise—a closing exercise following an opening sale, or write, means that sellers must meet their obligation. (This distinction is important for margin purposes, which will be explained later in the chapter.)

Let me give you an example of opening and closing buys and sells.

You want to buy a call. It is called an opening buy because you are initiating the position. It is called a closing buy if you are already short or have written an option first.

Conversely, an opening sell is when you sell short or write an option before you buy it. A closing sell is done after you have bought a call.

Obviously these same considerations apply to puts.

The *open interest* is the total of open options contracts on an exchange and is calculated by the exchange. Every option outstanding is counted. If you open buy an option, the open interest increases by one. Note that you cannot tell the number of buyers or sellers, only the number of contracts existing at the close of trading each day. The open interest is useful in determining the liquidity of an option. *Liquidity* is essentially how easy it is to buy or sell contracts without unduly affecting the price. Liquidity tends to increase as open interest increases. High liquidity is important if you want to place large orders to buy or sell. Open interest is typically reported by the exchanges on the day following the particular trading day.

One of the major considerations in looking at an option is the liquidity. An option with little open interest or volume will be hard to get into and out of. The bid/ask spread will be wider. You will only be able to enter and exit small positions.

An illiquid market is often likened to a Roach Motel©, you can get in but you can't get out! You must expect to hold the position to expiration and not exit earlier.

Why Buy an Option?

It is easy to understand the rationale of buying an option. You get most of the benefits of owning something without most of the risk. In one sense, buying an option can be compared to insurance. For example, insurance lets you have the benefits of owning a car, minus the cost of the insurance premium, without most of the risk of accidents. In options, the call buyer gets most of the price appreciation, if any, without much of the risk of prices moving lower. The put buyer gets most of the price depreciation, if any, without much of the risk of prices moving higher. The seller of the option takes the risk of price appreciation or depreciation in return for the premium, which is similar to the insurance premium.

Why Sell an Option?

Why would anyone want to sell options if they are not in the driver's seat? The answer is money. The price that option buyers must pay is set in an open market. If buyers don't bid high enough prices, sellers won't sell. The net effect is that options prices are bid to a level that option sellers believe compensates them for the risk of selling options. In effect, the buyers and sellers have exchanged an element of risk for a price.

Many people are attracted to options because they have heard the statistics that 70 percent to 80 percent of options expire worthless. Many advisory or educational services use this statistic to suggest that you are way better off selling options rather than buying options. They correctly point out that professional options dealers are net sellers of options and therefore that must be a superior way to make money in the options market.

This is completely false.

The returns of buying or selling options are exactly equal, all other things being equal. Only skill or luck will cause you to outperform or underperform. It is true that most options expire worthless. But if someone were to indiscriminately sell options they would have most of their trades be winners but those winners would be small and their losses would be large. They would net to zero, excluding transaction costs.

An option buyer tends to have a minority of their trades be winners but the winners are a much larger size than their losers. Still, they will also net out to zero.

The options market is too efficient to simply allow someone to make money by selling options.

Dealers are mainly short options simply because their clients tend to want to buy options. They would be buyers of options if their clients were

mainly short options. Dealers are simply trying to make the bid/ask out of their trading with clients.

DESCRIBING AN OPTION

It takes four specifications to describe an option:

1. What is the type of option: call or put?
2. What is the name of the underlying instrument?
3. What is the strike price?
4. When is expiration?

The Type

The two types of options are calls and puts. A *call* gives the buyer the right, but not the obligation, to buy the underlying instrument. Call option buyers hope for higher prices, and call option sellers hope for stable or declining prices. A *put* gives the buyer the right, but not the obligation, to sell the underlying instrument. Put option buyers hope for lower prices, and put option sellers hope for increasing or stable prices.

For every buyer there must be a seller. Selling a call means that you have sold the right, but not the obligation, for someone to buy something from you. Selling a put means that you have sold the right, but not the obligation, for someone to sell something to you. Note that the option seller has retained the obligation but no right.

An option described as the *June OEX 600 call at 25* describes a call option on the S&P 100 Index (OEX) with a strike of 600, a premium of 25, and an expiration in June. An option described as the *April Citibank 35 put at 3³/₈* describes a put option on Citibank stock with a strike of 35, a premium of 3³/₈, and expiration in April.

The Class or Underlying Instrument

A *class* of options is all the puts and calls on a particular underlying instrument. The something that an option gives a person the right to buy or sell is the *underlying instrument* (UI). Some examples of underlying instruments are:

- IBM
- S&P 100 Index
- Treasury-bond futures

The name of the UI is usually shortened to something manageable; for example, the S&P 100 Index is usually shortened to “S&P 100” or often to its ticker symbol “OEX.”

Throughout this book, the UI is referred to as a generic something, which could be:

1. A *stock*, like 100 shares of Citibank stock. (Note that options on stocks are always for 100 shares of the underlying stock. Options on futures are for the same quantity as the underlying futures contract.)
2. Something *tangible*, like 100 ounces of gold.
3. Something *conceptual*, like a stock index. (Conceptual underlying instruments call for the delivery of the cash value of the underlying instrument; for example, the popular S&P 100 option calls for the delivery of the cash value of the index.)

The Strike Price

An option traded on an exchange is standardized in every element except the price, which is negotiated between buyers and sellers. On the other hand, all aspects of over-the-counter (OTC) options are negotiable. (The examples in this book assume exchange-traded options, but the analysis also applies to OTC options.) This standardization increases the liquidity of trading and makes possible the current huge volume in options.

It is easier to buy or sell an option when you only negotiate price rather than every detail in the contract, as in options on real estate—those negotiations can take weeks or months. Exchange-traded option transactions, on the other hand, can be consummated in seconds.

The introduction of FLEX options blurred the line between exchange-traded and OTC options. *FLEX options* are options that are traded on an exchange, but more than the price is negotiable—virtually all of the elements can be negotiated. So far, the popularity of FLEX options has been limited.

The predetermined price upon which the buyer and the seller of an option have agreed is the *strike price*, also called the exercise price or striking price. “OEX 250” means the strike price is \$250. If you bought an OEX 250 call, you would have the right to buy the cash equivalent of the OEX index at \$250 at any time during the life of the option. If you bought a gold 400 put, you would have the right to sell gold at \$400 an ounce at any time during the life of the option.

Each option on a UI will have multiple strike prices. For example, the OEX option might have strike prices for puts and calls of 170, 175, 180, 185,

190, 195, 200, and 205. In general, the current price of the UI will be near the middle of the range of the strike prices.

In general, the higher the UI price, the wider the range of the strike price. For example, a stock selling for less than \$25 per share has strike prices 2.50 dollars or points apart, whereas a stock selling for greater than \$200 has 10 dollars or points between each strike price.

The exchanges add strike prices as the price of the instrument changes. For example, if March Treasury-bond futures are listed at 80-00, the Chicago Board of Trade (CBOT), the exchange where bond futures options are traded, might begin trading with strike prices ranging from 76-00 to 84-00. If bond futures trade up to 82-00, the exchange might add a 86-00 strike price. The more volatile the UI, the more strike prices there tend to be.

The Expiration Day

Options have finite lives. The *expiration day* of the option is the last day that the option owner can exercise the option.

This distinction is necessary to differentiate between American and European options. *American options* can be exercised any time before the expiration date at the owner's discretion. Thus, the expiration and exercise days can be different. *European options* can only be exercised on the expiration day. If exercised, the exercise and expiration days are the same. Unless otherwise noted, this book will discuss only American options.

Most options traded on American exchanges are American exercise.

Please also note that there are rules on most exchanges where options are automatically exercised if they are in-the-money by a certain amount. (We'll explain *in-the-money* later.)

Expiration dates are in regular cycles and are determined by the exchanges. For example, a common stock expiration cycle is January/April/July/October. This means that options will be traded that expire in those months. Thus, a May XYZ 125 call will expire in May if no previous action is taken by the holder. The exchanges add new options as old ones expire.

The Chicago Board Options Exchange (CBOE) will list a July 2008 series of options when the October 2008 series expires. The exchanges limit the number of expiration dates usually to the nearest three. For example, stock options are only allowed to be issued for a maximum of nine months. Thus, only three expiration series will exist at a single time. Because of this, the option closest to expiration will be called the near-term or short-term option; the second option to expire will be called the medium-term or middle-term option; and the third option will be called the far-term or long-term option.

TABLE 2.1 Expiration Cycles

Option	Cycle
Stock indexes	Monthly, using nearest three to four months
Stocks	January/April/July/October February/May/August/November March/June/September/December Monthly, using nearest three months
Futures options	Corresponding to the delivery cycle of underlying futures contract.
Spot currencies	March/June/September/December, but monthly for nearest three months
Cash bonds	March/June/September/December

Table 2.1 shows the expiration cycles for some of the major types of options. Note that typically only the three nearest options will be trading at any time.

However, there has been a movement toward options on futures that expire every month. These are called *serial options*. They typically exist only for the first several months. They are most common in the currency futures.

The UI of a serial option is the futures contract that expires the same month as the option or the first futures contract that expires subsequent to the option's expiration. For example, the November option in currency futures will be exercised for the December futures contract because that is the next futures contract that exists.

The currencies trade in a March/June/September/December cycle. This means that the September option will be exercised into a September futures contract. The October, November, and December options turn into December futures contracts.

In-the-Money, Out-of-the-Money, and At-the-Money

Other terms to qualify options are *in-the-money*, *out-of-the-money*, and *at-the-money*. They describe the relationship between option prices and the UI price.

1. In-the-money

- Call option: UI price is higher than the strike price.
- Put option: UI price is lower than the strike price.

2. Out-of-the-money
 - Call option: UI price is lower than the strike price.
 - Put option: UI price is higher than the strike price.
3. At-the-money: UI price is equivalent to the strike price. (Most people use *at-the-money* to also describe the strike price that is closest to the price of the underlying instrument.)

LIQUIDATING AN OPTION

An option can be liquidated in three ways: a closing buy or sell, abandonment, and exercising. Buying and selling, as discussed earlier, are the most common methods of liquidation. Abandonment and exercise are discussed here.

Exercising Options

An option gives the right to buy or sell a UI at a set price. Call option owners can exercise their right to buy the UI, and put option owners can exercise their right to sell the UI. The call option owner is calling away the UI when exercising the option. For example, owners of October AT&T 50 calls can, at any time, exercise their right to buy 100 shares of AT&T at \$50 per share. The seller of the option is assigned an obligation to sell 100 shares of AT&T at \$50. After exercising a call, the buyer will own 100 shares of AT&T at \$50 each, and the seller will have delivered 100 shares of AT&T and received \$50 each for them.

Only holders of options can exercise. They may do so from any time after purchase of the option through to a specified time on the last trading day if it is an American option. For example, stock options can be exercised up until 8:00 P.M. (EST) on the last day of trading. Option owners exercise by notifying the exchange, usually through their broker. The writer of the option is then assigned the obligation to fulfill the obligations of the options.

Option buyers and sellers should constantly check with their broker or with the exchange on the latest rules concerning exercise and assignment if they are going to be holding options until expiration or if they intend to exercise and/or expect to be assigned.

Clearinghouses handle the exercising of options and act as the focal point for the process. If you want to exercise an option, you typically tell your brokerage house, which then notifies the clearinghouse. The clearinghouse assigns the obligation to a brokerage house that has a client that is short that particular option. That brokerage house then assigns the

obligation to a client that is short that particular option. If more than one client is short, the obligation is assigned by the method that the brokerage house uses, usually randomly or first-in/first-out. However, another method can be used if it is approved by the relevant exchange. It is, therefore, important for option writers to know their brokerage house rules on option assignment.

Once assigned, call option writers must deliver the UI or the equivalent in cash, if the contract specifications call for cash delivery. They may not buy back the option. They may honor the assignment of a call option by delivering the UI from their portfolio, by buying it in the market and then delivering it, or by going short. The assignment of a put option may be honored by delivering a short instrument from their portfolio, by selling short in the market and then delivering it, or by going long.

If you exercise an option, you will be holding a new position. You will then be liable for the cost and margin rules of the new position. (*Margin*, in this context, is the amount of money you are allowed to borrow using your new position as collateral.) For example, if you exercise a long stock call and want to keep the shares, you will either have to pay the full value of the stock or margin it according to the rules of the Federal Reserve Board. Alternately, you could sell it right away and not post any money if done through a margin account. If you had tried to sell it through a cash account, you would have had to post the full value of the stock before you could sell. In general, exercising an option is considered the equivalent of buying or selling the UI for margin and costing considerations.

When an option is exercised, the brokerage house charges a commission for executing an order on the UI for both the long and the short of the option. For example, if you exercise a call option on American Widget stock, you will have to pay the commission to buy 100 shares of American Widget. This makes sense because, when you exercise an option, you are trading in the UI.

The true cost of exercise includes the transaction costs and the time premium, if any, remaining on the option. (*Time premium* is defined in the next chapter.) The costs make it expensive for most people to exercise options, so it is generally done only by exchange members prior to expiration.

You will not want to exercise an option unless it is bid at less than its intrinsic value. (*Intrinsic value* is discussed in the next chapter.) This will occur only if the option is very deep in-the-money or very near expiration. An option can be abandoned if the premium left is less than the transaction costs of liquidating it.

Options that are in-the-money are almost certain to be exercised at expiration. The only exceptions are those options that are less in-the-money than the transaction costs to exercise them at expiration. For example,

a soybean option that is only 0.25 cent in-the-money (worth \$12.50) will not be exercised by most investors because the transaction costs will be greater than the \$12.50 received by exercising. In all other cases, in-the-money options should be exercised. Otherwise, you will lose the premium and gain nothing. Most option exercises occur within a few days of expiration because the time premium has dropped to a negligible or nonexistent level. Most exchanges have automatic exercise of options that are in-the-money by a specified amount.

Prior to expiration, any option trading for less than the intrinsic value could also be exercised. This premature exercise can also occur if the price is far enough below the carrying costs relative to the UI. This discount is extremely rare because arbitrageurs keep values in line. Even if it occurred, it is likely that only exchange members could capitalize on it because of their lower transaction costs.

A discount might occur when the UI is about to pay a dividend or interest payment. Following the payment, the price of the UI will typically drop the equivalent of the dividend or interest payment. The option might have enough sellers before the dividend or interest payment to create the discount. There are typically a large number of sellers just before a dividend or interest payment because holders of calls do not receive the dividend or interest and, therefore, do not want to hold the option through the period when the payment causes the option price to dip.

In the final analysis, there are few exercises before the final few days of trading because it is not economically rational to exercise if there is any time premium remaining on the option.

CHANGES IN OPTION SPECIFICATIONS

The terms of an option contract can change after being listed and traded. This is very infrequent and happens only in stock options when the stock splits or pays a stock dividend. The result is a change in the strike prices and the number of shares that are deliverable.

A stock split will increase the number of options contracts outstanding and reduce the strike price. For example, suppose that Exxon declares a two-for-one split. You will be credited with having twice as many contracts, but the strike price will be halved. If you owned 20 Exxon 45 calls before the split, you will have 40 Exxon 22¹/₂ calls following the split. Note that the new strike prices can be fractional.

A stock dividend has the same effect on the number of options and the strike price. For example, Merrill Lynch declares a 5 percent stock

dividend. The exchange will adjust the number of shares in a contract up to 105 from 100 and reduce the strike price by 5 percent. An old call with a strike price of 50 will now be listed as the 47 $\frac{1}{2}$ call.

Exchanges will list new strikes at round numbers following the split or stock dividend. The fractional strikes disappear as time passes.

THE OPTION CHART

The option chart is a key diagram that will show up throughout the book. It shows the profit or loss of an option strategy at various prices of the UI at expiration. Figure 2.1 shows an option chart of a long call option. The scale on the left shows the profit or loss of the option. The bottom scale shows the price of the underlying instrument at expiration.

The chart illustrates the key fact that the price of an option generally rises and falls when the price of the UI rises and falls. Thus, a call option buyer is bullish (expecting prices to rise), and the seller is bearish (expecting prices to fall or stay stable). A put option buyer is bearish, and the seller is bullish. For example, if the price of Widget International was \$30 and you were holding a July Widget 40 put, you could exercise the option and make \$10 per share. If the stock dropped to \$25, you would make \$15 by exercising. By exercising the put, you have taken stock you can buy for \$25 in the open market and *put* it to someone else for the strike price of \$40. Your purchase price is \$25, your sale price is \$40, and your profit is therefore \$15.

Option charts usually do not consider the effects of carrying charges. They exist to give a quick overview of the effect of changes in price, time, and volatility on the price of an option. The most common charts show the

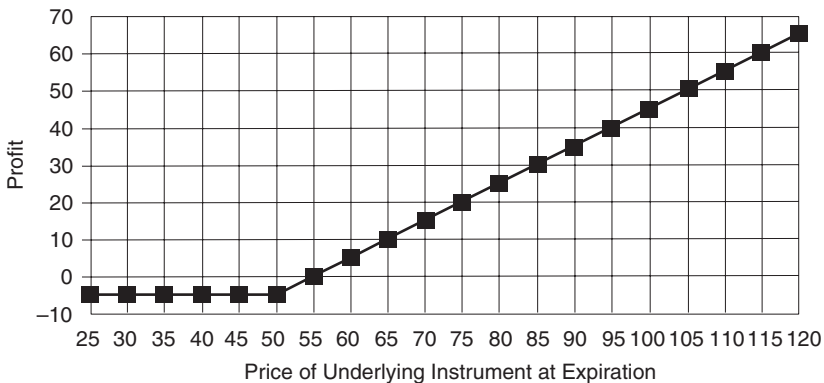


FIGURE 2.1 Option Chart

profit or loss of the strategy at expiration only. However, some charts will show the profit or loss characteristics of a strategy before expiration.

At expiration, the profit-and-loss line of an option will bend at the exercise price and cross the zero-profit line at the point that equals the exercise price plus the premium, for a call, or that equals the exercise price minus the premium, for a put.

PRICE QUOTES

Price quotes are essentially like the quotes of the UI. The following shows typical option price quotes found in a newspaper:

Chicago Board—Index Options

Expire date Strike price	Sales	Open Int.	Week's		Price	Net Chg.	N.Y. Close
			High	Low			
SP100 Apr 530 p	2434	7721	.25	.125	.125	-.0625	633.55
SP100 Apr 565 p	1724	5449	.875	.25	.3125	-.8125	633.55
SP100 Apr 570 p	2232	10406	1.0625	.375	.4375	-.8125	633.55

The rows are for the prices of the various strike prices; the columns are for calls and puts and the various expirations. With few exceptions, the units of price are the same as the UI. For example, because each option is for 100 shares, a price of 4.375 for an option on a stock means the total price for the option is 100 times the cost-per-share of the option, or \$437.50.

Quotations for options on Treasury-bond and Treasury-note futures are quoted in 64ths, whereas the underlying futures are quoted in 32nds. Many people make trading mistakes when trading these options due to this difference.

Price quotes on quotation services will be priced the same, but each quotation service has a different code for each option. Consult with your quotation service for the quote symbol of the option in which you are interested.

Options quotes are available on the previous day's close in the *Wall Street Journal*, *Investor's Business Daily*, and almost all big-city dailies. Quotes are available on all the major quotations services. They are also available on the Internet or you can call your broker for quotes.