CHAPTER 1

Option Basics

INTRODUCTION

An option is a contract between two parties that determines the time and price at which a stock may be bought or sold. The two parties to the contract are the buyer and the seller. The buyer of the option pays money, known as the option's premium, to the seller. For this premium, the buyer obtains a right to buy or sell the stock depending on what type of option is involved in the transaction. Because the seller has received the premium from the buyer, the seller now has an obligation to perform under that contract. Depending on the option involved, the seller may have an obligation to buy or sell the stock.

OPTION CLASSIFICATION

Options are classified as to their type, class, and series. There are two types of options: calls and puts.

OPTION TYPES

CALL OPTIONS

A call option gives the buyer the right to buy, or to "call," the stock from the option seller at a specific price for a certain period of time. The sale of a call option obligates the seller to deliver or sell that stock to the buyer at that specific price for a certain period of time.

PUT OPTIONS

A put option gives the buyer the right to sell, or to "put," the stock to the seller at a specific price for a certain period of time. The sale of a put option obligates the seller to buy the stock from the buyer at that specific price for a certain period of time.

OPTION CLASSES

An option class consists of all options of the same type for the same underlying stock.

EXAMPLE All XYZ calls are one class of options, and all XYZ puts are another class of options.

Class 1	Class 2
XYZ June 50 calls	XYZ June 50 puts
XYZ June 55 calls	XYZ June 55 puts
XYZ July 50 calls	XYZ July 50 puts
XYZ July 55 calls	XYZ July 55 puts
XYZ August 50 calls	XYZ August 50 puts

OPTION SERIES

An option series is the most specific classification of options and consists only of options of the same class with the same exercise price and expiration month. For example, all XYZ June 50 calls would be one series of options, and all XYZ June 55 calls would be another series of options.

BULLISH VS. BEARISH

BULLISH

Investors who believe that a stock price will increase over time are said to be bullish. Investors who buy calls are bullish on the underlying stock; that is, they believe that the stock price will rise and have paid for the right to purchase the stock at a specific price known as the exercise price or strike price. An investor who has sold puts is also considered to be bullish on the stock. The seller of a put has an obligation to buy the stock and, therefore, believes that the stock price will rise.

BEARISH

Investors who believe that a stock price will decline are said to be bearish. The seller of a call has an obligation to sell the stock to the purchaser at a specified price and believes that the stock price will fall and is therefore bearish. The buyer of a put wants the price to drop so that he or she may sell the stock at a higher price to the seller of the put contract and is also considered to be bearish.

	Calls	Puts
Buyers	Bullish Have right to buy stock, want stock price to rise	Bearish Have right to sell stock, want stock price to fall
Sellers	Bearish Have obligation to sell stock, want stock price to fall	Bullish Have obligation to buy stock, want stock price to rise

BUYER VS. SELLER

Buyer		Seller
Owner	**Known as**	Writer
Long	**known as**	Short
Rights	**Has**	Obligations
Maximum speculative profit	**Objective**	Premium income
With an opening purchase	**Enters the contract**	With an opening sale
Exercise	**Wants the option to**	Expire

POSSIBLE OUTCOMES FOR AN OPTION

EXERCISED

If the option is exercised, the buyer has elected to exercise the right to buy or sell the stock, depending on the type of option involved. Exercising an option obligates the seller to perform under the contract.

SOLD

Most individual investors will elect to sell their rights to another investor rather than exercise their rights. The investor who buys the option will acquire all the rights of the original purchaser.

EXPIRE

If the option expires, the buyer has elected not to exercise the right, and the seller of the option is relieved of the obligation to perform.

EXERCISE PRICE

The exercise price is the price at which an option buyer may buy or sell the underlying stock, depending on the type of option involved in the transaction. The exercise price is also known as the strike price.

CHARACTERISTICS OF ALL OPTIONS

All standardized option contracts are issued and their performance is guaranteed by the Options Clearing Corporation (OCC). Standardized options trade on the exchanges, such as the Chicago Board Options Exchange (CBOE) and the NYSE Alternext.

All option contracts are for one round lot of the underlying stock, or 100 shares. To determine the amount that an investor either paid or received for the contract, take the premium and multiply it by 100. If an investor paid $4 for 1 KLM August 70 call, the investor paid $400 for the right to buy 100 shares of KLM at $70 per share until August. If another investor paid $2 for 1 JTJ May 50 put, the investor paid $200 for the right to sell 100 shares of JTJ at $50 until May.

MANAGING AN OPTION POSITION

Both the buyer and seller, in an option trade, establish the position with an opening transaction. The buyer has an opening purchase, and the seller has an opening sale. To exit the option position, an investor must close out the position. The buyer of the option may exit a position through:

- A closing sale.
- Exercising the option.
- Allowing the option to expire.

The seller of an option may exit or close out a position through:

- A closing purchase.
- Having the option exercised or assigned.
- Allowing the option to expire.

Most individual investors do not exercise their options and will simply buy and sell options in much the same way as they would buy or sell other securities.

BUYING CALLS

An investor who purchases a call believes that the underlying stock price will rise and that he or she will be able to profit from the price appreciation by purchasing calls. An investor who purchases a call can control the underlying stock and profit from its appreciation while limiting the loss to the amount of the premium paid for the calls. Buying calls allows investors to maximize their leverage, and they may realize a more significant percentage return based on their investment. An investor may also elect to purchase a call to lock in a purchase price for a security if the investor currently lacks the funds required to purchase the security but will have the funds available in the near future. When looking to establish a position, buyers must determine:

- Their maximum gain.
- Their maximum loss.
- Their breakeven.

MAXIMUM GAIN FOR A LONG CALL

When an investor has a long call position, the maximum gain is always unlimited. The investor profits from a rise in the stock price. Because there is no limit to how high a stock price may rise, the maximum gain is unlimited just as if the investor had purchased the stock.

MAXIMUM LOSS FOR A LONG CALL

Whenever an investor is long, or owns a stock, the maximum loss is always limited to the amount that has been invested. When an investor purchases a

call option, the amount paid for the option, or the premium, is always going to be the maximum loss.

BREAKEVEN POINT FOR A LONG CALL

An investor who has purchased calls must determine where the stock price must be at expiration in order to break even on the transaction. An investor who has purchased calls has paid the premium to the seller in the hopes that the stock price will rise. The stock must appreciate by enough to cover the cost of the investor's option premium in order for the investor to break even at expiration. To determine an investor's breakeven point on a long call, use the following formula:

breakeven = strike price + premium

EXAMPLE

An investor has established the following option position: Long 1 XYZ May 30 call at 3. The investor's maximum gain, maximum loss, and breakeven will be:

- Maximum gain: Unlimited
- Maximum loss: $300 (premium paid)
- Breakeven: $33 = 30 + 3 (strike price + premium)

If at expiration XYZ is at exactly $33 per share and the investor sells or exercises the option, the investor will break even, excluding transactions costs.

SELLING CALLS

An investor who sells a call believes that the underlying stock price will fall and that he or she will be able to profit from a decline in the stock price by selling calls. An investor who sells a call is obligated to deliver the underlying stock if the buyer decides to exercise the option. When looking to establish a position, sellers must determine:

- Their maximum gain.
- Their maximum loss.
- Their breakeven.

MAXIMUM GAIN FOR A SHORT CALL

For an investor who has sold uncovered or naked calls, the maximum gain is always limited to the amount of the premium received when the calls were sold.

MAXIMUM LOSS FOR A SHORT CALL

An investor who has sold uncovered or naked calls does not own the underlying stock and, as a result, has unlimited risk and the potential for an unlimited loss. The seller of the calls is subject to a loss if the stock price increases. Because there is no limit to how high a stock price may rise, there is no limit to the amount of investor's loss.

BREAKEVEN POINT FOR A SHORT CALL

An investor who has sold calls must determine where the stock price must be at expiration in order to break even on the transaction. An investor who has sold calls has received the premium from the buyer in the hopes that the stock price will fall. If the stock appreciates, the investor may begin to lose money. The stock price may appreciate by the amount of the option premium received, and the investor will still break even at expiration. To determine an investor's breakeven point on a short call, use the following formula:

breakeven = strike price + premium

EXAMPLE

An investor has established the following option position: Short 1 XYZ May 30 call at 3. The investor's maximum gain, maximum loss, and breakeven will be:

- Maximum gain: $300 (premium received)
- Maximum loss: Unlimited
- Breakeven: $33 = 30 + 3 (strike price + premium)

If at expiration XYZ is at exactly $33 per share and the investor closes out the transaction with a closing purchase or has the option exercised against him or her, the investor will break even, excluding transactions costs.

Notice the relationship between the buyer and the seller:

	Call Buyer	Call Seller
Maximum gain	Unlimited	Premium received
Maximum loss	Premium paid	Unlimited
Breakeven	Strike price + premium	Strike price + premium
Wants option to	Exercise	Expire

Because an option is a two-party contract, the buyer's maximum gain is the seller's maximum loss, and the buyer's maximum loss is the seller's maximum gain. Both the buyer and the seller will break even at the same point.

BUYING PUTS

An investor who purchases a put believes that the underlying stock price will fall and that he or she will be able to profit from a decline in the stock price by purchasing puts. An investor who purchases a put can control the underlying stock and profit from its price decline while limiting his or her loss to the amount of the premium paid for the puts. Buying puts allows investors to maximize their leverage while limiting their losses. It may also allow investors to realize a more significant percentage return based on their investment compared to the return that could be realized from shorting stock. When looking to establish a position, buyers must determine:

- Their maximum gain.
- Their maximum loss.
- Their breakeven.

MAXIMUM GAIN FOR A LONG PUT

An investor who has purchased a put believes that the stock price will fall. There is, however, a limit to how far a stock price may decline. A stock price may never fall below zero. As a result, the investor who believes that the stock price will fall has a limited maximum gain. To determine the maximum gain for the buyer of a put, use the following formula:

maximum gain = strike price – premium

MAXIMUM LOSS FOR A LONG PUT

Whenever an investor is long, or owns a stock, the maximum loss is always limited to the amount invested. When investors purchase a put option, the amount they pay for the option, or their premium, is always going to be their maximum loss.

BREAKEVEN FOR A LONG PUT

An investor who has purchased a put believes that the stock price will decline. In order for the investor to break even on the transaction, the stock price must fall by enough to offset the amount of the premium paid for the option. At expiration, the investor will break even at the following point:

breakeven = strike price – premium

EXAMPLE

An investor has established the following option position: Long 1 XYZ May 30 put at 4. The investor's maximum gain, maximum loss, and breakeven will be:

- Maximum gain: $26, or $2,600 for the whole position (strike price – premium)
- Maximum loss: $400 (premium paid)
- Breakeven: $26 = 30 – 4 (strike price – premium)

If at expiration XYZ is at exactly $26 per share and the investor sells or exercises the option, the investor will break even, excluding transactions costs.

SELLING PUTS

An investor who sells a put believes that the underlying stock price will rise and that he or she will be able to profit from a rise in the stock price by selling puts. An investor who sells a put is obligated to purchase the underlying stock if the buyer decides to exercise the option. An investor who sells a put may also be selling the put as a way to acquire the underlying security at a cheaper price. If the stock is put to the investor, the investor's purchase price

is reduced by the amount of the premium received. When looking to establish a position, sellers must determine:

- Their maximum gain.
- Their maximum loss.
- Their breakeven.

MAXIMUM GAIN FOR A SHORT PUT

For an investor who has sold uncovered or naked puts, the maximum gain is always limited to the amount of the premium the investor received when he or she sold the puts.

MAXIMUM LOSS FOR A SHORT PUT

An investor who has sold a put believes that the stock price will rise. There is, however, a limit to how far a stock price may decline. A stock price may never fall below zero. As a result, the investor who believes that the stock price will rise has a limited maximum loss. The worst thing that can happen for an investor who is short a put is that the stock goes to zero and the investor is then forced to purchase it at the strike price from the owner of the put. To determine the maximum loss for the seller of a put, use the following formula:

maximum loss = strike price – premium

BREAKEVEN FOR A SHORT PUT

Whenever an investor has sold a put, he or she believes that the stock price will rise. If the stock price begins to fall, the investor becomes subject to a loss. In order for the investor to break even on the transaction, the stock price may fall by the amount of the premium received for the option. At expiration, the investor will break even at the following point:

breakeven = strike price – premium

EXAMPLE

An investor has established the following option position: Short 1 XYZ May 30 put at 4. The investor's maximum gain, maximum loss, and breakeven will be:

- Maximum gain: $400 (premium received)
- Maximum loss: $26, or $2,600 for the whole position (strike price – premium)
- Breakeven: $26 = 30 – 4 (strike price – premium)

If at expiration XYZ is at exactly $26 per share and the investor closes out the position with a closing purchase or has the option exercised against him or her, the investor will break even, excluding transactions costs.

Notice the relationship between the buyer and the seller:

	Put Buyer	Put Seller
Maximum gain	Strike price – premium	Premium received
Maximum loss	Premium paid	Strike price – premium
Breakeven	Strike price – premium	Strike price – premium
Wants option to	Exercise	Expire

Because an option is a two-party contract, the buyer's maximum gain is the seller's maximum loss, and the buyer's maximum loss is the seller's maximum gain. Both the buyer and the seller will break even at the same point.

OPTION PREMIUMS

The price of an option is known as its premium. Factors that determine the value of an option and, as a result, its premium, are:

- The relationship of the underlying stock price to the option's strike price.
- The amount of time to expiration.
- The volatility of the underlying stock.
- Supply and demand.
- Interest rates.

An option can be:

- In the money.
- At the money.
- Out of the money.

These terms describe the relationship of the underlying stock to the option's strike price. These terms do not describe how profitable the position is.

IN THE MONEY OPTIONS

A call is in the money when the underlying stock price is greater than the call's strike price.

EXAMPLE An XYZ June 40 call is $2 in the money when XYZ is at $42 per share.

A put is in the money when the underlying stock price is lower than the put's strike price.

EXAMPLE An ABC October 70 put is $4 in the money when ABC is at $66 per share.

It would only make sense to exercise an option if it was in the money.

AT THE MONEY OPTIONS

Both puts and calls are at the money when the underlying stock price equals the options exercise price.

EXAMPLE If FDR is trading at $60 per share, all of the FDR 60 calls and all of the FDR 60 puts will be at the money.

OUT OF THE MONEY OPTIONS

A call is out of the money when the underlying stock price is lower than the option's strike price.

EXAMPLE An ABC November 25 call is out of the money when ABC is trading at $22 per share.

A put option is out of the money when the underlying stock price is above the option's strike price.

EXAMPLE A KDC December 50 put is out of the money when KDC is trading at $54 per share.

It would not make sense to exercise an out of the money option.

	Calls	Puts
In the money	Stock price > strike price	Stock price < strike price
At the money	Stock price = strike price	Stock price = strike price
Out of the money	Stock price < strike price	Stock price > strike price

INTRINSIC VALUE AND TIME VALUE

An option's total premium is composed of intrinsic value and time value. An option's intrinsic value is equal to the amount the option is in the money. Time value is the amount by which an option's premium exceeds its intrinsic value. In effect, the time value is the price an investor pays for the opportunity to exercise the option. An option that is out of the money has no intrinsic value; therefore, the entire premium consists of time value.

EXAMPLE An XYZ June 40 call is trading at $2 when XYZ is trading at $37 per share. The June 40 call is out of the money and has no intrinsic value; therefore, the entire $2 premium consists of time value. If an XYZ June 40 put is trading at $3 when XYZ is at $44 dollars per share, the entire $3 is time value.

If in the above example, the options were in the money and the premium exceeded the intrinsic value of the option, the remaining premium would be time value.

EXAMPLE An XYZ June 40 call is trading at $5 when XYZ is trading at $42 per share. The June 40 call is in the money and has $2 in intrinsic value; therefore, the rest of the premium consists of the time value of $3. If an XYZ June 40 put is trading at $4 when XYZ is at $39, the put is in the money by $1, and the rest of the premium, or $3, is time value.

CHAPTER 1

Pretest

OPTION BASICS

1. You sold 10 IBM May 95 puts at 5.70. What is your maximum gain?
   a. $570
   b. $5,700
   c. Unlimited
   d. $95,000

2. An investor sells 2 ZAQ Nov 60 puts at 3.5 when ZAQ is at 62.70. ZAQ falls to 56.05 at expiration, and the investor closes the position at its intrinsic value. What is the investor's gain or loss?
   a. $90 profit
   b. $90 loss
   c. $45 loss
   d. $45 profit

3. Which of the following are true about an option?

   I. It is a contract between two parties that determines the time and place at which a security may be bought or sold.

   II. The two parties are known as the buyer and the seller. The money paid by the buyer of the option is known as the option's premium.

   III. The buyer has bought the right to buy or sell the security, depending on the type of option.

   IV. The seller has an obligation to perform under the contract, possibly to buy or sell the stock, depending on the option involved.

   a. I, III, and IV
   b. I, II, III, and IV
   c. I, II, and III
   d. II, III, and IV

4. Which of the following are bearish?

   I. Call seller
   II. Put seller
   III. Call buyer
   IV. Put buyer

   a. II and III
   b. II and IV
   c. I and IV
   d. I and II

5. Which of the following issues standardized options?

   a. The exchanges
   b. The OCC
   c. The company
   d. Nasdaq

6. An investor buys 10 XYZ May 70 calls at 3.10 when XYZ is at 68. At expiration, the stock is at 77, and the investor closes out the position at its intrinsic value. What is the investor's profit or loss?
   - **a.** $7,000 profit
   - **b.** $7,000 loss
   - **c.** $3,100 loss
   - **d.** $3,900 profit

7. A MSFT June 65 put trading at 3 has how much intrinsic value with MSFT at 65?
   - **a.** $0
   - **b.** $3
   - **c.** $65
   - **d.** $2

8. With XYZ trading at 52.50, which of the following options is in the money?
   - **a.** XYZ March 55 call
   - **b.** XYZ March 55 put
   - **c.** XYZ March 50 put
   - **d.** XYZ March 60 call

9. An XYZ May 50 call is quoted at 4.35 when XYZ is at 51.10. Which of the following are true?
   - **I.** The time value is 1.10.
   - **II.** The option is in the money.
   - **III.** The time value is 3.25.
   - **IV.** The intrinsic value is more than the time value.

   - **a.** II and III
   - **b.** I and IV
   - **c.** II and IV
   - **d.** I and III

10. An investor sells 10 CSC Oct 75 puts at 5.30 to open. CSC trades down to 71 at expiration, and the investor closes out the position at intrinsic value with a closing purchase. What is the investor's gain or loss?

a. $1,300 loss

b. $1,300 gain

c. $300 loss

d. $300 gain